The Architects' JOURNAL for July 10, 1958

THE ARCHITECTS' JOURNAL

[No. 3306] [Vol. 128

THE ARCHITECTURAL PRESS
11 *and* 13, *Queen Anne's Gate, Westminster, S.W.*1. *'Phone: Whitehall* 0611

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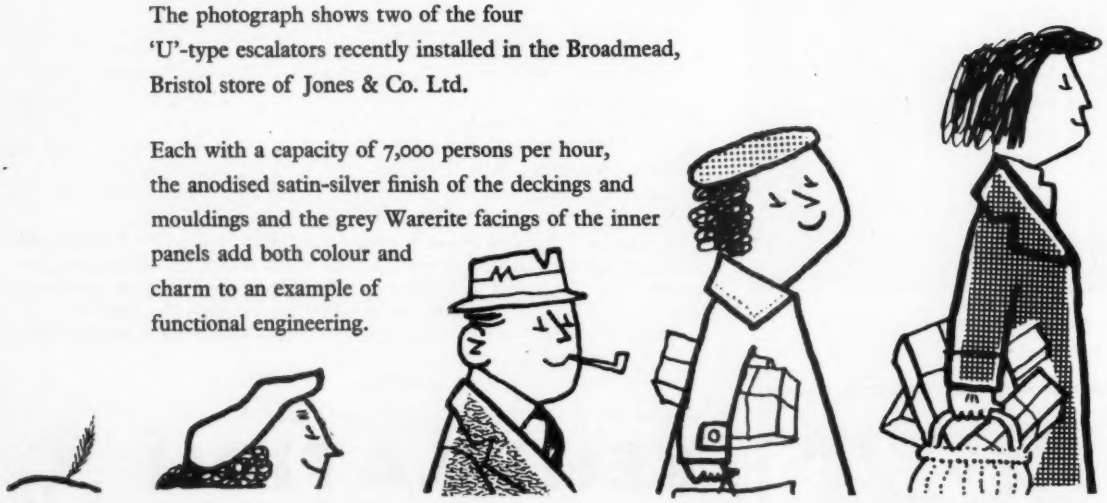
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ig one week, Ih to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square. Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers. 100, Park Street, Grosvenor Square, W.1. Mayfair 7086
ILA	Institute of Landscape Architects. 2, Guildford Place, W.C.1. Holborn 0281
I of Arb	Institute of Arbitrators. Hastings House, 10, Norfolk Street, Strand, W.C.2. Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1. Museum 7179
IQS	Institute of Quantity Surveyors. 98, Gloucester Place, W.1. Welbeck 1859
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3. Avenue 6851
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1. Abbey 6172
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1. Sloane 7128
JFRO	Joint Fire Research Organisation (DSIR & Fire Offices' Committee). Fire Research Station, Boreham Wood, Herts. Elstree 1341/1797
LDA	Lead Development Association. 18, Adam Street, W.C.2. Whitehall 4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1. Museum 3891
LSPC	Lead Sheet and Pipe Council. Eagle House, Jermyn Street, S.W.1. Whitehall 7264/4175
MAFF	Ministry of Agriculture, Fisheries and Food. Whitehall Place, S.W.1. Trafalgar 7711
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1. Mayfair 9400
MOH	Ministry of Health. 23, Savile Row, W.1. Regent 8411
MOHLG	Ministry of Housing and Local Government. Whitehall, S.W.1. Whitehall 4300
MOLNS	Ministry of Labour and National Service, 8, St. James's Square, S.W.1. Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, W.C.2. Gerrard 6933
MOT	Ministry of Transport, Berkeley Square House, Berkeley Square, W.1. Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1. Reliance 7611
NAMMC	Natural Asphalte Mine Owners and Manufacturers Council. 94/98, Petty France, S.W.1. Abbey 1010
NAS	National Association of Shopfitters. 9, Victoria Street, S.W.1. Abbey 4813
NBR	National Buildings Record, 31, Chester Terrace, Regent's Park, N.W.1. Welbeck 0619
NCBMP	National Council of Building Material Producers, 10, Storey's Gate, S.W.1 Abbey 5111
NEFMAI	National Employers Federation of the Mastic Asphalt Industry. 21, John Adam Street, Adelphi, W.C.2. Trafalgar 3927
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1. Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives. Federal House, Cedars Road, Clapham, S.W.4. Macaulay 4451
NFHS	National Federation of Housing Societies. 12, Suffolk St., S.W.1. Whitehall 1693
NHBRC	National House Builders Registration Council. 58, Portland Place, W.1. Langham 0064/5
NPL	National Physical Laboratory. Head Office, Teddington. Molesey 1380
NRDB	Natural Rubber Development Board. Market Buildings, Mark Lane, E.C.3. Mansion House 9383
NSAS	National Smoke Abatement Society. Palace Chambers, Bridge Street, S.W.1. Trafalgar 6838
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1. Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1. Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1. Abbey 4504
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh. Fountainbridge 7631
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1. Langham 5533
RICS	Royal Institution of Chartered Surveyors. 12, Great George Street, S.W.1. Whitehall 5322/9245
RFAC	Royal Fine Art Commission. 5, Old Palace Yard, S.W.1. Whitehall 3932
RS	Royal Society. Burlington House, Piccadilly, W.1. Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2. Trafalgar 2366
RSH	Royal Society of Health. 90, Buckingham Palace Road, S.W.1. Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19. Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1. Victoria 2186
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1. Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, E.C.3. Mansion House 3921
SIA	Society of Industrial Artists. 7, Woburn Square, W.C.1. Langham 1984/5
SIA	Structural Insulation Association. 32, Queen Anne Street, W.1. Langham 7616
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1. Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2. Temple Bar 5006
TDA	Timber Development Association. 21, College Hill, E.C.4. City 4771
TPI	Town Planning Institute. 18, Ashley Place, S.W.1. Victoria 8815
TTF	Timber Trades Federation. 75, Cannon Street, E.C.4. City 5040
WDC	War Damage Commission. 6, Carlton House Terrace, S.W.1. Whitehall 4341
ZDA	Zinc Development Association. 34, Berkeley Square, W.1. Grosvenor 6636

ESCALATORS in BRISTOL STORE

The photograph shows two of the four 'U'-type escalators recently installed in the Broadmead, Bristol store of Jones & Co. Ltd.

Each with a capacity of 7,000 persons per hour, the anodised satin-silver finish of the deckings and mouldings and the grey Warerite facings of the inner panels add both colour and charm to an example of functional engineering.



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ESCALATOR, LIFT AND REFRIGERATION ENGINEERS

AP 95

What's the compressive strength?

WITH the increasing use of air entraining agents in office blocks and multi-storey flats, many architects have asked for further data on the compressive strength of mortars incorporating plasticisers in place of lime.

To confirm our own findings, we commissioned the R.H. Harry Stanger Laboratories to carry out independent tests on mortars incorporating TRETOL MORTA-MIX. The Stanger report on these tests confirms that the performance of the plasticised mortar under a progressively increased crushing load makes it eminently suitable for load-bearing brickwork. Added to this are the other considerable advantages to be gained from the use of TRETOL MORTA-MIX—increased workability, reduced material costs and simplified storage.

We shall be glad to send you a copy of the Stanger report, together with a set of Specification Sheets on the uses of plasticisers in mortars and concrete.

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choose Ceramic Tiles

. . . providing an excellent illustration of the colour and interest which wall and floor tiling bring to a purely functional structure. The blue and white tiles used in this Pumping House at Sawbridgeworth need minimum maintenance—in years to come they will look equally attractive.

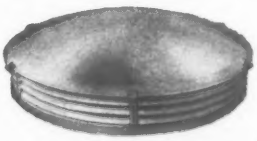
Architects: Scherrer & Hicks, London.
Tiling Contractors: Carter & Co. (London) Ltd.

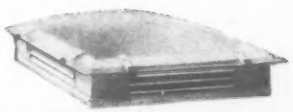
Ceramic TILES

Glazed & Floor Tile Manufacturers' Association · Federation House · Stoke-on-Trent

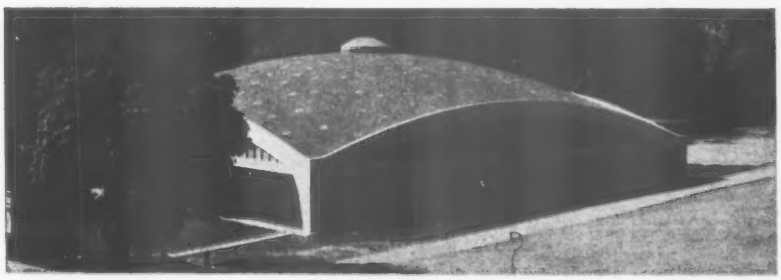
At the new Wimbledon covered courts a central ventilator was needed 14 ft. in diameter. Greenwood-Airvac engineers designed and built a special fitting, shown above, photographed from inside, and, below, from the outside.

Spectacular tasks of this kind broaden the experience which helps Greenwood-Airvac build a *Standard Range* of roof ventilators to meet, efficiently and economically, the vast majority of demands for ventilation and daylight. The cut-out illustrations below are two examples, both of which carry standard glass or ' Perspex ' domes. Circular ventilators from 18 in. to 6 ft. diameter, rectangular from 2½ ft. square to 4 ft. x 6 ft.





Please write for the new illustrated data sheets on Greenwood-Airvac ventilators



New covered courts at Wimbledon for the All England Lawn Tennis and Croquet Club.

Consulting engineers: C. J. Pell and Partners Contractors: W. H. Gaze and Sons Limited, in conjunction with Formcrete Limited.

Greenwood-Airvac *ventilation*

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CHANCERY 8135 (4 lines) 'Grams: 'AIRVAC', LONDON.

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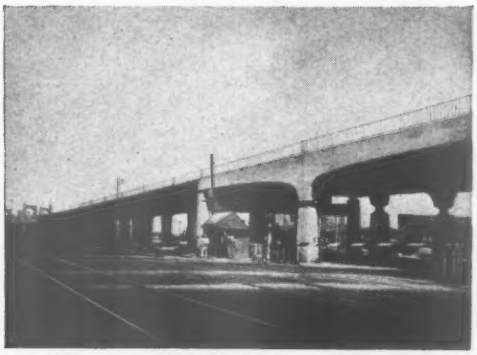

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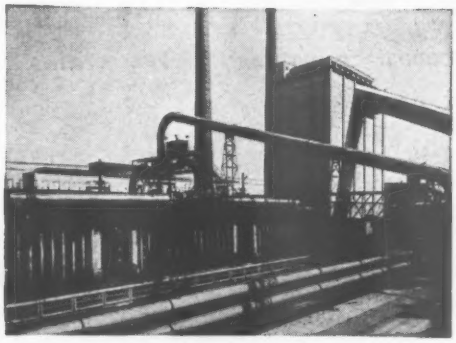

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Architects:—Messrs. Honeyman, Jack & Robertson.
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See information sheet 29.H6 in this issue, also 27.B11, 29.H1 and 29.H2

Supplementary sheets may be obtained by using the enquiry service on page 138.

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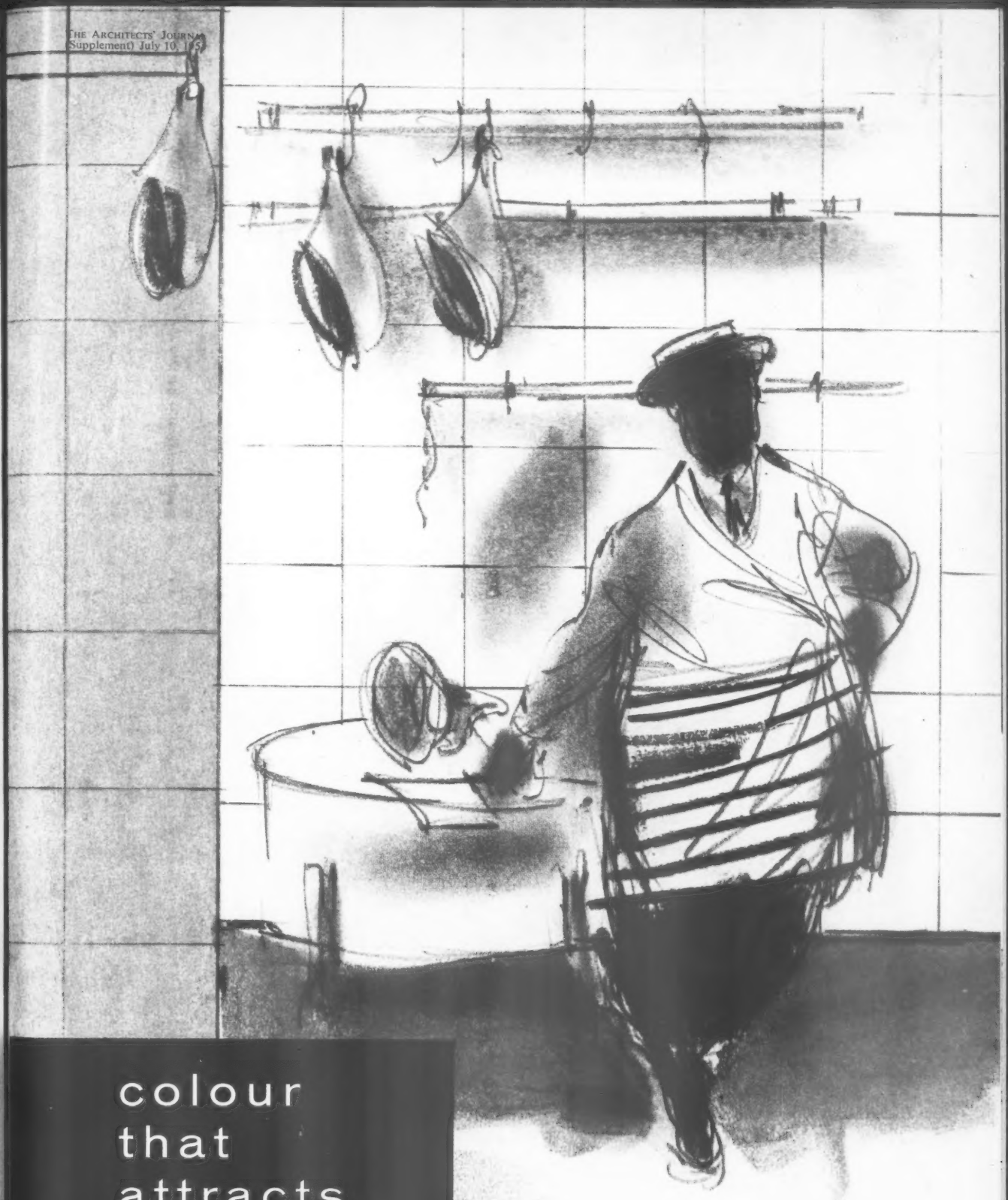

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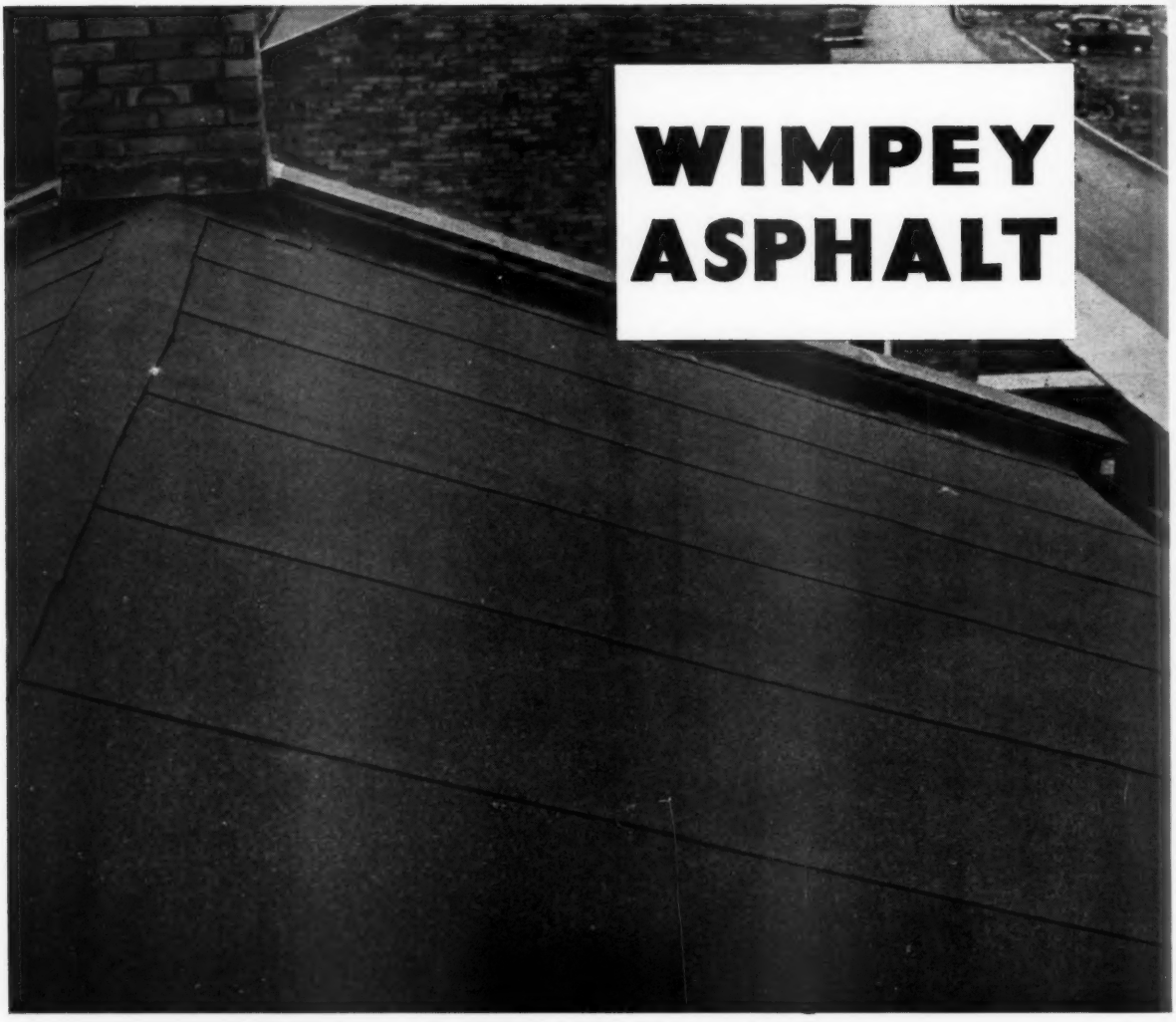

Architect: F. Gibberd, C.B.E., F.R.I.B.A., M.T.P.I.

This roof is a standard example of felt roofing to B.S.S.747 on Wimpey-built houses at Harlow New Town.

WIMPEY ASPHALT offers a service to all Contractors, Architects, Local Authorities, Industry, etc., for the construction of Asphalt Roofing, Flooring and Tanking, as well as 3-layer built up Felt Roofing.

Enquiries and requests for advice should be made to any Wimpey Asphalt office.

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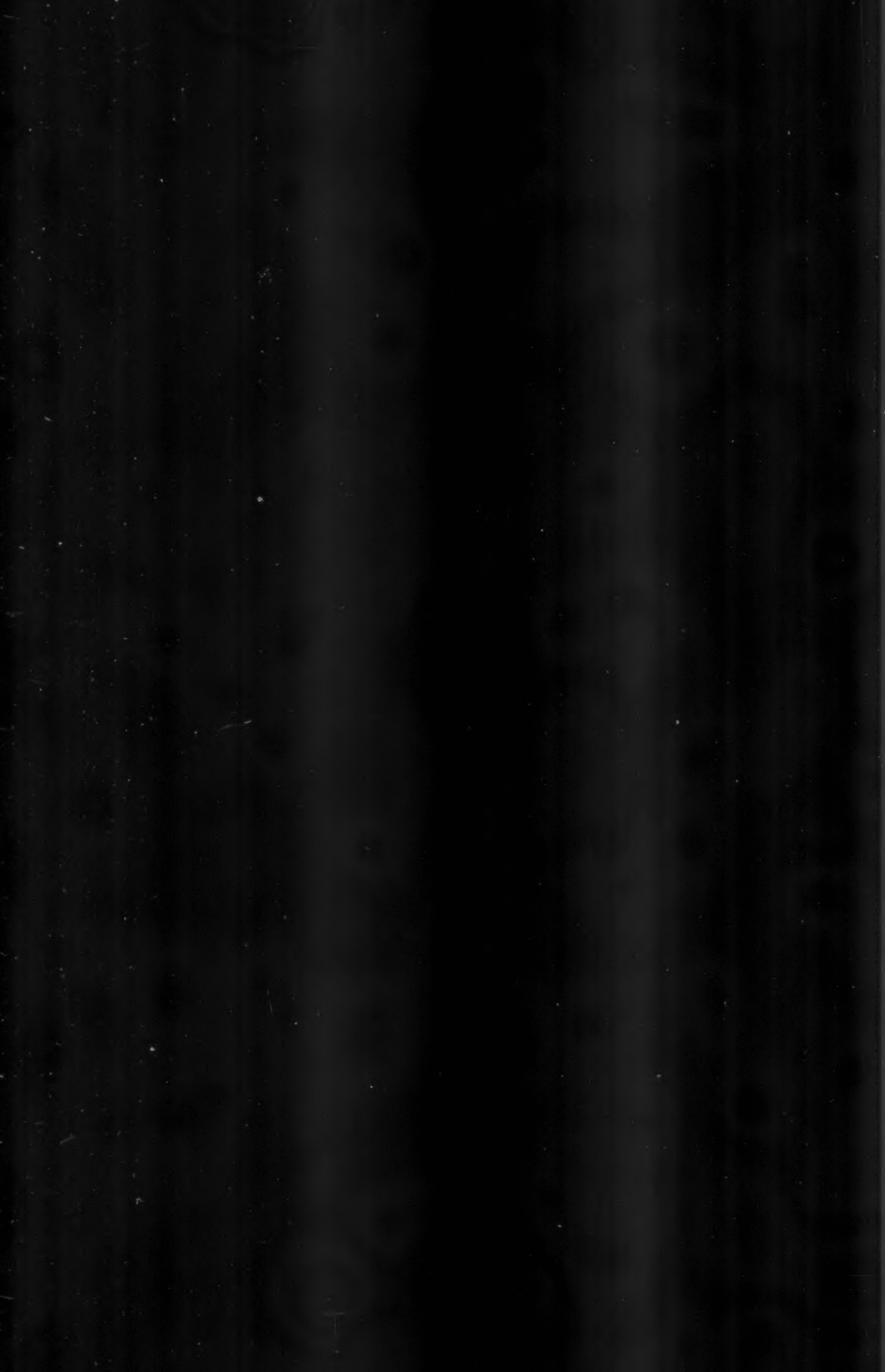
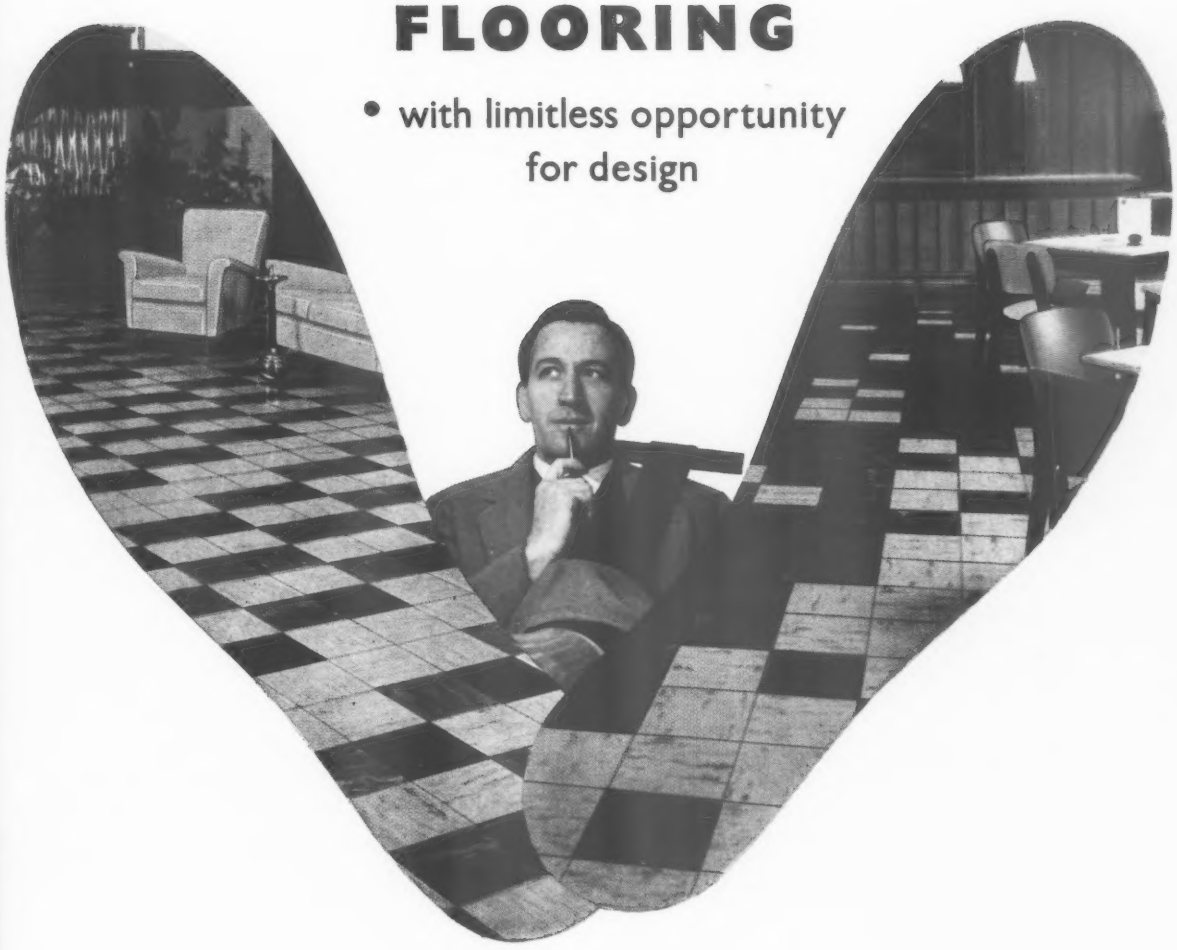


modern
FLOORING

• with limitless opportunity for design



AMONG those concerned with flooring problems many have come to the conclusion that "Semastic" or "Vinylex" tiles are the most practical and economical solution to covering sub-floors in industrial or commercial premises, in public buildings, and often in private homes, whether over new floors or to make old floors like new.

Tiles by Semtex provide ample opportunity for attractive designs, as the examples here show. They are quick to lay and immediately ready for use. This apart from other "user" considerations, such as the economy of longer wear; easy cleaning and maintenance; quiet, comfortable walking surfaces.

SEMTEX, with over 25 branches, provides a complete laying service throughout the United Kingdom, including technical and design advice. There are also independent approved laying facilities in the majority of the principal towns. For full information write or telephone to the address below.

Semastic *Decorative and* **Vinylex** *Floor Tiles are among the range produced by*

Semtex

• *THE COMPREHENSIVE FLOORING SERVICE*

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BOTH PRACTICAL AND DECORATIVE . . .

The examples above show that Semtex flooring has been accepted as the most practical and decorative solution to flooring problems, (left): Semastic Decorative Tiles at Lederle Laboratories Division, Cyanamid of Great Britain Ltd., (right): Vinylex Tiles in a reception hall in Germany.

BSE/55

Architect: Frank Scarlett, B.A., F.

STRAMIT partitions

for quieter, more attractive offices

Compactom Ltd., the partition specialists, erected these good-looking partitions in the offices of the Northern Aluminium Company in Bush House, London. They used hardboard-faced Stramit slabs of standard grade for the job. There were good reasons for this. Stramit partitions—so easy to erect and with such remarkable sound-deadening properties—commend themselves to architects and contractors alike. As the Stramit partitions illustrated above, in flush 'V' joints and aluminium framing, are faced with hardboard, they offer an exceptionally good decoration surface. Stramit of standard grade, however, cheerfully accepts paint and plaster direct, if desired. It is also available faced with fabric in a variety of attractive colours and designs.

What is Stramit?

Stramit is a low-cost, dry-construction material made of scientifically-compressed straw. It combines great strength and rigidity with exceptional values of thermal insulation and sound reduction. And official tests (reports available on request) prove that it resists fire resolutely.

Stramit of standard grade costs from 1s. per square foot, including delivery. Also available—Roofing grade, Low-Density grade (for non-load-bearing thermal insulation) and a special asbestos facing which gives a Class 1 rating for spread of flame.

STOCK SIZES: 4ft. wide × 6ft, 8ft., 9ft., 10ft. and 12ft. long.

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Kirkby is one of the largest post-war Municipal Housing Developments in the British Isles. It is equal in size to many of the official new towns. Commenced by the Corporation of Liverpool in 1952, over 6,000 dwellings have been completed. Several thousand more are under construction. Ultimately some 60,000 people will be housed at Kirkby.

Ronald Bradbury, PH.D., F.R.I.B.A., A.M.T.P.I.
(City Architect and Director of Housing)

The City of Liverpool is justifiably proud of its Town Hall. By any standards it is an architectural gem. Built to the design of John Wood of Bath between 1749 and 1755, it was enlarged by James Wyatt in 1789 and was further altered and restored by him after the fire of 1795.

Henry T. Hough, M.I.C.E., M.I.MUN.E., M.T.P.I.
City Engineer and Surveyor.
(Responsible for the maintenance of Public Buildings)

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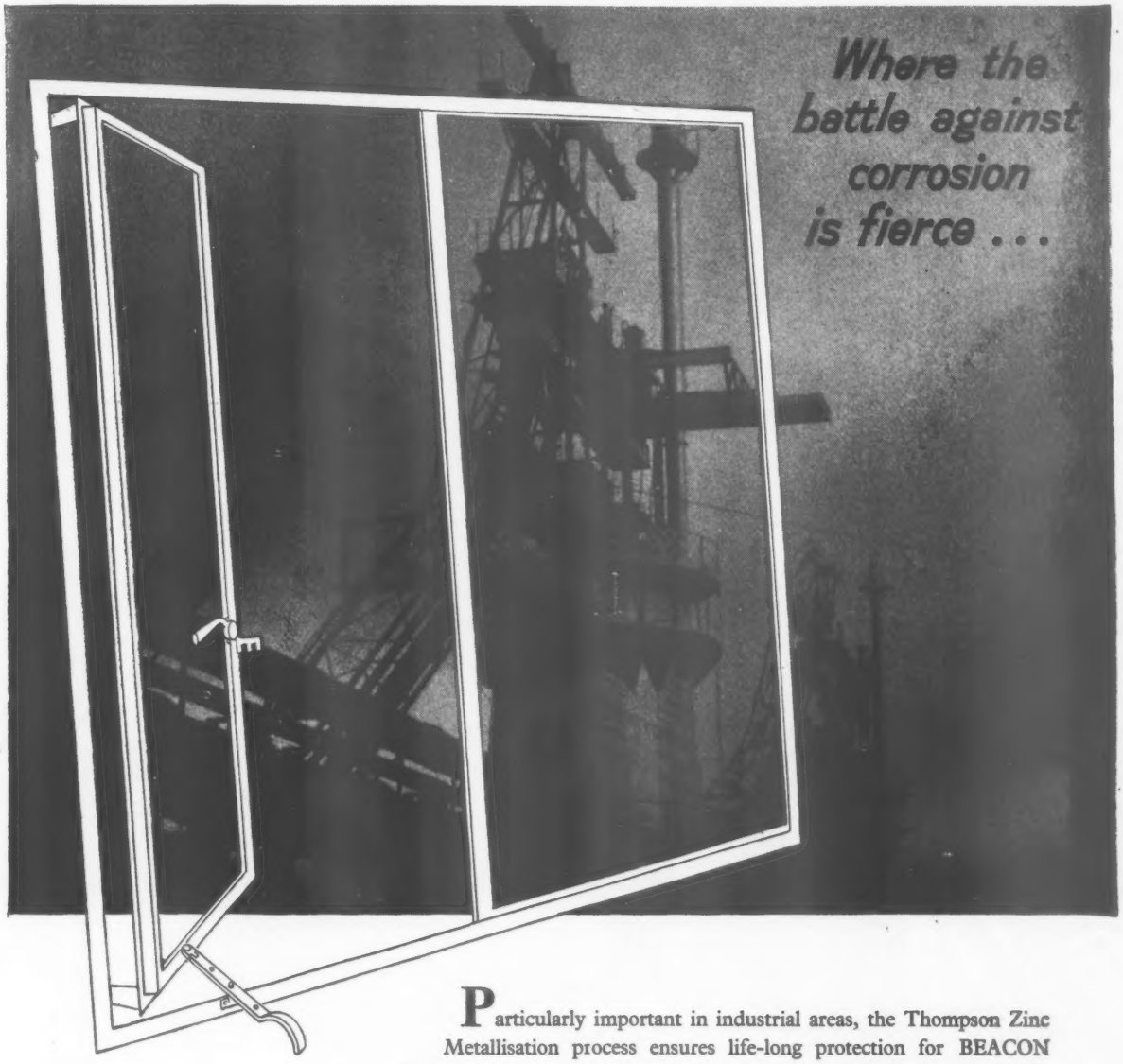

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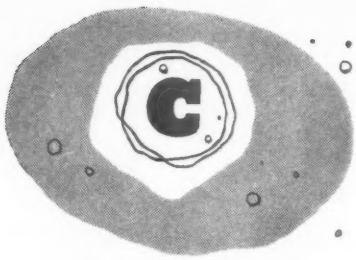


what do you look for in roof lighting?

The danger of fire spread, particularly in roofs is a matter of major concern to all associated with the building industry. Vague claims are often made about the flame spread characteristics of roof lighting sheets. The accepted authority is BS. 476:1953.

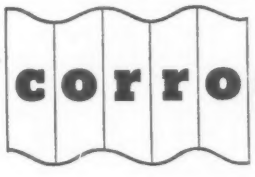
1 | safety at the point of danger

To clarify the position a series of tests, summarised below, were made by a leading independent laboratory in accordance with BS. 476:1953. The results clearly establish Corroglaze as ***the only corrugated roof lighting sheet which cannot in any way assist the spread of flame.*** Corroglaze is **100**% pure glass, reinforced with 1″ square wire mesh. It cannot flash, smoulder or drip flaming particles. Corroglaze gives better light transmission and distribution and is unaffected by exposure or fumes. It compares favourably in cost with all other forms of roof lighting and is suitable for use with corrugated sheeting.

MATERIAL	Time Lapse before ignition	Spread of flame after 30 secs.	Condition after 3-3¼ minutes
Sample 'A'	5-7 seconds	2″	Complete disintegration with molten material dripping off
Sample 'B'	5-7 seconds	2″	Completely burnt out—shell of burnt out fibre only remained
CORROGLAZE	NO IGNITION	NO IGNITION	No melting, the only effect being a slight cracking of the glass

LABORATORY REMARKS: Tests would classify Samples 'A' and 'B' as Class 4, Rapid Spread of Flame (B.S. 476: 1953 refers)

Designed and constructed under the supervision of G. A. Wilson, Esq., M.Eng., M.I.C.E., M.I.Mech.E., Chief Engineer, Port of London Authority; Main Contractors, Messrs. Tubewrights Ltd.



100% pure glass
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the non-combustible sheet

For further information and A.J. Information Sheet No. 666 write to :—

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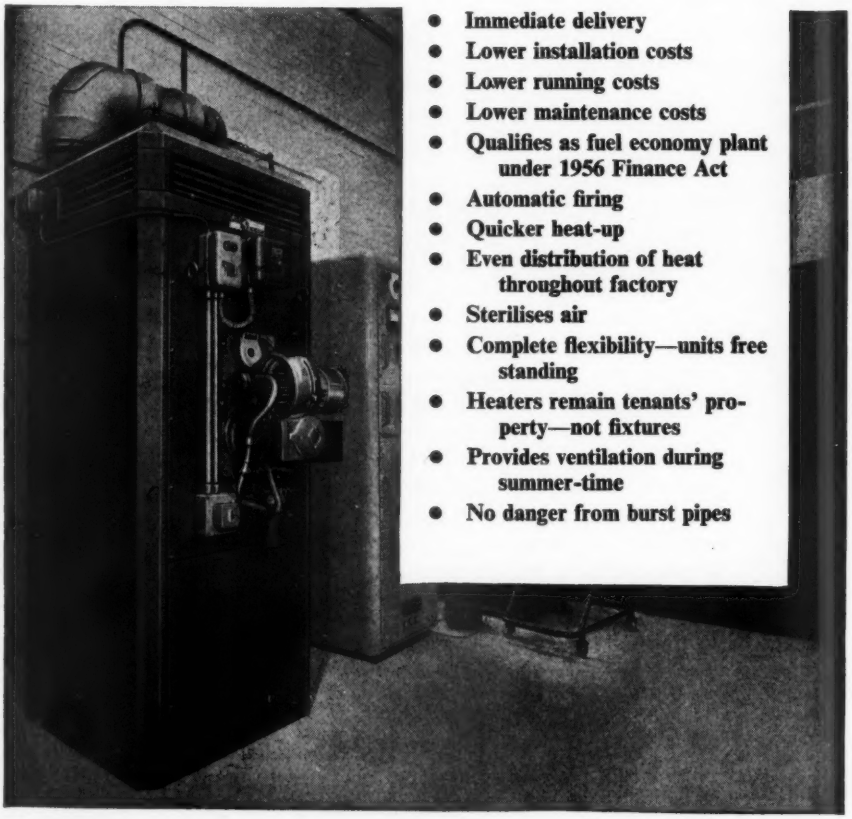

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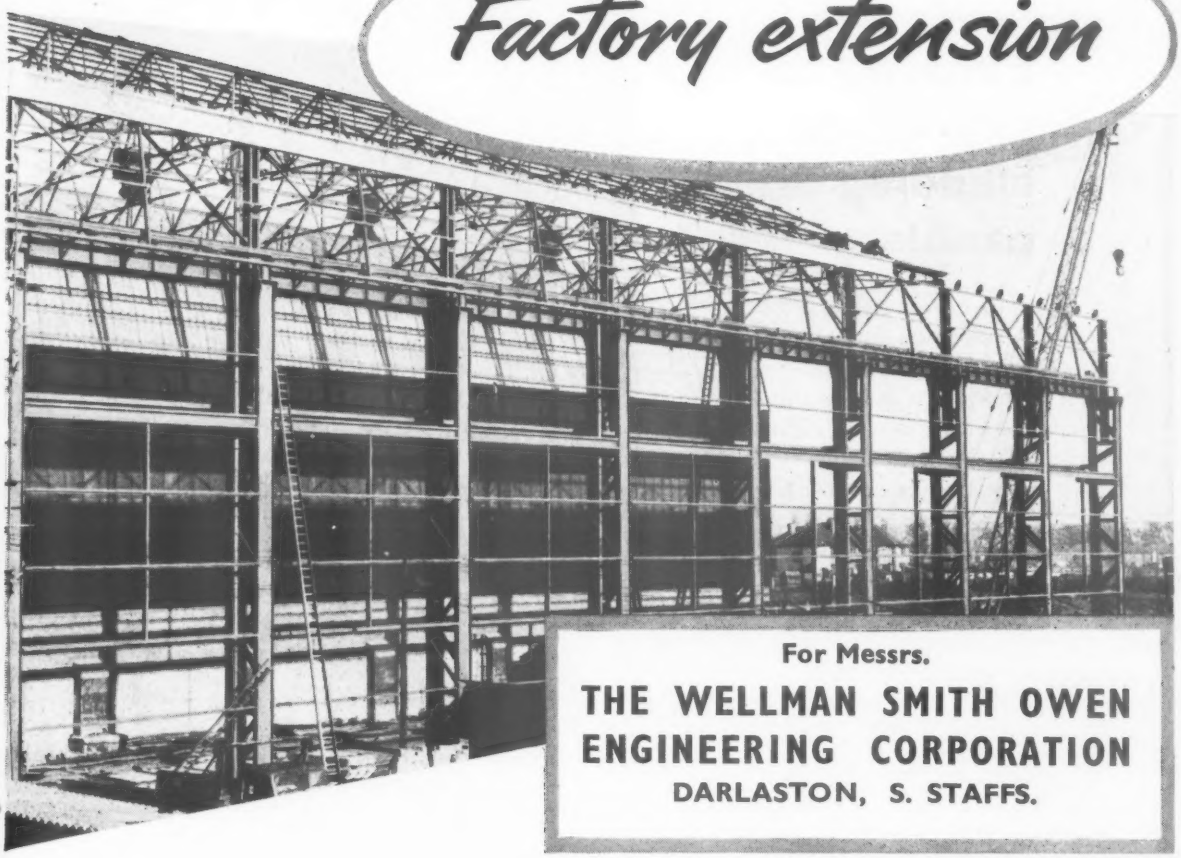
Factory extension



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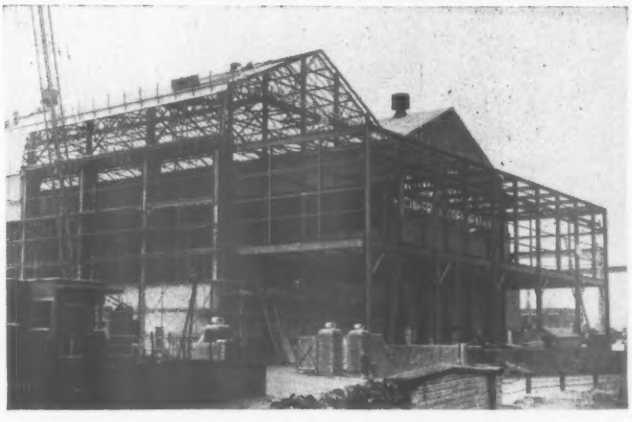

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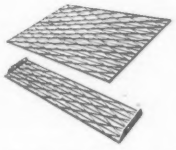

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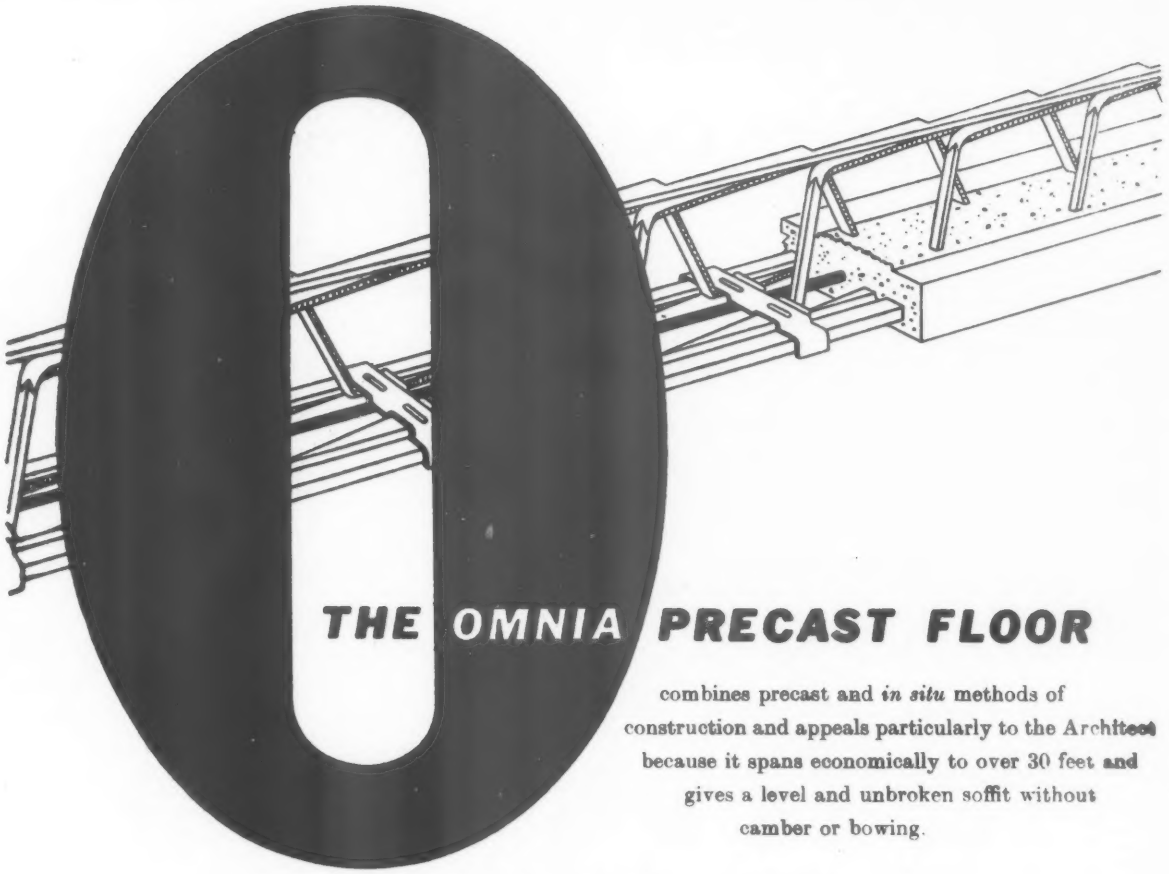

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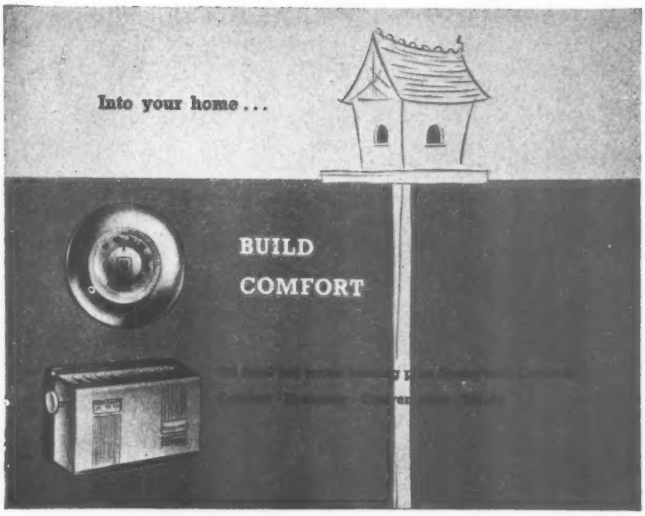

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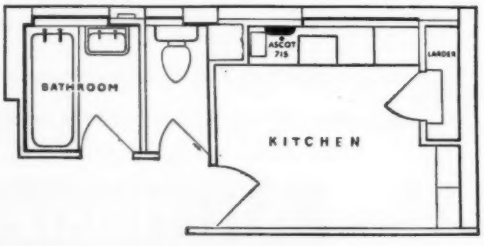

PLAN OF KITCHEN AND BATHROOM IN A TYPICAL TOWER COURT FLAT SHOWING POSITION OF ASCOT 715

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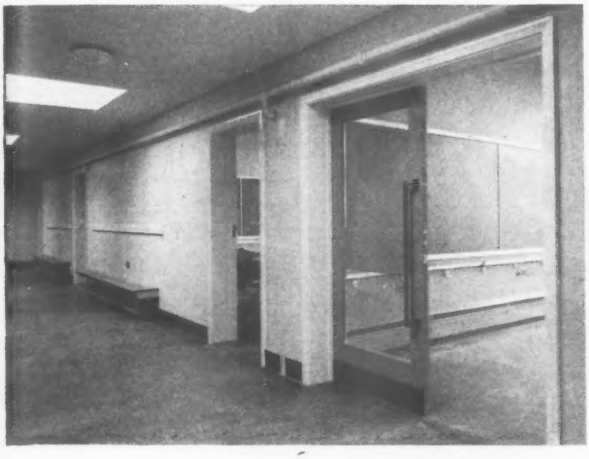

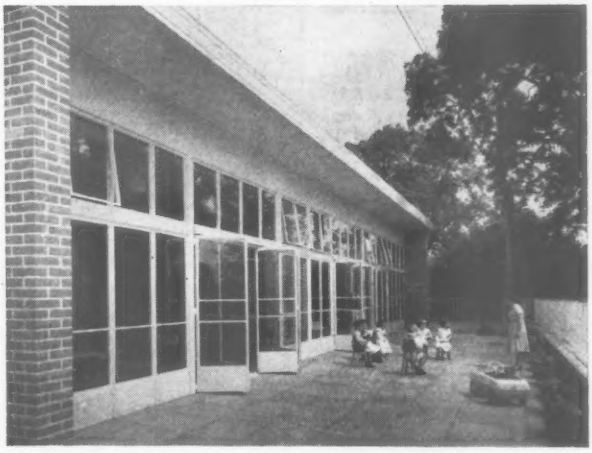

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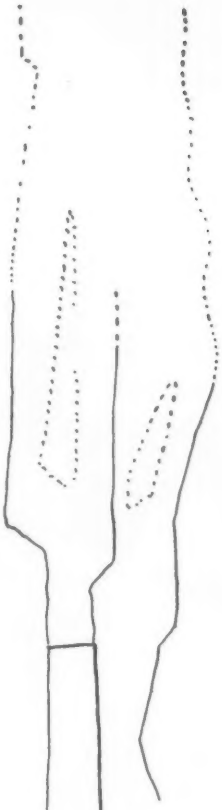

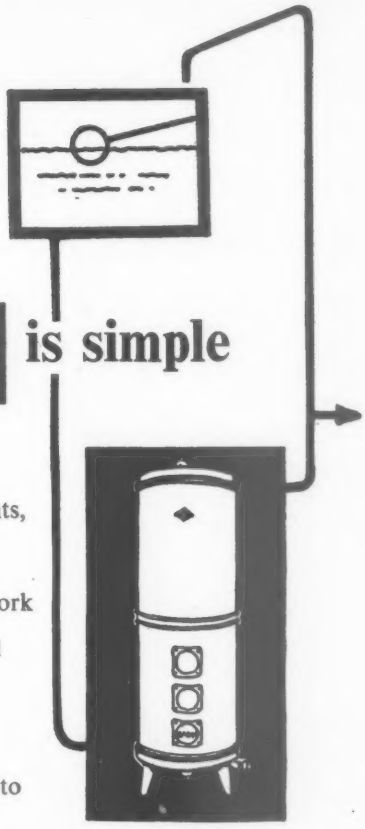

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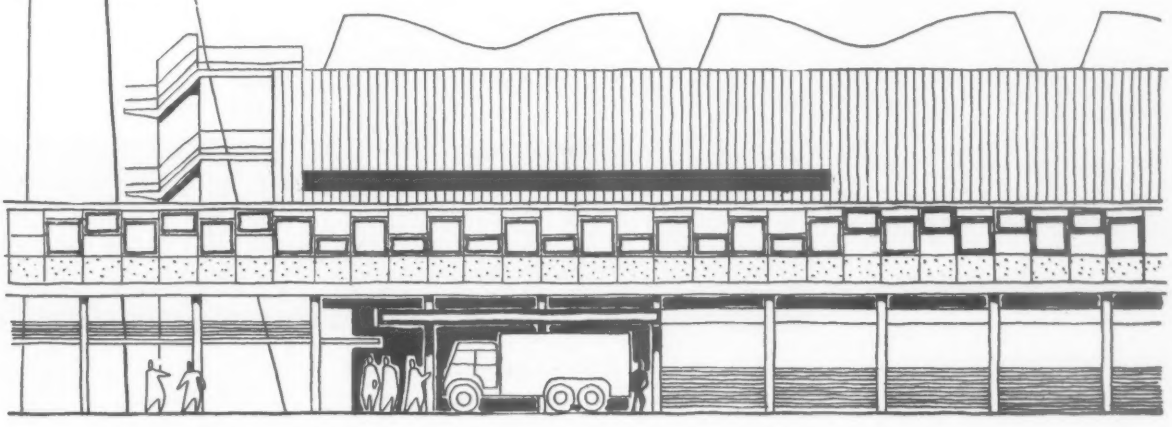

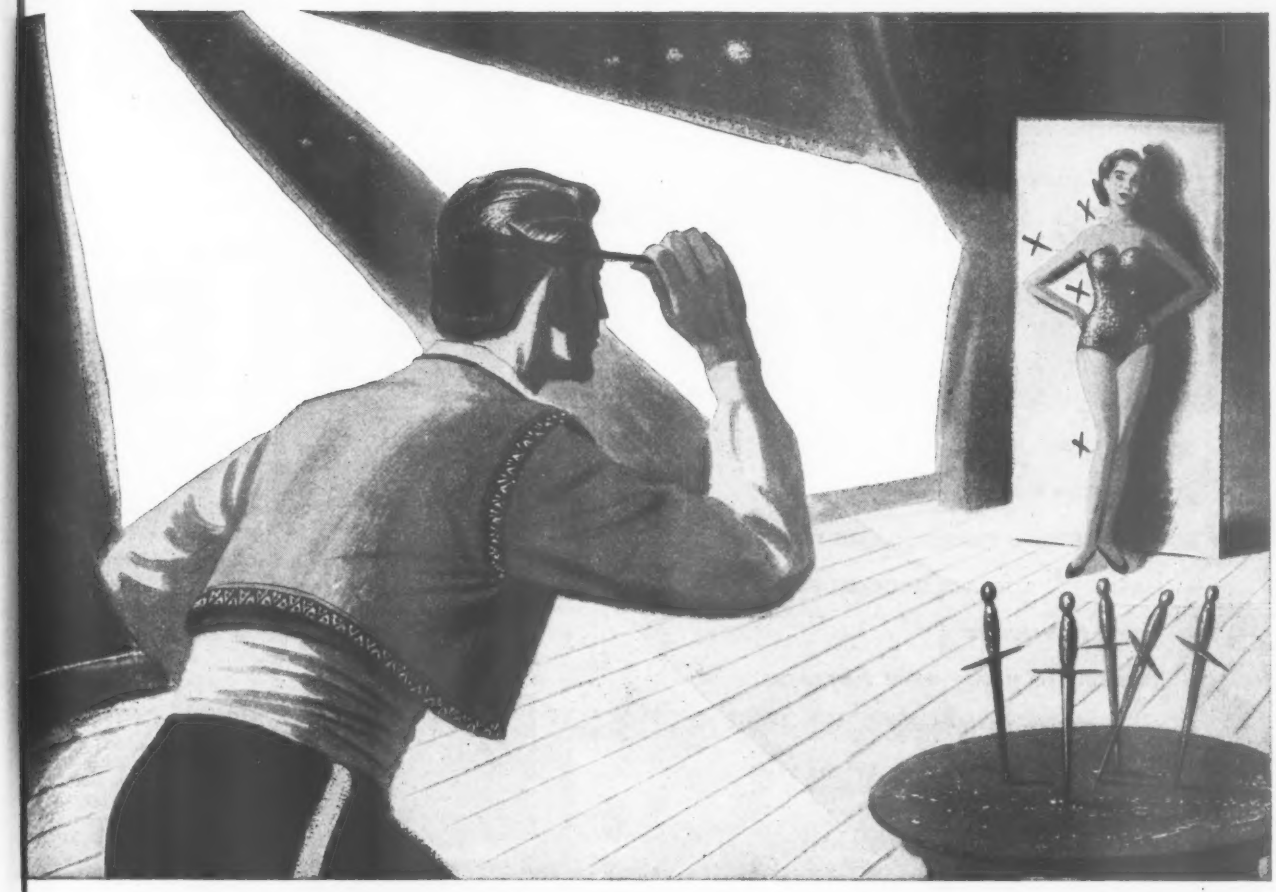

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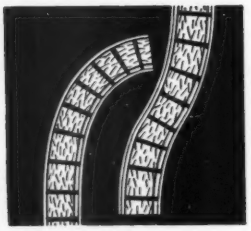

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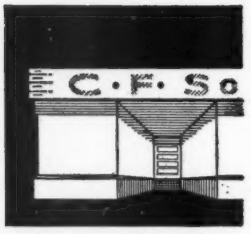

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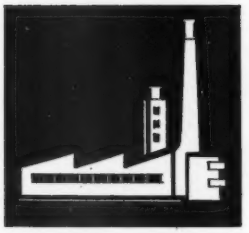

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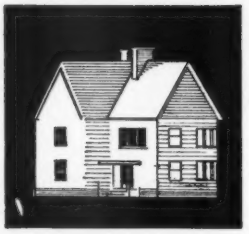

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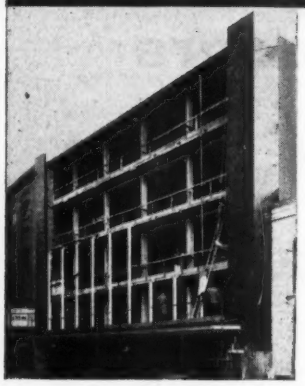

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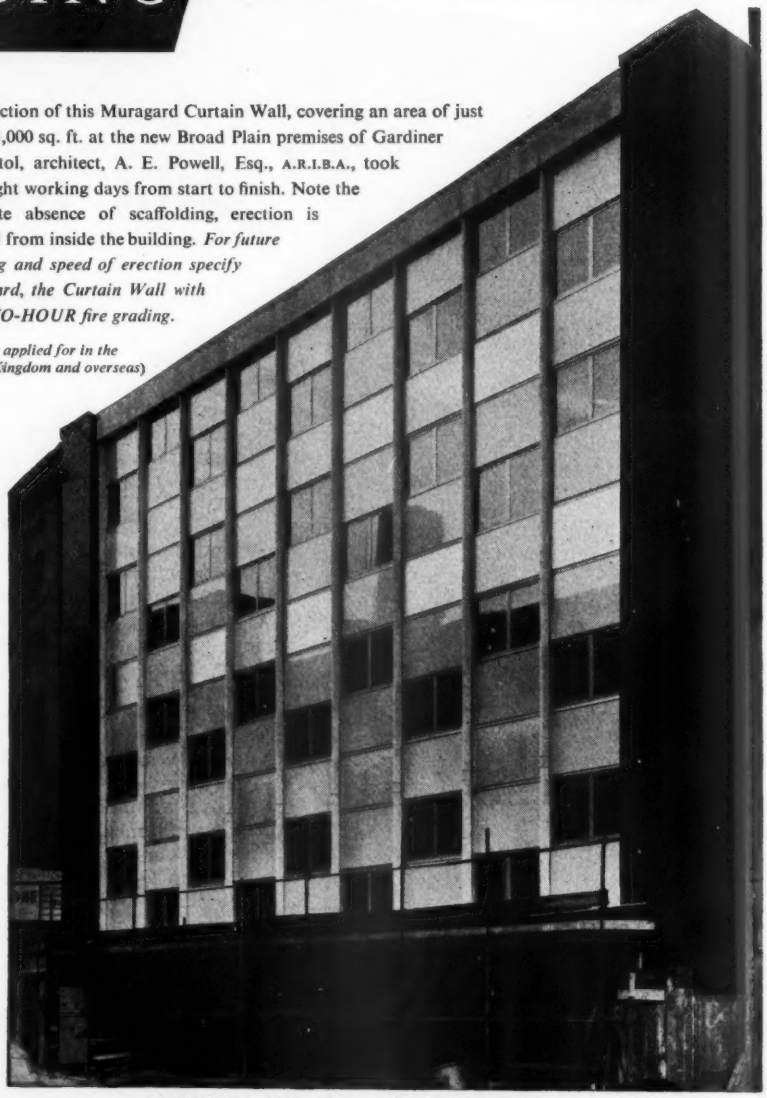

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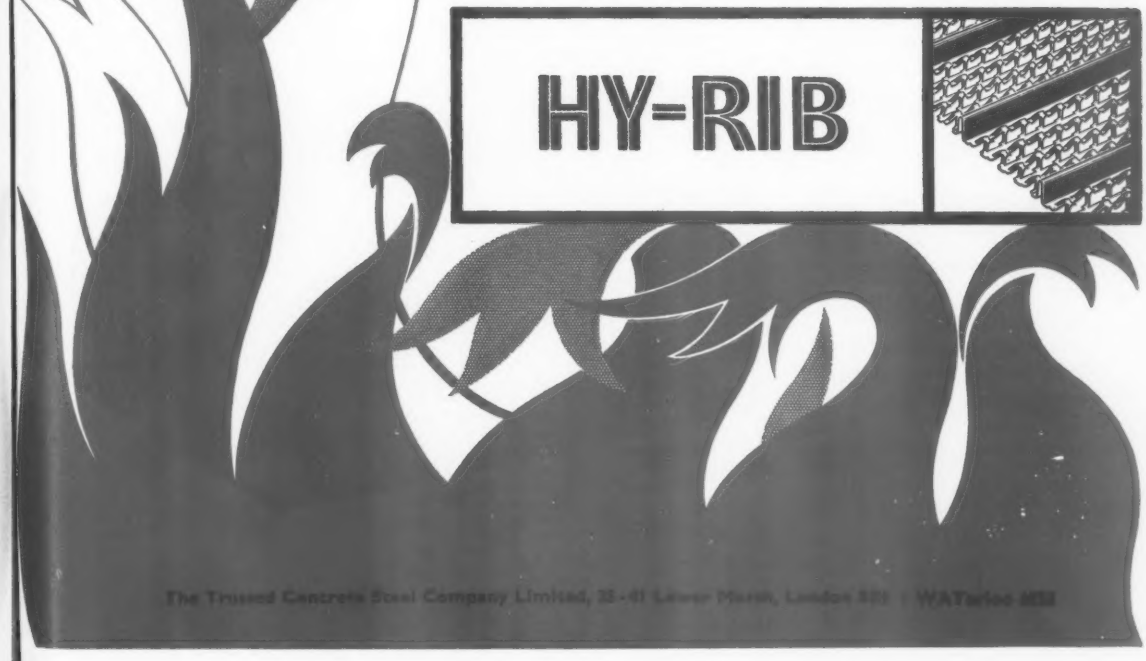
Plaster on a Hy-Rib base is true and sound — held fast and fortified by the steel mesh and tangs. And it is a very efficient fire shield. At the Fire Research Station recently a thin concrete floor — an uncertainty for a one hour rating — qualified *with a Hy-Rib ceiling close below* for four hours fire resistance. In the last stages of the test, the furnace temperature topped 1120°C., yet Hy-Rib still held the basic hemihydrate gypsum plaster intact. We will gladly advise on the fire resistance potential of any floor and Hy-Rib combination. Ask for Hy-Rib Department.

Whatever the floor, a Hy-Rib ceiling will much increase the fire resistance



Maximum output with minimum input

Riley Oil Burning Equipment

—is designed for consistent high-combustion efficiencies

Riley pressure jet oil burners exploit higher air and oil pressures than generally obtain in present day practice. They are factory set to give high CO_2, thus dispensing with the need for site adjustment.

There are Riley Oil Burners with throughputs ranging up to 700 lbs. per hour.

Type HL Burner

HIGH/LOW/OFF OPERATION

For capacities above 10 gallons per hour using 220 secs and 950 secs oil. Gives clean combustion and 13% CO_2 at variable firing loads. Incorporates one small and one large air register, each with its own atomiser. On low load only the small burner is alight, at high load both are working at optimum efficiency. Large burner has tip shut off, arranged for hot oil circulation to start and self cooling on shut down.

Type F Burner

ON/OFF OPERATION

Available in capacities from 20 lbs. to 90 lbs. per hour, using 220 secs oil. Air/Oil ratios and pressures are factory set to give suspended intense flame with 13% CO_2, and do not require further adjustment on site.

Type G Burner

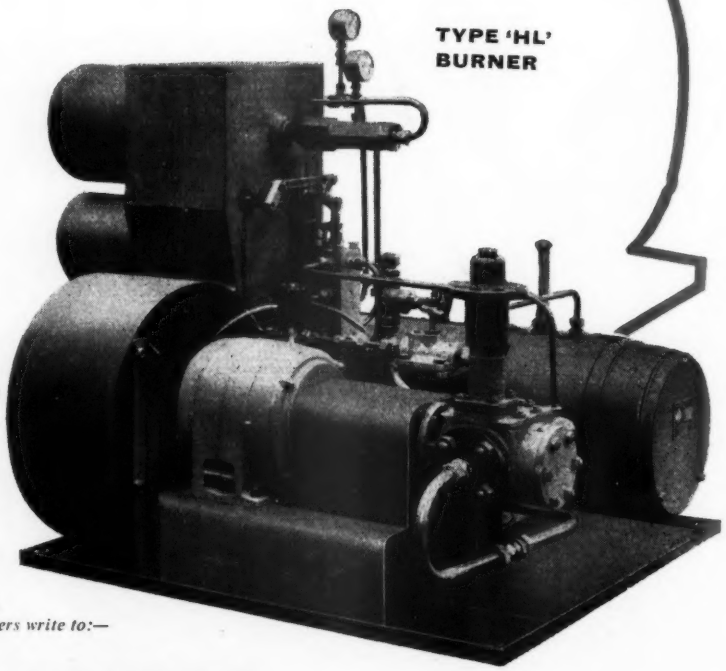
ON/OFF OPERATION

Generally similar to type F burner, but designed for use with 40 secs oil.

Type M Burner

FOR HORIZONTAL SHELL BOILERS

Spill return type atomiser with output range of 3 to 1. Specially developed air register to give clean narrow flame without impingement. Hot oil circulation to start and self cooling on shut down. Suitable for light and heavy fuel oils.



TYPE 'HL' BURNER

For booklets giving full details of these burners, also Riley Oil Fired Combustion Chambers and Air Heaters write to:—

RILEY (IC) PRODUCTS LIMITED

A Member of the International Combustion Group of Companies.

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NBP4

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MELAMINE SURFACE PLASTIC

DECORATIVE-DURABLE

with endless possibilities for surface application

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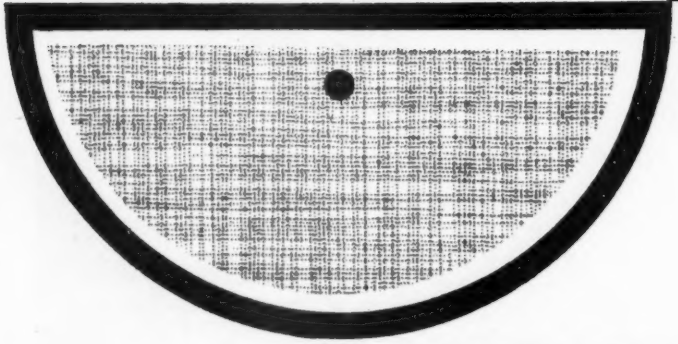

EASY TO FIX

with impact adhesives. An adhesive suitable for any surface and conditions under consideration will gladly be recommended.

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$8' \times 4' \times \frac{1}{16}''$

specify **PANAX**

MELAMINE SURFACE PLASTIC

FOR SHOPS, SHIPS, HOMES, HOTELS, HOSPITALS, RESTAURANTS, CAFES, CANTEENS, CLINICS, CINEMAS, COACHES, ETC.

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NORTH BRITISH PLASTICS LIMITED Blaydon, Co. Durham. Phone: Blaydon 346/9. Telegrams Panax, Blaydon-on-Tyne.

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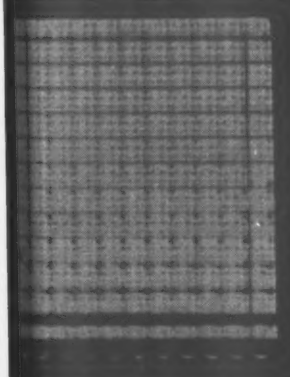
Sound Insulation

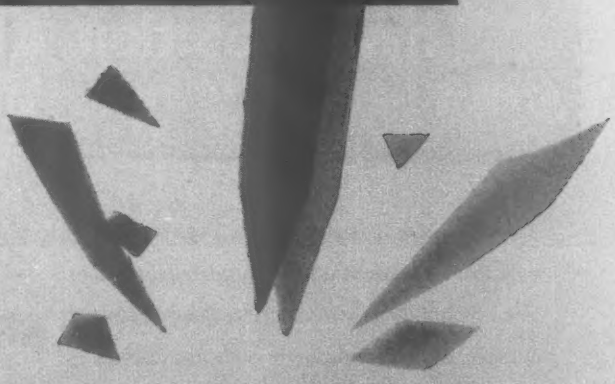
B.S. Code of Practice "Walls Partitions of Blocks and of " gives an average sound re- n value of 35 to 40 decibels for w Glass Blocks. These figures sed on measurements of air- sound transmission.

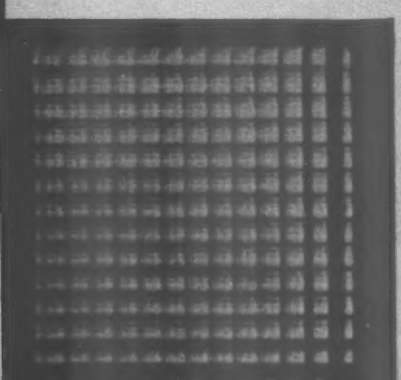
LIGHT" Hollow Glass Blocks possible light transmitting nd roofs without the dis- ages of lost heat and invasion e. They provide in one ele- good light transmission with



outstanding diffusion, resistance to fire, insulation against sound as well as reduction of heat losses and incoming solar heat. With maintenance-free and weather-proof surfaces, "INSULIGHT" Hollow Glass Blocks are the ideal material for non-load-bearing panel walls.

"INSULIGHT" is a registered trade mark of Pilkington Brothers Ltd. Supplies are available through the usual trade channels.





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Hollow Glass Blocks

A UNIQUE MULTI-FUNCTIONAL MATERIAL

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with Isocyanates

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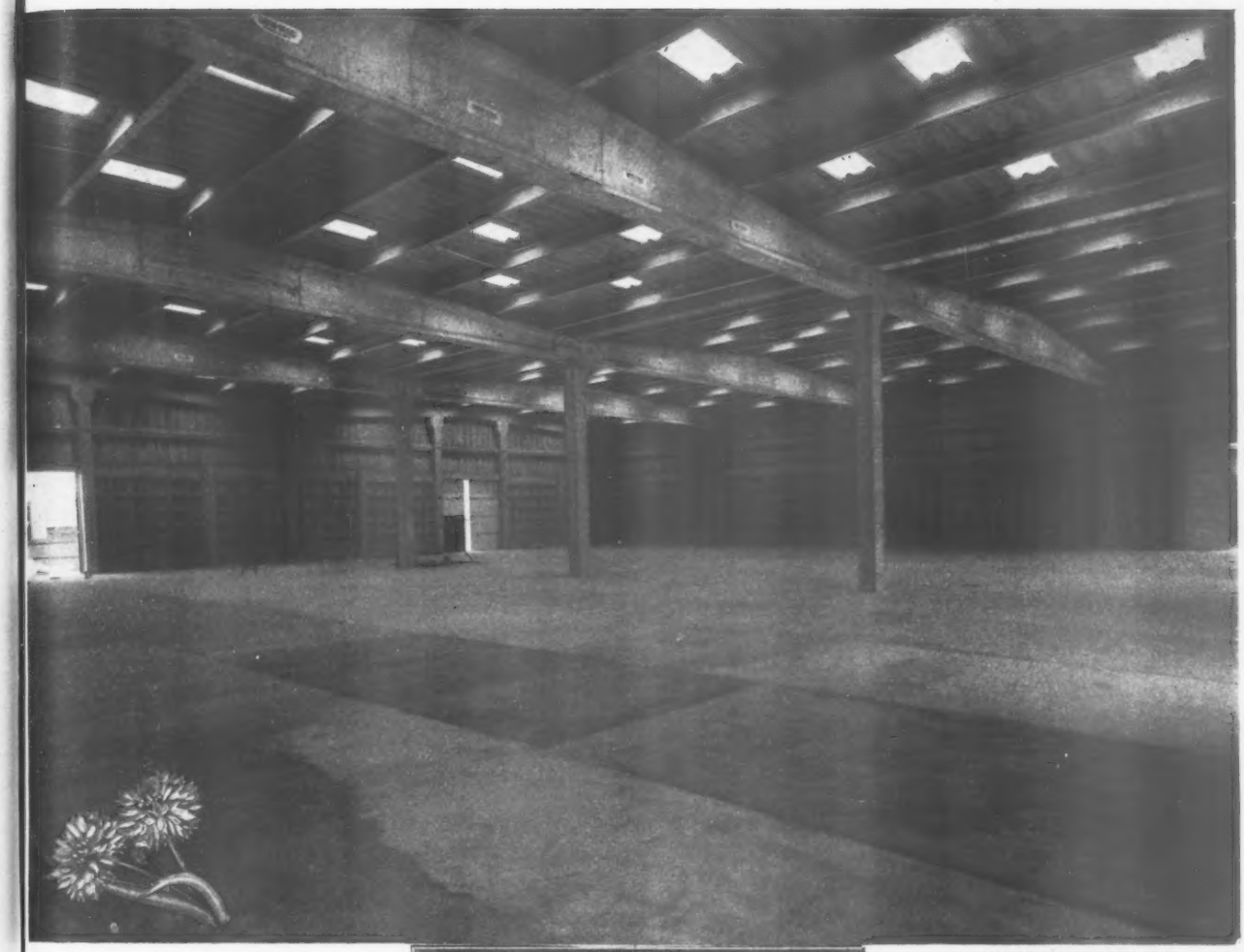

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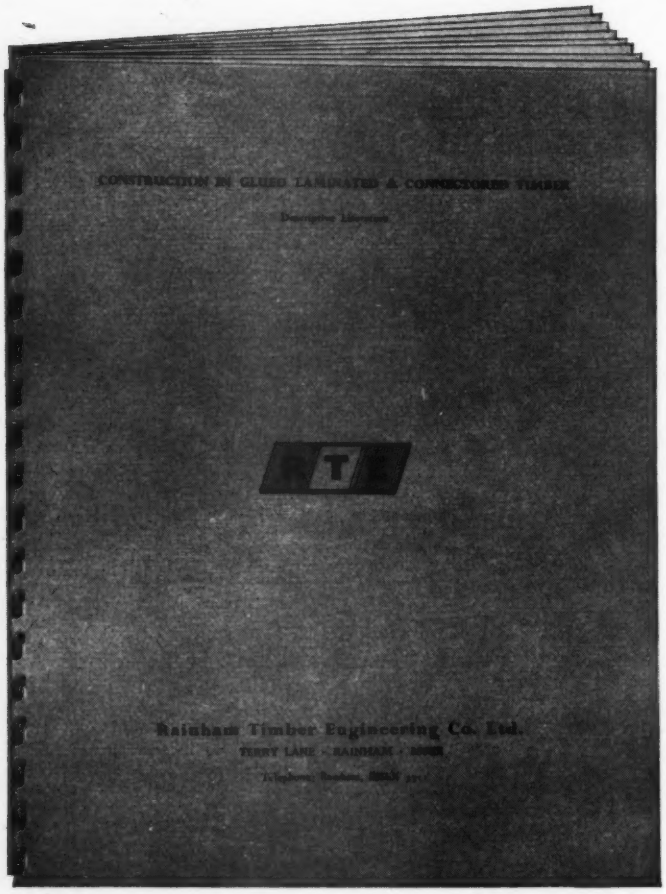

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TIB.24

FLOOR AS IT WOULD LIKE TO BE SEEN

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The floor, of hardwood, was laid by *Messrs. Vigers Brothers Limited.*

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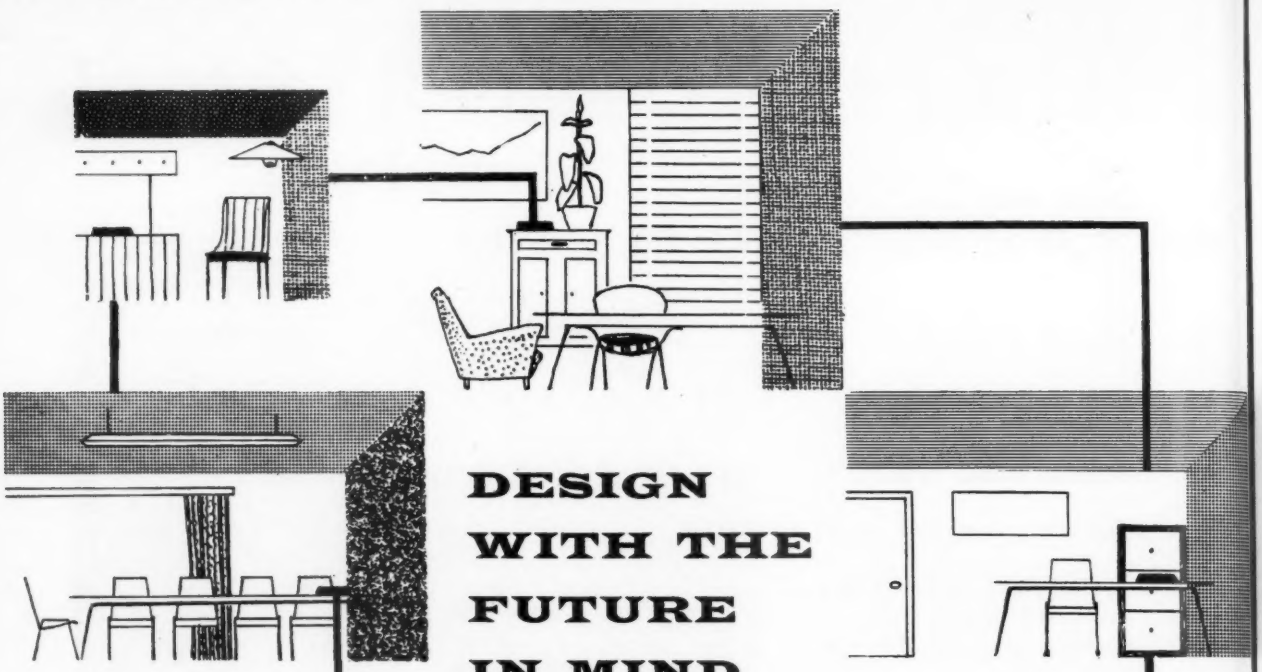

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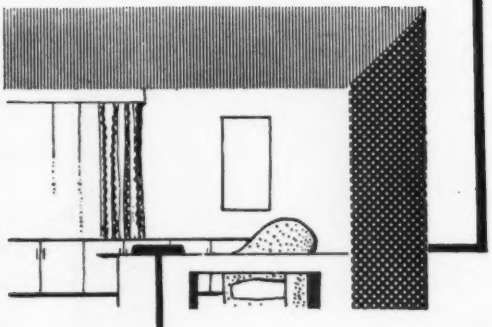

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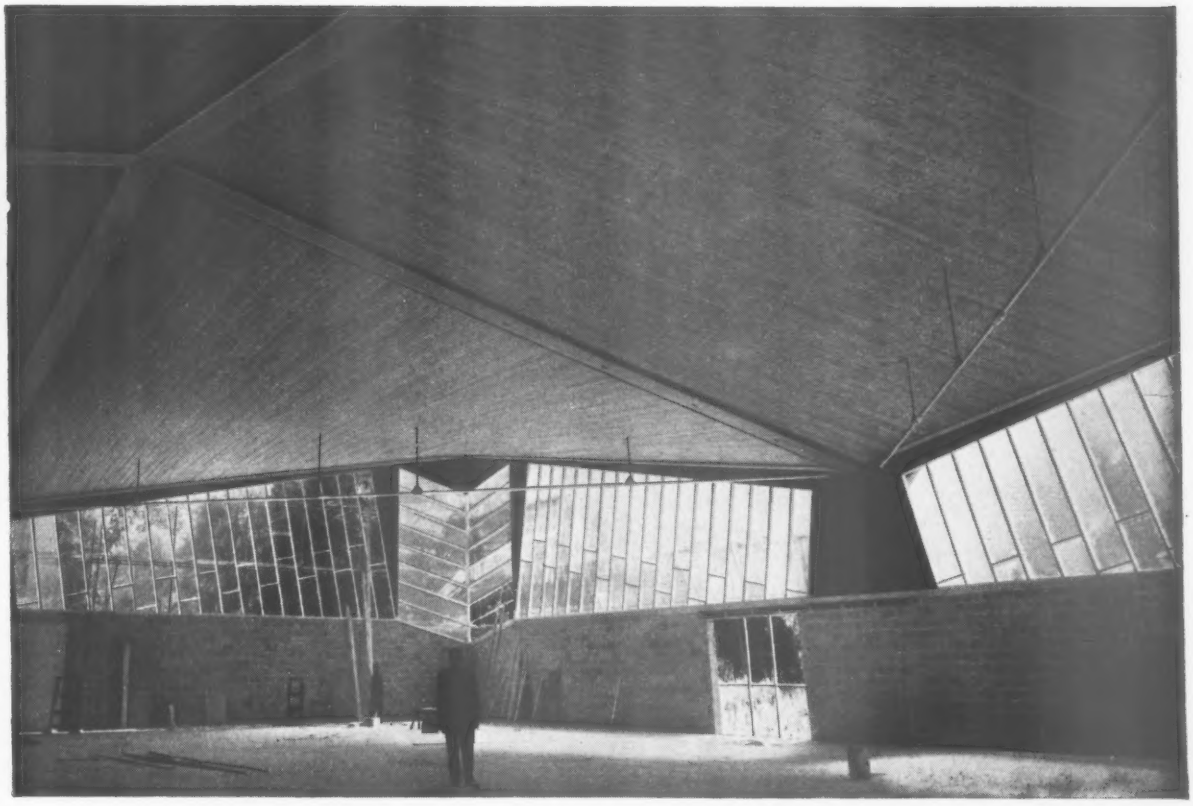

This unique example of timber roofing, has been erected for the Wilton Royal Carpet Factory. The roof consists of four timber shells, each measuring over 57 feet square.

ARCHITECT: Robert Townsend, F.R.I.B.A.
CONSULTING ENGINEERS: Timber Development Association
SIZE: 115′ 10″ square
HEIGHT: 18′ 0″ column head
COVERAGE: 13,420 sq. ft.
CONSTRUCTION: Three layers of boarding nailed together

Before you decide . . .

please do not hesitate to consult the T.D.A. who will gladly supply you with information on the uses of softwoods, hardwoods, plywoods, modern timber design and the names of timber fabricators.

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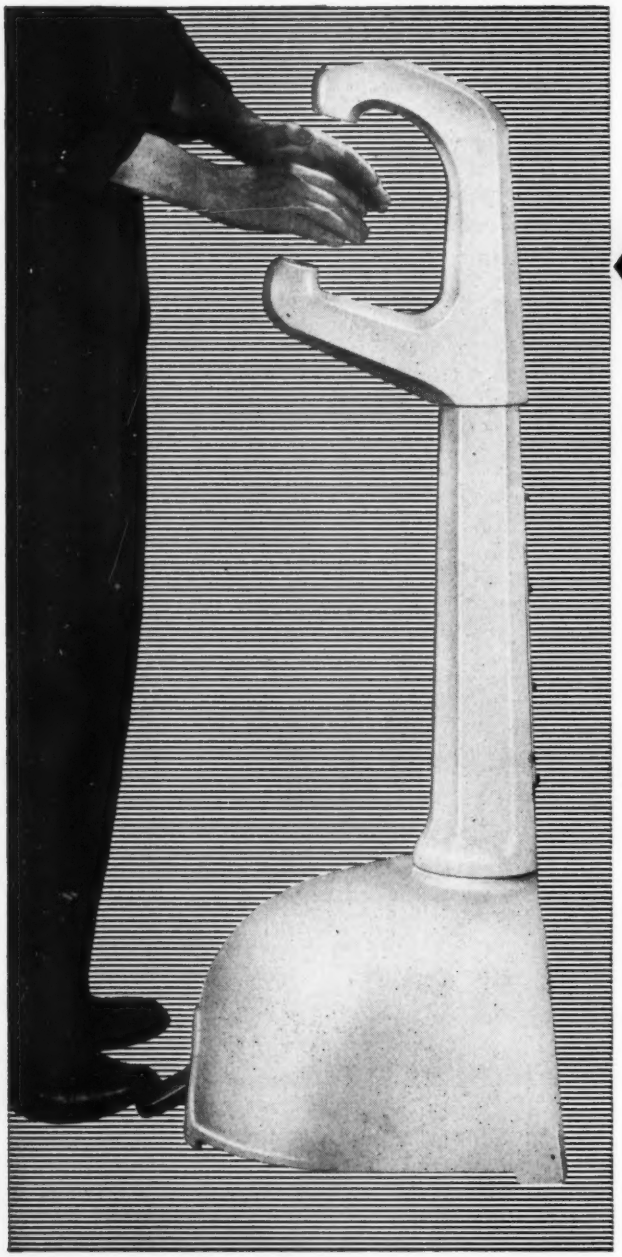

....48

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Harmonising in style with the layout and appointments of the modern washroom, 'ENGLISH ELECTRIC' Hand-Driers are complete in themselves.

No other fittings on the walls or receptacles on the floor are required. There is nothing to change or replace and the equipment itself requires no attention.

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Fixing Contractors: Hooper & Ashby Ltd., Winchester.
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Illustration below by courtesy of the Electric Depot Ltd., Rugeley, Staffs.
Architects: Wood and Kendrick and Williams, Birmingham, 3.
Fixing Contractors: Rudders & Paynes Ltd., Birmingham, 6.
Structural Steelwork: Boulton & Paul Ltd.
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*The new **safe** form of Decking that meets every demand*

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Materials in construction completely incombustible.
Durable aluminium 'sandwich' construction laid completely dry; weighs only 14½ lbs. per sq. yard.
Unique construction gives an exceptionally high degree of insulation.
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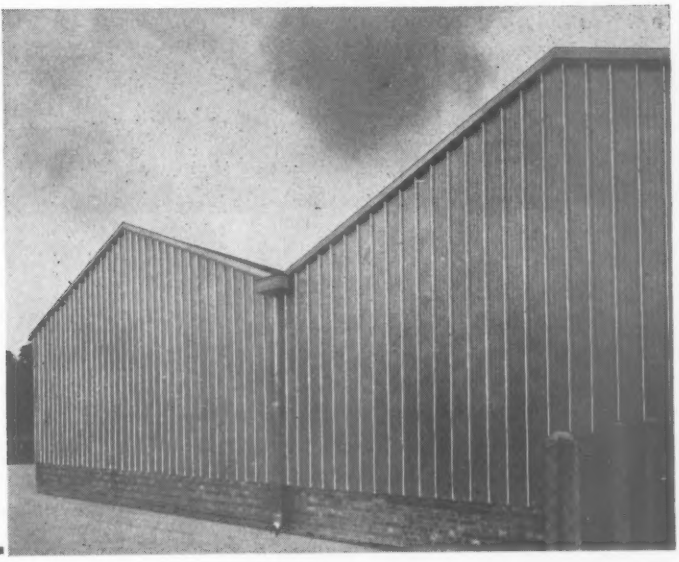

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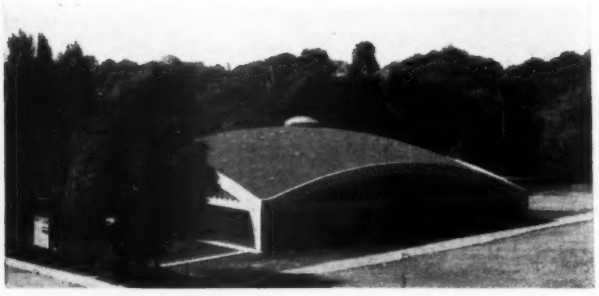

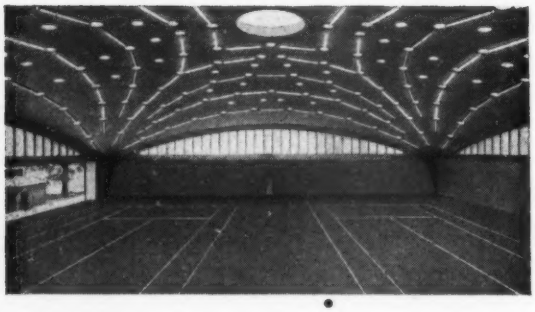

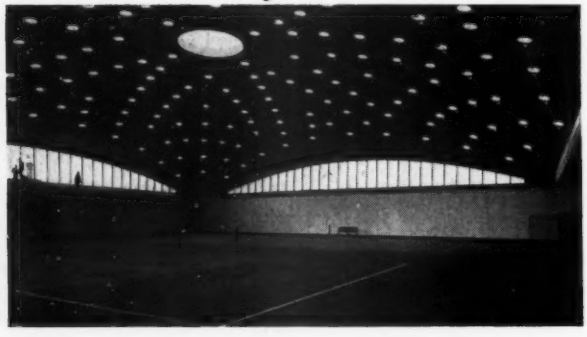

The recently completed covered courts at The All England Lawn Tennis Club, Wimbledon, which have been constructed by W. H. Gaze and Sons Ltd. With over fifty years' experience of hard tennis court construction behind them, Gazes were the obvious choice as Main Contractors for this unique building. The concrete dome with a span of 125ft. is the largest of its type in Europe, the whole load being transmitted through four prestressed bow-string girders to the four corner columns, the foundations of which have been piled. In addition, Gazes Electrical Division were responsible for the complete installation of the roof lighting system, which will allow play to be carried on throughout the year. The Architectural Ironwork Division of the company was responsible for the balcony staircases and balustrades.

The Consulting Engineers for this work were C. J. Pell and Partners.

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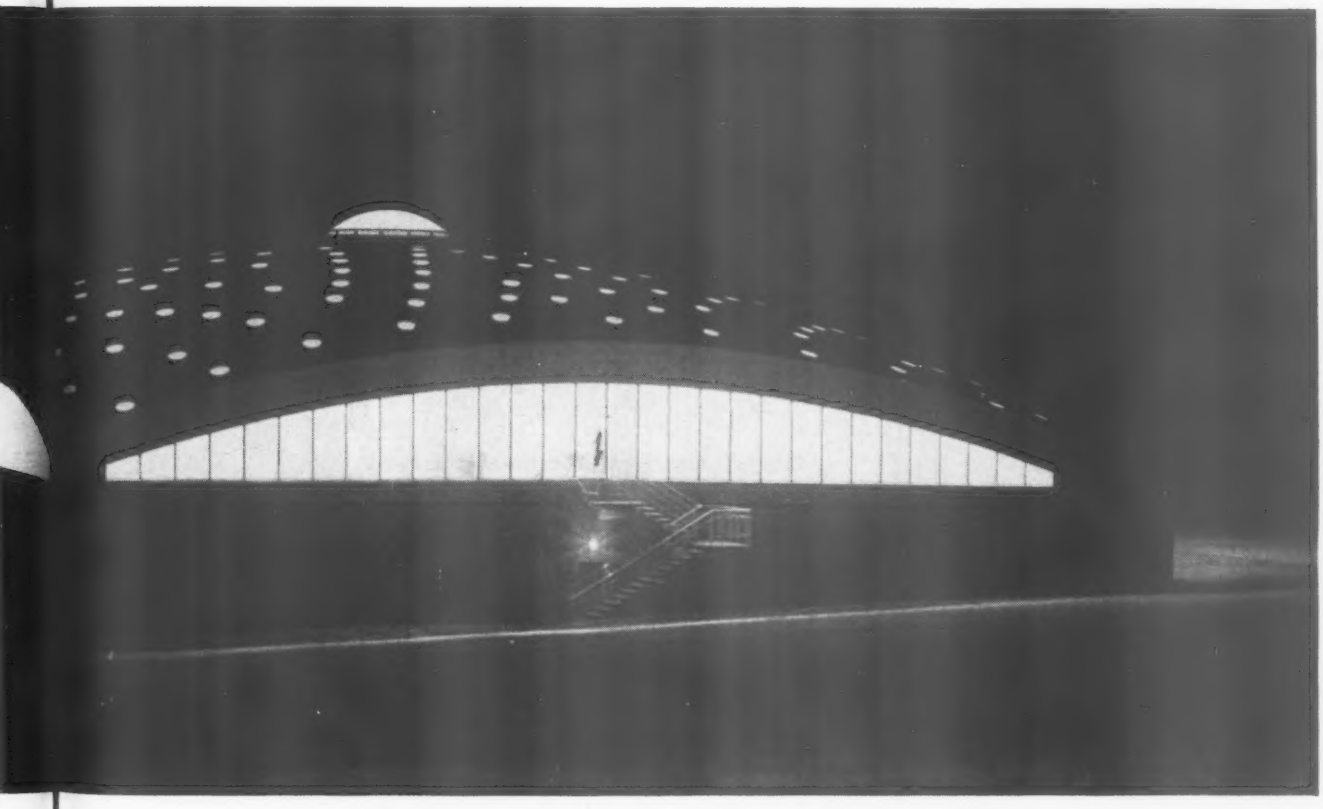

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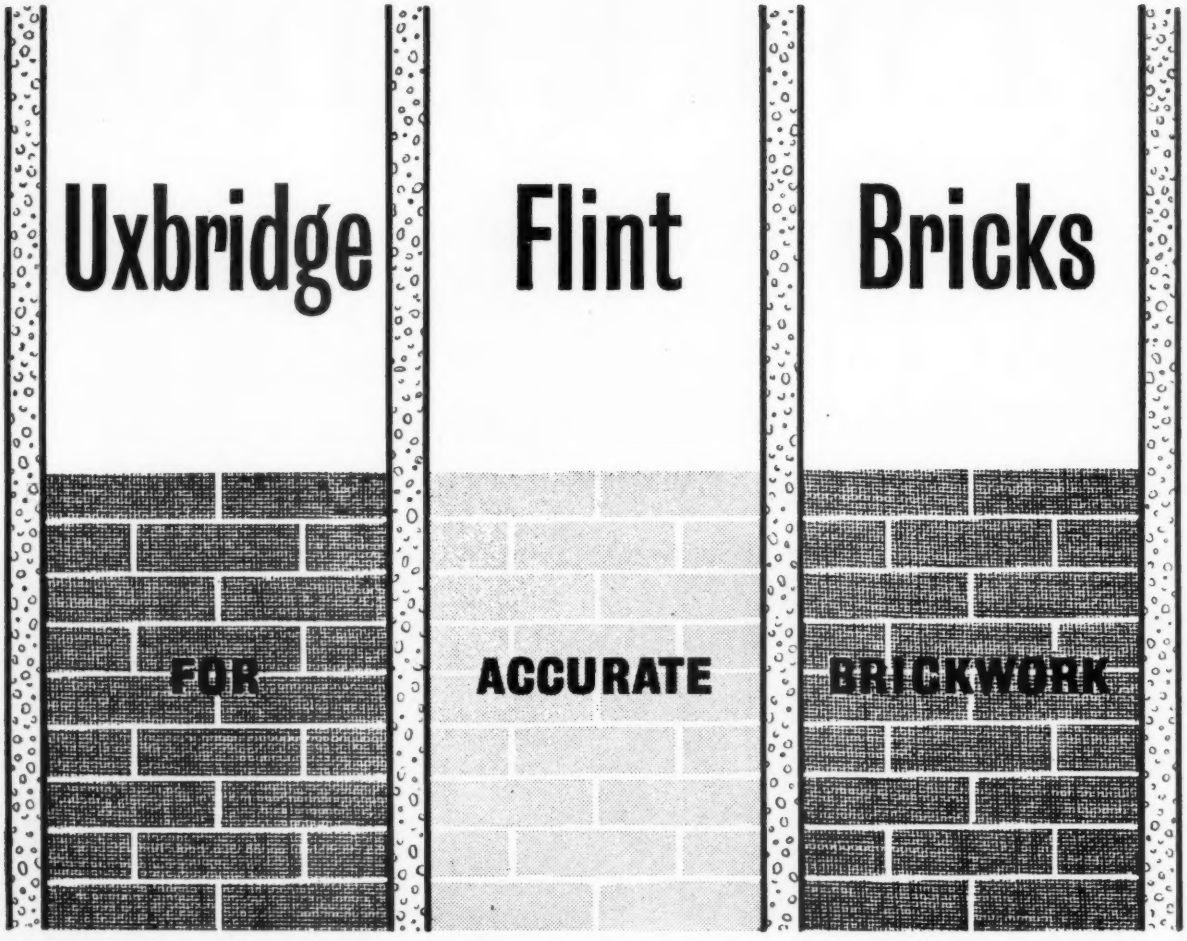

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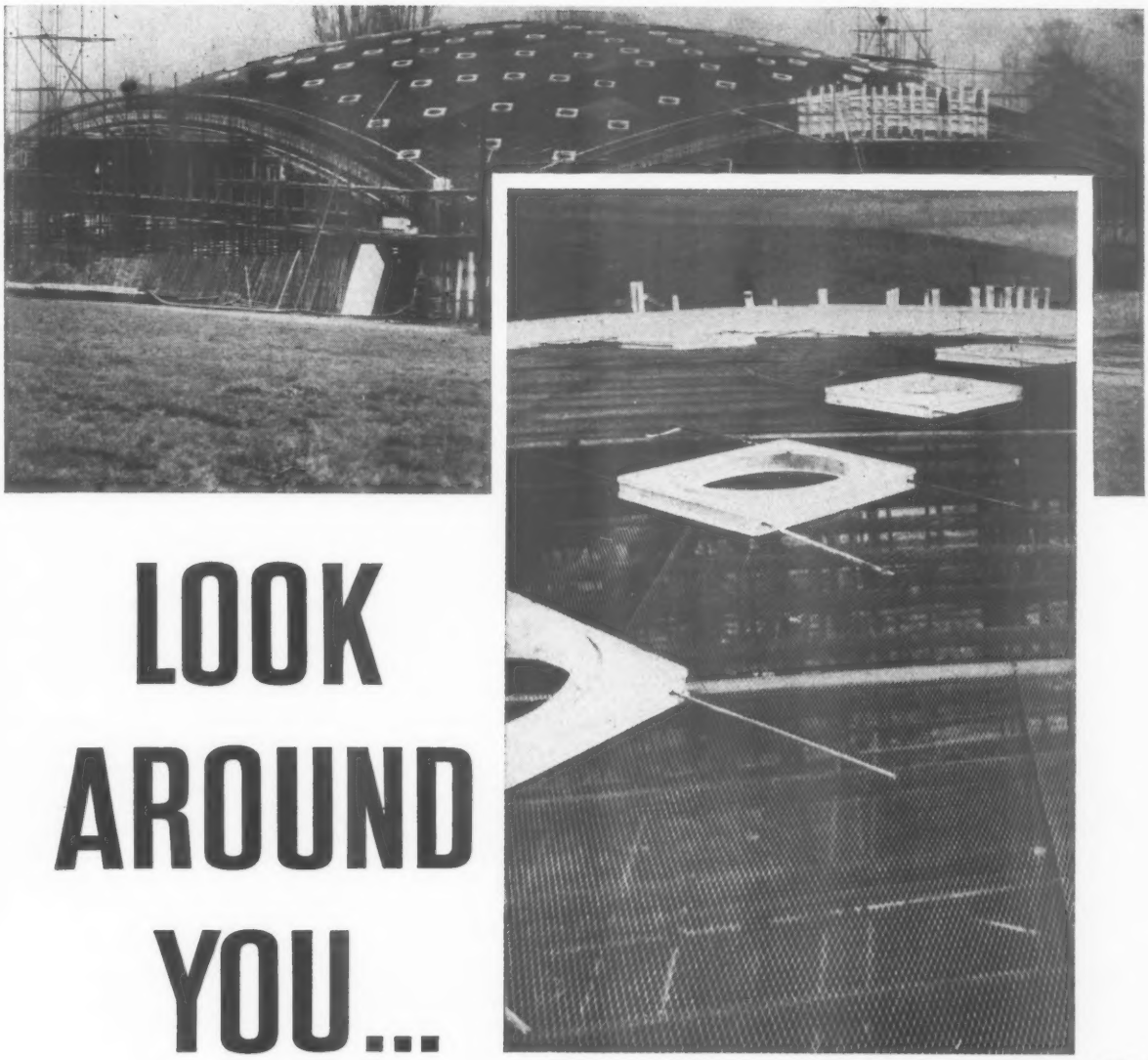

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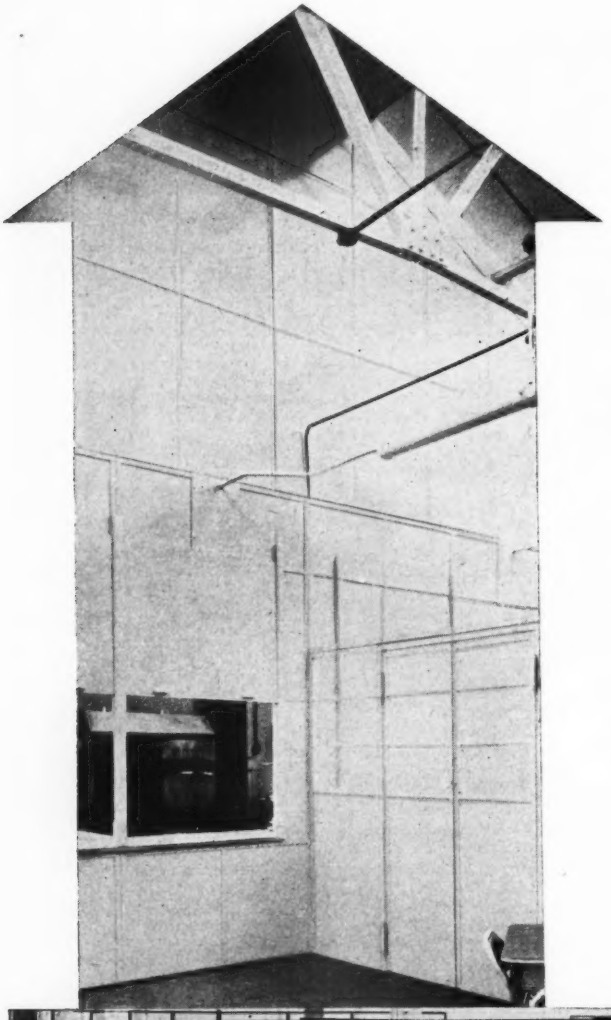

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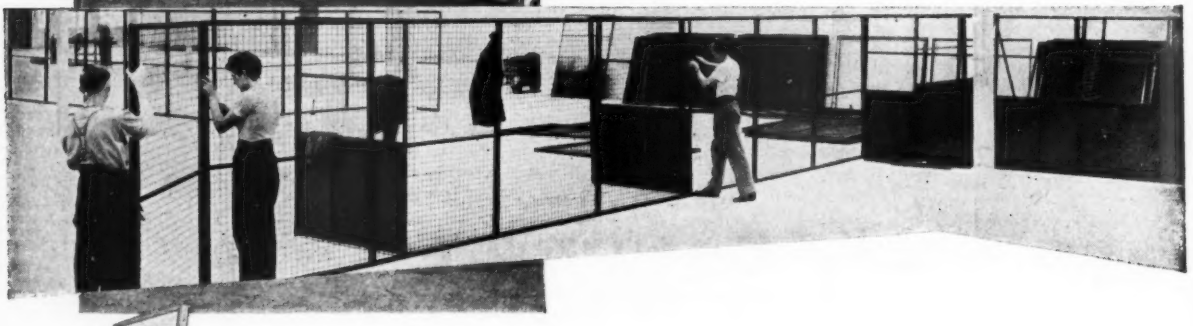

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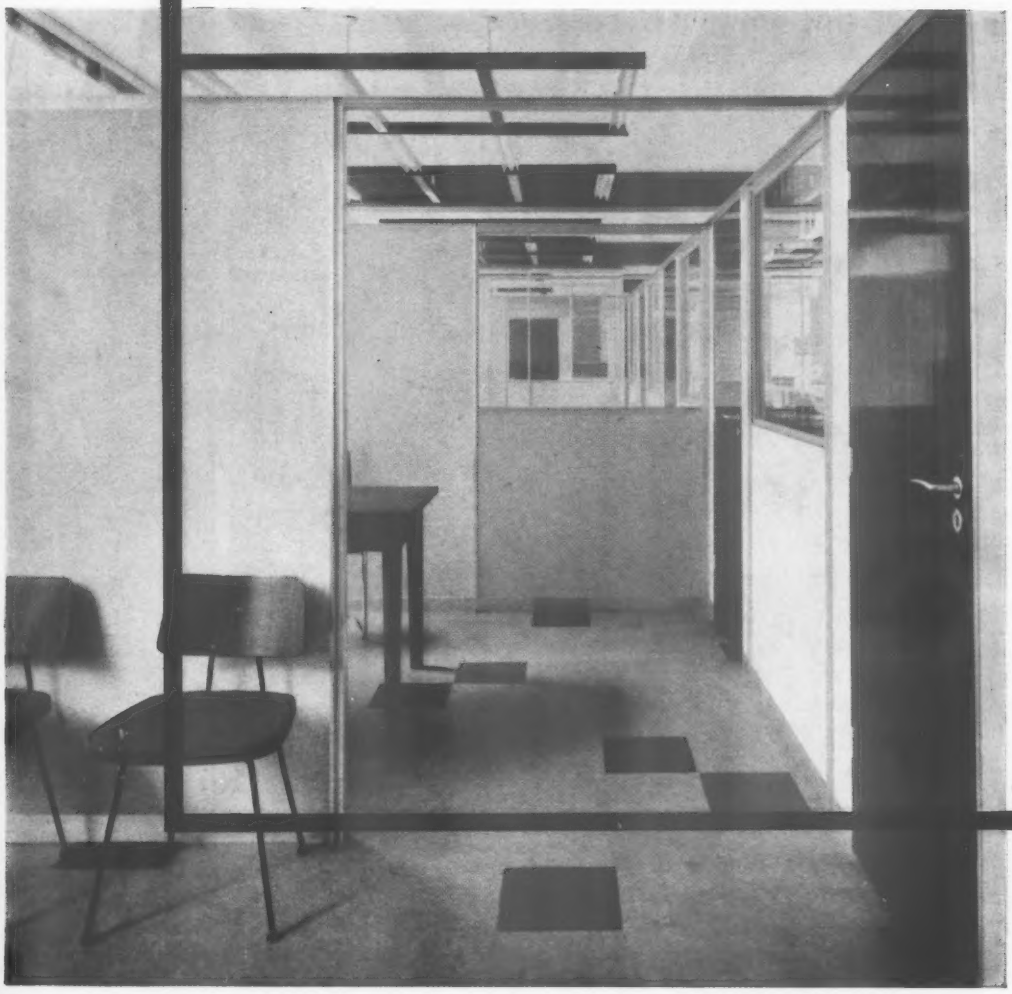

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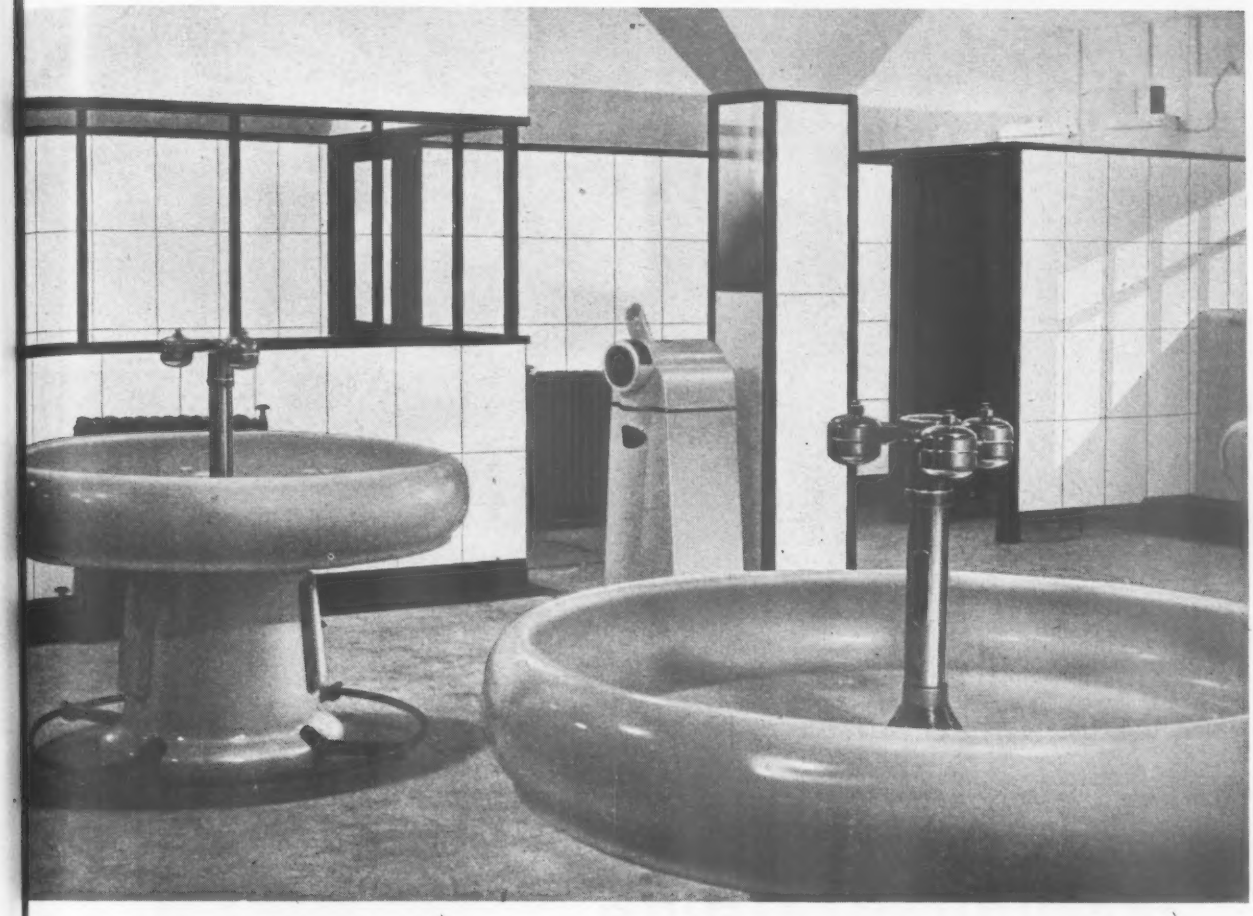

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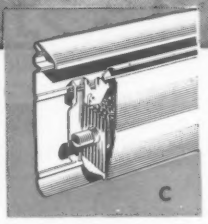

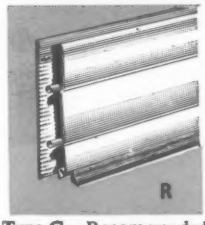

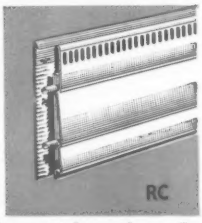

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THE ARCHITECTS' JOURNAL

No. 3306 Vol. 128 July 10, 1958

9-13 Queen Anne's Gate, London, S.W.1. Tel. WHI 0611
Subscription rates: post paid, inland £2 15s. 0d. per annum; abroad, £3 10s. 0d. per annum. Single copies, 1s.; post paid, 1s. 6d. Special numbers are included in subscriptions; single copies, 2s.; post paid, 2s. 6d. Back numbers more than 12 months old (when available), double price. Half-yearly volumes can be bound complete with index in cloth cases for £1 17s. 6d.; carriage 2s. extra.

NOT QUITE ARCHITECTURE

WHY USE AN ARCHITECT?

The first Act opens in one of those ironmongers shops where you can also buy weedkiller, vinegar and lavatory brushes. The floor is cluttered with islands of saucepans, plastic pails and clamouring Saturday morning customers. The harassed assistants peer out from behind tottering forests of stacked-up display on the counters—struggling to keep up with the demand.

*

Then in comes the " Methods Study Officer " with a notebook and that impenetrable self-confidence by which we have learned to recognize the management expert. With a keen glance round at the impatient chaos in the shop, he begins to " observe " the operation of buying a plastic curtain wire. Reel in hand, the assistant pushes her way all along the back of the counter to get to the yard measure; all the way back to the pliers to cut it, coils it up and then another journey for a paper bag. Back to the customer for the money; long traipse to the inevitably remote cash register and finally back to the customer before she can at last turn to the man who all the time has been fidgeting and pointing to what he wants on a distant top shelf. One's palms are already sweating for the next scene, the buying of an electric light bulb, which of course involves a long walk to the testing socket past more champing customers, and the next scene where the ironmonger counts out 2 doz. screws one by one for a small boy.

*

This British Productivity Council film—*A Nation of Shopkeepers*, sets out to show—as you will have guessed—that no field is barred to the management expert.

*

Act two therefore, shows the shop empty and the door locked with the Methods Study

The Bartlett Controversy

The Bartlett students, as announced in the JOURNAL of June 19, are complaining that their system of architectural training is outmoded and have appealed to their Provost and to the RIBA to hold an investigation into the running of the school. The illustrations here show the type of work undertaken at the beginning and end of this now controversial course: left, a first-year student's (M. W. Cassidy) study of early Egyptian motifs, and above, the display, bedecked with string, of design drawings by fifth-year students. A criticism of this exhibition by John Smith appears on pages 47-50, and letters from readers, emphasizing the importance and the controversial nature of this educational issue, appear on page 42. The fundamental points under discussion are the degree to which students should have a say in their education and the extent to which the RIBA should interfere in the educational methods of recognized schools. Obviously a recognized school should virtually have freedom to pursue any educational policy it wishes, provided the graduates reach an approved and accepted educational standard. But accompanying this freedom must be the responsibility of being able and willing to convince the student that his course of training is the best of all possible courses. It may, under certain circumstances, be a fair answer to one malcontent to say that if he doesn't like the course he should leave, but it is no answer when the majority of the students protest, because naturally, they cannot judge an architectural course in advance of having sampled it, and they can hardly spend years sampling courses to find one to their satisfaction. Should the RIBA interfere, as the authority giving recognition to the course, as it is entitled to do? There is a natural tendency for bodies in so-called authority to uphold each other, and to immediately oppress student opinion. It would be a great pity in this instance. The RIBA and the Bartlett should show that they have the strength to ignore mere questions of discipline and procedure. They have been appealed to by their students, for whom they both carry responsibility, and it is their duty to try and remove the causes of the students' distress.

Officer persuasively explaining to the staff that the shop could be better organized (no-one readily accepts the obvious). With reluctant consent a gap is made in the long counter, the cash register moved to a central position, together with the paper bags and yard measure. The bulb testing socket is put near to the bulbs. If you think these changes inadequate to the problem you have missed the point. They are only to win the shopkeeper's confidence (management experts never neglect what they so oddly call the "human element"). The real solution does not appear until the third act when an utterly transformed shop is displayed to the astonished ironmonger and his starry-eyed assistants. The counters are cleared of their precarious forests, the stock is now systematically distributed, accessible and clearly signposted. Articles like screws are pre-packaged and there are cupboards under the display counters for "fast moving" stock. There is even a judicious "lining up" of the major design masses to give an orderly appearance. And circulating amongst all this is an equally transformed Saturday morning crowd, able to pick out what it wants, to turn round to a smiling assistant who can sell promptly and keep no-one waiting.

*

And it's all done, mark you, without the aid of an architect!

*

I froze deeper into my uncomfortable seat at the National Film Theatre, glanced round at the ranks of solid faces—management experts most of them—and thought of the possibilities. If a management expert can re-plan an existing shop, he could surely plan a new one. And why stop at shops? But the real question is—why should the ironmonger call in a management expert and not an architect? After all, we regard ourselves as functionalists—we plan, or re-plan according to the activities that the building is to house, don't we? More than that, we integrate the structure and the services with the space planning, consider proportion and colour and pay due regard to neighbouring buildings and spaces. The management expert has a lot to learn before he can do all this. Yet for the ironmonger (and who knows what other building owners) his planning might seem more sound than ours. He has analytical techniques where we would accept what the client asked for. He has percentages and graphs to back his proposals where we would rely on our (aesthetic) sense of the "inevitable." And the record of his previous work is not undermined by an insecure control of costs. I think management consultants are unlikely to set up as building planners, but I do think that building owners are very likely to find their advice increasingly profitable.

*

Sixteen mm. copies of this film can be hired from the Central Film Library, Government Building, Bromyard Avenue, London, W.3, for 15 shillings.

JOHN CARTER

The Editors

INCONSISTENCY—AND FOLLY

WHY, at a time when the building of offices, spec. housing and private work of every kind is free from physical controls, should schools and other local authority building remain subject to the most rigorous government controls? Why should the present government, which does not believe in controls, apply them with increasing severity to the public building programme? Why does it argue that local authorities should be trusted with freedom, when seeking to justify the replacement of percentage grants to local authorities by block grants, and simultaneously deny to the same authorities the freedom to determine their school and house-building programmes?

These questions are prompted by the action of the Ministry of Education in cutting the London school building programme for 1959-60 from £3,202,365 to £1,297,825. The heaviest cut falls on the provision of facilities for teaching science and mathematics in secondary schools, which has been cut from £900,000 to £265,000 at the very moment when the whole future of the nation depends on expansion. The official explanation for this step is that the government's general financial policy, which seeks to combat inflation, compels it to restrict the amount available for educational building. In fact the cut in school building is utterly inconsistent with the action taken by the Chancellor last week to relax restrictions on credit. He did so, to quote *The Times*, because "the government frankly recognize that inflationary pressures in Britain are lessening, and some parts of industry show signs of under-using capacity." It is also argued, semi-officially, that local authorities always ask for more than they expect to get. In fact, since the war London's school building programme has been running at the £3-£4 million mark. For the current year the Ministry approved a programme of £3,116,583, which was subsequently cut half way through the year to £2,548,268. The Ministry has therefore cut the programme by half, or by more than half compared with the programme originally approved for the current year. The main burden of this cut will fall, as far as architects are concerned, on private firms.

It can hardly be disputed that the LCC's 1959-60 programme was based on "essential and urgent needs." The success of the MOE in reducing costs and increasing value for money has tended to obscure the fact that it has also successfully

prevented anything being done in recent years to begin the major task of replacing the vast number of slum and obsolete schools still in existence. Indeed, large sums have been spent on extending obsolete schools. It is argued by the Ministry that London has nearly completed its programme of providing additional school places. If so why should the LCC not get ahead? Instead of marking time while the laggards catch up, it should be encouraged to remove conditions that have the most harmful effects on the educational system.

The present cuts, moreover, are being made for the year 1959-60 when, if present signs mean anything, the volume of building work will be substantially lower than it has been in the past. Unemployment in the industry has increased. New orders in the first quarter of this year were £29 million less than the year before. To cut in two the building programme of the nation's biggest education authority at such a moment is an act of folly. The MOE's business, as we see it, is to enforce minimum standards, to promote improved design and greater efficiency, but not apply the brake to progress.

NO EXPENSES SPARED

Here's the subject you always enjoy—who's earning what, why it isn't worth what it was before the war, and more's the pity, etc. My excuse for bringing you back to the subject, is the LCC's new salary increase for senior officers, including the six highest ranks in its fantastically graduated architectural hierarchy. The chief architect has risen from £4,500 to £5,250. But in case he is pleased, or you are envious, let me do a John Gordon and tell you that before the war he could have done the same job (with much less responsibility) on a salary that would equal today's purchasing power of £8,275, *i.e.*, £3,000. And that little bit of mental arithmetic was calculated only on the fallen pound; if you take into account income tax and surtax the Architect ought to be feeling very sorry for himself indeed.

*

And what about the principal housing and schools architects, and the senior planning officer? Their salaries have risen to a maximum of £2,650, which is little more than half the value of the 1939 salary of £1,625. Inevitably the salaries of the middle grades have suffered in the same way, if not in the same proportions.

*

In the business world the fall in the value of salaries has been made good by expenses, which local government architects do not enjoy—they don't even get subscriptions paid for architectural journals or technical books. When LCC planners entertained Rotterdam planners last year they found that the entertainment allowance for the entire architects' department was £100 a year. Consequently senior, *and* not so senior, architects frequently have to entertain Council guests out of their own pockets. Clearly there is work here for the Local Government Architects' Society.

DIFFERENT ORIENTATION

The Japanese exhibition at the V and A is full of visual stimulation. The primitive Japanese sculpture will come as a surprise to a lot of people, and so will such oddities as a 12 ft. scroll of portraits of 13th century court nobles—two ranks of smug Establishment faces, crowning the elaborate geometrical folds of ceremonial costumes so voluminous that they must have prevented any movement more violent than a yawn.

*

The architecture that appears in the scrolls and the painted screens benefits amazingly from the Japanese habit of not seeing in European perspective. Buildings are normally rendered in a kind of birds-eye isometric, in which all horizontals are true to scale. As this is applied to timber frame structures of regular rectangular plan, almost innocent of solid walls, the result is a wonderful clarity that is hardly ever found in Western paintings of buildings.

EXCUSE ME, THAT'S MY CLUTCH

A friend of mine is thought to be an eccentric because he always gets out of his car twice. People don't realise that he gets back again to take the brake handle out of his trousers leg. The same man prepares his defence for the divorce court every time he carries a woman passenger. He can't shut his nearside door without going through most of the motions of an impassioned proposal. ASTRAGAL, who is frequently accused of speeding just because his accelerator foot gets caught up behind the brake pedal, understands all this very well, and is delighted that *Design* magazine has published an article on faults in car layout in its current issue. He is not so delighted with the title—*Ergonomics versus Styling*. After all, it is very special pleading to blame the stylist for such purely *Honeywood File* situations as the door catch that tries to get into your pocket. And men with their ears close to the roadbed in Birmingham tell me that the lack of foot space around pedals is due more to engineering decisions than to styling.

It is to do with the sort of weight distribution and handling characteristics that go with the modern " soft " ride. Apparently it is necessary to put the engine and the driver's feet in the part of the chassis already occpied by the front wheel arches.

*

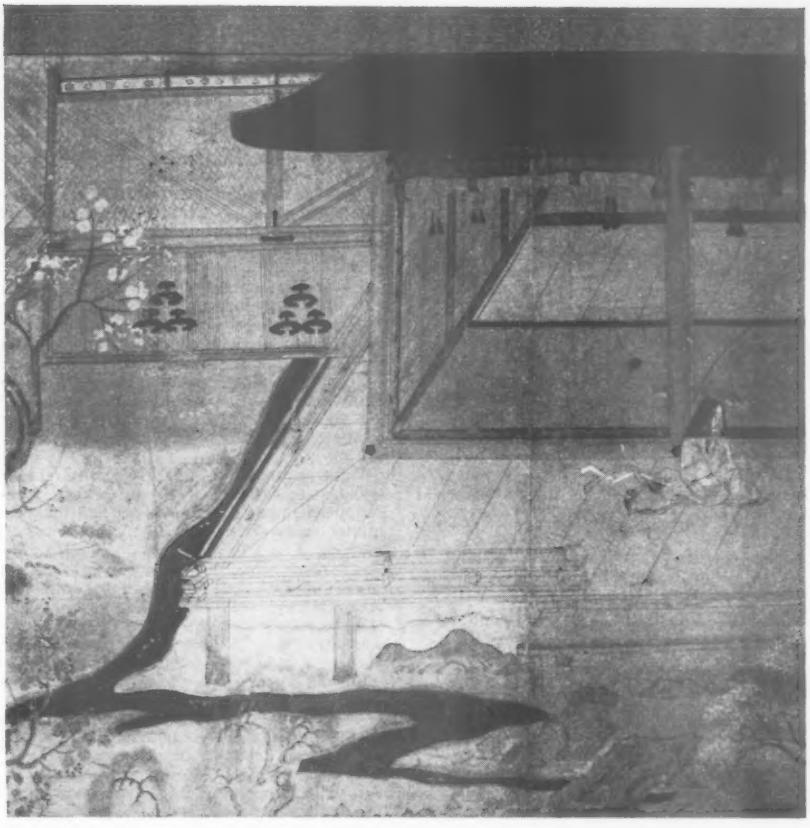
Why shouldn't high style and ergonomics (function to you) go together? We expect them to in great architecture, and they do so in the Corneil-Liberty safety car which is also illustrated in *Design*. This result of prolonger research into crash-proof design still has tail fins, wrap-round screens, scads of chromium, a space-ship interior—in fact, the lot. Ergo . . .

THE RFAC REPORT

The annual report of the RFAC, reported elsewhere in the JOURNAL, shows what a worthy, hard-working body this is, covering, in its studies, practically all the visual ills which afflict this country, though not often curing them, usually because the patient won't take the medicine prescribed. The Commissioners are a little shaky over building heights, however, suggesting a limit of about 100 feet around the Royal Parks. This is too high if it means that the skyline is to be allowed to go up all round the parks to this height. On the other hand, the Commission do not object to a few towers, but they do object to *slabs* rising over 100 ft. This is good sense. It is reasonable to have towers soaring over 100 ft. (the Victoria Tower is over 300 feet, and no one objects—what a splendid block of flats it might have made) but a skyline of 100 feet is neither one thing nor the other. Far better to limit the park-side buildings to tree height, say 60 feet, but allow occasional towers which could be tall enough to compensate for the floor space lost on the low blocks.

*

Amongst the mass of worthiness, in this respect, there is one phrase which really could be dangerous. The Commissioners apparently deplore the fact that there is " a growing tendency to rely on simple repetitive design formulae with little attempt at individual expression." It's an intriguing game for historians and architectophiles to look eagerly for quirks of designer's individuality but, by and large, one wants less individual expression in townscape, not more. With all the schools turning out self-advertising, self-aggrandising, self-styled architectural genii, there would soon be no sober gold background in which to set architectural jewels, but just the jewellery—and cheap costume jewellery—at that.



This detail from an illuminated Japanese scroll now on view at the V. and A. illustrates ASTRAGAL's *point about the way in which the ancient Japanese seem to have viewed their buildings. The projection is a species of parallel perspective in which all lines parallel to the picture-surface are true to scale—which may be at variance with the facts of vision, but does facilitate much clearer immediate visualization of plan, structure and modular organization than is possible in Western perspective. As can be seen, this is already a mat-module house, so the problem of which came first, the mode of vision or the technique of building, is still open to anyone's guess.*

ASTRAGAL FOR PRESIDENT*

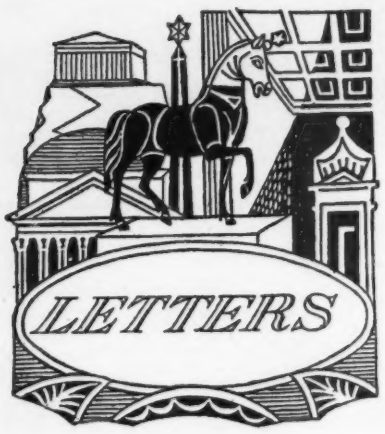
Are you fighting a losing battle with your hair? Are you one degree under? Does your girdle give you *seven*-way resilience? Forgive my asking, but this is just to remind you of the week's good news that if you *are* thinking of taking yourself in hand, at least you'll know what you're doing. The advertising boys, thank goodness, have come down heavily against subliminal advertising—the flashing of invisible messages on to the TV screen. It can now be revealed that the RIBA's watch committee have not been meeting, unknown to each other, to decide on the maximum permitted size of architects' names used in invisible advertising. They must have had a very jumpy time though. Just because a magazine advertised on TV didn't seem to have an architect's name on the cover, there was no real reason to suppose it wasn't there.

*

ASTRAGAL, who is a past-master at the advertising game, is absolutely unreceptive to any form of advertising. Many are the baffled moments he spends trying to remember what it is that he is supposed to like because Diana Dors " never says no " to it. This sort of thing could lead to awful confusion. Perhaps you heard of the small boy who was shown a famous poster —picture of a kangaroo with a bottle in its pouch. " It's very pretty," he said, " but they're only trying to sell you kangaroos."

ASTRAGAL

* As a subliminal experiment this should be put in the back of the mind for a couple of years.



D. G. Campion, H. A. W. Simons, Students R.I.B.A.
Phillip Allison, John Crosby, Charles Gaskin, Jeremy Hodgson, George Kassaboff, Frank Johnson, Jeremy Mackay-Lewis, Gavin Maxwell, Paul Power, Hector McDonald, Students R.I.B.A.
Executive committee, British Architectural Students' Association.
Mary Rose Riches, Paul Drake, John Hodjkinson, Francis Baden-Powell, Students R.I.B.A.
P. F. Smith
John Gloag
N. Keith Scott, A.R.I.B.A.
H. J. Spiwak, A.R.I.B.A.
U. Ghaidan
R. A. Young, A.R.I.B.A.

The Bartlett School

SIR,—Recent publicity and articles on architectural education and training have expressed many different points of view on the subject, since there are undoubtedly many ways of tackling the problem.

The Bartlett, as a University school, aims to achieve a broader and more academic education than that given by an independent or technical school. It gives a historical grounding during the primary years, after which students are free to develop along their own lines, having by then it is hoped, some understanding of architectural evolution and draughtsmanship. Any development is bounded only by the student's own capacity and incentive to work and to help himself.

In the light of your recent report, publicizing the views of many of the students at the Bartlett, it seems only fair to suggest that they are unable to appreciate the difference between a University and a purely technical education; if they or anyone else taking up architecture wants only the latter type of training, then they should go to an appropriate school. It seems rather ironical that any students should think they are in a position to formulate their own training.

It is not suggested that the Bartlett, or any other school for that matter, can offer an ideal course, but it has its own approach to the problem which should be respected even if it is not agreed with by many people.

D. G. CAMPION.
H. A. W. SIMONS.

The Bartlett School.

SIR,—We have noticed with concern that the petition of the Bartlett students, asking for an impartial investigation into their school, has apparently received no positive answer.

The sober unanimity with which the petition was put forward is most impressive. It amounts to a vote of no-confidence in the validity of their education, and as such should receive serious attention. The need is for immediate action, uninfluenced by expediency, and it would be distressing if the authorities were to lay themselves open to the charges of procrastination or victimization.

We urge that London University should collaborate with the RIBA in setting up the proposed impartial commission, so that this matter may be investigated as soon as possible.

PHILLIP ALLISON	Nth. Poly., London.
JOHN CROSBY	Liverpool School.
GEORGE KASSABOFF	AA School.
FRANK JOHNSON	Stoke-on-Trent.
JEREMY MACKAY-LEWIS	Liverpool School.
CHARLES GASKIN	Leicester College of Art.
JEREMY HODGSON	Brighton College of Art.
GAVIN MAXWELL	Kingston School of Art.
PAUL POWER	Regent St. Poly.
HECTOR MCDONALD	Aberdeen.

(Members of the executive committee of the British Architectural Students' Association).

SIR,—We hope that the brave move by the Bartlett students will not remain without support from all those who wish to raise the standard of architecture. The wording of their petition and the large number of signatories show that this is not just the irresponsible whim of a few hotheads, but the result of an eminently responsible attitude which the Bartlett students have adopted towards their education.

What will happen next? Academic institutions are notorious for their inflexibility. No doubt the university authorities regard the long summer vacation with relief. For then all grumbles will be forgotten among the ruins of Paestum or Hadrian's Villa, and next term the students will once again become that docile band of youngsters, which so warmed the academicians' hearts before the whole vulgar affair started.

But maybe the university will break with precedent and set up the independent inquiry for which the students are asking. If the RIBA were to be instrumental in achieving this it would be doing invaluable work. In the past it has seemed unwilling to act in this matter, for it is unimaginable that the Board of Architectural Education was not aware of the Bartlett situation long before the students were driven to this action. Let us hope that it will expiate its former lethargy by pressing for this overdue reform.

The Bartlett has great assets as a school of architecture, not least of which is the present enthusiasm of its students. It would be tragic if these assets were not exploited to the full now that the opportunity has arisen.

We therefore urge that all those concerned should promptly respond to this petition in the serious and sincere way in which it was conceived.

MARY ROSE RICHES	Hammersmith.
PAUL DRAKE	AA, London.
JOHN HODJKINSON	Regent St. Poly.
FRANCIS BADEN-POWELL	AA, London.

SIR,—The report on architectural education rightly advocates the principle that architects should be trained at full-time courses of study. However, recent disaffection in the Bartlett School focuses attention on possible anomalies in the full-time courses.

There has been growing discontent at the high rate of failure in the Liverpool School of Architecture. In the recent examinations there the failure rate throughout the School was about 33 per cent. Occasionally the rate in one particular year is as high as 40 per cent. Being a school of high international reputation, it is able to select students of high calibre. This suggests that at least some of the fault must lie in the standard of teaching. Surely it is not necessary that about 80 per cent of the students should be obliged to spend at least six years over the course as is the case at present? As grants do not cater for extra years, this frequently results in considerable hardship. This may partly account for the alarming number of physical and mental breakdowns which occur here.

Against this, there is another University School of Architecture which is unable to gain RIBA recognition in spite of a high standard of teaching. Before the external examination is abolished it would seem desirable that some of the anomalies connected with full-time courses be cleared-up.

P. F. SMITH.

Liverpool.

Wells Coates

SIR,—ASTRAGAL'S notes about Wells Coates (AJ June 26) omitted perhaps one of the most important things about his character, and I should like to supplement what you have already printed.

Wells was a purist who refused ever to compromise. He represented a new way of thought, and although like many architects of his generation he would have insisted that he was working within the framework, so to speak, of an international movement in design, his work and his ideas had the robust, forthright quality that has always been associated with the best traditions of English design. He was not an easy person to know, and his belief in the modern movement had all the power of profound passion. Nobody who knew him could fail to see behind the occasional arrogance of his advocacy for contemporary work, the immense sincerity of his beliefs, and the shining integrity of his mind. To have known him was a great privilege; to have argued with him was a stimulating and productive experience. He has left a mark on the development of contemporary architecture in England that, despite the relatively few things that he built, has had a far reaching effect. It will be long before the quality of his work and the standards he set are forgotten.

JOHN GLOAG.

London.

Buckminster Fuller

SIR,—May I join the fray on the subject of Mr. Fuller—for he is to my mind a man worth joining a fray about. In the first place I very much regretted ASTRAGAL'S outright condemnation of Mr. Fuller's "unintelligible jargon." I would suggest though, that ASTRAGAL forgoes getting "his ears washed out" (the remedy suggested by Mr. Banham with the familiar rudeness with which he seeks to belittle all his opponents) but rather he exerts a little patience and gets tuned in, for there is no doubt that Mr. Fuller operates on a different wavelength from we ordinary mortals.

It is possible that I have listened to Mr. Fuller for more hours than Mr. Banham and ASTRAGAL *et al*, could muster, having worked a whole semester with him in the USA, and though I have serious reservations about the wisdom (educationally) of

letting him run amok in a school for so long. I would vouch for his intelligibility—after, say, 5 or 6 listening hours (none of his talks at MIT lasted less than 4 hours).

On the other hand, it is possible that *The Builder's* representative has heard Mr. Fuller's theory of the geophysical evolution of the landmass of the British Isles, or that he has listened to the method by which he would parachute a complete geodesic igloo with wondrous radar-controlled accuracy into a hole pre-blasted by a controlled-power bomb dropped by the same aeroplane on the previous circuit. If he has, he would, I think, be entitled to the OED's definition of the word "mystic."

However, as a result of my experience with Mr. Fuller, I find myself in agreement with much of the latter part of Mr. Banham's letter. The trouble is that when Mr. Fuller commits himself to *print* on architecture, he becomes, like Mr. Banham, his own worst enemy, for he then really does become unintelligible. Now I would not be at all surprised if, at the end of this letter, the reader were to discover a "Joe Soap replies" paragraph demonstrating conclusively that I also am "stupid"—if not a congenital nitwit. Far be it from me to dissent from this uncharitable verdict, but I would beg leave in my own defence and without further comment to quote a sentence taken at random from an article by Mr. Fuller which was published in America two or three years ago:

"In partial fulfilment of this same emergent trend people have gone out of their fixed housing in all weather, multi-person clothing, endorsing sofas with wheel supports and integral motors, the automobile, to sit comfortably outdoors at open-air movie theatres."

N. KEITH SCOTT.

Preston.

SIR,—I am glad about Reyner Banham's letter (AJ, June 26). What he said is right and necessary to be said. More can be added. Buckminster Fuller is probably one of a dozen original thinkers of this century, with an extraordinary capacity for conceiving genuine basic ideas and evolving technical achievements from prime principles. To pinpoint a law of nature and to give it technical expression is the work of a genius and B.F. seems to have the characteristics of one.

Buckminster Fuller is *not* a mystic. A mystic in architecture would deal with values. This is a quality much nearer to Frank Lloyd Wright, and he is no doubt the greater architect and closer to one's heart.

From this point of view there is much which is lacking in B.F. He is an exponent of the technical age and speaks its language to perfection. He expresses it fully, but not in the idiotic stammer of the "brutalists" and other gross rationalists and materialists. Even so, B.F. is limited by his language of technique, and his philosophy is as earth and matter bound as the law of gravity is—nothing mystical here, alas. Yet these laws he sees to perfection, implements them in structure and teaches them in talks, which keep those who are open to their meaning spellbound. I for one have not heard anything more fascinating for years.

It is a good sign that quite a few of his audience would wish for more of this fare.

H. J. SPIWAK.

London

Architects In Iraq

SIR,—As an Iraqi student of architecture in this country, I was interested to follow the discussion started by Mr. Banham's article (AJ, June 19) on the BOT's letter. The Iraqi government—in my opinion—is quite wrong in commissioning foreign architects—however famous—if they really want to "excite the Iraqi."

The opportunity must be left to the young architects of Iraqi to have a go at designing these buildings. They are the people best qualified to provide that excitement. There shouldn't be any fear from their inexperience. Their designs should compare favourably with the absurd attempt of Wright at the "Baghdad Opera House."

Mr. F. Ll. Wright seems to think that a sculpture of "Aladdin and his magic lamp," coupled with a number of "hanging gardens," are sufficient to capture our hearts. This kind of architecture might be amusing, but certainly not exciting.

U. GHAIDAN.

London.

For Lack Of A Pin . . .

SIR,—Your Editorial concerning the recent RIBA Council election results (AJ, June 26), expresses puzzlement at the general results, diagnoses lamentable indifference and admits that the majority of the profession may not think it worth while to vote in the circumstances now pertaining. How right you are.

The average provincial architect has as much chance of knowing the true worth of each election candidate as has Mr. Kruschev of becoming a ballet dancer. He is thus presented with several fascinating ways of completing the voting paper: elimination is the first and most obvious method.

Out goes well-known Adrian Eggspoon who did those rather nice alterations to Lady Plain-Rice's potting shed, illustrated in you know where. Out goes Septimius Severe, whose monumental works resemble only too clearly those of his late father who strove to maintain that high standard of craftsmanship without which . . . !

Having thus cleared a little elbow room, we attempt an appraisal of candidates by turning to important back-numbers of the AJ for help. Here is a picture of Thomas Mudge taken during a Conference; he holds a glass of sherry in his left hand and wears an embarrassed smile. Unfortunately, the Thomas Mudges of the profession seldom get a look-in except at Conferences and their achievements, being in the more distant provinces, are seldom chronicled. We notice that he sports a good tailor and is therefore not yet bankrupt.

The next candidate was a child in the early 'twenties. Plenty of sound commonsense here, a good committee man and held in high regard by fellow-members of the Local Government Authority for which he works. Has served on the NIFF/NUFF Joint Consultative Board, has three children and smokes a pipe. Jolly good!

With a few exceptions, the remaining candidates have good solid English-sounding names and it is a fair bet, if their owners prove successful in the lists, that they will be able to do absolutely nothing which will in any way disturb the ruminations of that venerable Institute to which we owe so much.

Having eliminated the impossibles and studied the written and photographic evidence on everybody else, two courses lie open to us: we can use a pin or, for the reasons given in the AJ Editorial, throw the lot into the waste-paper basket. Me? I never seem to have a pin.

R. A. YOUNG.

Bristol.

DIARY

Regional Planning. Talk by Percy Johnson-Marshall. TCPA Meeting at the Planning Forum, 28, King Street, W.C.2. 6 p.m.
JULY 14

Japanese Art Treasures. Exhibition at the Victoria and Albert Museum. Monday, Wednesday, Friday and Saturday, 10 a.m. to 6 p.m.; Tuesday and Thursday, 10 a.m. to 8 p.m. Sunday, 2.30 a.m. to 6 p.m.
UNTIL AUGUST 17

RFAC

High Building and Spec. Building

The issue given the greatest prominence in the annual report of the Royal Fine Art Commission (HMSO 1s.) is the problem of high buildings, particularly in relation to the royal parks. But the report covers the entire range of the Commission's interests, touching on building projects in the provinces, new buildings in old sites, preservation of historic buildings (which, it says, continue to disappear at an alarming rate) and war department buildings. It is particularly concerned at the unimaginative way in which standard designs for barrack blocks have been used with little regard to their setting, for example at Woolwich, but hopes for better things from the new Civilian Works Organization under Donald Gibson.

In the countryside the Commission condemns excessive "wirescape," as being as disastrous in its effect on small scale architecture and picturesque streets as it is on natural scenery. The design of power stations seems to have improved, but their siting (as in Snowdonia National Park) still causes anxiety, as does the industrial development sanctioned at Milford Haven. In general, "the Commission is increasingly concerned at the tendency to site large industrial developments of all kinds in National Parks; this endangers the whole purpose of the policy which, with the strong support of public opinion, brought them into being."

Bridges, old and new, get a good deal of attention in the report. The Commission considers that the quality of the designs for new bridges in the government's road programme varies greatly; the best are excellent, but many show little appreciation of aesthetic values. "The same unsatisfactory shapes and ill-considered details do continue to appear," and the Commission suggests the issue of an illustrated booklet to designers, setting out the considerations they should take into account.

Street furniture still causes the Commission concern, though it notes the increased public attention resulting from the publication of Outrage by the *Architectural Review* in 1955. It is not convinced that street furniture should be subject to planning control, but suggests that some simple means could be found by which County Planning Officers or County Architects advise on design and siting of all road equipment.

The Commission welcomes the improved regulations on outdoor advertising, but fears that to single out certain areas for stricter control leads to greater laxity elsewhere. It hopes that the higher standard will be extended eventually to the whole country.

Its most severe censures are reserved for speculative housing. Its layout, says the report, is often of the lowest order. There is an alarming outcrop of ribbon development on the approach roads to our towns, which makes a mean and shoddy introduction to the urban scene and drives the countryside still further away. Speculative housing estates are still based on pre-war semi-detached patterns; wasteful of land and destructive of local character. Discussing the reasons for this state of affairs the Commission blames the conservative attitude of builders, the reluctance of private house purchasers to live in something that resembles a Council house, and lack of courage on the part of planning authorities, which give the impression sometimes that any design is accepted if only it is not too different from the one next door. It recommends that where planning officers have no architectural training advice should be made available from the County Architect or a consultant, and that more should be done to educate the lay members of planning committees, and (through school curricula) those of the future.

But, as already indicated, the Commission's main concern is with high buildings and the royal parks. It again emphasizes the importance of preserving all the royal parks from encroachment and unsuitable fringe development, and warns the Crown Estate Commissioners that, if satisfactory schemes are not forthcoming from private developers for retaining the Nash terraces in Regent's Park, the Commissioners have a direct responsibility for finding other means of preserving them. And it criticizes the Marble Arch-Hyde Park Corner improvement scheme because, among other things, it sets a precedent for further encroachment on the parks there and elsewhere.

Where new development is accepted on the fringes of the parks, "the Commission is concerned that it shall not disturb the almost rural atmosphere that is still to be found there. It would be an irreparable loss to London if these parks were to become, like Central Park, New York, mere gaps in a solidly built-up area, with no real escape from the sight of bricks and mortar, or glass and concrete." The Commission says that it is mainly a question of the height of buildings, the architectural idiom not being in itself important; it has accepted designs for new buildings in St. James's Place that made a radical departure from the traditional architecture of that area, though it was anxious that the existing height and scale should be preserved.

The Commission summarizes its views as follows: "Elsewhere the Commission has accepted some increase in height, but if the character of the parks is to be preserved it is essential, in our view, that this should be limited broadly to about 100 ft., as in Park Lane. Anything over this height is generally visible above the trees from many points in the parks, and while the Commission would not object to a few taller structures in the form of towers or other special features it would deplore a slab of building rising above the general level, as has been proposed recently in Park Lane and in Lancaster Gate."

The Commission also emphasizes the need to limit the height of buildings where abnormal height may affect views of important older buildings or detract from the sense of local dominance they were designed to give. Where large office blocks, whether above normal height or not, replace sparsely tenanted buildings traffic congestion must increase, and it may be necessary to consider a reduction in permitted floor space.

The Commission renews its criticism of the treatment of skylines by architects, many of whom seem to assume that provided lift motor rooms and other excrescences are set back to be invisible from the pavement on the opposite side of the street their architectural treatment is of no importance. The Commission stresses the importance of distant views, and the need to design roof structures as an integral part of the building, saying that the architectural success or failure of a scheme will be judged largely by the final silhouette.

COMPETITION

Wokingham School

Berkshire County Council announces an open competition for architects for the design of a new County Infants' School to be erected at Wokingham. The school is a six-class school for 240 children with an age range from 5 to 7 years. The estimated cost is £42,350 and it is included in the building programme for the year 1959/60. The RIBA have approved the appointment of the following assessors:—E. D. Lyons, J. T. Castle (Berkshire County Architect), and T. D. W. Whitfield (Director of Education).

Premiums for the three successful designs will be £300, £175 and £75 respectively. Copies of the Conditions will be obtainable from the Clerk of the Berkshire County Council, Shire Hall, Reading, after July 15, 1958, on receipt of a deposit of £2 2s. The latest date for questions will be September 8, 1958. The final date for submission of entries will be not later than 5 p.m. on December 15, 1958.

"Not One Winning Design Built"

Very strong opposition to architectural competitions for certain types of building was expressed in the House of Commons last week by Hugh Molson, the Minister of Works. In reply to Mr. Gough, who asked what process was adopted in selecting Lionel Brett as architect for the High Commissioner's residence in Lagos, Mr. Molson said that Mr. Brett was appointed after consultation with his advisers; the usual fee would be paid. Mr. Gough then asked whether some form of competition would not have been advisable, and suggested it would have been wiser to await the outcome of the Hatfield roofs inquiry.

Mr. Molson replied: "Mr. Brett has my full confidence. The urgency of this scheme would not have allowed the time necessary for a competition, even if I had been satisfied that one was desirable. I am not in favour of competitions as a method of appointing architects for schemes of this type. In the course of the last 100 years my department has organized competitions of this kind on a number of occasions, and in not a single case has the winning design in a competition for a major government building been carried out."

In reply to a further question by Lord Balniel, who said it was rather an odd procedure to appoint this architect before the report of the inquiry was available, Mr. Molson said that Mr. Brett had an established reputation as one of the best architects of the younger school. "I am satisfied that he is a most suitable person to be entrusted with this responsible and important job."

Hamburg Exhibition, 1963

An international competition is to be held to obtain designs for the construction of areas in the town centre of Hamburg, where an International Horticultural Exhibition is to be held in 1963. The competition is open to all independent, free-lance, government and officially employed garden and landscape architects in Germany and abroad, but persons engaged in other professions can participate. One of the five people individually invited to take part is Miss Brend Colvin. The prizes offered are: first, DM 15,000, second DM 11,000, third DM 9,000, fourth DM 6,000, fifth DM 4,000, five purchases of DM 3,000 each, and four awards of DM 2,000 for particularly good detail performances.

Competition forms are available on remitting DM 80 to Postscheckkonto Ausstellungspark Planten un Blomen, Hamburg Nr 113990, under the subject "Ideen-Wettbewerb IGA 1963," or from the management IGA 1963, Exhibition Park Planten un Blomen, Hamburg. 36. Queries can be submitted up to August 1, 1958, and entries must be handed in by November 19, 1958.

HENDON SOCIETY

Architects' Initiative

A group of local architects, with the support of the Civic Trust and local residents, has formed the Hendon Society, mainly as a result of criticism of the Borough Engineer's design for a new Civic Centre which recently appeared. About 100 people were present at the Inaugural Meeting at which Percy Johnson-Marshall, who is a local resident, took the chair.

Various members of the audience, which was composed mainly of local architects and representatives of local organizations, discussed urban design problems and the provision of community facilities in Hendon; in particular they criticized the design of the proposed Civic Centre. Most of the speakers also considered that the programme of accommodation, which includes a hall for 1,180 people and an international-size swimming-pool, was excessive, and the general opinion was that the Borough Council should have consulted the organizations and individuals likely to use the Centre, before drawing up even preliminary plans.

LCC

New Salary Scales for Senior Architects

Increased salaries have been awarded by an independent tribunal to the heads of departments and other senior officers of the London County Council. Their salaries have been subject to a standstill since January 1, 1955. The effect of these changes on the Architect's Department are as follows.

	Present salary	*Revised salary*	*Increase*
Architect to the Council	£4,500	£5,250	£750
Deputy Architect	£2,750–3,250	£3,250–3,750	£500
Principal housing and schools architects, senior planning officer	£2,050–2,250	£2,450–2,650	£400
Senior architects, assistant housing architect, assistant schools architect (design)	£1,775–2,075	£2,150–2,450	£375
Assistant architect (general division), assistant senior architect (theatres), group planning officers, senior architect (housing division)	£1,500–1,800	£1,650–1,950	£150
Assistant senior architects	£1,482 10s.–£1,777 10s.	£1,482 10s.–£1,850	£0–72 10s.

One does not always connect papers by quantity surveyors at the RICS Conference with sparkling wit and good humoured probing into the weaknesses of the professions and the building industry—quantity surveyors included. But these qualities are to be found in the paper by D. M. Jeffreys, A.R.I.C.S. on "The Future Structure of the Building Industry" which won him the chartered surveyors' gold medal and prize this year. We print excerpts from it below.

RICS EXETER CONFERENCE

Call for a "Summit Meeting" in the Building Industry

No builder can plan to build cheaply and quickly without sufficient co-operation from the professions of architect and quantity surveyor. In different words, a builder (granted that he is efficient, and this surely he must be in a competitive economy) builds not just as well as the professional man tells him to, but as well as the professional man allows him to. Now if this paper can be said to carry a message this is it, that until the architect and quantity surveyor mend their ways the builder cannot be expected to mend his.

The wrongs in our system—and in listing them I claim only that they are widespread, not that they apply to every contract, client, architect or quantity surveyor—the wrongs in our system are these:

1. The client believes that the sooner a building is started the sooner it will be finished, and the architect rarely persuades him that this is not so.
2. The architect does not prepare all his drawings before the bill of quantities is prepared, or even before the contractor takes possession of the site.
3. The architect's site control and administration are inadequate.
4. The quantity surveyor has yet to find a method of what might be called accurate approximate estimating, he does not keep day-to-day financial control of the contract and he delays its final account.

It is necessary to exercise these faults in more detail.

1. *The relationship between architect and client*

The doctor, having diagnosed the patient's illness, does not then allow the patient to tell him what to prescribe, yet architects are frequently allowing laymen to do just this—to over-rule them in matters of professional knowledge and policy. One glaring example of this weakness in the architectural profession is the way in which local authorities continue to ignore the recommendations of two of the most important reports in the building industry issued since the war—the Placing and Management of Building Contracts (1944), better known perhaps as the Simon Report, and the report of the Joint Committee on Tendering Procedure (1954), both of which stated in unequivocal terms that selective tendering is an essential to good and economical building.

Can we believe that councillors know better than they? Yet far from accepting the advice of the report on selective tendering, we now read that the Middlesex County Council have agreed in principle to the employment of an organizing company who will be responsible for the preparation of plans (including the provision of all consultant services) and for negotiating and placing building contracts. The professional man side-stepped, worse than that, given a rude sign. Is this the point to which the architect, the only possible leader of the team, has led us since the war? If it is, then he has spent 12 years designing not just flats and shops and schools but a gallows for himself.

The architectural school, working at only one side of a problem, is producing architects who are saturated with the aesthetics of architecture but weak in the subject of client control. It is making insufficient effort to interest the public in the new architecture which its students are soaking up like sponges. The architectural school is a deceptively sweet breeding ground because it is a school only for architects. There are no clients in the place, not even good ones.

2. *The preparation of drawings*

"It was emphasized to the team in the strongest terms by both architects and contractors that the early supply of complete and detailed information is a fundamental factor in securing speed of construction. The time required by the architect to assemble and prepare the necessary documents is more than made up by the rapid progress which the contractor is able to make when the work begins.")

Such words as these, from the Anglo-American Council of Productivity Report on Building and thousands similar from other reports, papers and speeches in the past ten years, make it superfluous to re-state the case for pre-planning.

The architect is not yet convinced of its advantages, he is reluctant to waste effort on work which may be altered and lastly, the very existence of the quantity surveyor as a sort of fine mesh sieve to catch the architect's errors has a psychologically bad effect on his planning.

Today nothing inflates a contractor's prices so much as the pre-knowledge that the architect is a poor one, nothing will pre-dispose him to cut his rates so much as the certain knowledge that the architect is a good one. This is the law of our jungle. Quantity surveyors are sure of this because they inhabit this jungle (indeed their detractors even say that they planted some of the trees in it themselves). Certainly quantity surveyors have all seen the contractor who, in tendering, comes to the office to study the drawings—ostensibly to study the drawings—in reality to sum up the new architect.

The quantity surveyor, who is a pre-planner *par excellence*, cannot send out a half-written bill—he completes his work and if high tendering reduces the scope of the contract, he alters his bill accordingly. Why then should the architect claim diplomatic privilege, and then watch the quantity surveyor do his pre-planning for him? Is this leadership? No, I am convinced that there is no valid reason why the majority of smaller contracts today cannot be planned to the last pipe-clip before the contractor takes possession of the site.

To talk about approximate estimating to some quantity surveyors is like kicking them on the shins and then pressing the bruise, yet here is the essential contribution that quantity surveyors must give now towards pre-planning—accurate approximate estimating combined with cost facts. Architects, like drowning men, are crying out for help, and some quantity surveyors will not even throw them a straw. There is no little evidence today to show that the quantity surveyor has yet to earn the full respect of the architect.

He wants to know how much extra a window costs per yard super. of 15½ inch hollow wall, what is the cheapest roof to span 20 feet, what is the most economical positioning of stanchions and beams in a steel-framed structure.

It is ironic that the quantity surveyor, who suffers personally from inadequate planning, should be a contributory cause of it. He has himself to blame. For too long he has followed the architect, like an aging spaniel who follows his master blindly and affectionately, always ready to snap up the tit-bit that is offered and knowing that dogs that keep to heel are given, from time to time, good, meaty bones. He has failed to assert himself. Yet does the quantity surveyor ever stop to ponder the delicacy of his position, that without him a very high degree of pre-planning by the architect would be obligatory?

3. *The architect's site control and administration*

In a tiny fishing village in Southern Italy, an English student from an architectural school whose name is a household word to you if you wear a smock, was dancing from shadow to sunlight and back into shadow again. He carried an exposure meter, a notebook and an architect-sharpened pencil. He had a beard and wore sandals. He was preparing, he said, a thesis on the effects of sunlight upon buildings.

I have often wondered since I met him whether that student, when he had finished his thesis, packed away his notebook and his exposure meter and his architect-sharpened pencil, oh yes, and his sandals, had worked for a month on a building site in Newcastle or Wigan or even East Cheam. For the sake of the building industry, I hope so. If he did not, then his vacation was being wasted, his youth as an architect mis-spent, because despite the crying need for colour and beauty and character in building today—and heaven knows the need for these things is great—the need for the architect to know the builder's problems and to understand his point of view comes before them all.

4. *The quantity surveyor*

I am reminded here of what the dear old lady said to the new vicar. "Vicar," she said, "until you came to the parish we didn't know what sin was."

The quantity surveyor, like that vicar, is new to the parish—relatively new perhaps, but new, nevertheless. There is ambiguity too in his position—to some he is the sinner, to others the uncoverer of sins. Sinner? Certainly his hands are not clean. He spends too much time "clerking" and not enough time being helpful to architects, he spends too much time measuring and not enough time preparing the client's final account. His deficiencies in estimating have already been mentioned. In his defence, however, it must be said that the amount of measuring he does is dictated by the Standard Method of Measurement, that over-elaborate document of the cautious twenties and thirties which lives on today outside its true environment like a vintage car, old-fashioned in concept but still running satisfactorily. Now I am certain that

there are no architects and few quantity surveyors who would not welcome a simplification of the Standard Method of Measurement.

By elimination I am persuaded that it is the builder who likes to see the Standard Method what he would call comprehensive and the quantity surveyor prefers to call overstuffed with trivialities. But can we blame him, when the bill of quantities is all he has to tender on? Thus we reach the core of all our problems, the most vicious of vicious circles—the builder will not accept a streamlined Standard Method of Measurement without pre-planning, the architect will not pre-plan without better assistance from the quantity surveyor—who is too busy measuring from the Standard Method of Measurement. It is as easy, and as difficult, as that.

Today we see the architect, the quantity surveyor and the builder lumbering round in circles like trained elephants, each holding the tail in front; but we see, too, the elephant with "Builder" painted on his side showing signs of restlessness, and neither the architect, nor the quantity surveyor, nor, in the long term, the client, are going to like the solution that he has to offer.

Framework for the future

Aesthetically our main influences will continue to flow, I believe, from Europe, and these will be given extra life by the European Common Market. We can expect building and planning to become more Europeanized and in consequence I believe the adoption in England of the metric system will not be long delayed. This particular pill, when we have the courage to swallow it, will make life easier for us all.

Under these conditions, then, what course is the British building industry likely to take? There appear to be four possibilities.

It may stay as it is. That is a very real possibility. It is not easy in England to upset a *status quo*. There are, after all, architects, quantity surveyors and builders today who do not wish to see revised the system which they know.

Secondly, and this I see as the likeliest trend, we may find the builder calling the tune. Already the all-in service schemes of the bigger builders are well-known. And, to the client, very attractive they sound. No outside architect, no independent quantity surveyor and no consultants, all with their concomitant fees. Above all, no delayed final account (I am tempted to add "just an unexpectedly large one delivered promptly"—for if this has not happened yet, it will). Here is all the seduction of the self-service store, and whoever came out of a self-service store without having spent too much? And where will architecture be, if the builder is in control? Be careful, architects, lest you are so busy honouring your forebears that you forget your duty to your contemporaries.

Thirdly, there are those who foresee the present-day quantity surveyor developing into a building consultant, a liaison between public and architect, a man who would recommend an architect to his client, prepare bills of quantities, administer contracts, prepare final accounts. It could not happen today, indeed I find it difficult to foresee a time when the architect will or even should surrender so much of his sovereignty, but the idea remains. It is not dead yet.

Lastly and surely least likely, we may resort to the American system of tendering by which each contractor tenders on a full set of drawings and a specification. Pre-planning is there, but the wastefulness of this system is obvious even to the layman. Among all the many advanced techniques which have come out of America, here surely is one 50 years behind the times.

Architecture, as I see it, is faced with two colossal problems. Parallel problems they are, for they do not appear to meet in the middle or at either end. The architect's first task is to interest me, as a layman, in architecture; his second to convince me, as a quantity surveyor, that he is the master of both the client and the builder, that he knows where he is going.

I am a businessman. I work in a city. I never look at buildings or notice what shops are like above the shop window level. We have some churches in our city—"fine old churches" is a phrase that comes to mind, one often sees it in the local papers—but I have no idea how old the churches are or what is fine about them. The new insurance office with stone columns each side of the entrance and a green marble step, I thought *that* was a fine building, but the other day in the bus somebody called it dull. Not that one cares, one knows what one likes—but the chap who called it dull was wearing a bow tie, and he had a "left bank" beard. Could he be right? Could I be out of step?

So the first need of architecture is to woo the man in the street and his son in the state school. When they can recognize buildings as they recognize cars on the road or aeroplanes in the sky they will be, without knowing it, better clients; they will have a greater respect for the architect, they will listen to what he has to say, they will agree that it is cheaper to rub out a pencil line than to knock down a 9-inch wall and who knows, they may one day insist that *their* building be pre-planned before even the quantity surveyor begins his work. But I am drunk with the excitement of it all. We must return to 1958.

The problem of how the architect is to reassume control as leader of the building team is for him a problem of life and death.

The architect as we know him today is very ill. In fact he does not know how ill he is. He does not know that only one thing is going to save him, that he needs a rare American drug. A drug called Pre-planning. Without it he will die. The family doctor who lives in Portland Place will give it to him—he has been suggesting it for years—in fact he is the only man who can give it to him. Maybe an American nurse will come across to supervise the administration of the first few injections, even hold the patient's hand. But beware, this drug can have queer effects. It is dangerous to exceed the stated dose. It even goes to the head and has been known to bring on mild megalomania.

But it is to the architectural schools that we must look for a lead, for their students are to-morrow's architects, their teaching to-morrow's architectural practice. They should give immediate and serious consideration to introducing the subject of pre-planning into their curricula, to treating pre-planning for what it must become, a *sine qua non*, a golden rule like putting the larder on the cold side and not building near poplar trees. Their students must be taught that only when he can pre-plan will he be a leader—a real leader, and not the follow-me-I'm-right-behind-you type. The quantity surveyor would like to see the fifth-year student of architecture not designing a motel for a west country motor-way but pre-planning and writing a specification for an underground convenience in a city near a factory. By all means teach the architect to live with his head in the clouds, but only if both his feet are on the ground.

I have criticized architects; I believe other quantity surveyors share many of my views. I have criticized because I believe that there is a very strong danger of the architect being ignored and by-passed by builders both big and small in the next 50 years and I am not at all certain that he either allows that this is so or recognizes the full danger behind the threat. But let us turn to his colleague, the quantity surveyor. What of him?

Politically he is probably a little to the right of middle. He has read about the Liberal revival. His appetite for newspapers lies somewhere between *The Times* and *The Manchester Guardian* with a pinch perhaps of Tanfield's Diary to taste. He prefers Panorama to The Six-Five Special. It is a pity that he is usually a little too busy to put down his pen and to wonder if it is all worth it. This is the man who must begin to mend his ways, although in fairness I must put it on record that many quantity surveyors are aware that their profession is due for fundamental changes. Others need a thunderflash beneath their chairs.

Changes needed

First we must revise the Standard Method of Measurement which has for too long now been allowed to flourish like an unpruned rose. We cannot expect any major revisions until pre-planning is popularized, for only when they are given the opportunity to tender on drawings and bill of quantities together will contractors agree to a simplified method of measurement. An interim revised edition of the Standard Method of Measurement would serve to clear the air. We must scrap some of the tiny items, the small mortices, the ten-second labours, and at the same time standardize phraseology ("not exceeding," "less than," etc.), and wherever possible standardize minimum deduction sizes throughout all trades.

It is the routine work of quantity surveyors' offices that the changes must occur. Somehow the quantity surveyor must find a way of collating cost information, of estimating accurately, of pricing variation orders when they are issued and of settling final accounts with despatch—all this in addition to his daily work of preparing bills of quantities.

Many quantity surveyors are actively engaged both in the office and after office hours in thrashing out a method of giving the architect the facts he needs when he most needs them. These new terms—"cost research," "cost planning," "cost analysis," "elemental bills" and "the private study group" are all symbols of the attempt being made by some quantity surveyors to be of genuine assistance to architects, to show a sincerity which is more than lip deep. No more well-turned phrases, no more considered opinions. Architects want facts; facts are still as rare as bags of gold. We must find them.

Could we not use our professional skill a little more in the preparation of final accounts to balance, without measuring them, adds against omits. A few shillings never matter, a few pounds may—and may not. Would not both the client and the builder sometimes be happier to see an answer accurate to within 2 per cent., given in three months, than one "quite" accurate in 12—or 36? Do clients who spend millions really care about 50 up or down or is it we who care, unnecessarily, on their behalf?

These are some questions to which we might give consideration.

What form could any joint action by architects and quantity surveyors take?

First there must be general agreement between them that action is needed. This itself may not be easily obtained. Next, a summit conference between architects, quantity surveyors and builders would give the professional man a thorough and up-to-date knowledge of the builder's problems. Following such a conference, the creation of a School of Building Administration, a Staff College at which all architects, quantity surveyors and builders should attend—with expenses paid—short courses to learn of, and to discuss, common problems, is surely what is needed. At the same time architects and quantity surveyors and builders must put their heads together to decide how best to introduce pre-planning as standard practice, how best to abreviate the Standard Method of Measurement and upon what day these two major changes can be introduced. These are the immediate targets.

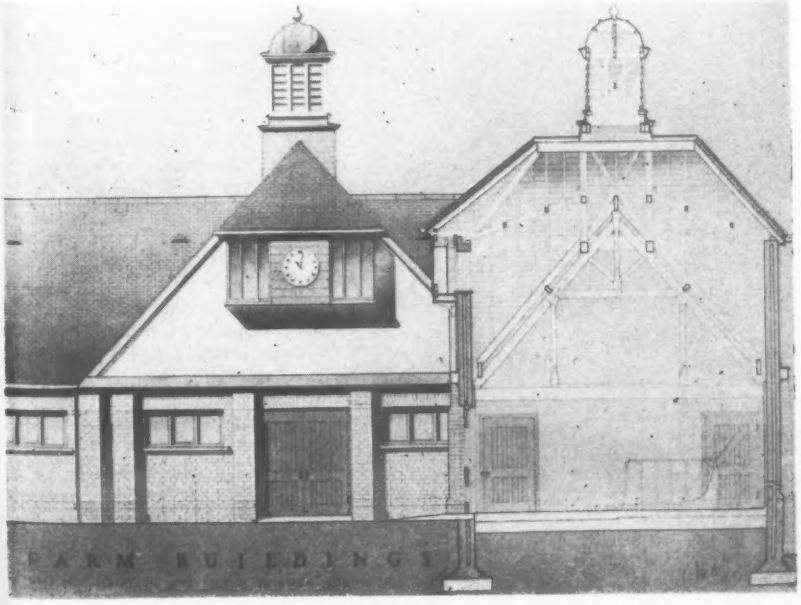
Never was it more urgent for architects and quantity surveyors to understand the changing scene, to examine their methods, to accept and to expose and to eradicate their weaknesses. The future looks tough, and divided we shall fall.

John Smith, whose provocative article on the country's architectural schools (published in the February issue of Architecture and Building*) was written following a tour of all the 74 schools in existence, was asked by the* AJ *to revisit the Bartlett School of London University on the occasion of the school's end-of-term exhibition. His comments, and a sample of the students' work exhibited is given below.* *See also page 38 and the correspondence on page 42.*

THE BARTLETT EXHIBITION

Criticism by John Smith

Above, two sketch designs, left, a second year design for a dovecot by J. Greening; right a chapel for Torrington Place by W. A. Chung, a fourth year student. Below part of a set of design drawings for a farm, by second year student R. J. Faircliffe.

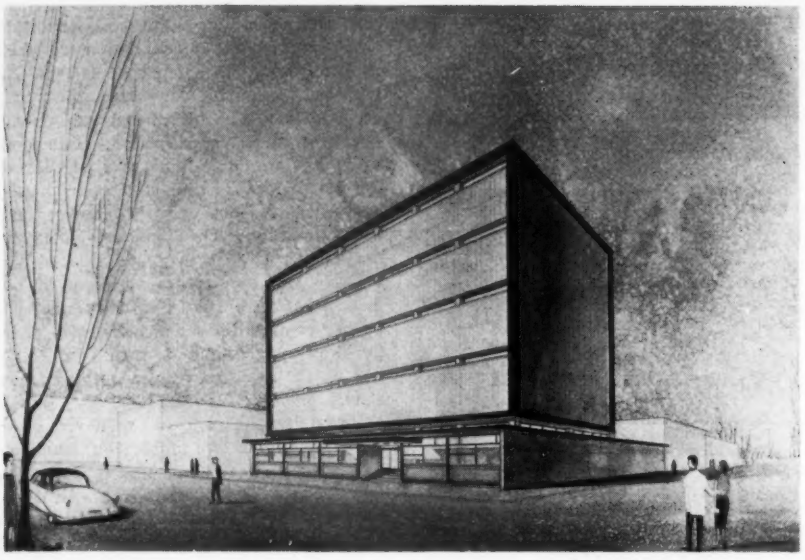


At this time of the year, most schools of architecture hold an exhibition of their students' work. In a few schools these exhibitions are ambitiously staged, the public are invited to visit them, and they remain open for an extended period. But more often they are modest affairs; a selection of the staff's idea of the best work, hastily assembled in one of the studios and designed to be seen by parents attending the annual garden party and prize-giving; scarcely will the last proud mum in her picture hat have been escorted homewards by her be-medalled son than out will come the drawing pins and back into portfolios will go the drawings resplendent with their stars.

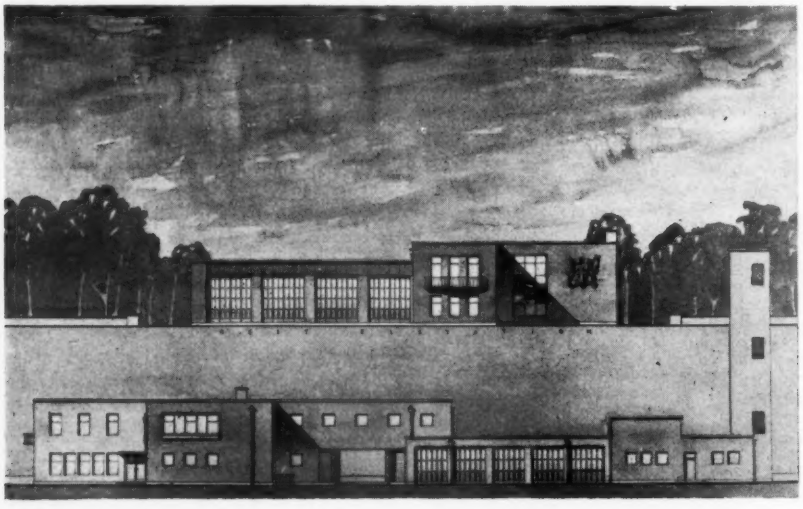
However staged, and on whatever scale, these exhibitions are important; architects should make a point of finding out when they are to be held, and then to visit them; for they show a school's view of itself, perhaps distorted, but for an all too brief moment the veil of mystery is lifted and the visitor is transported into the twilight "never-never land" of the student architect. There one can see the "good" work; that which has been commended by the tutors. What is seen was intended to be seen, for the shown work of the students reflects the states, idiosyncracies and capabilities of the staff, of those who control, not the development of architecture, but the training of architects. (And it is perhaps a tragedy of our time that those who are responsible for the development of our architecture have too little time to spare for problems of education.) A few days ago the Bartlett School held one of these modest exhibitions. With stories of the students' revolt striking sympathetic chords everywhere, the opportunity was not to be missed of seeing what might have been supposed would be the Establishment's answer to all the fuss. Surely here would be displayed and illustrated by prize drawings the classical *beaux arts* system of training so roundly condemned by the students as being "out moded and incompatible with present day architectural thought and practice." Here "the method" would be defended. Thus a positive "statement" was anticipated, and although one could be readily detected in the event, it was perhaps not entirely of the sort the authorities intended.

A professional touch

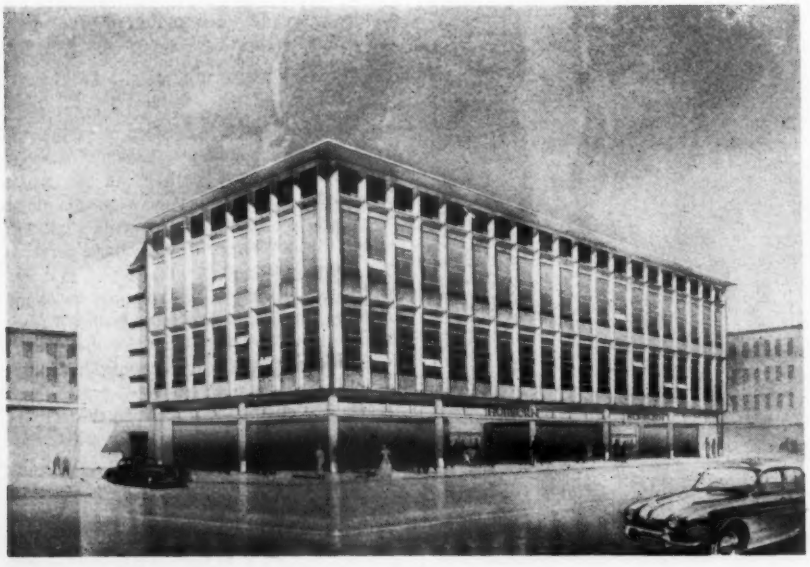
In one of the studios a series of screens displayed the work perhaps to the worst advantage. The drawings were crammed together like stamps in a child's album; often, they overlapped; and with a perverse yet consummate skill, odd-shaped sketches had been found to fill the most awkward corners. The visitor was faced with a "feast for the eyes," a feast which, for the present writer at least, was to prove somewhat indigestible. To give the show a professional touch the tops of the screens in the corners of the room were laced together with criss-crossed string, through which could be glimpsed dust covered sample pediments and mouldings fixed to the walls, and although the drawings were arranged in chronological order no clear sequence was defined, and



Two third-year designs; above, a warehouse by Norris Hellmon, below a fire-station by R. J. Faircliffe.



Below, a fourth-year student's design, a sports shop by H. A. Wykeham Simons.



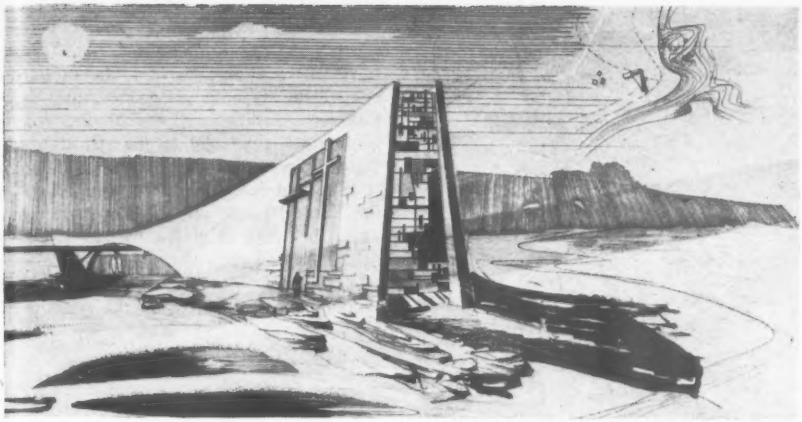
whichever way round the room one went, the effect appeared equally distressing.

It is not being unfair to give this somewhat gloomy overall impression. An air of tat and frustration pervaded the School, as it does many others in the country, and if it was most noticeable in Gower Street a few days ago it is only fair to say so before criticizing the particular, before getting down to details. Not that it is appropriate here to criticize individual student designs; the exhibition should not be dealt with as a provincial paper would an amateur theatrical production with "so and so admirably played Berowne and Don Adriano de Armado was humorously played by John Smith"; to do so would be wrong, and the particular here must also be dealt with in general terms. The reader will have examined the accompanying illustrations and will draw his own conclusions. Let us study more closely this curious exhibition.

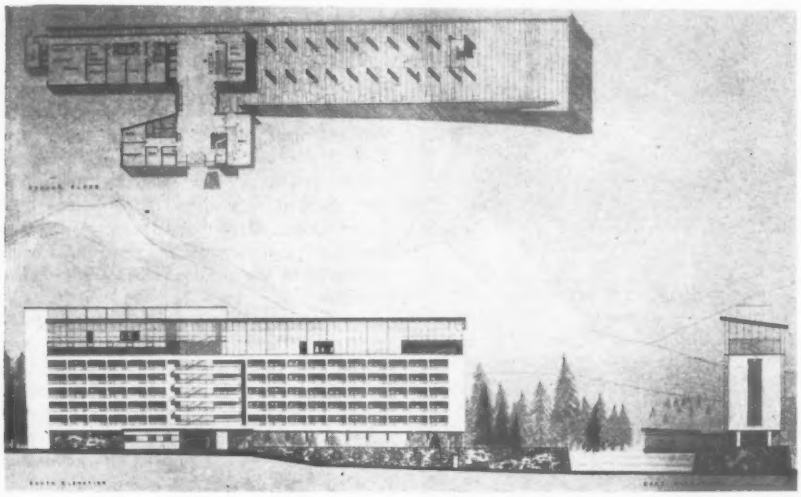
A useful exercise

The first year's work was composed largely of classical study sheets. The eye hopped from pillar to post murkily drawn in insipid sepia. Sheet upon sheet, columns and caps and quaint bric-a-brac formed repeated compositions of excruciating tedium. What are they all for? Discipline, draughtsmanship, architectural presentation; these are the beginnings and you start there; 1888, 1958, 2008 no matter. The tradition is there. "As it was in the beginning" but the beginning was only a lifetime ago. One Order a term; stretch, plot, draw and drown; stretch, plot, draw and drown on and on through the year; the monotony punctuated by the drawing of a Trajan alphabet (why not an Amharic script for a change?) and the design for the back of a playing card, painted not once, but several painstakingly identical times (such a useful exercise). Looking at the flat, drab rendered drawings so lacking in guts, one longed to see again these same exercises as carried out by students of previous generations. They were done with gusto then, for they meant something, and the sun shone on the Egyptian sheet which was brilliant with light and shade, unlike its foggy present day counterpart. (Even that sheet had a direct relevance during the short-lived Egyptian revival.)

The work of the second year showed the classical emphasis continuing. Studies in the construction of classic elements and exercises in the application of the Orders were prominent. Again, they were limp and pallid; almost apologetic and lacking conviction; expressing only their authors' reluctant conformity. Several orange Cotswold vicarages blinked out from their cobalt gravy surroundings, their plans blissfully blurred by the layers of sediment. Beautifully drawn farm buildings feebly designed in classical straitjackets, with exquisite sections meaning little, and giving an over-all effect to frighten the lives out of their modern bovine inhabitants. Then suddenly, a day sketch, gave apparently the students the freedom to "be contemporary" and the bizarre dovecots resulting showed quite clearly at this stage how far behind his counterpart in the more progressive schools is the Bartlett student in creative design ability. Even the much



Top, a fourth-year design for a memorial chapel by John Darbourne. Below a fifth-year design for a ski centre.



Below, part of the screen showing work by past students of the Bartlett. Pride of place was given naturally, to the P.R.I.B.A., *Basil Spence (who also trained at Edinburgh). One of his sketches of Coventry Cathedral can be recognized. Flanking Spence are examples of work by Sir Hugh Casson and Marshall Sisson.*

vaunted superiority in draughtsmanship the early discipline is supposed to provide was not particularly evident.

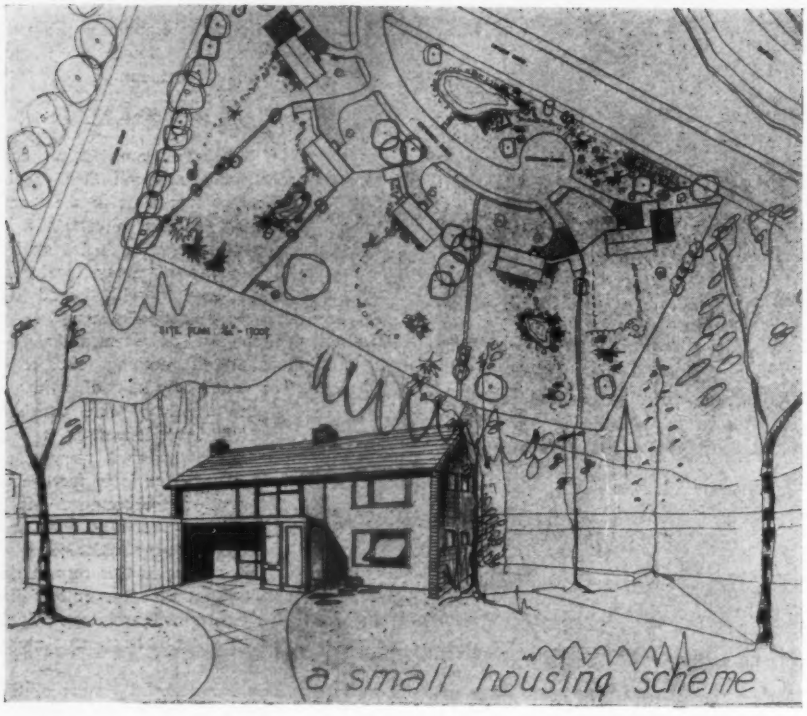
Freedom in design

Exercises in traditional construction continued wholesomely into and through the third year. One or two pubs in the "new town" style indicated that a certain freedom in design must prevail. A fire station to warm the cockles of many local surveyors' hearts, complete with boxed out windows and the municipal arms in stone showed the dangers of a misunderstood classical training, if nothing else. And although the continued lack of evidence that any of the buildings were designed for real sites could be lamented, it was apparent that here was work very similar to much of that which is in fact going up in various parts of the country. Many fourth-year schemes gave a similar impression, and by a happy coincidence it was possible to compare in this respect the students' work with that of seventeen distinguished Bartlett-trained architects which was displayed on a series of screens along one side of the room.

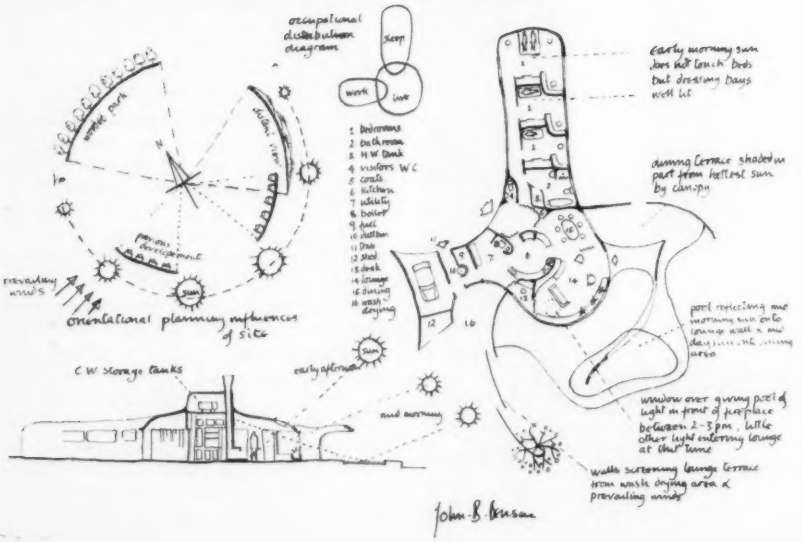
This was a novel and useful feature of the exhibition and one which other schools might copy. It was a surprise to discover, for example, that many of the new buildings in the City of London have been designed by former students of the school, a fact on which the Bartlett may well pride itself, although in the present circumstances to many of the students it would seem to be more a matter of shame. Towards the end of their school career the students are given considerable freedom and as if to compensate themselves for their previous experiences under an oppressive and (some say) reactionary curriculum, they produce largely unsuccessful *tours de force* notable chiefly for a certain spirit and a general flamboyancy. It may seem ungenerous not to praise where the intention has been so patently sincere, but these last works compare dismally with those of senior students in many other schools. The training that has been provided is seen to be insufficient to sustain the project in the "grand manner," a paradox if ever there was one, for surely it is precisely in the production of these schemes that a full-blooded *beaux arts* training should prove its value. But from the evidence seen, the blood has drained away and only the hard bony carcase, too dry and rigid by far, is left for students to feed on. Small wonder there is a revolt.

The importance of the Bartlett

Now what has been said so far may be considered harsh and severe, regrettably it is necessarily so, for in assessing the merit of work produced in an important school parochial standards must not prevail. The work selected by the authorities as being representative of what the school is producing should be compared with that of other schools. Such a comparison for the Bartlett at present would find the school placed perilously near the bottom of any table of recognized schools. At present it is the only fully recognized university



Above, a fourth-year housing scheme by L. Jones which was highly marked, for comparison with the design shown below (not exhibited), which was given a low mark.



school in the south and east of England. The nearest schools with degree courses (apart from Cambridge which is recognized up to the Intermediate only) are at Cardiff and Sheffield, both over 150 miles from London. Furthermore, should the recommendations contained in the report of the Oxford Conference on Architectural Education be put into effect, the importance of the Bartlett might well be increased. Thus, when the work exhibited by the School is found to be of such a comparatively inferior quality, it is a serious matter and steps should be taken to remedy the situation.

Imagination penalized

However, it should not be forgotten that the exhibition here criticized was selected by the school authorities, a factor which in view of the present dispute between the students and their directorate may not be without significance. It would be interesting to see, for example, an exhibition of work selected by the students themselves. For there is little doubt that designs of a more progressive (student view) or outrageous (staff reaction) nature are being produced in the studios, albeit almost clandestinely, and that this work is actively discouraged by the staff who fail it or mark it down. This is well illustrated by comparing the officially approved fourth-year housing scheme in the exhibition (above) which had a high mark (Mention Plus) with the scheme illustrated left which was virtually failed (C Minus). Although it is true that the scheme marked down was not exhibited, it was brought to the notice of the reviewer when he commented on the absence of models in the exhibition. Leaving aside the relative merits of the two schemes it can hardly be denied that the student with the more imaginative approach has been rather harshly penalized.

It is perhaps because of this conflict of attitudes that there is now such a gulf between the students and those responsible for their education. The sincerity of the staff in maintaining their attitude towards education is manifest and obviously they are not really ogre-like task masters with whips in their hands. But it is the essential validity of their present stand which the students appear united in questioning.

By the time the next annual exhibition is held, many of the problems now confronting both the staff and the students at the Bartlett may have been resolved. It is to be hoped that they will be, for then the exhibition will reflect any new-found *rapport*, and for that reason alone, the school will make a better showing. A student's design and the drawings he produces inevitably show the extent of his enthusiasm for what he is doing. This year it was precisely this element of natural student enthusiasm that it was so difficult to detect in the work exhibited.

The Bartlett is an important school, most fortunately situated in a great University; it should be one of the finest schools in the country.

Last week we announced the winners of the international competition for the reconstruction of the centre of Berlin. This week we publish the following report on the competition by a Berlin correspondent and illustrations of the first and second prize-winning plans. We also publish, on page 55, the only British prize-winning design, by Alison and Peter Smithson and Peter Sigmond-Wonke, who were one of the three third prize-winners.

RECONSTRUCTION OF BERLIN

Prize-winning Designs Illustrated

The arbitrary division of Berlin into four parts, one each to be administered by the American, British, French and Soviet occupation powers after the war, has resulted in the dividing line between east and west going from north to south right through the centre of the old city. Traffic communications pass from one side to the other, streets are cut in half by the inter-sectoral boundaries, supply lines have been severed and there are scores of unpleasant and even ridiculous results. For example, the ruin of the former United States embassy in Berlin stands on east Berlin territory, while the pavement of the road outside belongs to West Berlin.

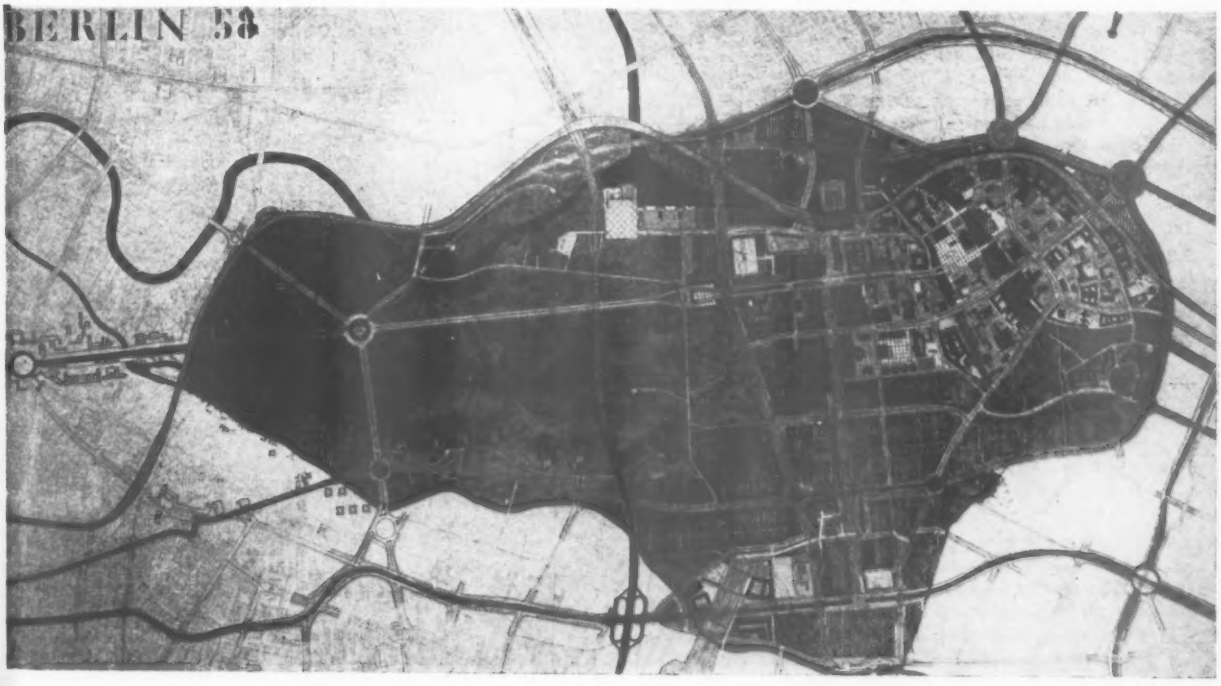
City planners, however, working for decades ahead of their time, must look beyond such present-day political divisions to the day when Berlin is reunited. The West German Bundestag, therefore, decided in October 1955 to hold an international competition on the best ideas for the future city centre of Berlin. The result was very encouraging. There were 149 entries, including 23 from Berlin, 49 from both East and West Germany, 17 from France, 11 from Britain, 10 from Austria, nine from Switzerland, seven each from Italy and the Netherlands, three each from Spain and Sweden, two each from Norway and Yugoslavia and one each from Brazil, Denmark, Turkey, South Africa and the United States.

The jury, which included Alvar Aalto, Pierre Vago of France, and Professor C. Van Eesteren of Holland, chose 19 of these entries as possible prizewinners; of these again, after eight days deliberation, one was given the first prize, two a second prize, three a third prize, while four others were purchased by the city of Berlin. Of the 10 winning entries there was one each from Britain, France, Austria and Italy.

The idea of the competition was to plan for a city centre leaving the main historical structures as they were, while creating a centre each for the political, cultural and economic functions of the old and future German capital. The jury considered the structural renovation of Berlin, the building suggestions, the uses made of the ground area available (about 2,471 acres), the artistic ideas, the character of the city as the capital of Germany, and the silhouette of the future city. This ruled out from the beginning some of the entries. The most fantastic was one by two Italian professors who planned to leave the "landscape with only the historical buildings," and put in the south-eastern corner of the city a babylonian tower more than 2,300 ft. in height to house everything else.

The prize-winners saw the solution of their task rather more from the practical viewpoint. Their main difficulties were the traffic problem which most entries attempted to solve by an inner-ring of fast speedways for moving traffic and large parking areas for stationary vehicles. Nearly all of them

Left to right: F. Sprengelin, F. Eggelin and G. Pempelfort, the first prize-winners. Below, their design, the basic elements of which are described in the text.

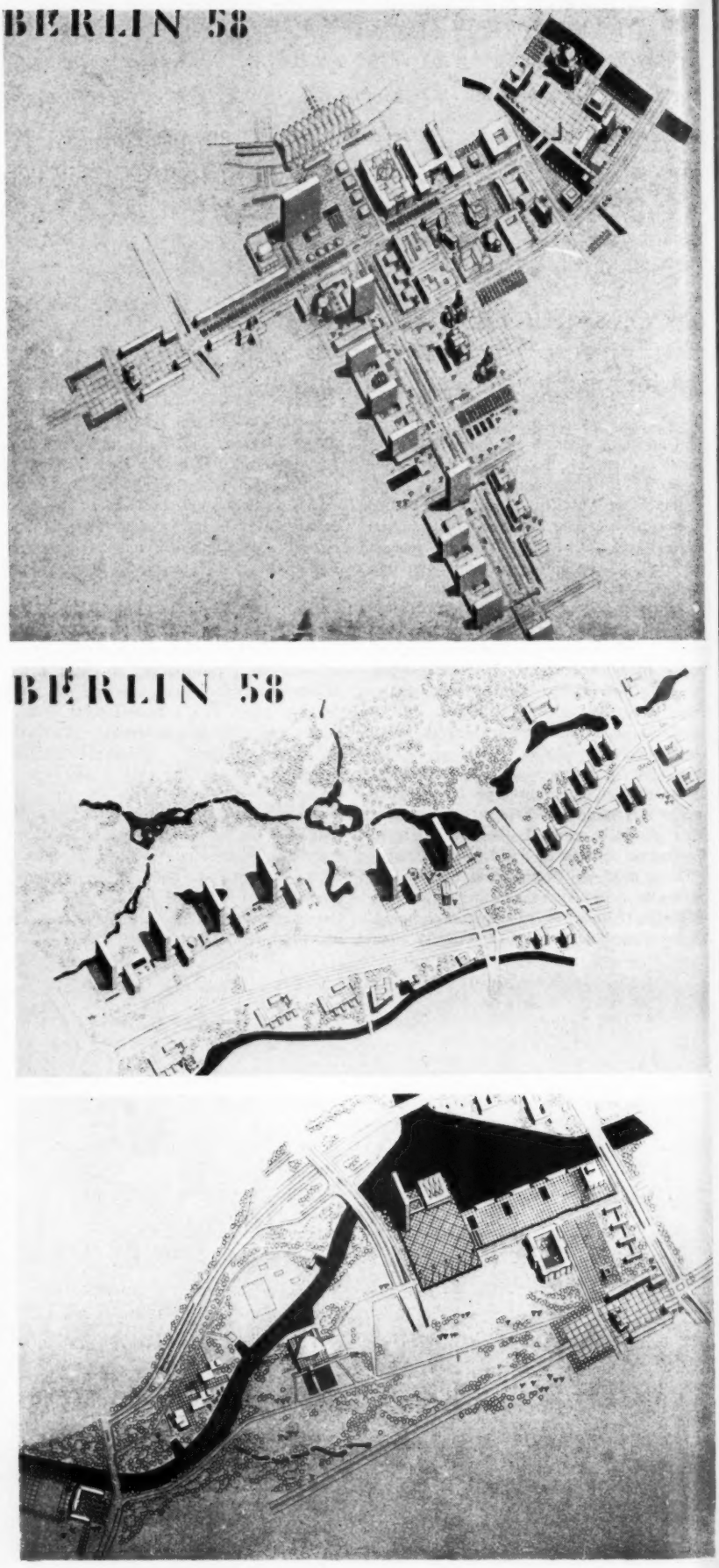


also proposed traffic-free pedestrian shopping centres.

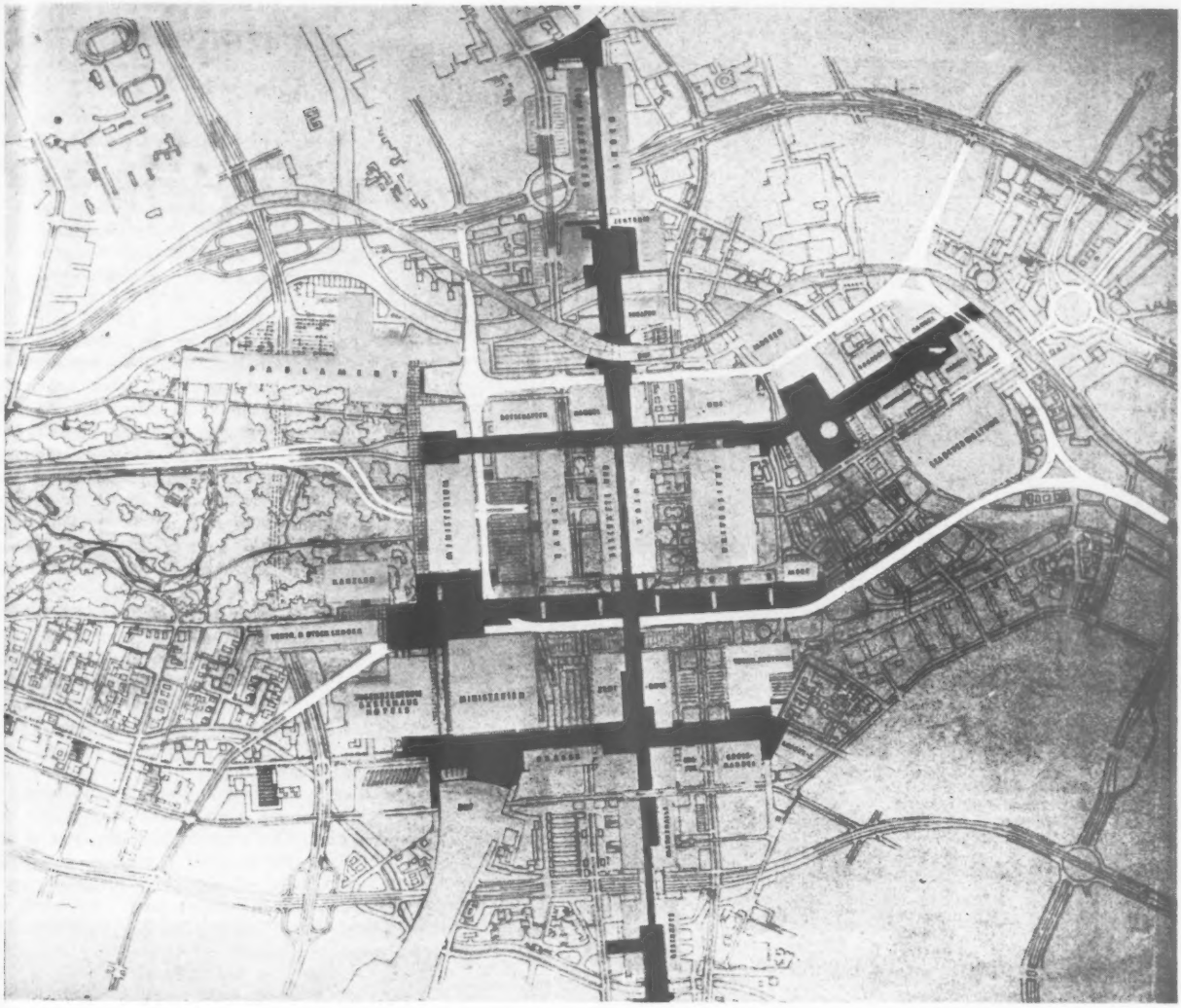
The first prize of 30,000 marks (about £2,500) went to a team of three West German architects from Hamburg and Hanover, Friedrich Sprengelin, Fritz Eggelin and Gerd Pempelfort. Their entry visualized a government centre in the present Tiergarten park, just south of the Spree river bend between the newly constructed Congress Hall and the old Reichstag building. A tunnel motorway is to go north-south under the Tiergarten park, while the city's economic centre is to lie south of the Unter den Linden Avenue, the cultural centre north of this broad street and on the island on the Spree which formed the nucleus of the city when it was founded 700 years ago. The main traffic is to be taken from the Unter den Linden southwards to a new parallel thoroughfare. The Tiergarten park is to be expanded eastward past the Brandenburg Gate to include the area of the old Reichs Chancellery. The diplomatic quarters are again to be south of the Tiergarten where they were before the second world war. The jury praised especially this entry's rhythm between greenland and building areas and the care taken by the planners to give pedestrians a shopping area around Unter den Linden and Friedrichstrasse by confining through traffic to an inner traffic circle. The entry was also praised for its relative ease of realization. Herr Eggelin told your correspondent that he regarded the task of this competition as his chance in a lifetime. "Can there be a more interesting problem then than that of planning the future of your country's capital?" he asked. The devastated areas in the former city centre made a generous solution possible, he said.

The first of the two second prizes of 20,000 marks each (about £1,600) was awarded to Egon Hartmann, of Mainz and W. Nickerl, of Gelsenkirchen, both West Germany. They interwove the three main components asked for, the government, cultural and economic centres. Three parallel east-west connections give their stamp to this entry, of which the centre one, the Unter den Linden, is again to be reserved for shopping, the main traffic is to go underground and on to an inner-circle on the circumference of the city proper, the parliament again is to go into the Tiergarten park, and the bend in the Spree is to be enlarged to become a lake.

The other second prize went to Berlin professors H. Scharoun and Wils Ebert. Here again the main idea was to let as many of the existing possibilities remain as they are, while getting the traffic out of the city. This entry places emphasis on the shopping area in Leipziger Strasse, which runs parallel to and south of Unter den Linden. Parliament is to be in the Spree



Details of the winning design: top, treatment of the junction of the Unter den Linden and the Friedrichstrasse, centre, the diplomatic quarter south of the Tiergarten, and bottom the government centre on the Spree.



The equal-second prize-winning design by Hartmann and Nickel.

river bend between the Congress Hall and Reichstag building, and a motorway runs underground from north to south under the Tiergarten. A cultural and religious centre is to be on the island.

The three third prizes of 10,000 marks each (about £833) went to two Berlin and one London group of architects. R. G. Rümmler, G. F. Kern and H. J. Schröter planned the city centre mainly on its present lines and won praise from the jury for their modesty, which was regarded as an advantage. There are no constructural experiments, and the plan appears to be easily realizable.

Alison and Peter Smithson and Peter Sigmond-Wonke, of London, presented the most daring idea of all the prize-winners. Their basic idea was to put traffic and shopping on to two levels above each other, the pedestrian one on a network of platforms about 10 metres high above the traffic streets. This would reduce the main centre of the city to a 10-metre or two-storey level. The circumference of the inner-city would take a semi-circle of 30-storey offices of about 100 metres height, which Mr. Smithson described as a "kind of Chinese wall." The jury praised this entry as the most notable solution of the problem of city cores, but found it "formally insufficient, and giving no solution for the capital Berlin issue and little chances of realization."

The last of the third prizes went to B. Fleischer and Hermann Kreidt, a couple of young Berlin architects who had stuck in the main to the given data of the street net and whose entry was said by the jury to be "outstanding but missing the metropolitan atmosphere."

The competition was secret, of course, and the jury judged entries solely by merit and without knowing their authors. Thus Le Corbusier was not placed in the first ten, but was among the first 19 with his entry which divided the city into groups of quadrangular blocs with a tower of 60 storeys in the middle and a group of five other 60-storey towers at the eastern edge of the city. Henri Colboc, and George Philippe of Paris, similarly wanted to stress the vertical effect by planning four tower structures each 800 ft. high, which were described by the jury as "problematic"

Now that the competition is decided, a commission of West Berlin planning experts is to consider the possibilities and prepare a plan which will go before the city government at the earliest in 1959. A series of specialized architect's competitions for individual structures and areas are expected to follow.

It is obvious that nothing can be achieved in the way of realization of the plans before the city of Berlin is one day reunified. But city authorities in West Berlin are trying to be very careful in withholding, as far as possible, building permissions in that part of the inner-city which is under West German administraton so long as the final plan has yet to be decided. They intend to reopen discussions with East Berlin city planners, which were interrupted after the Hungarian revolution in 1956. West German architects attending the International Architects Union in Moscow this coming summer, also plan to renew links with their East German colleagues there.

East Berlin, where reconstruction is proceeding far more slowly than in West Berlin, has in the past concentrated mainly on the suburbs, Stalinallee, the former Frank-

The equal-second prize-winning design by Professors Scharoun and Ebert.

furter Allee east of Alexanderplatz, was built after the war as the 'first socialist street in Berlin" with the unpaid voluntary help of tens of thousands of Berliners. But the district of the inner-city which was the basis for the West Berlin competition is still a sorry sight. Goering's old Air Ministry now houses the East German Government, and the few remaining other buildings have been taken over by other authorities. But the bulk of the old city of Berlin is still lying in ashes.

The East Berlin Communist party chief, Hans Kiefert, suggested on the day the competition was judged that something should be done to make East Berlin catch up and surpass West Berlin building policy. His idea is to hold a new competition among town-planners and architects from the countries of the socialist camp to plan the reconstruction of the old city between the former Lustgarten (now Marx-Engels Square) and the demolished Hohenzollern Palace "so that we can stand up to the verdict of the coming generations with pride."

THE 'INVERTED PROFILE' CITY

The Smithsons' Third Prize-winning Design

This is a very simple plan. The main idea is to give the motorist and the pedestrian *equal* rights to freedom of movement and freedom of access, discriminating against neither. This is an old idea, but what is new in this plan is that the concept is communicated by the buildings themselves. For example, in the main shopping zone there are two interrelated systems of movement and two interrelated aesthetics. The motorist-pedestrian shopper uses the street net at ground level, and the public-transport-pedestrian shopper uses the platform net (on top of the shops) at the 10 metre level. The aesthetic of cars being straight streets and right angular intersections, and that of pedestrians non-parallel narrowing and widening routes and angled junctions.

Escalators

The platform net crosses the street net once between every street intersection, and at this point the two systems are connected by continuous running public (free) escalators. This escalator system makes the high level platform net really practicable—for no one will use a fly-over or subway to cross a road if it involves extra effort.

Motorist shopper

The way it works for the motorist shopper is that casual parking (less than half an hour) is provided (with trees and paved areas) between the street net and the platform net, giving more or less the character of the Champs-Elysées—window shopping both on wheels and on feet. But, if the motorist shopper wants to do any *buying* (which is different from shopping) he must go to one of the underground parking garages (less than four hours) which are located on the main through-streets, the Kanonierstrasse running North-South, and the Leipzigerstrasse and Kochstrasse running East-West. All-day parking is to be found at the periphery in the Green Zones at the foot of the "Wall" of office buildings which surround the shopping area.

Pedestrian shopper

For the pedestrian shopper, a platform net starts at the main S-Bahn Station and bus station. This platform is at the level of the S-Bahn (10 metres), and grows down the main spine of the old "economic city"—the Friedrichstrasse, and once south of the historic buildings of the Unter den Linden it expands into the whole triangular zone between the old diagonal roads running out from the Mehringplatz. The platform net forms elongated enclosures along the Friedrichstrasse, with less elongated enclosures elsewhere, each enclosure being given a specific function and shape. Those nearest the outside of the shopping zone are more especially differentiated, for example, the Fashion Centre, the Entertainment Centre or the Flower Market. The Fashion Centre has an exhibition area and salons, the Entertainment Centre a large open space with water, and the Flower Market a glass-covered market and auction rooms. The platform net terminates at the old Mehringplatz with a Helicopter Station on the platform, and with the Air-line offices, etc., beneath the platform. Except in these special areas, in general under the platform are shops, restaurants, cinemas, etc., with gaps through from one enclosure to another, and although the platform is marked on the drawings as being three floors high, this is only nominal, for most big shops would have only one very high floor and a basement. The platform level is kept in full use by putting various functions up there, which are accessible only at this level or are accessible from both the ground and platform level. For example, at junctions of pedestrian routes and similar pressure points there are areas dropped down below the general level of the plat-

form to form piazzas around which are small boutiques, or restaurants, either as independant establishments or as part of the big shop under the platform. And, when the platform crosses the street net there is a shopping gallery one level down from the platform level which can be reached as one is going up or down from the escalator middle landing. Thus one gets a kind of Rialto Bridge at every street crossing. Above the level of the platform are small squarish towers about 30 metres high. These towers actually rest on the ground but become wider above platform level. They serve as the administrative offices for any shop that needs them, or they can house that sort of shop which needs no shop window. The towers have access and egress both at ground and platform level so that there is connection between the two systems at many points. All the towers are attached to the north-south routes of the platform net, their presence indicates that you are in a true shopping area and they cluster most intensely along the Friedrichstrasse.

Servicing the platform net

To service the platform level, a system of electric trolleys and trailers would run from two "Transfer Points" located on the East and West of the shopping zone. At the "Transfer Points" goods would be transferred from lorries to trailers which would then be pulled up the ramps to platform level, and the goods delivered in the normal way.

Platform net branches

At its periphery the platform runs out to join up with the Anhalter Bahnof (on the south-west), to the old city (on the north-east), and more importantly, to the north-west it sends out a major branch to the Government Buildings. Between these major connections stalks run out through the office "Wall" to the park, and the new Green Zones.

Parliament forum

The main branch which runs out to the Government Buildings is a processional approach to the great Forum created round the old Platz der Republik in the bend of the river. Here the platform widens out to hold terraced Government Buildings, and south of them encloses the old circular Platz, and finally rises in a series of tiers to form an amphitheatre. The approach to the Platz der Republik is under these tiers, and under the Government Buildings are the car-parks and the "works" and service areas. From the terraces of the Government Buildings, officials and their visitors can look down into the amphitheatre on national occasions.

Press building

At the critical junction between the processional approach platform and the Parliament Forum is the Press building with its radio antennae and television mast, symbolizing the link between government and people in an age of mass communications.

Ministries

Under the approach platform runs the road connecting the Parliament to the rest of the city. On the north bank of the Spree, either side of the Government Buildings, are the Ministries. These buildings grow northwards from two storey "Ministers' Houses" on the river bank. As their attendant departments get bigger and more anonymous so does the building that contains them. They rise finally to high buildings (maximum 45 metres) which back onto an east-west road from which all office workers' cars and service vehicles have ingress. The Ministers and high officials use the formal entries and parking spaces off a continuous "Quai" which runs along the north bank of the Spree from the Bellvue Schloss to opposite the Dom. This "Quai" has underpasses where it crosses the north-south bridge heads.

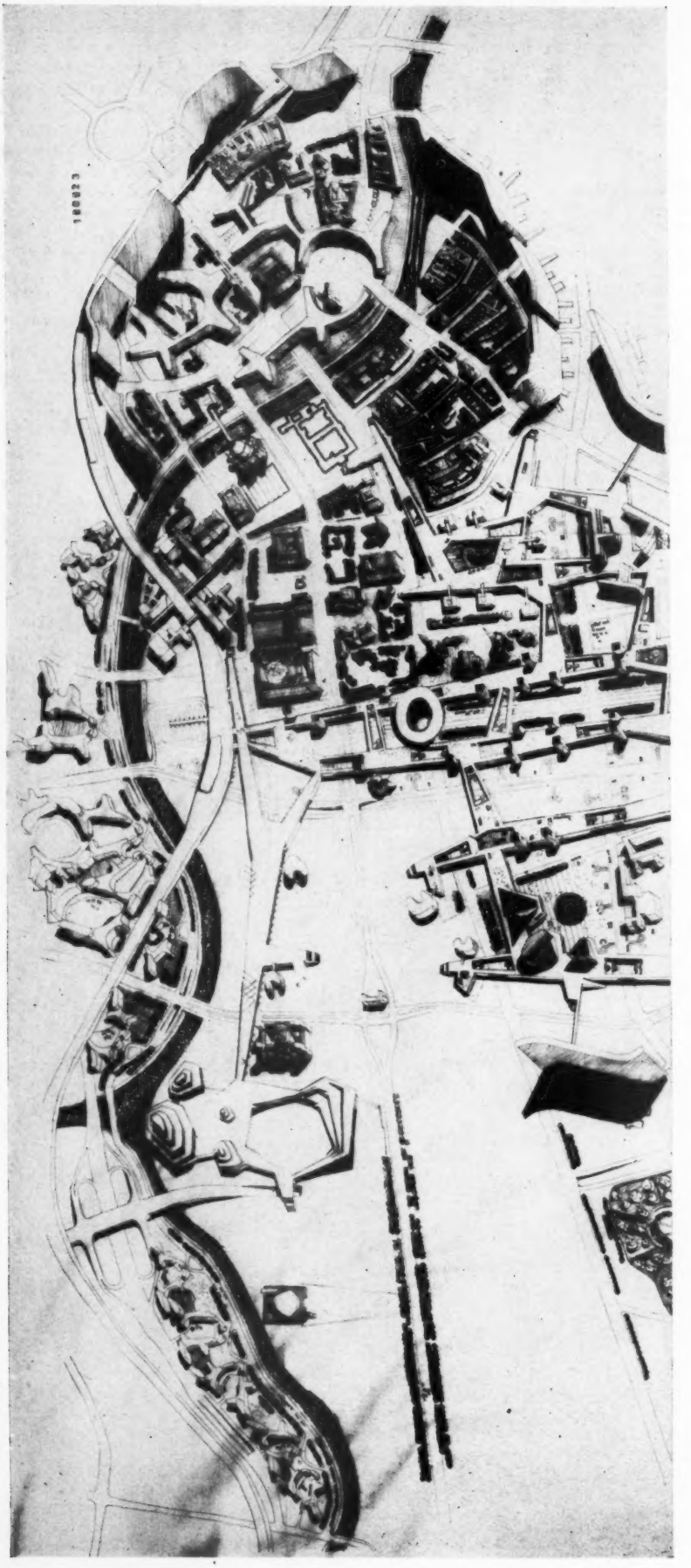
Administrative offices

These Ministries in their green zone define the north boundary of the Hauptstadt in the same way that the "Wall" of offices

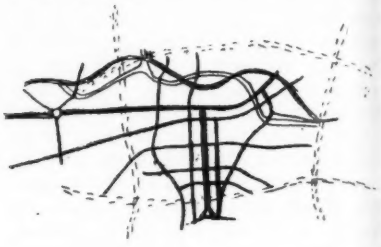
Plan of the third prize-winning design by Alison and Peter Smithson and Peter Sigmond-Wonke.

KEY

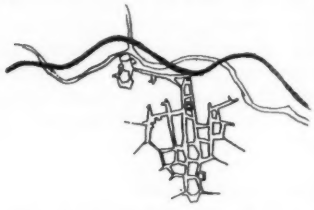
1. Ministries
2. Congress Hall
3. Parliament buildings and Forum (Platz der Republik)
4. Old Reichstag
5. Brandenburg Tor
6. Embassies, representatives of German States
7. Bus Station
8. Railway Station
9. Various existing historic buildings
10. Technological Centre
11. Cathedral (Dom)
12. City Administration
13. "Casbah"—residential, old and new, clubs and hostels
14. "Chinese Wall"—warehouses and offices
15. Hotels (in black)
16. Entertainment Centre
17. Fashion Centre
18. Flower Market
19. Friedrichstrasse
20. Helicopter Station



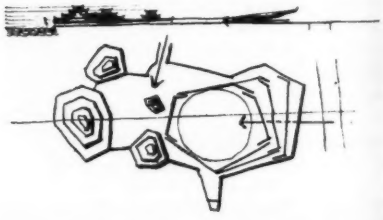
Left, aerial perspective of parts of the Smithson plan, which should be read in conjunction with the plan and key on page 55.



The ground level road pattern, with the S-bahn (railway) and river Spree at top. The dotted lines indicate the motorways which carry all through traffic, freeing the centre from all but local traffic.



The pedestrian platform, showing the system of pedestrian ways on the roofs of single-storey shops 10 metres high. Tall blocks not shown.



The Parliament Forum, in section and in plan. The right-hand arrow indicates the entry of the processional way under the tiered amphitheatre into the Forum on the old Platz Der Republik. The top arrow points at the Press Building; the other terraced buildings house Parliament, law courts and government offices.

(100 metres high) defines the shopping area. This "Wall" is in a wide green zone, that part between the "Wall" and the shopping area being purely to show off the offices and to give recreation place for the office workers, and that behind the "Wall" being used for car-parking and service areas which are concealed amongst trees and sunk below the general level.

"Old City"

The "Old City" has been unified by weaving between the existing buildings three new buildings which coalesce visually. All these buildings are civic; the Central District Court to the North, the Police Headquarters to the East, and round the old city hall the Senate Administration. Most of the old curved streets are retained, and the area between these streets and the building is used for parking and access, as in the shopping area. The new buildings are terraced and form dished spaces, the general aesthetic tying up with the Government Buildings.

"The Casbah"

The area around the Fischerbrücke, where many old houses remain, is developed as a kind of "Casbah." Everything which remains is preserved as far as possible, and between the preserved buildings are new buildings to an increased scale (about double) arranged around courtyards. The whole quarter is treated rather romantically with a mixture of Acadamies, Pensions, Tourist facilities and some private houses.

Wholesale houses

Around the unified "Old City" is a "Wall" of Wholesale Houses similar to the "Wall" of Offices around the shopping area. Between this "Wall" and the old city is a Green Zone and behind the wall a service area with loading bays and storage buildings accessed from the rear (the shadows cast by these high buildings fall mostly on roads or onto the S. Bahn).

Technological centre

At the centre of the shopping area is the navel—the Technological Centre, raised high over the crossing between the main north-south street (the Friedrichstrasse), and the main east-west street. This Technological Centre is saucer shaped and inside is a series of platforms around a central void. It is entered, up the columns which support it, by lift from street level, or by escalators from platform level. This building in this unique position is meant to symbolize a reunified Germany through technological means. The main east-west road joining West Berlin beyond the Zoo to the East Berlin beyond the Alexanderplatz has been straightened to make this intersection of north and south, and east and west more obvious, and also to make actual communication between east and west (the present commercial centre) more easy.

Foreign embassies

This re-alignment alters the south boundary of the Tiergarten, where, on the south side of the road, are located the Foreign Embassies and the Representatives of the Federal States. This quarter is arranged to be "inlooking" and is the only area of the plan which is outside the "Wall" of offices.

Chancellor's residence

On the north side of the road near the Zoo is the Chancellor's Residence. The Tiergarten "Wall" has been extended eastwards of the Brandenburg Tor along the Unter den Linden—a green wedge being driven right through to the old Schloss (the site of the old Schloss being outlined in trees). In this green wedge are the remaining historic cultural buildings. No attempt has been made to reproduce the old layout or aesthetic of the building groups on the Unter den Linden where they have been destroyed. The Brandenburg Tor is therefore in the centre of a green space defined by the two arms of the platform net. From these arms various cultural buildings are pendant.

The Dom

The old Dom has been reconstructed to preserve the Lustgarten as one of the historic "fixes" in an otherwise new city. Over the river from it is a tower within the Old City area which is used for Protestant Administration. This tower is linked to the Dom by a cloistral bridge. Opposite the Museum Island are the new linked Library and University extensions.

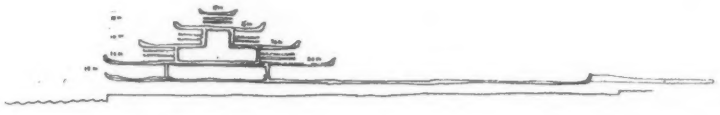
South bank of the Spree

From the Parliament to this new University area, on the south bank of the Spree, is a continuous green walk which is intended as the recreation area both for the workers in the shopping area and those from the Ministries.

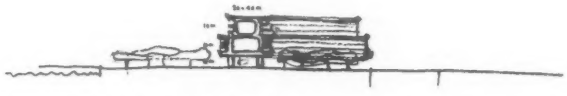
Summary

The principle characteristics of the new Hauptstadt are:

1. The Inverted Profile—that is, instead of the city centre being the apex of a building-height-and-density pyramid, the high buildings form a "Wall" at the periphery and the centre iself is low with a single symbolic "visual fix" at its centre. But unlike historic Baroque towns this point is not the generator of the geometric organization but only an incident at the meeting point of several disciplines.
2. Absolute maximum mobility—the use of related levels each with their own discipline and aesthetic.
3. The use of Green Zones—to define but not divide the parts.
4. "Growth and Change" is built into the concept—each sort of development has its rules by which addition and variation are controlled.



Section, on a larger scale, of one of the government buildings, showing the river Spree on left, the big volumes (e.g., debating chamber) in the centre of the building, offices on the outside in the light and air, and part of the pedestrian platform with car parking underneath.

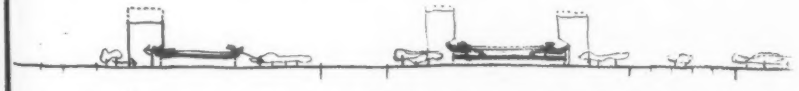


Section through the city law courts showing the same principle: courts and assembly rooms in the centre, offices outside.

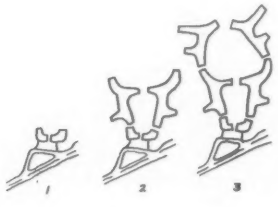
Hotel, 40 metres high, rising above pedestrian platform at 10 metres level.

The "inverted profile." Everything is low, on this scale almost non-existent, except the 100-metre "Chinese Wall" of offices and warehouses surrounding the centre, and separated from it by green wedges, the central Technological Centre (the Smithsons call it "the navel"), and the isolated blocks in the central area. The ticks projecting downwards indicate where roads run at right angles.

In this section the Technological Centre is seen raised like a boat over the main east-west intersection, symbolizing a re-united Germany and the transfer of power from politics to technology.



Detail showing, left, section through a shop and pedestrian platform, 10 metres high and, right of centre, section at point where a piazza with small shops or restaurants is formed below the platform level.



Typical plan showing the development of one of the Ministries lining the quay of the river Spree. Their growth is compared to the horns of a stag, growing freely but to a pre-ordained pattern. 1. The two-storey house for the Minister. 2. As his departments grow and become more anonymous, so do his offices, until 3, they reach a maximum height of 45 metres.

CRITICISM

The architects reply

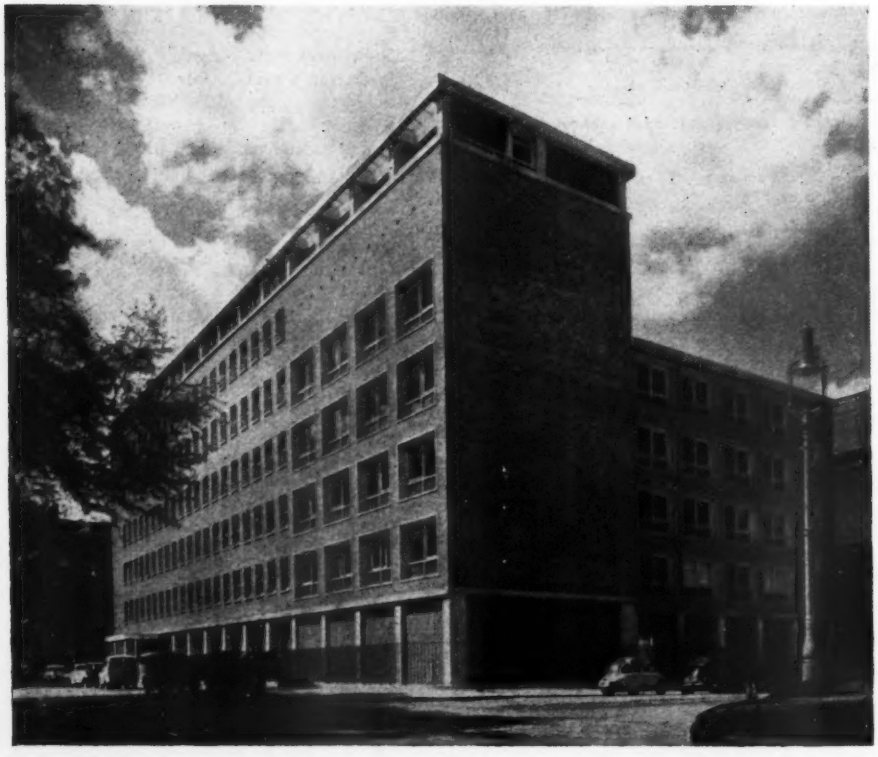
In last week's JOURNAL we published a criticism by J. M. Richards of the new building in Gordon Square for the University of London. Below is the reply by the architects, Booth, Ledeboer and Pinckheard.

In designing this building, which had to provide accomodation for three separate users each with different and sometimes conflicting requirements, it was not always possible within the tightly packed envelope to avoid the complex interlocking of one department with another. This interlocking presented no difficulties in elevational treatment where the accommodation was all of a similar scale—as is the case with the two Institutes with their relatively small rooms—but where the scales differed, as they did where the large examination rooms were juxtaposed against the small Institute rooms, we were only too well aware of the elevation problems to which Mr. Richards has drawn attention.

Whether in a building with a tightly interlocking plan such as this it is possible always for the fenestration faithfully to reflect the character of the spaces behind, we very much doubt. Mr. Richards has quite fairly pointed to the contradiction between the small oral examination rooms, on the first floor on the Gordon Square front, and their large windows borrowed from the fenestration pattern of the examination halls. But there is a good deal less justification for his strictures on the handling of the fourth floor windows immediately above. These windows light the photographic studio of the Institute of Archæology which consists mainly of a single large studio requiring a high level of natural light.

These supposed defects in elevational expression though abhorrent perhaps to the purist are of small importance in relation to the total effect. Notwithstanding the elevational problems they created we welcomed the necessity for the large examination hall windows, which gave us the opportunity of producing a more interesting elevation than we might otherwise have been able to achieve. The decision to group the examination halls at one end of the building—one early rejected alternative was to arrange them in a horizontal layer throughout the lower part of the main block—led to a strongly, and we think appropriately, asymmetrical treatment on the main front. Gordon Square has a central garden which is so densely planted that one can scarcely see the buildings on the far side. Any building which occupied the site on the north side ought, we felt, to be designed for the oblique view. This consideration, together with the fact that the building would necessarily be approached from its ends and the absence of any pronounced central axis in the square, pointed conclusively to an asymmetrical treatment.

Mr. Richards has remarked on the " not very Bloomsburyish " relationship of wall to window in the part of the elevation where the small Institute windows occur. This is a matter of opinion. It seemed important to us to create in this building a quality akin to



The Gordon Square front of the new university building. The wing containing the examination halls is on the right.

the surviving character of Bloomsbury. This quality we sought to achieve in several ways, among which were the choice of the solid wall-and-window treatment, the use of yellowish brick sympathetic in colour to the prevailing blackened stocks and the avoidance (taking a leaf from Cubitt's book) of the solid built-up corner by setting back the Taviton Street wing, thus echoing the traditional screen wall used to link the end of terraces at street junctions.

The area of unwindowed wall on the fifth floor immediately above the large windows on the main front is a necessary part of the elevational pattern; it screens the stack room of the Institute of Classical Studies Library. Mr. Richards's question about the presence of windows on the rear side only of this room might carry the implication that windows were omitted on the front solely for the sake of the elevation. Windows were as far as possible omitted (ventilation being provided by mechanical means) in order to provide the maximum area of unbroken wall space for book shelves. The small windows on the rear wall were provided solely to serve the needs of the few readers who, when referring to many books at once, find it more convenient to work close by the shelves rather than carry their books into the adjacent reading room. Had it not been for this specific requirement we should certainly have favoured a completely windowless stack room, with consequent slightly greater shelf space and sharper differentiation between stack room and reading room.

In designing the interconnected entrance hall and exhibition gallery it was our aim to provide a focus of interest—both inside and outside the building—at street level. To this end the south wall of the exhibition gallery was fully glazed so that the interior was visually penetrable from the square, while at the same time the view of the tree-filled garden seen from within the building became an element in the interior design. Each pier in the exhibition gallery is provided with two pairs of brackets to support two removable hinged display screens which, when in position and connected at their inner ends, form a rigid inward-pointing projection fin at right angles to the elevation. These fins offer no obstruction to the opening up of the exhibition gallery to the square and their position at right angles to the window plane ensures ample daylighting for the displayed material. In order, however, to provide the greatest possible flexibility for display purposes, the screens were designed so that they could be rotated to an alternative position where, unfortunately, the intended visual opening up of the gallery is completely obstructed. It is perhaps a pity in view of the rather dead air which results both inside and out when the screens are used in this way that this additional facility was provided.

The sixth floor, which commands attractive views over the tree-planted square, is shared by both Institutes and at an early stage in the development of the scheme we put forward a proposal for locating the two institute common rooms with their attendant catering facilities on this floor. Unfortunately we had not at this stage given due weight to the rather special needs of the Technical Department of the Institute of Archæology. In this Department, which is concerned with the cleaning and restoration of archæological specimens, a high daylight factor is of paramount importance. The Department also possesses a number of potentially noisy machines, its drainage arrangements are complicated by the need to deal with a fairly large amount of solid matter in the effluent and its work involving the use of plaster is liable to be messy. All these factors excepting the crucial daylight requirement suggested a basement location. So notwithstanding the aggravated problems of noise insulation, drainage, etc., this group of laboratories was transferred to the top, the only place in the building where it is possible to provide daylight on both sides.

In the examination halls we set out to produce a neutral background and deliberately avoided the use of stimulating colour. The finished effect perhaps carries neutrality too far and we are inclined to agree that we might have been less non-committal in the interior decoration of these rooms.

The large windows in the examination halls were carried down almost to floor level to create the atmosphere of lightness and openness particularly necessary with the relatively low ceiling heights in these rooms (dictated by the ceiling height of the smaller rooms in the Institutes' portion of the building). At the same time it was necessary to provide a sense of privacy and also to cut off from the candidates seated near the windows the supposedly distracting view of the street below. The use of translucent panels for this purpose in the lower part of the windows does not significantly reduce their efficiency as it is the top part of the window that admits most of the useful daylight. The translucent panels incidentally also enable us to introduce a necessary colour accent in elevations.

We are inclined to agree that the slate-faced in-filling panels might have been treated with more refinement. It would have been an improvement if a recessed member, perhaps of worked slate, had been interposed between the ashlar and the riven slate, incidentally obviating the slightly irregular line that now results from the direct juxtaposition of these two materials. Opinions may differ about the handling of the main cornice but we would not wish to reduce its weight or emphasis.

We do not share Mr. Richards's concern about the concealment of the centre column on the east end elevation, nor do we think we can be reasonably charged with "suggesting a greater span than in fact exists," or that the treatment at the ground storey throws the end elevation out of scale. This criticism would be valid if the hidden stanchion in question was the end one of a centre row of internal stanchions, but it is not. The east end of the main block—the part that contains the examination halls and the lecture room—contains no centre stanchions; the floors span 30 feet between external walls and it is this span which is clearly expressed on the end elevation. The fact that an additional centre stanchion—one might say an untypical stanchion—was introduced into the framing of the end wall to halve the spans of the wall beams is not something which has a better claim for elevational expression than the plan which lies behind.

PLASTIC WALL FINISH FOR ILFORD OFFICES

Offices are planned as large open areas in Ilford Ltd.'s new multi-storey office block at Ilford, Essex, designed by the company's architect, E. H. Willison (assistant architect-in-charge, C. L. Little). The advantages of these open spaces are economy on internal partitioning and doors, flexibility of use and ease of supervision; the main drawback, noise. To combat this, the architect has finished the ceilings with acoustic panels throughout, and the floors are closely carpeted with a sponge-rubber underlay, except for the central "corridor" between the desks, which is finished with a new type of French rubber flooring with sponge-rubber backing. This is expected to stand up better than carpet to the amount of foot traffic, tea trolleys, etc., which will be using this passageway. Internal telephones (by Siemens) have been equipped with a subdued-ringing bell and flashing light, of a type not supplied by the GPO. Finishes have been chosen to reduce maintenance costs to a minimum, and all internal walls are finished in plastic fabric—of a different colour on each floor, for easy recognition—which was about a third more expensive than plaster and paint or distemper, but is expected to last about 20 years without any maintenance other than cleaning. Another reason for this choice was that it enables thermal movement of the building to take place without producing the cracks which appear in ordinary plaster finishes. The quantity surveyor was H. E. Bodz (staff quantity surveyor, Ilford, Ltd.) and the general contractors were A. E. Symes, Ltd.

COVERED TENNIS COURTS AT WIMBLEDON

The clients for this structure required the covering in of two existing courts so that play—mainly practice play—could take place in all weathers and at all times. The shell roof took 7½ months to build, spans 175 ft. in both directions and has a rise of some 24 ft. Foundations, which were in bad ground consist of six 65-ft. piles under each corner column and the end frames were pre-stressed with the Gifford Udall system. The 3-in. shell was laid on expanded metal resting on curved scaffold tube formwork and is pierced with 200 21-in. dia. glass domes in pre-cast surrounds (above) and in the centre a 14-ft. dia. dome of glass-fibre laminate, with ventilating upstand. Artificial lighting is provided by "strings" of 125 w. 8-ft. fluorescent tubes which follow the lines of the principal stress trajectories of the shell and give 40 lumens per sq. ft. (below). The expanded metal soffit is sprayed with Pyroc which absorbs some sound but leaves a noticeable reverberation. Movement in the shell due to shrinkage, plastic yield or differential settlement prohibits rigid fixing to the foundations. Hence one of the columns rests on a fixed spherical bearing and the other three on spherical bearings free to move in direction and position until movements had taken place—when they were concreted in to fix their positions. The area covered by the shell is 15,200 sq. ft. and the cost was approximately £40,000, giving a unit cost of about 53s. per sq. ft. of floor area. The consulting engineers were C. J. Pell and Partners and the general contractors W. H. Gaze and Sons Ltd. in conjunction with Formcrete Ltd. For sub-contractors see page 71.

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H105

technical section

THE INDUSTRY

From the industry this week Brian Grant describes an electrical service unit, heating ceiling panels, plastic garage doors, plastic panelling, acoustic tiles, shopfitting equipment, mirrors, sliding windows, an electric cooker, sliding door gear and roofing.

Electrical service units

The illustration on the right shows the Dual-Door house service unit which is built into the external wall and which allows meter readings to be taken while the householder is out. While the meter faces outwards, the fuses and main switch face inwards, so that they are easily accessible. The outside door is properly sealed against the weather and has a lock with a key held by the meter reader. The unit is, unfortunately, not suitable for installations where a pre-payment meter is required, as the householder either has to go outside in order to insert the necessary coins, or the meter reader has to come inside the house to make his reading. What is now needed is a meter which can be emptied from either the front or the back. (*Switchboards, Ltd., City Works, New Kent Road, St. Albans, Herts.*)

Radiant heat from acoustic panels

Petradene Ltd. are now marketing an entirely new ceiling known as Heatacoust, which provides both sound absorption and electric radiant heating. The ceiling panels are suspended from channel and tee-sections and are based on the existing Supacoust acoustic tile, but contain a specially designed embedded electric heating element. The individual tiles have a 1-in. thick quilt of fibreglass on the back and can be made in a number of different sizes with varying electrical outputs. The heating panels are of exactly the same appearance as the normal acoustic tiles and, in an average room, with normal heat losses, only about one-third of the ceiling area would need the heated tile. Uniform heat distribution can thus be quite easily achieved, even with partitioning in large open office areas, and in the event of further subdivision it is not difficult to exchange a heating tile with a normal acoustic tile to provide the necessary redistribution of heat sources. The manufacturers claim that from 15 to 20 per cent of the capital cost of a hot water central heating system can be saved and that at the same time an acoustic ceiling is provided. (*Petradene Ltd., 7-8, Hobart Place, London, S.W.1.*)

Garage door in plastics

A 7-ft. square glass reinforced plastic door of the up and over type, is now in production. Although it is primarily intended for garages, it could also be used for certain types of industrial building and it is claimed that painting should not be necessary as a variety of colours can be incorporated during manufacture. The weight of the door is from 50 to 60 lb., which is not much more than one third of the weight of a comparable wooden door and for this reason quite light lifting gear can be used, with only small counterweights. The price is £33 complete with opening gear. (*Coburn Engineers, Coburn Works, Peasmarsh, Guildford, Surrey.*)

Plastic panelling

A further forty-seven colours and patterns have recently been added to the range of Decorplast laminated sheet. Decorplast has a phenol-formaldehyde base with a tough melamine surface which is resistant to oils, dilute acids and heat up to 310 deg. F. It is produced in sheets 4 ft. wide and in lengths of 8 and 9 ft. with a thickness of $\frac{1}{16}$ in. and has a sanded reverse ready for bonding. It can be supplied $\frac{1}{4}$ in. thick or more, with patterns on both surfaces if required. (*Holoplast Ltd., 116, Victoria Street, London, S.W.1.*)

Decorated acoustic tiles

Burgess acoustic tiles for ceiling or wall installation can now be stencilled from a design from one of a range held by the company or as an alternative special designs can be cut to architects' drawings. It is possible to produce murals in entrance halls and large rooms from large stencils which may cover a series of adjoining tiles. (*Burgess Products Co., Ltd., Acoustical Division, Brookfield Road, Hinckley, Leicestershire.*)

The Dual-Door house service unit.

Shopfitting Equipment

Vizusell suspension systems for shopfitting equipment are illustrated in a new loose leaf catalogue which is clearly arranged and provides fully dimensioned drawings and constructional details to show how the equipment is used. Basically the system consists of channels into which brackets and other attachments can be quickly screwed, to provide shelving storage racks, bins and counter fittings of all kinds, whether on walls or on island sites. The list not

The plastic garage door by Coburn Engineers.

technical section

only describes each fitting but also gives directions for installation, so that it also becomes an assembly manual. *(Versatile Fittings (WHS) Ltd., 55, Fetter Lane, London, E.C.4.)*

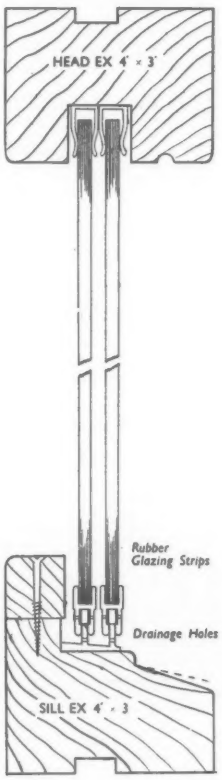
Double glazed windows

Tomo double glazed windows have been available for a considerable time purpose made to meet architect's requirements, and there is now a standard double glazed model to BS 644. This is a horizontal pivot hung model 5-ft. 11¼-in. wide and 4-ft. 0¼-in. high, made from high quality softwood. Price, excluding glass, is £25, and it is supplied ready for painting. *(Tomo Trading Co. Ltd., Cowley Peachey, Uxbridge, Mx.)*

Sliding windows

Leyland sliding windows consist of a wood frame with a double phosphor bronze channel in the underside of the head and a fixed brass track bedded in mastic and screwed to the sill. The glass panels are polished ⅛ in. or ⅜ in. plate, bedded with rubber into a brass runner at the foot, this runner containing a series of steel ball bearings which run on the fixed brass track. When the window is closed the panels overlap about three inches at the centre and a draught excluder of plastic with a lip is fitted to the inside vertical edge while there are rubber fillets in each window jamb. The windows can be locked shut by a bolt which is put through the bottom end of each jamb and there is also a side catch to provide an additional hold for windows more than 3 ft. 6 in. high. A night ventilation bolt can be supplied as an extra if required; this is fitted to the sill and allows the right-hand panel to be opened slightly and locked in two different positions. The maximum window height with ¼-in. panels is 6 ft. 6 in. overall, and above this size and up to 7 ft., ⅜ in. thick plate glass should be used. The widths of the complete windows is 10 ft. wide by just over 7 ft. high, but windows of non-standard dimensions can be supplied. *(Leyland & Sons Ltd., Talbot Road, Stretford, Manchester.)*

Vertical section through Leyland sliding window.



New electric cooker

The photograph on the right shows the new Creda Mercury electric cooker which, although it conforms to the British Standard dimensions of 21 in. square, has a hob height of 33 in. against the 36 in. of the standard. The manufacturers claim that this is a more practical working height so far as cookers are concerned, but they have available a 3-in. plinth which is available at no extra cost for users who prefer to have a cooker which lines up with their existing kitchen units. The cooker has three boiling rings, all controlled by simmerstat type switches incorporating automatic boosters which allow the current to remain full on until the rings have heated up to the required temperature. There is a separately heated warming drawer underneath the large oven and the large grill, big enough to make four large pieces of toast at once, is situated at the top of the oven, while there is storage space for the grill pan at the top of the warming drawer. One or two people have suggested that the grill should always be separate from the oven, but I was assured by various experts who certainly know more about cooking than I do that to have it on top should not be a disadvantage. I suspect however that this layout must have been partly dictated by the 3-in. reduction in height, for a separate grill would have meant abandoning the warming drawer or probably making the oven rather too low. On the credit side, the cooker is remarkably cheap, only 34 guineas. and of excellent appearance: the hot plates are sealed to the hob with stainless steel rims so that any spilt food is prevented from running into the interior of the cooker and cleaning seems to be remarkably easy. The standard finish of these cookers is white or cream vitreous enamel. There is also a luxury model selling at 39 guineas which includes an automatic oven timer (which also controls the warming drawer) and an inner glass door for the oven, with an automatic oven light. The cooker will be on sale in September. *(The Simplex Electric Co., Ltd., 26-28, Binney Street, London, W.1.)*

The Creda Mercury electric cooker.

Sliding door gear

Hendersons have recently introduced a new version of their Loretto sliding door gear for wardrobes and cupboards and it is interesting to note that the prices have been quite considerably lowered. Top channel and bottom rail are in aluminium alloy or alternatively the bottom rail may be in brass, and a variety of bolt guides is available for the tops of the doors in order that they may be removed for cleaning or redecoration of the interior. The rollers fitted to the bottom of the doors now have nylon wheels which should be a good deal quieter than the previous brass or composition wheels and they sell for 2s. 10½d. each against the previous figure of 6s. Top and bottom sheaves now cost only 1s. a foot as against 1s. 3d. and a standard set for a pair of doors in a 4 ft. wide opening costs only 34s. complete with all the necessary fixing screws. *(P. C. Henderson, Ltd., Tangent Works, Harold Hill, Romford, Essex.)*

Low cost roofing

The Pandex LPM range of 5 deg. pitch roof trusses have been designed for use with or without monitor tops. The design uses both tube and channel sections, and trusses in spans up to 60 ft. can be fabricated and delivered in a single welded unit. Sixteen span sizes are available, from 10 ft. to 60 ft. in increments of 3 ft. 4 in. and the trusses are designed to take 10 ft. long decking units. Monitor roofs with spans of 6 ft. 8 in., 10 ft. or 13 ft. 4 in. have been standardized and multi-span roofs can be constructed without the need for separate valley gutters. Standard valley beams allow valley stanchions to be spaced at 10-, 20- or 30-ft. centres. The cost of the standard trusses varies from 10s. to 20s. per foot run, without monitors, and it is claimed that complete roofs with monitors and insulated decking need not cost more than 12s. per square foot erected. *(Ludwell & Co., Ltd., Pandex Works, Queensway, Leamington Spa.)*

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technical section

1 SOCIOLOGY

windows in tall blocks: tenants' opinions

We publish below a report compiled by the LCC's sociologist on the reactions of tenants living in the upper floors of tall blocks to the windows supplied. Among the interesting points that emerge are that for easy cleaning fixed panes should not be wider than 1 ft. 10 in. if reached from one side only, 3 ft. 9 in. if reached from both sides, that the easy-clean hinge must allow a gap of at least 3½ in., and that with wood windows, pivoting windows give better control of ventilation than casements.

A total of 219 households, living from 7- to 11-storeys up, were visited on six LCC Estates. Rather more than half of these had timber windows, and the remainder metal windows, and the tenants had lived in their flats for periods ranging from one to eight years. The actual breakdown of these households, by estates, is given in table 1.

Table 1: Households visited

Timber windows	Households visited	Average time dwelling occupied
Fitzhugh	39	2½ years
Alton	36	1½–2 ,,
Loughborough	39	1–1½ ,,
Total	114	
Metal windows		
Woodberry Down	43	7–8 ,,
Ocean	31	4 ,,
Ackroydon	31	3 ,,
Total	105	

The opinions of the tenants were sought as follows:
(*a*) Could they clean all their windows satisfactorily?
(*b*) Could they adjust the windows to the right amount for the ventilation they needed?
(*c*) Were they satisfied with the way the windows worked?
(*d*) Did they have any difficulty in putting up the curtains when they first came?
(*e*) Were there any particular places where there were bad draughts (*i.e.*, when the windows were shut)?
(*f*) Did they consider the windows were safe, particularly for children?
(*g*) What was their opinion about the size of the windows in each room?*
Any suggested alternative type of window preferred was noted.
Their replies are summarized in table 2.

The cleaning problem

More than half (58 per cent.) of the households interviewed found some difficulty in cleaning one or more of their windows. 36 households (16 per cent.) found it necessary to employ a window cleaner, and a number of others would like to do so but for the difficulty of securing a cleaner who was willing to do the upper floors and the high charges involved (from 4s. 6d. to 7s. 6d. quoted).

Wood windows

(*a*) *Casement*: At Fitzhugh and Alton estates about half of the households (37 out of 75) had difficulty cleaning their windows. 35 out of the 37 criticized the long stretch to clean the casement windows in the bedrooms (a distance of 1 ft. 10 in.), and 20 out of a possible 28 criticized the one in the kitchen (a distance of 2 ft. 1 in.). The greater number found the bedroom windows hard to clean probably because there is no centre mullion and the cleaner has to hold on to the windows themselves, one of which is not bolted and feels unsafe as a handhold (see figure 1). In the kitchen, although the cleaner has the added disadvantage of having to reach through the opened horizontally pivoting window, the mullion affords a firm handhold, and because the casement is on the left it can be cleaned with the right arm (see figure 2).
At Loughborough estate the 2 ft. stretch of the casement window in the second bedroom was found difficult by 10 out of 17 (see figure 2); the reduced proportion criticizing it as compared with those at

* The original report had a question on breakages but as the answers only showed that breakage was not a problem this aspect has been omitted.

Table 2: Proportion of households making criticisms

Aspect	*Proportion of total households*	*Timber windows*			*Metal windows*		
		Fitzhugh	*Alton*	*Loughborough*	*Woodberry*	*Ocean*	*Ackroydon*
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Cleaning	58	46	53	44	77	64	61
Ventilation	47	80	75	36	28	19	42
Draughts (excl. casement door)	38	46	56	33	47	13	26
Size	26	10	25	26	54	23	13
Mechanism	26	41	44	21	26	13	3
Curtaining	25	13	6	15	28	61	32
Breakages	21	13	3	5	35	52	23
Safety	18	31	25	10	12	19	10
Total households	219	39	36	39	43	31	31

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CONTRACTORS: Oliver Staines & Son, Station Street, Swaffham.

For the prevention of rising dampness in the floors of the above hostel, the County Architect specified the inclusion of 4% of 'PUDLO' Brand waterproofer to the cement in a 1.2.4. mix. The finishing screed 1" to 1½" thick was finished with various patent floor tiles.

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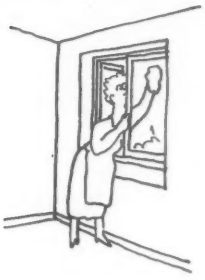


Fig. 1. No centre mullion: one casement not bolted, feels insecure.

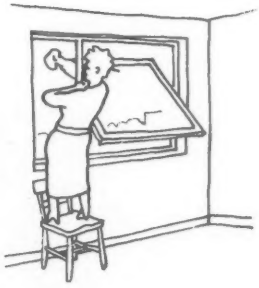


Fig. 2. Firm mullion to hold on to, left-handed fixed light easy to clean with right arm.

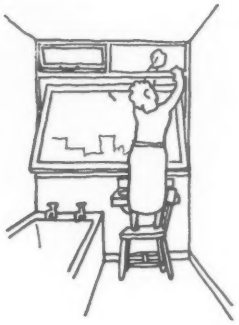


Fig. 3. Added stretch to clean fixed top light.

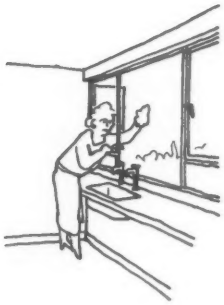


Fig. 4. Large fixed pane directly over sink.

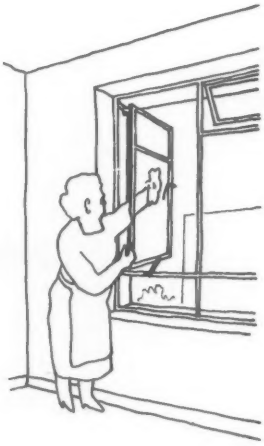


Fig. 5. Easy clean type hinges with too narrow gap.

Fitzhugh and Alton may be because it is the *only* difficult window in the maisonette, it is in the less important bedroom and there is a balcony on the floor below to give a greater feeling of safety. The added stretch to clean the top light above the pivot and casement windows was criticized by 9 out of the 17, but was particularly difficult in the bathroom where the cleaner has to reach over the basin or stand on the bath (see figure 3).

The stretch needed, at that height, to clean the casement windows satisfactorily meant that those households where the husband did the cleaning made less criticisms than those where the wife did it. At Fitzhugh and Alton estates 47 husbands did the cleaning compared with 18 wives, and whereas only a third (32 per cent.) of the men appeared to find difficulties, two-thirds (67 per cent.) of the women did so. At Loughborough, where there are only two windows without a balcony, husbands and wives did the cleaning about equally, the number of men who could manage without difficulty was twice as many as the number of women.

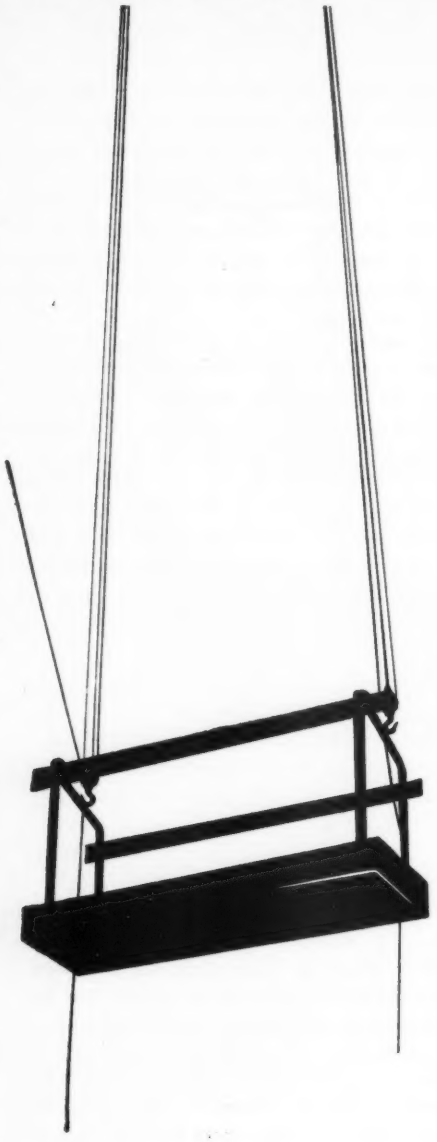
(*b*) *Horizontal pivot:* The three estates with timber windows have horizontal pivots. Only 7 people found them difficult to clean (5 at Loughborough) and 4 of these were elderly people who were frightened they might be "tipped out."

Metal windows

(*a*) *Fixed pane:* At Ackroydon 21 out of 31 households said that they could not clean their windows satisfactorily and the reason given by all of them was the size of the fixed pane, particularly in the kitchen (4 ft. wide), but made more difficult by being over the sink unit (see figure 4); in the bedrooms the size is 3 ft. 7 in.; all have opening windows either side. The bathroom window, which was 3 ft. 6 in. across and only reached from one side, was specifically criticized by 8 people; the rest of the households did not appear to attempt to clean it and they were not bothered unduly because it was of obscured glass. At Ocean estate, 20 out of 31 households criticized the windows for cleaning, half of them because of the size of the fixed pane (3 ft. 6 in. wide in the living room).

At Ackroydon and Ocean estates, out of 20 wives who did the cleaning, 18 had difficulty, but only 6 out of 23 husbands. At Ackroydon, one-third of the total households said they would have preferred a pivot window for cleaning.

(*b*) *Casement:* The three estates with metal windows have casements with easy-clean hinges. At Ackroydon (cleaning gap—3¼ in.) only 4 criticisms were made of these windows, but half of the total households who could not manage at Ocean estate mentioned the narrowness of the gap (size—3 in.) and as many as 31 out of 33 at Woodberry Down (cleaning gap—3 in.). The last-named estate had a concrete surround to the outer window which scraped the arm of the cleaner, and this considerably increased the number of criticisms of this type of window (see figure 5).



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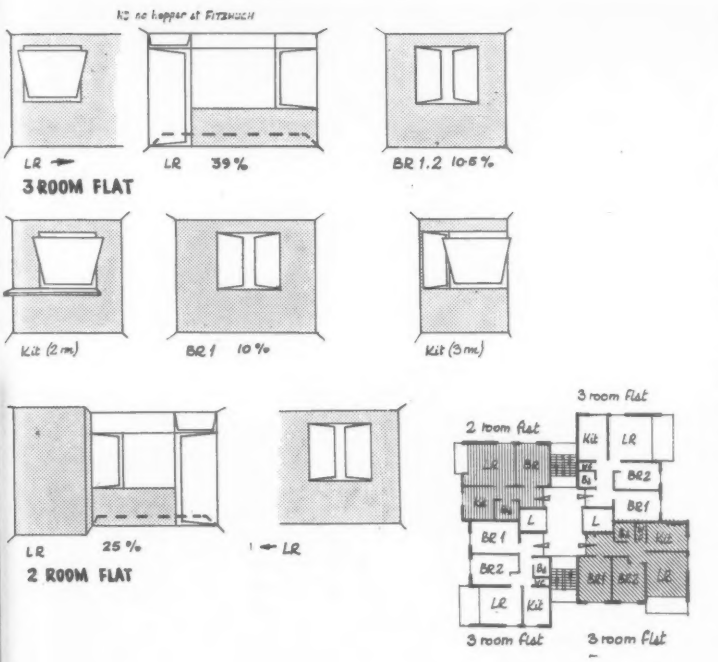
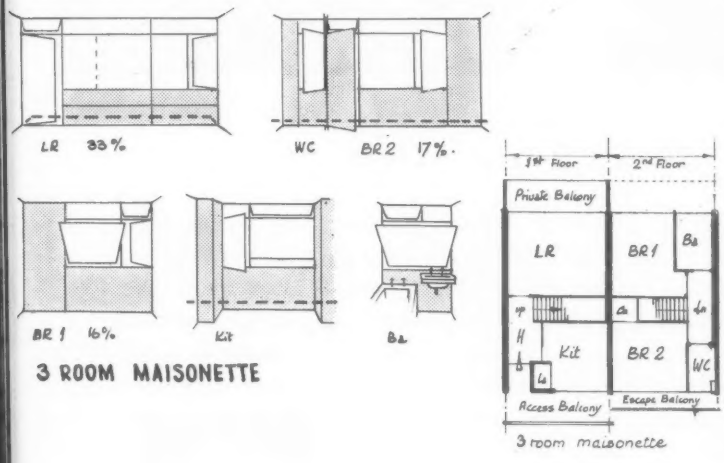


Fig. 6. Comparative plans and internal elevations, above of Alton and Fitzhugh Estates (Plan scale: $\frac{1}{16}$" = 1' 0"), *below of Loughborough Estate* (Plan scale: $\frac{1}{8}$" = 1' 0"). *All timber windows.*



The casement windows with the easy-clean hinge are safer for cleaning; and because it is the narrowness of the gap rather than the stretching out which is the main criticism, it is significant that Woodberry Down is the only estate where more wives than husbands do the cleaning (16 to 10); but as many as 14 households have a window cleaner, probably because of the higher age structure on this estate. Between a third and a quarter of the households at Woodberry Down said they would have preferred pivoting, inward opening or sash windows for easier cleaning.

Other factors

On all estates, except Loughborough, there were a few people (2 to 8 in number) who gave the height as a reason for not managing to clean their windows satisfactorily. In most cases, those that were particularly affected by height either got their husbands or the window cleaner to do the cleaning. There was no difference in the proportion of households living from 7-11 storeys up who were not able to clean their windows satisfactorily.

The standards of cleaning expected by tenants tend to modify their opinions. For example, where there is only one difficult window or it is in a less conspicuous position, *e.g.*, bathroom or side windows hidden by curtains, the number of households criticizing that window will be fewer. Awkwardness over a bath, sink or from an outside obstruction will increase criticism. Most people do not find it satisfactory to use a cloth on a handle or "squeegee," but some housewives do not mind. The age of population on the different estates and the willingness of the husbands to do the cleaning will also influence the number of households who say they can manage or not.

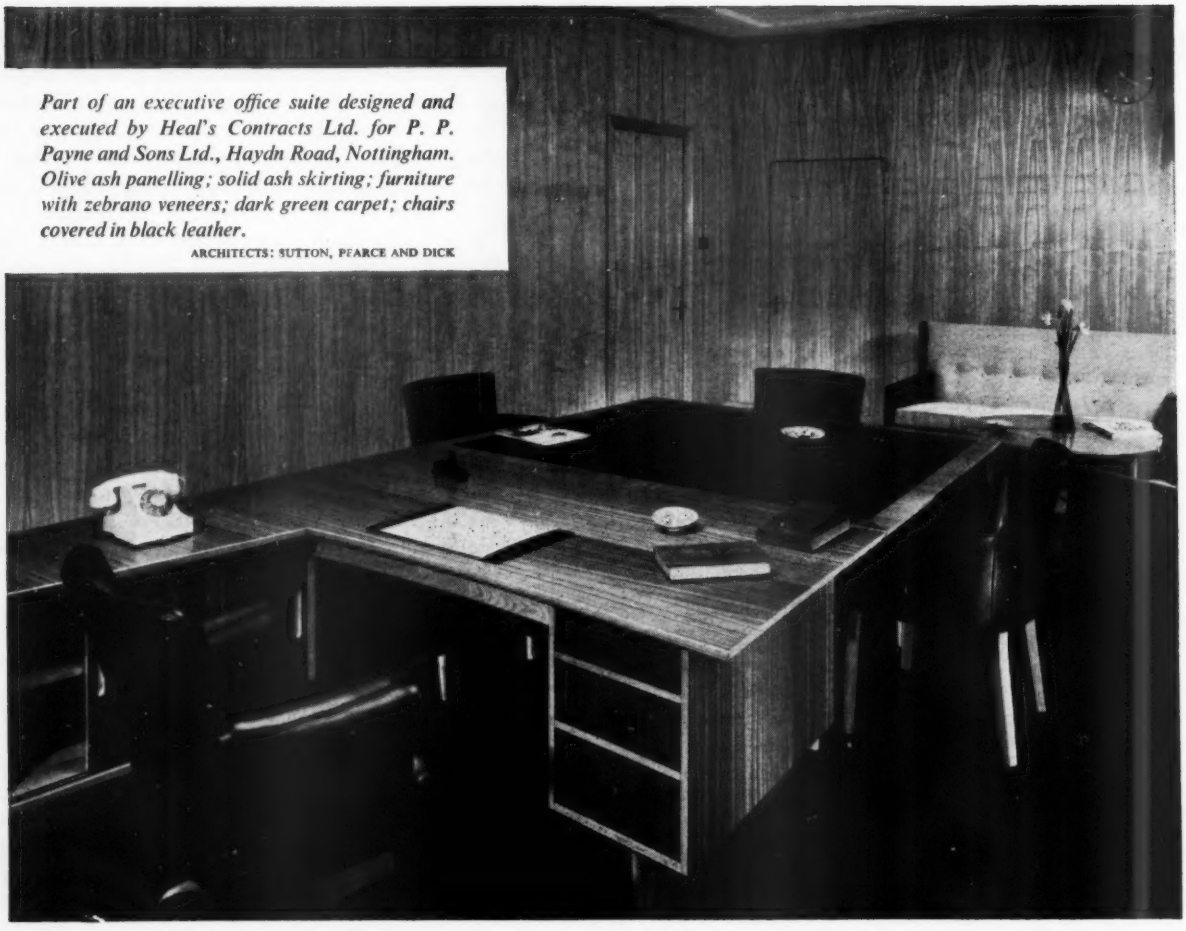
Ventilation

Wood windows: The criticisms of ventilation were twice as numerous at Fitzhugh and Alton estates, where there were no hopper windows, as at Loughborough, where hoppers were provided (77 per cent. on the former estate made complaints of ventilation and 36 per cent. on the latter (see figure 6)). At Fitzhugh and Alton lack of sufficient adjustment of the casement window in the bedroom was the main criticism. On the smallest opening there were complaints of too much air, particularly if the wind was in that direction, it could not be left open because the rain would come in, it was not safe for children, and there was the danger that the wind would blow it out.

In the living rooms there was appreciably less criticism of ventilation at Fitzhugh and Alton estates because the windows faced in two directions, so that either one or the other could be opened according to the prevailing wind. Alton had a hopper window over the casement door and only one person made criticism of the ventilation, but 6 people did so at Fitzhugh (no hoppers), 5 of whom had casement instead of pivoting windows in the side wall. In the kitchen, 15 households wanted some small adjustable window which could be open all the time and in any weather if required.

At Loughborough (11-storey slab block), 14 people criticized the ventilation, the majority found that in very windy weather there was too much air blowing into the rooms from the hopper windows, causing doors to slam, etc.

Metal windows: There were considerably fewer criticisms of ventilation from those households with metal as compared with timber windows, although at Ackroydon, where there were no hopper windows, there were more criticisms than at Ocean and Woodberry Down where hoppers were provided (see figure 7). However, the ability to put a metal casement window on a handle notch so that a very small amount of ventilation is



Part of an executive office suite designed and executed by Heal's Contracts Ltd. for P. P. Payne and Sons Ltd., Haydn Road, Nottingham. Olive ash panelling; solid ash skirting; furniture with zebrano veneers; dark green carpet; chairs covered in black leather.

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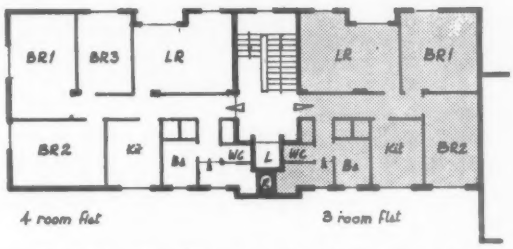
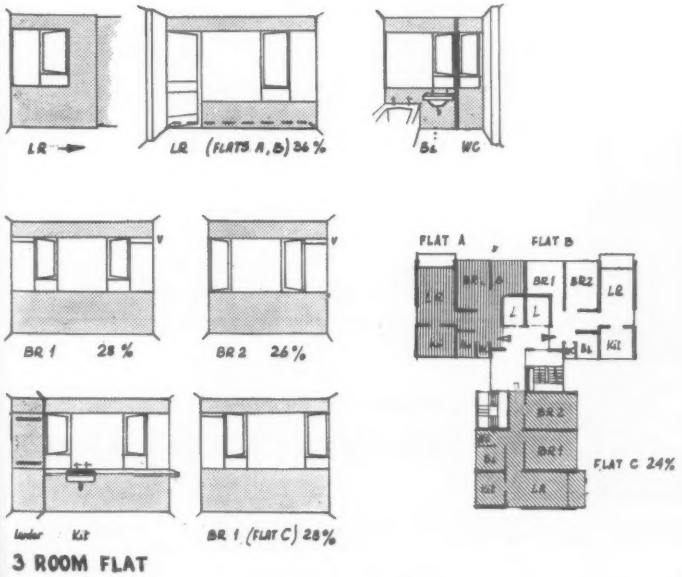
Fig. 7. Comparative plans and internal elevations of flats with metal windows: above Ocean Estate, Stepney (Plan scale: $\frac{1}{16}$" = 1' 0"), *right, Woodberry Down, Stoke Newington* (Plan scale: $\frac{1}{16}$" = 1' 0"), *below Ackroydon Estate, Wandsworth* (Plan scale: $\frac{1}{16}$" = 1' 0").





possible reduced criticism at Ackroydon compared with Fitzhugh and Alton estates.

At Ackroydon, the lack of a small window for ventilation in the kitchen was mentioned by 8 households, in the bedrooms by 6, and in the living room by 3. At Woodberry Down (8-storey slab block) 7 of the 12 complaints concerned the excess of ventilation from the hoppers when the winds were strong. At Ocean estate there was criticism that their hoppers were too small in the bedrooms for sufficient ventilation, particularly in summer.

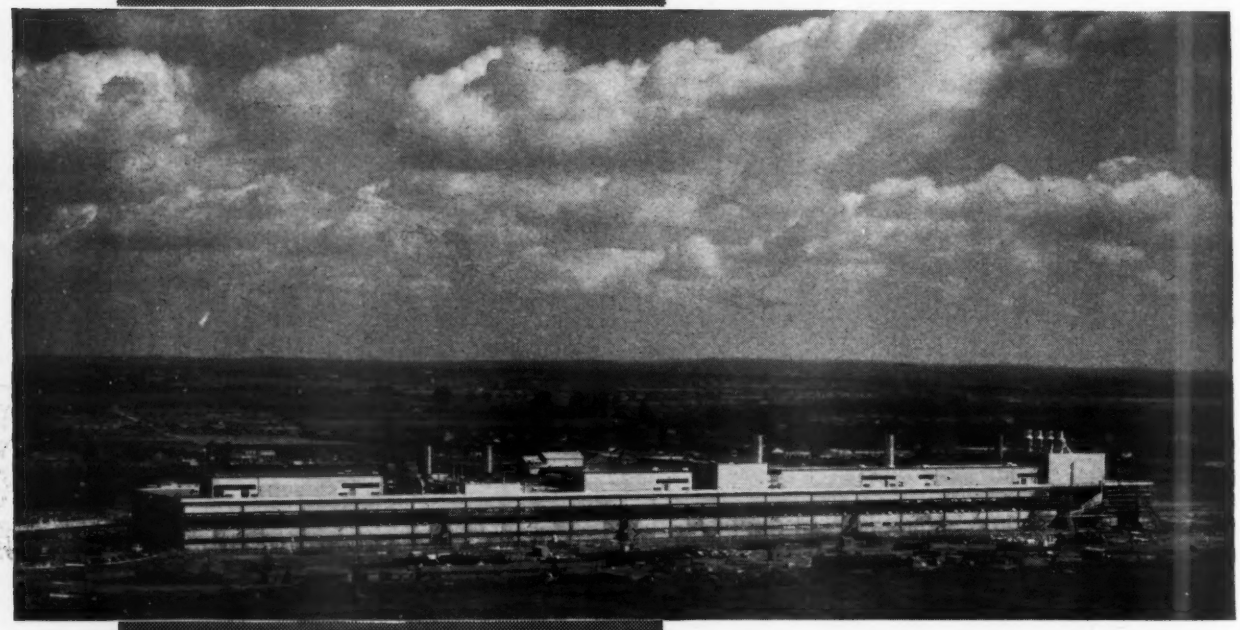
The criticisms of ventilation, on the evidence available, seemed to be unrelated to the direction in which the flats faced, nor did the height, varying from 7 to 11 floors, make any appreciable difference.

Provision of a hopper window, particularly in the bedrooms, was suggested by two-thirds of the households at Fitzhugh, Alton and Ackroydon estates.

There is also evidence to suggest that the horizontally pivoting window was regarded as superior for ventilation control as compared with the casement.

FORD

The Thames Foundry for The Ford Motor Co. Ltd., Dagenham, Essex.
Engineers: M/S H. K. Ferguson & Co. Ltd., Civil Engrg.
Contractors: M/S John Laing & Son Ltd.



choose

ROYAL FLUSH DOORS

REGD. TRADE MARK 792503

for service

The doors installed in this new Ford Foundry had to be very hard working, very reliable and still attractive. Naturally they chose 'Royal Flush' Doors.

'Royal Flush' Doors are craftsman-made and are supplied with solid or semi-solid cores in a wide variety of veneers.

Have you got your copy of "*Constructional Details*"? If not we will gladly send it on request.

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technical section

Draughts

Draughts from the windows, when shut, were criticized by more people on those estates with timber frames than on those with metal, *i.e.*, 45 per cent. on the former and 30 per cent. on the latter. As to be expected, draughts felt in the living room were more criticized than those in other rooms, and there is some evidence that, on those estates which had timber frames, the casement windows gave more draught than the pivot. The aspect of the rooms appeared to make little difference.

However, draughts from the doors were far more criticised than those from the windows on all estates, particularly the casement door. Of those with a timber framed casement door, 62 households (54 per cent.) made criticisms of draught although over half of these people said that they had no draughts from the rest of the windows. At Ackroydon (metal frame) 5 out of 31 households mentioned draughts from the casement door.

Central heating lessened the criticism of draught to some extent; for example, at Woodberry Down, where 23 households had central heating and 20 open fires, only 9 households (39 per cent.) with central heating mentioned draughts from the windows and 11 (55 per cent.) without central heating did so.

Although a greater number of households with timber windows made complaints of draughts, many of them had been able to put up some form of draught excluder (65 per cent. had done so and others said they were going to this winter), while of those with metal frames 37 per cent. had tried some method (foam rubber was often used) but many had found their efforts not very satisfactory.

Window size

The majority of households in the survey considered that the size of their windows was satisfactory and in proportion to the size of their rooms. Of those who did make comments, the majority wanted more window space, rather than less, and the bedrooms were criticised more than the living rooms. Only 5 people, out of the 219 visited, criticised the kitchen windows, 3 of whom were at Woodberry Down.

Living room: Only one person at Fitzhugh and Alton estates would like the living room window smaller, while 5 said they would have liked it larger (2 were in the two-roomed flats, size of window, 9 ft. 6 in. × 5 ft. 6 in. including glazed door). At Loughborough 10 people (half of whom were elderly) thought there was too much window (14 ft. 3 in. × 6 ft. 3 in. including glazed door). The reasons were mainly " curtaining expense "; but 3 mentioned cleaning, one said it was cold and one because " it felt too much."

At Woodberry Down 12 households (28 per cent.) would have liked their living room windows larger, 8 of whom were on the 6th floor (size 6 ft. 6 in. × 5 ft.). On Ocean estate only one person criticised the size of the window because it was too small (6 ft. 6 in. × 4 ft.) while at Ackroydon 3 considered there was too much window area in the living room (10 ft. 10 in. × 5 ft. including glazed door).

Bedrooms: The majority of people who made comments on the size of the bedroom windows were in favour of more window space and only 3 people—at Ackroydon—would have liked the size reduced. At Fitzhugh and Alton estates 12 households wanted larger bedroom windows (present size 4 ft. 6 in. × 4 ft.), at Ocean estate 5 did so, while at Woodberry Down 15 households thought the window in the main bedroom was too small (present size 3 ft. 8 in. × 5 ft.). On the newer estates there was much appreciation of the large windows as they made the rooms seem light and airy. The " picture " window was praised and at Woodberry Down several people thought that their own smaller paned windows with metal bars were must less attractive.

There was a general tendency to prefer windows in the centre of the wall rather than to one side, and several people at Woodberry Down disliked the two separate windows in their living room and preferred one large one, with emphasis on greater length than height of window. Few people made any comment on the height of the sill, and those who did, wanted it lower rather than higher. No one thought the present height of their sill was unsafe.

Mechanism

More than half of the criticisms of the mechanism of windows occurred at Fitzhugh and Alton estates where the casement window stay had given considerable trouble. The windows were not firm on the first hole and some households had had the fixing screws of the stay pulled away by the force of the wind. A few of the tenants had satisfactorily put in their own cabin hooks to keep the windows open firmly when a small aperture was required.

At Woodberry Down 11 households made criticisms, but these were almost entirely due to the weakening of the spring inside the casement stay. A few complained of rust and stiffness of the arm.

On none of the other estates was there any serious criticism. The horizontally pivoting windows were satisfactory except when they were sometimes blown to by the wind or the tenant complained that he could not regulate it for a small amount of air.

Curtaining

Almost all the criticisms of curtaining occurred on the estates with metal window frames. None had any provision for a pelmet and the tenants had had to plug the walls themselves. At Ackroydon, although runners had been provided, there was some difficulty if net or inside curtains were required, and at Woodberry Down some people, to get extra light had had trouble in putting up the curtains to hang on the wall at the side of the window.

There were no serious criticisms or difficulties in putting up the curtains at Fitzhugh and Alton estates where, in addition to the windows being of timber, a wooden board had been attached to the lintel above the windows.

As regards the design of the windows for curtaining, there were practically no complaints of the opened

technical section

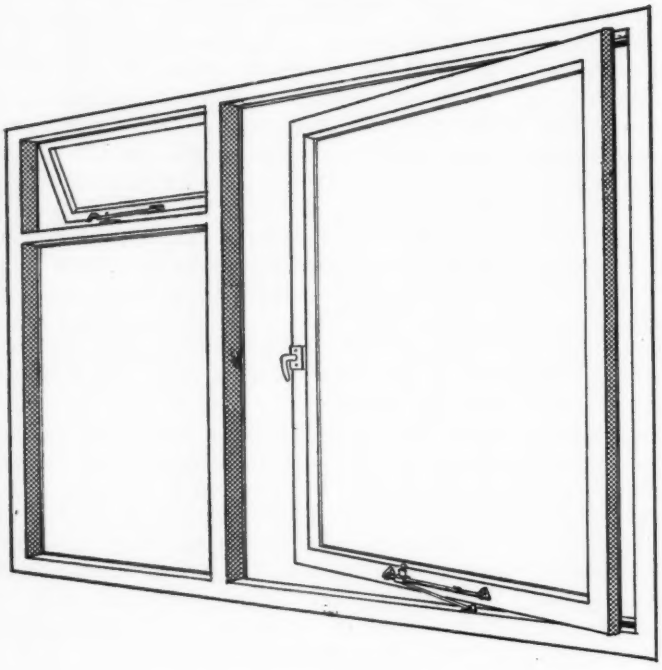


Fig. 8. The LCC's new standard timber window.

pivoting windows getting in the way of the curtains, but several people mentioned that when the casement windows were opened their curtains were pulled out by the wind with danger of tearing, etc.

Safety

Most of the parents with children 1 to 5 years of age regarded the windows, of whatever type, as a source of danger. The exception was at Loughborough, where there were balconies under all the windows and only 4 out of 13 parents thought that the windows in the children's bedroom were not safe.

However, those households in flats *without* hopper windows were more critical of lack of safety, particularly in the children's bedroom. Where the only source of ventilation was the casement window the parents said that they had to keep the windows shut at night as they feared a child might push it open and fall out. The danger is increased where there are two children in the room as then one bed is usually under the window. With metal windows there is a safety catch, but this was placed at the bottom of the windows and within reach of children.

Factors mentioned by parents which would be conducive to greater safety of windows for young children include hopper windows, fixed lights beneath casement windows, pivoting windows as the device restricting the movement of the window appears to be more foolproof, the possibility of the provision of slots by the windows in the children's bedroom to enable the parents to put up bars if they wished, and locks on the catches of casement windows so that they cannot be opened by children.

Summary

1. The problem of *cleaning* is the most frequently mentioned criticism of windows. A fixed pane of glass is found difficult by the majority when it is over 3 ft. 9 in. wide (reached from both sides), while 1 ft. 10 in. for a stretch over casement windows, particularly where there is no centre mullion or through a horizontally pivoting window is also too great. Easy-clean hinges with a gap of 3 in. are criticized, and severely criticized where the cleaner's arm rubs against the outside wall. Windows on a balcony, the horizontally pivoting type and those with an easy-clean hinge giving a 3½-in. gap cause little or no criticism.
2. *Ventilation* is primarily a problem on those estates where no hopper windows had been provided. There is less criticism with metal than timber casement windows because the former can be held on a ventilation notch on the handle. Lack of control of ventilation is felt primarily in the bedrooms and secondly in the kitchen, and, in the slab blocks only, in the living room. With timber frames, the evidence shows that the pivoting windows are more satisfactory for ventilation than the casement.
3. *Draughts,* when all the windows are closed, are more frequent from timber than metal windows, although more tenants with the former have been able to fix weather stripping. Far more draughts are felt from casement doors and doors generally than from the windows.
4. The *size* of windows, where large, was on the whole considered favourably because of the good light, and only at Loughborough estate were there several criticisms, primarily because of the cost of curtaining. Requests for larger windows were mainly for bedrooms.
5. Criticisms of the *mechanism,* for the most part, concerned the stay of the casement windows, its insecurity on the first opening position and its apparent fragility in high winds.
6. *Curtaining* difficulties arose almost entirely on estates with metal windows, and included the lack of facilities for putting up a pelmet and the inferior arrangements for net or inside curtains when required.
7. Adequate *safety* for children was a problem amongst the majority of families with children of 1-5 years, except at Loughborough, where there were balconies under all the windows.

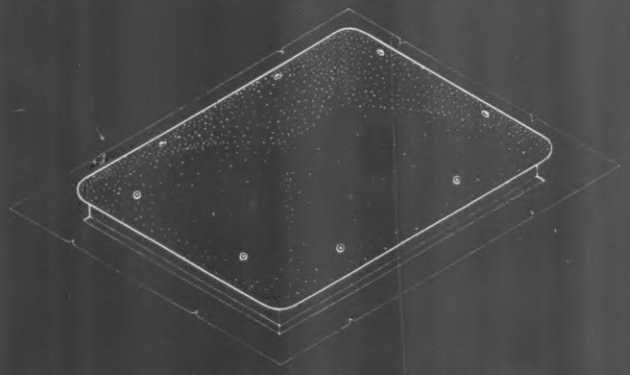
Illustrated in Fig. 8 is the new standard timber window which was introduced in 1956 to meet the type of criticism contained in this report. It incorporates the following features:

1. Hopper ventilating lights to all rooms.
2. Vertically pivoting light with double weather check.
3. Double arm captive peg stay with spring-loaded retaining device.
4. Where casements are used in addition to the above the clearance provided by the easy-clean hinge is 4 in.
5. The pivoting light opens through 120 deg. to allow outside of glass to be cleaned from indoors without difficulty.

Since the publication of the report the maximum width of the fixed light has been fixed at 1 ft. 10 in.

ROOF GLAZING | DOMES | RESIN-BONDED GLASS FIBRES

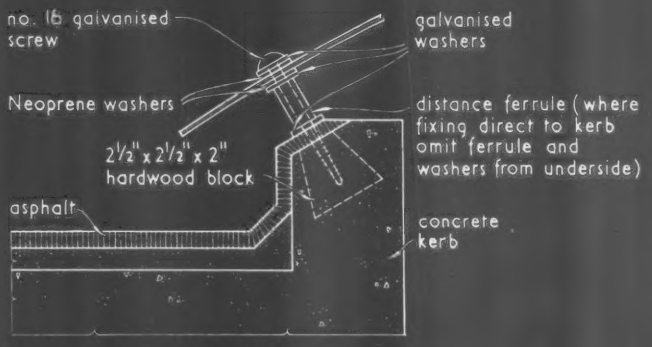
The Architects' Journal Library of Information Sheets 679. Editor: Cotterell Butler, A.R.I.B.A.



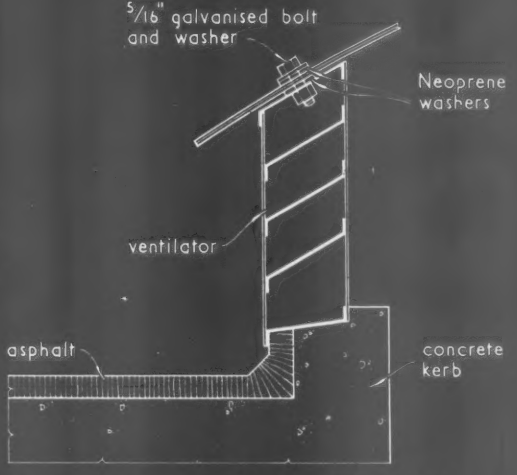
ISOMETRIC VIEW OF TYPICAL RECTANGULAR DOME.

circular :	2'-0" to 14'-0"
square :	2'-0" to 4'-0"
rectangular :	2'-6" x 3'-0" to 4'-6" x 7'-0"

STANDARD SIZES. (larger sizes and special shapes made to order : see reverse of Sheet)

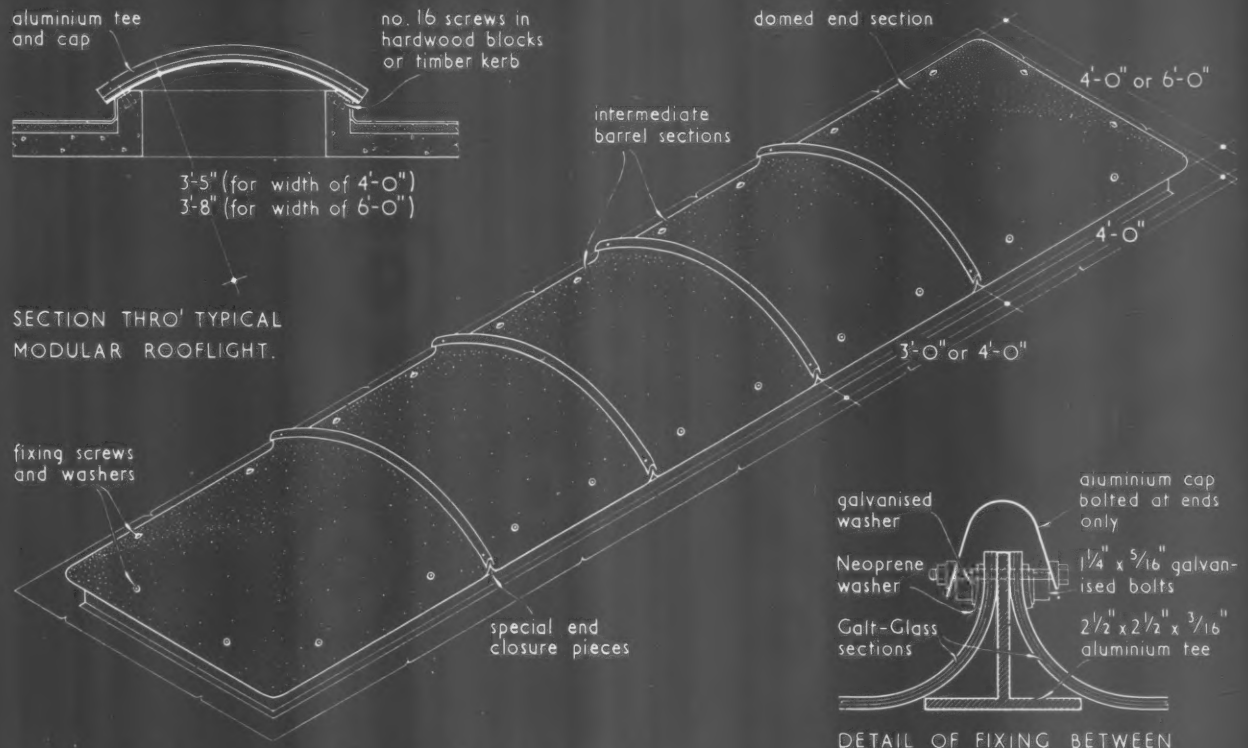


FIXING TO CONCRETE KERB.



FIXING TO PROPRIETARY VENTILATOR.

SECTION THRO' TYPICAL MODULAR ROOFLIGHT.



ISOMETRIC VIEW OF TYPICAL MODULAR ROOFLIGHT.

DETAIL OF FIXING BETWEEN SECTIONS.

·GALT-GLASS· DOME ROOFLIGHTS Manufacturers : Galt Glass Industries Ltd

24.L3 ·GALT-GLASS· DOME ROOFLIGHTS

This Sheet describes Galt-Glass dome rooflights which are made from the same basic material as Galt-Glass corrugated translucent sheets for roof-lighting described on Sheet 15.U1. They provide an effective means of admitting diffused daylight without glare or shadows and have the advantage of being very light in weight. The drawings on the face of the Sheet show the appearance of typical rectangular and modular rooflights with details of fixings applying also to circular dome rooflights.

Material and Construction

Galt-Glass is a tough, lightweight, translucent material composed of glass fibres bonded by low-pressure unsaturated polyester resins. It will not shatter and does not become brittle with age. Galt-Glass is a thermo-setting and not a thermo-plastic material, being physically unaffected by extreme temperatures ranging from minus 40° to plus 120°C. It is immune to chemical attack through fumes or smoke.

Thickness

According to the size of dome, a thickness of $\frac{3}{16}$ in. to $\frac{3}{8}$ in. should be allowed for at fixing points, where the rim of the dome is moulded into an adequate seating flange.

Types and Sizes

The dome rooflights are available in the following types and standard sizes:

Circular:
2 ft. 0 in. to 3 ft. 6 in. dia. in 6-in. increments.
3 ft. 9 in. dia.
4 ft. 0 in. to 6 ft. 0 in. dia. in 6-in. increments.
6 ft. 0 in. to 14 ft. 0 in. dia. in 12-in. increments.
(over 14 ft. 0 in. dia. to order.)

Square:
2 ft. 0 in. to 4 ft. 0 in. square in 6-in. increments.
(larger sizes to order)

Rectangular:
2 ft. 6 in. by 3 ft. 0 in.
3 ft. 6 in. by 3 ft. 0 in.
4 ft. 0 in. by 3 ft. 6 in.
5 ft. 0 in. by 3 ft. 6 in.
6 ft. 0 in. by 4 ft. 0 in.
7 ft. 0 in. by 4 ft. 6 in.
(8 ft. 0 in. by 5 ft. 0 in. or 6 ft. 0 in. to order.)

Modular:
Width, 4 ft. 0 in. or 6 ft. 0 in.
Domed end sections, 4 ft. 0 in. long.
Intermediate sections, 3 ft. 0 in. or 4 ft. 0 in. long.

Weight

For roof loading calculations, the weight of a Galt-Glass dome rooflight ranges from 1 to 3 lb. per sq. ft., according to size and type.

Light Transmission

The specification of Galt-Glass has been evolved to produce the maximum efficiency in diffused interior illumination consistent with a light transmission value exceeding 80 per cent. Tests prove that this glare-reducing factor, coupled with low light transmission loss, produces shadowless illumination under the strongest direct sunlight.

Thermal Insulation

Duplex dome rooflights with insulating air space are available to order in the majority of standard sizes.

Fire Resistance

Reference should be made to Sheet 15.U1 which gives the Joint Fire Research Organisation rating for corrugated Galt-Glass of the quality branded F.R.X. In the case of Galt-Glass for dome rooflights, the specification for the material exceeds that originally lodged with the L.C.C. and J.F.R.O.

Fixing

As the risk of breakage in transit and lifting into position is virtually eliminated, labour and time required for fixing are reduced to a minimum. Galt-Glass dome rooflights can be fitted to any standard proprietary ventilating upstand, or metal frame, by drilling on site as required and substituting bolts for fixing clips, the latter being neither required nor recommended. Alternatively, the dome rooflights can be fixed either to concrete or timber kerbs by means of ordinary gutter-fixing screws (e.g. size 16) at not more than 1 ft. 6 in. centres, with galvanised washers and additional Neoprene washers on both sides of the Galt-Glass in direct contact with the surface. Fixing holes, allowing normal clearance, can be drilled on site with conventional hand tools, no special precautions being necessary.

In the case of the modular rooflight, ribs and joint flanges are jig-drilled in the factory to ensure accuracy and ease of fixing. The ends of the metal weather-capping and the surrounding flange to the upstand only need be drilled on the site. The integrally-moulded vertical flange ensures complete water-tightness without the use of sealing compounds, mastics, etc.

Applications

Galt-Glass dome rooflights can be used as a simple and effective means of daylighting corridors which cannot be provided with windows or borrowed lights. They are particularly suitable in schools and similar buildings where impact breakages might otherwise be expected, and in the lighting of kitchens and process shops where there is normally a risk of breakages from thermal shock.

Cleaning

Galt-Glass dome rooflights may be cleaned by washing with water and detergents.

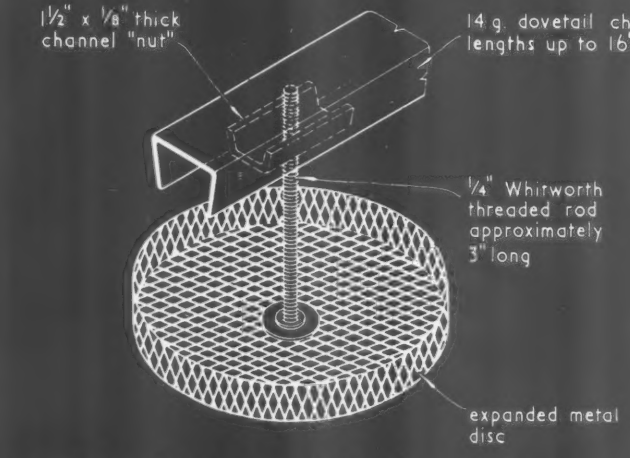
Compiled from information supplied by the manufacturer.

Sole distributors in the United Kingdom:
Allan Blunn Ltd.
Address: 29, Craven Street, London, W.C.2.
Telephone: Whitehall 8801-3.

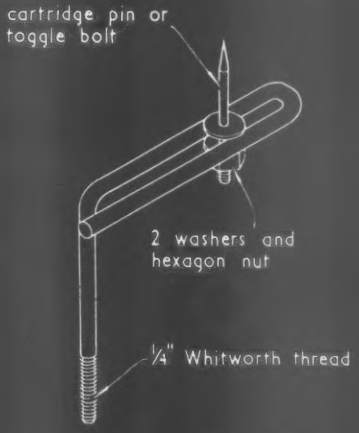
Manufacturer:
Galt-Glass Laminates Ltd.
Address: 415, Oldfield Lane, Greenford, Middlesex.

SPACE HEATING | HOT WATER

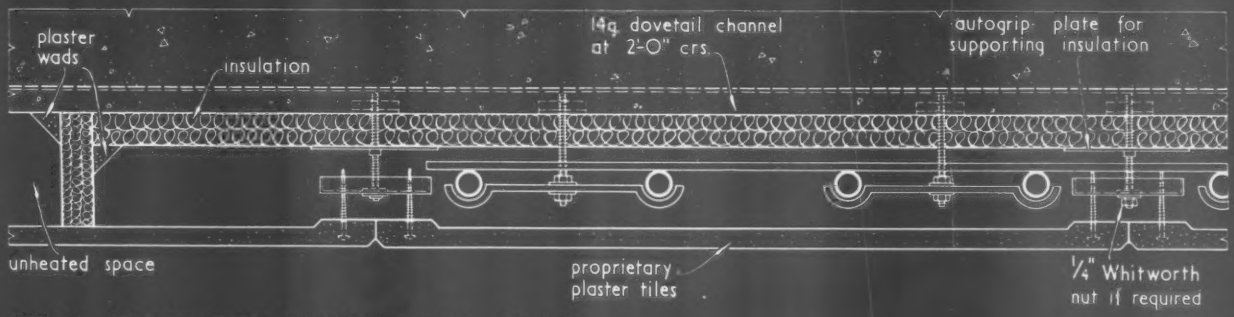
The Architects' Journal Library of Information Sheets 680. Editor: Cotterell Butler, A.R.I.B.A.



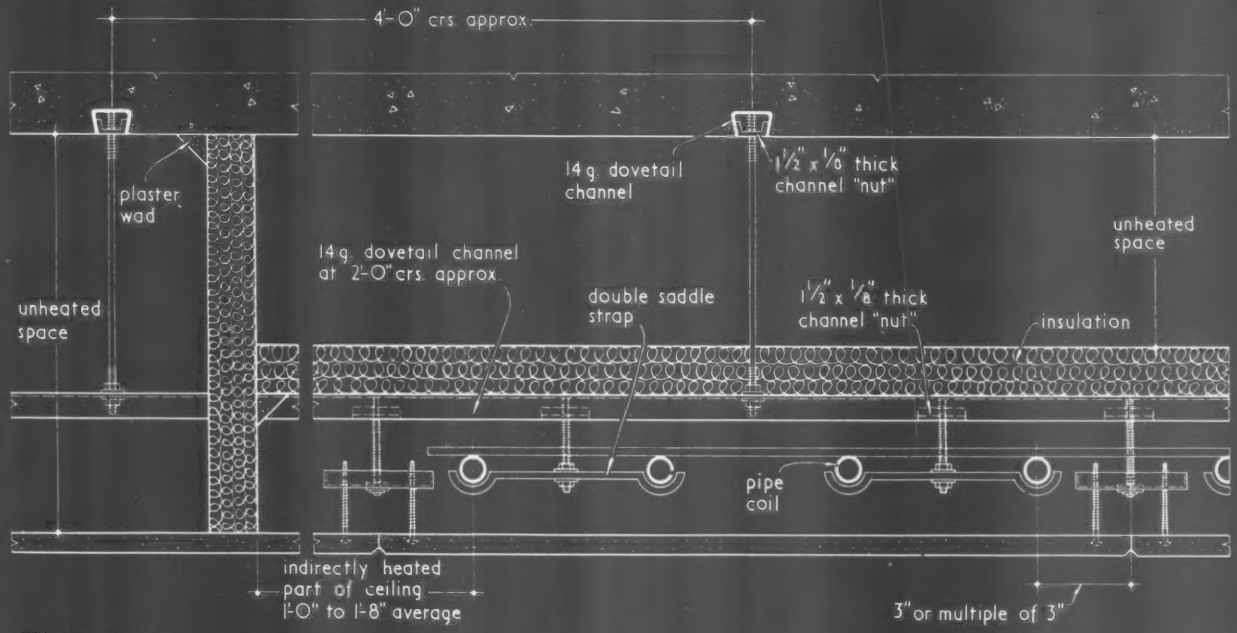
ISOMETRIC VIEW OF PATENTED EXPANDED METAL DISC AND HANGER.



detail of alternative hanger rod



TYPICAL SECTION THRO' HEATED ACOUSTIC CEILING.



TYPICAL SECTION THRO' HEATED SUSPENDED ACOUSTIC CEILING.

HEATED ACOUSTIC CEILINGS

Compiled from information supplied by Invisible Panel Warming Association

29.H6 HEATED ACOUSTIC CEILINGS

This Sheet describes a system for suspended heated acoustic ceilings which permits flexibility in the positioning of the components with regard to the structural supports and makes use of current types of proprietary acoustic plaster tile.

Principle

Water at normal radiator temperature is circulated through a pipe coil freely suspended in the space above the plaster tiles: it heats the tiles by radiation and convection, not by contact. The tiles are supported independently of the pipes by means of the patented expanded metal discs illustrated, and installation is simple and rapid, especially for large unbroken areas. The typical sections on the face of the Sheet show alternative arrangements: in the first, the ceiling is installed so that the minimum amount of height is taken from the room, and in the second, an unheated space is provided above the ceiling for ducts, etc.

Construction

14-gauge dovetail channel, which is supplied in lengths up to 16 ft. 0 in., is cast in the structural concrete at 2 ft. 0 in. or 4 ft. 0 in. centres, to provide support for the pipe coils and electrical services, as well as for the plaster tiles, which are usually 2 ft. 0 in. square. Alternatively the channel may be fixed beneath beams or hollow block floors, when it is supported at 4 ft. 0 in. maximum centres along its length. The ¼-in. Whitworth-threaded rod on which the expanded metal disc is screwed can be fitted into the channel section at any point by inserting the short length of ⅛-in. channel (shown in the drawing) at an angle into the channel section. When it is straightened up, the screw thread is tightened and this locks the "nut" into the channel section. The plaster tiles are fixed to the expanded metal discs by screws through recessed holes, one in each corner of the tile and forming part of the perforation pattern. The screws can penetrate any part of the expanded metal disc as far as required, so that vertical and horizontal adjustments can be made. Dovetail channel may be cast in the slab (or fitted to the soffit) at 4 ft. 0 in. centres with slotted channel below, at right angles, at 2 ft. 0 in. centres (as shown in the lower section on the face of the Sheet): this gives even greater latitude in positioning and the layout of tiles and lighting fittings can be decided upon subsequently. Where the channel sections are not used for fixing to the structure, toggle bolts or cartridge-fired pins, with ¼-in. Whitworth-thread, can be used. For this application special hanger rods are provided where necessary to accommodate inaccuracies of up to 2 in. in any direction. The same method of suspension is used to support the pipe coil, as shown.

Insulation

The horizontal sound-absorbing material, usually 1 in. thick, also serves as thermal insulation and is fitted above the pipe coil, supported at the corners by square metal "autogrip" plates on the rods holding the expanded metal discs. Flexible mineral wool or glass fibre mats require metal mesh or similar supplementary support, but more rigid types of material, including resin foam slabs, may be used. Air leakage upwards through the insulation must be avoided, especially below a roof. Where a room partition finishes at the underside of the plaster tiles, plasterboard at least ½-in. thick or 1-in. wood wool should be fitted vertically to close the gap.

The manufacturers of the acoustic tiles are responsible for the standard of sound-absorption obtained, but the thermal insulation above the pipes determines the upward heat transmission. The latter consideration may sometimes be more important than the former in selecting the insulating material. Another factor which may influence the architect to choose an alternative to mineral wool or glass silk is the tendency of these latter to shed particles through the joints of demountable tiles.

Installation

When all hangers for panels, pipes, services and plaster tiles are in position and the horizontal insulation, with any services above it, installed, the saddle brackets are fixed and levelled parallel to the pipes: they are turned at right angles when the pipe coil is in position. Connections and electrical services, etc., are completed and the pipes painted and tested before the plaster tiles are put in position. The tiles below the heated area are fixed first, starting with a rigidly fixed border. The vertical insulation is then applied and the remaining parts of the ceiling erected.

Electric Wiring

It is often convenient to take electric wiring through the heated space. In these cases butyl rubber or stoving grade p.v.c. insulated cable is suitable for the temperature conditions, or metal-clad mineral-insulated cable may be used.

Further Information

The following leaflets are obtainable from the Association:

Heated acoustic ceilings, plaster, steel, aluminium	HC.1
Thermal insulation and sound absorption	HC.2
Electric wiring and lighting fittings	HC.3
Dovetail channel and taper nuts	HC.4

Compiled from information supplied by:
The Invisible Panel Warming Association
Address : Grand Buildings, Trafalgar Square, London, W.C.2.
Telephone : Whitehall 4060.

working detail

STAIRCASE: HOUSE AT GENTOFTE, DENMARK

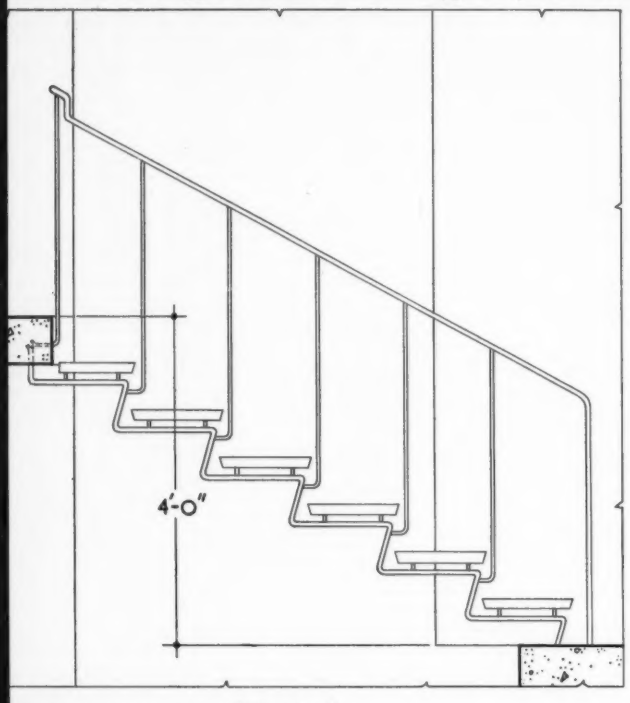
Eva and Nils Koppel, architects (material supplied by John Whalley)

This stair is a particularly effective example of detailing in steel. Note the triple change in direction in the tubular handrail at the head of the stair, giving an added stiffness where it is much needed. Note also the addition of rubber washers at the fixings of the treads.

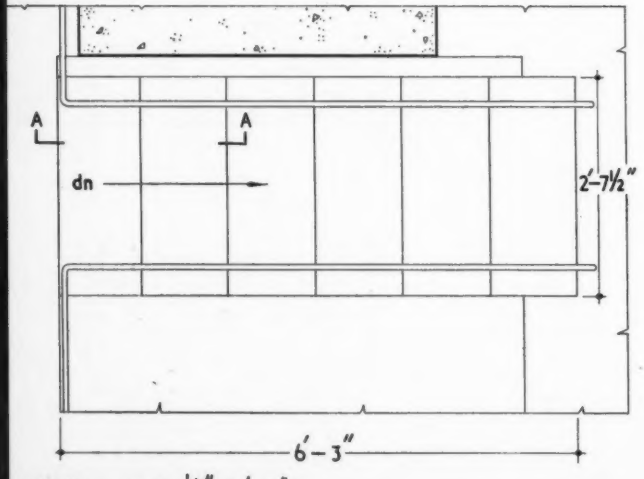
working detail

STAIRCASE: HOUSE AT GENTOFTE, DENMARK

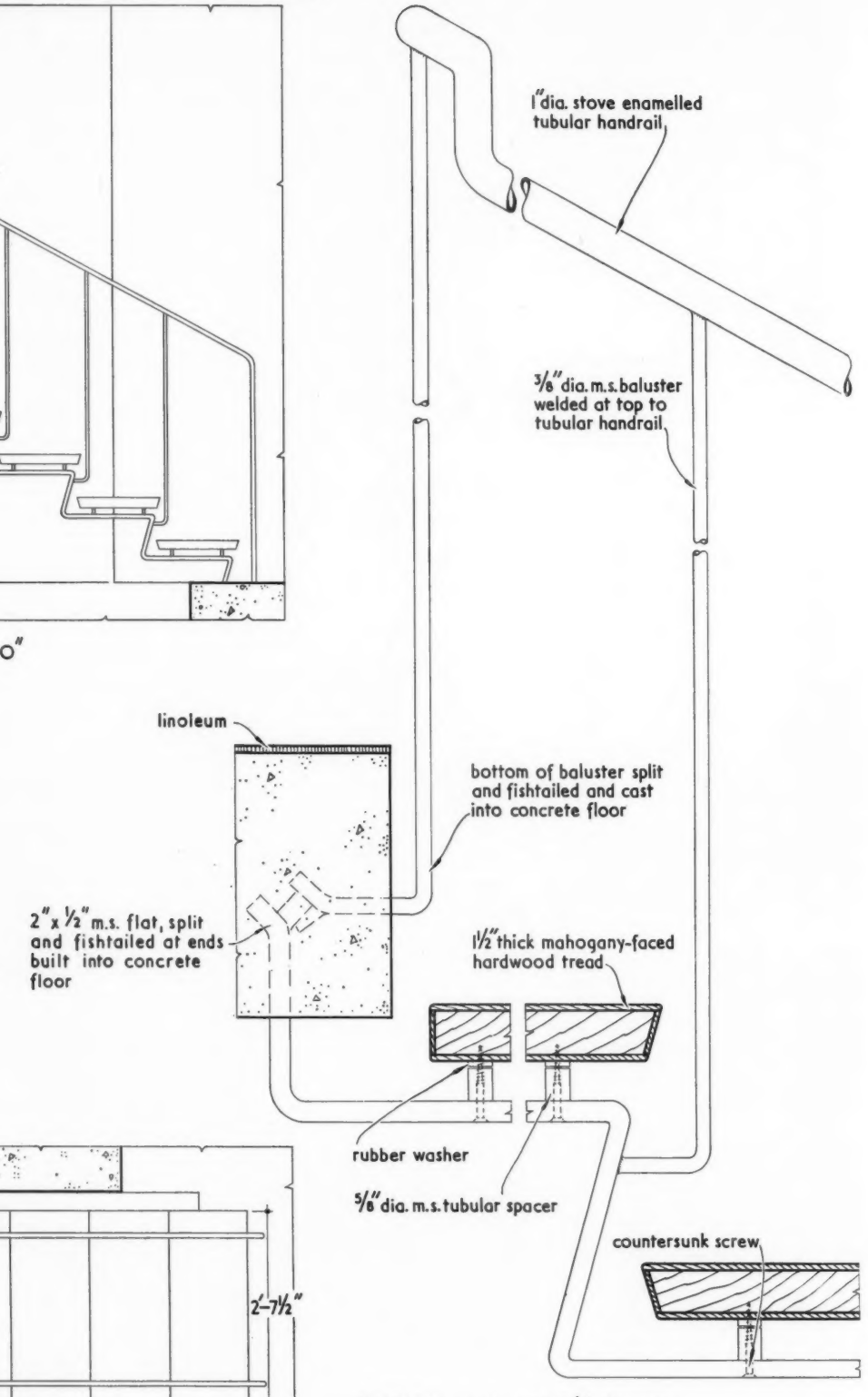
Eva and Nils Koppel, architects (material supplied by John Whalley)



ELEVATION. scale ½" = 1'-0"



PLAN. scale ½" = 1'-0"



SECTION A-A. scale ¼ full size

note: figured dimensions in feet and inches are approximate

Contractors

Covered courts building at the All England Lawn Tennis and Croquet Club, Wimbledon (page 61). *Consulting engineers:* C. J. Pell and Partners. *General contractors:* W. H. Gaze. *Sub-contractors: Felt roofing:* D. Anderson & Son Ltd. *Glass dome lights:* Allan Blunn Ltd. *Glazing:* James Clark & Eaton Ltd. *Sliding doors:* Esavian Ltd. *Aluminium roof ventilators:* Greenwoods & Airvac Ventilating Co. Ltd. *Expanded metal lathings:* Expanded Metal Co. Ltd.

Announcements

PROFESSIONAL

Iorwerth M. Williams, A.R.I.B.A., has now moved to Claremont House, 67, Montpellier Terrace, Cheltenham. Telephone Cheltenham 55771.

TRADE

G. D. Hogg, sales manager of Uni-Tubes Ltd., has left for an extended sales tour of America covering USA, Canada, Venezuela, Brazil and Argentine, visiting Uni-Tubes Ltd. Kopex Manufacturing Concessionaires regarding sales of their stressed concrete steel tubing, electrical conduit and ventilation ducting.

The new address of the Federation of Master Builders Headquarters is 33, John Street, Holborn, London, W.C.1. Telephone Chancery 7583.

Leaderflush (Doors) Ltd., have appointed The Iron & Marble Co. Ltd., 33/35, Victoria Street, Bristol, 1 (telephone 27471) to act as sole distributors of Leaderflush doors for Somerset and the town of Bristol.

D. L. Irwin, Snr., retired as managing director of The Ruberoid Co. Ltd., on June 30, and has been succeeded by D. L. Irwin, Jnr., works director, and G. D. L. Goslett, O.B.E., sales director, as joint managing directors. D. L. Irwin, Snr., retains his seat on the Board as consultant director and his appointment as chairman. Sir Richard Yeabsley, C.B.E., has been appointed deputy chairman.

Nettle Accessories Ltd. have appointed J. A. Morden as Sales Representative in the South Eastern Electricity Board Area. He will function from their London Depot at 20/22, Craven Road, London, W.2.

Federated Foundries Ltd., would like to express their appreciation for the support received from architects, members of the building and plumbing trades, and the Press, for Mr. Croft's tour of lectures on single stock plumbing.

A number of firms who manufacture and install illuminated signs of all types have formed themselves into a group under the title of "Sign Patents Advisory Association Ltd.," for the purpose of acting jointly in questions of common interest relating to sign patents. At present, sixteen companies are members of this Association and several more firms are likely to be admitted to membership shortly. Any company which is active in the field of illuminated signs is eligible for membership.

H. H. Ash, an employee of Philips Electrical Ltd. for the past 31 years—most of which time has been spent as the representative of the Lighting Division in North Wales—retired from the Company's service on June 30. From that date his duties will be taken over by G. T. Jones.

J. G. Ambrose and C. B. Mathews, chairman and deputy chairman of Concrete Ltd., have retired from the Board. They have been succeeded by K. M. Wood and T. S. Lucas, joint managing directors. Three senior employees of the company, T. H. G. Mathews, J. Swale and G. Wigglesworth, have been appointed to the Board.

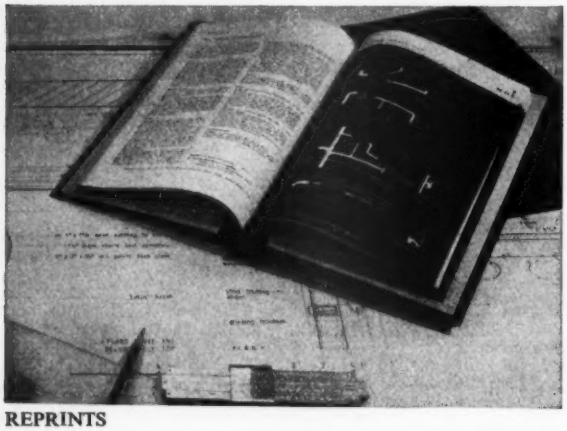
The name of Aero Research Limited, Duxford, Cambridge, has been changed to CIBA (ARL) Limited. The trade names of "Aerolite," "Redux," and other proprietary products are unaffected.

The Midland Depot of Sissons Brothers & Co. Ltd., has now moved to Park Lane, Cradley, Staffs (telephone Cradley Heath 66341/2).

The Owen Organisation announce that the name of Hodgkiss Oil Burners Ltd. has been changed to Rubery Owen (Heating) Ltd. The address of the company is Church Street, Wednesbury, Staffs (telephone Wednesbury 1081/2). The managing director is K. E. W. Norton and the technical services of C. Shorrock are available to the company.

The Nuralite Company of Gravesend, Kent, have appointed two new representatives in their Scottish Region. They are W. Y. Gray of 80, Monkland Street, Airdrie, and D. F. Smith of Park House, Park Place Aberdeen.

Evode Limited have now moved their London Office to 82, Victoria Street, London, S.W.1 (telephone Abbey 4622). The new offices are adequate to house the two associates, Evomastics Limited and English Waxes Limited.



THE LIBRARY OF INFORMATION SHEETS COMPLETE TO MARCH, 1958

REPRINTS

All Information Sheets published since the new series was started in October, 1947, have been reprinted. Specially-designed binding cases to hold approximately 100 Sheets may be obtained at the price of 6s. 0d. each. (Postage 1s. 1d.)

Individual Sheets may be ordered (3d. each) Readers requiring sets or individual Sheets should fill in the form below. Sets in classified order (without binders) are available as follows, and the publishers will quote for sets not detailed below

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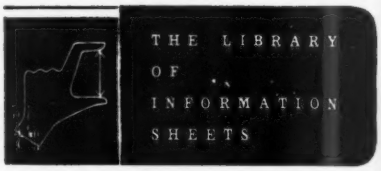
On August 3, Dorman & Smith Limited will be moving their entire offices and works to a new factory in Preston. The head offices of the associate company, Messrs. D. S. Plugs Limited, will also be moved to Preston. Their address will be Dorman & Smith Limited, Atherton Works, Blackpool Road, Preston (telephone Preston 86785).



14.K2 *REFERENCE BACK*

Readers are asked to note that under the heading Material and Construction, *second sentence, the words "of performance" should be added after ". . . in all respects. . . ."*

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Messrs. Howard Humphreys, Victoria Street, London, S.W.1.
Contractor: Messrs. A. Streeter & Co. Ltd., Godalming, Surrey.
The illustration is of Temple Tube being laid at considerable depth immediately behind a mechanical digger and shows how little time is required to instal the material after excavation.

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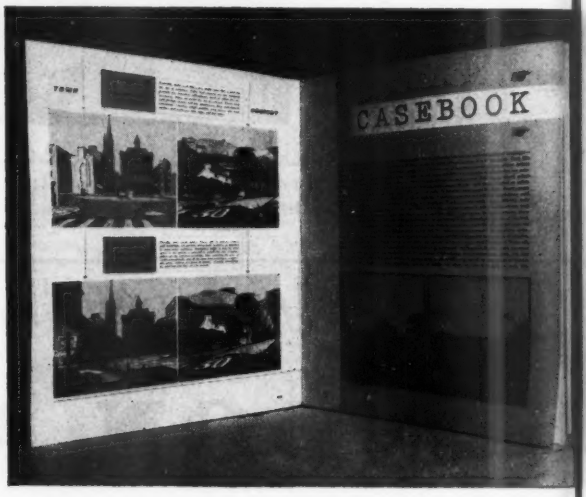
COUNTER-ATTACK
against subtopia

BY IAN NAIRN

THIS BOOK, a reprint of the December 1956 Special Number of the *Architectural Review*, is the sequel to *Outrage*, the book which showed what we are doing to the face of Britain in the name of 'progress', 'amenity' and the 'national interest.' Its revelation of decaying towns, pockmarked countryside and anonymous suburbs shook the press to the extent of 1,100 column inches of special feature and review space, shattered the complacency of many, opened the eyes of many more; the word then coined to describe this squalid mess—subtopia—has become part of everyday speech.



The response to *Outrage* proved that there were plenty of people who recognised the mess and who were prepared to do something about it. What they lacked was ammunition: examples of the right way to do things; arguments to refute theories tossed about by the apostles of inertia to save themselves from the necessity of thinking; a common-sense vocabulary for things which are either dismissed as intangible or served up in woolly abstractions. This book provides all these; it is not a set of pious resolutions but a true counter-attack. If your worry is tree lopping, look at page 381; if badly designed lamp-posts, turn to the designs on page 393; if your housing estate looks like a desert, the reasons are given on page 409; if you want to know why planning doesn't stop subtopia, and how it could be reformed, see page 431. There are forty pages of photographs showing well-designed and well sited examples of every kind of object; at the beginning there is a simple four-point common-sense sequence for sane design which can be applied straight away to see what is wrong with any street—the one outside your window, for instance, or the one which contains your office or your pub. This sequence isn't high-flown or obscure; it can be understood in half an hour, and it is described on pages 355-360.

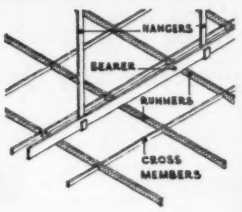
Here is the ammunition: will you finish the job?

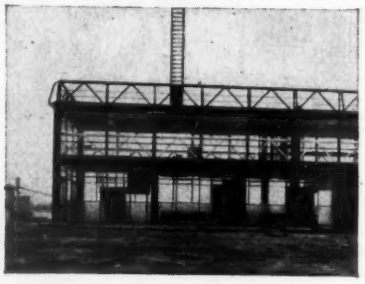
Size 12¼ *in. by* 10 *in.* 84 *pages with over* 350 *illustrations in line and halftone.* 12*s.* 6*d. net, postage* 1*s.* 5*d.*

THE ARCHITECTURAL PRESS, 9-13 Queen Anne's Gate, LONDON, S.W.1

JULY

Right: overhead nomenclature; the designations of the parts of suspended ceilings, from the first of a number of articles on this new entrant in the field of prefabricated building elements. *Below:* Glass Cages at Gatwick; some of the new buildings at Gatwick airport are almost brutalistically solid, others are transparent glass and steel structures, all will be fully described in a special feature.

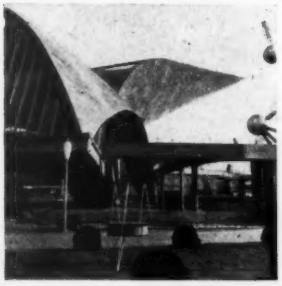




Below: Theatre in Coventry; a view across the auditorium of the newly-opened Belgrade Theatre. The interior of the National Film Theatre will also be given the full treatment in this issue.

AUGUST Special Issue
The Brussels Exhibition

Neotechnic dinosaur; the gigantic equilibrated structure designed by van Dooselaere and Paduart to celebrate the triumphs of civil engineering.

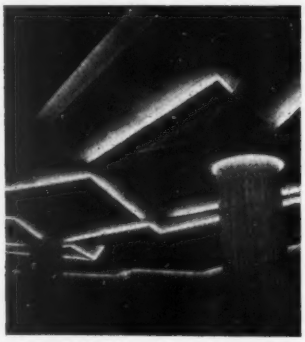


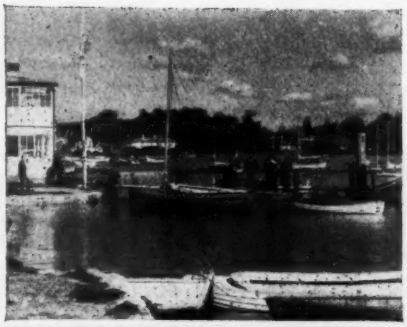
Japanese Garden; trees, water, sculptured objects and symbolic rocks in the traditional-modern garden adjoining Mayekawa's Japanese pavilion.

Turkish Delight; structure, space, light, air and traditional crafts combined in the pavilion by Izgi, Sensoy and Turegun.

SEPTEMBER

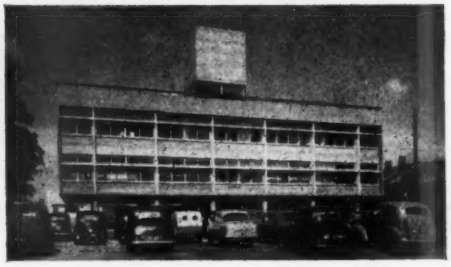
Right: Suspended Ceilings, the conference room of an office block in Rome by Aldo della Rocca, from Michael Brawne's article on the aesthetics of suspended ceilings. (See also A. R. July and September Skill articles.)

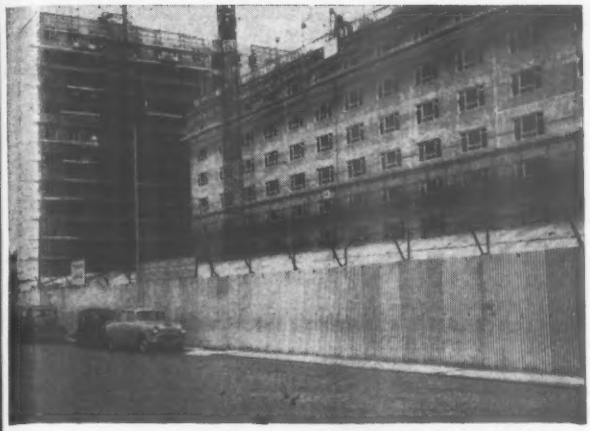




Above: National Water Park, Lymington harbour, one of the small multi-purpose boating centres serving the Solent, whose future is discussed as a matter of urgency by Geoffrey Robson.

Below: Bold Front in Birmingham, a new prestige office-block added to an existing factory, by Ernö Goldfinger, one of the buildings illustrated and described in this issue.





10-storey flats at Eldon Street for Birkenhead Corporation.

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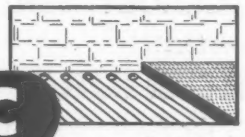

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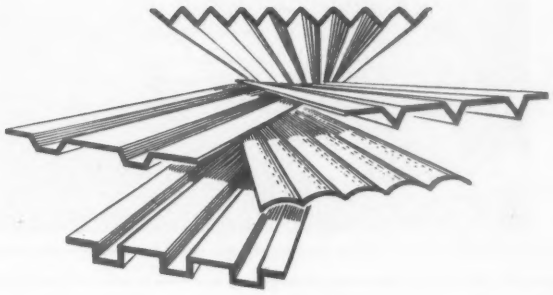

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Advertisements should be addressed to the Advt. Manager, "The Architects' Journal," 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, and should reach there by first post on Friday morning for inclusion in the following Thursday's paper.

Replies to Box Numbers should be addressed care of "The Architects' Journal," at the address given above.

Public and Official Announcements

30s. per inch; each additional line, 2s. 6d.

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Vacancies for (1) ARCHITECTS, Grade III, starting salary up to £1,090 a year. (2) ARCHITECTURAL ASSISTANTS, starting salary up to £860.

Full and interesting programme of Houses, Flats, Schools and General Buildings.

Application form and full particulars from Hubert Bennett, F.R.I.B.A., Architect to the Council, The County Hall, S.E.1, quoting Ref. AR/EK/21/58. (799) 9375

ARCHITECTURAL ASSISTANTS
required by
MINISTRY OF WORKS

For employment in London and Provinces on design and detailing work on construction and maintenance of all types of public buildings.

Salary Range £550 (age 21) to £870 p.a. London (slightly less elsewhere).

Five-day week; 3½ weeks annual leave initially.

Starting pay according to age, qualifications and experience. Good prospects of promotion with salaries of £1,015 p.a. and above.

Opportunities for permanent posts leading to pensions (non contributory).

Interviews at Regional Offices where possible. Applicants should be of Inter. R.I.B.A. standard. State age, training and experience to Chief Architect, Ministry of Works, Abell House, John Islip Street, S.W.1. 9720

BOROUGH OF HEYWOOD
APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited from persons who have passed the R.I.B.A. Intermediate Examination for the above-mentioned appointment in the department of the Borough Engineer and Surveyor, at a salary in accordance with A.P.T. Grade II (£725—£845) of the Scale of Salaries.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, to the National Joint Council's Conditions of Service and to one month's notice in writing on either side.

The successful applicant will be required to pass a medical examination.

Consideration will be given to the provision of housing accommodation.

Applications endorsed "Architectural Assistant," stating age, qualifications and experience and accompanied by copies of two recent testimonials, should reach the undersigned not later than Friday, 18th July, 1958.

Canvassing in any form will be a disqualification.

W. R. PARKER,
Town Clerk.

Municipal Buildings,
Heywood.
23rd June, 1958. 9834

SHROPSHIRE

The appointment of COUNTY ARCHITECT will be vacant in November and applications must be received by 21st July. A high standard of Architectural ability and Administrative capacity are required.

Salary within the scale £2,550 × £105 (2) × £85 (1)—£2,815 per annum with an allowance for travelling and other expenses at present amounting to £440 per annum.

Full particulars from G. C. Godber, Clerk of the County Council, Shire Hall, Shrewsbury. 9822

SURREY COUNTY COUNCIL

Applications invited for appointment of ARCHITECTURAL ASSISTANT GRADE I, £575—£725 p.a. plus London Allowance of up to £30 p.a. according to age. Must be of good general training.

Full details, present salary and 3 copy testimonials to County Architect, County Hall, Kingston, as soon as possible. 9865

BOROUGH OF TOTTENHAM

Applications are invited for the following posts:—

ASST. ARCHITECT (Unestab.) APT Special Grade—£750 to £1,030 p.a. Applicants must hold a final professional qualification.

ARCHITECTURAL ASSTS. (Estab.) APT II—£725 to £845 p.a. Applicants must have at least passed RIBA intermediate examination or equivalent.

ARCHITECTURAL ASSTS. (Estab.) APT I—£575 to £725 p.a. Applicants must have at least passed RIBA intermediate examination or equivalent.

London Weighting allowance of £20 or £30 p.a. according to age.

Commencing salaries within grades according to ability and experience.

Application form and Conditions of Appointment from Borough Engineer, Town Hall, Tottenham, N.15. Applications to be delivered by Monday, 21st July, 1958. 9864

AIR MINISTRY WORKS Design Branch requires in LONDON and PROVINCES ARCHITECTURAL ASSISTANTS experienced in planning/preparation of working drawings and details for permanent and semi-permanent buildings. Salaries in LONDON up to £1,015 p.a. for men and £925 p.a. for women. Somewhat lower in PROVINCES. Starting pay dependent on age, qualifications and experience. Long-term possibilities with promotion and pensionable prospects. Five-day week, three weeks three days leave a year. Liability for overseas service. Normally natural born British subjects. Write stating age, qualifications, employment details including type of work done to any Employment Exchange quoting Order No. BOROUGH 100. 9535

SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD
ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments on the permanent staff of the Board's Regional Architect generally in accordance with the Whitley Council conditions of service. A number of large development schemes are now in active preparation on which the new staff will be engaged.

London Weighting is payable in addition to the scales quoted.

SENIOR ASSISTANT ARCHITECT

The commencing salary will be at the minimum of the scale £1,010×£30(5)×£35(1)—£1,195. Applicants must be qualified architects with an interest in hospital work and experience in contemporary construction and design.

ASSISTANT ARCHITECT

The commencing salary will be within the scale £700×£25(3)×£30(1)×£35(6)—£1,015. Applicants must be Associate members of the Royal Institute of British Architects and capable of preparing working and detailed drawings and specifications and supervising work on individual projects. Experience of hospital planning and construction an advantage.

SENIOR ASSISTANT QUANTITY SURVEYOR

The commencing salary will be at the minimum of the scale—£1,010×£30(5)×£35(1)—£1,195. Applicants must be Corporate members of the Royal Institution of Chartered Surveyors (Quantity Surveying Branch) and have had sound practical experience in the estimating and analysis of prices, working up and taking off of quantities for contracts and also of checking contractors' accounts.

ASSISTANT LAND SURVEYOR

The commencing salary will be within the scale —£700×£25(3)×£30(1)×£35(6)—£1,015. Applicants must be Corporate members of the Royal Institution of Chartered Surveyors and have had sound practical experience of the surveying of land and buildings and be familiar with matters relating to the Town and Country Planning and Building Bye-Laws.

SURVEYORS' CLERK

The commencing salary will be at the minimum of the scale £440 at age 24 or over ×£15(3) ×£20(4)×£25(2)—£615. Applicants must have had suitable training including three years' technical experience in a Surveyor's office including experience in working up.

Applications for the senior appointments should state age, experience, qualifications, present appointment and salary together with names of three referees and be sent to the undersigned at 11a Portland Place, from whom application forms for the other appointments may be obtained. Completed applications must be received by not later than 21 July.

E. G. BRAITHWAITE, *Secretary.*
9897

CITY OF LIVERPOOL
ARCHITECTURAL AND HOUSING DEPARTMENT

Applications are invited for the undermentioned appointments, viz.:—

(1) SENIOR ASSISTANT. Salary, £750—£1,175 per annum. N.J.C. Scale/APT.IV

Applicants should possess qualifications in Surveying, Estate Management or Architecture. Commencing salary will depend on qualifications and experience.

The duties include the keeping of records of the purchase of land and property together with the supervision of dwellings purchased by the Corporation for slum clearance.

(2) ASSISTANT ARCHITECTS. Salary, £750—£1,030 per annum (N.J.C. Scale).

Applicants should be Associates of the Royal Institute of British Architects, or hold equivalent qualifications. Commencing salaries will depend on qualifications and experience. Vacancies exist in General, Housing and Redevelopment Architectural Sections and applicants expressing a preference for a particular type of work will be considered accordingly. The work involved is interesting and includes building for the Education programme of the City, together with other public buildings; the housing programme includes multi-storey blocks of flats and slum clearance work.

Application forms (returnable by 15th August, 1958) and further details obtainable from the City Architect and Director of Housing, Blackburn Chambers, Dale Street, Liverpool, 2. The appointments are superannuable and subject to the Standing Orders of the City Council. Canvassing disqualifies.

THOMAS ALKER,
Town Clerk.
(J5250) 9893

GLOUCESTERSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

ASSISTANT ARCHITECTS—"Career Class," commencing in A.P.T. IV (£1,025—£1,175) and progressing to A.P.T. V (£1,175—£1,325), subject to satisfactory report on reaching appropriate incremental point in Grade.

ARCHITECTURAL ASSISTANTS—"Qualifying Class," A.P.T. Grades I (£575—£725), A.P.T. II (£725—£845), and Special (£750—£1,030). Progress within the class subject to satisfactory reports and qualification.

Applicants for posts graded A.P.T. Special and above must have passed Final Examination R.I.B.A. and for Grades A.P.T. I and II the Intermediate Examination without exception.

N.J.C. Service Conditions, Superannuation, Medical Examination.

Applications stating age, present position, salary and date of appointment, previous appointments, names and addresses of two persons for reference to County Architect, Shire Hall, Gloucester, by 19th July.

GUY H. DAVIS,
Clerk of the County Council.
9896

UNIVERSITY OF AUCKLAND
NEW ZEALAND

SENIOR LECTURESHIP IN ARCHITECTURE

Applications are invited for the above-mentioned appointment.

The salary scale for the position is £1,315 per annum, rising by three annual increments to £1,615 per annum. An allowance is made towards travelling expenses.

Further particulars and information as to the method of application may be obtained from the Secretary, Association of Universities of the British Commonwealth, 36, Gordon Square, London, W.C.1.

The closing date for the receipt of applications in New Zealand and London, is 31st August, 1958. 9881

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD

SURVEYING ASSISTANT required in Architect's Department. Salary within scale £525 to £730 plus £20—£30 London weighting. Candidates should have passed the Intermediate examination of the R.I.C.S. (III B).

Duties include management of contracts and specification writing for specialist and subcontract work. The Board operate a scheme of financial assistance to students studying for professional examinations. Office at present near Kingsway, but moving to new offices near Paddington Station later in year.

Apply, stating age, qualifications and experience, and giving names of two referees, to Secretary, North West Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, by 17th July, quoting ref. 657. 9882

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD

ASSISTANT ARCHITECT required—good experience of design and construction necessary preferably in hospital work. Applicants must be Associate Members of the R.I.B.A.

Salary scale £700 × £25 (3) × £30 (1) × £35 (6) —£1,015 plus £20-£50 London weighting. Commencing salary above minimum may be paid according to relevant practical experience appropriate to the post. Whitley Council conditions, superannuable.

Apply, stating age, qualifications (with date) and experience, with names of two referees to Secretary, North West Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, by 17th July. 9883

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Applications invited for ASSISTANTS in the Furniture and Display Section for work on the design of colour schemes and interiors, exhibitions and furniture. Salary up to £860 according to qualifications and experience.

Application forms and particulars from the Architect, Hubert Bennett, F.R.I.B.A., Architect to the Council, The County Hall, S.E.1, quoting reference AR/EK/32/58, returnable by 18th July, 1958. (1278) 9884

CITY OF LEEDS
CITY ARCHITECT'S DEPARTMENT

	Post Grade	*Scale*
MATERIALS CLERK	APT.I	£575—£725

Candidates must have had a wide experience of the building trade and the supply of building materials.

The commencing salary may be at any point within the salary scale as indicated.

The payment of salary increments will be subject to satisfactory service and will be granted normally with effect from the 1st April following the completion of six months' service.

The appointment is subject to the Local Government Superannuation Acts 1937-1953 and the successful applicant will be required to pass a medical examination.

Application forms may be obtained from the City Architect, Priestley House, Quarry Hill, Leeds 9, to whom they should be returned, together with copies of three recent testimonials, by 12 noon on Saturday, 26th July, 1958.

Canvassing in any form, either directly or indirectly, will be a disqualification.

R. A. H. LIVETT,
City Architect.

Priestley House,
Quarry Hill,
Leeds, 9.
2nd July, 1958. 9891

COUNTY BOROUGH OF SMETHWICK
BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT

Applications from persons suitably qualified are invited for the following appointment—SENIOR ASSISTANT ARCHITECT, Salary £1,025—£1,175 per annum. The commencing salary will be according to the qualifications and experience of the successful applicant.

The post is subject to the provisions of the National Scheme of Conditions of Service, the Local Government Superannuation Acts 1937-53; the passing of a medical examination and to termination by one month's notice on either side.

Application forms may be obtained from the Borough Engineer & Surveyor, Council House, Smethwick, and should be returned, in envelopes suitably endorsed, not later than 22nd July, 1958.

E. L. TWYCROSS,
Town Clerk.

Council House,
Smethwick, 40.
July, 1958. 9892

DEVON COUNTY COUNCIL require PLANNING ASSISTANTS on A.P.T.II (£725—£845) and A.P.T.I. (£575—£725). Posts suitable for Graduates of either sex. Training in Geography or Economics an advantage. In approved cases loans for removal expenses available, also lodging allowance of £2.10.0 per week for married officers whilst seeking accommodation. Application forms, returnable by 28th July, from County Planning Officer, "Bellair," Topsham Road, Exeter. 9895

CITY AND COUNTY OF NEWCASTLE UPON TYNE
CITY ARCHITECT'S DEPARTMENT

The City Architect will be pleased to receive applications from suitably qualified persons for the following Architectural vacancies:—

(*a*) PRINCIPAL ASSISTANT ARCHITECT (General Section), A.P.T. Division Grade IV (£1,025—£1,175).

(*b*) SENIOR ASSISTANT ARCHITECT (Education Section). A.P.T. Division Grade IV (£1,025—£1,175).

(*c*) SENIOR ASSISTANT ARCHITECTS (General, New Town Hall, Housing, Re-Housing or Education Sections). Special Class (£750—£1,030).

(*d*) ASSISTANT ARCHITECTS (Housing or Education Sections). A.P.T. Division Grade II (£725—£845).

The above posts will be subject to the provisions of the Local Government Superagnuation Acts, 1937—1953, and to one month's notice on either side.

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Closing date for receipt of completed applications: 31st July, 1958.

JOHN ATKINSON,
Town Clerk.

Town Hall,
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4th July, 1958. 9922

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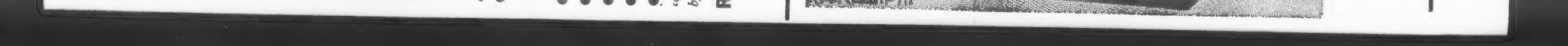

Printed in Great Britain for the Proprietors of "THE ARCHITECTS' JOURNAL" (The Architectural Press Ltd.), 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, by HARRISON & SONS LTD., by Appointment to Her Majesty The Queen, Printers, London, Hayes (Middx.), and High Wycombe. Editorial illustrations engraved by THE ENGRAVERS' GUILD LTD., Windsor House, 23/26, Cursitor Street, London, E.C.4.