

APR 6 1960
FINE ARTS

THE ARCHITECTS' JOURNAL



Standard contents

every issue does not necessarily contain
all these contents, but they are
the regular features which
continually recur

NEWS and COMMENT

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TECHNICAL SECTION

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CURRENT BUILDING

Major Buildings described:

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anted and Vacant

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THE ARCHITECTURAL PRESS

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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 Ii one week, II to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

ILA	Institute of Landscape Architects. 1, Park Crescent, Portland Place, W.1. Museum 3473
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 7197
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. 68, Gloucester Place, W.1. Welbeck 9966
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
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. Hyde Park 7070
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. 14 Howick Place, Victoria Street, S.W.1. Victoria 1600 & 6477
NAS	National Association of Shopfitters. 2, Caxton St., 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 Asphalte 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 Arts Commission. 5, Old Palace Yard, S.W.1. Whitehall 3935
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

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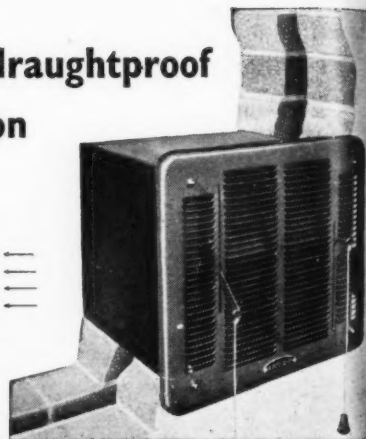
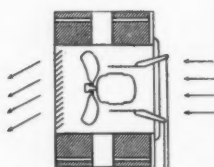
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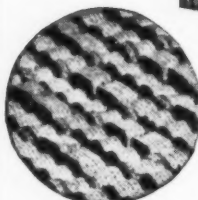
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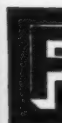
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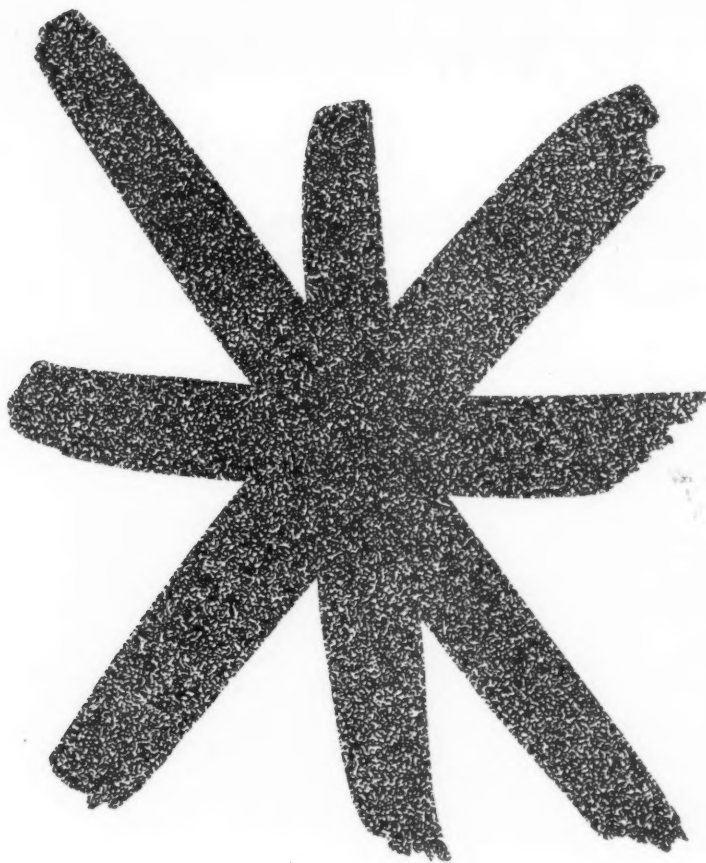
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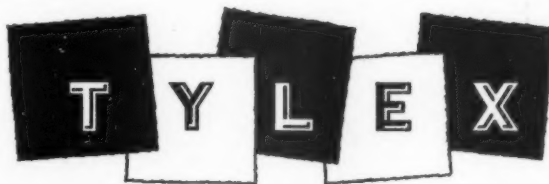
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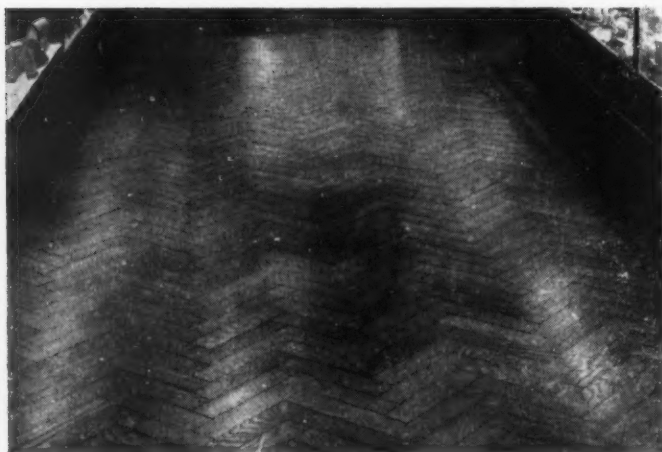
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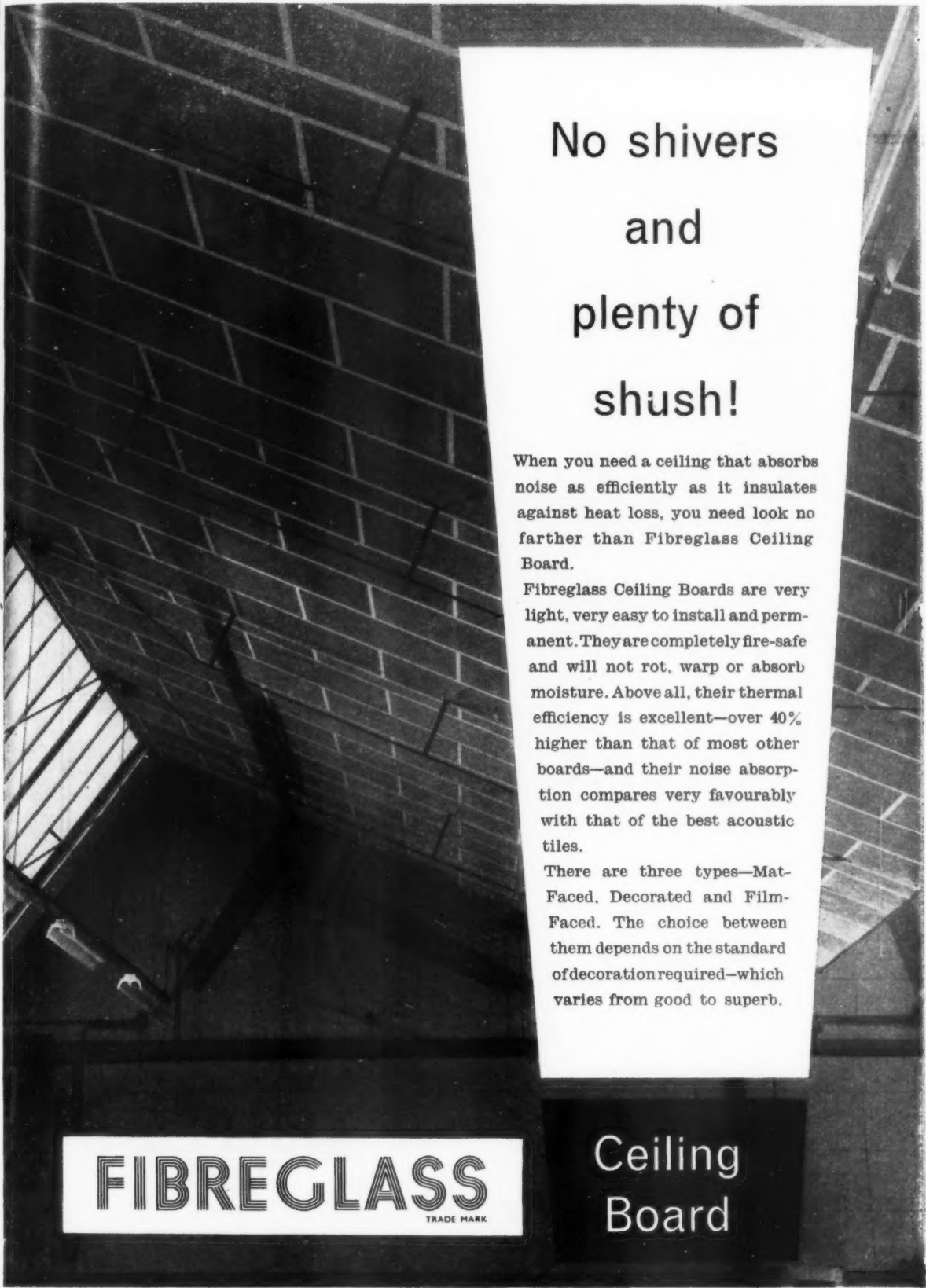
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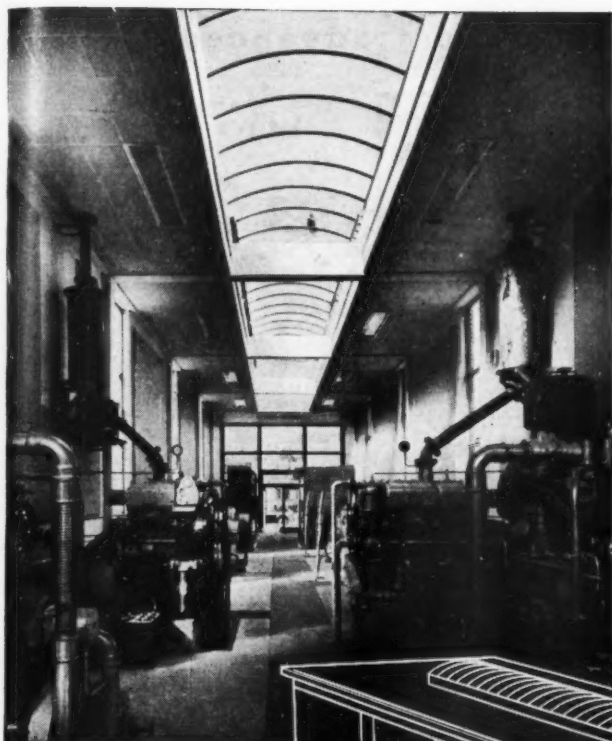
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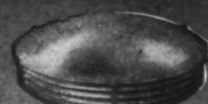
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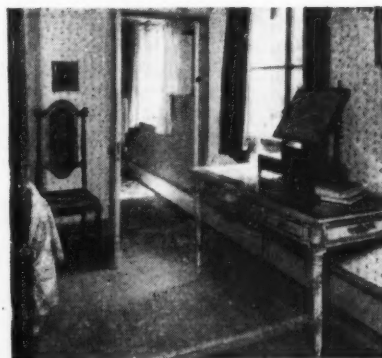
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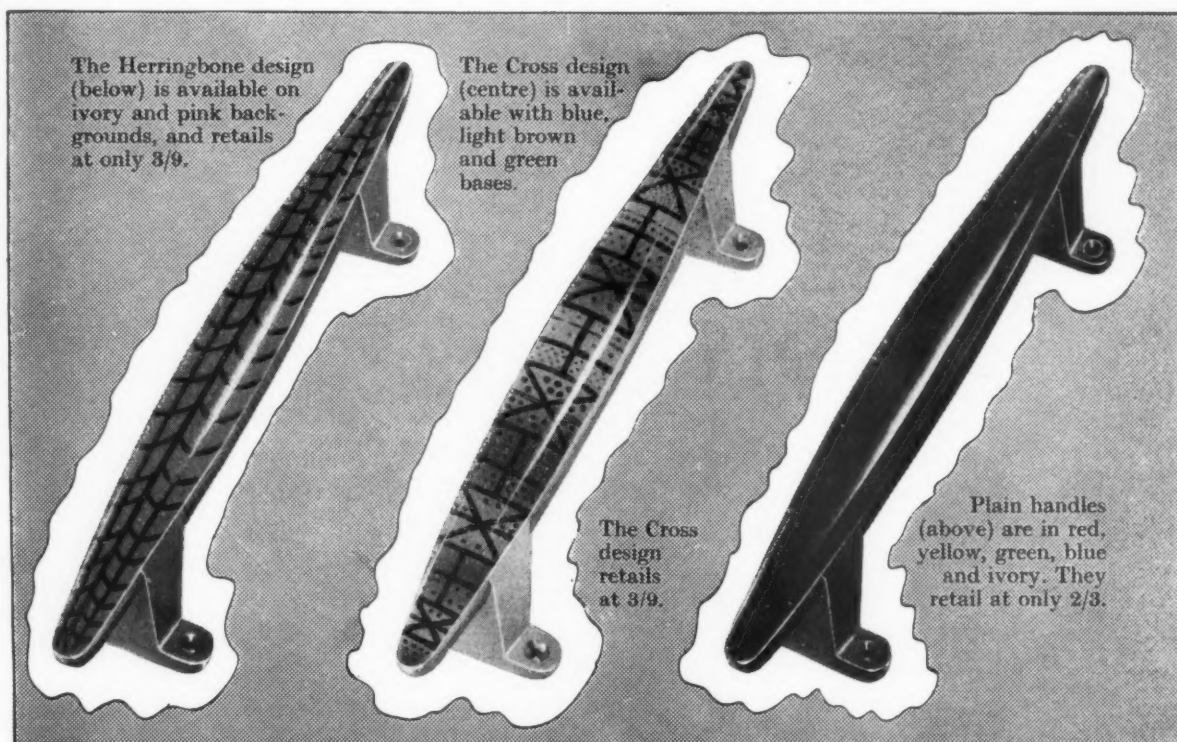
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The Ascot De Luxe is fitted with a constant volume gas governor and a water governor. External controls include hot and cold taps and a rotary gas control. Gas and water cocks are an integral part of the heater linings.

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The De Luxe ensures easy fixing and maintenance. The outer case and top and bottom pans are quickly detachable, and all working parts are readily accessible. The stainless steel Ascot 'flat flame' burner needs little attention.

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The De Luxe is designed to operate as either a single point heater with a gin. spout, or as a small multipoint heater.

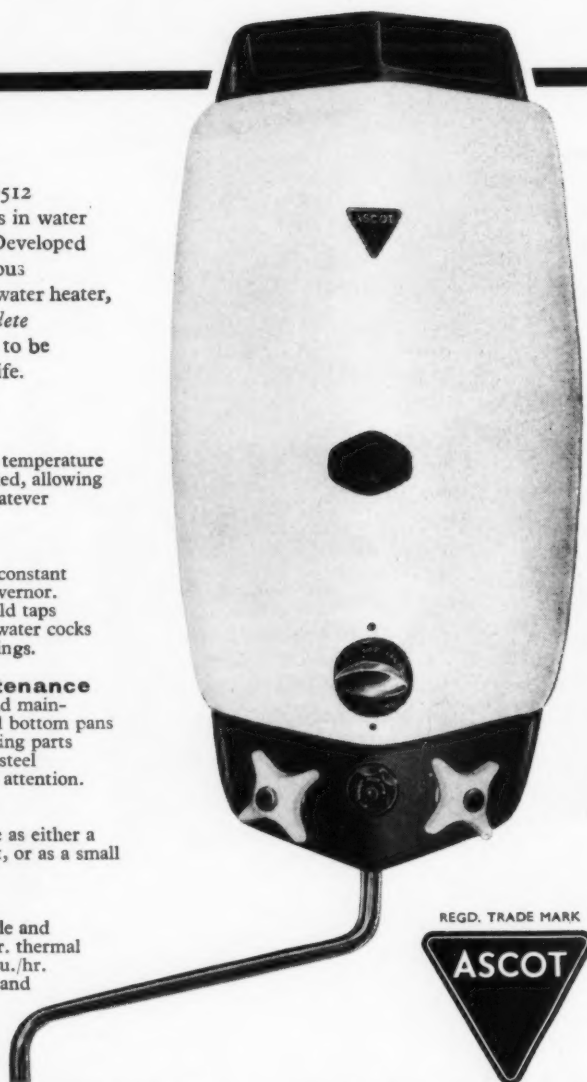
Performance

The De Luxe is 23½" high, 10½" wide and 8⅝" deep and gives 30,000 B.t.u./hr. thermal output from an input of 40,000 B.t.u./hr. producing 0.5 g.p.m. raised 100°F, and 0.625 g.p.m. raised 80°F, and pro rata. Pilot consumption is 250 B.t.u./hr.

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corroglaze

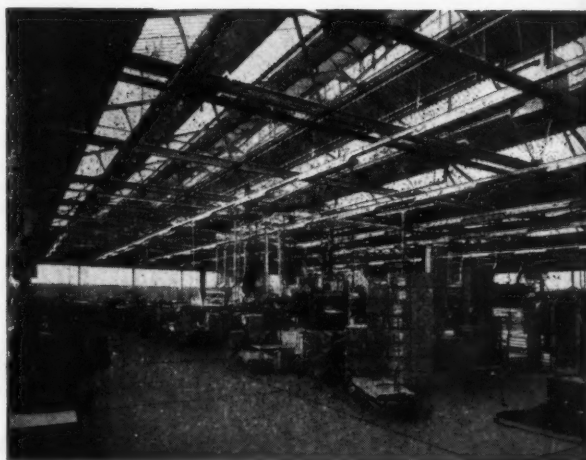
is 100% pure glass

it gives more shadow free light at working level



Because Corroglaze is pure glass, has a corrugated section and prismatic ribbing on its underside, it evenly spreads *all* the light. Harsh areas of light and dark shadows are eliminated.

Corroglaze diffuses natural light at working level. Panel spaced Corroglaze is economical too, as it gives greater light distribution yet, compared with patent glazing laid in runs, saves over 30 per cent. costs.



plus complete immunity fire spread

Tests carried out to B.S. 476:1953 clearly establish that Corroglaze is *the only corrugated roof lighting sheet which cannot in any way assist the spread of flame* and it will not flash, smoulder or drip flaming particles. It may be specified without restriction. Corroglaze requires no glazing bars, fixing holes or flashings, there is no risk of leakage and it can be supplied ready-mitred if desired. Write for literature and a copy of A.J. Information Sheet No. 666.



Transmits more light

Corroglaze is unaffected by fumes, does not discolour and maintains its efficiency under the most adverse atmospheric conditions.



Better light spread

Scientifically designed prismatic type ribbing on Corroglaze eliminates harsh light and dull areas.



Eliminates fire hazard

Corroglaze is the only 100 per cent. non-combustible corrugated roof lighting sheet. It is pure glass, reinforced with lin. square mesh.

corroglaze

the sheet that never burns

CORROGLAZE LTD.

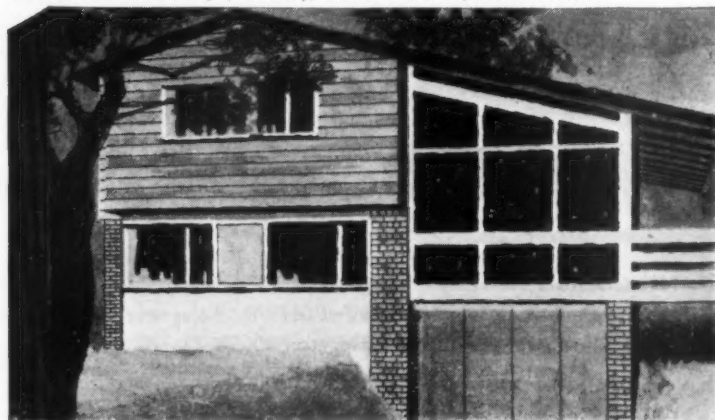
Wembley Middlesex. Telephone : Wembley 9411





Western red cedar

With a tree of great age (1,200 years is not unusual) a timber of enormous resilience may be taken for granted. Yet Western Red Cedar is also the lightest of all commercial softwoods and is unsurpassed in its easy workability. Free from pitch or resin, highly resistant to decay, acids and alkalis, handsome both in texture and colour—few timbers combine so many rare qualities, or provide a better material for so many different uses. Roof decking, exterior cladding, interior panelling, door and window framing, are just some examples. For further information contact the Commercial Secretary (Timber), Canada House, London SW1.



The Canada Trend House at the 1960 Ideal Home Exhibition



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Primer 'X' adheres and keys firmly when brushed on to a glass plate under running water.

Considerable research has gone into the development of this new primer. Primer 'X' is a dual purpose primer containing special anti-corrosive pigments and a cationic agent which gives tenacious adhesion to all building materials and ferrous and non-ferrous metals. It is unimpaired by atmospheric dampness and presence of moisture. The firmness of the key provided by Primer 'X' compels moisture to seek alternative outlets, thus preventing flaking and peeling of paintwork.

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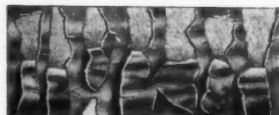
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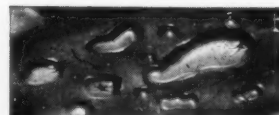


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Also at Slough.



STOPS flaking and peeling



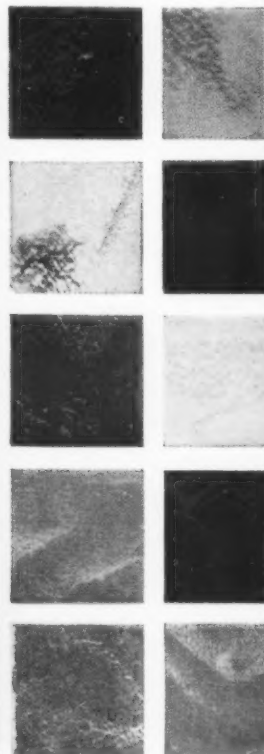
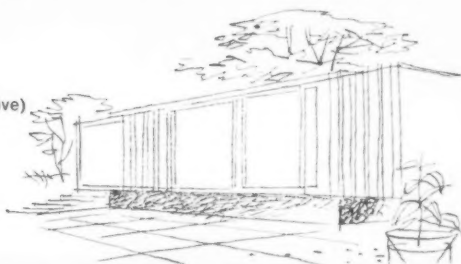
STOPS paintwork blistering

HOUSE AT BRANCH LANE, ALMONDBURY, YORKS,

featuring Nairn Vinyl tiles. Photo: Mann Bros. (Courtesy Peter Stead of Design Collaborative)

'... the first of a series of projects in which the designers are attempting to create living environments using colour-space considerations. The spaces, inside and outside, are determined by planes of colour ... These coloured planes interact, giving continuous visual rhythms ... creating a system of chromoplastic relationships and spaces that is clear-cut, yet tranquil.'

ARCHITECTURAL DESIGN, July 1959



Vinyl tiles

give you 19 planned colours to simplify colour-matched design

Using Nairn Vinyl tiles, you can choose from *planned* colours. Virtually all correspond closely with B.S.2660, making it easy to design a floor that will fit in with the overall colour plan of your project. A marbled finish helps to maintain their appearance in heavy traffic areas. To satisfy a particularly big demand, plain black and plain white are available for use in the 2.0 mm range.

The colour range shown here is based on the experience of our French factory, whose range has proved most popular with Continental designers. All 19 colours are available in the 2.0 mm domestic tiles (9" x 9"). In the heavy-duty 3.2 mm tiles (9" x 9" and 12" x 12"), there are 5 colours in the Contractors' Basic 'A' Range and a further 6 in the Architectural Design 'B' Range. Within each range, every tile is the same price: you can quickly and accurately cost up any installation.

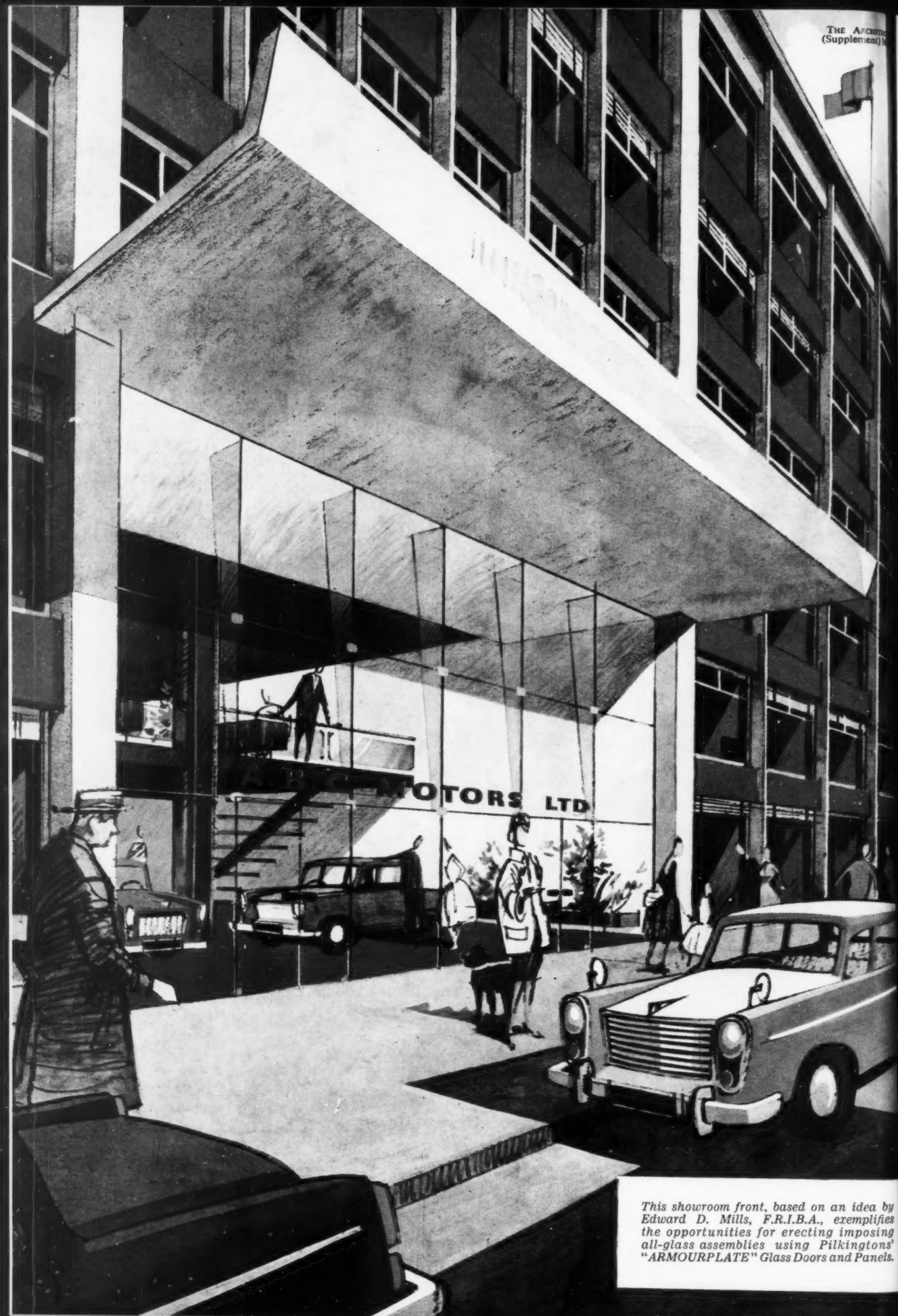
NAIRN TECHNICAL ADVISORY SERVICE

Technical representatives are based at our area offices to advise and give information on all matters concerning floorcovering materials. If you wish to consult one of these representatives, just write or 'phone any of these offices:

MICHAEL NAIRN & CO. LTD. P.O. BOX 1
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LONDON EC1: 131 Aldersgate Street,
Monarch 3211 (8 lines).
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A complete range of 19 attractive colours for commercial and domestic use





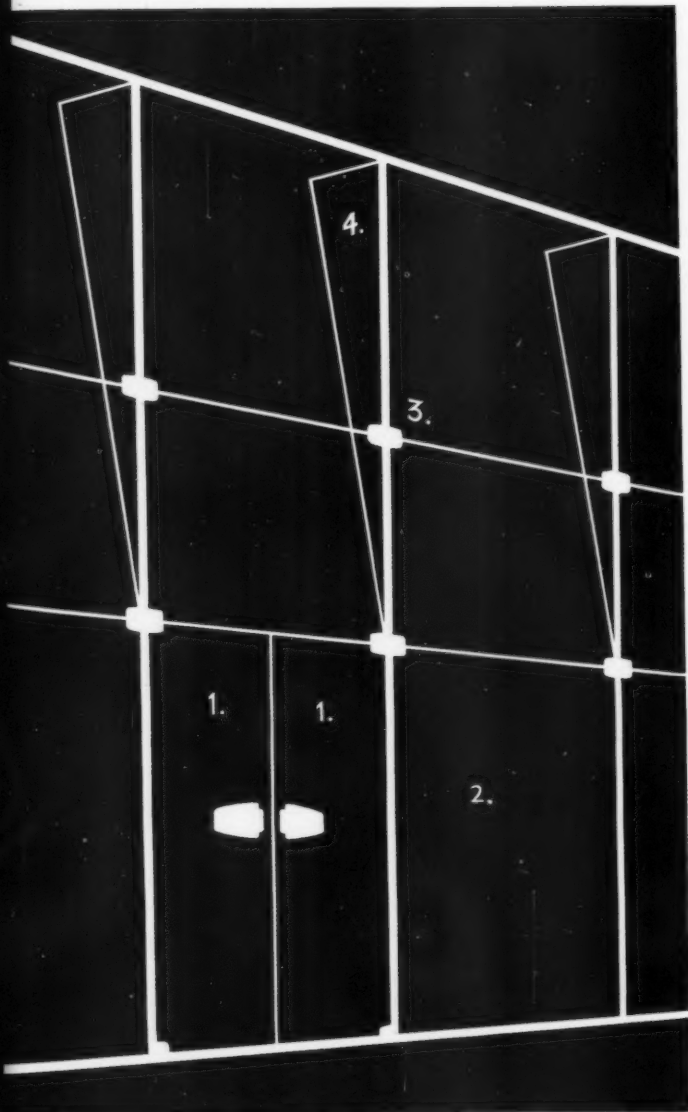
This showroom front, based on an idea by Edward D. Mills, F.R.I.B.A., exemplifies the opportunities for erecting imposing all-glass assemblies using Pilkington's "ARMOURPLATE" Glass Doors and Panels.

P

P

Expansive Elegance

Pilkingtons' "ARMOURPLATE" Glass Doors and Assemblies



Now, the inviting elegance of "ARMOURPLATE" Glass Doors can be expanded to include the whole frontage. For full details of Pilkingtons' "ARMOURPLATE" Glass Assemblies and fittings—which make possible uninterrupted expanses of glass, two storeys high—write to the manufacturers, Pilkington Brothers Limited.

- 1 Pilkingtons' "ARMOURPLATE" Glass Doors (guaranteed five years) are available in standard sizes up to 96" x 36". Non-standard sizes made to order.
- 2 "ARMOURPLATE" Glass fixed panels and transoms are available in sizes up to 164" x 60".
- 3 "ARMOURPLATE" Assemblies require no metal framing. Small patch fittings link and secure the separate panels.
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"ARMOURPLATE" is a registered trade mark of Pilkington Brothers Limited. Supplies are available through the usual trade channels.





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Specification

The roof to Broughton Green Best (grained) Slates, to be the Broughton Slate Quarries, The Lancs., in about 18 in. proportionate widths, laid regularly di from eaves slate to be by two sto and wide used on the Alternativ Thirds, S Olive Gre Shades. Ridging: pose-made moulded sl reins is rec

CON
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NOTTINGHAM UNIVERSITY

All 7 blocks of the
Cripps Hall of Residence
are roofed with

BROUGHTON MOOR Light Sea Green Slates

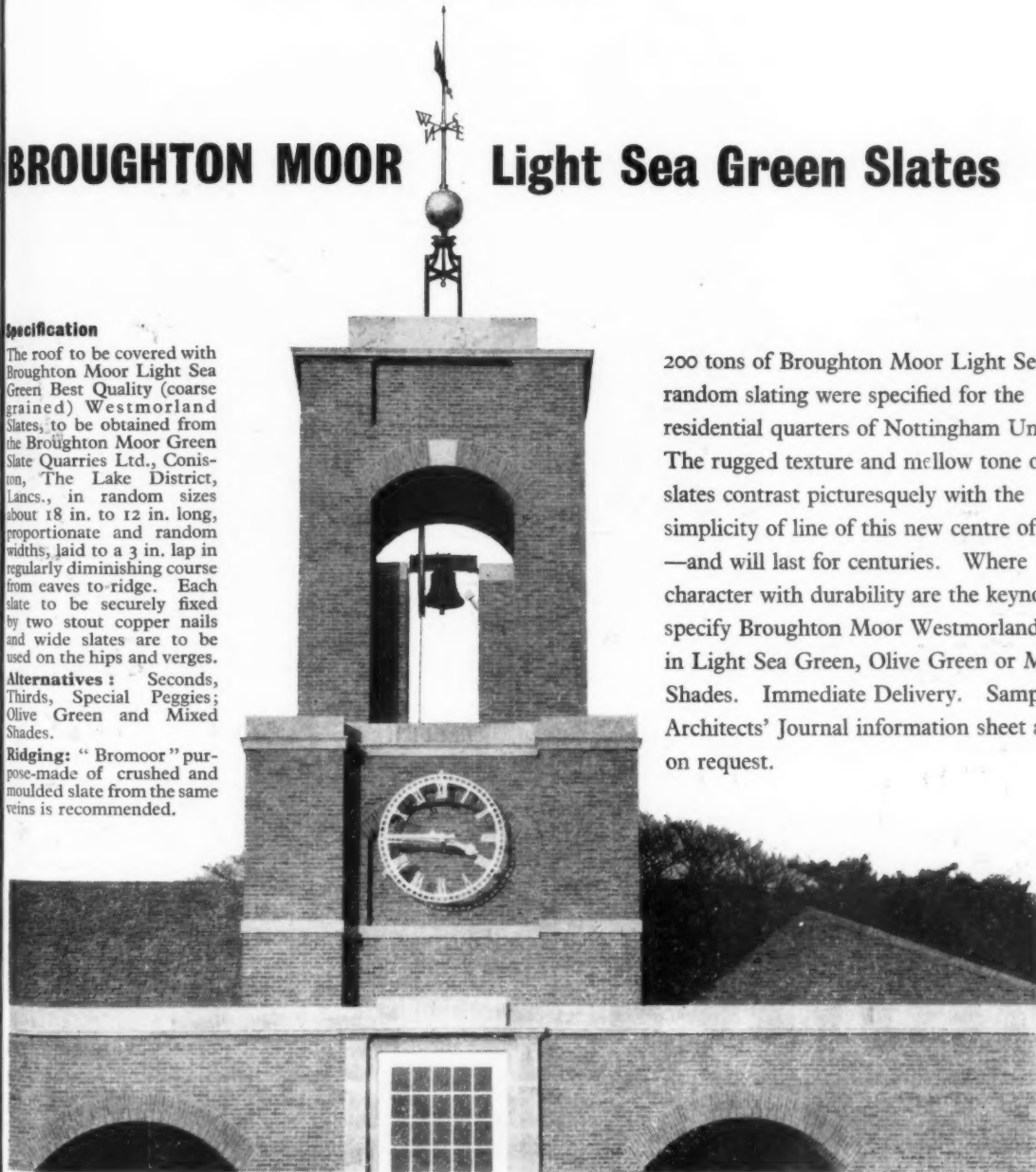
Specification

The roof to be covered with Broughton Moor Light Sea Green Best Quality (coarse grained) Westmorland Slates, to be obtained from the Broughton Moor Green Slate Quarries Ltd., Coniston, The Lake District, Lancs., in random sizes about 18 in. to 12 in. long, proportionate and random widths, laid to a 3 in. lap in regularly diminishing course from eaves to ridge. Each slate to be securely fixed by two stout copper nails and wide slates are to be used on the hips and verges.

Alternatives: Seconds, Thirds, Special Peggies; Olive Green and Mixed Shades.

Ridging: "Bromoor" purpose-made of crushed and moulded slate from the same veins is recommended.

200 tons of Broughton Moor Light Sea Green random slating were specified for the residential quarters of Nottingham University. The rugged texture and mellow tone of these slates contrast picturesquely with the simplicity of line of this new centre of learning—and will last for centuries. Where character with durability are the keynote, specify Broughton Moor Westmorland slates, in Light Sea Green, Olive Green or Mixed Shades. Immediate Delivery. Samples and Architects' Journal information sheet available on request.



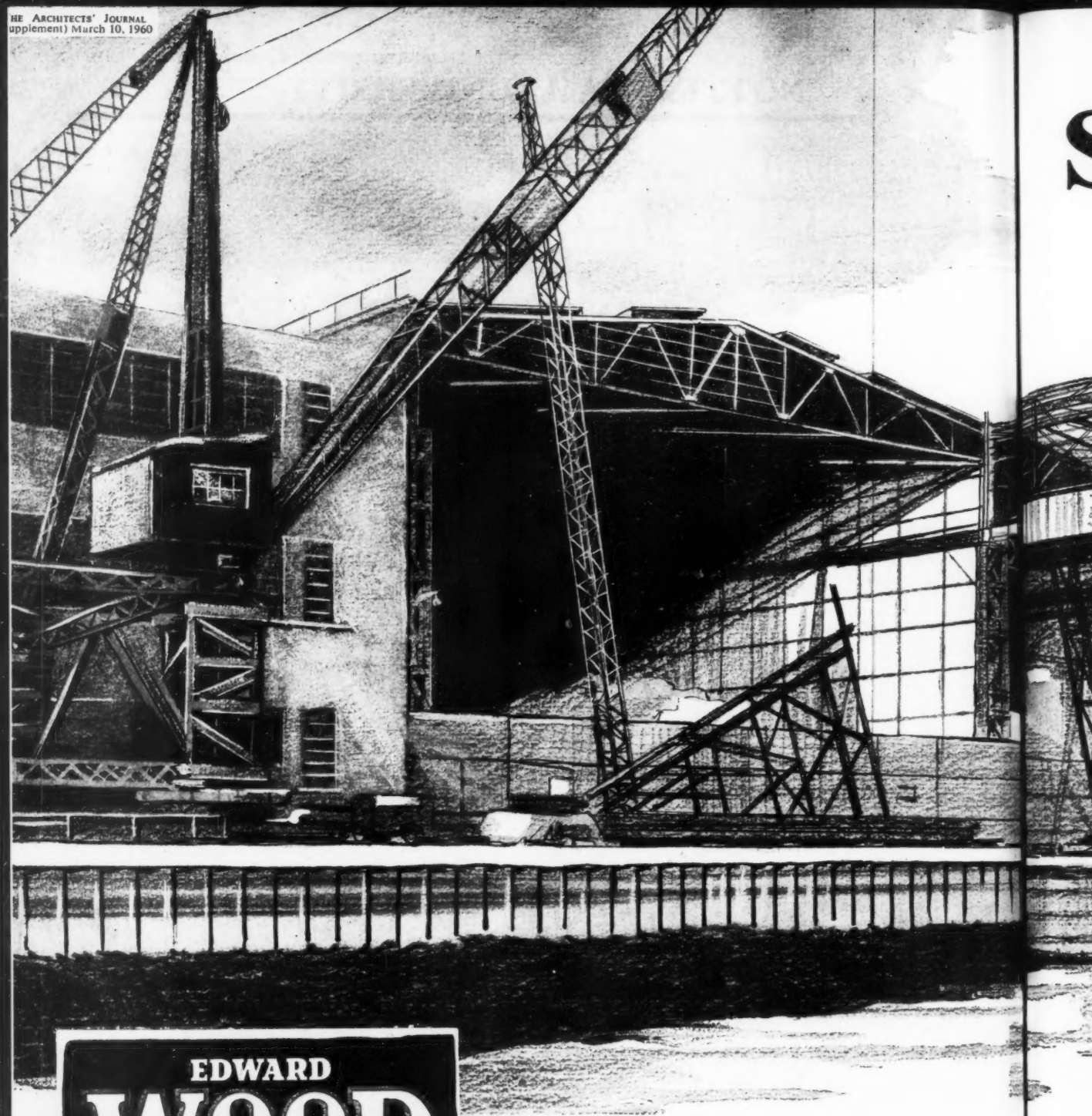
Horace Farquharson, Donald McMorran, ARA, George Whitby MBE, Architects.

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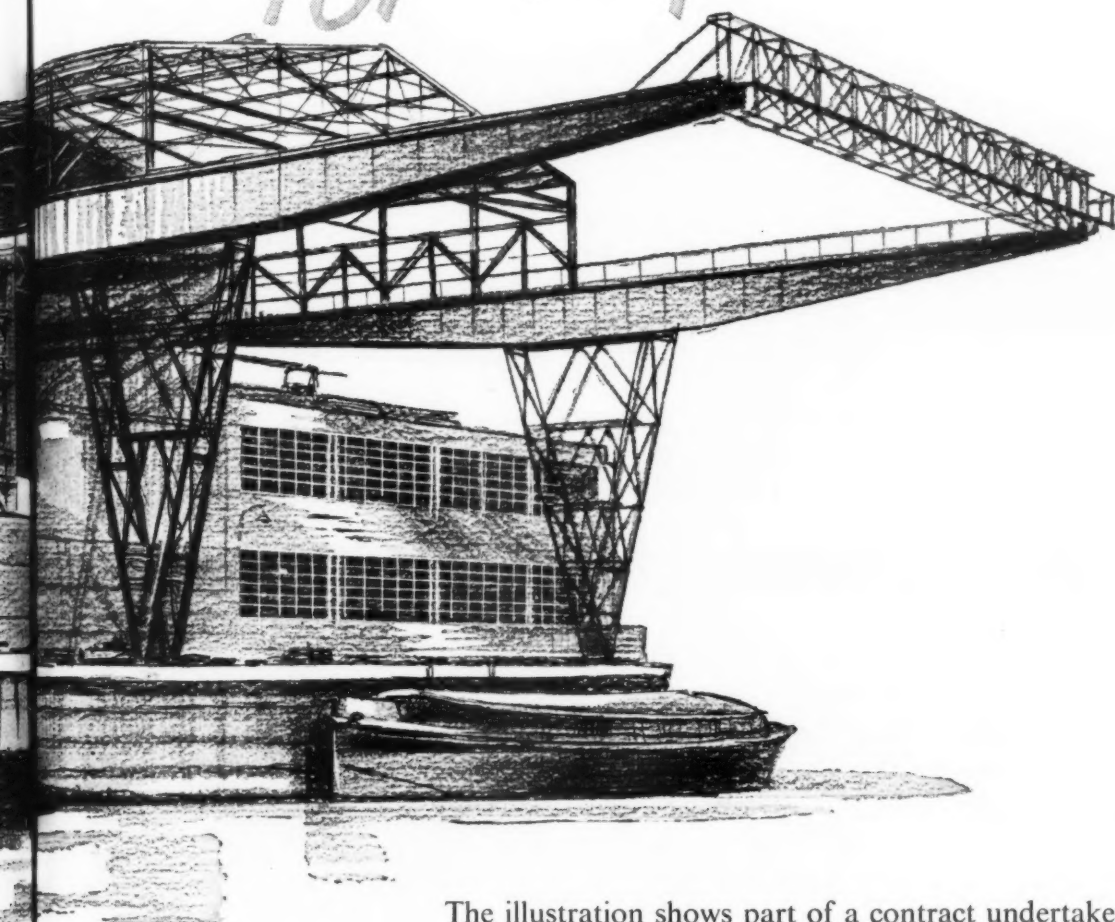
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for Paperboard

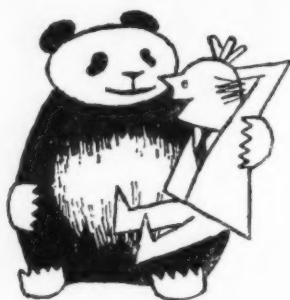


The illustration shows part of a contract undertaken for Thames Board Mills Limited, at Warrington, Lancashire. The project comprises large storage bays with direct loading facilities from the new diversion of the River Mersey at Arpley Meadows; the 50 ft. high gantry which will accommodate a travelling crane, has a 50 ft. projection over the quay side.

ENGINEERS

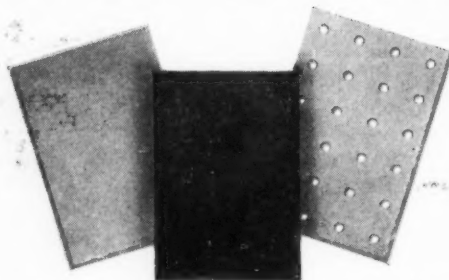
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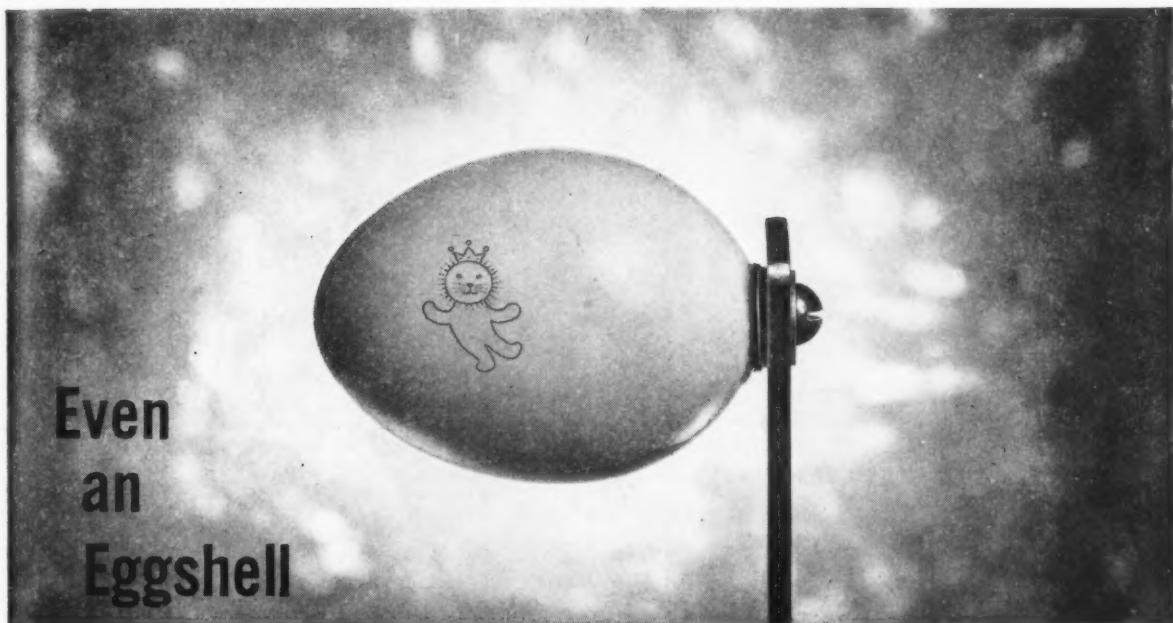
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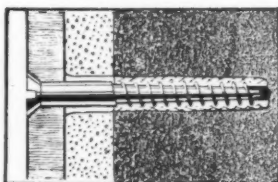
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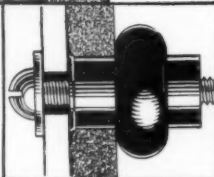
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The famous Rawlplug makes firm screw fixings in masonry in a mere fraction of the time taken by any other method. For all screw sizes up to 1/2" diam. coach screws.



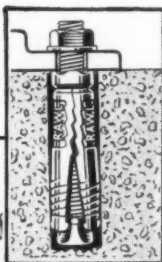
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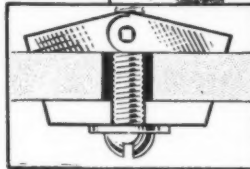
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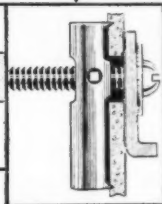
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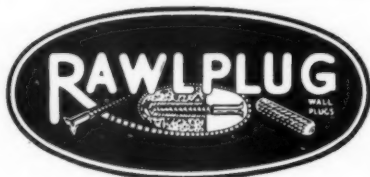


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Passed through a hole in hollow material, the long member falls into a vertical position by gravity, and is then drawn against the back of the material by screwing from the front.

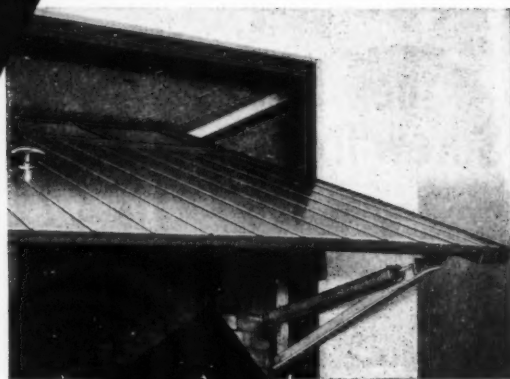
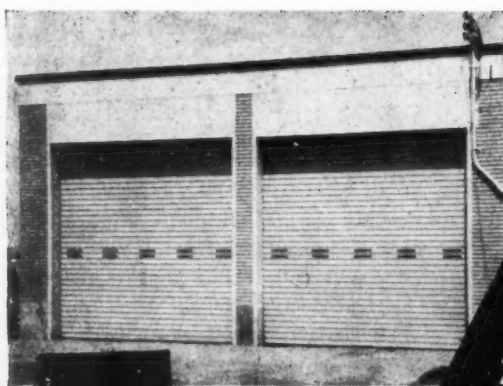
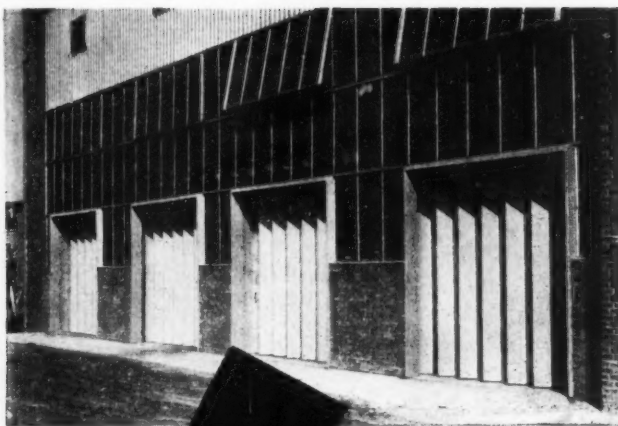


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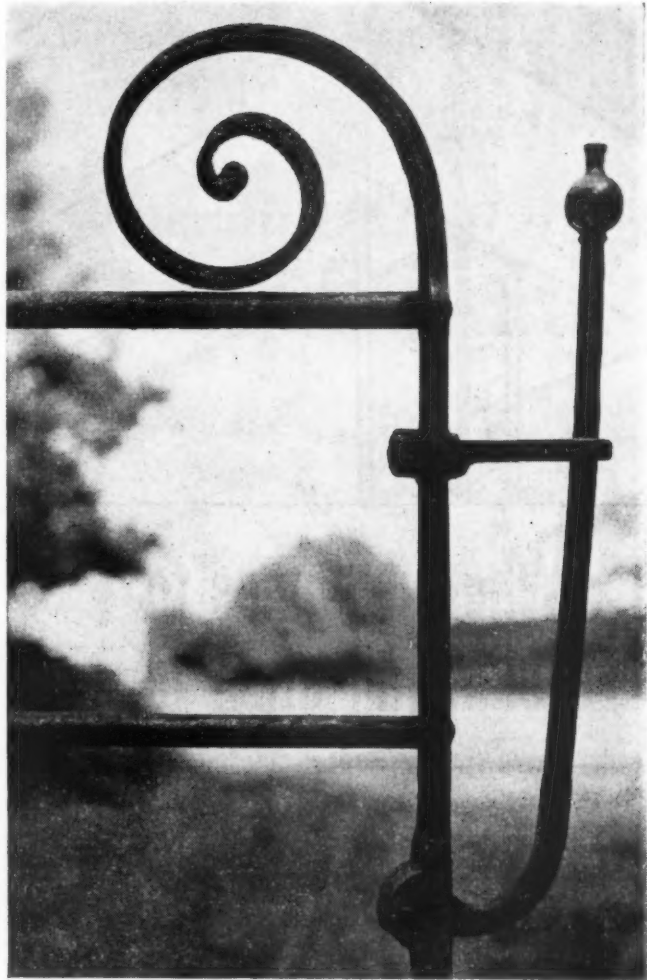
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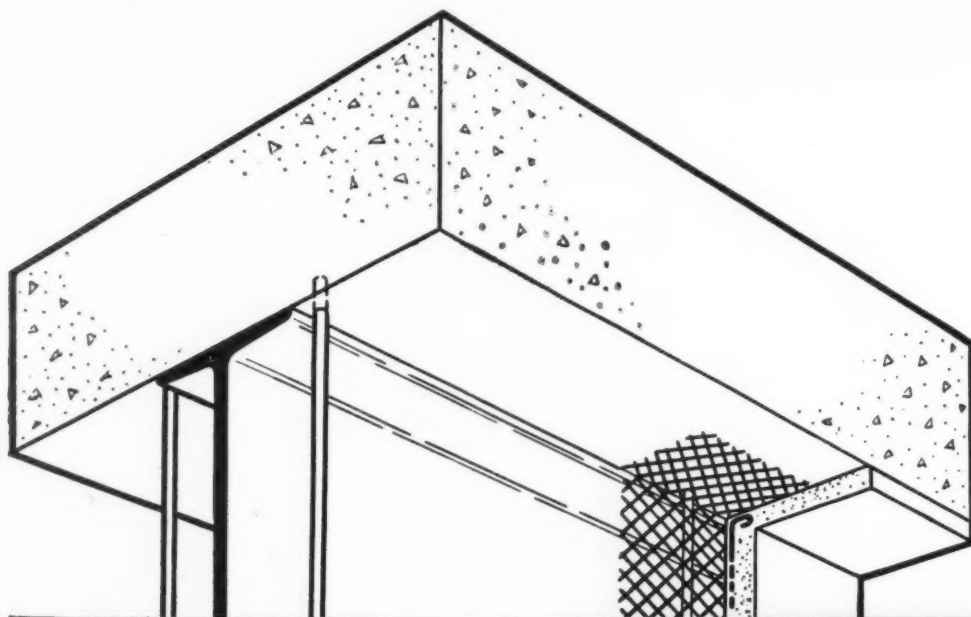
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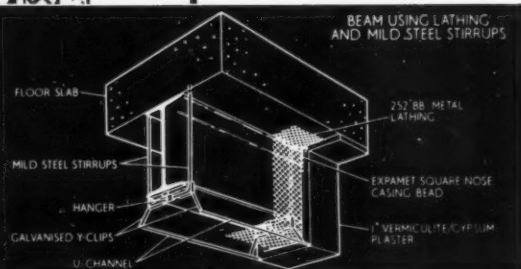
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'I did not bow to you,' said the Master,
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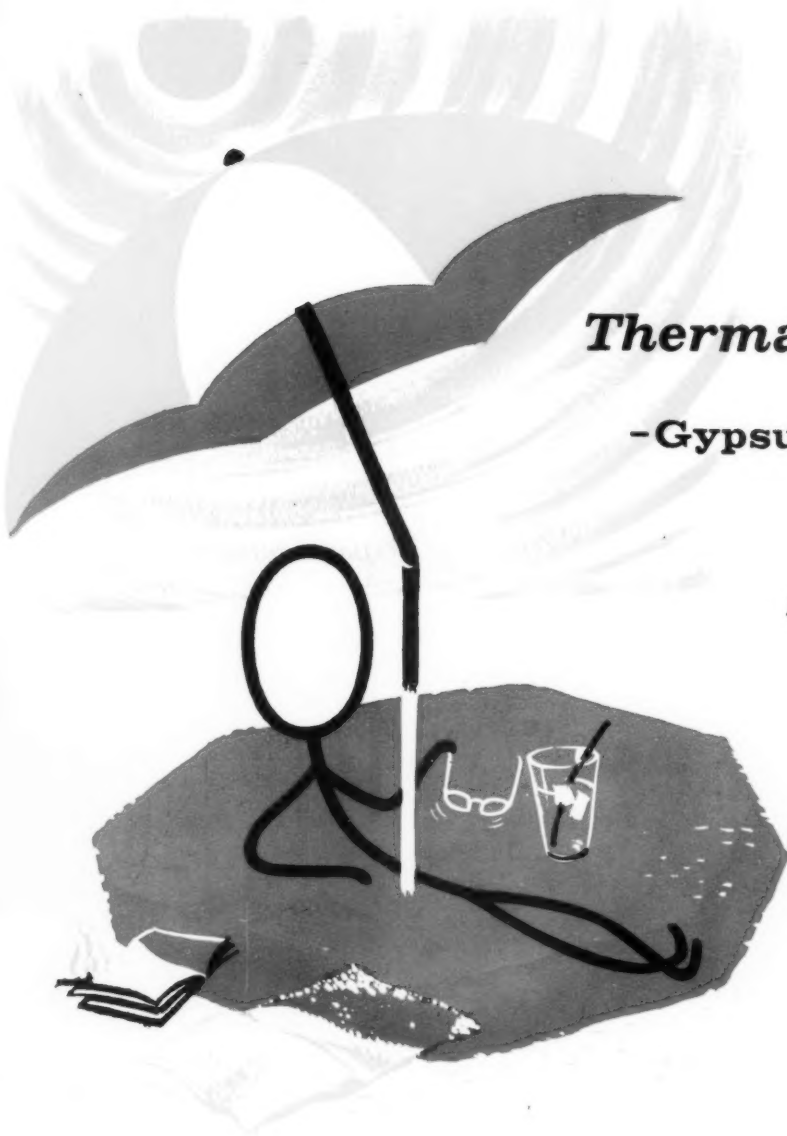
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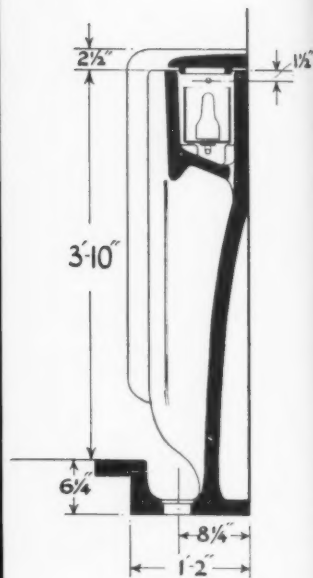
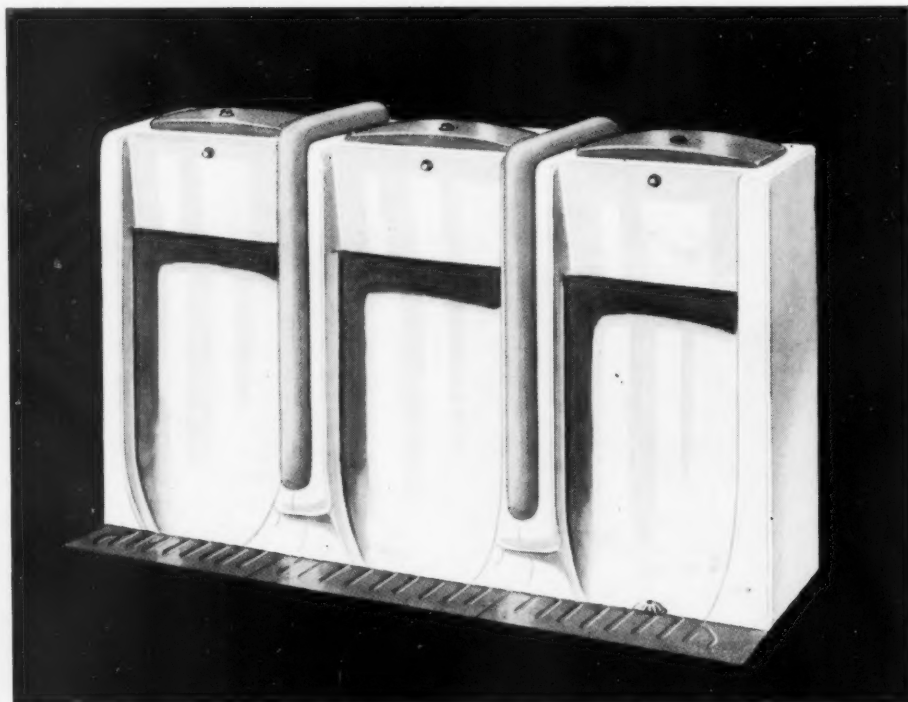
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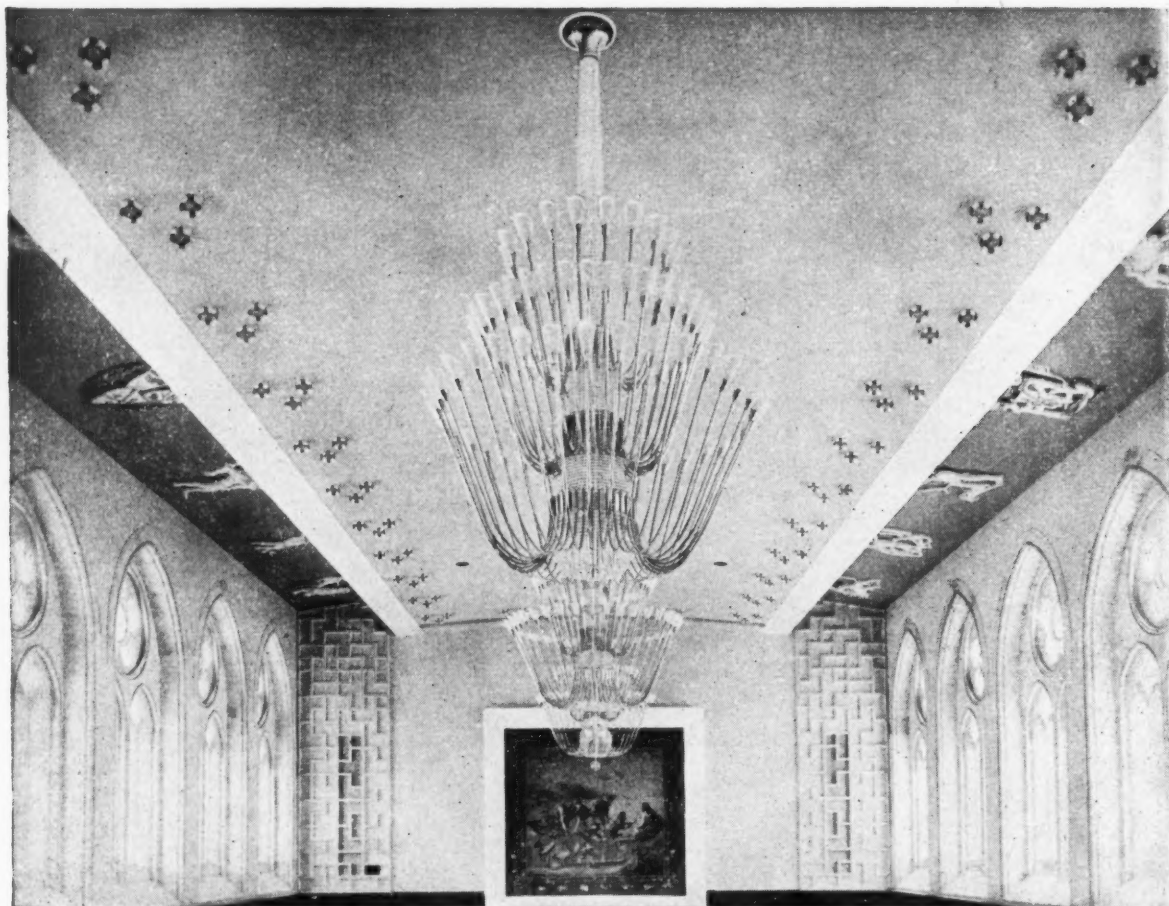
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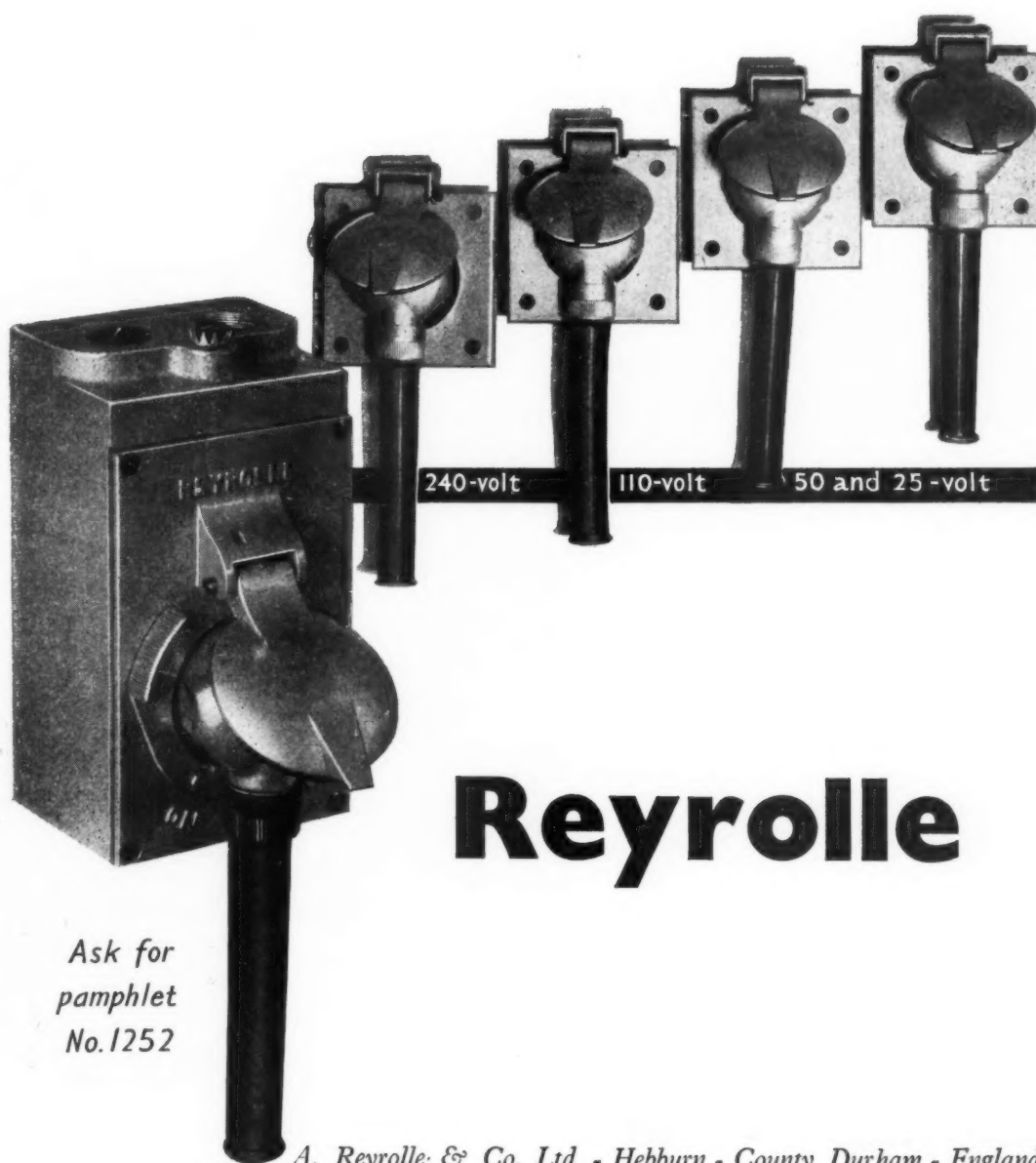
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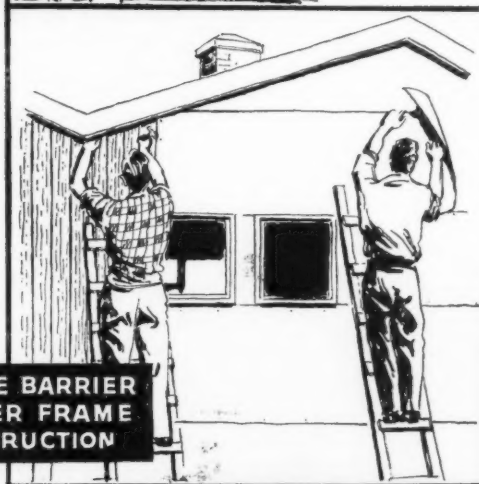
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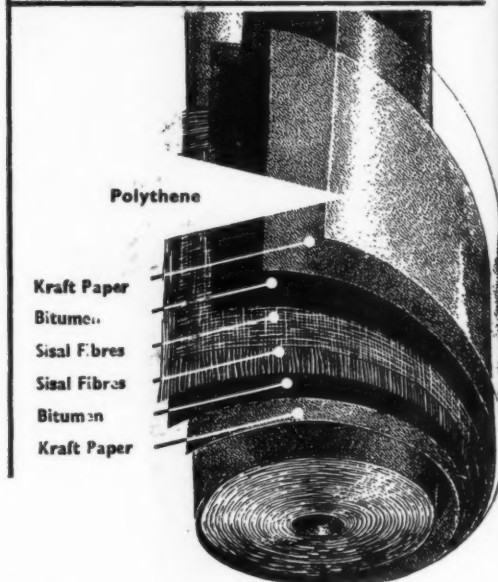
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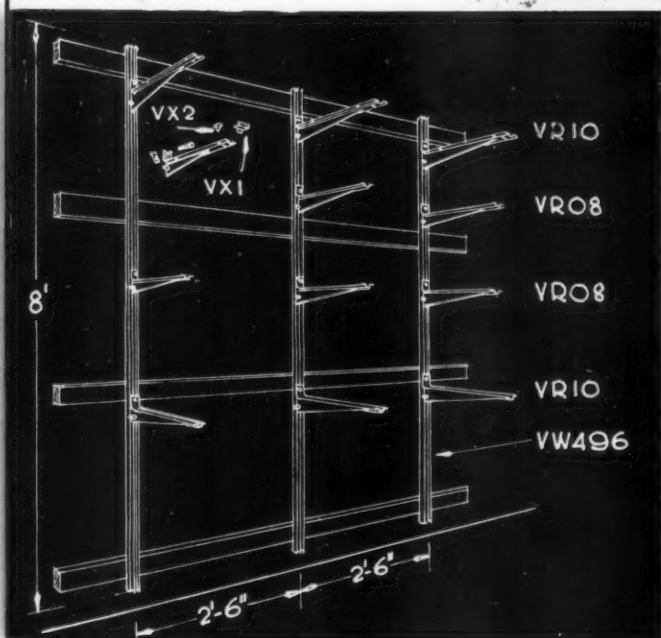
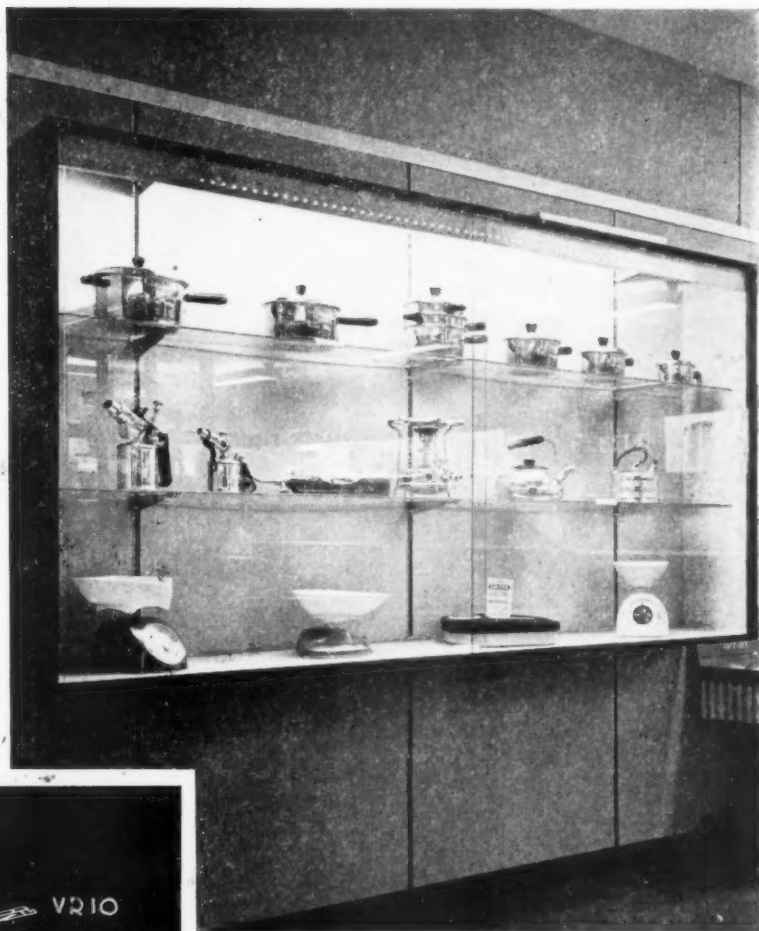
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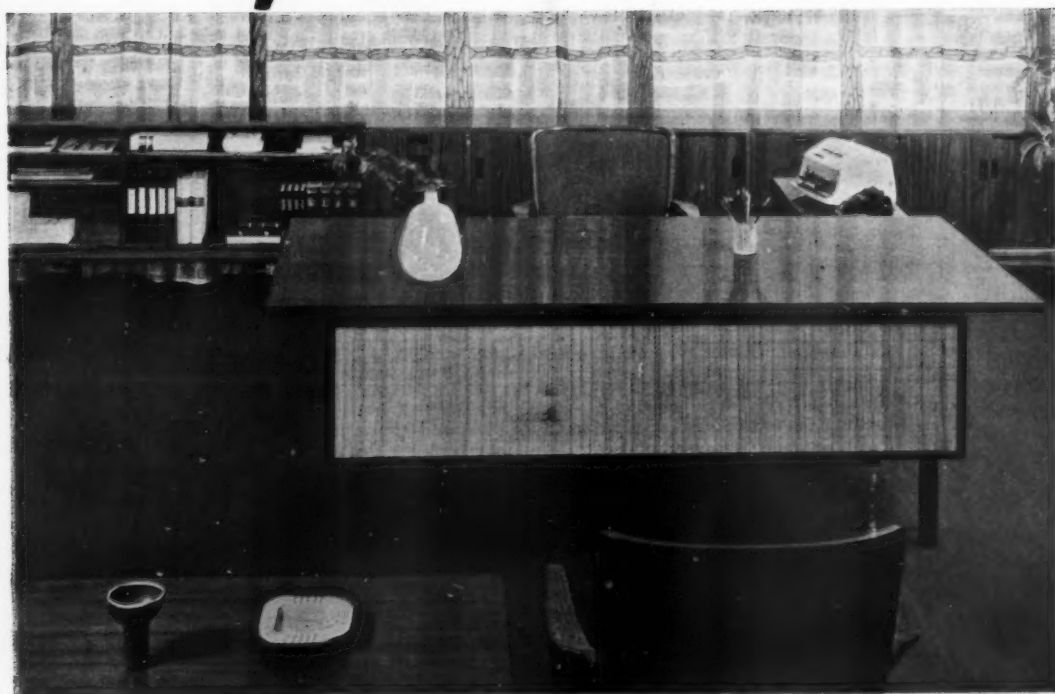
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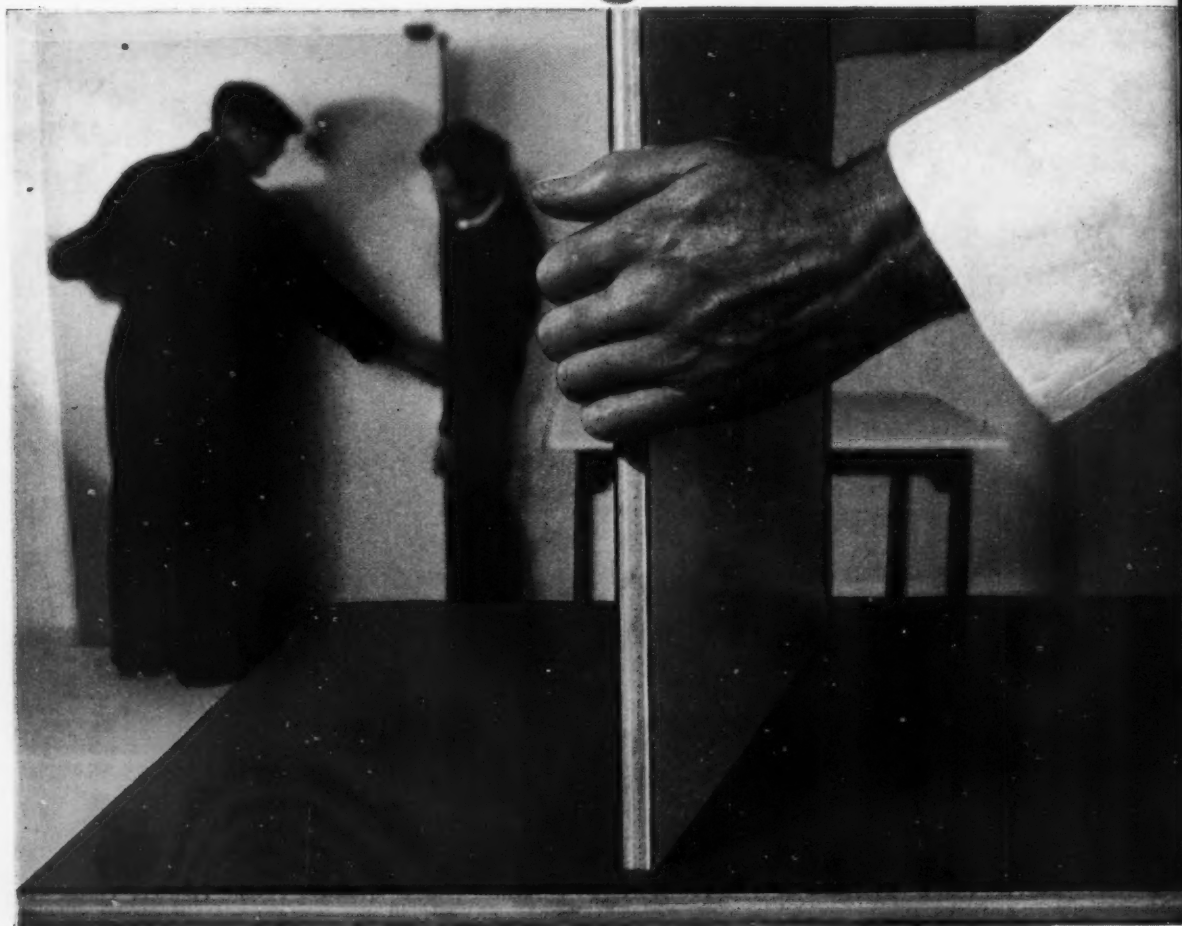
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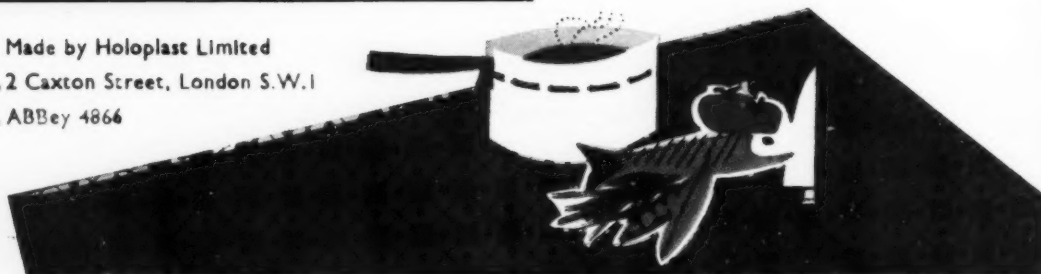
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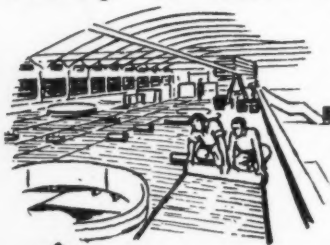
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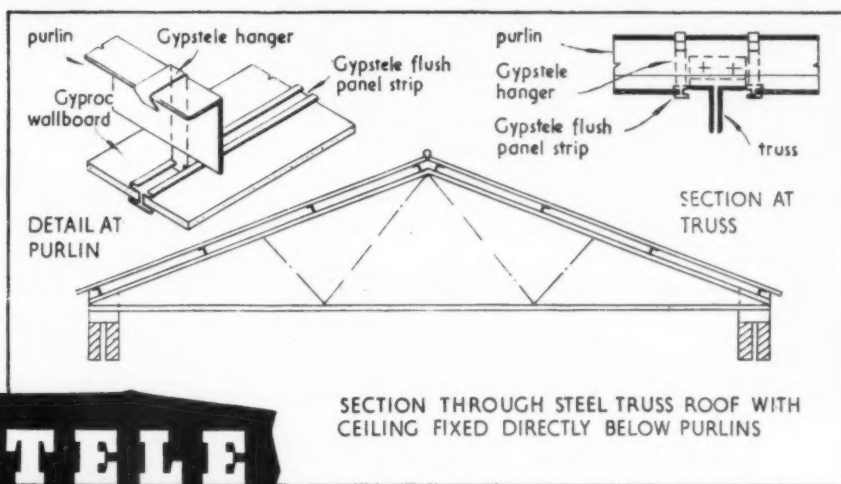
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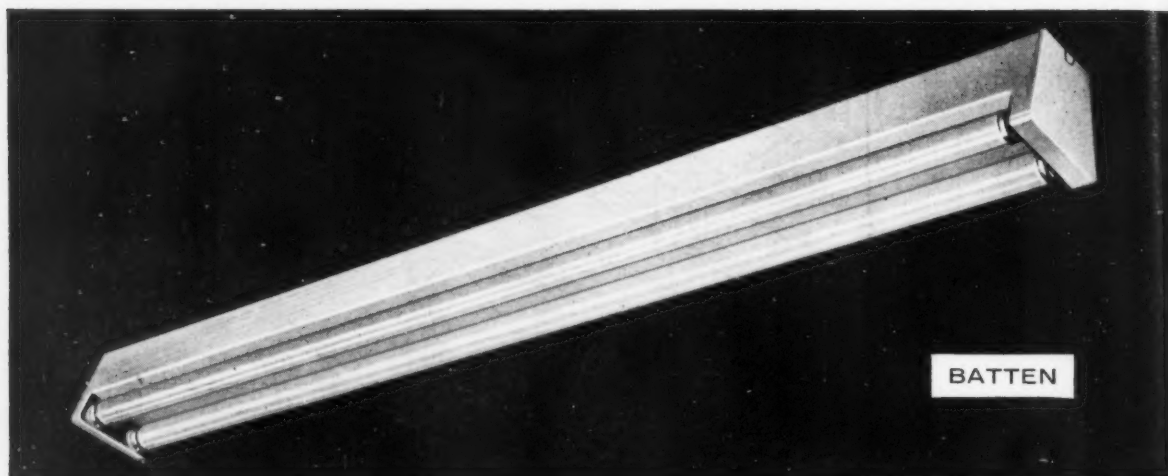
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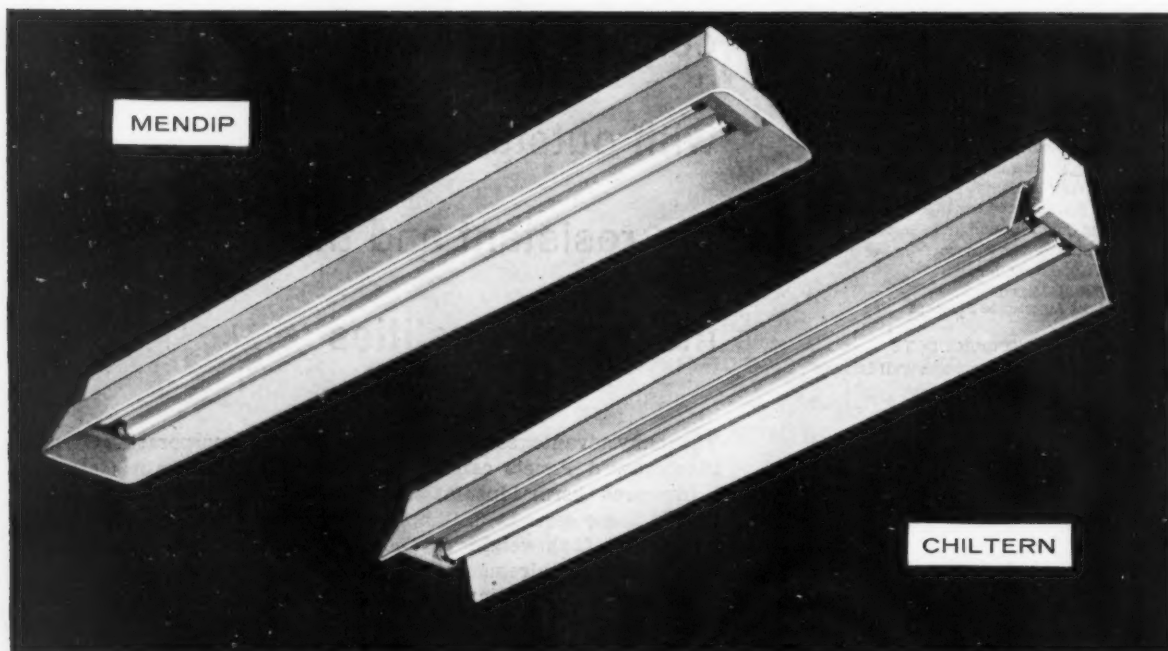
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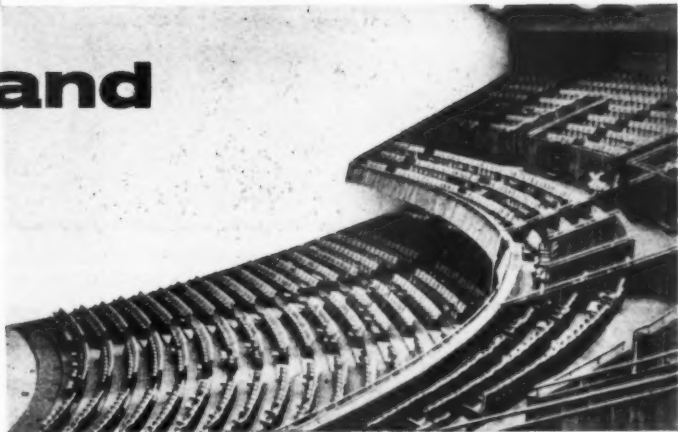
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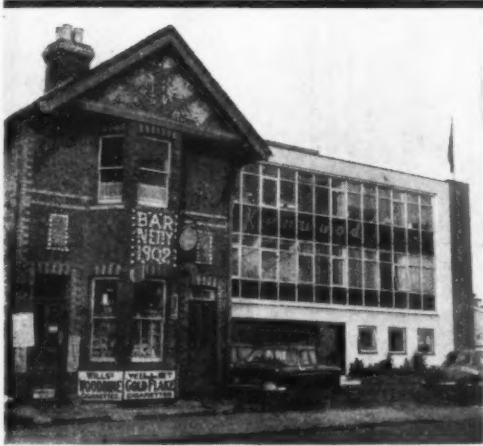
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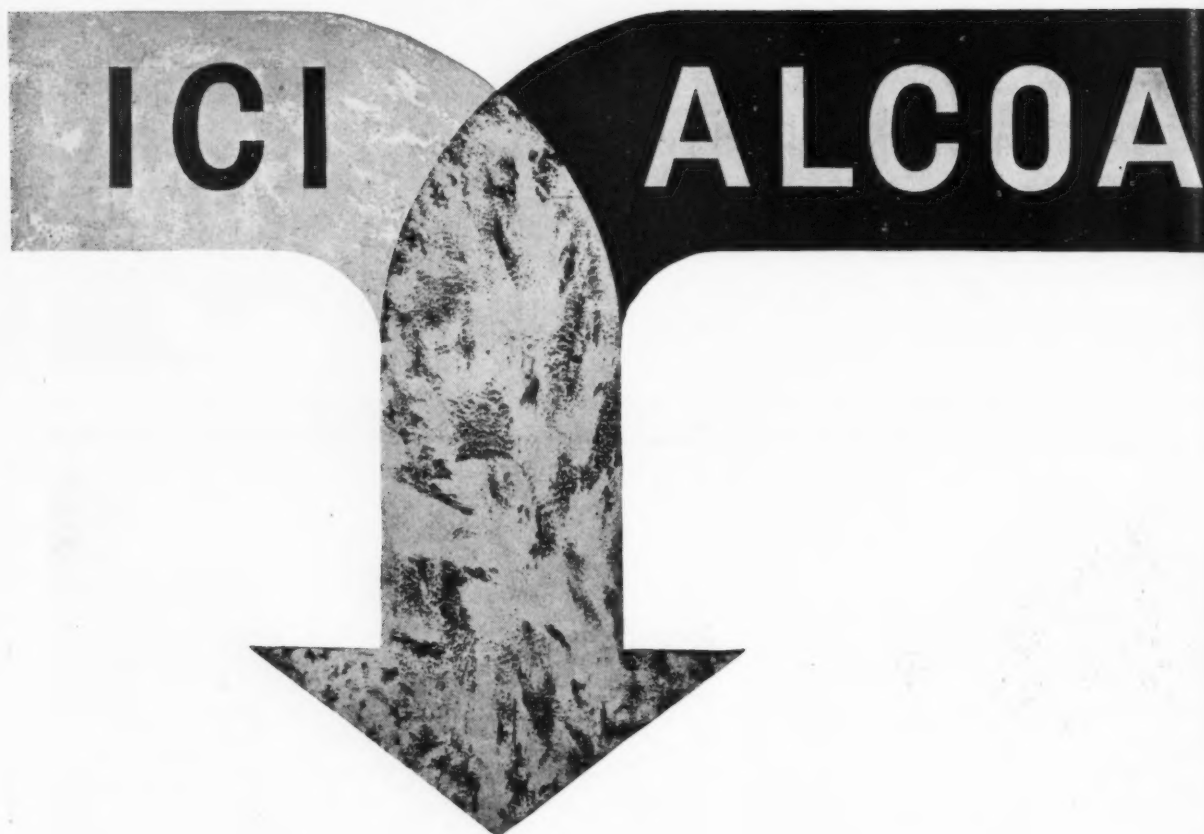
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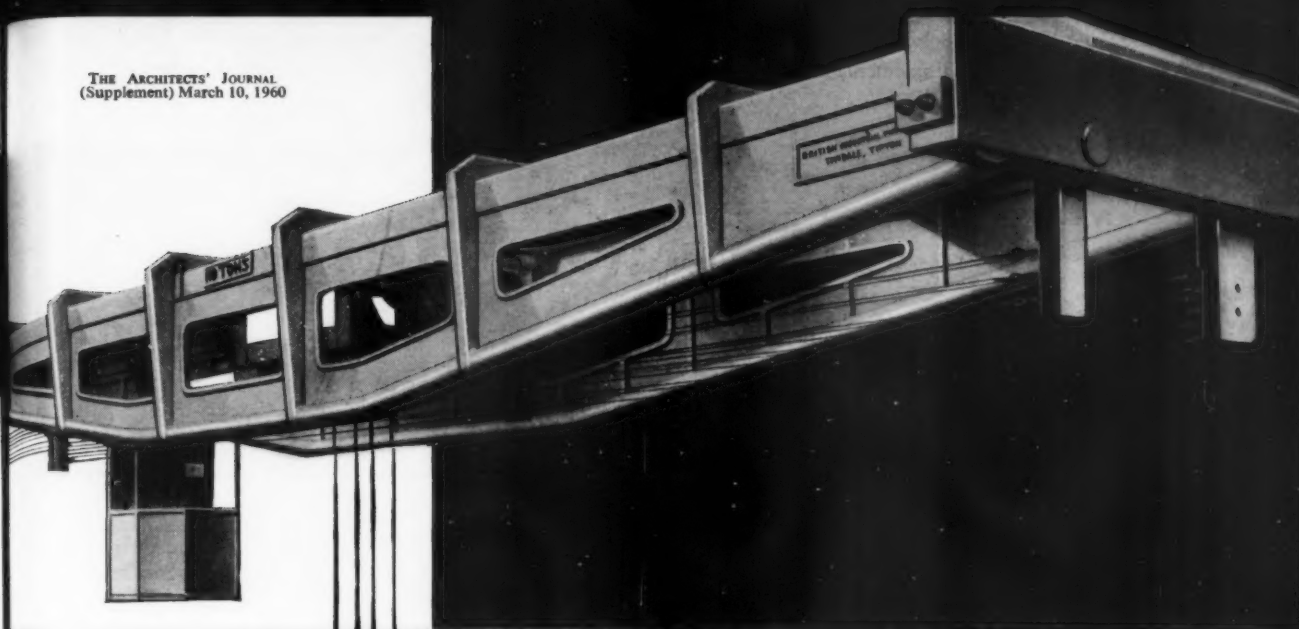
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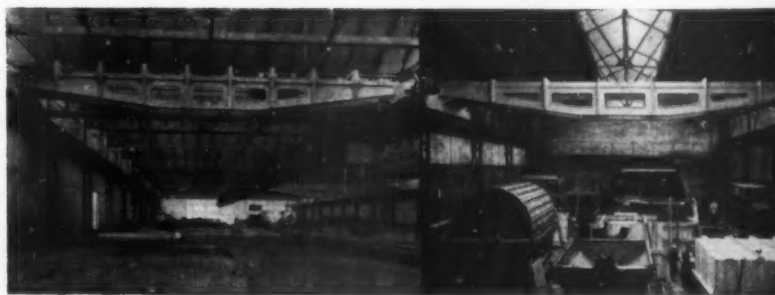
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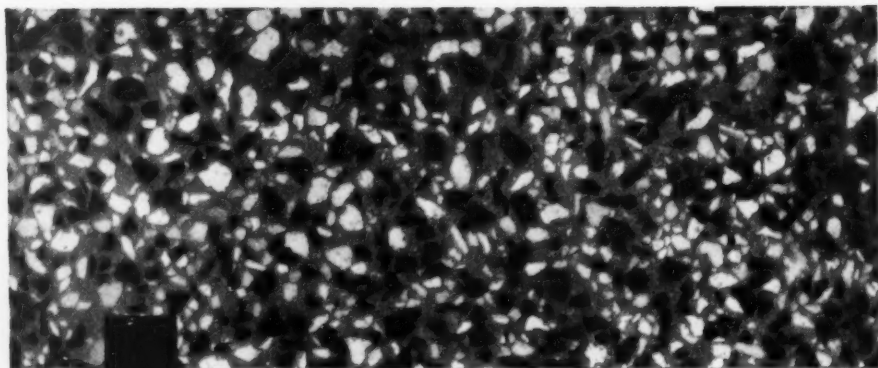
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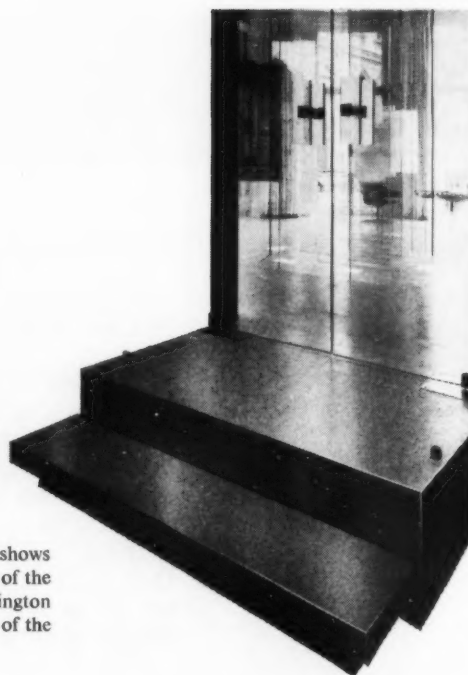
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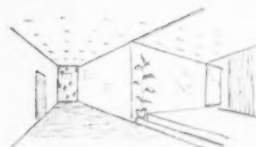
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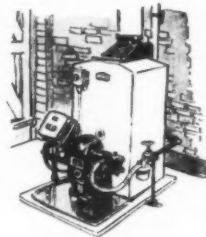
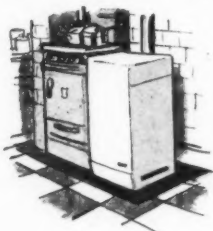
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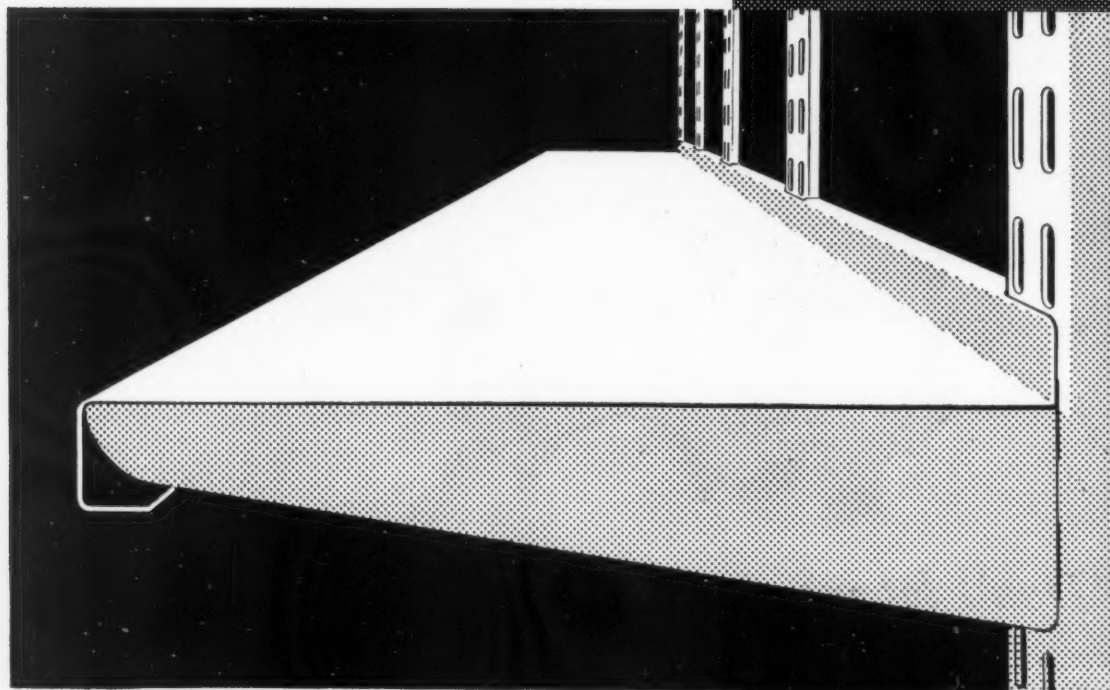


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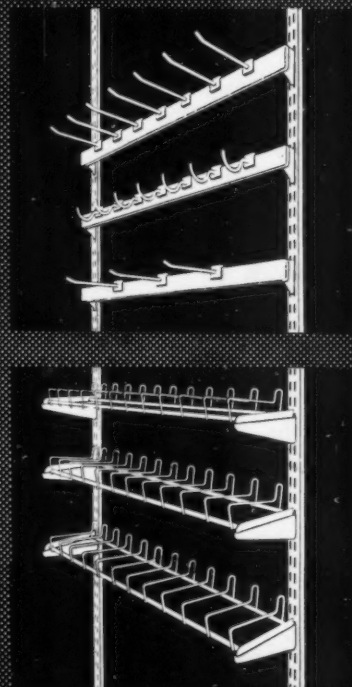
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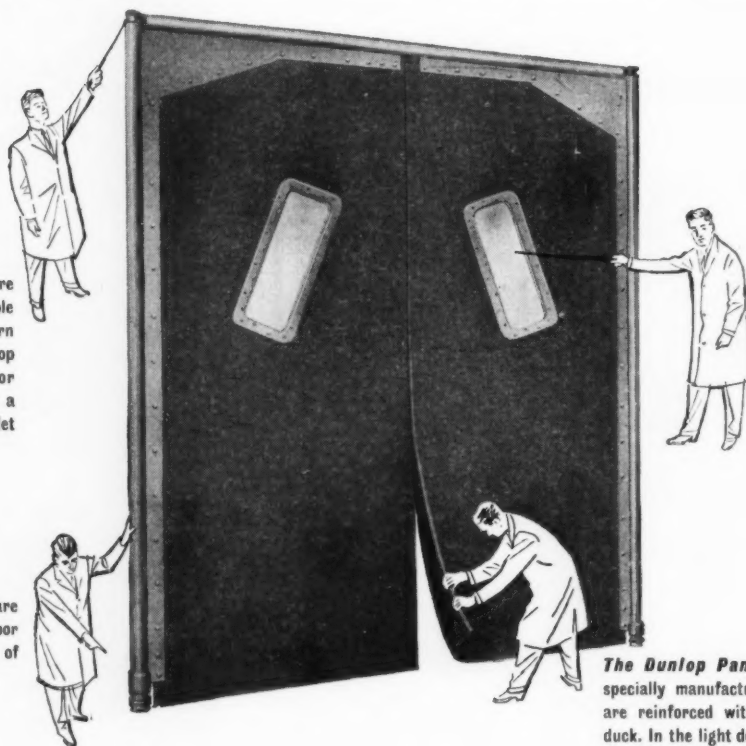
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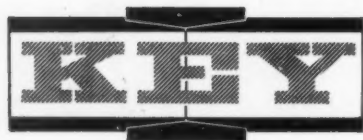
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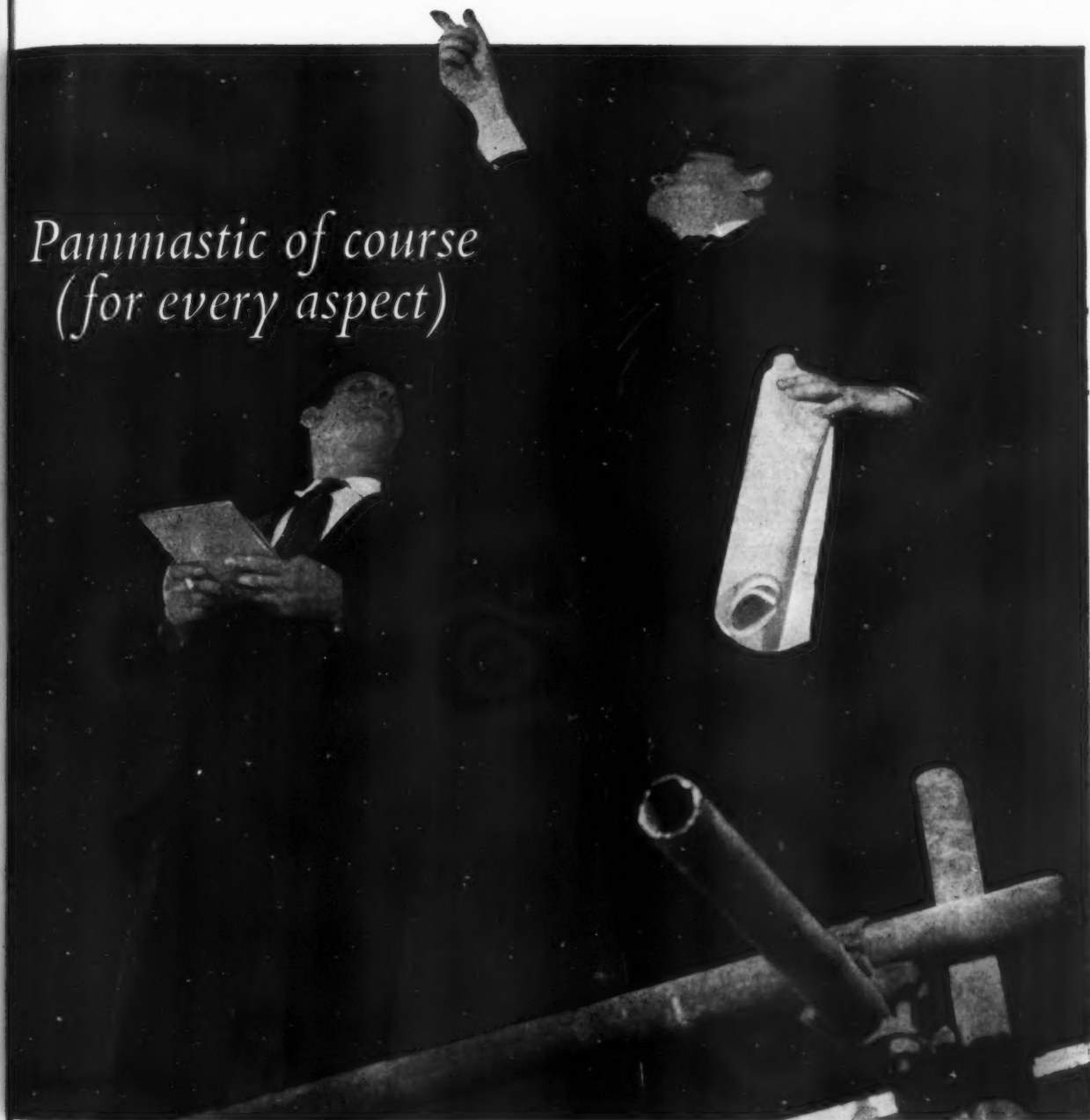
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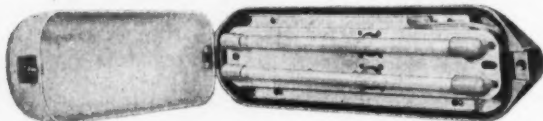
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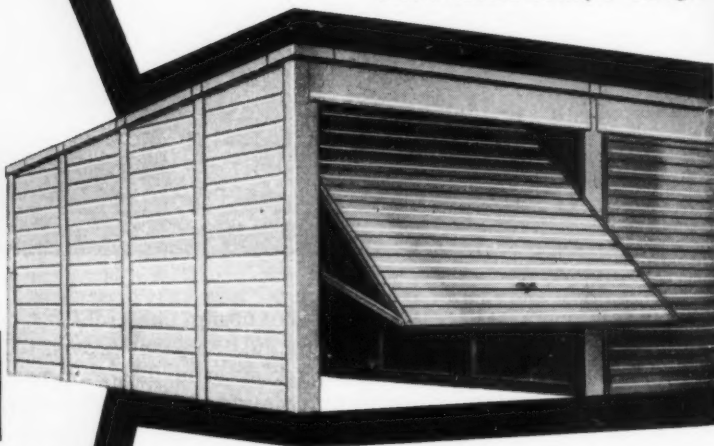


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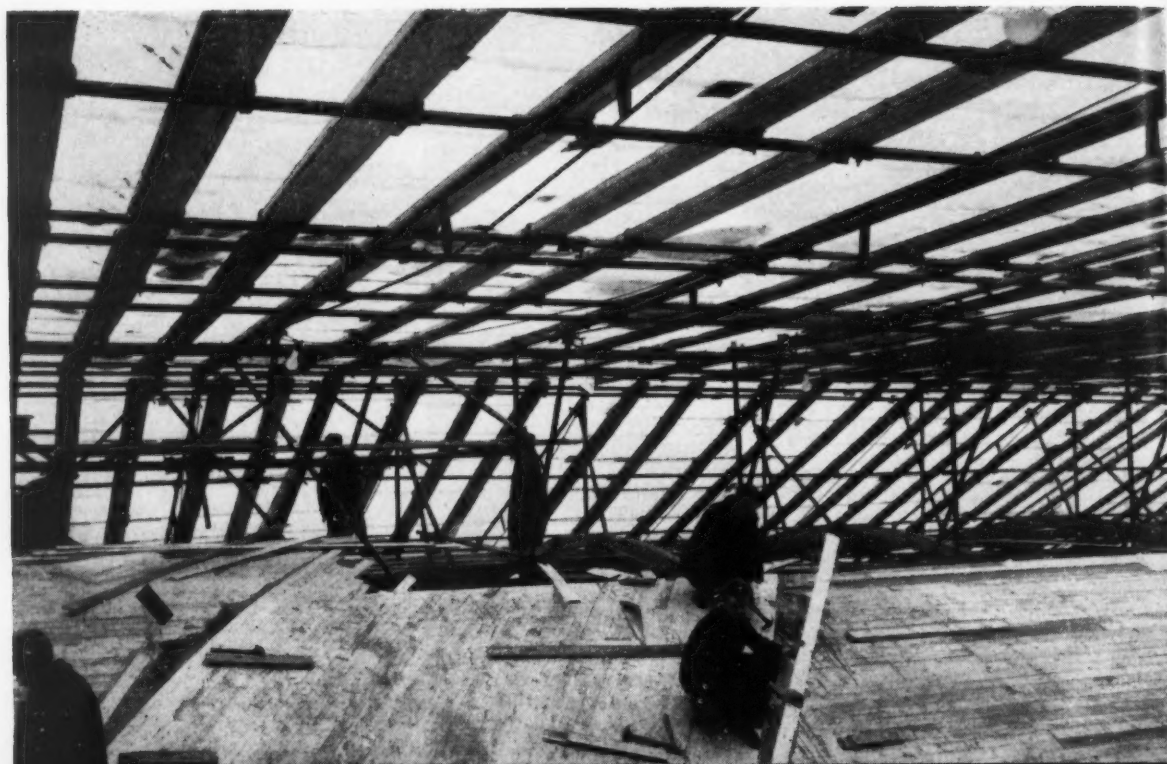


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The roof of the new parcels depot at Coventry Station, 'protected' by a 'Visqueen' canopy providing shelter for men and materials during construction. British Railways London Midland Region Chief Civil Engineer: J. Taylor Thompson, M.I.C.E.

'Visqueen' keeps rain out
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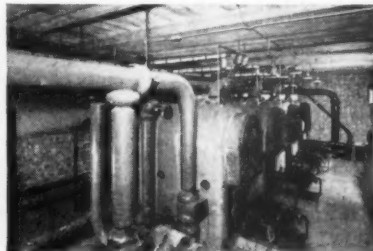
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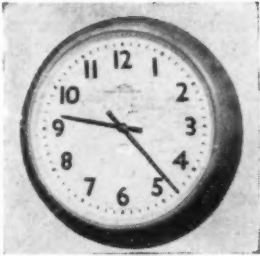
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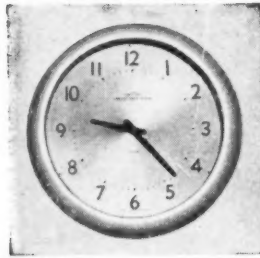
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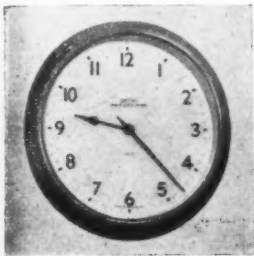


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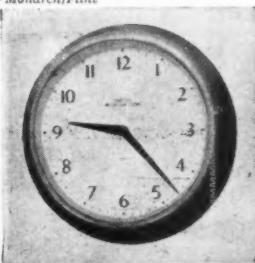
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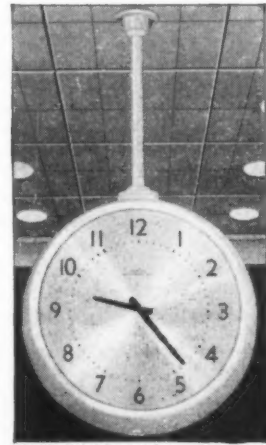
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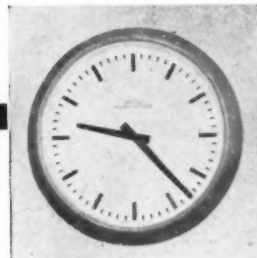
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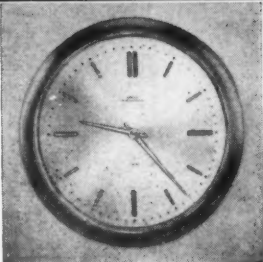


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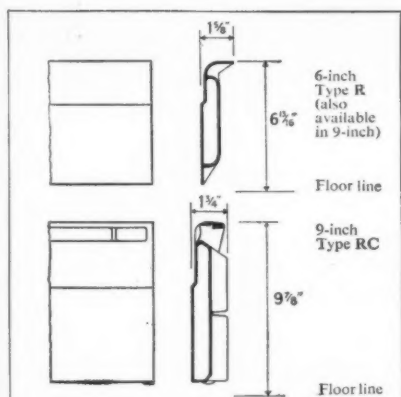
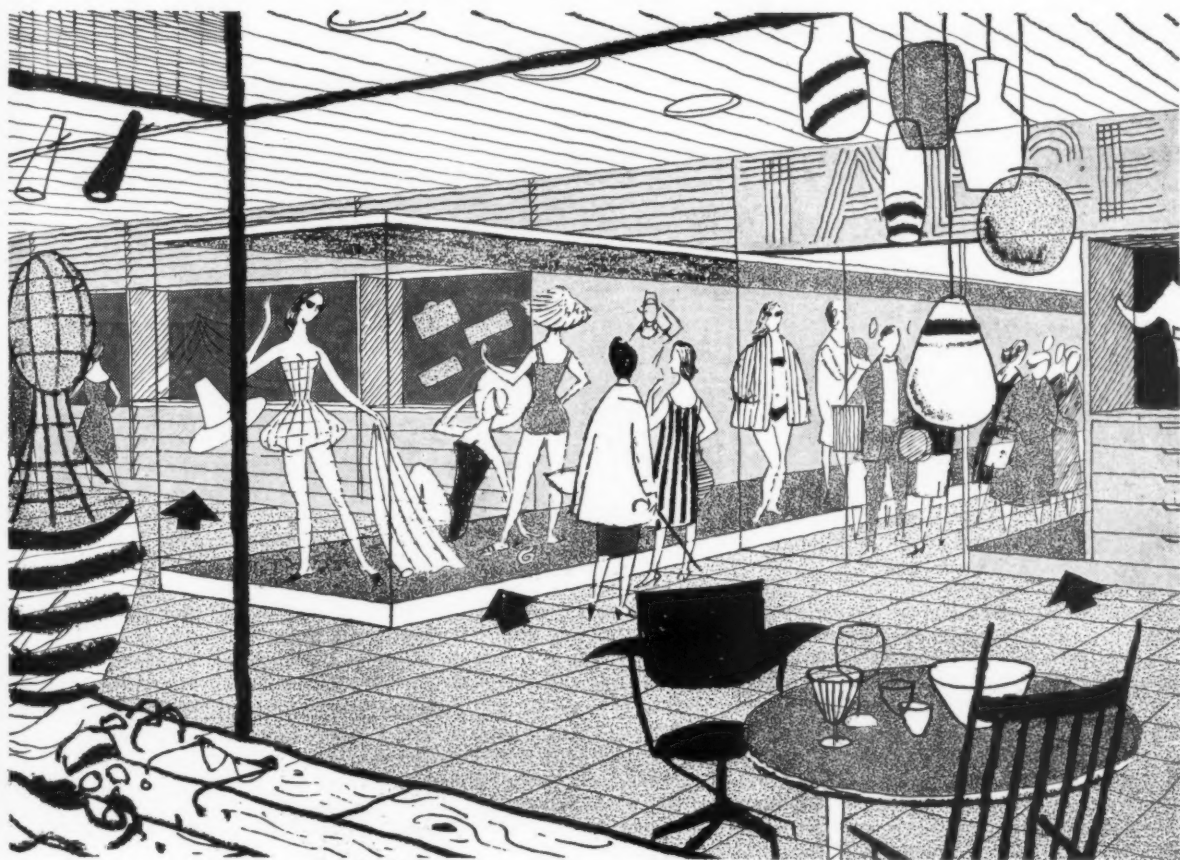
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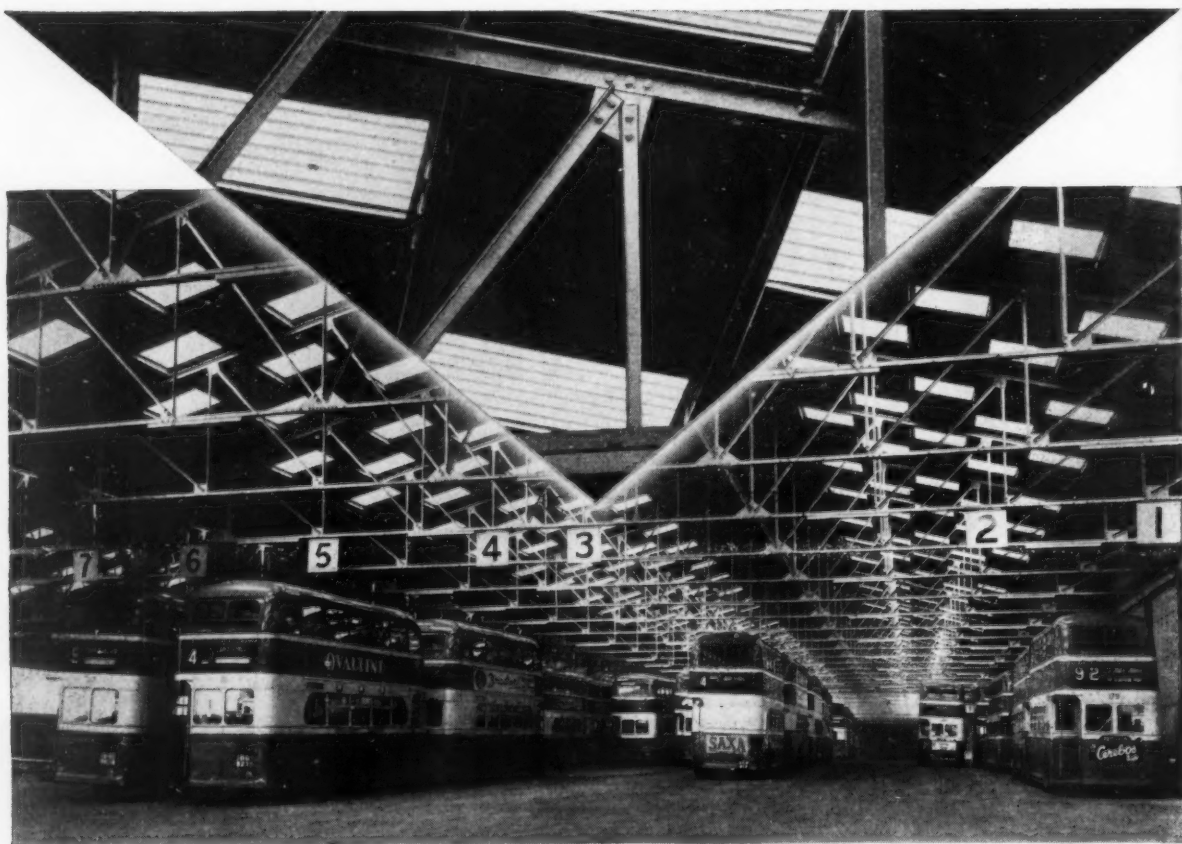
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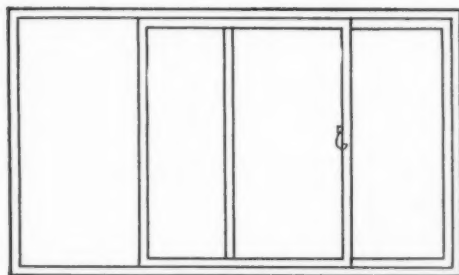
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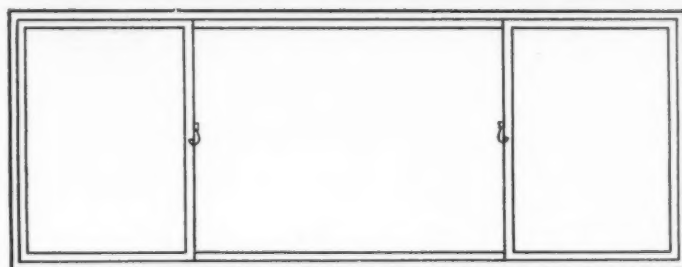
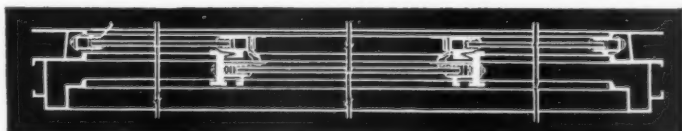
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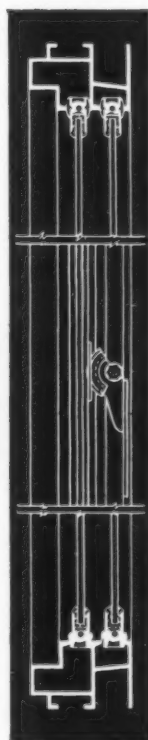
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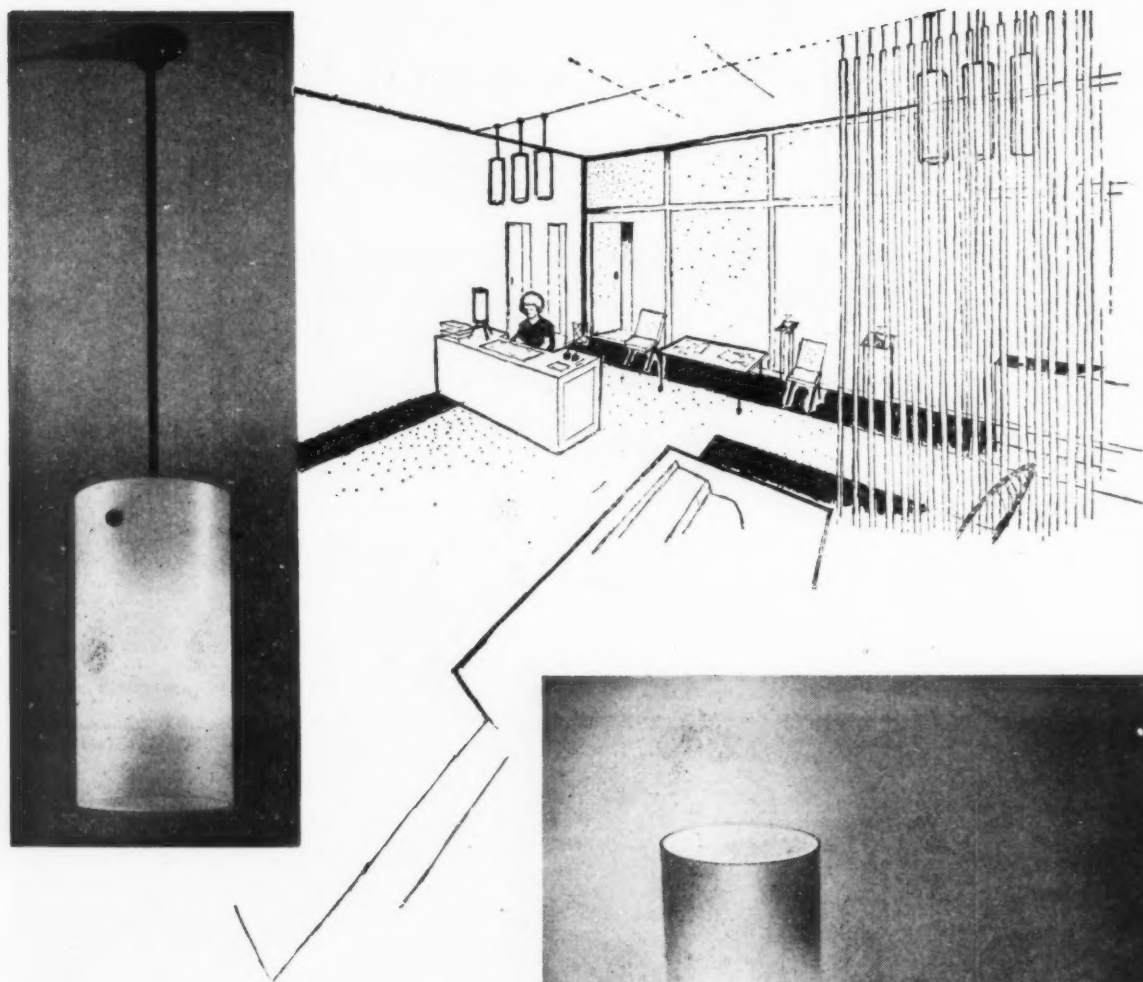
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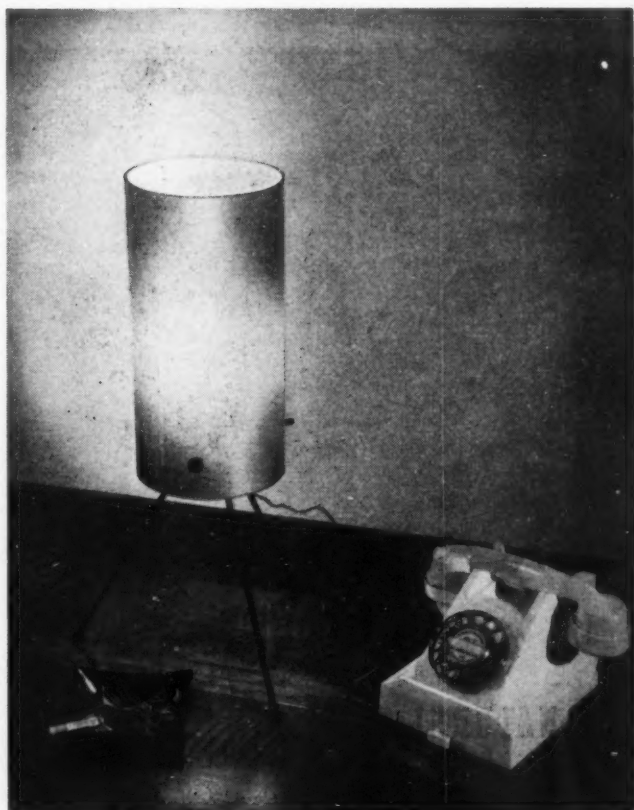
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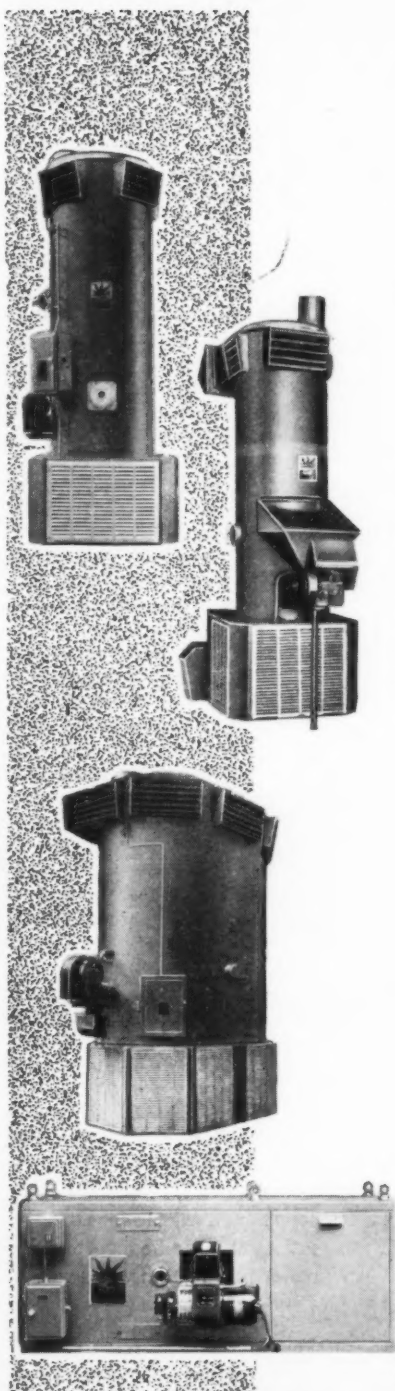
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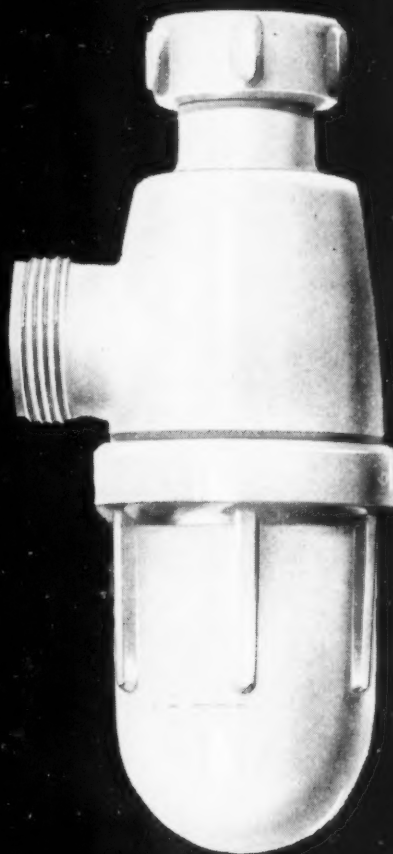
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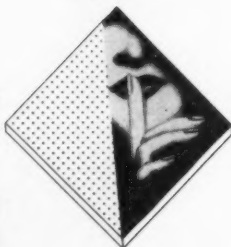
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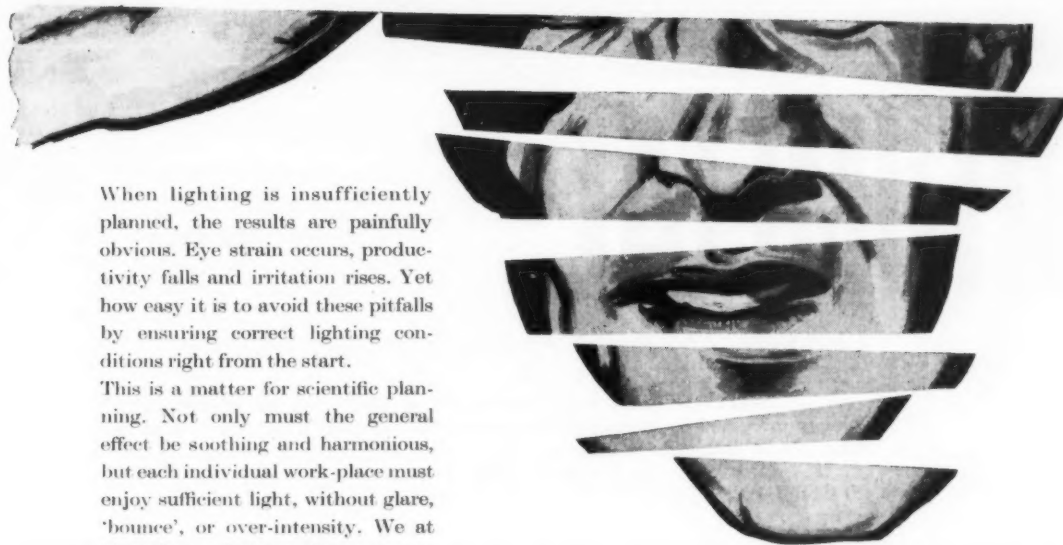
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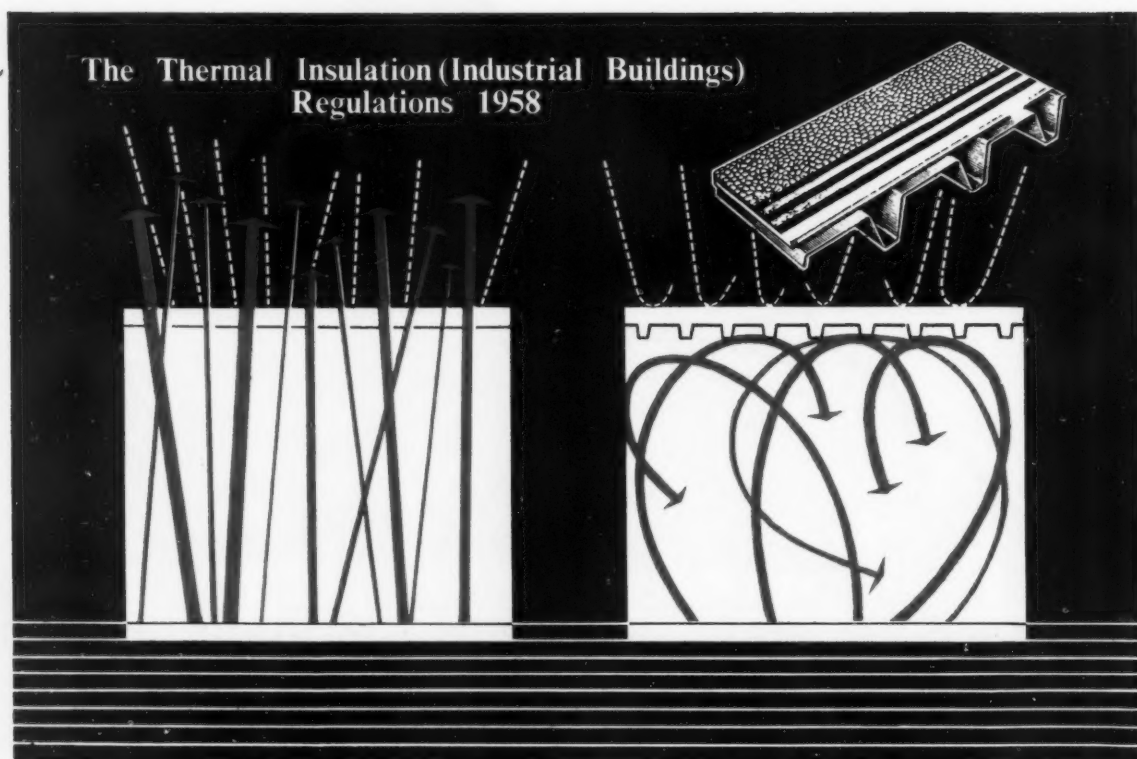
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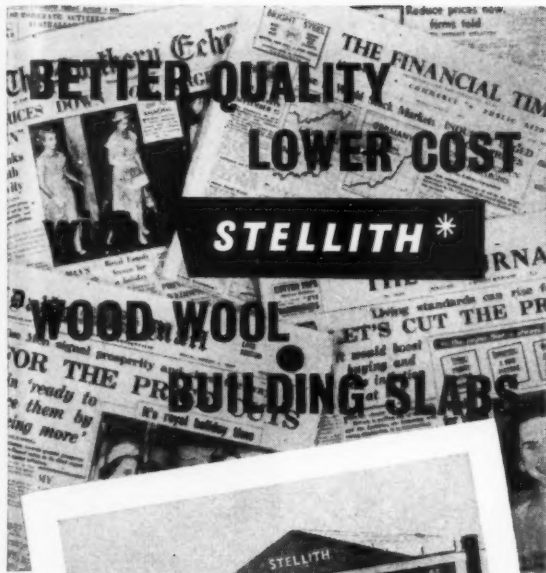
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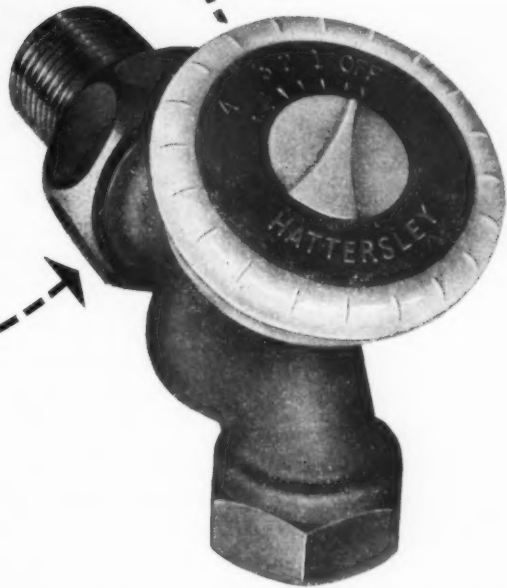
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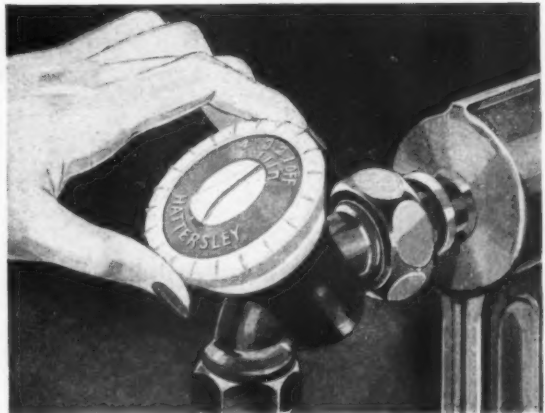
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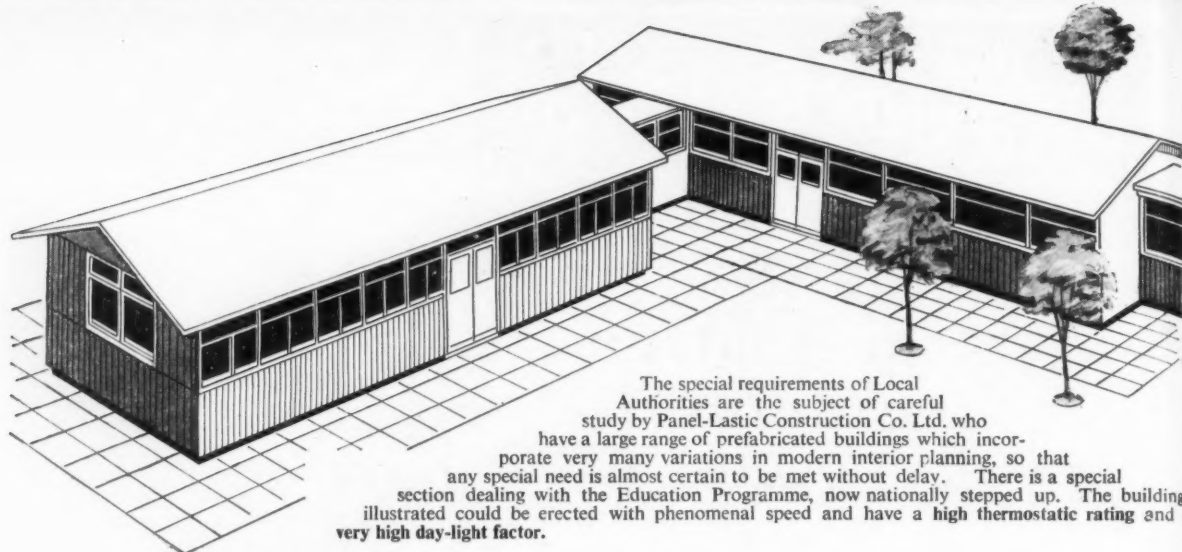


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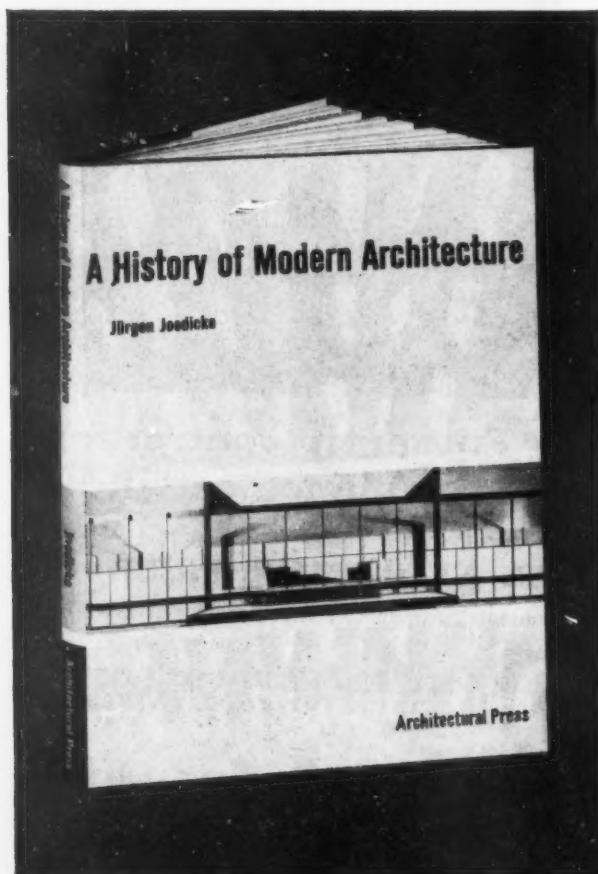
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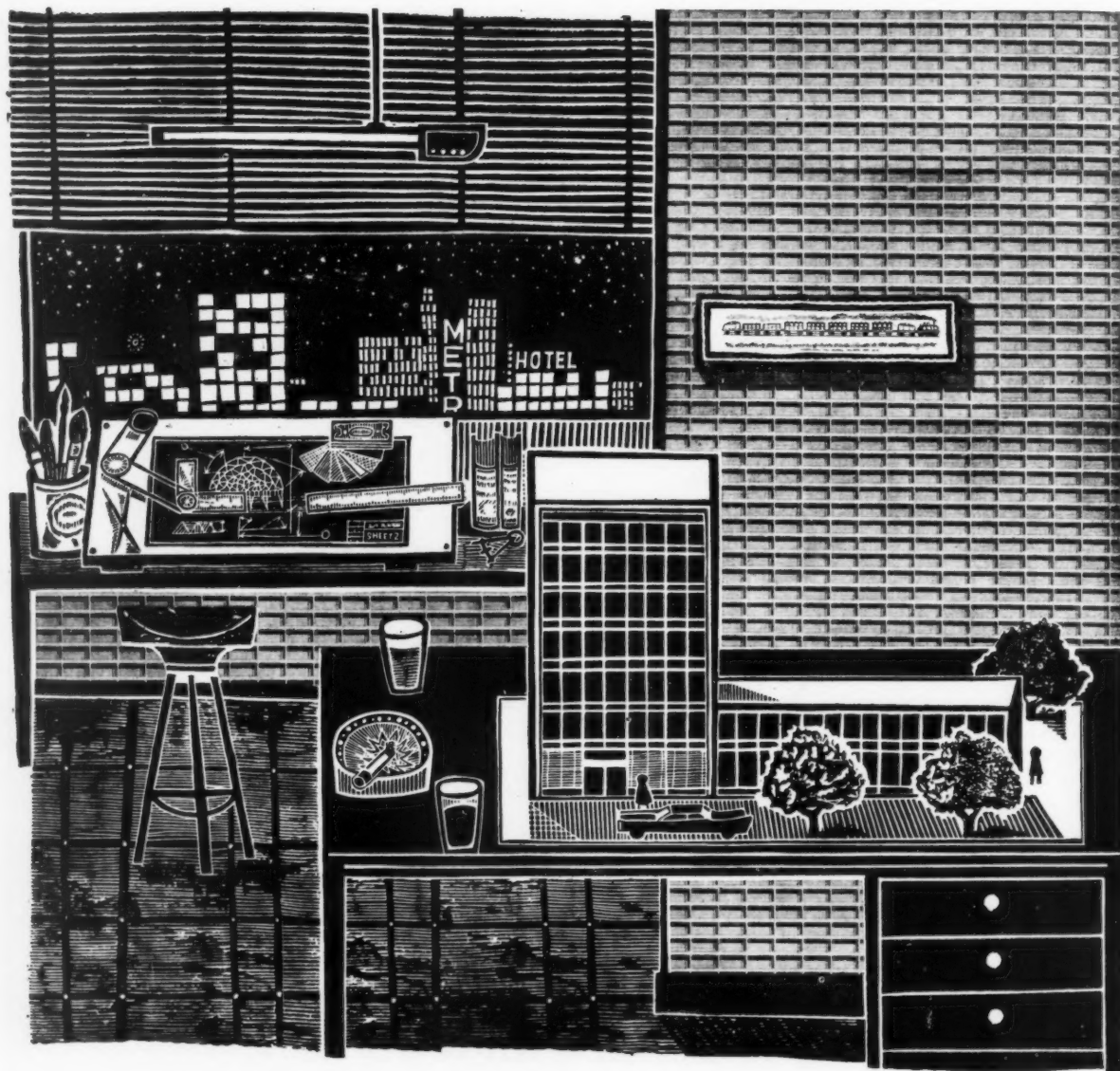
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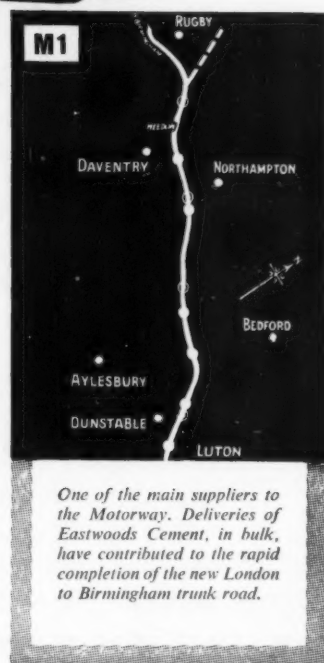


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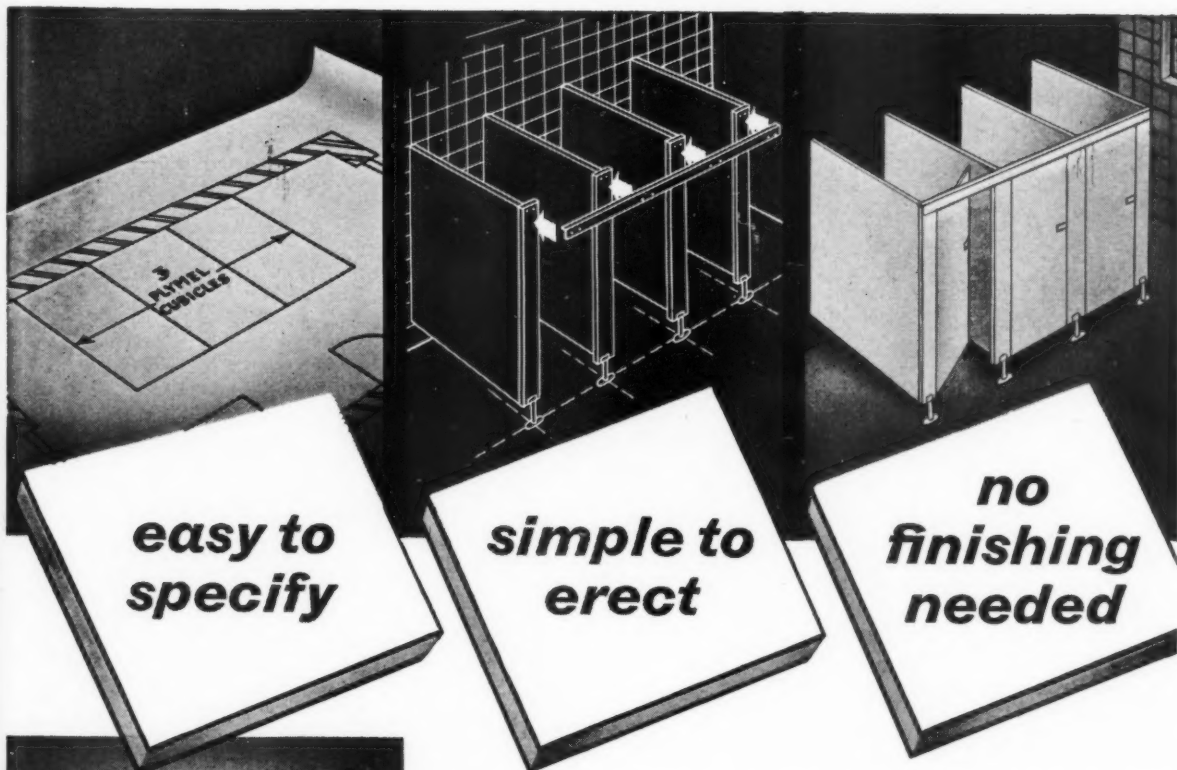
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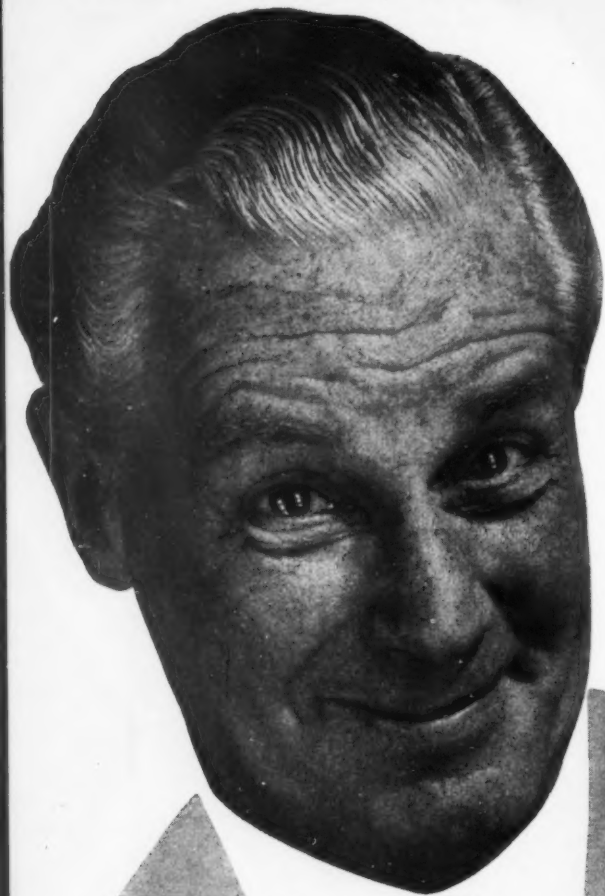
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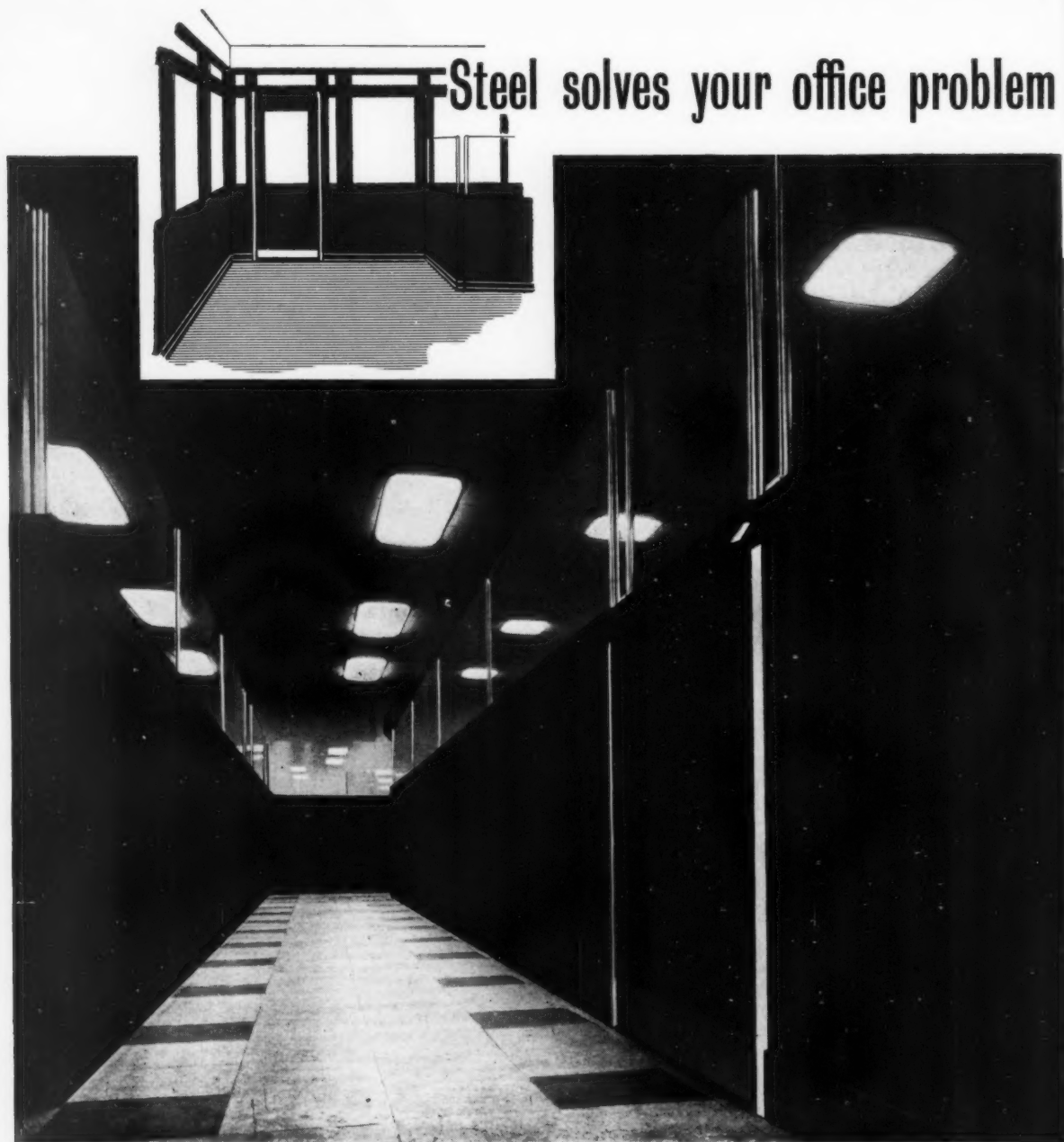
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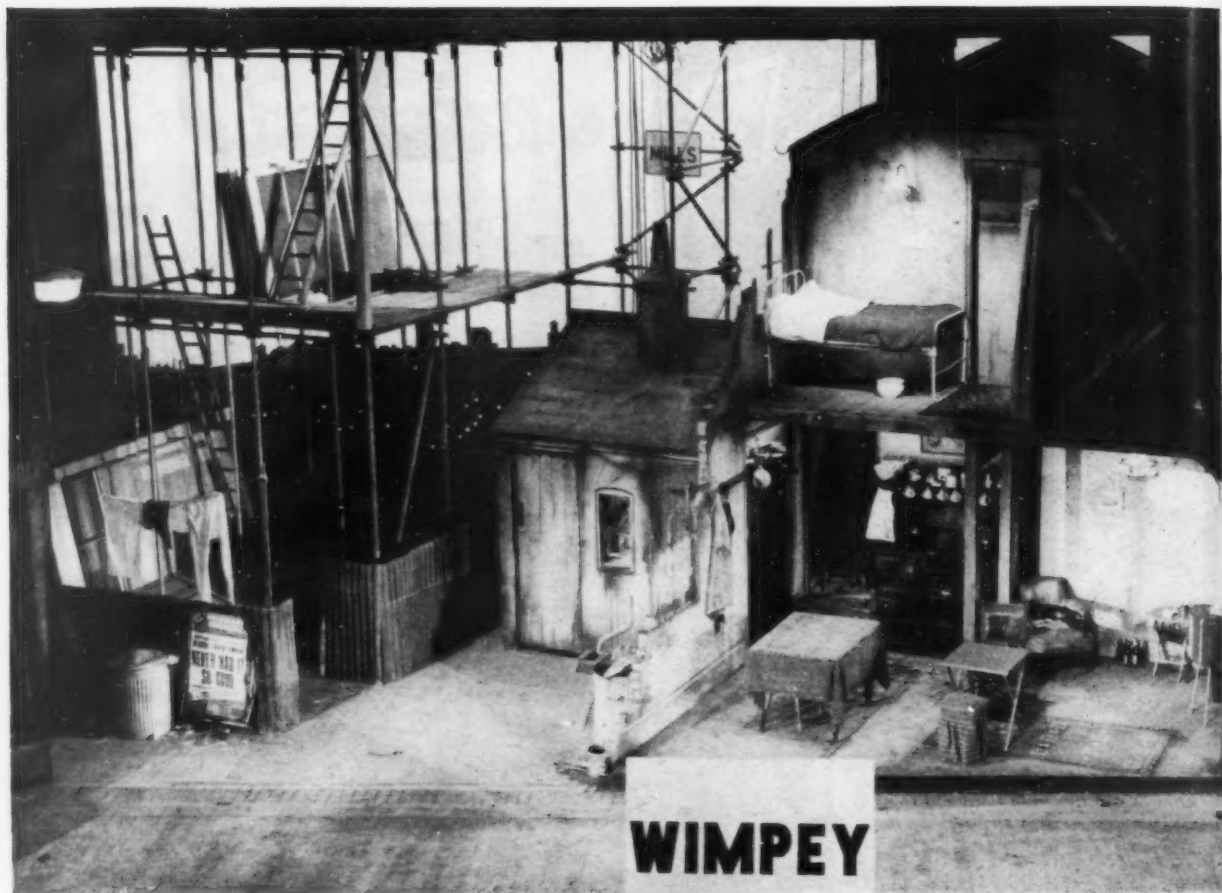
NOT QUITE ARCHITECTURE

Juryman's Journal— concluded

... a symposium in Civic Design arranged by the local architects' chapter and students. All of us speak on this and the hour passes quickly despite the delays of interpretation. (At one stage the interpreter having taken notes throughout Professor I's address starts again in Turkish before cries of dissent halt him in full flight.) At 6.30 we are carried off to a cocktail party given in our honour by the University Board, and finally to a British Embassy dinner party. Here there are I suppose about 50 people—distributed round small tables. My neighbour—the Swedish ambassadress—is a pretty Canadian girl from Winnipeg where I had been three weeks previously. This is splendid luck as she has not been home for years and is hungry for news. The French ambassador however dominates the table with a flood of talk on rare flowers, early music, unusual dishes, rococo architecture and I get involved in trying to tell him the story of the French Pavilion at Brussels—as he is a friend of architect Gillet. Luckily I remember the French for tower-crane.

*

Saturday: The jury is to disperse today so final decisions must be made. "Asplund" remains (1), "Umbrellas" (2). Herr R, after a night's reflection, shovels his exhumed corpse back into its grave. By 12 p.m. the choice is made—but two must be eliminated

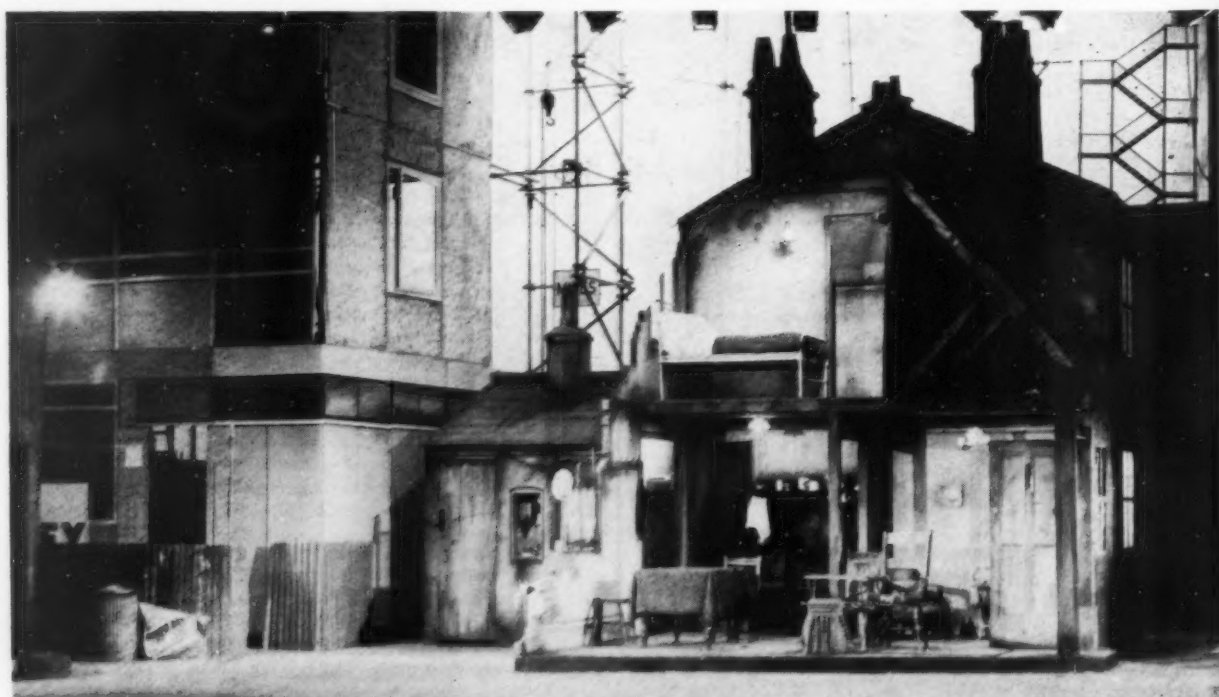


WIMPEY

Coventry's New Morality Play

Arthur Ling, Coventry's City Architect, went into the theatrical design business last week when he designed the decor for a new play at the Belgrade Theatre, *Never Had It So Good*, commissioned by Coventry Corporation and written by John Wiles. Its theme is the rebuilding of post-war

Coventry and Ling's sets express this with a tumbledown house awaiting demolition on the right and new flats rising on the left. In Act I (above) only the scaffolding is up, in Act II (below) the flats are finished and families move in. Sheila Lynd reviews this civic venture on page 392.



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from the list of runners-up. At 12.30 we leave for the City Planning Office where we have been asked to give our views upon the re-siting of the Atatürk statue in the local Piccadilly Circus. This is a fascinating problem bristling with political and emotional overtones—an amalgam of Eros, Nelson's Column and Parliament Square. We look at the site, inspect plans, photographs and models and give our opinions—mine about 20 ft. away from Herr R's. We leave in a flurry of courtesy, confident that the argument will continue. At the Embassy lunch-party—an Air Vice-Marshal and wife from Cyprus, a Turkish couple, the English chaplain from Istanbul—(church by Street)—white-bearded, be-ringed, Thespian voiced—I sit next to the Turkish wife, a charmer with perfect English learned, she explains, from a finishing school at Reigate.

*

At 3 p.m. we are again on the job. We are now stiff and tired and carry chairs around with us. By now too we heartily dislike nearly all the schemes. What later proves to be an English entrant is praised for a strong and well-presented set of elevations. At 4 p.m. we are greeted with the news that a new entry delayed in transit has arrived. A sworn cablegram establishes it was sent off in time and we agree, half hopeful, half fearful, to accept it. At first glance it is a possible low prize-winner or a mention, but eventually it subsides into the open grave. The list of prize-winners is now complete. Time presses and in order to complete our report each judge is asked to take on a portion of it. I am given the general introduction and principles of assessment, plus a round-up of random bouquets. Herr R takes the winner, Professor E, crippled this morning by a cold, takes on No. 2, Dean P No. 3. The rest are sub-divided. The Secretary co-ordinates. I am in luck as I have with me some lecture notes and I finish with suspiciously fluent speed. Each draft is read, signed and goes for typing. The envelopes are opened. The results are excellent—a Turkish winner—and moreover a youngish architect with a growing reputation for sensitive and imaginative work. Second an American group from Michigan. Third another Turk. There is little time for post-mortems or congratulations. Prof. E disappears in a storm of sneezes. Professor I vanishes like the magician he resembles. I say hurried farewells to Herr R, Dean P and Secretary G and drive off to lecture to almost 60 architects and students on recent buildings in Cambridge including selected Churchill competitors. They greet this with respectful surprise as Mies or SOM are still the local lodestars and the slit-windowed fortresses currently favoured here are clearly unexpected. A final party at the Embassy—a miscellaneous bunch including the Vali (or Mayor), some Turkish architects and contractors, the local theatre designer, a MOW representative, *The Times/Observer* correspondent, English teachers—a shoes-off dinner alone with my host and bed by 12.

HUGH CASSON

The Editors

MANAGEMENT FOR ARCHITECTS

THE client asks two things of the architect: to design his building and to get it built. The client may or he may not be able to judge the excellence of a design: he is more likely to be able to judge the expedition with which his design is built. On page 396 of this issue we publish a friendly but critical report of a short course on management for architects held at the AA; and the same criticism could apply to earlier courses of the same kind held elsewhere.

The trouble seems to be this. Management consultancy is a profession. Managerial consultants are prepared to sell any firm their professional advice. To a commercial firm this advice is very well worth buying; to an architects' firm it is probably still worth buying, but as the influence it can exert on profit is proportionately less, the incentive is less. Also architects suspect that their business is not quite so susceptible to the kind of techniques management offers, but in this they may well be wrong. All things considered, it is not likely that a great many architects' firms are going to pay the price of a private consultancy in the near future.

Yet there is no doubt that the profession as a whole needs this kind of advice. It is needed particularly by that section—the small and medium sized office—which is usually the least able to pay for individual service. There is a case for the RIBA employing one or more firms of management consultants to investigate a small number of representative offices and to publish detailed results, so that management codes could be prepared covering substantially the whole field of architectural practice. Though there are honourable exceptions, mismanagement is a corporate failing of our profession, calling for a corporate solution.

NO SECRETS AT THE ELEPHANT

The second competition between developers and their architects for the shopping centre at the Elephant and Castle is rumoured to be approaching its climax. According to whispers in the Members' Lobby at the LCC—the members seem to be a good deal less discreet than their officers—five finalists have been picked from something like 30 applicants. According to the same source the five schemes are all good, and some “very exciting.”

Is there any reason why at least the five finalists' schemes could not be put on exhibition *before* the committee has made up its mind? or even the whole thirty? Would it not both help to educate and to interest the public in architecture if they had a chance to express an opinion before the die is finally cast? And would it not also increase public confidence, recently shaken, in the LCC's judgment? The RIBA is now studying the whole problem of the secret competition. Pending its findings some tearing of the veil of secrecy can do nothing but good.



BACK TO THE DAILY MAELSTROM

I had only just recovered from the horrors of the Earls Court Furniture Exhibition when I found myself slogging round Olympia, wondering which of the Homes on view was supposed to be Ideal. There is a wide choice, from an "authentic reproduction of about 1720" (expensively modernized in a way that depressed me) to a Canada Trend House, designed by Peter Barefoot, a lot of continental furniture supplied by the top people in Tottenham Court Road and some Canadian furniture. This is the best of the houses in the Ideal Village, and the others are not quite as horrible as they used to be. It was amusing to find in one of them some of John and Sylvia Reid's American Colonial furniture—only a few yards from the All-American House which is full of the same sort of thing. This transatlantic import is very disappointing, with its slabs of dark panelling, its grotesque period furniture and its mass-produced electric oil lamps. But I suppose we couldn't expect anything better at an exhibition which is geared to popular taste. Judging by the advertisements in the American glossies this house, which was designed by a committee of the National Association of Home Builders' Research Council and the New York Design Centre, is typical of what the American wants.

Is the Exhibition as a whole typical of what the British want? If so our standards have soared in the last few years. Many of the furnished rooms are tolerable, most of the stands just off the main aisle are well furnished and the kitchen equipment is better than ever. In fact, there is so little decoration remaining on cookers and refrigerators that I'm sure manufacturers will soon be getting worried and demanding something more florid so that their wares can be identified.

*

There is less fun and games at this year's Exhibition and it is clear that the organizers have decided to cut the cost drastically. This means that a million or so people will have to spend their time looking at products rather than side shows. And that's not a bad thing now that the standard of design is so much higher.

PACE SLACKENS

I enjoyed the week-end conference on "The Architect and the Church," which was organized by Christian Teamwork and chaired by Edward Mills. This amiable interchange of views among architects and clergy was in three parts: an informal commentary on coloured slides of Continental and British churches; a session on how the architect should be briefed, led by an Anglican parson and a nonconformist minister, and a discussion, started by George Pace and Paul Mauger, on how to cope with the many and various committees concerned with church building—from Quaker to Anglican.

*

I thought at first that the conference was intended to tell church organizers of the architect's problems. But there were so many architects present that the affair became more of an exchange of useful tips on how to give committees what they don't know they want. Mr. Pace seems to have the thing well organized. He pointed out that as no architect designs a church to make money, it doesn't matter how long he takes to do the job. He himself always refused to be rushed over a church design. ("There should be no time limit in church buildings.") And he always approached the job by giving several illustrated talks (sketching his carefully-worked-out "spontaneous"

ideas on a blackboard) to the committees concerned. He then gave them the job of making their own altar table. This, he implied, helped to distract their attention from anything they might not like in the design they were getting.

*

I could fill the rest of my column with useful hints picked up at the conference. But I suggest that anyone really bogged down by a church committee should write to Mr. Pace, who applies Eric Lyons' quiet anarchy (with all humility, of course) to the obstinate or ignorant Christian layman.

WHAT GOES UP . . .

There have been protests in Cambridge about the proposed demolition of the Central Hotel (a listed building: Grade 2), which is a much-altered row of four or five small houses built in the 17th and 18th centuries between St. Edward Square and Market Hill. King's wish to pull down this cluster of small-scale buildings opposite King's College Chapel and erect sets of students' rooms to a design by the Architects' Co-Partnership. A time will soon come, if it has not already, when it will be grossly uneconomic to keep such old decaying properties, and these in particular hardly deserve the fuss the preservationists are making. But what the enthusiasts for architecture *should* be protesting about is the piecemeal redevelopment of an area which should be comprehensively planned. The Central Hotel should not be pulled down until such a plan has been prepared.

EDMUND HOWARD

I am sorry to hear of the death of Edmund Howard, who was one of the AJ "Men of the Year" in 1956. Howard, who was a surveyor, was senior partner of the architectural firm of Howard, Fairbairn and Partners, and chairman of the City of London Real Property Co. Ltd. Fountain House, built by the company in Fenchurch Street, introduced into the City the glass curtain-wall tower block rising from a podium. Howard denied that this was a "change of heart." But it was a decisive, and most welcome, change, by a firm which had previously been associated with some of the offices built under the ill-fated "Lessor Scheme."

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MISGUIDED COMMISSION

The recommendations of the Local Government Commission on the East and West Midlands, knocking various counties together (and knocking Rutland off the map), granting county borough status to Cambridge and Luton, while taking it away from Burton-on-Trent, is just the kind of make-do-and-mend operation that was bound to emerge from its limited terms of reference. Its proposal to set up a "high authority" to handle overspill from Birmingham and the West Midlands conurbation is really an admission that tinkering with the boundaries of the existing authorities cannot produce machinery for regional planning. It is hard to see what positive results the proposals can achieve although they will obviously start another round of boundary and status wrangling.

SQUARING THE SQUARE-BASHERS?

Edinburgh Corporation, I am happy to see, has been persuaded to suspend (though only for two weeks) its excavations on the north side of Charlotte Square—where, you will remember, it is banking the roadway to enable the traffic to gyrate more swiftly round the gardens. The Corporation has even agreed to listen to some advice from Frederic Stevenson, the head of Robert Matthew's University research project, on behalf of the Charlotte Square proprietors.

*

Will the Corporation now decide that in future it might as well take architectural advice first, and act afterwards? And can it not also decide to abandon the entire Charlotte Square project?

BROOKE NO EVIL

Research was the theme at the dinner held to celebrate the granting of a Charter to the TPI. The President, J. S. Allen (an architect-planner) must have been speaking ironically when he wondered whether we had sufficient knowledge to embark on the changes that will take place in this country over the next ten years: greater changes, he prophesied, than those caused by the devastation of the war or by anything else in history. He was "appalled" by the small sums spent on research into the development of towns. He concluded (and he didn't sound sarcastic) by saying we were



Above is the living room of an American house exhibited at the Ideal Home Exhibition. The exterior is ranch-style modern (see below) but the interior is less specialized. The plan is described as "open" which means three separate bedrooms, and two bathrooms in the normal private, enclosed manner, but the dining room is an alcove off the living room. A hatch connects with the kitchen, and it is in this "below stairs" area that the family lets its hair down and enjoys "open living." The kitchen and the family room are separated only by a freestanding cooker, there is a second dining area and alongside is w.c. and muddy clothes room. The living room, therefore, with its specimen vase and reproduction furniture reverts to what is known in this country as "the parlour".

confident that the Minister of Housing was planning for the future—"planning in general what we're going to plan in detail."

*

No wonder Henry Brooke could only say lamely, and all too truthfully: "You've been far too flattering to me." However, the Minister continued by deploring shoddy materials and shoddy roadside development, and admitted to allowing an appeal to build a "lopsided bungalow" because it was in a neighbourhood of bungalows of no greater merit—a defeatist attitude. He ended by pointing out that the intrusions he had reluctantly permitted into the National Parks had reduced them by an infinitesimal percentage—a statement which conflicted with his earlier statement: "People ought not to do with their own land what is hurtful to others." Sir Sydney Littlewood, President of the Law Society, who also spoke, rightly demanded that the Institute should turn its attention to public relations.

SORRY

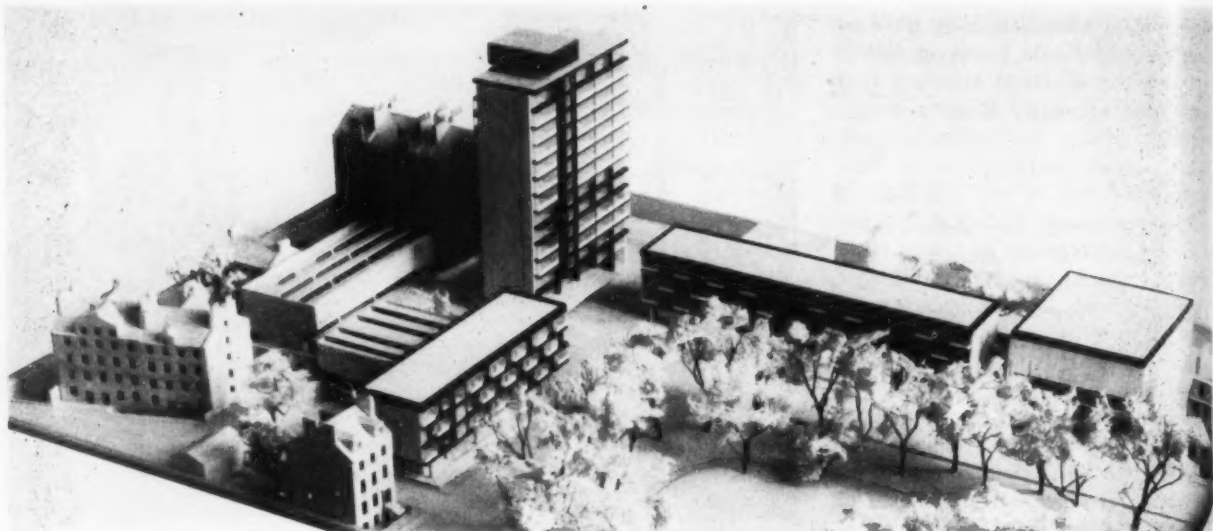
I have done an injustice to the Rev. Tubby Clayton, Vicar of All Hallows-



by-the-Tower, who has been leading a campaign against the LCC's plan for Tower Hill. On February 11, I said that the Awful Warning perspective published in the *Sunday Times* showed how his private view of Tower Bridge from his flat would be blocked by the new buildings. I now learn that Mr. Clayton lives in Trinity Square in a flat from which he can't see Tower Bridge, and that the viewpoint of the perspective is the new baptistry of All Hallows. There will be a flat there, but it will not be Mr. Clayton's. This does not affect my contention that the perspective completely fails to support Mr. Clayton's case—that the view of All Hallows from the Tower itself will be spoilt. But I do apologize to him for implying that his motives were selfish.

ASTRAGAL

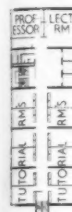
PROPOSED EDINBURGH UNIVERSITY DEVELOPMENT IN



The Secretary of State for Scotland's decision on the future of the south and east sides of George Square, Edinburgh, is expected daily. Controversy has raged for 14 years over the fate of a square of great charm and historic interest but only modest architectural distinction. The Minister's rejection at the eleventh-hour of protests by the National Trust for Scotland and other amenity societies would lead to the fulfilment of Basil Spence's 1955 plan (opposite right) for the development of the University, of which the next stage is the new Arts Faculty buildings designed by Robert



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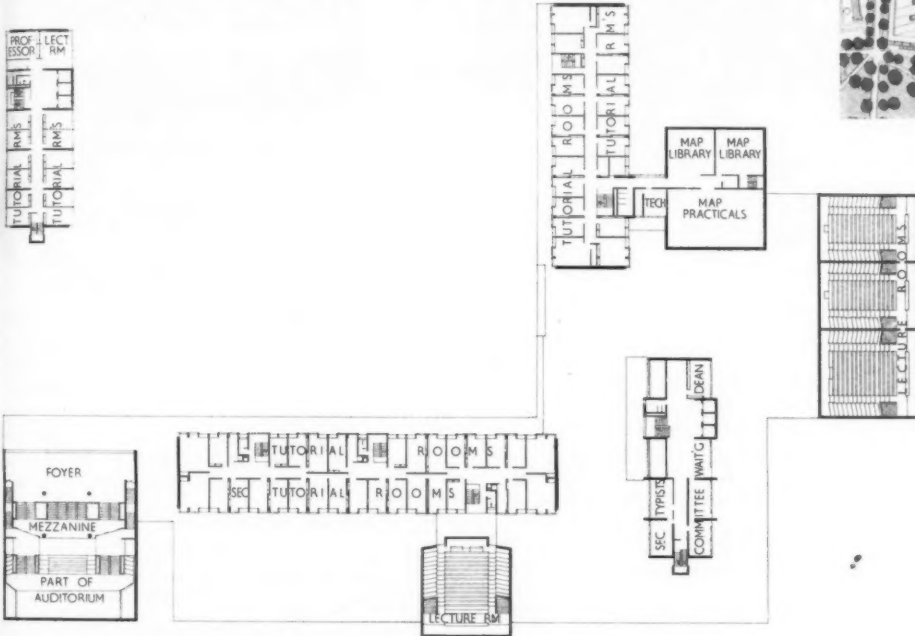
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IN GEORGE SQUARE, EDINBURGH

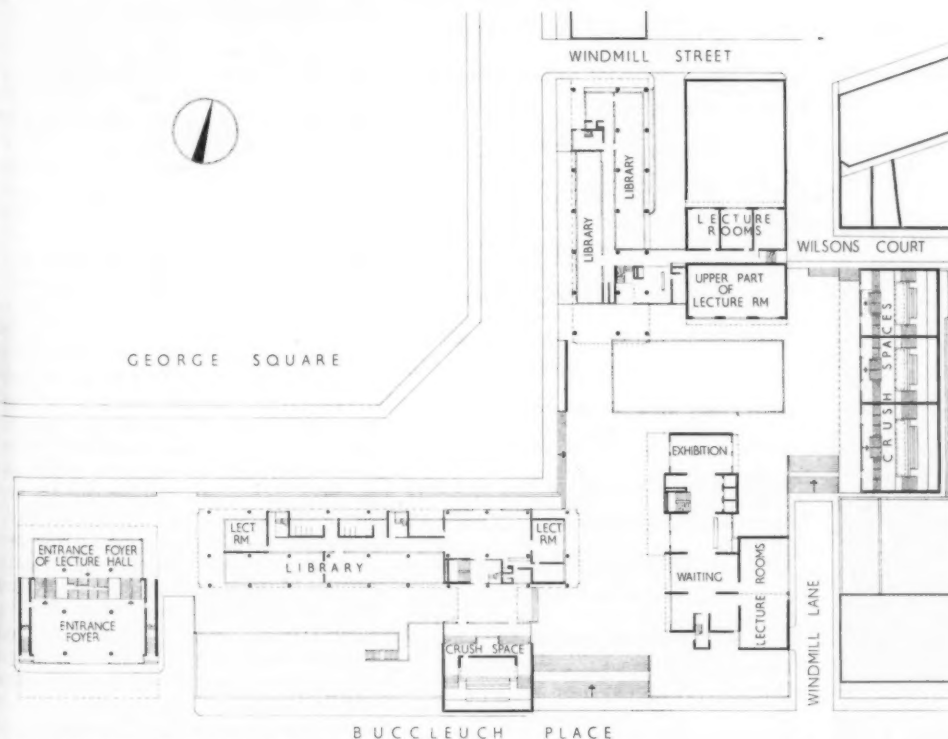
Matthew and Johnson-Marshall and illustrated here. The perspective, opposite, shows the view from George Square. It is difficult for those who live south of the Border to appreciate the intensity, particularly in recent months, of the struggle between the amenity societies on the one hand and the University and its architects on the other. This reached such a pitch that last year two special meetings of the graduates from the General Council of the University were held (in itself an unprecedented thing) at both of which majorities were mustered against the University's proposal to demolish and redevelop the south and east



sides of the square. As the picture, opposite, of the east side of the square shows, the buildings are simple domestic architecture of the late 18th century, suitable for use as flats or houses, but totally unsuitable for conversion into permanent university teaching departments as some of the University's critics have proposed. The extraordinary feature of the controversy is that the University's desperately urgent expansion plan should have been put in jeopardy 14 years after the University first announced its intention to redevelop George Square, and five years after Edinburgh Corporation had approved Basil Spence's plan which proposed to preserve the west side (the best), and to redevelop the north (which was ruined years ago), east and south sides. The Spence plan really marked the point of no return, for the only possible alternative has always been to redevelop large areas of slum and semi-slum property, which could only have been done had Edinburgh Corporation

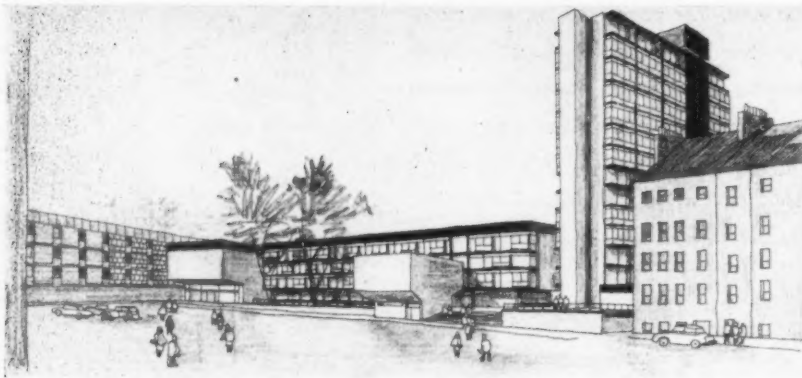


First floor plan, and tenth floor plan, tower block (inset)



Ground floor plan [Scale 1/4" = 1' 0"]

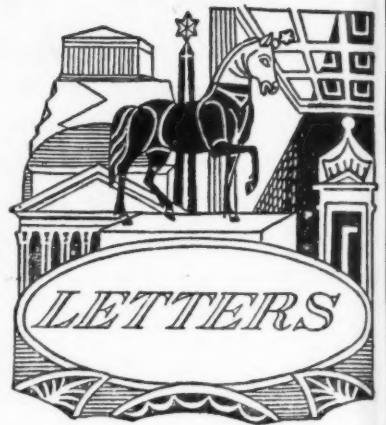
DEVELOPMENT IN GEORGE SQUARE: continued



(notoriously backward in town planning) designated an area of comprehensive development several years ago. The controversy has been prolonged because at no time in the 14 years has town planning legislation afforded an opportunity for a public inquiry and a final decision. While one must regret the demolition even of moderately good domestic buildings while inferior property remains, one can hardly doubt that a new George Square would be better than the old, for the central gardens provide a superb University campus, and a fine setting for modern architecture. The first phase of the Arts Faculty buildings will be the 14-storey tower block, containing tutorial rooms, small libraries and lecture rooms, and two large lecture halls in the low block behind it. The new Arts Faculty buildings reflect the revolution that is taking place in Scottish University teaching by providing 312 rooms for tutorials, seminars, etc. The later blocks will provide more tutorial space, and a lecture theatre for 600, on the left in the perspective, above, which is drawn from Buccleuch Place. The new buildings firmly enclose George Square; the road, below, leading to Buccleuch Place will be closed. The blocks are visually and physically separated above the level of a podium slab at George Square level belows which there is a basement at the Buccleuch Place level, about a storey lower, for car parking, workshops, sound-proof rooms, service rooms, circulation and common room looking into the garden court. The podium slab forms a paved pedestrian precinct at the George Square level, from which steps lead down to Buccleuch Place. The tower block is r.c. cross-wall structure with framed end bays. The low tutorial blocks have r.c. frames. The lecture blocks have double branching cantilever r.c. cross walls between which their



roofs have a clear span. Throughout the scheme large areas of unbroken walling will be finished in natural stone. Edges of floor slabs and cross walls will be faced in fine rubbed grey slate. Window frames and sub-frames will be aluminium, and spandrels in white glass. Heating is by electricity throughout. Planning permission has been given in outline, but not in detail. It is hoped to complete the first phase for the autumn term in 1962. The south side of the square will be completed by the new University Library to be designed by Basil Spence.



Vivien Levett, A.R.I.B.A.

20 Members of the Barnsley
Branch of NALGO

David Stern, A.R.I.B.A.

R. W. Barbour

David Moizier, A.R.I.B.A.

R. F. Hall, Chairman, Electrical Committee,
Master Sign Makers' Association

The RIBA Kalendar: A4 or A5?

SIR: For goodness' sake let's try to keep our own favourite end of the lunatic fringe as straight as we can. The reason for the handsome new shape and size of the RIBA Kalendar is surely that we—you firmly, unequivocally and continuously; I and some others no less so in spirit—have been campaigning for exactly this over the last three and a half years.

We've been shouting out loud that all our reference books, of umpteen different shapes and sizes will just not fit comfortably together on the ordinary—or any conceivable extraordinary—bookshelf, and that there is no hope that they ever will do so until. O happy day, everybody agrees or is forced to produce them to this one size, and that only this one size will universally do—the size of the good old A4 itself, which also happens to be the international A4 sheet size.

Any interim maddening of those who have to handle new and old together, I thought we had all agreed, would be a very small price to pay for once and for all complete standardization and rationalizing of our reference bookshelves and file cabinets. And one of these surely is where we ourselves can expect to keep the Kalendar, not, as apparently is ASTRAGAL's choice, among the bedside Penguins.

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We should be glad, I suppose, to hear that ASTRAGAL doesn't hurry to check the length of our professional standing, but surely this imaginative and attractive exercise in dignified and informative type design should firstly be given a glad welcome for being just that, and critically assessed in detail afterwards. Stiffer covers would, of course, be an improvement, but these can be achieved in five minutes by any drawing office handyman with a pastepot and the *Review's* container. (Incidentally does anybody seriously moan that the AJ and the AR flop about if stood alone on edge?) I certainly hope the Kalendar will not change its format when next it is reprinted, and that it will be taken as a Standard to be followed closely albeit not slavishly by all responsible for the production of information for our reference libraries.

VIVIAN LEVETT

London

Technical Staffs of Local Government

SIR: It is with some concern that we as qualified professional technical staff, note that our status is steadily deteriorating by the recent reviews and salary awards. It is felt that not enough is being done to reward the skill and technical knowledge which is at the disposal of local councils, and we feel that some recognition of our position should be made more apparent to local councils.

With this in mind we wish for a general revision of the grades for suitably qualified technical staffs, other than the special grades of the Conditions of Service, and we are suggesting the following three grades:

Preliminary: £655 × £35 (4) to £795 for assistants who have completed their initial training and graduates with less than two years' experience.

Technical: £795 × £40 (7) to £1,075 for assistants who are studying for their final professional examination and graduates with more than two years' experience.

Professional: £1,075 × £50 to £1,575 for Chartered engineers, architects, surveyors, town planners, etc., with at least five years' experience.

Points in our favour are that a Graduate in civil or municipal engineering, architecture or town planning, between the ages of 16 and 30 years, earns rather less than a clerk in General Division.

A further point is that even after the age of 30, a local government qualified technical officer will earn between 20 per cent and 50 per cent less than his counterpart in civil engineering, architecture or town planning and in the nationalized industries outside Local Government.

We would respectfully submit that in our view, little notice is taken of the fact that time and money is taken up in studying and sitting for examinations in order to qualify for membership of the better known and accepted professional bodies.

In achieving this we believe we are implementing the wishes of NALGO who have as their ambition a fully representative, qualified staff; this is to the ultimate advantage of the local authorities who will benefit from fully trained and qualified staff.

We believe such application, to work and study, should be rewarded with such financial incentive as is deemed appropriate for a person or persons who have decided to make local government their career and accordingly successfully qualified in their particular profession.

While we are aware that NALGO has done some very valuable work in the Conditions of Service for its members we feel that in the implementation of the awards, technical staff have lost a lot of leeway, creating anomalies and differentials that have borne hard on some members of long service.

We sincerely hope that something may evolve eventually to suitably reward and attract new entrants into local government, but it is quite obvious that the present salary scales and their application will neither satisfy existing members nor attract new entrants, who have more lucrative offers of employment elsewhere.

At the Scarborough Conference the National Executive Council undertook to table sectional claims on behalf of groups of employees when circumstances were favourable. We consider that the time is now favourable as more and more staff are being enticed away into industry and the nationalized industries for higher rewards.

We would also point out that various local authorities are competing amongst themselves for technical staff by offering more attractive salaries; this practice could be stopped by a national award to the qualified technical staff, more realistic than is being shown at present.

20 MEMBERS OF THE BARNSELY
BRANCH OF NALGO

Barnsley

Secret Competitions

SIR: A good deal of concern has been expressed in recent months over the current method of inviting tenders for the purchase and development of sites in which architects are necessarily involved in the preparation of at least draft proposals, without their having any assurance that the architectural merits of their schemes will influence the acceptance of their client's tenders.

This pernicious system is gaining ground and the vague way in which some of them are being handled gives rise to even greater concern.

As an instance I would quote an invitation to tender extended by the County Borough of Croydon for the development of a residential site at Beulah Hill.

A single quarto sheet of the very barest particulars and a site plan were made available in August, 1959, and this I enclose. As you will see, no date for the receipt of tenders is given, and in reply to our inquiry on this point we were unable to obtain any submission date.

Our application was submitted on September 24 and upon further inquiry we were

informed on October 6 that the Council "did not anticipate a decision being reached in this case before the end of the month."

A further inquiry in November elicited the reply that the Council "had been considering the offers received, but they have deferred their decision," and they "hope to be able to advise us further in the near future." On January 18, in reply to a further request, the Council informed us that they were "hopeful to be able to make a decision during February."

On February 25, we were notified that the Council "has accepted another offer."

No details of the offers received have been given, nor of the type of development accepted. While of course one dare not allege any irregularity, this method of handling by a Borough Council can do little to allay the fears of both architects and clients.

Would it not be possible for the RIBA to make it clear that architects are not allowed to participate in such "gamble" unless a set of simple conditions is complied with by the inviting body?

DAVID STERN

London

Trade and Technical Literature Competition

SIR: I have just paid a visit to the exhibition at the Building Centre arising out of the latest competition for manufacturers' trade and technical literature. I came away with a feeling of disappointment over another opportunity missed.

To my mind the object of the exhibition is not merely to show off the various entries. Surely its purpose should be to inspire manufacturers to do better, and to give them some real advice and help—an extension, in fact, of the main aim of the competition. I am glad that the assessors, in their report, call for wider publicity. This would certainly help, though it is hardly likely to be enough by itself. May I make some further suggestions which are, I hope, constructive?

1. Give to the exhibition some indications of importance. If it has to be in the most remote part of the building, at least go to some trouble to publicise it adequately in the entrance hall and actively encourage people to look at it.

2. Improve the presentation. What confidence can manufacturers have in sponsors who recommend better presentation in literature but do not appear to appreciate its importance themselves?

3. Prepare some duplicated notes on the awards, explaining the good points of the better entries. They are not always self-evident to the manufacturer—if they were, the competition would be unnecessary.

If this series of competitions is to succeed, manufacturers must be convinced that it is worth the trouble of entering. At the moment I suspect that only a few of them feel that way, even amongst those who entered this time.

R. W. BARBOUR

London

More Light Wanted

SIR: I see that your Specialist Editor on Lighting has followed the line taken by John Bickerdike at the RIBA "New Freedom of Lighting" discourse, that permanent supplementary artificial lighting as described by Dr. Hopkinson is now a valid design method for congested urban sites, which may well be premature.

The BRS model studies have so far been confined to sites where normal daylighting possibilities were good, and only the exceptional depth of the rooms made the supplementary lighting necessary. Under these conditions it was relatively easy to retain the dominance of daylight which most speakers considered very important. The balance of light determined in the experiments was influenced by the open sky visible from the viewing position.

The conditions in the lower floors of an urban building are often quite different from those in the experimental situation. The sky is not visible at all only a few feet from the window, so that a most important element of the experimental brightness pattern is not present. In addition, the usual Town Planning regulations were based on a 1 per cent. Sky Factor at 12 ft. from the window wall, and reductions in ceiling heights commonly used in new buildings have reduced this to around 1 per cent. Daylight Factor, corresponding to 5 lumens per sq. ft. on a dull day. This order of daylight will not dominate supplementary artificial light of 30-50 lumens/sq. ft.

The implication is that unless the lower floors are set well back within their own site the rooms in them should be shallow, while above them, where open site conditions prevail deep rooms can be planned. Alternatively, the Town Planning regulations could be made more stringent to ensure that more daylight is available to balance the supplementary artificial light. Or again, should the "artificial light plus view window" interior be so readily dismissed?

Dr. Hopkinson and his team have made an excellent start on a big problem, and are well along the way. No doubt we shall presently have a more complete answer, for this work should so obviously be extended, but in the meantime let us not risk bringing valid results of research into disrepute by using them out of context.

DAVID MOIZER

Hemel Hempstead

Guaranteed Signs

SIR: Your editorial column recently contained a criticism of the "Code of Practice Concerning Illuminated Sign Installation" issued by the Master Sign Makers Association. It is odd that a set of practices and minimum standards, which aim to raise quality and clarify the service to be given, should be read as a bad thing. However, the point criticized is that the members of the Association are required to limit the duration of the guarantee to a sign. (Six months is the time stated in the Code.) The majority of reputable sign makers guarantee a "neon" installation for six months, and there is a particular reason

for this period. The reason is that after six months use in exterior conditions a sign needs service attention, and if that is not given, then faults are likely to develop. The sign must be cleaned and checked. A service contract is normally arranged to commence when the sign is six months old; under this the manufacturer takes full responsibility for the installation for years ahead.

Sign makers believe themselves to be honest people. When submitting price offers to supply signs, the service requirement is stressed, and the cost of this is given as a separate item from the capital outlay. If the period for guarantee and the essential need for service attention are considered together, surely the provisions of the Code must be a good thing for sign buyers.

R. F. HALL

Chairman, Electrical Committee
Master Sign Makers Association

London

DIARY

Daily Mail Ideal Home Exhibition. At Olympia. UNTIL MARCH 26

Crafts in London Schools. LCC Exhibition at County Hall, London, S.E.1.

UNTIL MARCH 19

Architecture in Evolution. The Annual Discourse by Constantinos A. Doxiadis. At the RIBA, 66, Portland Place, W.1. 6 p.m.

MARCH 10

New Sights in London. LCC Exhibition at the Tea Centre, 22, Regent Street, S.W.1.

MARCH 10 TO APRIL 1

The Art of the Carver. Exhibition at the Building Centre, 26, Store Street, W.C.1. Monday-Friday 9.30 a.m. to 5 p.m. Saturday 9.30 a.m.—1 p.m. MARCH 11 TO 31

Town Centres in the New Towns. TCPA Symposium at 28, King Street, W.C.2. 6.30 p.m. MARCH 14

Impact of Motorways on Cities. Joint meeting of the RIBA and the ICE at 66, Portland Place, W.1. 6 p.m. MARCH 15

The Role of the Engineer and of the Architect in the Planning of Electrical Installations. Discussion organized by the Association of Supervising Electrical Engineers at Manson House, 26, Portland Place, W.1. 6.30 p.m. MARCH 15

Name and address wanted

A number of readers are regularly marking the enquiry form at the back of each issue of the AJ, tearing it out and posting it to this office without giving their names and addresses. Without this information, advertisers cannot be told who is asking for further information. Please be sure that your name and address are clearly written on our reply-paid form before despatching it.



Above, Arthur Ling. Below, his first sketch for Act I.



THEATRE REVIEW

'Never Had It So Good' At the Belgrade Theatre

When Arthur Ling offered—or was persuaded?—to design the sets for the new play at the Belgrade Theatre, Coventry, *Never Had It So Good*, this wasn't quite so far off beat as a job for the City Architect to do as might at first appear.

For this is a play about the rebuilding of Coventry, and was commissioned by the Coventry Corporation, who invited John Wiles, a young man from South Africa with some TV plays to his credit, to come to Coventry, live there, meet people, and write a play about it all. A kind of documentary, in fact, planned to client's requirements like a building—and standing up, it must be said, extraordinarily well.

A sponsored documentary about Coventry? I can hear the sensitive reader hissing through his teeth and squirming in his seat at the very thought. However, this is no rosy pageant of Bal-Ham by Peter Sellers, but a sharp-spoken, hard-hitting, convincingly presented play about a city rising from the blitz, swelling with new people from outside, bursting with work and prosperity, short of all charms and graces, and failing to fulfil many of its human needs.

All this comes flying across the footlights, honestly, often entertainingly, sometimes sentimentally—certainly without any visible strings attached—in the story of the various families living in the remains of one blitzed Coventry street.

At first it seemed likely to follow too easily the style established by Joan Littlewood at Stratford-atte-Bow. The prosperous Coventry natives bursting from their house in the left

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wing are counterpoised by a homeless family from London in search of a wandering father. A stage Irishwoman and a stage Welshwoman are clearly comic relief and one begins to squirm in one's seat. Then a small man in Salvation Army uniform, pushing a street sweeper's barrow, crosses the stage with a flourish of traffic signalling, and the Coventry audience bursts out laughing, recognizing a well-known local character.

From there the play begins to establish itself as representing not Stratford-in-the-Midlands, but Coventry, looking at, criticizing and laughing at itself. And we foreign critics could tell how well each shot went home by the size of the laugh or the depth of a patch of silence.

Like all new towns Coventry—which is virtually a new town—seems intensely conscious of its own problems, and much alive to what "they" are up to at the City Hall, and even in the Architect's Department, which is paid the compliment of several hearty and disrespectful laughs.

Bitter youngsters, near-delinquent from boredom, burst into an antiphonal recitation of all the things they would like and haven't got, punctuated with reminders of what they *have* got—"the cathedral" growls a boy, "and the tombola" chants a girl—a reference to the fantastic number of factory rallies.

And a great, fat laugh bursts out as the derogatory young rise to sing in chorus, "Thank God for Basil Spence."

Here, in short, is a lifelike picture of life in a boom town, the goodness and the nastiness, the clash between ruined slums and those who cling to them; and multi-storey flats and those who welcome them, the hostility that boils up between the "natives" and the "foreigners" from London, Ireland, Africa; the conflict between Labour militancy and Labour bureaucracy, both real and busy in the factories and at the City Hall.

The happy ending is achieved when the son of the London family becomes an apprentice—the only way to become a native, according to the Irish shop steward who gets most of the best lines and most of the laughs, most convincingly played by David Blake Kelly.

"It's no good you marching to the Corporation with the Red Flag, they know that song much better than you do!" he tells the indignant slum dwellers who object to being rehoused in council flats.

To this slice-of-liveliness Arthur Ling has designed a most effective setting, immediately evocative of the bustle of rebuilding, with a shored-up old house, complete with privy, on one side, and the new flats rising into the flies on the other. In the first act there is only scaffolding and a big Wimpey sign; in the second the flats are up and the families are moving in. The passage of time, evening by evening, is marked by lighting up the sky behind with a red glow, pricked by the scarlet skysigns of the great car factories where "Dad's on nights."

No foreigner could spend long in Coventry without getting a sense of it as quite a special place, disfigured perhaps with get-

rich-quickery, but humming with effort and ideas as few of our cities hum. This evening, in the crowded and sparkling civic theatre, with its responsive and not at all sparkling audience, one was very conscious that this particular occasion couldn't have happened anywhere else.

SHEILA LYND



OBITUARY

Dr. W. A. Singleton

We regret to announce the death of Dr. W. A. Singleton, Director of the Institute of Advanced Architectural Studies, in York, after a short illness. Dr. Singleton was educated at the Liverpool University School of Architecture, and was lecturer at the Manchester University School from 1943 to 1959. In 1959-60 he was Hoffman Wood Professor of Architecture at Leeds University. He was Director of the York Institute from its establishment in 1953. John West-Taylor, the secretary of the York Institute writes:

Singleton had been connected with York since 1951, when he was appointed to direct the architectural activities of York Academic Trust, which at this time consisted only of an annual summer school for students. While maintaining and expanding the programme of student activities, he started residential courses for qualified architects, surveyors and builders. These quickly developed in variety and number, and led to the foundation of the Institute in 1953. Three years later he carried out a most successful and appropriate conversion of the disused Church of St. John's, Ousbridge, York, as the new headquarters of the Institute, and this was opened by the Minister of Works in March, 1956.

The Institute was Singleton's greatest achievement. Its rapid success and constant expansion were due to his energy and vision. He believed in the necessity for architects to continue their studies at post-graduate level throughout their working lives, in order to keep abreast of new techniques and to discuss and tackle current problems. He believed also in maximum co-operation between architects, surveyors and builders, and usually members of all three professions were found in the membership of the Institute's courses. He had a wide general interest

in architecture, with particular interests in management (for which he had held a Bossom Fellowship) and repair of historic buildings. His friendly and approachable manner made him popular with lecturers and students alike.

Bronek Katz

We regret to announce the death of Bronek Katz, who died suddenly while on a skiing holiday abroad. In the war he was one of that small band of architects grouped around Misha Black and Milner Gray at the Ministry of Information who, as exhibition designers, kept the pulse of architecture alive while others were concerned with garrison or air-raid shelter construction. Later he worked with Ralph Tubbs and afterwards in partnership with Reginald Vaughan. His work spread to housing and factories, shops and hotels. For Bata he built all over the world handsome shops, factories and welfare establishments.

Bronek Katz practised architecture with devoted passion. He was a kindly modest man who did not see himself as a great innovator, but as one working in the new tradition of his time. He allowed each new problem to indicate its proper solution and then express this architecturally with unfailing honesty and integrity.

COMPETITIONS

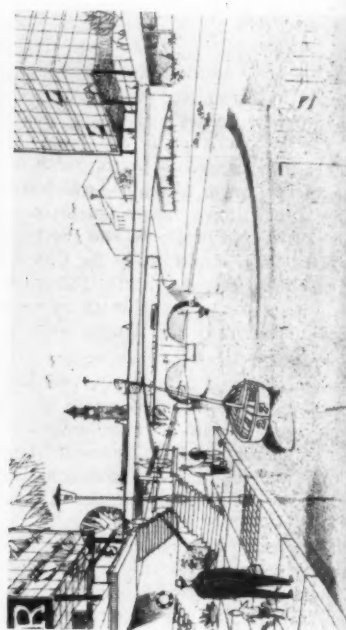
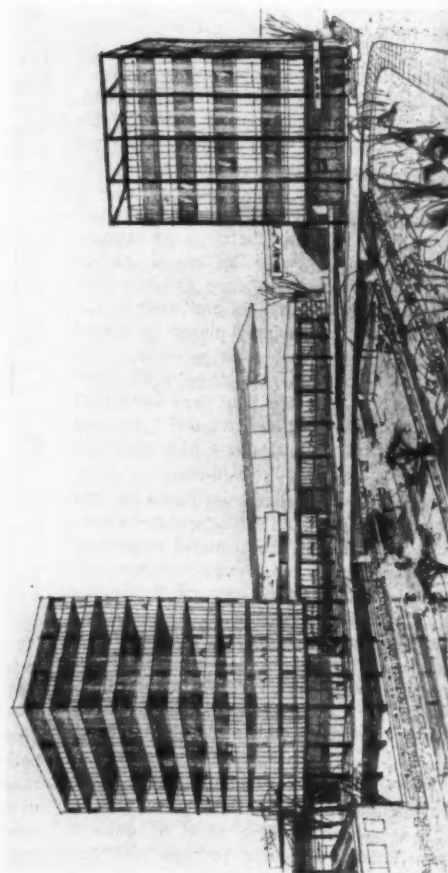
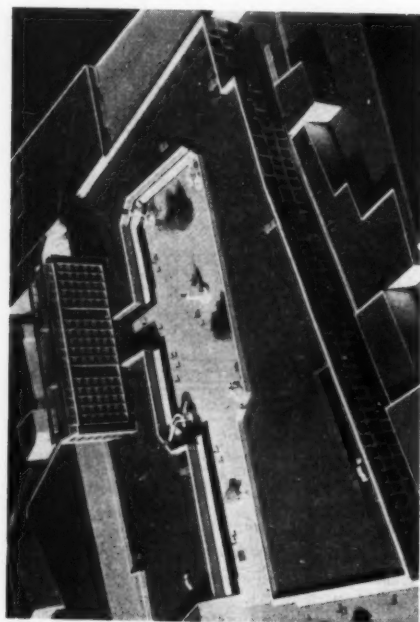
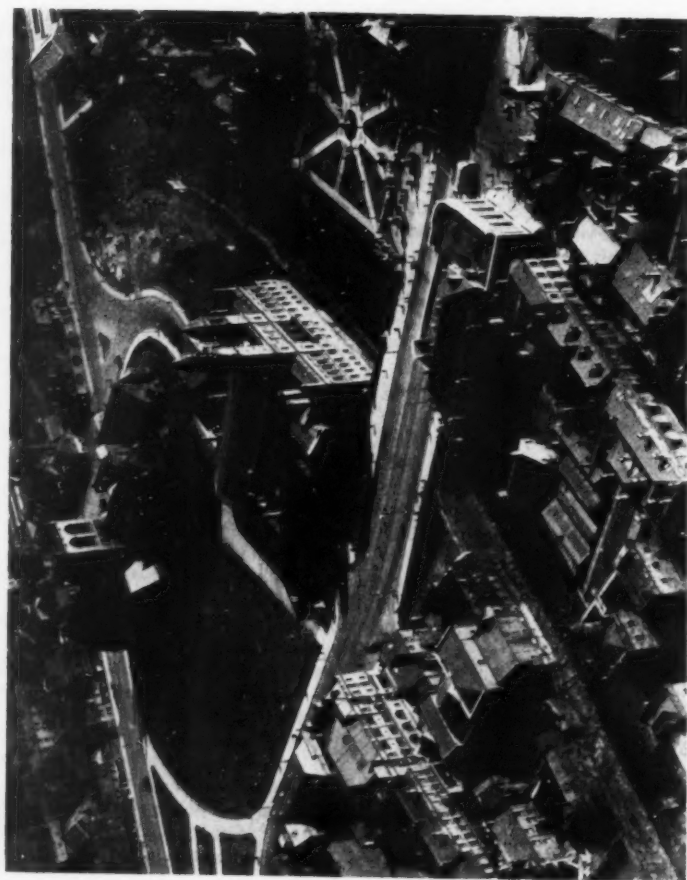
Dumbarton Centre

The Burgh of Dumbarton announces a competition for the redevelopment of its central area, lying between the River Leven and a railway, for which the assessor is Professor Robert H. Matthew. The premiums offered to successful competitors are: First, £1,200, second, £900, and third, £500. A dual carriageway main road will run through the area, close to its northern boundary, and competitors will have to make proposals for its treatment and for the design of a new bridge. Provision has also to be made for a lesser road through the area leading to the existing bridge. The accommodation to be provided includes shops, offices, a 50-bedroom hotel, a community centre, dwellings, car parking and an open space between the High Street and the river. The closing date for questions is March 7, 1960, and for designs May 30, 1960. Conditions from the Town Clerk, Municipal Buildings, Dumbarton.

County Offices

The County Council of Dunbarton also announces a two-stage competition for County Council Offices on a site at Crosslet, on the outskirts of Dumbarton. The assessors are F. R. Wylie, Professor J. H. Napper and James Mottram. The six competitors selected for the second stage will each receive £400, and the competitor placed first will receive £1,500 (to be merged, as usual, in his commission). First stage designs must be submitted by July 16, 1960. Conditions from the County Clerk, County Council Offices, Dumbarton.

PROPOSED RIVERSIDE PIAZZA IN PAISLEY



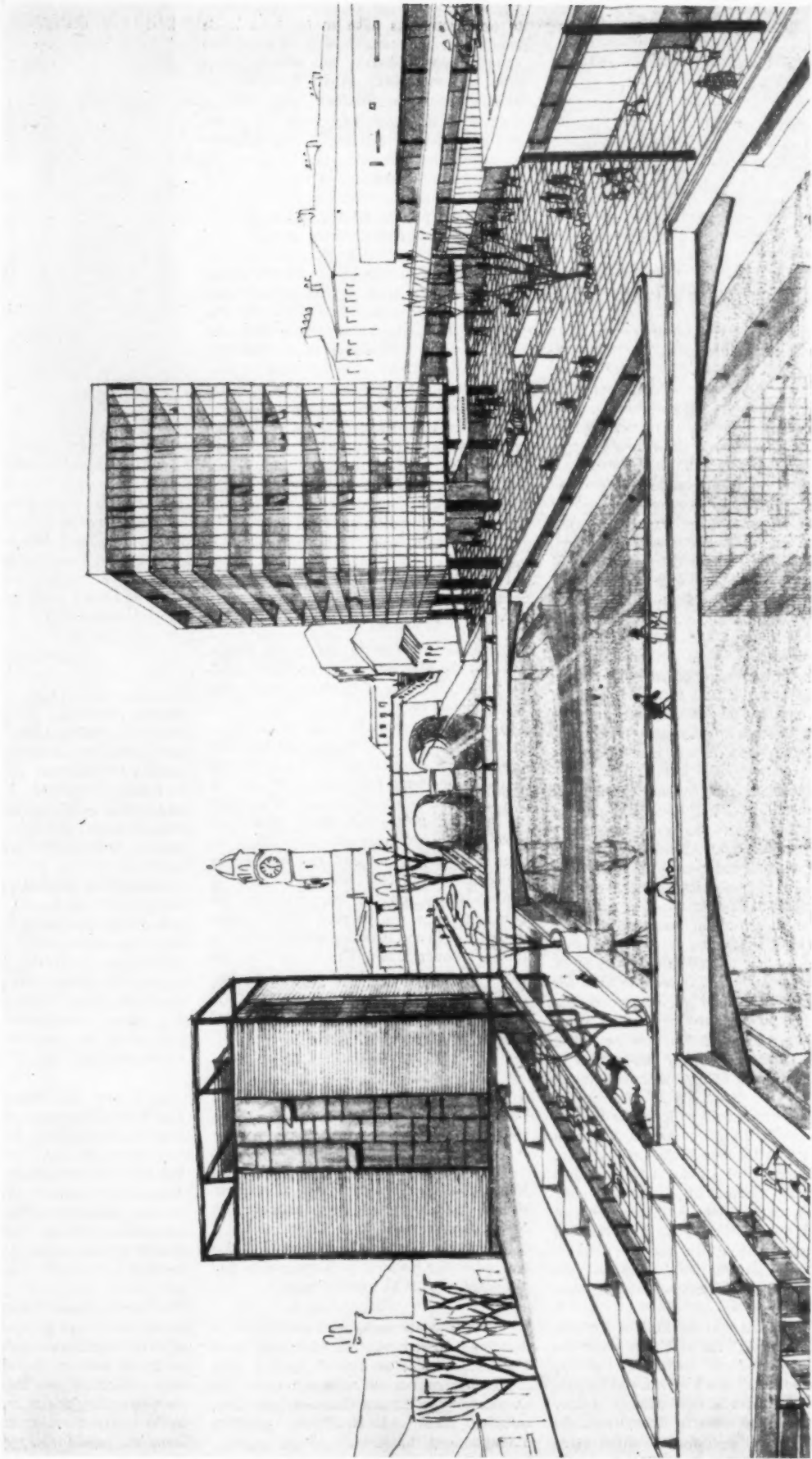
On November 12, 1959 we published under the heading "Architecture Anonymous" some illustrations, one of which we reproduce left, of the scheme selected by Paisley Corporation for the redevelopment of part of its central area. This was the outcome of a variety of the "secret competition" which had this element of novelty—that at least one of the competitors was under the impression that he was the only runner in the race. Since we published the winning scheme and criticized it rather severely, two of the unsuccessful competitors have sent us their designs, both of which seem to us to have been better, and one of them outstandingly so, than the winner. The air view, far left, shows the centre of Paisley, with the Abbey and

the River Cart running past the Town Hall. The area to be redeveloped is in the foreground; the winning design, following an earlier scheme prepared by the Burgh Engineer, decks the river

treats the river (which, the authors say, is neither as sluggish or polluted as the Thames, the Tiber or the Seine) imaginatively, and provides the increased parking space required without

the River Cart running past the Town Hall. The area to be redeveloped is in the foreground; the winning design, following an earlier scheme prepared by the Burgh Engineer, decks the river over to create a "piazza," as does the scheme, centre opposite, by J. Seymour Harris and Partners for Murrayfield Real Estate Co. But the scheme by J. C. and M.K. Holmes, below and opposite

treats the river (which, the authors say, is neither as sluggish or polluted as the Thames, the Tiber or the Seine) imaginatively, and provides the increased parking space required without putting the river in a culvert. Has Paisley Corporation made the wisest choice, or does this example not reinforce the case for some control over secret competitions?



News continued from page 393

Trinity College

In the JOURNAL for January 28 we announced a competition for an extension to the library of Trinity College, Dublin, and said that the conditions were expected to be available early in February. We are now told, however, that the conditions will not be available before May.

AA

Management for Architects

During the last fortnight of February an architects' sandwich course on "Management for Architects" was organized by the Architectural Association. Comprising four afternoon and one morning session its object was to give an appreciation of management technique rather than to show how to apply the technique to the architect's problem.

The course was introduced by Donald Gibson and the lecturers were drawn partly from the personnel of the management consultant firm of Urwick Orr & Partners, partly from the (as yet) meagre ranks of those who have applied management principles in the different sections of the building field. Mr. C. R. Miller, a management consultant, set himself the hardly necessary task of convincing his hearers that management ("organized commonsense") was important and described the techniques and the technical terms which it uses. He was followed by another management consultant, H. R. Birkett, who did the same for work study.

W. F. Brookfield, the planning engineer of the firm of builders, T. J. Lovell & Son Ltd., described, first, the way in which the builder prepares a tender and second, how he programmes (and "progresses") a job. J. M. Austin-Smith, one of the very few architects who have had their offices put to rights by a management consultant, described in detail his method of organizing his drawing office in order to elicit a planned production of drawings. James Nisbet urged the need for cost control and described, dispassionately, the systems put forward by himself when Chief QS for the MOE (i.e., cost control in the sense that the JOURNAL understands it) and the method of alternative estimates put forward by the RICS. W. J. Reiners of BRS gave (substantially) the paper he had given to the RIBA on actual variations in builders' prices for flats in the London area; T. R. Meacham, of Urwick Orr, described the builder's method of controlling costs during the contract, and F. E. Warner, also of Urwick Orr, gave a slightly irrelevant but much appreciated lecture on the different kinds of architectural partnership and the points to be watched by those about to enter one.

There is no doubt that the kind of "organized commonsense" for architects which the course advocated is something greatly needed. Courses of this kind are still pioneer ventures. As there is not enough specific architectural experience to draw upon, the organizers have the choice of either going

into great detail on such few applications to architecture as have so far been made (and which time may show to be untypical) or to depend on analogy with what has been done in other fields. Apart from Austin-Smith's papers (which clearly gave the students what they were expecting) this course was based on analogy, and it may be questioned whether this was wise.

Management consultants are insistent that what goes for commercial people goes for professional people also and in part they are right; for a substantial share of what professional people do (and are responsible for) is repetitive in nature and is therefore susceptible to the kind of techniques which management proposes. But it remains true that a share escapes these techniques (architects would say the larger share) and it is possible to conceive of much waste of time in the attempt to apply them. This is not a motive for disparaging management techniques, for the leeway in the profession which management can make up is very great. It is a motive for regarding each profession as a special case. If slightly off the mark, this course was still excellent and should be followed by more.

BRASILIA

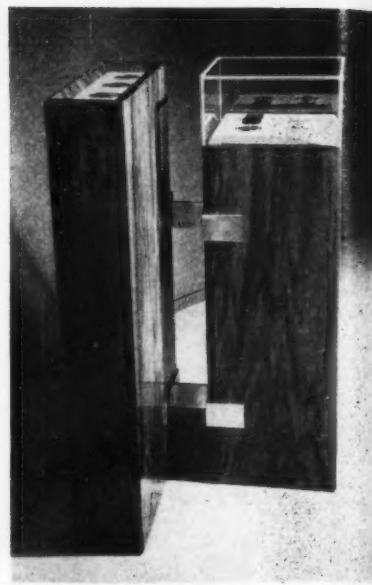
Travel Grants

Applications are now invited by the RIBA, to reach the Secretary not later than March 28, for travel grants of £1,000 offered by the Leverhulme Foundation to members of the RIBA to enable them to work for at least a year on planning or building of Brasilia, the new Federal Capital of Brazil. Applicants should be between the ages of 21 and 35, and will have to acquire a rough knowledge of Brazilian Portuguese. They should explain briefly why they are particularly interested in going to Brazil and working on the plans or designs for the capital. A normal salary, on the comparatively low Brazilian scales, will be paid for the period to be spent in the Planning Office at Rio de Janeiro (under Lucio Costa) or the Site Office at Brasilia (under Oscar Niemeyer). Student members who have passed the Final Examination Parts 1 and 2 and have had at least two years' practical experience are eligible.

In Brief

A second list of major hospital projects, to cost £20 million, has been announced by the Ministry of Health. A first list of projects, also to cost £20 million, was announced, in November. Included in the new list are a new teaching hospital in Liverpool and a new maternity hospital in Birmingham, and big developments at many hospitals.

A one-day conference on Team Work in Building is to be held at the University Arms Hotel, Cambridge on Friday, April 1. This is the first conference convened under the auspices of the Eastern Counties Joint Consultative Board of Architects, Quantity Surveyors and Builders.



The medals which Grey Wornum received during his career have been presented to the RIBA by Mrs. Wornum. They are displayed in the library in this stand, which was designed by Martin Grierson, M.S.I.A. It is made of French walnut with glass tops and silver bronze fittings.

A course on "Timber and its Uses in Modern Building" has been arranged by the York Institute of Advanced Architectural Studies, in conjunction with the Timber Development Association, and will be held in York from April 1 to 5. Further information can be supplied by the Secretary. The Institute of Advanced Architectural Studies, Micklegate York.

Contractors in Great Britain carried out constructional work to the value of £509 million during the fourth quarter of last year, according to provisional figures compiled by the Ministry of Works. Although this figure is only £2 million more than the figure for the third quarter it is nevertheless a record. The value of work done during the year as a whole is provisionally estimated at £1,976 million.

Basil Spence has been elected President of The Building Centre to take the place of the late Sir Giles Gilbert Scott.

Kenneth Allerton, who is at present Principal Assistant Architect in the Nottingham County Architect's Department, has been appointed Deputy County Architect of Warwickshire, and will take up his duties on April 4.

The British Road Federation is to hold an exhibition of car parking at the Institution of Civil Engineers, London, from March 18 to 26. It will be the most comprehensive ever collection of models, photographs, drawings and plans of buildings all over the world designed to house the parked car in many ways and for many purposes.

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Readers who at times grow restless at the spirit of frugality and caution which mark building research in this country may well appreciate this report by Thomas Markus of last autumn's Conference of the Building Research Institute of America. Prodigious of effort, uninhibited in describing failures, precipitate in claiming success, Americans may stumble on more truths by accident than we discover by design.

BUILDING RESEARCH IN AMERICA

By Thomas A. Markus

The gap between thought and action in the building industry—research and building—is notoriously difficult to bridge. At a time when our own research organization, the Building Research Station, is devoting a great deal of effort to solving this problem, and when the architectural profession is itself becoming aware that it needs a technical "memory" which can collect, advance and disseminate information (one thinks of the new RIBA policy and activities, the coming of a comprehensive classification and filing system and the expansion of the Building Centre's field)—at such a time it is salutary to have a look at this gap in a country where expenditure on both thought and action is vast and virtually unlimited by Government control.

The Fall Conference of the Building Research Institute held in Washington DC from November 17 to 19 gave one an opportunity for a quick, breathless look. BRI is one of the children of the National Academy of Sciences and was founded after the war. Its function is to bring together all persons and organizations concerned with building research or development, to provide a means for discussion and exchange of ideas, and to advance the general cause of building technology. It does this by means of conferences, symposia, publications and an active, efficient committee structure which is typical of American organizations of this type. It does not carry out any research itself, either directly or by sponsorship, and its staff is purely administrative. In its seven years of existence it has organized symposia on such diverse topics as metal curtain walls, sealants and adhesives, metal fastenings, glass, concrete floors and acoustics. Proceedings of all these are published and available.

BRI conferences

Every spring and autumn the BRI holds a conference at which a number of selected topics are discussed. This year there were six conferences in one, not more than three at any one time. This meant that one received a kind of "fugal" mixture by crossing from one room to another between papers. The six subjects were: Building Research International, Modular Co-ordination, New Heating Techniques, Metal Curtain Walls, Building Research Workshop and Sandwich Panel Design. The papers were highly compressed and never of more than half hour's length; delivery technique in general was poor compared to European conferences and the material was frequently badly organized, with little structure or highlighting of main topics. Thinly disguised

product advertising, with little self-criticism was general.

In spite of these features or perhaps because of them, there was a real atmosphere of optimism and action at these meetings. Even more marked was the total absence of the mutual suspicion with which architects and engineers on the one hand and manufacturers on the other regard each other at similar British affairs. The outcome of this team spirit in the field is a degree of co-operation which makes daring technical experiments the rule rather than the exception, with frank joint acceptance of responsibility for the numerous failures which result.

This joint irresponsibility and responsibility was well demonstrated in the Metal Curtain Wall and the Sandwich Panel conferences, the greater part of both of which was a series of case studies on individual buildings and products. Robert Hastings, for instance, from the firm of Smith, Hinchman & Grylls, co-ordinating architects for the General Motors Technical Centre project, gave a graphic description of the series of misfortunes in the first blocks which finally led to the revolutionary metal tray sandwich panels glazed with motor car type "zip-in" pressure gaskets. The coming together of the motor car and building technologies was almost an accident. John Dinkerloo of Saarinen's office sent shivers up the backs of the assembled manufacturers by a prophetic vision of a curtain wall-less world, unless some radical visual and functional changes took place; at the moment we seemed to have reached a kind of dead end. Sabine dealt with the acoustics of sandwich panels and others with problems of heat transfer, moisture, structural strength, fire regulations (these seem to have the same braking effect on developments and economics, due to the back-up wall requirement, as they do here), durability and assembly.

Mechanical suckers

The case studies of metal curtain walls included an illustrated description of the assembly and glazing techniques used by Skidmore Owings and Merrill at the Connecticut General Life Insurance Building; the automatic gantry on rails designed to handle and place plates of glass weighing about half a ton were the first to utilize mechanical suckers on this scale. Something was heard of the Philadelphia Sheraton Hotel's misfortunes where a section of wall and window were sucked away from the building on the leeward side; the New Orleans Public Library—a grey-glass box

surrounded by a carefully engineered solar metal screen—was closely analysed in both design and performance.

Building Research International gave an insight into the research problems of countries with acute problems of climate, in contrast to some of our more "leisurely" ones. Japan, with earthquakes and hurricanes destroying 90,000 houses per annum; South Africa with mysterious large scale subsidence which turned out to be the centre of buildings rising, not the foundations sinking; Canada with problems of permafrost and building at 20 deg. below for a large part of the year.

Modular co-ordination

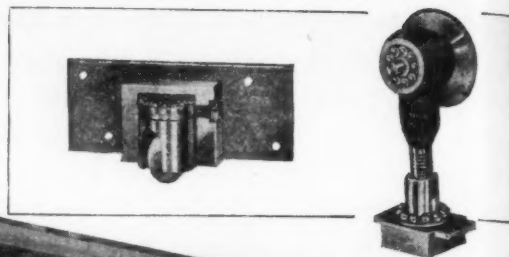
Modular Co-ordination in the States has developed fast, with no official Government support or research and without any public commotion. In fact it has crept up on the unwary manufacturer so steadily that now he is forced to take notice to be in the swim. Of the 298 dimensional products advertised in the October issues of the 10 leading architectural and building journals, 245 were modular on a 4 in. module, making allowances for joints and tolerances. (One actually advertised itself as being the only non-modular product of its class available!) The Executive Director of the Modular Standards Association—a private organization somewhat similar to the Modular Society—outlined the scope and results of various surveys recently carried out. One indicated that some 11 per cent of the total building projects in the country are being drafted on modular lines—this does not necessarily mean that they will be entirely modular constructions. It does mean that the MSA's efforts to introduce modular drafting is bearing fruit; tracing paper with the 4 in. module printed at various standard scales, modular scales and rulers, and centre-line dimensioning are all part and parcel of this. Also a tremendous effort is being put into educational programmes in schools of architecture, encouraged actively by the AIA.

Attitudes to research

The Building Research Workshop was designed to encourage discussion of development and research techniques in general, and to enable various research leaders to outline their future projects and identify gaps. Here more clearly than anywhere during the conference was a demonstration of the fundamentally different meaning attached to the word "research" in the States and Europe. To the American it is a means to an end—the thing uppermost in his mind is the problem to be solved, at any cost; the European, as a result of educational conditioning and economic necessity, thinks of research as an end in itself, a special form of thinking and working. Research techniques themselves are made the subjects of research—the thought uppermost in his mind is how best and most economically to get the answer rather than what the answer itself will be.

In practical terms these two attitudes result in very different modes of attack. The most striking feature of American research is its apparent extravagance in men and money.

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County High School, Ickenham, Middx. County Architect. Builders: A.E.A. Prowling Ltd.

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Made for both End-folding and Centre-folding Leaves

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'COLLEGE' Rollers take the weight on floor. Suitable for screens up to 17 ft. high and openings of any width. Neat B.M.A. or matt chrome finish. Quiet precision bearings. Floor Rail can be danced over.

'COUNCIL' Ball Bearing Hangers. Carry the weight from a top beam. Ten track sizes take care of small domestic up to largest assembly hall partitions.

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Much work is duplication, not because duplication is seen as a useful check—which it often is—but through sheer ignorance of what the other hand is doing. One project, for utilization of solar energy in curtain walling, was outlined by the leader at a forum. During the course of it he multiplied by three his first estimate of annual cost; it also appeared that the only complete bibliography on the subject (some 3,000 items) and passed his scrutiny in literature search. Another feature of the several projects proposed was the small amount of theoretical work that went into their design. We learnt a long time ago that the cheapest form of research is to employ a brilliant scientist, put him by a desk for a few years with a slide rule and notebook, and then build the one experiment which he predicts as hopeful. (Sometimes even this fails to struggle through to the light of day.) They build full scale prototypes to test all ideas simultaneously; one may produce the right answer. This "steam-roller" approach is expensive—naturally most of it has to be paid for by manufacturers and industry. Amongst the subjects to be thus covered are: a study of the suitability of models for heating and ventilating studies at the University of Illinois; an experiment in the control of the human environment at the University of Hartford; an investigation of air-flow patterns around groups of buildings at the Texas Engineering and Experimental Station and the effect of high-rate loading on prestressed concrete at the Catholic University of America.

Documentation

A special section of the Workshop was devoted to Building Science Documentation problems. Glenn Beyer of Cornell's Housing Research Centre gave a brilliant outline of the scope of the problem in terms of human physiology and psychology. An information consultant outlined mechanical and electronic systems of information cataloguing and retrieval; the whole of his sparse time was occupied in denying that the supposed differences between these were real, in terms of basic information theory—but what this theory was never became clear.

Heating

The last of the six conferences was on New Methods of Heating Buildings. The two outstanding contributions here were by Professor Jordan, of the University of Minnesota, on solar energy systems, and by the Market Research Manager of GEC on new electric systems. In the first, a rather more realistic assessment of the potential than is usual from enthusiasts in this subject was made; in spite of much technical progress there are many gaps. Any single radical increase of efficiency in a component part could raise the overall efficiency of energy conversion (which is never likely to be more than 10 per cent) by the one or two per cent necessary to make it economical on an amortized basis.

One of the greatest needs is for improved methods of heat storage, particularly for such climates as Britain's, where there are

long periods with little available energy coincident with maximum heat requirements. Interseasonal heat storage, for instance by means of the soil underneath buildings, could be the answer but was not mentioned amongst the many possibilities. In the second paper first glimpses became available of research being carried out to utilize the "Peltier effect" for heating. The phenomenon of two dissimilar metals joined to each other producing a cold junction and a hot junction under given currents passed through, long employed as the principle of the common thermocouple, can apparently be used, coupled to a heat pump, for heating. The efficiency of current utilization is far in excess of that in resistance heating—the basis of all electric heating today.

Colossal scale

There can be little doubt that by the time the Conference Proceedings are published a few months hence, many of these projects will already have come to grief or been proved successful. This is in the nature of American research; matters move at great speed. It may be true that the failures are colossal, in our terms, and many; it may be that resources are squandered through lack of proper theoretical and small scale study; certainly there is needless duplication. But rather in the same way as it is held that public utility companies such as those producing electricity, could not produce as cheaply and efficiently if their product was not wasted, thus creating a constant high demand (few New York office buildings are without large areas of empty lit up office space throughout the night) in the same way the turnover of ideas and work is bound to produce a steady output of results.

The finance is largely industrial, even where the work is undertaken at a University. Some startling general results are produced quite haphazardly, with narrow, trade aims. The Structural Clay Products Research Foundation, in an attempt to discredit curtain walling economics, brought out a calculation on the "final cost of a wall" taking into account capital cost, maintenance, heating, lighting, air-conditioning, taxation and depreciation. In so doing they taught the architectural profession the basis of cost analysis and cost planning. The manufacturers are stumbling over each other to be "in" on modular co-ordination, without

any official co-ordinating plan. The steel producers, through their work at Princeton University, produced what is still the best visual and functional analysis of the curtain wall.

Military research

Monsanto Chemical Company, in an attempt to create further outlets for their plastics in building, sponsored work at MIT which resulted in one of the real break-throughs in housing design. Currently another is about to be made using hyperbolic paraboloid mushrooms for a school construction. The Air Force, desperate for a radome shelter for the Arctic, and working at top speed, have given the Geodesic dome and Buckminster Fuller their biggest advance in years. The Army, in searching for a soil stabilizer which could be sprayed onto beaches shortly before landings, from helicopters, to make firm ground for landing craft, incidentally supplied the key to methods of soil stabilization, coupled with the use of road making machinery and slabtiling, making possible a new method of low-cost house construction. The examples could be multiplied many times over.

BRI and the Building Research Advisory Board, both branches of the National Academy of Sciences—itsself largely a private organization—are entirely non-experimental. The former is the forum; the latter is the advisory body on building research matters and individual problems. The National Bureau of Standards, in its Building Division, carries out testing and research work on materials or physical problems of building; it is a division of the Department of Commerce. The Housing and Home Finance Agency set up in 1947 to administer the Federal housing programme, with its sub-division (of previous foundation) the Federal Housing Agency, which is chiefly a mortgage insurance body, encourages much research of a practical nature, but does not carry out any. Almost the entire weight, therefore of research responsibility falls on private enterprise. Were it possible to plan and organize its work in some measure, without the dead hand of officialdom killing its vigour or changing its advertising-inspired publications into textbooks, untold progress might be made. Who knows but BRI will succeed in some measure in bringing this about?

THE SCIENTIFIC APPROACH TO COMFORT

David Medd Reviews a Furniture Symposium

This was the challenging title of the one-day symposium recently organized by the Furniture Development Council at the Central School of Arts and Crafts. The pertinacity of the Furniture Development Council and the enthusiasm in particular of J. C. Pritchard, the Director, are wholly admirable. Apart from noticeable exceptions, the gap which separates furniture research and the furniture industry is im-

mensely wide, and there was evidence in the symposium to support this view.

The day was imaginatively organized, and Mr. Pritchard maintained a lively pace throughout the day, combining adequate time for discussion with punctuality. The six speakers were scientists and research workers, so that the audience, of about 140, consisting mainly of industry, had a vivid dose of reason to swallow.

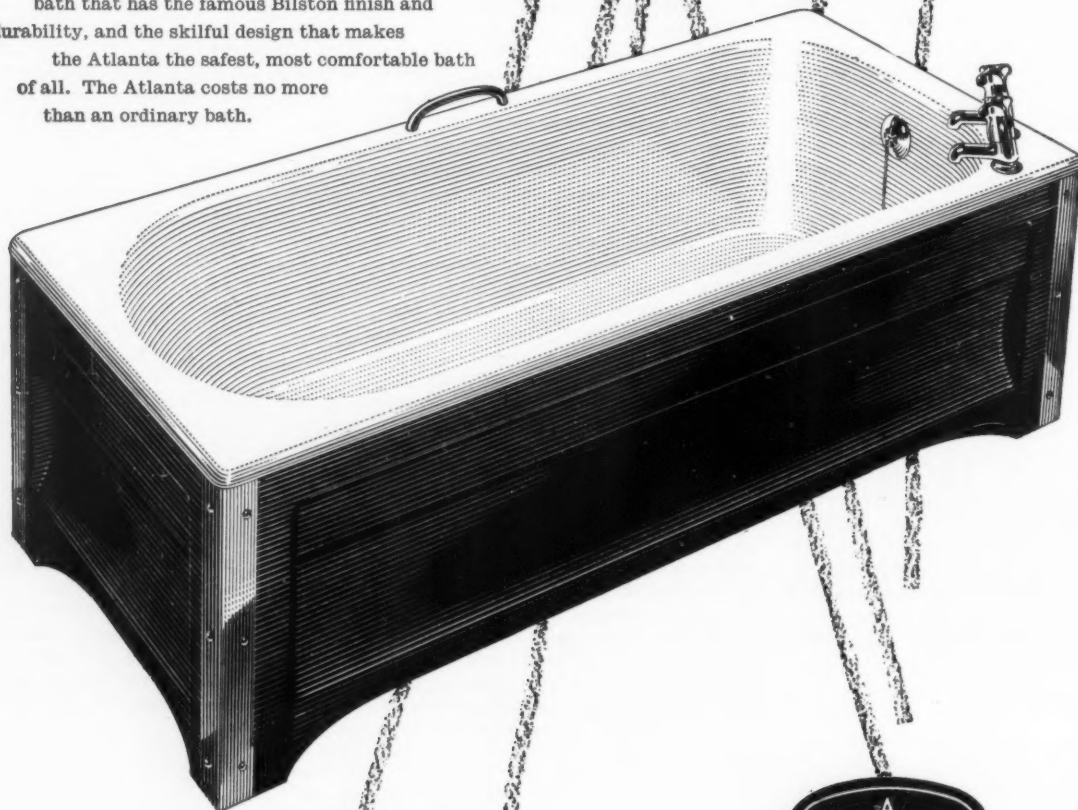
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Dr. W. F. Floyd, physiologist, spoke on the "Application of Anatomy and Physiology to Sitting Problems" and demonstrated very clearly that the facts for the design of comfortable upright chairs are well known, in spite of the flagrant violations of these with which the market is littered. Dr. Floyd, with Dr. D. F. Roberts, is co-author of BS 3044:1958 *Anatomical, Physiological and Anthropometric Principles in the Design of Office Chairs and Tables*. In spite of the formidable title, this is a model standard, which gives just the basic facts a designer needs to know; and when read in conjunction with BS 3079:1959 and BS 3030 Part 3: 1959, which apply these principles to office and school tables and chairs respectively, there is little excuse left for serious design mistakes in either of these important markets. Let us hope that the industry will seize on these documents to spread the cause among their clients who naturally are less well-informed, so that sales for reasonably designed furniture are increased. Much of the impetus, however, arising in school and office furniture design has come from designers and dedicated client organizations, and now that the principles have become well established, industry has a fine opportunity to make sales capital out of them—in fact, they would be failing in their duty not to do so.

What is comfort?

But the symposium was concerned with other problems, and it was a brilliant idea to ask Dr. R. G. Hopkinson, of the Building Research Station, and Dr. S. A. Chrenko, of the Medical Research Council, to speak on the techniques evolved for the assessment of comfort and discomfort in lighting and heating respectively. Dr. Hopkinson, as usual, presented a complex subject very lucidly, and spoke with great experience in translating subjective reactions into design data, and one was made to feel, because of this work, how much better equipped the lighting designer is than the designer of easy chairs. With an immense number of factors involved in the design of comfortable easy chairs, let us hope that the experience of Drs. Hopkinson and Chrenko will be heeded. The subject has to be tackled both from subjective and mechanical viewpoints, but as Dr. Hopkinson said, the human integration of complex factors is of more value than the mechanical integration of physical ones. Subjective assessment techniques show that sensitivity is increased with experience, and clearly here was a problem for the industry, to many of whom selling chairs is more important than meeting highly experienced judgments.

Professor A. T. Welford, of the Psychological Laboratory, St. John's College, Cambridge, gave a beautifully clear address on the theme that very minor design adjustments to equipment, whether sewing machines, gas cookers or chairs, could give important benefit to users. He described experiments in which wriggle meters recorded movements of sitters in various types of chairs, and asked whether a wriggle rate could be recorded as an integration factor for comfort; but he fortunately added that

the wriggle must be validated—that is to say, does it mean discomfort? So one is thrown back on the subjective attack once more. Professor Welford hoped that from research on this difficult subject would emerge design criteria, tables of related dimensions and possibly some ingenious nomogram, by which designers might combine various factors to suit particular situations.

Professor Welford concluded his address by telling a cautionary tale which illustrates how much easier it is to assess discomfort than comfort, and that changes for the worse are appreciated more readily than improvements. The Bell Telephone Company conducted an experiment in which new instruments were installed, and on requesting reactions, received only a few grunts of reluctant comment. However, the replacement of the new instruments by the original ones brought outcries of protest.

J. W. N. Jordan, Director of Ernest Race Ltd., who was chairman for Professor Welford, bravely retrieved the reputation of the industry, which had been severely shaken by an outburst from the floor in which it was stated that cost was far more important than comfort. The industry had now got beyond design for comfort which could easily be achieved if free of cost limitations. Professor Welford answered another comment from the floor by saying it was wrong to design a chair precisely like a tailor-made suit, but the analogy of pyjamas or dressing gowns, for which fitting is less critical, was more appropriate.

Large and small

For the final session Dr. Floyd and Professor Welford were joined by M. J. Merrick, Head of the Research Department of FDC, and Dr. O. G. Edholm, Head of Division of Human Physiology of the Medical Research Council, to form a "Brains Trust" to comment on six easy chairs gallantly supplied by the industry for the purpose. This session was brilliantly conducted by Mr. Pritchard, and although in a lighter vein than previous sessions, some hard hitting and fundamental points were made. Large men and small men and women were asked to sit in the chairs while the experts made their comments, and the high spot of the symposium was undoubtedly when Miss Adams (of the FDC) flicked off her shoes and tucked her legs up in the chair, and with a smile looked up at the nonplussed egghead for his comment on her comfort. In such a session as this, the experts were only able to observe mechanical rather than subjective points, but it was remarkable how consistently they were able to demonstrate that it was only with some muscular effort that you could rest your head on the back, gain lumbar support, or rest your feet flat on the floor, and that it was virtually impossible to combine two or more of these positions at once. Clearly there is a very long way to go.

It was a pity that a wider variety of chairs could not have been chosen, for inevitably the comments were rather repetitive. One speaker from the floor commented that "there is only one chair of the six that is

slightly modern—the others haven't changed since Queen Anne." This statement was expressed more than once and not only displays an ignorance of the qualities of traditional chairs, but expresses the common modern heresy that performance and appearance are two quite separate parts of the design process. What was so fascinating was four scientists discussing articles in terms of fact—unlike the comment Mr. Pritchard quoted: "I know what I think; don't confuse me with the facts."

Excuse for irresponsibility

The fewer design criteria that are based on fact, the more excuse is there for irresponsible design; but the more facts that are established, the more may designers feel that their creative freedom is being curtailed. Surely no one wants to restrict imagination, but the basis must be one of knowledge rather than of ignorance. The character of the symposium was established by scientists being the only speakers, but one could not help feeling that seating designers for the railways and buses must over the years have amassed an immense amount of experience that could well be shared. Who are these anonymous designers? Although some in the furniture industry apparently think otherwise, their experience is relevant, and their standards very high.

The symposium succeeded in stirring up a vastly complicated subject in which practically every condition from cold feet to sticky hair had a part. Of the three groups mainly represented, perhaps the designers went away least satisfied, for they are hungry for design criteria. The scientists were honest in claiming one after the other that they do not know the answers, and obviously some of the manufacturers do not think it is important to know them, or think they already do. They fear that furniture designed for comfort over the years will not have immediate sales appeal. But, as Mr. Pritchard warned them in his opening remarks, the industry may not get its fair share of national prosperity unless it works hard for it. It is the duty of industry to the public to ensure that this extra effort is put into value for money and not merely enhanced immediate sales appeal. The responsibility of industry in the domestic market is particularly great, for unlike the schools market, for example, the customer is less well informed.

If in this review any unfair references have been made to the industry, it is only a reflection of the views expressed at the symposium with, of course, the exception already mentioned. It is unfortunate that active support for research is not more widespread in the industry, but in spite of this Mr. Pritchard gave evidence of some very generous support for this research into easy chairs. Some very difficult hurdles have already been surmounted by the FDC—performance tests is only one. Let us hope that we shall soon be given the knowledge whereby easy chair design is based not on the search for a new shape, but the solution to identified problems in which performance and appearance are inseparable.

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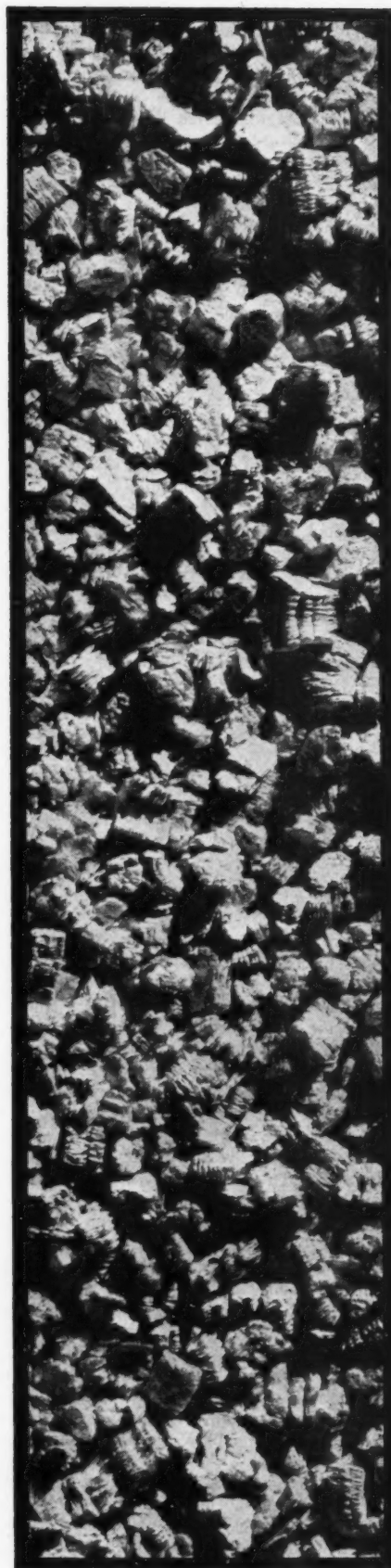
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Nearly a year ago* our Specialist Editor (11) Legal discussed the report on the Committee set up to consider possible changes in the law relating to rights of light. Since then the Rights of Light Act, 1959, has been passed. This grants a five years' respite to those in danger of having a prescriptive right to light proved against them as a result of the stoppage of building caused by the war, and makes it no longer necessary to put up a screen to prevent this happening.

RIGHTS OF LIGHT

The 1959 Act described by a Legal Correspondent

Every architect knows that planning new development on a site, as well as the value of the site, can be seriously affected by adjoining buildings that have acquired rights of light over it. In built-up areas easements of light can represent large sums of money. The right of light is not a natural right of property, but an easement, which has to be acquired. It can only relate to apertures. It can only exist when acquired by means that have legal recognition. Such an easement must be an advantage to a dominant tenement (the building taking light) and a burden on a servient tenement (the building or land over which the light passes).

The normal method of acquiring an easement of light is under the Prescription Act, 1832, section 3 of which reads:

When the access and use of light to and for any dwelling house, workshop or other building shall have been actually enjoyed therewith for the full period of twenty years without interruption, the right thereto shall be deemed absolute and indefeasible, any local usage or custom to the contrary notwithstanding, unless it shall appear that the same was enjoyed by some consent or agreement expressly made or given for that purpose by deed or writing.

The "interruption" referred to in the section must exist for one year. That is why (although it is not conclusive) anyone enjoying light to a building for nineteen years and one day (without written consent) is said to be "home" with his claim to have secured an easement of light under the 1832 Act.

The usual methods of preventing the acquisition of light easements before the passing of the Rights of Light Act, 1959 (of which, more anon), were, a written agreement between the parties, whereby the servient owner permitted the dominant owner to take light over his property, thus enabling the former to develop unhampered his property, or, failing an agreement, development by the servient owner of his site or the erection by him of a screen against the windows in the dominant building.

The bombing of the last war, some of which occurred in 1940, left many vacant sites, or areas with blitzed structures. Adjoining these were buildings with windows which thereupon took light across the open or partly built areas. Controls on building operations and on the use of timber and other materials made it impossible to erect screens to prevent the acquisition of light

easements over the blitzed sites. As controls were relaxed, a more formidable obstacle appeared in the Town and Country Planning Act, 1947, under which it was necessary to get planning permission for the erection of screens. There are reported cases of such permissions having been refused. (I understand in some Commonwealth countries, planning considerations override rights of light.)

Time was running out against the unfortunate owner of a blitzed site. In consequence, the Lord Chancellor appointed the Committee on the Law Relating to Rights of Light, with terms of reference, subsequently extended, to advise whether legislation was desirable to amend the law as to rights of light relating to war-damaged sites or sites whose development was prevented or impeded by reason of restrictions or controls imposed during or after the late war, to preserve rights of light acquired or in process of acquisition by buildings which subsequently suffered war damage and to consider whether alterations were desirable in the law and practice relating to the means whereby the acquisition of rights of light over any land might be prevented.

The committee's report was presented to Parliament in July, 1958. As a result, the Rights of Light Act, 1959, which largely follows the committee's recommendations, received the Royal Assent on the 16th July, 1959. Thereupon sections 1 and 6 of the Act's 8 sections came into force. The rest of the Act became operative on the 16th October, 1959, by which time rules had been made for working the Act. These are The Lands Tribunal (Amendment) Rules 1959 (SI 1959 No. 1732) and The Registers of Local Land Charges (Rights of Light, etc.) Rules 1959 (SI 1959 No. 1733).

Under the new Act, which applies to England and Wales, the period of prescription for the acquisition of rights of light under the 1832 Act is extended from 20 to 27 years but only for the purposes of claims asserting a right to light if brought between July 14, 1958, and the end of 1962, and for the purposes of disputes about interruptions of the access of light caused before the end of 1962. This temporary provision gives a period of 27 years for the owner of the blitzed site to develop his land unhampered by rights of light enjoyed by the dominant building. In other words, he can develop his site, consonant with planning permission, ignoring apertures in the dominant building which have not been

there for 27 years.

The more permanent and novel aspect of an Act that has avoided injustices that would otherwise have occurred is found in sections 2 and 3. These enable a property owner to prevent the acquisition of rights of light over his land by the registration of a notice with the local authority in whose area the dominant building (the building taking light) is situated on payment of a fee of £10. This registration is in lieu of erecting a screen to obstruct the access of light. Such a method of notional obstruction should put an end to unsightly screens and the cost of their erection and maintenance. It also overcomes the difficulty of obtaining planning permission for them.

An application for the registration of such a notice must be in prescribed form and specify the position and dimensions of the structure to which the notice is intended to be equivalent. It must be accompanied by a certificate of the Lands Tribunal. This will not be issued until notice has been given by the servient owner to all persons likely to be affected by the registration and a fee of £10 paid. In cases of exceptional urgency (e.g., where a prescriptive period is about to run out) a temporary certificate may be issued. The fee for the temporary and definite certificates is £15. In practice it will be found that this is neither a simple nor an inexpensive procedure. A total minimum fee of £20 is not negligible. (In this connection, the committee report said that any system of registration in lieu of physical obstruction must not be so easy or cheap as to encourage notices that are frivolous or worse.) Once the necessary notice is registered as a local land charge and is effective for a year, the obstruction of light enjoyed by a dominant building is deemed to have been submitted to or acquiesced in for one year after its registration. This is fatal to the acquisition of an easement of light. The servient owner will have 20 years before the period of prescription has run against him once more. During this period of grace he should be able to develop his land. The notice, unless cancelled, will remain effective for 21 years. It will need to be renewed if the servient land is still not developed.

If the dominant owner claims an easement of light over the servient land, he must take court proceedings to secure it. As from the date such action commences, the dominant owner shall not be treated as submitting to or acquiescing in the notional obstruction brought about by the registration of the notice, of which the dominant owner has been notified.

It should be realised that the remedy provided by the new Act to servient owners applies to any building not fully developed over which light passes to a dominant building. Such owners should consider whether they ought to take advantage of the Act. The Act defines who may register notices and deals with land in which the Crown or the Duchy of Lancaster or the Duchy of Cornwall has an interest. Agreements as to light can still be entered into. Property owners may prefer these to the alternative, though expensive, remedy offered by the Act.

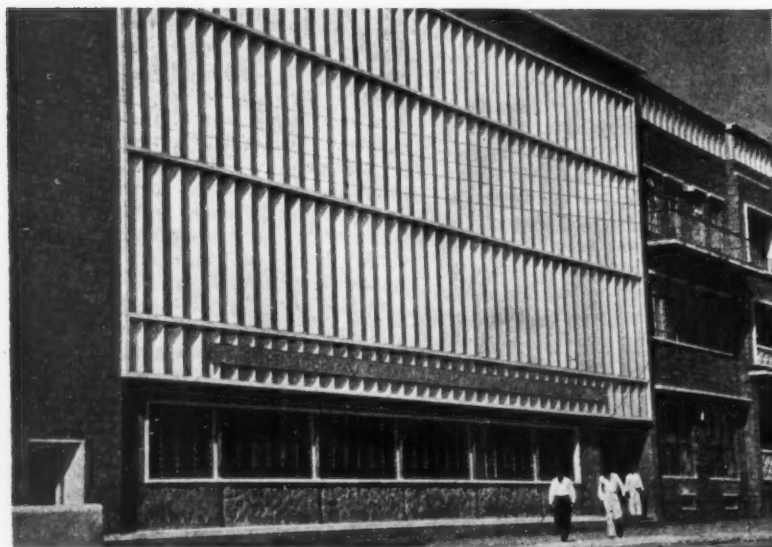
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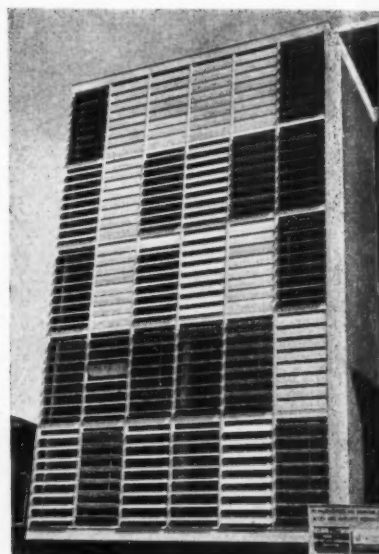
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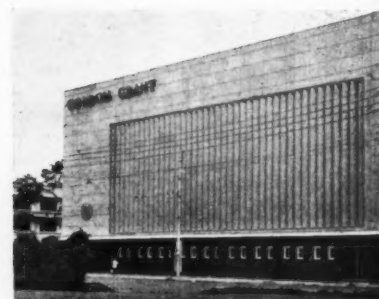
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IN THE COMMONWEALTH

THE INDUSTRY

From the industry this week Brian Grant describes blind riveting, temperature control units, unit heaters, emergency lighting accumulators, panel radiators, a sound meter, flexible doors and a new range of light fittings.

Blind riveting

There are many jobs where it is desirable to rivet sheet metal, but where it is only possible to reach one face of the material, so that the ordinary rivet cannot be used. "Pop" rivets were originally evolved for the aircraft industry, but there are many building industry uses such as the fixing of sheet metal cladding or duct work, as well as suspended ceilings. The rivets are tubular, and are assembled on a headed mandrel or steel pin. The mandrel is gripped in a hand or pneumatically operated tool which pulls the mandrel through the rivet, forming a head on the blind side and at the same time clenching the sheets together. When the whole joint is tight the mandrel breaks at a predetermined point. The head of the mandrel leaves a weathertight joint, but

other versions are made for particularly severe conditions or where a pressure tight joint is needed. The whole process is rapid, and can be carried out by unskilled labour. The rivets themselves are made in various metals, and in diameters up to $\frac{1}{4}$ in. (*The George Tucker Eyelet Co. Ltd., Walsall Road, Birmingham 22.*)

Electrical controls

Engel & Gibbs are making temperature control units for the control of electrical floor warming, thermal storage for space heating, and stored hot water supplies. The units have been designed to give maximum flexibility, and can be supplied with an adjustable time clock for off peak control with facilities for a mid-day boost and a shut down at weekends. Spring motor reserve power can be incorporated in the clock if necessary. The switchgear is of mercury type which are completely silent in operation and have a very long life.

The control units can be set to omit Friday and Saturday nights from the heating schedule to save current and at the same time provide adequate heat on Monday morning. For accurate temperature control floor or room thermostats can be used, sometimes both. Anticipatory control can be arranged with a thermostat which measures internal and external temperature differences and will provide, for instance, greater heat input during a colder night after a comparatively warm day. The makers maintain that the usual bi-metal thermostat often has a sensitivity of only plus or minus 10 deg. F., which may increase with contact wear. They have therefore evolved a pressurized type of contact thermometer with a differential of about $\frac{1}{2}$ deg., which can be housed in the floor.

The control units, which can include general circuit fuses and space for meters, are supplied in sheet steel cases for flush mounting if necessary. (*Engel & Gibbs Ltd., Warwick Road, Boreham Wood, Herts.*)

Unit heaters

The new range of Copperad unit heaters starts with a basic unit intended mainly for horizontal warmed air discharge. This is suitable for the majority of installations, and is recommended where ductwork is to be connected to the inlet side of the fan to provide forced ventilation. There is also

an enclosed version with a sheet metal case at the back for use where improved appearance is required. There is a further Downstream model which provides a downward air discharge and is recommended for mounting at considerable heights, or where air distribution in four different directions is needed. The heaters are made for use with low, medium or high temperature hot water, or with steam, and with fans of varying speeds and degrees of silence. The latest catalogue (publication UH 104), describes all models, and has a very full series of tables giving heat outputs with various hot water temperatures and steam pressures, as well as appropriate spacings and mounting heights. There is also a useful page of notes on the corrections to be made when allowing for the resistance of trunking or operation at high altitudes. A good factual publication. (*Copperad Ltd., Colnbrook, Bucks.*)

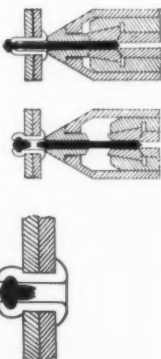
Emergency lighting

All hospitals and other buildings which need electricity as a vital service have some form of stand-by system which takes over automatically if the main supply should fail. The service is generally supplied by accumulators kept permanently on trickle charge, but if the demand for essentials is at all heavy the space required may be quite considerable. Tudor have now a range of high performance cells which occupy only about half the space of the equivalent BS cells. They are made in two versions, one for use where the rate of discharge will be less than the one hour rate of the battery, and the other capable of heavy discharges for comparatively short periods, such as might be used for starting stationary engines or operating heavy switchgear. Maintenance is almost negligible, and there are cases where Tudor cells are still in use with the original plates after 25 years of continuous trickle charging. (*The D. P. Battery Co. Ltd., Bakewell, Derbyshire.*)

Panel radiators

The range of Washington steel radiators, described in these Notes a considerable time ago, has recently been increased with a series of fo'ed panel radiators for small bore and ordinary central heating systems. The radiators are formed from a single sheet folded over at the top and welded

The three stages of "pop" riveting, by the George Tucker Eyelet Co. Ltd.



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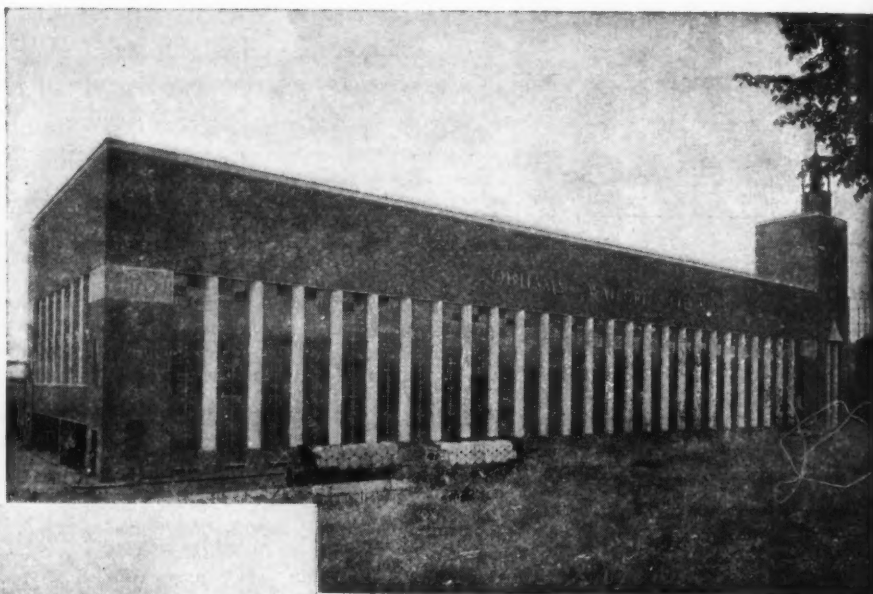


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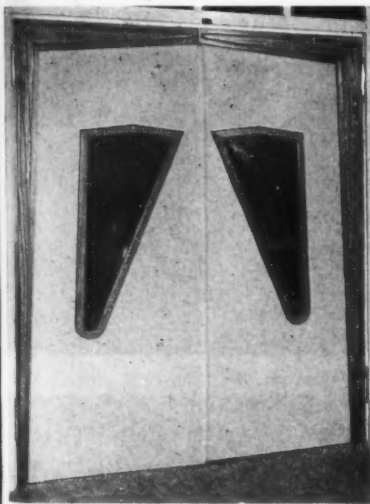
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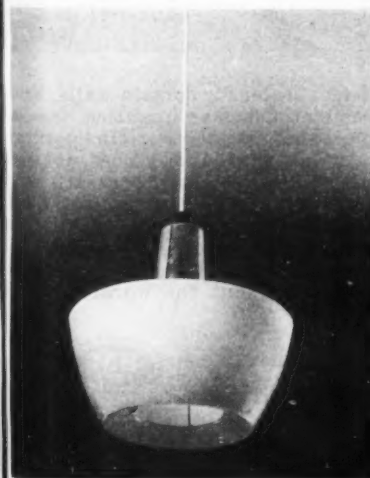
technical section



The portable sound meter by Dawe Instruments Ltd.



Above, flexible doors by Mancuna Engineering. Below, the new Troughton & Young lighting fitting to MOE requirements.



across the bottom and down the sides: they are fixed by surface mounted side and bottom brackets and the top is thus free of any attachments or sharp edges. The radiators have vertical and horizontal water channels to give even water circulation over the surface, and are stocked in three sizes with nominal surface areas of 10, 15 and 20 sq. ft., covering the main demand for the British market. Standard height is 20½ in. with lengths of 32, 45 and 61 in.; each panel is given a grey priming coat which is adequate protection for a reasonable period of site storage. (Washington Engineering Ltd., Washington, Co. Durham.)

Measuring noise

A new lightweight portable sound meter should be available next month from Dawe Instruments. The meter weighs only 4 lb. complete with dry batteries, and has a camera type case so that it can be easily carried about. Transistors are used instead of the more usual radio type valves, and a set of batteries should last for about 60 hours' use. It is claimed that accurate readings of sound intensities between 24 and 140 decibels can be obtained easily and quickly. Price is likely to be about £100, so that these instruments will scarcely be standard office equipment. Acoustic consultants, however, should find them useful, or some enterprising local association might have them on hire, like levels and tapes. (Dawe Instruments Ltd., 99, Uxbridge Road, London, W.5.)

Flexible doors

Mancuna Engineering are now producing a timber framed flexible swing door for use in schools, hospitals, restaurants and other places where traffic is comparatively light and where the metal framed industrial type of flexible door would not be suitable. The new door is framed in mahogany or oak, though other timbers can be supplied at extra cost. The flexible panels are laminated rubber sheet and can be supplied in a number of colours as well as in black or white: windows (also timber framed) are Perspex. Standard doors are produced for openings up to 90 in. square. (Mancuna Engineering Ltd., Denton, Manchester.)

Lighting fittings

Troughton & Young have just introduced a general purpose lighting fitting which is designed to MOE requirements but which has a number of other applications. Taking 150 or 200 watt lamps with an E.S. cap, the fitting can either be fixed direct to the ceiling when it has a depth of 11 in., or suspended by tube or flex (see illustration). Prices vary from 22s. to 28s. plus purchase tax. Light output is about 91 per cent, and the cut off angle is 45 degrees so that the lamp is not visible from normal viewing angles. The diffuser is a plastic moulding and is carried by a cadmium plated steel spider, from which it is easily detachable for cleaning. (Troughton & Young Ltd., 143, Knightsbridge, London, S.W.1.)

INFORMATION CENTRE

A digest of current information prepared by independent specialists; printed so that readers may cut out items for filing and paste them up in classified order.

A

74

17.118 construction; general

CONSTRUCTION MANUAL

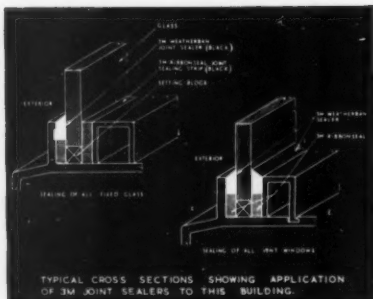
Principles of Modern Building. Volume 1. 3rd edition. DSIR, HMSO. 20s.

The first edition of the book with this title was published in 1938. It was substantially the work of one man, Robert Fitzmaurice (who later became Technical Editor of the AJ). Fitzmaurice's volume had as its sub-title, *The Wall and its Functions*. His work, brought up to date, now forms the second part only of this third edition, accounting for slightly less than half the total number of pages. This third edition may, therefore, be considered a substantially new work of reference—and a very excellent one, too. The new Part I is entitled *The Building as a Whole*. There are chapters on all the subjects which you would expect: strength and stability, water exclusion, sound and heat insulation, ventilation, day lighting and fire protection. But there is also a chapter which might not have been expected—on building economics. This does not consider cost analysis in great detail. But it shows a welcome awareness and largeness of view on the part of the compilers.

There are some oddnesses due to the difficulty of marrying a new and an old text of approximately equal lengths. The all-important framed structures receive only a paragraph in *The Wall and its Functions* and such information as can be got on the physical design of curtain walls is to be found in a chapter on principles of the use of materials. When the original volume appeared the main effort of the Station was spent on providing impermeability and the chief method proposed was the cavity wall. To-day the emphasis has shifted to heat conservation. This interest has already sealed the cavity and now threatens to fill it with insulant. This concentration upon one aspect at a time is characteristic of building research in this country. It leads to a situation in which the solution to one problem makes the solution of other, equally important, problems more difficult. If there were more field studies at the Station, this volume could be made even more useful than it is, but it would be wrong to end on this note of criticism. This book is succinct, well written and clear. No architect should practice who has not read it attentively.



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technical section

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17 CONSTRUCTION: GENERAL

light cladding, 3 condensation

Having considered heat transmission (February 25) and stability (March 3), R. Michael Rostron turns to the next most troublesome factor in curtain wall design: condensation. He first recounts why condensation happens and then describes in detail current methods for avoiding it, giving his own preference (in normally heated buildings in this country) for the drained cavity in place of the vapour barrier.

There is a widespread belief that good standards of thermal insulation are an effective answer to the problem of condensation in wall structure. When traditional methods and materials are used it is true that a low rate of heat transfer generally precludes the possibility of condensation in walls and is, in all cases, a satisfactory deterrent to surface condensation. The non-loadbearing wall, however, usually consists of a series of components which offer various resistances to water vapour which may condense as moisture in any one of them, independently of their resistance to the transmission of heat. The U value of insulation is, in fact, concerned solely with overall transmission losses of heat and has little or no relevance to the problems of condensation. It is, therefore, untrue and dangerous to assume that because improved standards of thermal insulation have been embodied in well construction, the possibility of condensation occurring in the wall is reduced. In many cases the possibility is increased.

In order to assess whether condensation will or will not take place in any composite wall structure a thorough understanding of the nature of moisture dispersal is necessary. The design of protective measures is then a relatively easy task.

Under normal conditions, a certain amount of water vapour is present in the air. This amount is expressed as a percentage of that necessary for complete saturation of the air at that temperature and is known as the *relative humidity* of the air. There are a number of factors which can change the relative humidity of a particular volume of air; an increase in temperature may enable the air to hold a greater amount of vapour and so reduce the relative humidity, and in the same way a reduction in air temperature will increase the relative humidity.

Alternatively, relative humidity is increased if the air simply takes up more water in the form of vapour. The temperature at which the air becomes completely saturated (or in other words, when the relative humidity becomes 100 per cent) is known as the *dew point*. Any reduction in temperature below the dew point means that the air cannot continue to hold the vapour and results in the deposition of moisture in liquid form. It is this deposition which is known as *condensation* and the deposited liquid is called the *condensate*.

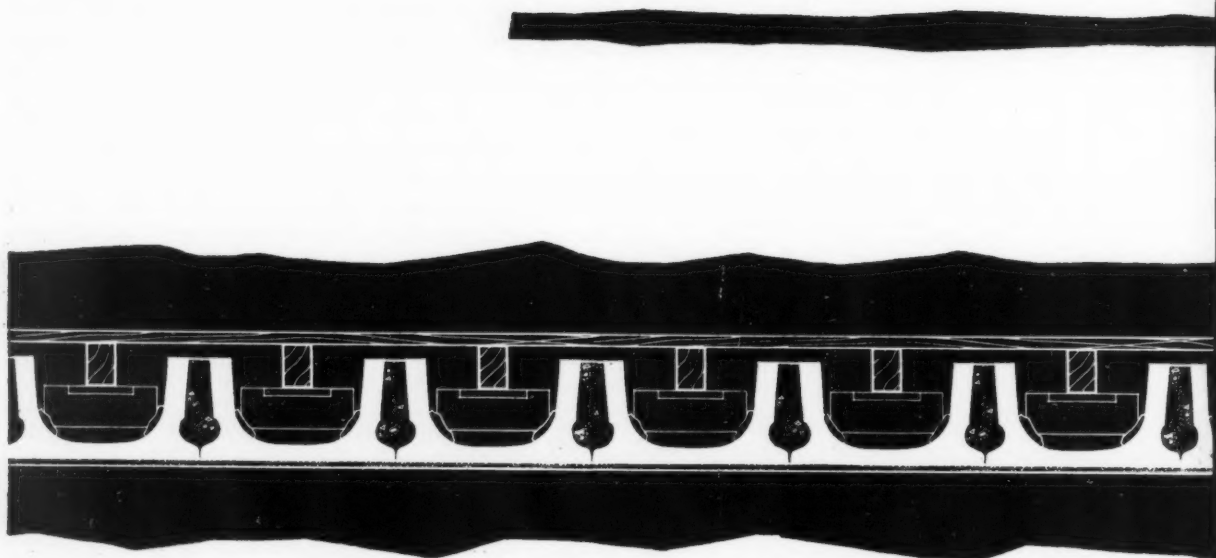
If air is drawn into a building and merely warmed, without increase in water content, no condensation can occur. Such an operation is, however, extremely unlikely; moisture is absorbed from activities such as cooking and washing as well as from the occupants of a building. It may also be purposely injected into the air by air conditioning to increase internal comfort. At the same time, although the cold air entering a building may be near saturation point at the time of its entrance, it becomes capable of holding much more moisture after its temperature has increased. It may therefore be assumed that the relative humidity of air inside a normally heated building is higher than that of the air outside, and a positive vapour pressure differential is created between inside and outside.

As the relative humidity of the internal air rises, so does its dew point, and if any internal surface is below this temperature, condensation will take place on that surface. Such surface condensation is dependent primarily on internal surface temperature and is unlikely if a reasonable standard of thermal insulation is attained.

Interstitial condensation, or condensation occurring in the thickness of the wall, is more troublesome and more difficult to deal with. Whenever a difference in temperature exists between inside and outside air, there is a change in temperature throughout the wall thickness, the actual temperature gradients depending on the thermal transmission values of the various components. Most insulation materials are porous and as the vapour-laden air travels through the wall, it will gradually be cooled (with a corresponding increase of relative humidity and a decrease of dew point). The actual rate of cooling of the air/vapour mixture will be governed by the vapour resistance of the material through which it is passing, but if, at any point in the thickness of the wall, the temperature falls below the dew point of the air at that point, condensation will occur.

The simplest case is a homogeneous, permeable wall (Fig. 1a). The temperature gradient is uniform and three possible dew point gradients are shown, depending on the resistances of the surfaces to vapour. It is seen that condensation within the wall is most likely when the internal (warm) surface resistance is low.

It is, however, unlikely that homogeneous walls will often be encountered in light cladding techniques. Some



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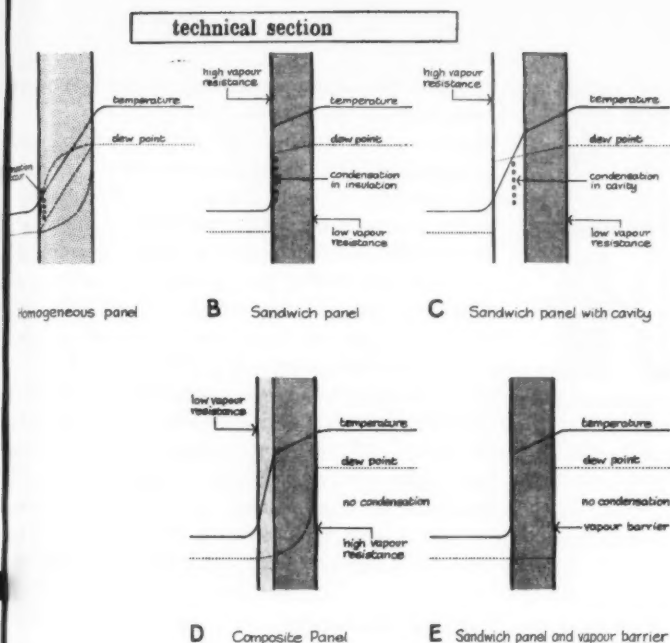


Fig. 1. Interstitial condensation.

form of sandwich panel is more common and a simple type is shown in Fig. 1b. The insulated core is lined internally with a material of low vapour resistance and externally (the cold side) with a material which is either impervious or of high vapour resistance. Condensation is possible on the core side of the external lining. The addition of a cavity (Fig. 1c) although increasing the thermal resistance of the wall, would not necessarily prevent condensation, which would here take place either in the cavity or on the cavity surface of the external skin. If, however, the inside (warm) surface of the wall is resistant to vapour the possibility of condensation occurring is reduced and is remote if the external surface allows easy passage of vapour (Fig. 1d). The use of a complete barrier to vapour (Fig. 1e) will prevent any vapour entering the wall and interstitial condensation cannot occur.

It is apparent that interstitial condensation can only occur when the following requirements are satisfied:

1. Low vapour resistance on the inside and high vapour resistance on the outside.
2. Low external temperature and humidity and high internal temperature and humidity.
3. A high standard of thermal insulation.

It is unfortunate that these factors are all present when light cladding is used on buildings which require a high standard of internal comfort. In such cases, especially when low external temperatures are at any time expected, provision must be made for condensation control. Failure to do so may result in moisture being trapped in the composite wall unit with serious results. Certain types of core adhesives are affected by moisture, and, although most insulating materials are capable of absorbing a certain amount of moisture, provided it is later released, continuous moisture accumulation may damage the material and will certainly affect its thermal properties. Under prolonged spells of cold weather the presence of moisture within the wall may result in a

build-up of ice with consequent buckling and damage to both external skins and insulation. Perhaps the most obvious result of condensation is the deterioration and discoloration of painted surfaces and corrosion of metals. Most brush painted and stove enamelled coatings will ultimately be damaged by persistent condensation and the continued presence of moisture is always a potential catalyst for corrosion and electrolytic action between dissimilar metals.

External surface condensation

When panels of high thermal transmittance such as metal and glass are used for exterior facings, condensation may exist for short periods under summer conditions when warm moist air comes into contact with surfaces cooled by night conditions. On still, clear nights the position is aggravated because the external surface loses heat more readily by radiation to the sky and its temperature may fall several degrees below the external air temperature, causing the formation of dew or even frost. Such conditions may occur on both sides of the external facing if outside air has access to both surfaces such as when a ventilated cavity is used. Fortunately, such climatic conditions are usually followed by high external temperatures which evaporate the deposited condensate. External surface condensation cannot be prevented by any practicable means but it is unlikely to prove troublesome if normal precautions against corrosion are taken.

Internal surface condensation

Internal surface condensation may be caused by cold internal surfaces or by abnormally high internal humidity or both. It is obvious that good thermal insulation is a safeguard against cold internal surfaces and it has been stated* that internal surface condensation in heated buildings is unlikely if a maximum U value of 0.3 BTU/hr/sq. ft./deg F. is attained and abnormal internal humidity is not maintained.

The position is slightly more involved if intermittent heating is in operation. The majority of light claddings have a very low thermal capacity and this means that in cold weather the wall will tend to lose its heat quickly, the internal surface may reach the dew point of the internal air before heating is resumed and condensation will occur. If condensation is heavy, continuous heating may be necessary for as long as the cold weather persists. In buildings where high relative humidity is expected, such as bakeries, laundries and some types of industrial work, good ventilation is essential. Hoods over unit appliances and artificial ventilation by means of extractor fans should be regarded as essential if humidity is to be kept low enough to ensure that condensation is reduced to a minimum.

The most obvious and troublesome internal surface condensation is that which occurs on areas of glazing. Double glazing in sealed cavity units solves the problem by allowing the internal sheet of glass to approach internal air temperature more closely than the external sheet, and by exposing the outside sheet to dry air on the cavity side. Double windows are not quite so effective, since moist air may gain access to the cavity, and provision

* Building Research Station Digest No. 23, *Condensation Problems in Buildings*, HMSO, October, 1950, p. 2.

technical section

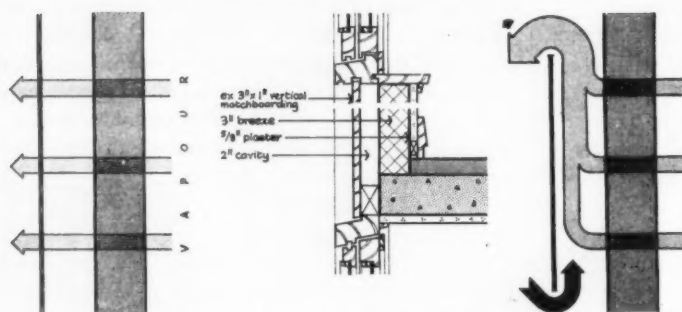


Fig. 2. Prevention of interstitial condensation. 1, porous outer skin. (Bishop Simpson Secondary School, Reigate. Architects, Charles Pike and Partners.) (Above left and centre.)

Fig. 3. Prevention of interstitial condensation. 2, ventilated cavity. (Above right)

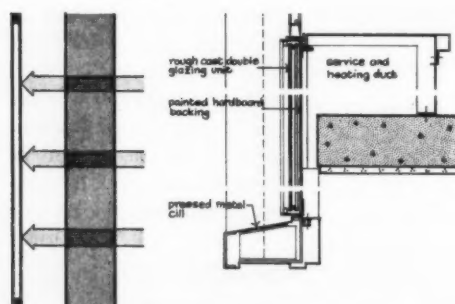


Fig. 4. Prevention of interstitial condensation. 3, insulated outer skin. (College of Art and Technology, Coventry. Architect, A. G. Ling, City Architect.)

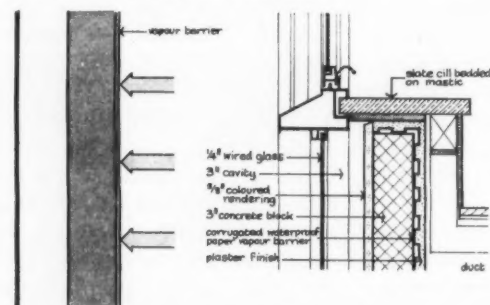


Fig. 5. Prevention of interstitial condensation. 4, vapour barrier. (Leeds Central Colleges. Architects, Yorke, Rosenberg and Mardall.)

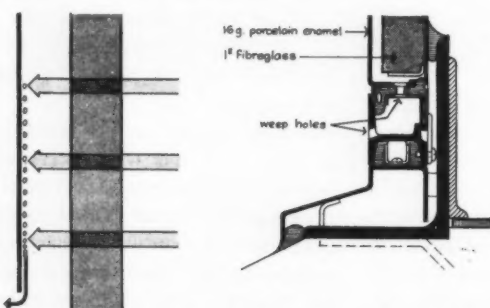


Fig. 6. Prevention of interstitial condensation. 5, Drainage. (United Air Lines Finance Building, Chicago. Architects, Skidmore, Owings and Merrill.)

should be made to drain away any condensation occurring here.

When economy dictates that single glazing is used, condensation cannot be prevented in humid conditions, but corrosion of metal frames and deterioration of timber and paint should be prevented by allowing for the collection and removal of deposited moisture. It is heartening to observe that condensation grooves and tubes on windows for long regarded as essential in transport engineering, are being reintroduced by architects and manufacturers after a long absence.

Spot occurrence of surface condensation caused by through-panel and edge connections may be reduced by the use of non-hygroscopic insulators of low thermal conductivity such as plastic and impregnated felt. The avoidance of condensation on continuous framing members is a similar problem to the reduction of heat loss through these members and is dealt with elsewhere.

Interstitial condensation

Whenever water vapour is allowed to travel through a composite wall until it reaches a vapour barrier which is below its dewpoint (such as a metal or glass sheet), it will condense upon it. There are two widely differing approaches to the solution of this problem: attempts may be made to exclude the vapour from the cold interior of the wall, or the vapour may be allowed into the wall, and arrangements made to prevent it causing damage.

Porous outer skin: The easiest way to avoid interstitial condensation (although not necessarily the most economical from the heating point of view) is to allow the entire wall to "breathe" to the outside air (Fig. 2), so that the vapour encounters no cold impervious barrier on which it may condense. This is achieved by using a porous or perforated outer skin so that the permeability of this skin to water vapour is at least five to ten times greater than that of the interior surface. The vapour porosity of various building materials is given in Table 1. When perforations are used, these may be at panel edges

Table 1. Vapour porosity of common building materials. (From "Specification 1960")

Material	Thickness inches	Vapour diffusion grains per sq. ft. per hr. per mm. Hg.
Fibreboard	1/2	1.18
Fibreboard, laminated with layers of bitumen	1/2	0.005
Wood	1/2	0.13
Wood, 1 coat aluminium paint	1/2	0.065
Wood, 2 coats aluminium paint	1/2	0.018
Wood, 1 coat enamel paint	1/2	0.075
Wood, 2 coats enamel paint	1/2	0.036
Kraft paper, 2 sheets	—	2.0
Waterproof paper	—	0.3-0.01
Asphalt between 2 sheets kraft paper	—	0.018
Plaster	1 1/2	0.53
Brickwork	4	0.04
Aluminium foil	—	zero unless perforated

technical section

or joints and, if properly positioned, will act as weep-holes to drain any condensation which may form and any water which penetrates into the wall from outside. Joints between panels should be designed on the same principle: joints in the inner skin should be vapour tight, and joints in the outer skin should be weather protected, but vapour porous.

Ventilated cavity: A rather more elegant and practical way of allowing the wall to "breathe" in order to avoid interstitial condensation is to employ a ventilated cavity (Fig. 3). Vapour is here carried out of the wall in an air current which is admitted at the base of the panel and extracted at the top. Such a cavity should be inserted immediately behind the impervious outer skin, in which position any condensate which may form will be evaporated and carried away to the outside air.

When relatively mild weather follows a cold spell there may be some condensation on both sides of the outer skin when a ventilated cavity allows the air access to both sides. This is really the same problem as exterior surface condensation under similar conditions and is rarely troublesome. The quantity of deposited moisture is usually small and the condition disappears as the outer skin becomes warmer or as the weather turns colder.

A more difficult problem when the outer skin is of transparent or translucent glass is maintenance of the cavity surfaces. A common practice is to use clear or rough cast glass as an outer skin and to colour the internal surface of the cavity. The air current ventilating the cavity tends to deposit dust and grime on both cavity surfaces and easy access to these surfaces is necessary for maintenance, either by removal of the glass, or by mounting the glass in a hinged frame.

Insulated outer skin: If the outer skin consists of an insulated sandwich panel, the surface facing the cavity will be warmer than the surface exposed to the air and condensation on the cavity side is unlikely except in the severest conditions (Fig. 4). In order to avoid condensation within the insulated panel it must have a hermetically sealed cavity containing dry air, and the only such units commercially available at present are sealed glass pounds with an air space (double-glazed units) and, in some cases, an insulated backing (Vitrolab). The efficiency of this method depends entirely upon the continuing air-tightness of the edge seal.

An extension of this method is to use a hermetically sealed panel for the entire wall thickness and this has been carried out with great success in aircraft design. The extremely high standards called for in both materials and workmanship render such panels prohibitively expensive for use in buildings and at present they are not considered economical or ordinarily practical.

Vapour barrier: Rather than to allow for the effective dispersal of vapour after it has entered the wall, a more satisfactory method of preventing interstitial condensation would appear to be to prevent the vapour entering the wall by means of a vapour barrier (Fig. 5), and under certain circumstances this is, indeed, an effective measure. Such a barrier will also prevent the entrance of water vapour from outside in summer and so reduce the latent cooling load on air conditioning equipment.

The correct position of the vapour barrier is usually taken to be as near the warm side of the wall as possible. In hot climates, however, when internal cooling is in operation in summer, the warm side of the wall may well be the outside in summer and the inside in winter. In temperate climates, the vapour pressure differential between inside and outside air in summer is not usually high enough to cause interstitial condensation and the vapour barrier is correctly positioned near the inside surface. In extremely warm, humid climates, the problem is reversed. The inside surface may here be the colder surface and if the vapour barrier is placed on the inside, humid air travelling inwards, through the wall, may deposit condensate on the outer face of the vapour barrier. In such cases the vapour barrier should be placed on the external side of the wall. It is neither necessary nor good practice to provide two vapour barriers in a wall.

The major requirement of any material to be used as a vapour barrier is that it shall be impervious to water vapour. Such materials include glass and metals, bitumen-coated papers and aluminium foil. The difficulty experienced in the use of vapour barriers lies not in the choice of material but in the detailing of the joints. An effective vapour barrier must remain continuous and undamaged over both joints in the structure (mullion/panel and transom/panel) and between joints in the material. Aluminium may be welded (extremely expensive and only applicable in severe cases) and joints in paper barriers may be made with hot bitumen. A lapped and welded joint is almost as effective, but a plain lapped joint is rarely satisfactory. Whichever joint is used, good workmanship is essential and a careful inspection should always be made before the work is covered.

When conditions are not severe and the wall is plastered internally, a perfectly satisfactory solution may be a vapour resistant paint system, such as two coats of aluminium primer with two coats of oil paint as a decorative finish. The permeability of some common paints is given in BRS Digest No. 58, *Wall and ceiling surfaces and condensation*, p. 2. Plaster cracks and cracks occurring at angles and junctions due to structural and thermal movement will render the barrier discontinuous and ineffective unless repaired. For this reason maintenance costs, particularly during the early life of the building, are likely to be higher than for a sheet barrier, although installation costs are appreciably less. As BRS Digest No. 98 points out, however, there are obvious and substantial difficulties of maintaining the continuity of a vapour barrier over jointed backgrounds. It may well be that the real value of a vapour barrier is to act more in the nature of a deterrent to the greater part of the water vapour. By reducing penetration into the wall by this means, the dispersal of the small quantity of penetrating vapour will be a relatively easy task. At present, it would appear to be unwise to consider a vapour barrier as a complete and permanent shield, and provision for the evacuation from the wall of a substantially reduced amount of vapour or condensate is a wise precaution.

technical section

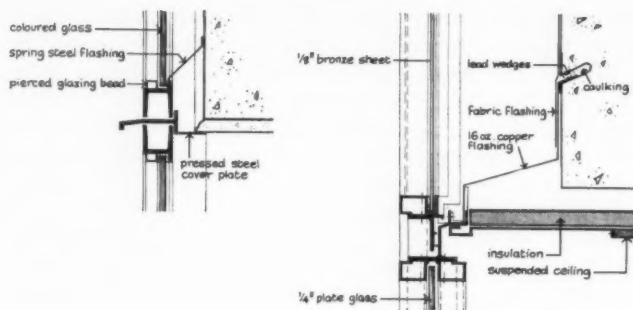


Fig. 7. Condensation flashings. Left, at offices in Chiswell Street, London (architects, Handisye and Taylor). Right, on the Seagram Building, New York (architects, Mies van der Rohe and Philip Johnson).

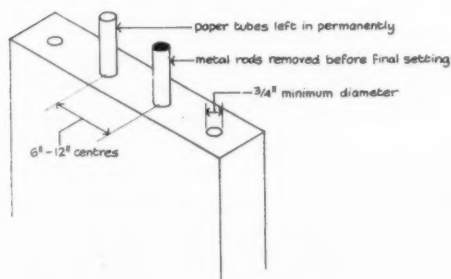


Fig. 8. Drainage and ventilation tubes in low density concrete.

Drainage: The four methods discussed so far all attempt to prevent interstitial condensation taking place. The alternative approach is to allow condensation to take place and to make provision for removal of the condensate. This is effected to some extent in the ventilated cavity, when circulating air evaporates small quantities of condensed vapour and carries it away, but a more efficient method is to drain the cavity (Fig. 6). Moisture collecting on the cavity side of the external skin drains down the surface by gravity and out through weep-holes at the foot of the panel. It is possible that large panels may deposit enough moisture to streak lower surfaces which are not rain-washed, but carefully detailed profiles will prevent this. A more serious problem is the prevention of reverse action in which rain is blown by wind or sucked by pressure differentials into the cavity through the weep-holes. American experiments have shown that a 150 m.p.h. wind velocity acting on weep-holes can create an 8 inch head of water. In view of this, the 2 in. minimum upstand behind weep-holes suggested the BRS would appear to be inadequate when high wind velocities are likely. In such cases additional baffles and base flashings would be necessary. In all cases internal flashings should prevent water collecting against the back-up wall and drain the moisture to the weep-holes (Fig. 7), and regular inspection is necessary to ensure that the weep-holes do not become clogged with dust, leaves or insects. Fig. 7 shows a particularly well detailed arrangement of flashing and weep-holes in the Seagram Building, New York, by Mies

van der Rohe and Philip Johnson. The copper flashing drains condensed moisture first to a condensation channel. Most of the moisture is then evaporated from the channel and carried away by air currents, thus avoiding staining of the windows below. If the channel does overflow, the water is drained away to the face of the building through a series of baffles which prevent rain being blown into the cavity.

When a cavity is not used it is still possible to drain and ventilate the interior of the wall by inserting air tubes or channels in low density concrete (Fig. 8). These channels which should be placed as close to the cold side of the wall as possible, act in a similar way to agricultural drains in land; water vapour or moisture will migrate to the channel and be dissipated either by gravity or by air flow. The channels are formed by inserting porous paper tubes or metal rods in the wall before the concrete is poured. Paper tubes may be left in the wall permanently, whilst metal rods are removed before final setting of the concrete. The feet of the tubes should be protected in the same way as weep-holes. To avoid clogging of the tubes by ice crystals they should be not less than $\frac{3}{4}$ in. diameter and used at 6 in. to 12 in. centres. They are equally effective in in-situ and precast concrete provided the mix is not dense.

Experience in this country suggests that, in normally heated buildings without abnormal internal humidity, condensation is least likely if a drained cavity is used. The reasons for this are not hard to find. The use of a vapour barrier to prevent condensation calls for impeccable workmanship; any flaws in the barrier or its joints result in the deposit of water in the wall. Other methods, whilst requiring less skill, make no allowance for stray leakages or for sudden severe external conditions. Current American practice does not condemn the presence of moisture in the wall provided it is not allowed to remain there, and the drained cavity solves the dual problem of condensation and water penetration from outside. A ventilated and drained cavity is, perhaps, the best solution, as it allows for two escape routes for water vapour and condensate and the weather air-wash inside the wall prevents high temperature build-up and solar heat gain.

When high internal humidity is expected, a vapour barrier should be used on the warm side of the wall. The technique of creating a vapour barrier has not yet been fully investigated and allowance should therefore be made for the escape of vapour or moisture which penetrates the barrier. If such alternative escape routes cannot be provided it is doubtful whether a barrier should be used. An inefficient barrier used as the only condensation precaution would tend to seal penetrating moisture in the cavity and cause further trouble.

Having accepted the temporary presence of moisture inside the wall it is essential that it can do no damage before it is drained or evaporated. Paintwork must be accessible for maintenance and renewal and the danger of corrosion must be reduced to a minimum. Protective coatings should only be applied to completely dry surfaces under strictly controlled conditions and dissimilar metals should be insulated against electrolytic action.

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OFFICES

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quantity surveyors

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PETER WATSON
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STB File No. (92)

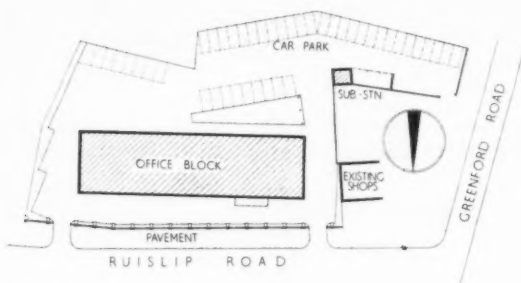
UDC No. 725-33

This week we publish this medium-sized office block just outside the immediate London area. It is representative of a type of building which is being built extensively at the moment and is a good example of an unpretentious building competently carried out.

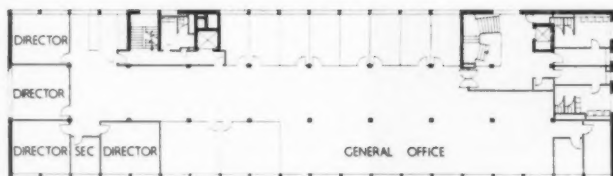
*View from Ruislip Road,
looking east.*



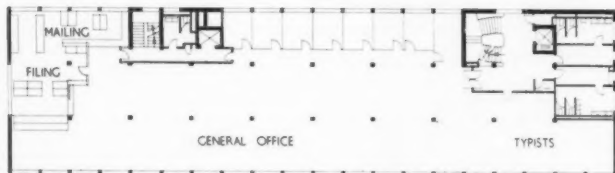
building illustrated



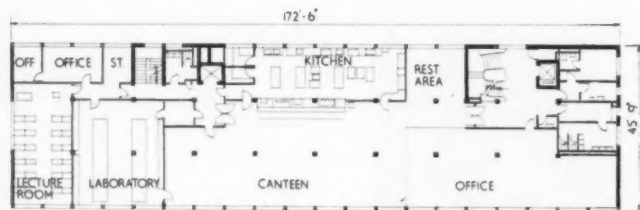
Site plan



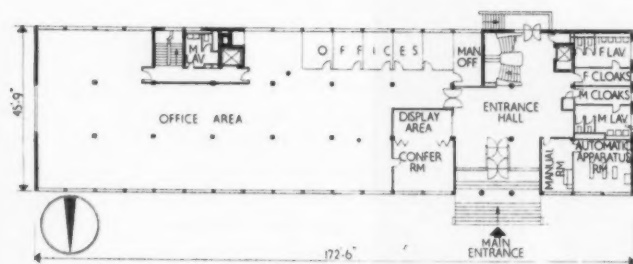
Third floor plan



Second floor plan



First floor plan



Ground floor plan [Scale: 1/4" = 1' 0"]

APPRAISAL: The clients who are manufacturers of industrial instruments, needed an office to centralize their large number of smaller ones. The Greenford area was found convenient as it is not too far from London and also because a large proportion of the office staff already came from the area. The clients wanted their offices to be arranged in the American fashion which meant that its structure, which is a reinforced concrete frame, had to be designed on a grid suitable for the provision of large open office areas. Except for a group of offices for the directors on the third (and top) floor, there are comparatively few small offices. Those that there are are partitioned off by 6 ft. 6 in. high movable screens. These were designed by the architect and have a very neat look. They are of an aluminium framing with glazing in the top half. The lower infill panels are of cloth-covered flax-board material. The doors are flush, faced with polished mahogany (as they are throughout the whole building).

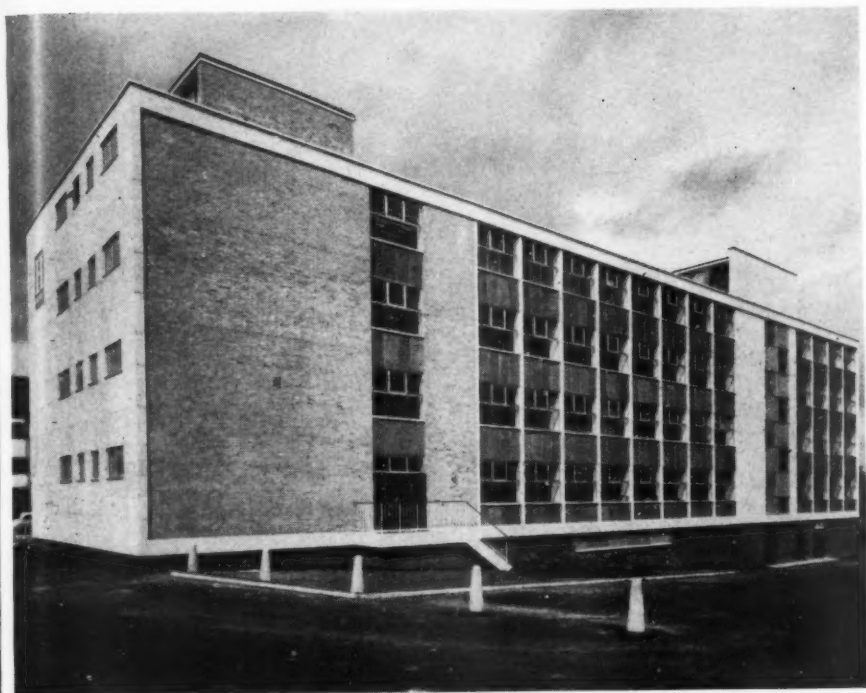
On the first floor there is a laboratory and a lecture theatre for the training of the firm's own personnel and for giving courses to outsiders on the uses of the company's products. The building has its prestige entrance at the front, facing the road, but employees who have parked their cars behind the building have access to the front lobby from the rear.

The main entry hall gives on to the main staircase and one of the two lifts serving the block. Also off the main hall is a conference room and a display area. The main staircase somehow doesn't seem to belong to this building. An odd anomaly this, as the general treatment is marked by its logicity and simplicity. It suggests that the client suddenly discovered that he had more money than he had thought and decided to put it all into this staircase. If this was indeed the case it is a great pity as the roof covering (three-ply felt) looks as if it could have had a little more spent on it. There is a secondary staircase at the other end of the building which, although it is presumably mainly intended for a fire escape, has been treated with the same overall care as the rest of the building.

Both these staircases have been placed so that either could serve a possible extension of the offices. This is planned as another elongated rectangle running into the present building somewhere along the southern flank. The future extension will interfere with the present parking arrangements but there will still be sufficient room to accommodate the increased number of cars.

To design an office block on the lines indicated by the clients evidently set a number of problems. For example, the placing of the various separate rooms in relation to the grid is not easy to do, as the plan of the first and second floor shows. Everything gets thrown out to the far ends of the building. Externally the building is straightforward enough and is in keeping with the suburban shopping area in which it is situated.

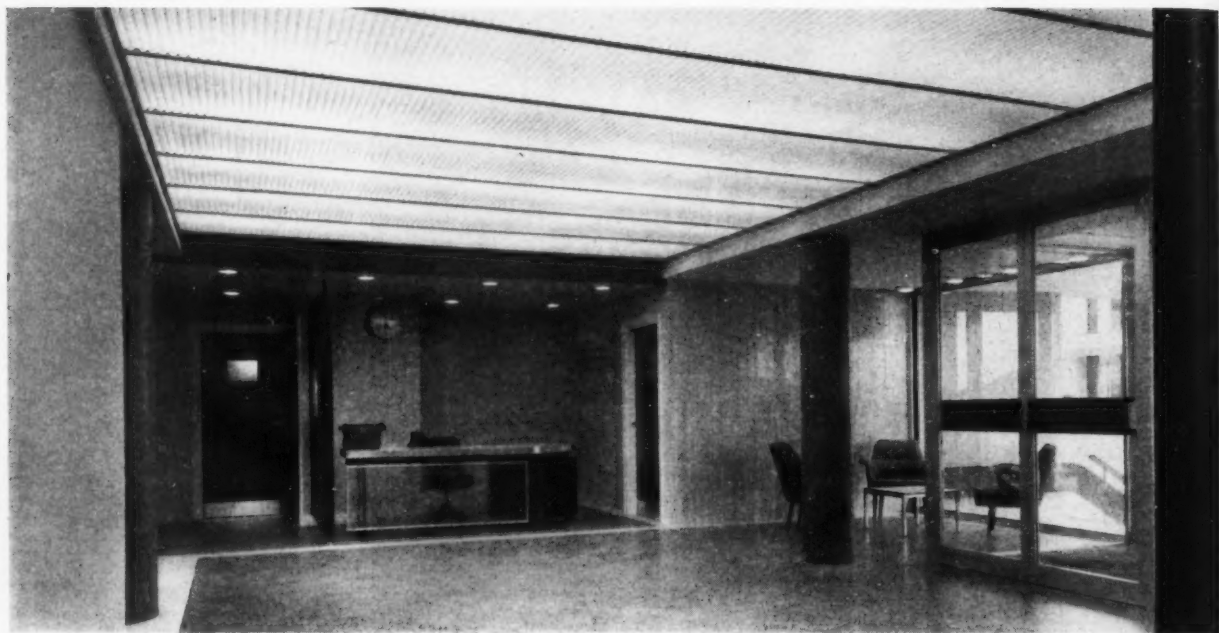
The cladding to the building generally is in reconstructed stone with precast concrete panels between the columns and the use of these materials is justified by the fresh appearance of the building nearly eighteen months after completion.



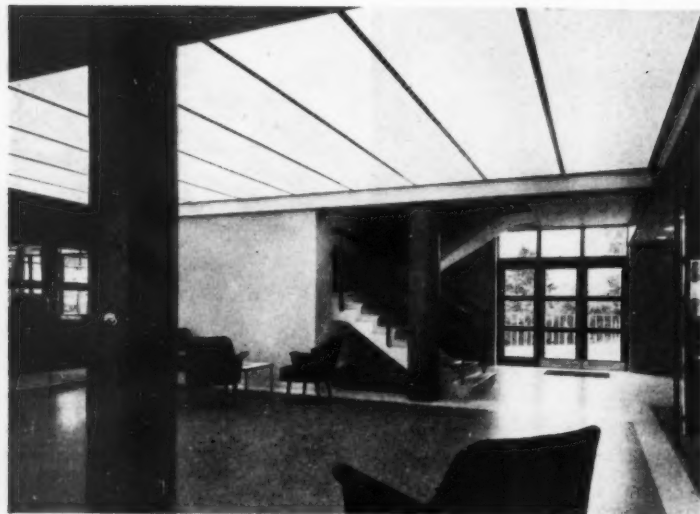
Above left: rear view of the building showing two vertical panels which are to allow for future extension. Left: the main entrance from Ruislip Road.



building illustrated



Above: the entrance foyer and reception desk. Left: looking through the foyer to the staircase and the doors to the rear car park.



Left: typical office area.





Above and below: purpose-made movable partitions designed by the architects.



building illustrated



*Above: the service counter in the canteen.
Below: the comparatively expensive main
staircase, viewed from above.*



analysis

CLIENTS' REQUIREMENTS

The clients required a new head office to cover the administration of all their units throughout England together with the main London branch office, service unit and school. Previously, the firm had occupied a number of small premises all within the Ealing and Perivale districts. The clients are firm believers in avoiding the centre of London and required a site in the suburbs, not too far away from the district they already occupied.

SITE

The site selected lies at the junction of Greenford Road and Ruislip Road East, access to the site being from the latter which is to be widened to allow for more traffic. The site backs on to Perivale Park golf course and overlooks the River Brent. It has a steep gradient of some 8 ft. and had previously been occupied by a number of dwellings, all with cesspools, which were exposed by the excavations. The subsoil was mainly clay with a generally high water table containing a large sulphur content.

PLANNING AIMS

An open office layout of continuous lines of desks dictated the general arrangement and in particular, the structural grid into which the desks were to be fitted. Each floor was to be as flexible as possible and provision had to be made for possible future extension. The building is divided horizontally and each floor contains a separate unit.

SUMMARY

Ground floor area: 7,524 sq. ft.
Total floor area: 36,685 sq. ft.
Tender date: April, 1957.
Work began: May, 1957.
Work finished: June, 1958.
Tender price of foundations, superstructure, installations and finishes: £153,842.
Final contract price: £150,306.
Tender price of external works and ancillary buildings: £6,013.
Final contract price: £6,020.
Total: £156,326

Preliminaries and insurances

Contingencies

Nil.

Work below ground floor level

Reinforced concrete bases and concrete strip foundations supporting 13½ in. walls. Semi-basement area tanked in natural rock asphalt.

STRUCTURAL ELEMENTS

Frame or load bearing element

(including upper floor, staircases, and roof construction).

Reinforced concrete columns, beams and stairs with precast concrete slab floors and roofs.

External walls

Cavity construction on ground floor and above consisting of 2 in. exposed aggregate or artificial stone slabs as outer skin and 6 in. thermalite block inner skin tied together with wall ties. Basement 13½ in. brick walls faced externally with facing bricks.

Ratio: $\frac{\text{solid wall}}{\text{floor area}} = \frac{0.36}{1}$

Windows

Aluminium windows.

Ratio: $\frac{\text{windows}}{\text{floor area}} = \frac{0.2}{1}$

External doors

(Roller shutters, entrance doors and screen.)
All doors in sapele except main entrance doors which are in aluminium.

Ratio: $\frac{\text{doors}}{\text{floor area}} = \frac{0.01}{1}$

Upper floors

(Included with frame or load bearing element.)
Span of each type 15 ft.

Staircases

(Included with frame or load bearing element.)
Number of staircases: 2.

Roof construction

(Included in frame or load bearing element.)

Rooflights

Number of lights: 1.
Area: 120 sq. ft.

Glazing

32 oz. sheet to fixed lights, ¼ in. polished plate to opening lights.

Total of structural elements: 32s 7d

PARTITIONS AND FITTINGS

Internal partitions

Type of partition: mainly half brick—8½d. per foot super.
W.c. partitions and doors 2½d. per foot super (Plymax type G.)

Screens to sides of tank rooms

Hardwood framing glazed with ¼-in. georgian wired cast glass.

Internal doors

Mahogany faced flush doors.
Number of single doors: 52.
Number of double doors: 9.

Ironmongery

Normal door furniture.

Fittings, stair balustrades and handrails

Stair balustrade 1s. 2½d. per foot super. Simple wrot iron to secondary staircase with Marley rail covering as handrail. Wrot iron balustrade to main staircase with built-up laminated hardwood kicking board and handrail polished.
Joinery fittings, shelving, venetian blinds, mirrors, etc. 1s. 5½d.
Sign boards, lettering and lighting to canopy fascia 3½d.

Total of partitions and fittings: 5s 7½d

FINISHES

Floor finishes

Type of finish: generally p.v.c. tiles at 26s. 8d. per yard sq. yd.
Semi-basement is granolithic.

s d
4 10½

7

1½

11½

11

4

1 1

3½

2 11½

s d
1 2½

5 8½

20 5½

5 7

4 5½

analysis

Wall finishes

Generally two coat plastering.

Ceiling finishes

Generally acoustic fibreboarding on softwood battening.

Roof finishes

(Rainwater pipes, etc.)

Type of finish: three layer felt on vermiculite screed.

Decorations

Emulsion paint to all walls and ceilings.

Total of finishes: 12s 9½d

SERVICES**External plumbing****Cold water installation**

Copper tubing in services and horizontal wastes and anti-syphonage pipes and cast iron vertical stack pipes.

Sanitary fittings

Type of fitting	No. of each type
Sinks	5
Lavatory basins	22
Drinking fountains	5
Low level w.c.	18
Urinals	2

Heating, hot water and ventilation**Internal temps.**

General office area: 68° F.

Storage area, loading bay circulation area, lavatories and kitchen: 60° F.

Entrance hall and canteen: 65° F.

Air changes

Generally 2 but 6 to loading bay, 3 to entrance hall, 1 to kitchen and 4 to canteen.

U of walls: .35.

U of roof: .30.

Gas installation

Supply to laboratory and repair shop.

No. of points: 2

Electrical installation

Type of point	No. of each type
Lighting point	490
GPO or dictograph	233
Switch sockets	290

Lifts or other mechanical services

2 automatic electrically operated passenger lifts

Total of services: 17s 10½d

Drainage

Generally stoneware and encased in concrete.

s d

2 7½

3 8½

1 1½

10½

Other elements not shown above

Removable sectional partitions—1s. 6d. Cloth-covered flax board with polished aluminium framing with polished hardwood doors.

Special electrical installations for client's fittings—2d.

Compressed airlines—1d.

Kitchen equipment—1s. 7½d.

Ventilation to kitchen—7½d.

Total per sq. ft. of floor area:

£150,306 (net cost excluding external works)

36,685 sq. ft. (floor area measured inside external walls) = 80 11½

COST COMMENTS

The cost per square foot of 81s., approximately, seems high for an office building of simple, rectangular plan shape, inexpensive reinforced concrete frame with easy spans and loads and mainly solid partitioning. Where has the money been spent?

1 5½

Foundations: The architect had more than his fair share of troubles below ground.

External walling: Nothing extravagant here, at an average unit cost of 14s. 4d. per sq. ft.

6½

Windows: At a unit cost of 22s. 1d. per sq. ft. the windows are not expensive for what they are, but there are plenty of them.

Ceilings: Quite a lot of thought and money has gone into this element.

Electrical installation: Costs are above average here, but no more than a reflection of the client's requirements.

Lifts: At an apparent cost of £2,560 each, the installation of a second lift seems a worthwhile luxury.

7 5

Other elements: An unspecified quantity of demountable partitions are shown at 1s. 6d. per sq. ft. of floor area. These are inevitably expensive, but obviously desirable.

Kitchen equipment at 1s. 7½d. per sq. ft. of floor area is not normally included in the cost of building. Kitchen ventilation is always a problem, but the sum of just over £1,000 spent here emphasises the greater problems when a kitchen is sandwiched between two floors.

CONTRACTORS

½

General contractors: J. Gerrard & Sons Ltd. **Sub-contractors—**

Sanitary fittings: Adamsez Ltd. **Aluminium front entrance**

screens and doors: Ajax Architectural Products Ltd. **Blinds:**

Airelite Venetian Blind Co. **Reconstructed stonework:** The

Atlas Stone Co. Ltd. **Heating and ventilation installation:**

G. N. Haden & Sons Ltd. **Kitchen equipment:** Benham &

Sons Ltd. **Lifts:** Bennie Lifts Ltd. **Demountable partitioning:**

Compactom Ltd. **Electrical installation:** A Dean & Co. Ltd.

Loft ladder: Drew, Clark & Co. Ltd. **Sliding and folding**

partitions: Esavian Ltd. **Bituminous roofing felt:** The General

Asphalte Co. Ltd. **Bricks:** Sydney A. Hunter Ltd. **P.v.c.**

floor tiles: British Doloment Co. Ltd. **Terrazzo:** Jaconello

Ltd. **Reinforced concrete structure:** The London Ferro-

Concrete Co. Ltd. **Luminated ceiling:** Luminated Ceilings

Ltd. **Aluminium windows:** Mellowes & Co. Ltd. **Signs:**

Pearce Signs Ltd. **Door Furniture:** Alfred G. Roberts Ltd.

Internal telephones: Standard Telephones & Cables Ltd.

Suspended ceilings: Steel Bracketing & Lathing Ltd. **W.c.**

compartments: Venesta Ltd. **Lettering:** Ward & Co.

1 2

working detail

FURNITURE AND FITTINGS: 89

BARRIER: CONCERT HALL IN COPENHAGEN

Frits Schlegel and Hans Hansen, architects (material supplied by Alan E. Firth)

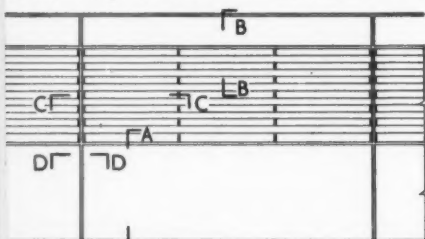


The intelligent combination of timber and steel raises this detail above the level of the ordinary. Economy of detailing is achieved at the principal post supports by the fixing of the lemon wood battens to the $\frac{1}{2}$ -in. square mild steel uprights. The face of the blockboard lower panel is veneered with lemon wood.

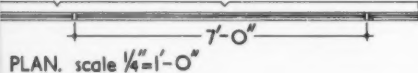
working detail

BARRIER: CONCERT HALL IN COPENHAGEN

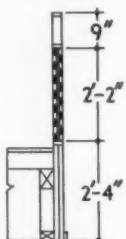
Frits Schlegel and Hans Hansen, architects (material supplied by Alan E. Firth)



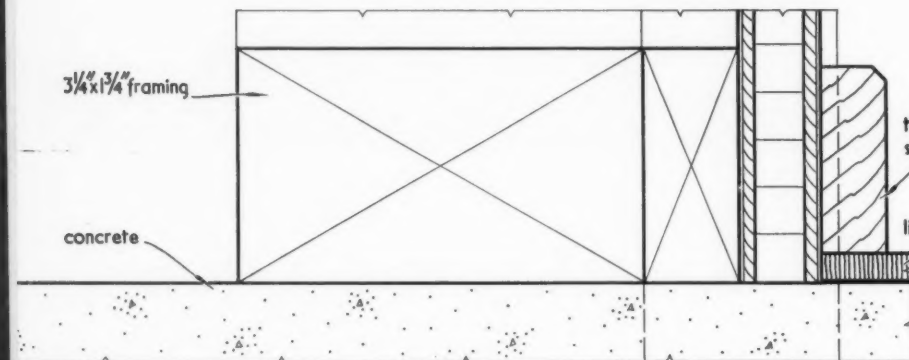
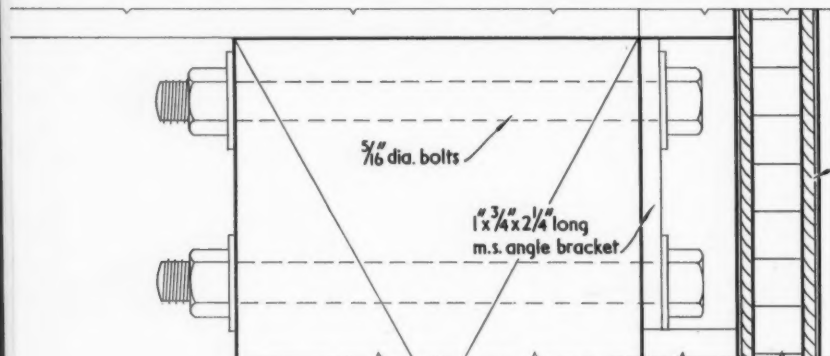
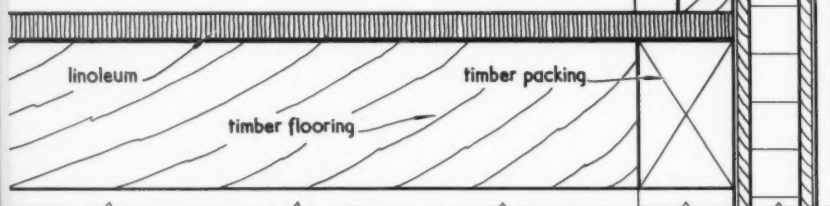
ELEVATION. scale $\frac{1}{4}'' = 1'-0''$



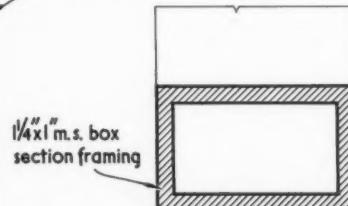
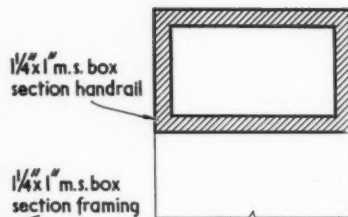
PLAN. scale $\frac{1}{4}'' = 1'-0''$



SECTION.



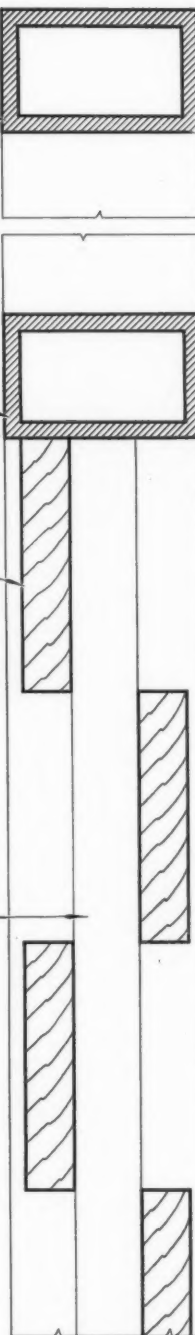
SECTION A-A. scale $\frac{3}{4}''$ full size



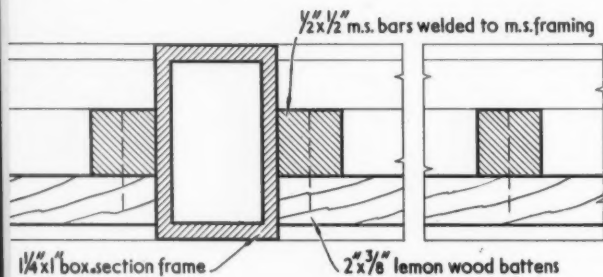
2" x 3/8" lemon wood battens screwed to m.s. bars

5/8" lemon wood veneered blockboard

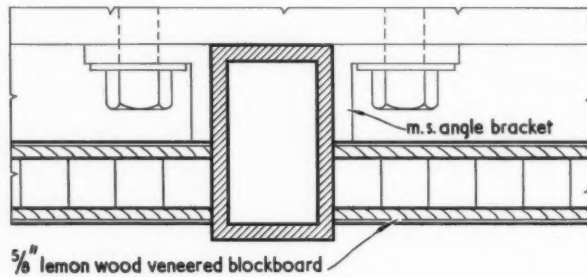
1/2" x 1/2" m.s. bars welded to m.s. framing



SECTION B-B.



PLAN AT C-C. scale $\frac{3}{4}''$ full size



PLAN AT D-D.

note: figured dimensions in feet and inches are approximate

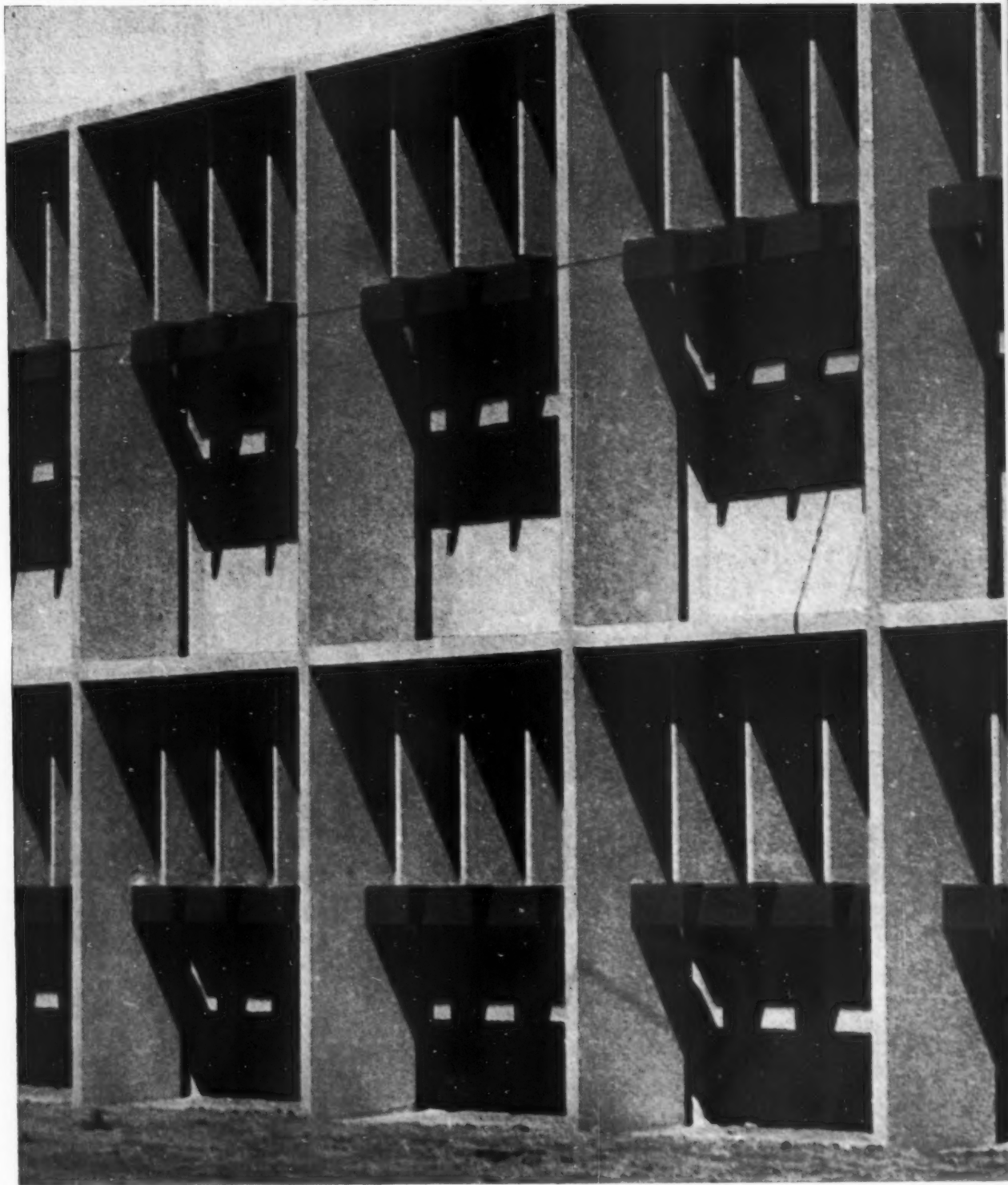
working detail

(E)

WALLS AND PARTITIONS: 92

SUN-BREAKERS: INSTITUTE IN PILANI, INDIA

Kanvinde and Rai, architects (material supplied by Viren Sahai)



The deep precast concrete sun-breakers, which are finished in rough plaster, are intended to block the oblique angles of the sun without impairing the view. The beams which support them and the columns are in-situ concrete.

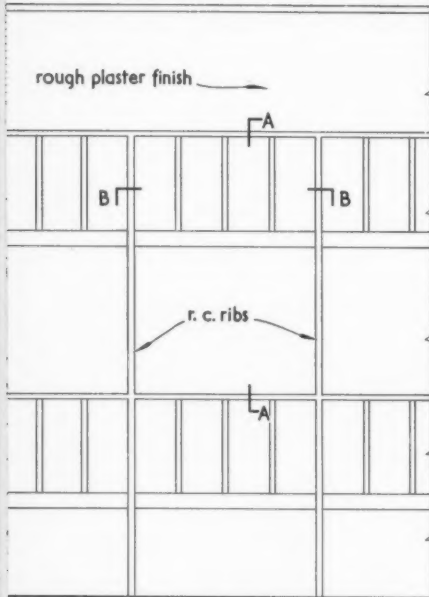
working detail

SUN-BREAKERS: INSTITUTE IN PILANI, INDIA

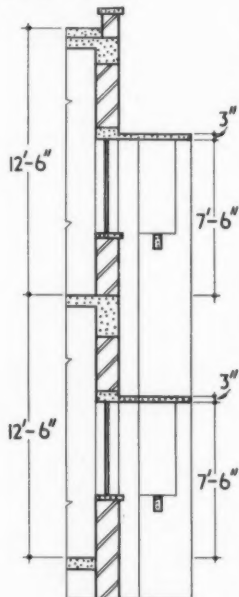
Kanvinde and Rai, architects (material supplied by Viren Sahai)

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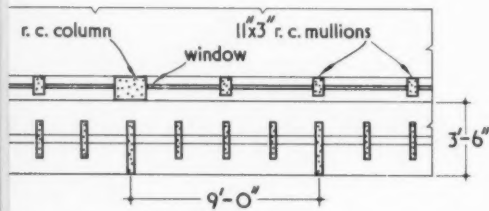
WALLS AND PARTITIONS: 92



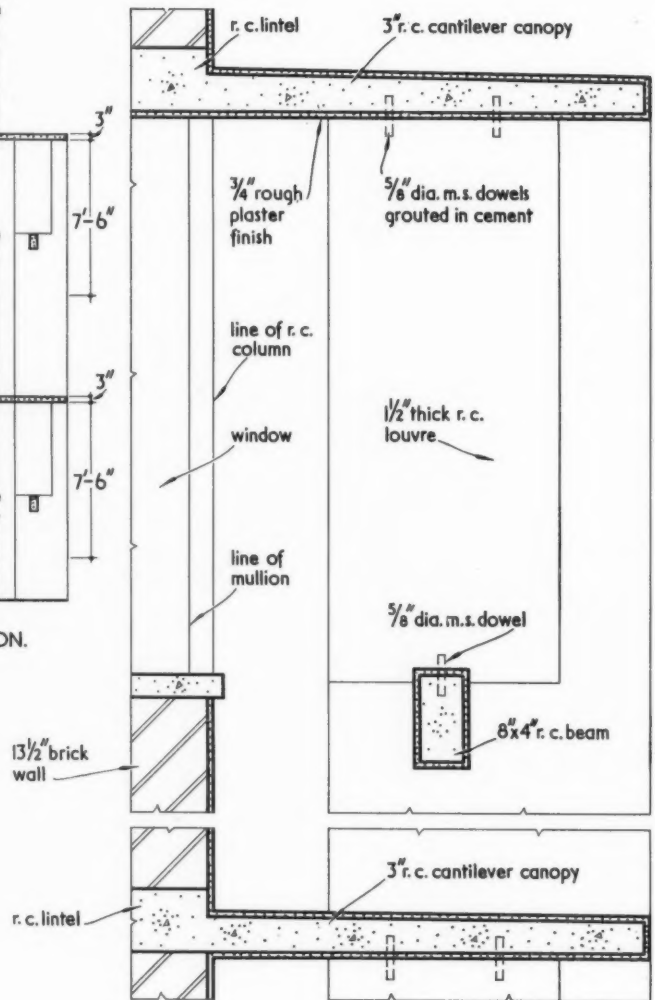
ELEVATION. scale $\frac{1}{8}'' = 1'-0''$



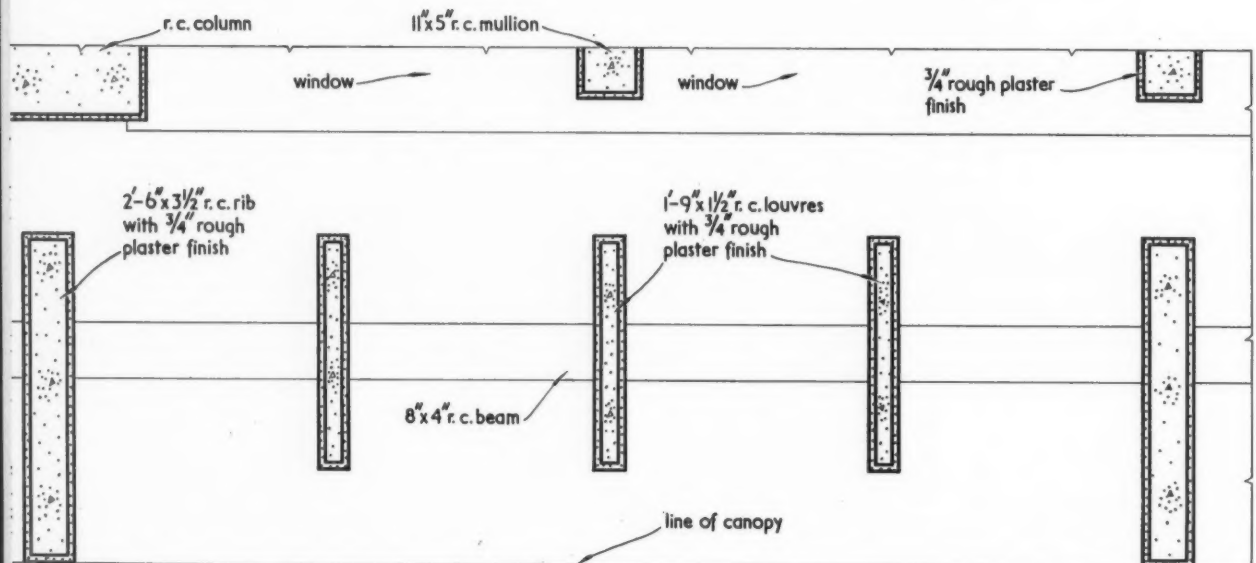
SECTION.



PLAN. scale $\frac{1}{8}'' = 1'-0''$



SECTION A-A. scale $\frac{3}{4}'' = 1'-0''$



PLAN AT B-B. scale $\frac{3}{4}'' = 1'-0''$

note: figured dimensions in feet and inches are approximate



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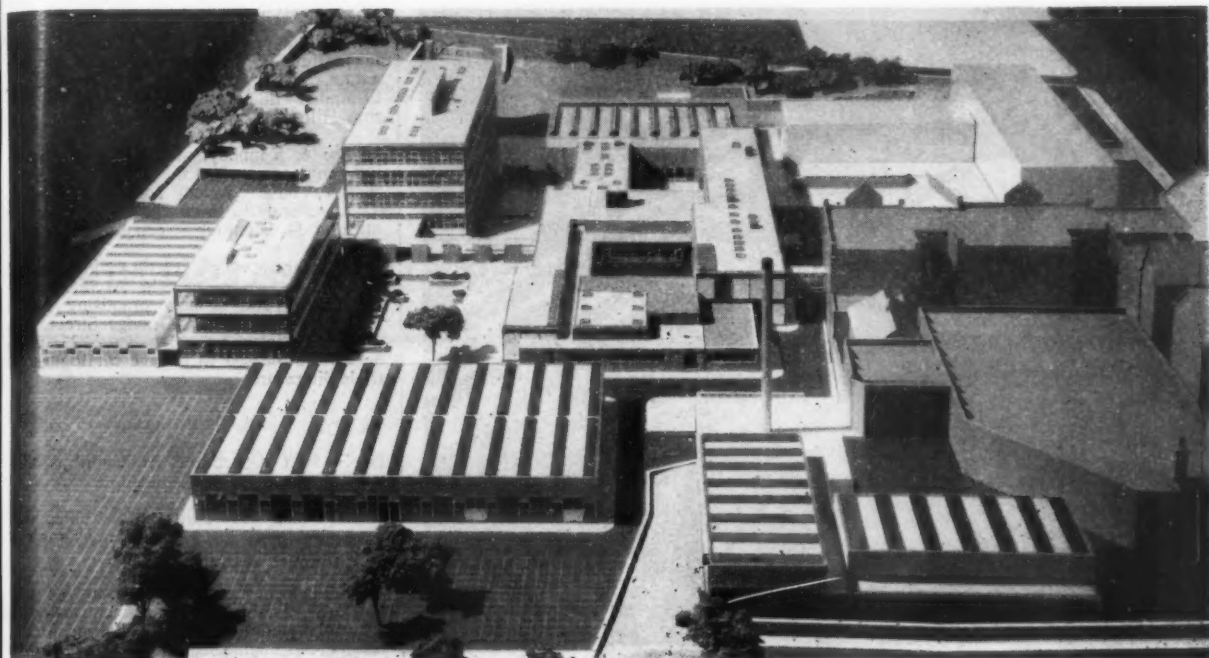
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M

EXTENSION TO THE COLLEGE OF FURTHER EDUCATION AT PRESTON



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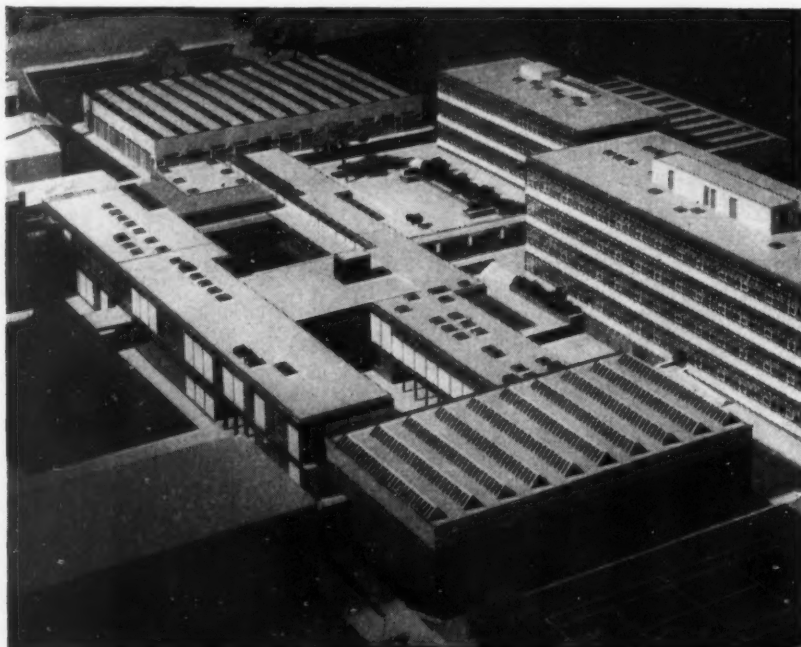
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COLLEGE EXTENSION AT PRESTON: continued



heavy duty laboratories and a three-storey teaching block. There is also to be a communal and administrative centre and a 4-storey specialist teaching block. Special consideration was given to creating a fitting environment for a centre of technological and liberal studies on a drab industrial site which included a disused canal and various old buildings and yards.

Announcements

PROFESSIONAL

Hilton and J. M. Wright, A/A.R.I.B.A., have taken into partnership John H. Ingham, A.R.I.B.A. The practice will continue at 11, Campden Hill Road, London, W.8 under the title Hilton Wright & Ingham.

Munce & Kennedy, architects and consulting engineers of 133, University Street, Belfast, have placed John F. Sheldon, A.R.I.B.A., M.S.I.A., in charge of their London office at 34, Seymour Street, London, W.1.

John Smith, A.A.Dipl., A.R.I.B.A., has resigned as an associate partner in Architects' Co-Partnership and is now practising on his own account from 49, Goodge Street, London, W.1 (telephone Museum 6206) where he will be pleased to receive catalogues and trade literature.

TRADE

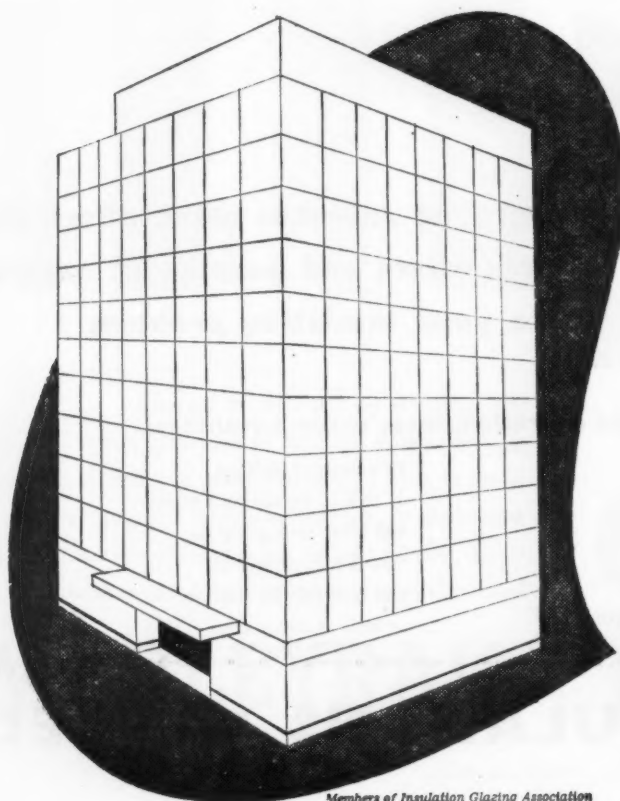
H. G. Butt has retired from Philips Electrical Ltd.

British Insulated Callender's Cables Ltd. have appointed T. C. Johnston as regional manager (Eastern region).

Atlas Lighting Ltd. have re-organized their Technical Sales Department consisting of four new sections to handle lighting fittings, commercial engineering, lighting engineering and product engineering.

OBITUARY

The death occurred on February 24 of Herbert John Stone, M.C., M.I.E.E., a director and general manager of British Insulated Callender's Cables Ltd.



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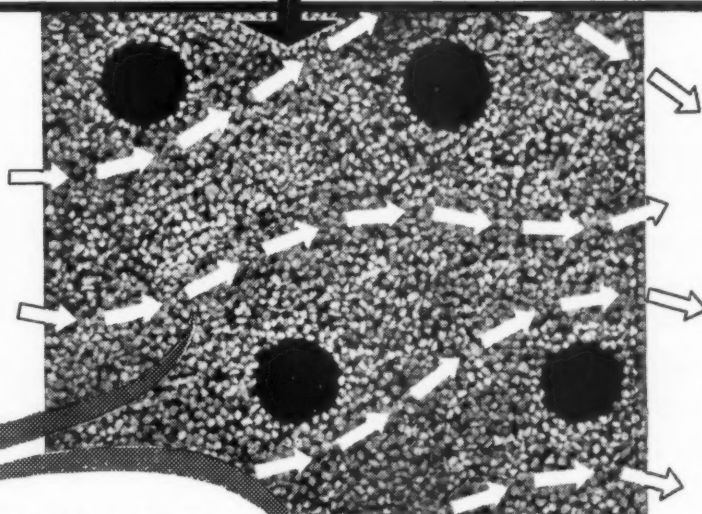
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of Rubervent showing granule underside which allows dispersal of vapour to exterior, and the adhesion points which fix the entire specification to the substructure.

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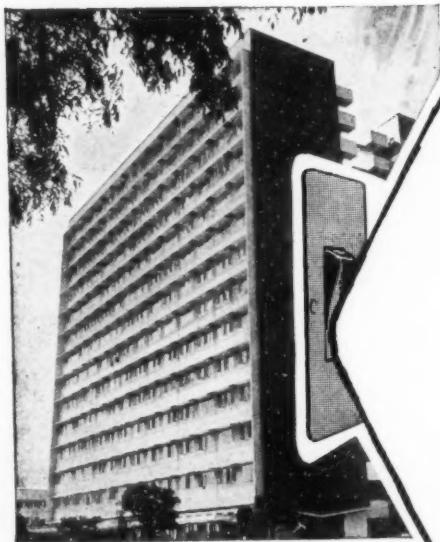
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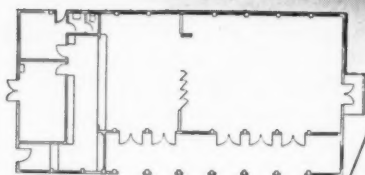
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Photographs by courtesy of Hart's Holiday Club, Leysdown, Isle of Sheppey

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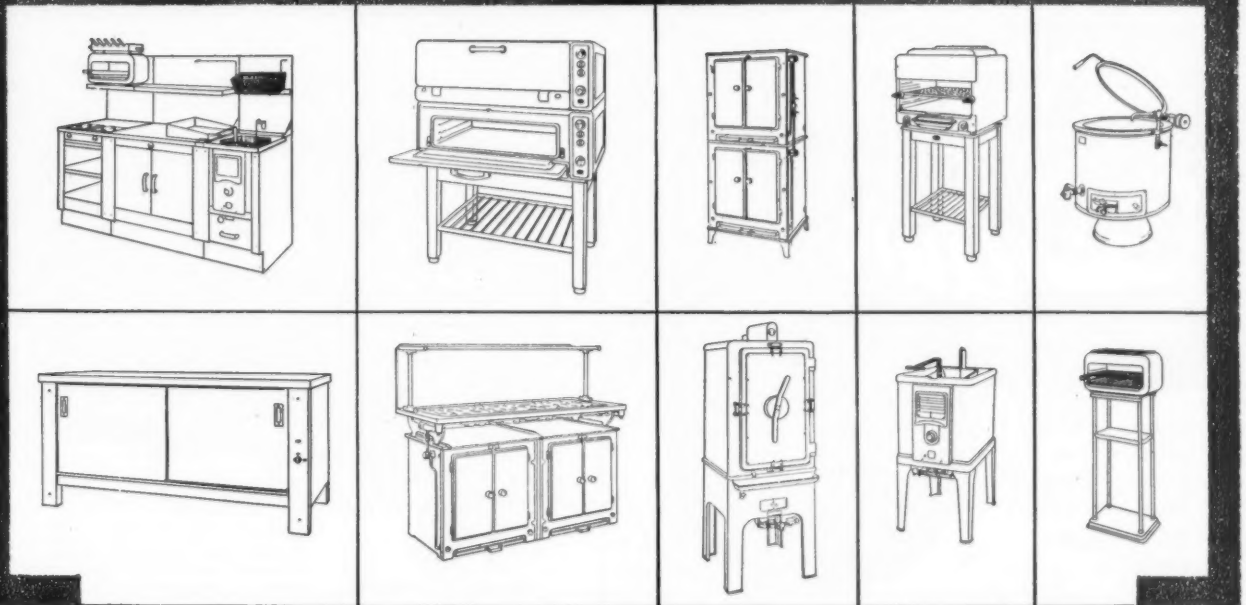
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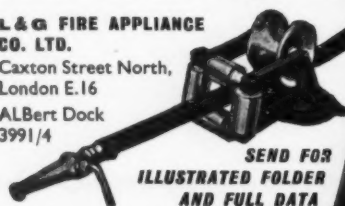
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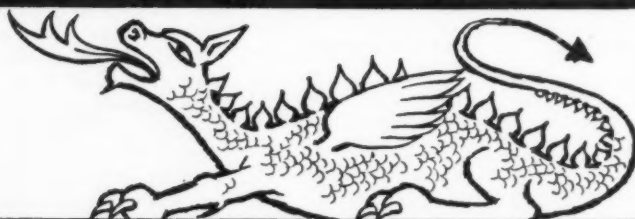
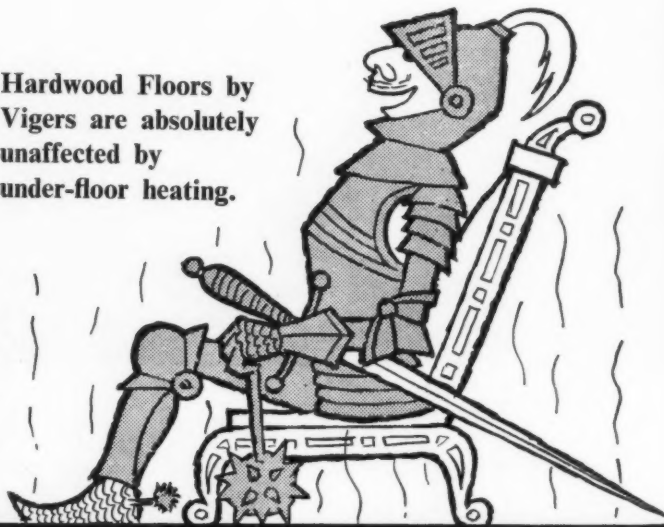
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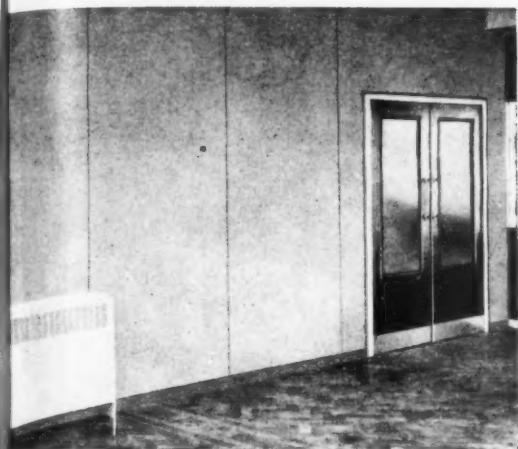
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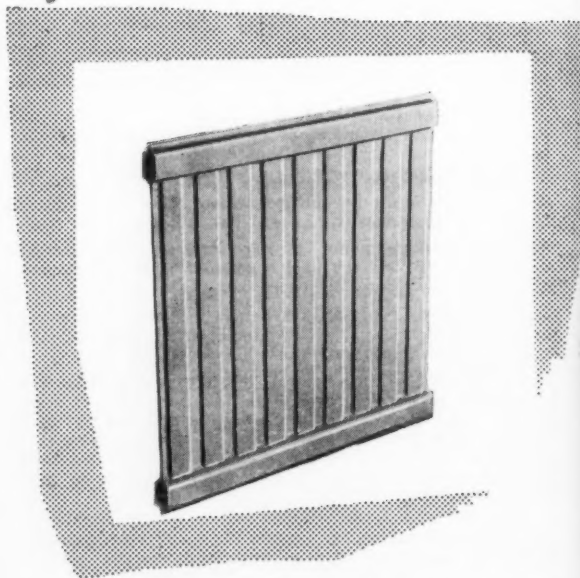
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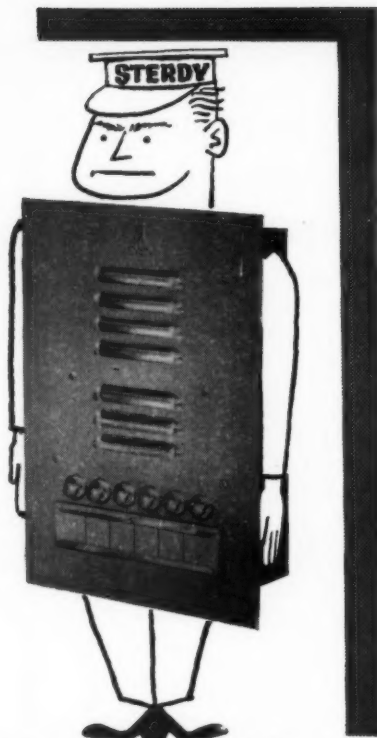
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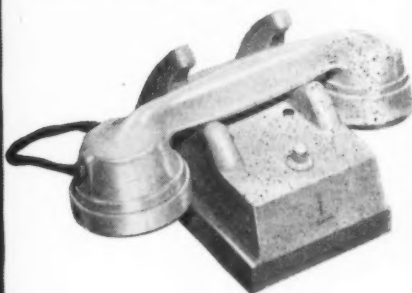
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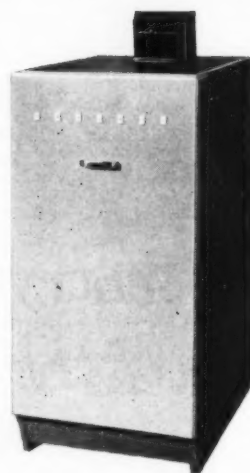
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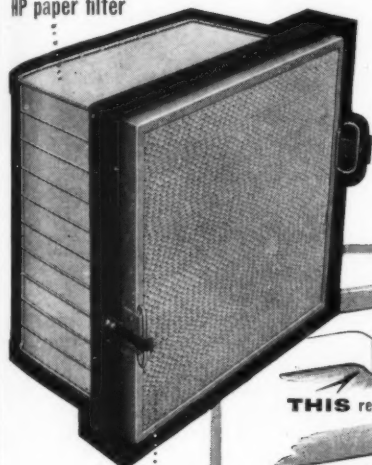
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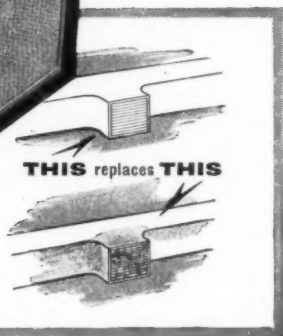
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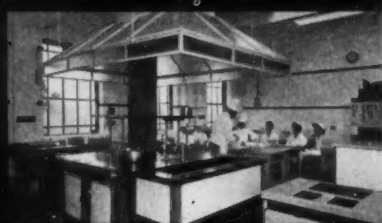
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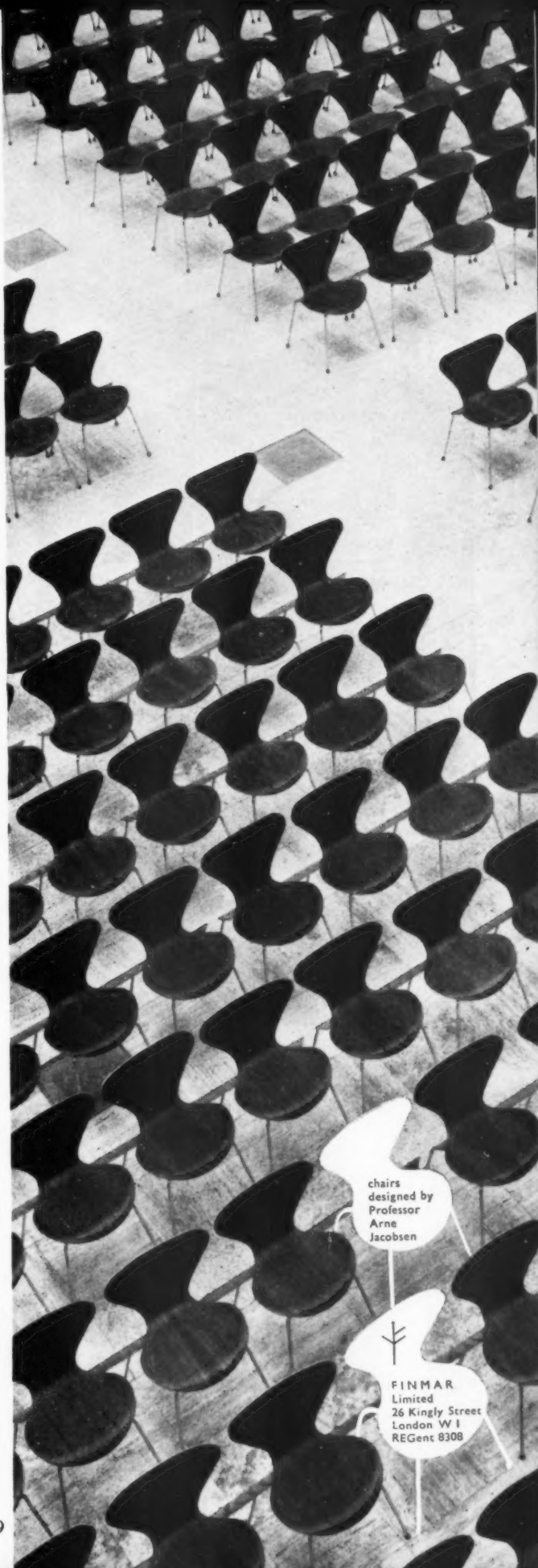
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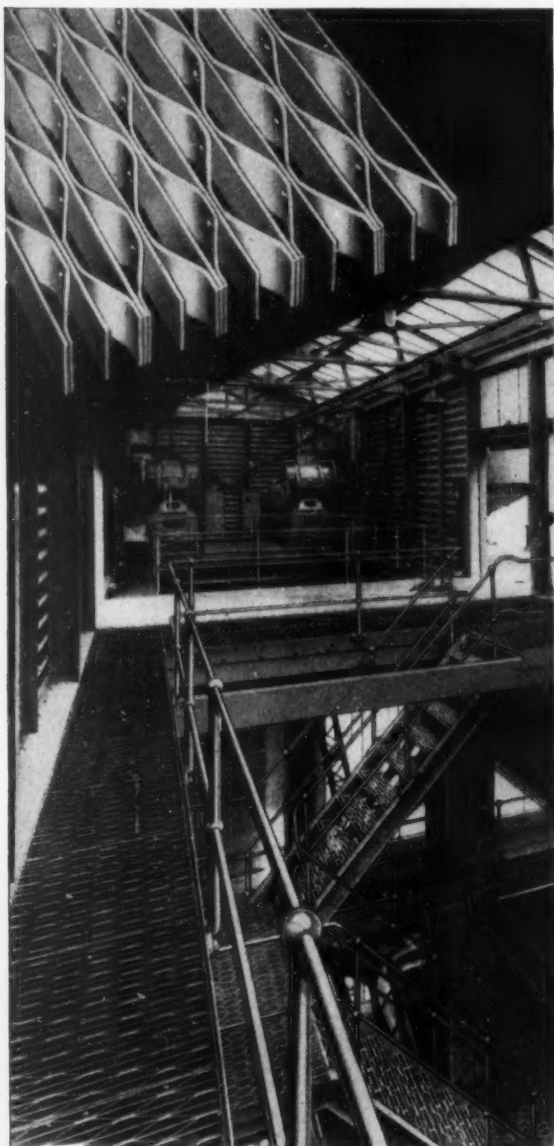
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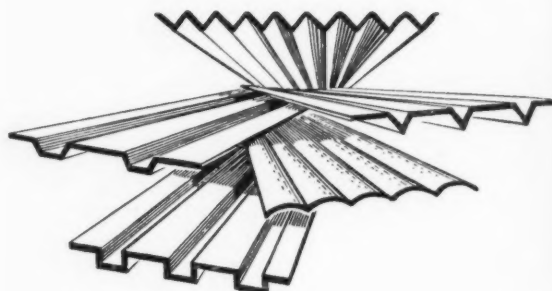
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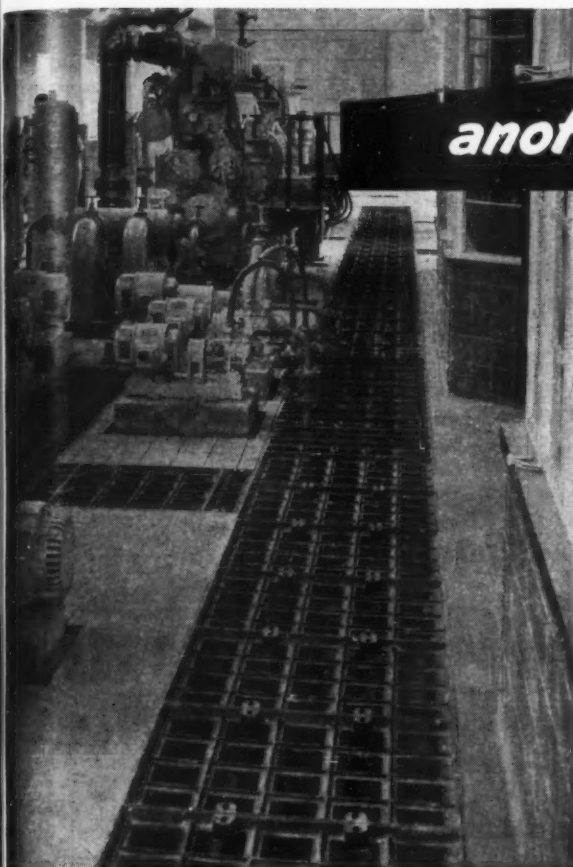
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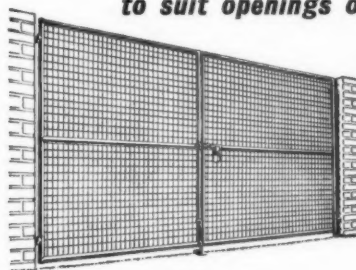
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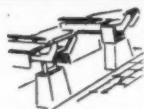
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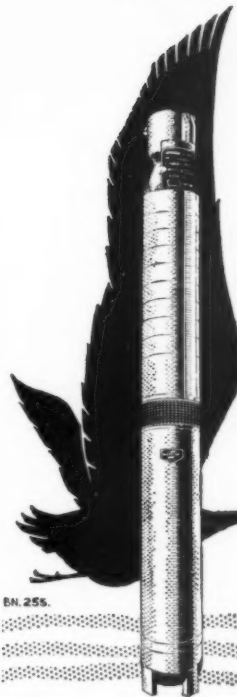
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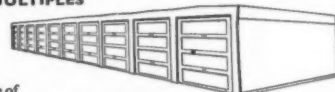
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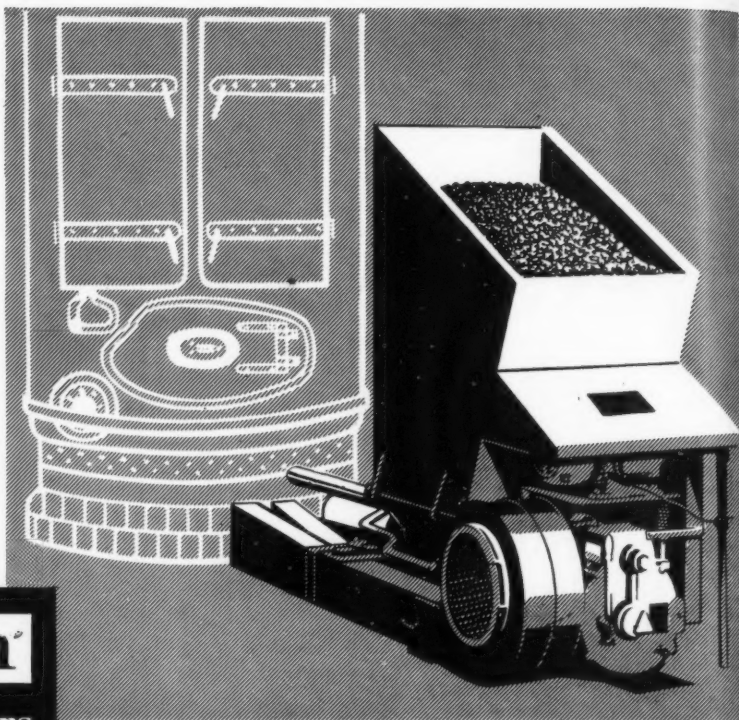
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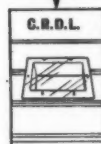
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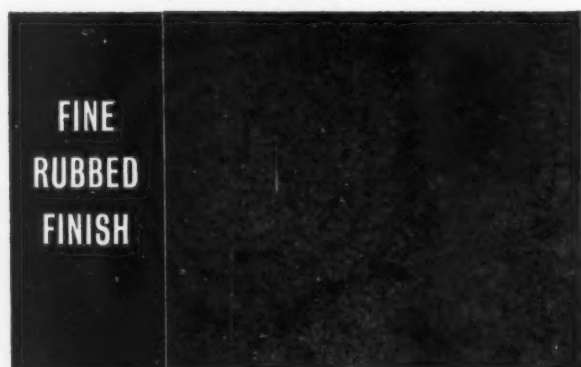


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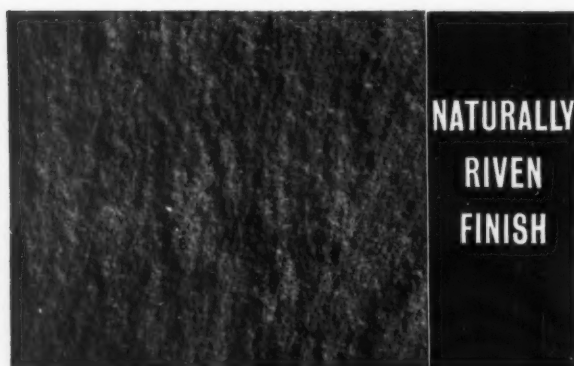
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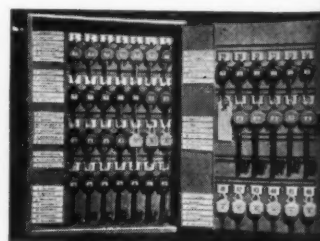
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Replies to Box Numbers should be addressed to "The Architects' Journal," at the address given above.

AIR-MAIL SERVICE available on request: in response to requests from a number of Overseas subscribers for air-mail delivery of Public and Official Appointment details and Other Appointments. We have been pleased to arrange that cuttings of all such classified advertisements appearing in the A.J., shall be despatched by air-mail on Wednesday of each week (one day prior to A.J. publication date). The cost of this special service to Overseas subscribers will be 5s. for four weeks (1s. 3d. for each additional week) and payment should be sent by subscribers wishing to take advantage of this service. The charge we are making represents only the actual cost of the postage involved.

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Applications are invited for the post of ARCHITECTURAL ASSISTANT, Grade A.P.T. I £250-£265 per annum, plus a London Weighting allowance of £10-£30 per annum according to age.

Applicants must have had experience in the preparation of plans, specifications, etc., including the maintenance of public buildings. Saturday mornings are normally free of duty. Application forms obtainable from H. D. Peake, M.Sc.(Eng.), M.I.C.E., Borough Engineer & Surveyor, 7 Little Park Gardens, Enfield, Middx., returnable to the undersigned.

CYRIL E. C. B. PLATTEN,
Town Clerk.
8454

GLENROTHES DEVELOPMENT

ARCHITECT/PLANNER required on grade £220 to £1,375 with placing according to qualifications and experience. Applicants should be associates of R.I.B.A. and T.P.I. with general architectural and planning experience particularly in the field of Civic Design, including the development of large residential developments, central industrial areas. Medical examination for entry to the Superannuation Scheme. House to rent available if required. Application forms from the Secretary and Legal Adviser, Glenrothes Development Corporation, Glenrothes, Fife, to be returned by 15th March, 1960. 8752

SHIPLEY URBAN DISTRICT COUNCIL

Applications are invited from appropriately qualified persons for the following appointments within Special Grade (£785-£1,075):

(a) ENGINEERING ASSISTANT

(b) ARCHITECTURAL ASSISTANT

The posts are superannuable and subject to the provisions of the National Scheme of Conditions of Service; commencing salary according to experience and qualifications. Housing accommodation will be provided if required.

Applications giving age, details of training, qualifications and experience, with the names and addresses of two referees to be sent to the Engineer and Surveyor, Town Hall, Shipley, Yorkshire, by 10 a.m., Thursday, 17th March, 1960.

ERNEST PEARS,

Clerk and Solicitor.
8676

BOROUGH OF BASINGSTOKE

APPOINTMENT OF

DEPUTY BOROUGH ARCHITECT

This rapidly-growing town is now commencing a scheme of expansion in conjunction with the L.C.C. all housing and architectural works being handled by the Borough Council's Architect's Department.

Applications are invited from Associates, R.I.B.A., who have had first-rate housing experience; salary in accordance with A.P.T. V (£1,220-£1,375); house or flat available; car allowance; N.T.C. conditions; post pensionable; medical examination.

Details giving age, training, experience, etc., and names and addresses of three referees to be sent to the Borough Architect, Eric Almond, Dist. Arch., A.R.I.B.A., Municipal Buildings, Basingstoke, Hants, by the 23rd March, 1960. Canvassing disqualifieds. 8696

Amended Advertisement

WEST SUSSEX COUNTY COUNCIL

COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointment:—
HEATING MECHANICAL, ELECTRICAL ENGINEER at a salary in accordance with Scale B (£1,265 x £55 (4)-£1,485). Commencing salary will be according to experience.

Further particulars should be obtained from the County Architect, County Hall, Chichester, to whom all detailed applications must be submitted not later than 4th April, 1960.

T. C. HAYWARD,

Clerk of the County Council.
8717

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT
NEW SECTION FOR NEW TOWN
DEVELOPMENT

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Amended Advertisement

BOROUGH OF WARWICK

APPOINTMENT OF

SENIOR ARCHITECTURAL ASSISTANT

Applications are invited for a Senior Assistant to work immediately under the Chief Architectural Assistant in the Borough Surveyor's Department. Salary A.P.T. III (£880-£1,065), entry in the scale according to qualifications and experience. The position is permanent and subject to medical examination. Housing accommodation will be provided if necessary and removal expenses paid.

Applicants must have passed at least the Finals of the R.I.B.A.

The post offered is for the design and site supervision of large Housing Estate Development incorporating shops, multi-storey flats, etc.

Applications stating age, qualifications, experience and the names and addresses of two referees should be sent to the Borough Surveyor, 23, Jury Street, Warwick, not later than Monday the 21st March, 1960.

HECTOR SETON BROWN,

A.M.I.C.E., A.M.I.W.E.,

Borough Engineer & Surveyor.

23, Jury Street,

Warwick.

22nd February, 1960. 8733

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ADMINISTRATIVE COUNTY OF LEICESTER

(a) SENIOR ASSISTANT ARCHITECT £1,075

£1,220.

(b) ASSISTANT ARCHITECT £785-£1,070.

Candidates for (a) must be chartered members of the R.I.B.A., have had considerable experience and be capable of taking charge of contracts from inception to completion; for (b) must have passed Parts I and II of the R.I.B.A. final and be capable of executing working drawings.

Lodging allowance and removal expenses may be paid to a married man.

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COUNCIL

ARCHITECTURAL AND HOUSING DEPARTMENT

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(b) ARCHITECTURAL ASSISTANT, Grade

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The work of the Department consists of a large Housing and Capital Works programme, which includes a Sports Stadium and Civic Hall.

Applications, stating age, qualifications and experience, together with the names of two persons to whom reference can be made, should reach R. T. Chappell, A.R.I.B.A., Architect and Housing Director, "Grasscroft," Arway Road, Huyton, not later than Monday, 28th March, 1960.

Canvassing disqualifieds.

D. WILLGOOSE,

Clerk of the Council.

Council Offices,

Derby Road,

Huyton. 8869

COUNTY BOROUGH OF BOOTLE

BOROUGH SURVEYOR'S DEPARTMENT

Applications are invited for the appointment of an ASSISTANT ARCHITECT on Grades III/IV (£880 to £1,220 per annum). Preference will be given to those having experience in the design and planning of houses and public buildings.

Application Forms from the Borough Surveyor, Town Hall, Bootle 20, Lancs., are returnable by Friday, 18th March, 1960.

HAROLD PARTINGTON,

Town Clerk.
8933

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(1) Grade A.P.T. III/IV—£880 to £1,220 plus London weighting.

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Candidates should have had considerable experience in the administration of planning and building acts, preferably in the Metropolitan Area, and should possess one of the following qualifications: A.M.T.P.I., A.M.I.Mun.E., A.R.I.C.S., A.R.I.B.A., or be otherwise qualified in accordance with the Charter. Medical examination is required. Housing cannot be provided.

Applications with full details and names of three referees should be forwarded to the Town Clerk (A.J.), Town Hall, Haverstock Hill, N.W.3, by Wednesday the 16th March. 8678

ARCHITECTURAL ASSISTANTS

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Apply, giving details of age, training and experience, to: E. Bedford, Esq., C.B., C.V.O., A.R.I.B.A., Chief Architect, Ministry of Works, (A), Abell House, Room 427, John Islip Street, London, S.W.1. Interviews will be held at the above address and at Regional offices where possible. 8661

TOWN PLANNING

KUMASI COLLEGE OF TECHNOLOGY,

GHANA

Applications are invited for the post of LECTURER IN TOWN PLANNING in the School of Architecture, Town Planning and Building.

Applicants should hold an Associate Membership of the Town Planning Institute or an equivalent qualification. The successful candidate will be required to teach students preparing for the examinations of the Town Planning Institute.

Contract appointments are normally for five years, and may be renewed. Three months' notice of resignations of an appointment is required.

The contract salary scale is £1,295 x £70-£2,275

per annum.

A gratuity at the rate of £150 a year is payable at the end of a contract period. Children's allowances are paid up to a maximum of three.

The College is fully residential, and members of staff are housed in pleasant, modern bungalows on the spacious campus; climate and living conditions are good.

Application forms and an Information Brochure may be obtained from the Assistant Registrar, Reference AJ/A, Kumasi College of Technology, 29, Tavistock Square, London, W.C.1, who will also be glad to answer any question about this appointment. The Principal of the College will be in London to interview candidates for this post in April. 8666

COUNTY BOROUGH OF DARLINGTON

BOROUGH ARCHITECT'S DEPARTMENT

Applications are invited for the appointment of ASSISTANT ARCHITECT. Salary in accordance with the Special Grade of N.J.C. Scales (£785-£1,070) starting point according to experience.

The Department has a large programme including Secondary and Primary Schools, Housing, and Welfare Schemes and Municipal Offices. Preference will be given to candidates experienced in this class of work and who are members of the R.I.B.A.

Housing accommodation will be made available if required.

Applications, giving full particulars of age, qualifications, present appointment with salary, previous appointments with dates, and name and address of three referees, to be received by E. A. Tornbohm, A.R.I.B.A., A.M.T.P.I., Borough Architect, Central Buildings, Darlington, not later than first post on 21st March, 1960.

C. N. S. NICHOLSON,

Town Clerk.
8870

LANARK COUNTY COUNCIL

Applications are invited from qualified ARCHITECTS for vacancies on the following grades within the County Architect's Department at Motherwell:—

(a) SENIOR ASSISTANTS—Salary scale £1,197-

£1,250.

(b) ARCHITECTURAL ASSISTANTS—Salary

scale £1,040-£1,120.

(c) ARCHITECTURAL ASSISTANTS—Salary

scale £795-£1,075.

Applicants for all posts should be A.R.I.B.A. Employment in these capacities offers wide scope in development of modern building programme.

Medical Examination. Superannuation. No canvassing.

Applications stating age, qualifications and experience together with names and addresses of three referees should be lodged with County Clerk, P.O. Box No. 1, Glasgow, within 14 days of advertisement. 8694

BOROUGH OF SOLIHULL
APPOINTMENT OF ASSISTANT ARCHITECTS
Following a review of the establishment of the Architects Section of the Borough Surveyor's Department, applications are now invited from architects having suitable experience for appointment as Assistant Architects, at a salary in accordance with A.P.T. Grade IV—(£1,065 per annum rising by annual increments of £50 and £55 to a maximum of £1,220 per annum).

Solihull has a population of approximately 90,000 and is still expanding rapidly. It is seeking County Borough status and is an Excepted District under the Education Acts. It has approximately £260,000 of education building under construction at the present time. The 1960/61 programme includes work of approximately £380,000 in value and the future programme includes new primary and secondary schools, nursery schools, extensions and adaptations, and a considerable number of minor capital works.

In suitable cases housing accommodation will be provided as soon as possible and half removal expenses paid.
The appointment is subject to the provisions of the Local Government Superannuation Acts, to the National Scheme of Conditions of Service and to one month's notice on either side.
Applications, giving full particulars as to present and past appointments, experience and qualifications held, should be submitted to the Borough Surveyor, 90, Station Road, Solihull, so as to reach him not later than 15th March, 1960.
W. MAURICE MELL,
Town Clerk.

The Council House,
Solihull,
Warwickshire. 8681

BOROUGH OF PRESTWICH
BOROUGH ENGINEER'S DEPARTMENT
APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited for the position of Architectural Assistant at a salary in accordance with Special Classes (£785—£1,070 per annum). Applicants should hold suitable qualifications and have had experience in housing and public buildings. Preference will be given to applicants who have passed the Final Examination of the R.I.B.A.
Applications, stating age, qualifications, experience, etc., together with the names of two persons to whom reference may be made, should be received by the undersigned not later than 26th March, 1960.
C. A. CROSS,
Town Clerk.

Town Hall,
Prestwich,
Lancashire. 8912

QUANTITY SURVEYING
KUMASI COLLEGE OF TECHNOLOGY,
GHANA

Applications are invited for the post of LECTURER IN QUANTITY SURVEYING in the School of Architecture, Town Planning and Building. Applicants should be Professional Associates of the Royal Institution of Chartered Surveyors (Quantity Surveying) and will be required to teach Quantity Surveying Estimating and Valuation for the examinations of the R.I.B.A. and of the I.O.B. Teaching and/or post-qualification professional experience is essential. Contract appointments are normally for five years, and may be renewed. Three months' notice of resignation of an appointment is required. The contract salary scale is £1,202 10s. x 265—£2,112 10s. p.a.

A gratuity at the rate of £150 a year is payable at the end of a contract period. Children's allowances are paid up to a maximum of three.
The College is fully residential, and members of staff are housed in pleasant, modern bungalows on the spacious campus; climate and living conditions are good.

Application forms and an Information Brochure may be obtained from the Assistant Registrar, Reference A/J/D, Kumasi College of Technology, 29, Tavistock Square, London, W.C.1, who will also be glad to answer any questions about this appointment. The Principal of the College will be in London to interview candidates for this post in April. 8666

QUANTITY SURVEYING ASSISTANTS,
GRADE III, required by AIR MINISTRY in the PROVINCES. Duties include abstracting and billing, site measurement and preparation of estimates. Candidates must hold O.N.C. (Building or Builders' Quantities) or equivalent and have good experience under Quantity Surveyor or Building Contractor. Knowledge W.D. Schedule an advantage. Financial assistance and time off given for recognised courses of study. Promotion and pension prospects. Five-day week with 18 days' leave a year initially. Overseas tours for which special allowances granted.
Salary ranges from £680 (at age 26) to £850. Commencing salary dependent upon age, qualifications and experience. Applicants, who must be natural born British subjects, should write stating age, qualifications and previous appointments including type of work done, to Manager (P.E.2) Professional and Executive Register, Ministry of Labour, Atlantic House, Farringdon Street, London, E.C.4. No original testimonials should be sent. Candidates selected will normally be interviewed in London and certain expenses reimbursed. Only applicants selected for interview will be advised. 8336

LINDSEY (LINCOLNSHIRE) COUNTY
COUNCIL

ARCHITECTS' DEPARTMENT

Owing to reorganisation of the Department to cope with large and interesting programme of work, the following vacancies occur:—

- (a) ARCHITECTURAL ASSISTANTS, Grade A.P.T. III, £880—£1,065.
- (b) ENGINEERING ASSISTANT, Grade A.P.T. III, £880—£1,065.
- (c) QUANTITY SURVEYING ASSISTANT, Grade A.P.T. II, £765—£880.
- (d) QUANTITY SURVEYING ASSISTANT, Grade A.P.T. I, £610—£765 or Miscellaneous III, £525—£590.
- (e) AREA CLERK OF WORKS, Grade A.P.T. II, £765—£880.

Applicants for (a) experienced with a sound knowledge of construction to complete the middle section of a team; (b) qualified by experience as graduate I.H.V.E. and able to prepare designs for heating schemes; (c) preferably Intermediate R.I.C.S. and able to abstract and take off smaller jobs; (d) grade offered according to experience but applicants must be able to abstract (e) to take charge of area centred on Skegness and be responsible for supervision of major schemes and many minor schemes.

Commencing salary within the grade dependent upon experience. N.J.C. Conditions of Service. Canvassing will disqualify. Candidates must disclose in writing whether to their knowledge they are related to any Member or Senior Officer of the Council.

Applications giving age, qualifications, experience, present post and salary, and the names of two persons to whom reference can be made, to be sent to the County Architect, County Office, Lincoln, not later than 15th March, 1960. 86

PERTH AND KINROSS JOINT COUNTY
COUNCIL

COUNTY ARCHITECTS' DEPARTMENT

Applications are invited for vacancies in the New Houses and New County Offices Section as follows:—

- (a) GROUP LEADER—Salary Scale £995 to £1,275.
- (b) GROUP SUB-LEADERS—Salary Scale £815 to £1,175.
- (c) ASSISTANT ARCHITECTS—Salary Scale £795 to £1,075.

Applicants for posts (a) and (b) must be fully qualified A.R.I.B.A. Applicants for post (c) should be A.R.I.B.A. or hold a Diploma in Architecture. Placing on the Scales may be given according to experience.

Further particulars and forms of application from The County Clerk, P.O. Box 15, County Offices, York Place, Perth. Applications to be lodged by 21st March, 1960. 86

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BOROUGH OF LEYTON
(IN THE COUNTY OF ESSEX)
COMMITTEE FOR EDUCATION
APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited for the permanent appointment of Architectural Assistant, Grade A.P.T. II, £765-£820 per annum, plus London weighting. The successful applicant will be employed by the Essex County Council, and will work in the School Architect's Section of the Borough Engineer and Surveyor's Department, Town Hall, Leyton, E.10. Five-day week is operated.

Details and forms of application from the Borough Education Officer, Education Offices, Kirkdale Road, Leytonstone, E.11, to whom they should be returned within 10 days from the appearance of this advertisement.

D. J. OSBORNE,
Town Clerk.
Leyton, E.10. 8905

BOROUGH OF ILKESTON
APPOINTMENT OF ARCHITECTURAL ASSISTANT

GRADE A.P.T. IV (£1,065-£1,220)

An Assistant (Degree Diploma or A.R.I.B.A.) is required by the Corporation for a wide range of development. In addition to the normal housing programme consideration is now being given to the provision of new municipal offices, swimming baths and a bus station.

The post is superannuable, being subject to one month's notice on either side and to the passing of a medical examination.

A five-day working week is in operation, housing accommodation will be provided if required, and consideration will be given to financial assistance in connection with removal expenses.

Ilkeston is a progressive town of approximately 35,000 population lying some 8 miles from Nottingham and 10 from Derby, being in close proximity to the Peak District National Park.

Forms of application and conditions of appointment may be obtained from A. O. Marshall, M.I.Mun.E., M.I.Struct.E., F.I.A.A., Borough Engineer & Water Engineer, Town Hall, Ilkeston, Derbyshire, to whom they are to be returned by Wednesday, 6th April, 1960.

J. YATES,
Town Clerk.
8902

COUNTY BOROUGH OF WALSALL
PUBLIC WORKS DEPARTMENT

Applications are invited for the following appointments in:-

1. Town Planning Section.

- (a) **CHIEF ASSISTANT TOWN PLANNER**-J.N.C. Scale "B" (£1,390-£1,475).
- (b) **ASSISTANT TOWN PLANNER**-Special Grade (£785-£1,070).

QUALIFICATIONS FOR APPOINTMENT.

(a) Must hold A.M.T.P.I. and a further professional qualification in Architecture, Engineering or Estate Management will be an advantage. They should have had extensive experience in all branches of Town Planning.

(b) Should hold A.M.T.P.I. or other professional qualification. Those not holding A.M.T.P.I. should have had previous experience in Town Planning.

Commencing salaries will be fixed according to qualifications and experience. Posts are superannuable and subject to medical examination.

HOUSING ACCOMMODATION CAN BE MADE AVAILABLE IF REQUIRED.

Forms of application and, for Post 1 (a), details of duties, can be obtained from the undersigned and must be returned by not later than 11 a.m. on Wednesday, March 16th, 1960.

M. E. HABERSHON,

Borough Engineer and Surveyor.
Council House,
Walsall.
2nd March, 1960. 8914

COUNTY BOROUGH OF SWANSEA

BOROUGH ARCHITECT'S DEPARTMENT

APPLICATIONS are invited for the following posts:-

- (a) **SENIOR ASSISTANT ARCHITECT**, Salary Grade APT IV (£1,065-£1,220).

Applicants must be Associates of the R.I.B.A. and must have had considerable experience in the design and supervision of the erection of public buildings.

- (b) **TWO ASSISTANT QUANTITY SURVEYORS**, Salary Grade APT II (£765-£880).

Applicants must have passed the Intermediate Stage of the R.I.C.S. (Quantities).

The commencing salary of both posts will be within the grade according to ability and experience.

HOUSING ACCOMMODATION will be provided for Post (a) (Senior Assistant Architect).

Candidates must be under 45 years of age unless in Local Government Service.

The appointment will be subject to the provisions of the Local Government Superannuation Acts and may be terminated by one month's notice on either side. The successful applicant will be required to pass a medical examination.

Forms of Application must be obtained from the Borough Architect, The Guildhall, Swansea to whom they must be returned not later than **FRIDAY, 25th MARCH, 1960.**

Canvassing disqualifies.

T. B. BOWEN,
Town Clerk.

The Guildhall,
Swansea.
25th February, 1960. 8906

BOROUGH OF CHATHAM
APPOINTMENT OF ASSISTANT ARCHITECT

Applications are invited for the above appointment at a salary within Special Grade (£785-£1,070) and A.P.T. IV (£1,065-£1,220) according to qualifications and experience. Preference will be given to applicants who are professionally qualified and suitably experienced.

Applications with the names and addresses of two referees, should be delivered to Mr. J. A. T. Richards, Borough Engineer and Surveyor, Town Hall, Chatham, not later than Friday, 25th March, 1960.

HOUSING ACCOMMODATION WILL BE AVAILABLE IN AN APPROPRIATE CASE.

The appointment will be (a) in accordance with the National Scheme of Conditions of Service, (b) terminable by one month's notice on either side, and (c) superannuable, subject to satisfactory medical report.

In accordance with their usual practice the Council will require the successful candidate to give an undertaking to remain in the Council's service for two years.

ROWLAND NEWNES,
Town Clerk.

Town Hall,
Chatham. 8918

SCOTTISH SPECIAL HOUSING ASSOCIATION LTD.

ARCHITECTS, GRADE II

The Association, a Government sponsored and financed body, developing large scale housing schemes throughout Scotland, with an interesting programme of mixed developments, including multi-storey blocks of flats, invite applications for the appointment of ARCHITECTS, GRADE II. The posts are superannuable with a salary scale of £780-£1,135 per annum with placing for age on entry up to £990 at age 31. A house may be available if required.

Application forms, with full particulars, obtainable from Harold E. Buteux, A.R.I.B.A., A.M.T.P.I., Chief Technical Officer, 19, Palmerston Place, Edinburgh, 12. 8848

BOROUGH OF HORNSEY

Two temporary ARCHITECTURAL ASSISTANTS required-Salary Grade A.P.T. III/IV (£880 to £1,220, plus London weighting). Commencing salary according to experience.

Application forms from Borough Engineer and Surveyor, Town Hall, Crouch End Broadway, N.8, to be returned by noon on 21st March, 1960.

W. B. MURGATROYD,

Town Clerk. 8907

PEAK DISTRICT NATIONAL PARK

Applications are invited for the appointment under N.J.C. service conditions of JUNIOR PLANNING ASSISTANTS, A.P.T. Grade I (£510-£765) in the office of the Peak Park Planning Board at Bakewell. The posts offer a wide range of interest both in the field of general planning and in national park activities.

Forms of application and further particulars from the Planning Officer, Aldern House, Bakewell, Derbyshire. Applications to be received by 28th March, 1960. Canvassing disqualifies. 8925

HATFIELD RURAL DISTRICT COUNCIL

Applications are invited for appointment of ARCHITECTURAL ASSISTANT, Grade A.P.T. II, £765-£980 per annum, preferably with R.I.B.A. Intermediate.

Summary forms from and applications to Engineer and Surveyor, 82, Great North Road, Hatfield, not later than 21st March, 1960.

S. F. JAGO,

Clerk of the Council.

Council Offices,
16, St. Albans Road,
Hatfield,
Herts. 8911

THE LLANTRISANT & LLANTWIT FARDRE R.D.C. invite applications for the post of ARCHITECTURAL ASSISTANT, A.P.T. II-III (£765-£1,065).

Candidates must have had experience in the design of houses, the layout of housing estates, and have sound ability and experience in the preparation of working and detail drawings. Preference will be given to candidates who have passed the Intermediate Examination of the R.I.B.A.

The appointment is subject to the N.J.C. conditions of service, the Superannuation Acts, and to one month's notice on either side.

Housing accommodation will be made available if required.

Applications with details of age, qualifications, experience and names of three referees, to the Clerk of the Council, Council Offices, "Danygraig", Llantrisant, Glamorgan, by Monday, 28th March, 1960. 8841

HALTEMPRICE URBAN DISTRICT COUNCIL

ENGINEER & SURVEYOR'S DEPARTMENT

Applications are invited for ASSISTANT ARCHITECT in the Engineer & Surveyor's Department, A.P.T. Special Grade (£785-£1,070).

Commencing salary dependent upon qualifications and experience.

Applications, stating experience and commencing point within the salary scale desired, and names of two persons to whom reference may be made, should be forwarded to the undersigned not later than noon on Monday, 21st March, 1960.

A. B. GLASSPOOL,

Clerk of the Council.

Anlaby House,
Anlaby
E. Yorks. 8883

CORPORATION OF DUNDEE
CITY ARCHITECT'S DEPARTMENT

Applications are invited from persons under 45 years of age for a number of appointments as ARCHITECTS in the City Architect's Department.

The salaries will be within the scales for Professional Assistants-£795 to £1,075 and £1,085 to £1,190.

Applicants must be Associate Members of the Royal Institute of British Architects and placings in the grade will be according to experience.

The successful applicant will require to pass a medical examination for entry in the Superannuation Scheme.

Applications, giving full information of training, experience and qualifications, together with the names of two professional referees and details of the applicant's housing needs, if any, should be lodged with the Subscriber not later than 21st March, 1960.

ROBERT LYLE,
Town Clerk.

City Chambers,
Dundee. 8823

BOROUGH OF GOSPORT
APPOINTMENT OF QUANTITY SURVEYOR

Applications are invited for the above appointment within the Grade A.P.T. III (£880-£1,065) or N.J.C. Grading of Special Classes (£785-£1,070).

Candidates should be qualified in accordance with Paragraph 28 of the N.J.C. Scheme of Conditions of Service and be fully experienced in and prepared to accept responsibility for the preparation of Bills of Quantities, measurement of works on site, agreement of final accounts, etc.

The post is subject to:-

- (i) The N.J.C. Scheme of Conditions of Service,
- (ii) Local Government Superannuation Acts, 1937-53.

(iii) If required, the passing of a Medical Examination.

- (iv) One month's notice on either side.
- (v) Provision of housing accommodation, if necessary.

Applications, stating age, qualifications, present and previous appointments, details of experience, and the names and addresses of two referees, should be delivered to the undersigned not later than first post on Monday, 21st March, 1960.

EDWARD ADDENBROOKE,

Town Clerk.

Town Hall,
Gosport.
Hants. 8832

METROPOLITAN BOROUGH OF SOUTHWARK

Applications are invited for the following appointments in the Borough Engineer and Surveyor's Department:-

ARCHITECTURAL ASSISTANTS, A.P.T. I

(£840 to £795 p.a.) or A.P.T. II (£795 to £910 p.a.).

Vacancies in design groups dealing with mixed housing and other development. Applicants should possess Intermediate R.I.B.A. for A.P.T. II. If under 26 years of age, the salaries will be £10 per annum less.

The Council has a large programme for housing development on sites already available, or scheduled for clearance within the next ten years. In addition, a number of public building projects are envisaged, including new public baths within the Elephant and Castle Development Area.

Applicants are requested to attach to their application forms, in typescript if preferred, brief details of their experience, particularly under the following headings:-

- (a) Housing schemes.
- (b) Public buildings.
- (c) Other buildings.
- (d) Office organisation.
- (e) Site supervision.

Please indicate clearly the post and grade applied for.

Council's Conditions of Service of Officers and Superannuation Scheme apply. Medical examination. No housing. Canvassing will disqualify. Further particulars from the undersigned. Closing date 30th March, 1960.

E. J. PITT,

Town Clerk.

Southwark Town Hall
(near Elephant & Castle Underground Station),
Walworth Road. 8840

COUNTY OF DURHAM

APPOINTMENT OF COUNTY ARCHITECT

Applications are invited for the post of County Architect. Candidates must be Fellows or Associates of the Royal Institute of British Architects and preference will be given to those having had experience under large public authorities.

The salary will be £3,740 a year, rising by three annual increments of £135 to a maximum of £4,145. Superannuation deductions. Medical examination. Applications, stating age, education, qualifications, experience and present appointment, with the names and addresses of two referees, must be received by me not later than noon on 28th March, 1960.

Personally canvassing the members of the Council is prohibited.

J. K. HOPE,

Clerk of the County Council.

Shire Hall,
Durham. 8853

COUNTY BOROUGH OF SUNDERLAND
CHIEF ASSISTANT ARCHITECT
Grade A.P.T. IV (£1,065-£1,220)

Applications are invited for the above post. Commencing salary according to qualifications and experience. Particulars of the appointment obtainable from the Borough Architect, Grange House, Stockton Road, Sunderland.

Applications must be received at my office, Town Hall, not later than 25th March, 1960. Canvassing will disqualify.

G. S. McINTIRE
Town Clerk. 8888

CHESHIRE COUNTY ARCHITECT'S DEPARTMENT
HEADQUARTERS AND DISTRICT OFFICE
CHESTER

Application, on forms obtainable from me, are invited for the following appointments (five-day week):—

SENIOR ARCHITECTURAL ASSISTANT
A.P.T. IV (£1,065 × 1 at £55 and 2 at £50-£1,220 p.a.)

SENIOR ARCHITECTURAL ASSISTANT
A.P.T. III (£880 × 3 at £35 and 2 at £40-£1,065 p.a.)

ARCHITECTURAL ASSISTANTS, A.P.T. II
(£765 × 1 at £25 and 3 at £30-£880 p.a.)

JUNIOR ARCHITECTURAL ASSISTANTS
A.P.T. I (£610 × 4 at £30 and 1 at £35-£765 p.a.)

EDGAR TABERNER, A.R.I.B.A.,
County Architect.

County Hall,
Chester.
26th February, 1960. 8796

COUNTY OF ANGUS
APPOINTMENT OF ASSISTANT ARCHITECT
Applications are invited for appointment as Assistant Architect in the Department of the County Architect and Planning Officer. Duties will include work on new schools and other Council projects.

Applicants should be Associates of the R.I.B.A. and the salary scale will be £795 rising to £1,075 (special grade) with a car allowance. Housing accommodation will be available in due course in appropriate cases.

Application forms, together with full particulars of the Conditions of Appointment can be obtained from the undersigned.

IAN A. MACKNIGHT,
County Clerk.

County Buildings,
Forfar.
26th February, 1960. 8795

NEW ZEALAND—MINISTRY OF WORKS
The New Zealand Ministry of Works invites applications for the following vacancies on the permanent staff.
ARCHITECTS

Commencing salaries up to £1,525 a year according to qualifications and experience. Applicants should be members of the Royal Institute of British Architects (R.I.B.A.). These positions offer excellent prospects for those with the right qualities and scope for initiative and creative thinking in helping to meet the architectural requirements of a prosperous and fast-developing country.

ARCHITECTURAL DRAUGHTSMEN

Salaries up to £1,140 a year according to qualifications and experience. Applicants should have had at least five years' draughting experience in an architectural office.

Subject to completion of a bond to remain in the Service for three years, successful applicants will be assisted with expenses incurred in travelling to New Zealand. A superannuation scheme is available and there are generous annual and sick leave privileges.

Enquiries, mentioning this publication and quoting reference number B11/30/20, should be addressed to The High Commissioner for New Zealand, 415, Strand, London, W.C.2, who will supply further details and application forms. Completed applications to be lodged in London not later than 4th April, 1960. 8842

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

DESIGNER for interior fittings and furniture required in Furniture and Display Section on programme of work in connection with Schools, Colleges, Old Peoples' Homes, Residential Hostels, etc., calling for special interest in functional studies. Previous experience of such work an advantage.

Up to £1,135 (under review). Application form, returnable by 31st March, from Hubert Bennett, F.R.I.B.A., Architect to Council, EK/32/60, County Hall, London, S.E.1. (426.) 8846

THE NORTH WESTERN ELECTRICITY BOARD
THIRD ASSISTANT ENGINEER
(CIVIL ENGINEERING)

SUB-AREA ENGINEERING DEPARTMENT
OLDHAM

Applicants should be suitably qualified and have had experience in preparing sketch schemes, working drawings and specifications for commercial buildings, including Service Centres and supervision of work on site. Membership of the Royal Institute of British Architects will be an advantage.

Salary Scale: £1,025/£1,085 p.a., Class "L" Grade 10 N.J.B. Conditions.

Applications must be made on a form to be obtained from the Manager, No. 3 Sub-Area, The North Western Electricity Board, Union Street, Oldham, and returned to him so as to be received not later than 21st March, 1960. 8915

BOROUGH OF BEBINGTON
(a) SENIOR ARCHITECTURAL ASSISTANT—
Grade IV A.P.T.

(b) ARCHITECTURAL ASSISTANT—Special
Classes.

Applications are invited for the above posts, commencing salaries of which will be fixed according to qualifications and experience.

Applicants for both posts must hold appropriate architectural qualifications and in the case of post (a) applicants should also be capable of undertaking development schemes of housing and public buildings.

Application forms are available from the Borough Engineer and Surveyor, Town Hall, Bebington, Cheshire, and when completed should be returned to the Town Clerk so as to be received by him at the same address not later than first post on Monday, 21st March, 1960.

The candidates appointed, if married, and considered by the Council to be in need of housing at the time of appointment, will be found accommodation within a reasonable period of time.

Canvassing will be a disqualification.

G. CHAPPELL,
Town Clerk. 8874

BOROUGH OF GUILDFORD
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT

Applications are invited for:

(a) SENIOR ENGINEERING ASSISTANT,
Special Grade (£785-£1,070).

(b) ARCHITECTURAL ASSISTANT, A.P.T. II
(£765-£880).

(c) ARCHITECTURAL ASSISTANT, A.P.T. I
(£610-£765).

For (a) applicants must have passed the Testamur of the Institution of Municipal Engineers or equivalent, and have considerable experience in general Municipal or Civil Engineering.

For (b) applicants should have passed the Intermediate Examination of the R.I.B.A. and have experience in general Architectural work.

For (c) applicants should have had a good training in design and construction in general Architectural work.

Applications, with the names and addresses of two referees, must be sent to the Borough Engineer and Surveyor, Municipal Offices, High Street, Guildford, by Tuesday, 22nd March, 1960.

HERBERT C. WELER,
Town Clerk. 8809

COUNTY BOROUGH OF BARNSELY
BOROUGH ENGINEER & SURVEYOR AND
PLANNING OFFICER'S DEPARTMENT
APPOINTMENT OF ARCHITECTURAL ASSISTANT AND PLANNING ASSISTANT

Applications are invited for the following:—

(a) ARCHITECTURAL ASSISTANT—Special
Classes (A.P.T. I, £610-£765 or Special Grade, £785-£1,070).

(b) PLANNING ASSISTANT—Special Classes
(A.P.T. I, £610-£765 or Special Grade, £785-£1,070).

THE COMMENCING SALARIES WILL BE
FIXED WITHIN THE APPROPRIATE
GRADES ACCORDING TO EXPERIENCE AND
QUALIFICATIONS.

For appointment (a) candidates should have completed their training and be at least Intermediate R.I.B.A. standard. Applicants for (b) should be taking T.P.I. or Diploma Courses. Study facilities are available.

The posts are superannuable and subject to passing of medical examination, N.J.C. Conditions of Service, and one month's notice on either side.

HOUSING ACCOMMODATION CAN BE
PROVIDED IF NECESSARY AND 50 PER CENT.
OF REMOVAL TRANSPORT EXPENSES WILL
BE PAID IN APPROVED CASES.

Applications, stating age, present and previous appointments, qualifications, experience, etc., together with the names of two persons for reference, should reach the Borough Engineer, Town Hall, Barnsley, by Friday, 25th March, 1960.

Canvassing will disqualify.

A. E. GILFILLAN,
Town Clerk. 8851

CITY OF LEICESTER
EDUCATION COMMITTEE
LEICESTER COLLEGE OF ART
Principal: E. E. PULZEY, A.R.C.A., F.S.A.E.

SCHOOL OF BUILDING

Applications are invited for the post of LECTURER chiefly for the full-time and part-time courses preparing students for the examinations of the Royal Institution of Chartered Surveyors. Candidates should hold B.Sc. (Estate Management), A.R.I.C.S., or equivalent qualifications.

Applicants should state which of the following subjects they are able to teach:—Law of Property, Central and Local Government, Economics, Book-keeping, Law of Contract & Tort, Law of Dilapidations, Valuations, Town and Country Planning (Law and Procedure), London Building Acts and Bylaws.

Salary: Barnham Technical Scale—for men, £1,370-£35 to £1,550 p.a.

Forms of application may be obtained from the Registrar, to whom they should be returned, together with copies of two recent testimonials, within 14 days of the publication of this advertisement. 8882

COUNTY COUNCIL OF NORTHUMBERLAND
COUNTY ARCHITECT'S DEPARTMENT

Applications are invited from Architects who have passed the R.I.B.A. Final Examination, having considerable practical office experience, for the post of ASSISTANT ARCHITECT on the staff of this Department. Salary, according to qualifications and experience, on Special Grade £785-£1,070 per annum with prospects of promotion to higher grades within the office in due course.

The appointment will be subject to the provisions of the Local Government Superannuation Acts and the successful candidates will be required to pass a medical examination.

Applications, in writing, stating age, qualifications and previous experience, including any service with a Local Authority, together with the names and addresses of two referees to whom reference can be made, to be forwarded to the County Architect, County Hall, Newcastle upon Tyne, 1, within fourteen days of the publication of this notice. 8878

RURAL DISTRICT COUNCIL OF ROSS AND
WHITCHURCH
ASSISTANT IN THE DEPARTMENT OF THE
ARCHITECT & SURVEYOR

Applications are invited for the above appointment at a salary in accordance with Special Grade (£785 to £1,070 per annum). Applicants must be A.R.I.B.A. and should have had experience on housing work of a local authority.

The appointment will be subject to the National Scheme of Conditions of Service for Local Authorities' A.P.T., etc., Services, to the provisions of the Local Government Superannuation Acts and to the passing of a medical examination.

Applications, stating age, qualifications and experience, with the names of two referees, must be received by the undersigned not later than noon, on the 14th March, 1960.

H. B. REYNOLDS,
Clerk of the Council

Council Offices,
Woodside,
Ross-on-Wye,
Herefordshire. 8879

CITY OF OXFORD
CITY ARCHITECT AND PLANNING
OFFICER'S DEPARTMENT

Applications are invited for the following post:—

SENIOR ARCHITECTURAL ASSISTANTS,
A.P.T. Grade IV (£1,065-£1,220) (Grading under review).

Suitable housing accommodation, if required, will be provided by the Council for the above posts.

The successful applicants must be Members of the Royal Institute of British Architects and will be engaged mainly on educational and civic buildings. Applicants should have several years' experience and possess a wide knowledge of modern methods of construction and contract procedure and must be capable of carrying through contracts from sketch stage to completion with minimum supervision. A high standard of design ability and a keen interest in contemporary architecture are essential. Assistants are encouraged to control their own contracts from sketch design onwards.

The appointments will be subject to the National Conditions of Service and the successful candidates will be required to pass a medical examination.

Application forms to be obtained from the City Architect and Planning Officer, Town Hall, Oxford. Closing date: 25th March, 1960.

HARRY FLOWMAN,
Town Clerk. 8883

BRACKNELL DEVELOPMENT CORPORATION
Applications are invited for the post of ASSISTANT ARCHITECT, salary range £1,065-£1,220.

Applicants must be Corporate Members of the R.I.B.A. Superannuation schemes, medical examination. Housing available. Apply by 24th March, 1960, giving age, education and qualifications, experience and appointments held (with dates and salaries), and names of two referees to General Manager (A), Bracknell Development Corporation, Farley Hall, Bracknell, Berks. 8917

COUNTY BOROUGH OF WOLVERHAMPTON
CHIEF PLANNING ASSISTANT

Applications are invited for this appointment on the staff of the Borough Engineer and Planning Officer. Salary grade A.P.T. IV-£1,065-£1,220 per annum.

Superannuable post, medical examination N.J.C. conditions of service.

Housing accommodation may be provided.

Candidates should be Corporate Members of the Town Planning Institute and must have wide experience in all aspects of Town and Country Planning.

Particulars of the appointment may be obtained from the Borough Engineer, Town Hall, Wolverhampton, to whom applications should be submitted by 21st March, 1960. 8881

PADDINGTON BOROUGH COUNCIL
DRAUGHTSMAN (£640-£795)

Starting salary according to qualifications and experience. Suitable for probationer member R.I.B.A. Applications should state age, experience, present and past appointments, names of two referees, and should reach me by 21st March, 1960 (quoting A.460).

W. H. BENTLEY,
Town Clerk

Town Hall,
Paddington, W.2. 8881

BOROUGH OF NEWARK-ON-TRENT

ARCHITECTURAL ASSISTANT
Applications invited for the above appointment in the Borough Surveyor's Department at a salary according to experience in A.P.T. Grade III, £680-£1,065.
HOUSING ACCOMMODATION available if required.
Appointment subject to National Scheme of Conditions of Service, Superannuation Acts, and one month's notice on either side.
Applicants with experience in Municipal Housing in addition to other architectural work should submit their applications, stating age, qualifications, experience and names and addresses of two referees to the Borough Surveyor at the Municipal Buildings, Balderton Gate, Newark, by 15th March, 1960.

J. H. M. GREAVES,
Town Clerk.

Municipal Buildings,
Newark-on-Trent,
26th February, 1960.

8932

**ARCHITECTS
GLENROTHES DEVELOPMENT CORPORATION**

Architects (2) with A.R.I.B.A. required for the design and construction of Commercial and Shopping premises, Industrial Buildings and Housing. Salary grade rising to £1,375 per annum with placing according to age and experience.
Houses to rent available if required. Medical examinations under Superannuation Scheme. Application forms from Secretary and Legal Adviser, Glenrothes Development Corporation, Glenrothes, Fife, to be returned by 4th April, 1960.

8937

EAST KILBRIDE DEVELOPMENT CORPORATION

The Corporation invite applications for posts of DRAUGHTSMEN. Salary scale £595-£670 per annum with prospects of advancement. Candidates should have general experience of drawing office procedure and a particular ability in drawing maps and plans. The work will include compiling and maintaining statistical records for the Architectural Department. Commencing salary in accordance with experience, etc. Superannuation. Medical examination. Five-day week. A house flat will be made available if required. Application forms from the General Manager, Torrance House, East Kilbride, to whom completed forms should be returned not later than 15th March, 1960.

8808

CITY OF BELFAST

Applications are invited for the following posts:
EDUCATION DEPARTMENT

(a) ARCHITECT, CLASS I

Applicants must be registered and qualified by examination, and should be capable of supervising architectural staff. Preference given to those with experience in modern school design and construction. Salary: £1,010 x 6/40 x 50-£1,200 per annum.

(b) ARCHITECT, CLASS II

Applicants must be registered architects with experience in general design and construction of modern buildings. Salary: £825 x 6/35 x 40-£1,075 per annum.

Applicants must have passed the Intermediate Examination of the R.I.B.A., and should have a sound practical experience in general design and construction of modern buildings. Salary: £610 x 6/30 x 2/40 x 35-£905 per annum.

(d) ARCHITECTURAL ASSISTANT, CLASS II

(Temporary)
Applicants should have good general education and be neat draughtsmen. Experience in land surveying an advantage. Wages at the rate of £286 x 2/30 x 35 x 4/30 x 40 x 35-£575 per annum.

Commencing remuneration determined according to qualifications and experience. Superannuation contributions of approximately 6 per cent. of remuneration payable.
Canvassing will disqualify.

Application forms, etc., obtainable from Education Offices, 40, Academy Street. Completed applications must reach the undersigned by Friday, 25th March, 1960.

JOHN DUNLOP,
Town Clerk.

City Hall,
Belfast,
P.O. Box 234,
25th February, 1960.

8821

NORTH RIDING COUNTY COUNCIL

COUNTY ARCHITECT'S DEPARTMENT
Applications are invited for the appointment of an ASSISTANT ARCHITECT on the permanent staff who must have passed the Final R.I.B.A. Examination. Salary is Special Scale (£785-£1,070), point of entry will depend on experience.

The National Scheme of Conditions of Service and the Local Government Superannuation Acts apply, and a medical examination is required.

Forms of application are not being issued but application should state age, qualifications and experience, together with particulars of present and previous appointments and names and addresses of three persons to whom reference can be made, to be delivered to the undersigned not later than the 24th March, 1960.

Canvassing, directly or indirectly, will be deemed a disqualification and candidates should state in writing whether they are related to any member of, or senior officer under, the Council.

HUBERT THORNLEY,
Clerk of the County Council.

8830

THE UNIVERSITY OF LIVERPOOL

A Town Planning Draughtsman is required as TECHNICAL ASSISTANT in the Department of Civic Design. Skilled draughtsmanship essential, together with knowledge of maps and plans. Experience or qualifications in Town Planning desirable but not essential. Appointment within salary range £750 to £925 per annum. Applications in writing, quoting Reference No. 170 AJ, before 31st March, 1960, to the Registrar, The University, Liverpool, 3.

8845

EDINBURGH CORPORATION

DEPARTMENT OF THE CITY ARCHITECT
A PRINCIPAL ASSISTANT ARCHITECT is required to take charge of the section dealing with all educational buildings in the City.

The post is one requiring considerable capacity in design and construction; candidates should also be capable of carrying through a programme of redevelopment of existing schools.

Salary scale £1,200 x £50-£1,400, with possible placing based on experience.

Applications, giving age, qualifications, full details of experience and the names of two referees as to character, should be sent to the City Architect, City Chambers, Edinburgh 1, not later than 23rd March, 1960, marked "Staff-Confidential".

8824

**GLASGOW CORPORATION
ARCHITECTURAL AND PLANNING DEPARTMENT****PLANNING ASSISTANTS**

Applications are invited for posts as Planning Assistants, minimum qualification Final Examination of R.I.B.A. or T.P.I. Salary Scale £795-£1,240 per annum, with placing according to experience. The posts are permanent and superannuable, subject to medical examination.

Form of application may be obtained from the Principal Administrative Officer, 20, Trongate, Glasgow, C.1.

A. G. JURY,

City Architect and Planning Officer.

8803

COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE**OFFICE OF THE COUNTY ARCHITECT**

The Council requires SENIOR ASSISTANT ARCHITECTS in the salary grades shown below for their extensive and interesting building programmes which include schools, colleges, old people's and children's homes, clinics, ambulance, fire and police stations, and other public buildings. Architects appointed will be employed at the Central Office in Wakefield solely upon capital works dealing with building projects from sketch plans to completion.

N.C. Scale "A": £1,170-£1,390.
A.P.T. V: £1,220-£1,375.

Applications, stating age, qualifications, experience, present position, and giving names and addresses of three referees, to be sent to the undersigned, not later than Tuesday, 22nd March, 1960.

A. W. GLOVER, F.R.I.B.A.,
County Architect.

Bishopcarrth,
Westfield Road,
Wakefield.

8935

**LONDON COUNTY COUNCIL
HAMMERSMITH COLLEGE OF ART AND BUILDING**

Required as soon as possible, LECTURER in charge of Interior Design and Cabinet Making. Duties involve administration of Section with teaching for National Diploma in Design (Special level) and for I.B.D. Examinations.

Applicants should be suitably qualified, with industrial and teaching experience.

Salary-£1,370 x £35 to £1,550 plus London allowance of £38 or £51 according to age. Possibly entry above minimum if justified by experience and present position.

Application forms from Secretary at College, Lime Grove, Shepherd's Bush, W.12, to be returned within 14 days. (483.)

8938

Architectural Appointments Vacant

3s. per line: minimum 12s. Box Number, including forwarding replies 2s. extra.

ARCHITECTURAL ASSISTANTS. Intermediate and qualified, for medium sized varied London West End practice. Interesting contemporary work, opportunity to exercise initiative. Salary range £700 to £1,200. Apply Box 8740.

BRIGHT young ASSISTANTS wanted urgently to work on a wide range of contemporary projects. Excellent prospects for men with enthusiasm and initiative. Salary range £400-£800 according to experience and ability. Write or telephone Derby 49287. Morrison & Partners, St. Alkmunds House, 103, Belper Road, Derby. 8741

ARCHITECTURAL ASSISTANT required. Design ability and capable of handling projects to completion. Interesting work on hand. Write stating experience and salary required. Illingworth, Son & Grisdale, 15, Sunbridge Road, Bradford, Yorks. 8742

SIR JOHN BURNET TAIT & PARTNERS require additional STAFF for their design section. Salaries £1,000 to £1,500 per annum according to ability. Applicants should have experience in the development of new schemes and a talent for design generally. Medical and Pension Schemes. Luncheon vouchers. Reply personally to Gordon Tait. Telephone LAngham 3826, 8705

QUALIFIED and unqualified Senior and Junior ARCHITECTURAL ASSISTANTS required. Salaries by arrangement. After qualifying period a bonus scheme is in operation, together with a non-contributory Pension and Life Assurance scheme. Telephone CHANCERY 3526 or write to Woodroffe, Buchanan & Coulter, 5, Bedford Row, W.C.1. 8708

DESIGN RESEARCH UNIT requires JUNIOR for architectural drawing office. Some drawing and office experience and interest in design. £450-£550 p.a. Apply in writing: 37, Duke Street, London, W.1. 8713

INTERMEDIATE ASSISTANT required for recently established West End practice. Box 8748

EXPERIENCED ASSISTANT required in London Office. Write giving particulars to Box 8758.

RAMSEY, MURRAY, WHITE & WARD require a qualified ASSISTANT. Salary according to experience. Apply to the Secretary, 32, Wigmore Street, London, W.1. 8759

ASSISTANT ARCHITECT, Final standard, required; also ARCHITECTURAL ASSISTANT, Intermediate standard, for West End Architect's Office, for Hospital, Commercial and Overseas projects. Pension scheme and luncheon vouchers. Salary by arrangement. Telephone LAngham 4091 for appointment. 8767

TWO ARCHITECTURAL ASSISTANTS required-Intermediate R.I.B.A. standard-who have had good office experience. Salary £600-£800 according to experience. Housing accommodation could be provided. Reply, giving particulars of age and experience and salary required, to: Francis W. Keyworth, L.R.I.B.A., 20, Park Road, Melton Mowbray, and 31, Friar Lane, Leicester. 8776

ARCHITECTURAL ASSISTANTS required for private practice LONDON for interesting and varied work. Applicants should be of Intermediate standard, with office and survey experience. Salary by arrangement. Write giving brief particulars, present salary, age, etc. Box 8777.

ASSISTANT ARCHITECT wanted in new Chelmsford office by well established London firm, age 22/35. Intermediate standard at least. Salary range £500/£590 according to qualifications. Interesting and varied work Home Counties and London area. Apply Ganton & Ganton, Empire House, St. Martins le Grand, London, E.C.1. 8780

ROBERT J. WOOD & PARTNERS require post Intermediate ASSISTANTS for their Bromley office. Telephone: RAvenbourne 1083. 8784

ASSISTANT required. Write Eric Lyons, O.R.E., F.R.I.B.A., M.S.I.A., Mill House, Bridge Road, Hampton Court, Surrey. 8671

F. R. BATES & SON, F.A.R.I.B.A., Chartered Architects, 70, High Street, Newport, require ARCHITECTS/ASSISTANT ARCHITECTS for their Newport and Cardiff Offices. Interesting and varied work on Churches, Schools, Hospitals, etc. Scope for initiative and responsibility in design and site supervision. Graded Salary System: In the range £750-£1,100 (according to age and experience). Saturday rota and car mileage allowance. Write above address or telephone NEWPORT 58253/4. 8670

ARCHITECTURAL ASSISTANT required in Company Architect's Department to work on an interesting industrial and commercial building programme. Good working conditions. Fares paid for evening classes. Five-day week, pension scheme. Applicants with three years' office experience are asked to write, giving particulars of age, experience and salary required, to Company Architects Coates Brothers & Company Ltd., St. Mary Cray, Kent. 8674

ARCHITECTURAL ASSISTANT of Intermediate standard or thereabouts required for varied work on housing and industrial building. Applicant should be capable of undertaking projects with a minimum of supervision. Write, giving full particulars of experience and salary required to Shepperdson & Dixon, 2, Museum Street, Ipswich. 8679

SENIOR and Intermediate standard ASSISTANT required for position which offers prospects of early advancement. Interesting work mainly on Department Stores and Ecclesiastical buildings. Apply stating experience and salary required, to George Baines & Syborn, A.R.I.B.A., 121, Victoria Street, Westminster, S.W.1. 8649

C. H. ELSOM & PARTNERS require ASSISTANTS for work on theatres, laboratories, shops, stores and town centre redevelopment. Apply to 10, Lower Grosvenor Place, S.W.1. VIC. 4304. 8688

ARCHITECTURAL ASSISTANT required. Intermediate/Final standard. Varied and interesting work. Good draughtsmanship, sound knowledge of construction and ability to manage jobs, essential. Five-day week. Apply, stating age, experience and salary required, to George Lowe & Partner, 4, High Street, CROYDON 3608/9. 8645

TAYLOR, YOUNG & PARTNERS, MANCHESTER, require ASSISTANTS for work on schools, hospitals and other projects. Pension scheme. Salary up to £1,200 per annum according to ability and experience. Apply in writing to 195, Oxford Road, Manchester, 13. 8659

W. S. HATTRELL & PARTNERS

Architects COVENTRY

invite applications for the following vacancies:—
(a) SENIOR ASSISTANTS. (Salary £1,000 minimum). Must be fully qualified architects with some years' office experience, capable of taking a large measure of responsibility for a wide range of contracts.
(b) ASSISTANTS. (Salary £750-£1,000.) Should be of Intermediate-Final standard, capable of preparing full working drawings, specifications, etc., under supervision, and of taking responsibility for smaller contracts.
(c) JUNIOR ARCHITECTURAL ASSISTANTS. (Salary up to £750.) Up to Intermediate R.I.B.A. standard. Opportunities to gain experience on a wide range of contracts.
Progressive salary depending on ability. Pension Scheme. Five-day week. Travelling expenses paid to interviewed applicants.
HOUSE AVAILABLE.
Replies to 1, Queen's Road, Coventry. 8685

W. S. HATTRELL & PARTNERS

Architects LONDON

invite applications for the following vacancies:—
(a) SENIOR ASSISTANTS. (Salary £1,000 minimum). Must be fully qualified architects with some years' office experience, capable of taking a large measure of responsibility for a wide range of contracts.
(b) ASSISTANTS. (Salary £750-£1,000.) Should be of Intermediate-Final standard, capable of preparing full working drawings, specifications, etc., under supervision.
(c) JUNIOR ARCHITECTURAL ASSISTANTS. (Salary up to £750.) Up to Intermediate R.I.B.A. standard. Opportunities to gain experience on a wide range of contracts.
Progressive salary depending on ability. Pension Scheme. Five-day week. Travelling expenses paid to interviewed applicants.
Replies to 21, Cleveland Place, St. James's, S.W.1. 8686

W. S. HATTRELL & PARTNERS

Architects MANCHESTER

invite applications for the following vacancies:—
(a) SENIOR ASSISTANTS. (Salary £1,000 minimum). Must be fully qualified architects with some years' office experience, capable of taking a large measure of responsibility for a wide range of contracts.
(b) ASSISTANTS. (Salary £750-£1,000.) Should be of Intermediate-Final standard, capable of preparing full working drawings, specifications, etc., under supervision, and of taking responsibility for smaller contracts.
(c) JUNIOR ARCHITECTURAL ASSISTANTS. (Salary up to £750.) Up to Intermediate R.I.B.A. standard. Opportunities to gain experience on a wide range of contracts.
Progressive salary depending on ability. Pension Scheme. Five-day week. Travelling expenses paid to interviewed applicants.
Replies to 15, Piccadilly, Manchester, 1. 8687

TWO young partners with very busy and varied expanding practice, urgently require an ASSISTANT ARCHITECT accustomed to responsibility and with real design ability. Write giving full details of experience, qualifications, age and salary required. All letters answered. Silverton & Welton, A./R.I.B.A., Dip.Arch., 16, Weston Road, Southend-on-Sea, Essex. 8697

NORTH LONDON. Established practice requires ASSISTANT R.I.B.A. Intermediate standard. Principally industrial and commercial work. Five-day week. Please send full particulars and salary required to Box 8599 or telephone PAL 1186/7.

ARCHITECTURAL ASSISTANTS required in a new and expanding Architects Department on development work for housing, multi-storey flats and shop design.
Applicants should have a sound knowledge of construction and be able to prepare working details.
Salary will be commensurate with ability and experience.
Enthusiasm will be duly rewarded.
Applicants should apply giving full details to:—
The Chief Architect,
A. J. Wait & Co. Ltd.,
Wellington Crescent,
New Malden, Surrey. 8634

MAX LOCK & PARTNERS require ARCHITECT. Final standard, with practical experience, for their Bedford Office. 5-day week. Apply in writing to G. W. King, 5a Harpur Street, Bedford. 8633

DEVEREUX & DAVIES require capable and enthusiastic ARCHITECTURAL ASSISTANTS salary £750 per annum or according to experience and ability. 3 Gower St., Bedford Sq., London, W.C.1. 8628

DEVEREUX & DAVIES require capable and enthusiastic ASSISTANT ARCHITECTS salary £1,000 per annum or according to experience and ability. 3, Gower St., Bedford Sq., London, W.C.1. 8629

ARCHITECTURAL ASSISTANTS. Intermediate or Final standard, required by Borsy, Rigby Childs & Glover. Interesting tropical work. Salary £750 to £1,000, according to experience. 6, Welbeck Street, W.1. Tel.: WELbeck 1681. 8512

NEW ZEALAND major Architectural Practice, chiefly engaged Commercial and Bank work, requires: (a) ASSISTANT ARCHITECT, with A.I.B.A. plus subsequent experience, salary range £1,050-£1,200; and (b) ARCHITECTURAL ASSISTANT of approximately R.I.B.A. Intermediate standard, with about six years' sound training, range £800-£900. Capability governs rate applicable, commencing salaries subject six monthly increase according progress. Good opportunity enterprising capable men, either single or married considered, housing prospects for later, three years' assured engagement, applicants' passage paid subject minor conditions. Apply Airmail with snapshot, personal and experience details, small recent eighth working drawing, to Mitchell & Mitchell and Partners, P.O. Box 187, Wellington, New Zealand. 8628

ARCHITECTURAL ASSISTANTS AND DRAUGHTSMEN with initiative required for interesting and varied work on new Power and Pump Houses and Industrial buildings. Architectural Assistants should be of Intermediate to Final R.I.B.A. standard with several years' experience and capable of preparing working drawings and specifications with minimum supervision. Draughtsmen should have a good training in modern building construction and have had at least four years' experience in an architect's office. Pension scheme, five-day week. Luncheon vouchers. Apply with full particulars to J. D. & D. Watson, 67, Tufton Street, Westminster, S.W.1. 8541

LEWELLYN SMITH & WATERS require experienced ASSISTANTS to work on an interesting and varied programme of large and small projects. Salary according to ability in the range of £800-£1,200 in return for a sound knowledge of construction and an interest in good draughtsmanship. L.V., Pension Scheme. Please apply, with details of previous experience to 133, Old Brompton Road, S.W.7. Also vacancy in Worcester Office for experienced Assistants of R.I.B.A. Intermediate standard. Apply to 33, Foregate Street, Worcester. 8549

COMPETENCE essential. Qualifications secondary. ASSISTANT capable of supervising small contracts in varied practice. Levitt, Commerce House, Higgleswade, Beds. 8546

SENIOR ARCHITECTURAL ASSISTANT required in busy practice with interesting and varied projects in hand. Five-day week. Salary £800-£1,000. Graham Crump & Denis Crump, F.A./R.I.B.A., 43, George Street, Croydon. 8544

ARCHITECTURAL ASSISTANTS required in Croydon office. Intermediate standard with several years' office experience. Interesting and varied work. Salary £600-£800 according to abilities. Five-day week. Graham Crump & Denis Crump, F.A./R.I.B.A., 43, George Street. 8543

WEIGHTMAN & BULLEN require an experienced SENIOR ARCHITECT to handle large school projects from sketch design to completion. Opportunity for responsible individual to exercise initiative in progressive atmosphere. Starting salary £1,200 or more for above average ability, bonus and pension scheme. 5-day week. Send full particulars in confidence to 76, Rodney Street, Liverpool. 8530

ARCHITECTURAL ASSISTANT required for university laboratories and other buildings. Good draughtsman with thorough knowledge of building construction and some office experience. Reply giving details of experience and salary desired to Garoe & Partners, 16, Great College Street, Westminster. 8525

E. NORMAN-BAILEY & PARTNERS urgently require ARCHITECTURAL ASSISTANTS for large scale schemes. Intermediate and Final standard. Salaries according to qualifications and experience. Ring VIC 7088 for appointment. 8522

TWO JUNIOR ARCHITECTURAL ASSISTANTS required for busy general practice. Five-day week. Consideration given to assistants wishing to continue part-time architectural study. Good prospects for right persons. Salary by arrangement. Write stating age and experience to Richardson, Son & Knowles, A./R.I.B.A., 127, High Street, Rickmansworth, Herts. (Tel. Rickmansworth 3143.) 8572

ARCHITECTURAL ASSISTANTS of Intermediate standard required in London office of Architects with large and varied practice. Comfortable working conditions. Five-day week. Box 8577.

INTERMEDIATE to final standard ASSISTANTS wanted. Salary £600-£900 according to qualifications and experience. Pension scheme. A. D. Cooke, A.R.I.B.A., 32, Queen Street, Ipswich. 8771

F. W. WOOLWORTH & CO. LTD.—Architects' Department—Kensington District Office. Applications are invited for the following appointment: ARCHITECTURAL ASSISTANT of Intermediate R.I.B.A. standard, capable of carrying out surveys, preparing sketch schemes, working drawings and details. The appointment is pensionable. Five-day week. Canteen facilities. Application, stating age, experience, qualifications and salary, to District Architect, F. W. Woolworth & Co. Ltd., 26/40, Kensington High Street, London, W.8. 8744

W. H. WATKINS, GRAY & PARTNERS require ASSISTANTS of Intermediate and Final standard. Pension scheme and luncheon vouchers. Salary range £700 to £900. Apply 57, Catherine Place, London, S.W.1. 8722

ARCHITECTURAL ASSISTANTS required in Architect's Department, Groves & Whitall Limited, Regent Road Brewery, Salford, 5, Lancs. (1) CHIEF ASSISTANT approaching Final R.I.B.A. to act as deputy to Company Architect. Must be experienced and have drive, initiative and good design ability.

(2) ASSISTANT, with R.I.B.A. Intermediate (or part) with experience and with ability to handle jobs with minimum supervision.
Usual facilities for study, well equipped office, canteen and pension scheme.
Apply in writing to Company Architect, stating age, experience, qualifications and salary required.

THREE ASSISTANTS required for long established and expanding Architectural practice in Yorkshire on public and private work. Many interesting projects in hand. Should have contemporary outlook and be able to work on own initiative and preferably be car drivers. Housing accommodation will be provided. Apply giving full particulars and salary required, to Dyson, Cawthorne and Cole, 25, Regent Street, Barnsley.

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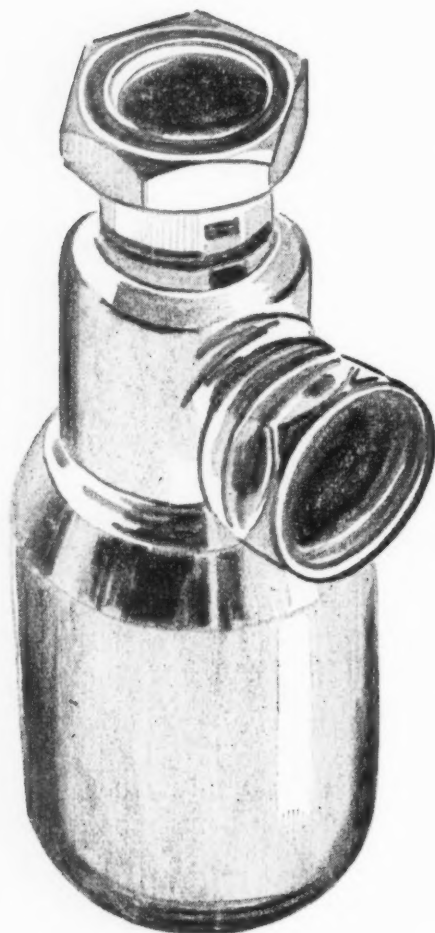
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