

THE ARCHITECTS' JOURNAL



standard contents

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

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Details of Planning, Construction, Finishes and Costs

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Wanted and Vacant

No. 3201]

[VOL. 124

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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhamstead, Herts.	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 8738
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Reliance 7611, Ext. 1706
BCC	British Colour Council. 13, Portman Square, W.1.	Museum 5400
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Welbeck 4185
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Ealing 9621
BDA	British Door Association. 10, The Boltons, S.W.10.	Redditch 716
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Fremantle 8494
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Temple Bar 9434
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Glasgow Central 2891
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Chancery 7772
BOT	Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Langham 2785
BRS	Building Research Station. Bucknalls Lane, Watford	Trafalgar 8855
BSA	Building Societies Association. 14, Park Street, W.1.	Garston 2246
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 0515
BTE	Building Trades Exhibition. 32, Millbank, S.W.1.	Mayfair 9000
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Tate Gallery 8134
CAS	County Architects' Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Newport 65491
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Chichester 3001
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Sloane 5255
CDA	Copper Development Association. Kendalls Hall, Radlett, Herts.	Regent 1284
CIAM	Congrès Internationaux d'Architecture Moderne. Dolderstr. 7, Zurich, Switzerland.	Radlett 5616
COID	Council of Industrial Design. 28, Haymarket, S.W.1.	Dolderstr. 7, Zurich, Switzerland.
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.1.	Trafalgar 8000
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 4280
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Sloane 9116
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reading 72255
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.
DPT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1.	Reliance 7611
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Whitehall 0540
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	Trafalgar 8855
FAS	Faculty of Architects and Surveyors. 68, Gloucester Place, W.1.	Sackville House, 40, Piccadilly, W.1.
FASS	Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, S.W.1.	Regent 4448
FBBDO	Fibre Building Board Development Organization, Ltd. (FIDOR) 47, Princes Gate, Kensington, S.W.7.	Abbey 7232
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Princes Gate, Kensington, S.W.7.
FC	Forestry Commission. 25, Savile Row, W.1.	47, Princes Gate, Kensington, S.W.7.
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Whitehall 6711
FDMA	The Flush Door Manufacturers Association Ltd., Trowell, Nottingham.	Regent 0221
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Sloane 1002
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Ilkeston 623
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Ulverston 201
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.
GBPA	Gypsum Building Products Association, 11, Ironmonger Lane, E.C.2.	Chancery 7583
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Whitehall 3902
GG	Georgian Group. 16, Hanover Square, W.1.	Langham 4341
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Monarch 8888
IAAS	Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1.	Sloane 4554
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Mayfair 5454
ICE	Institution of Civil Engineers. 1, Great George Street, S.W.1.	Whitehall 2881
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2.	Belgravia 3755
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Grosvenor 6186
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Whitehall 4577

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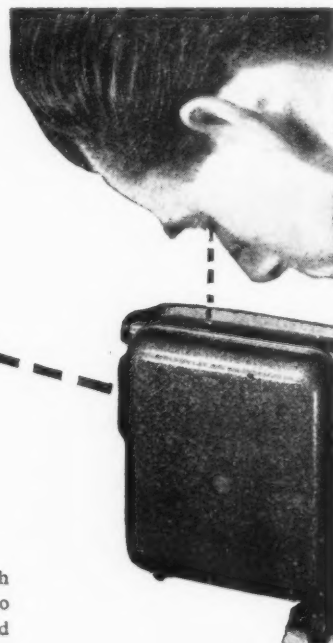
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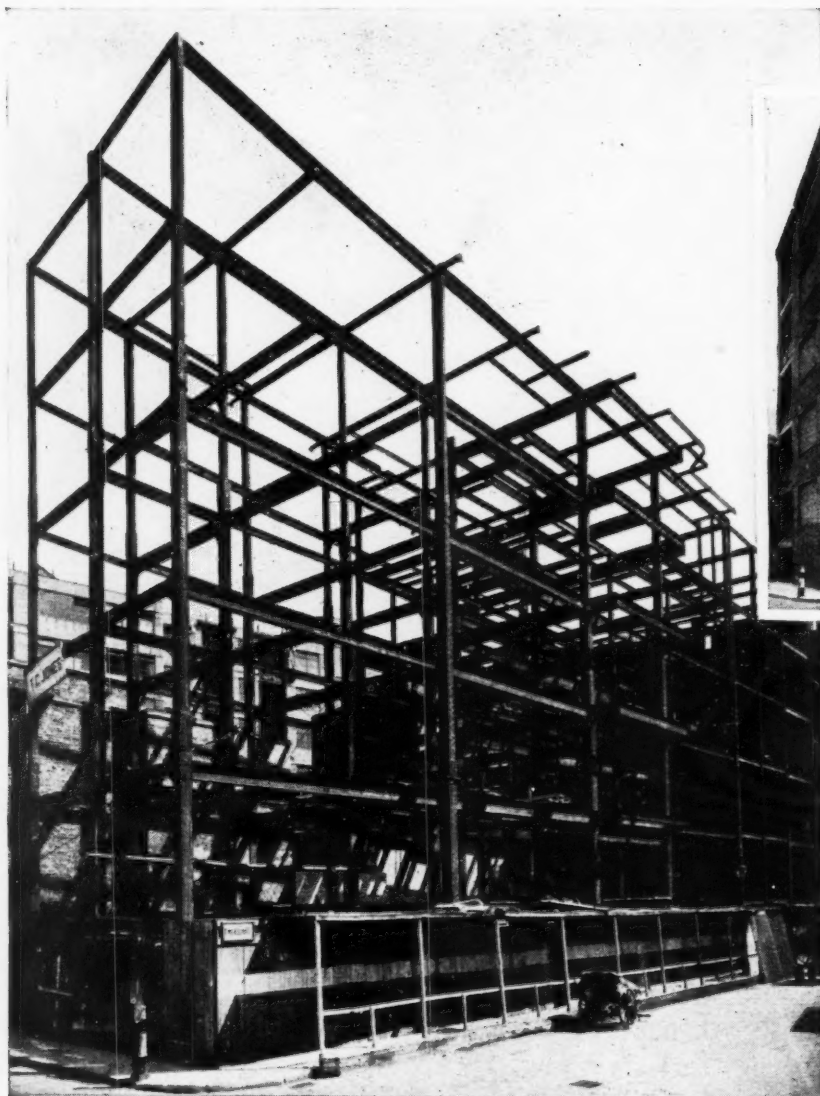
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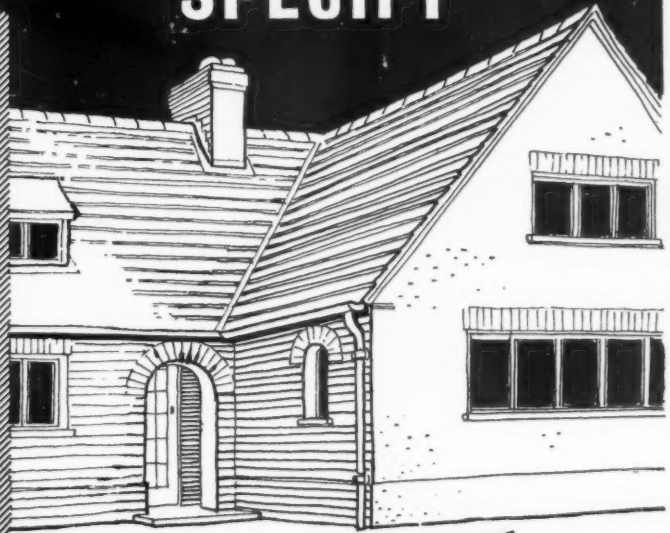
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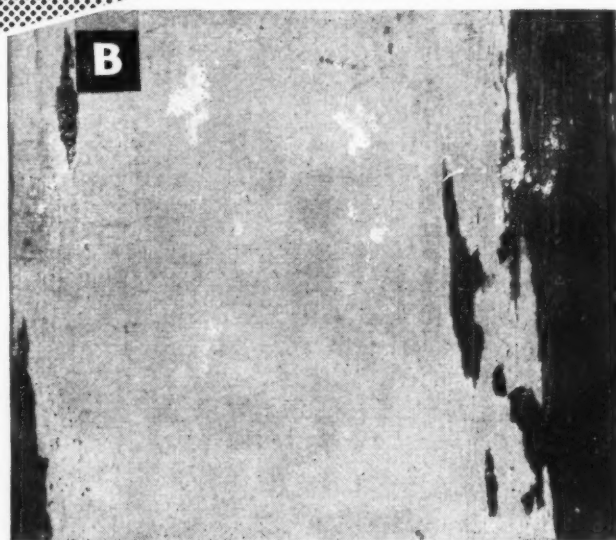
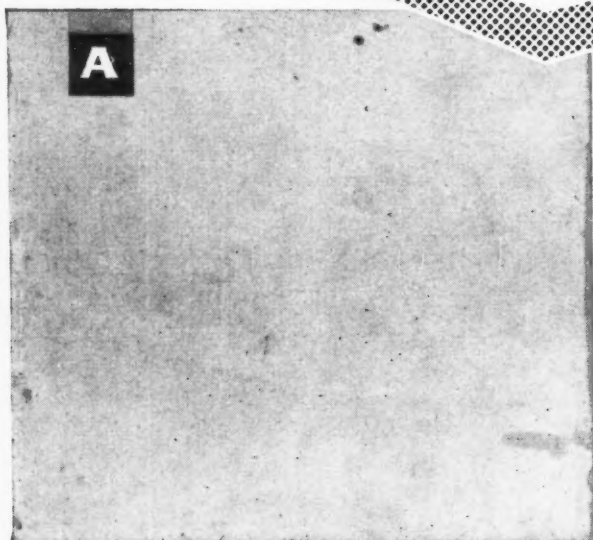
These two identical panels of wood were treated (A) with the Kinslac All-Alkyd System and (B) with the usual oil primer and alkyd undercoat and finish, and both panels were exposed to the elements for a period of 9 years. The photographs (slightly enlarged) speak for themselves.

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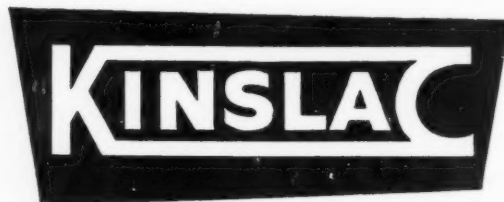


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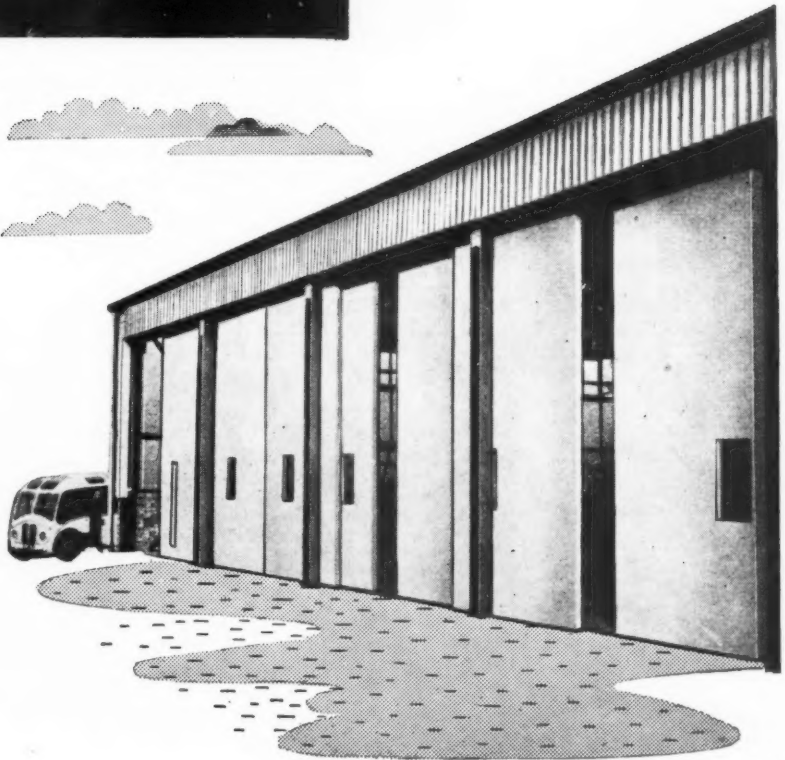


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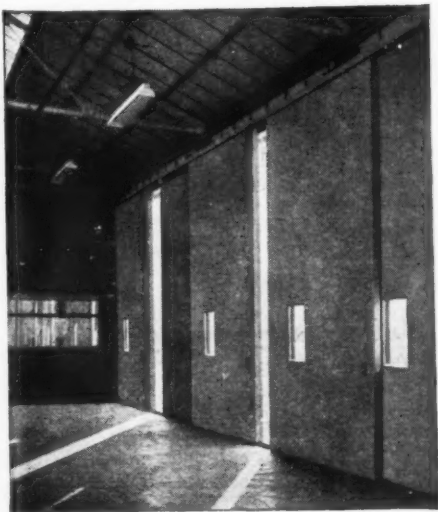
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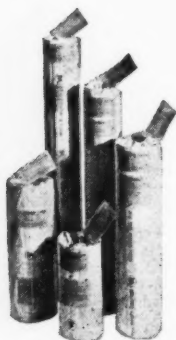


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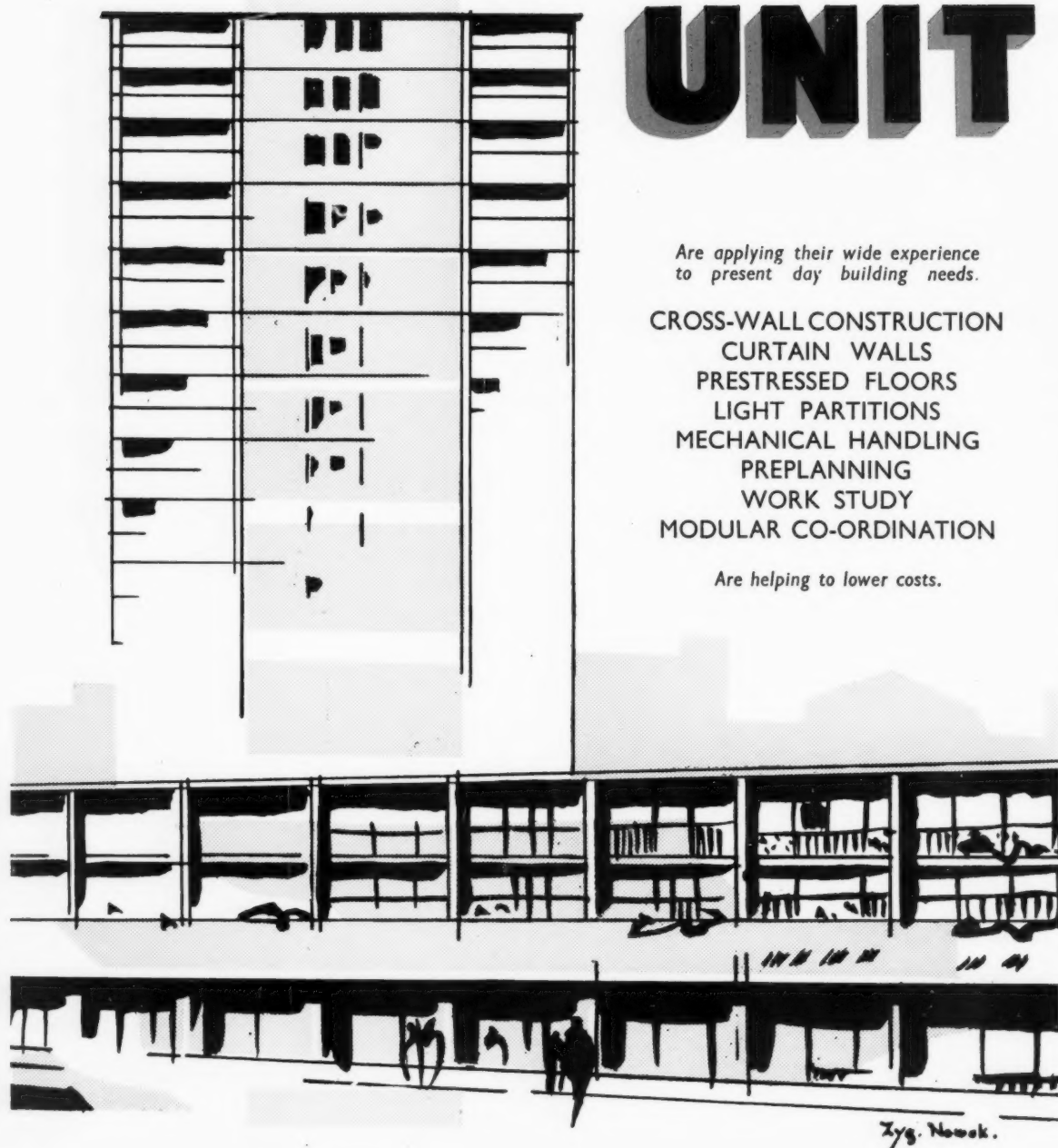
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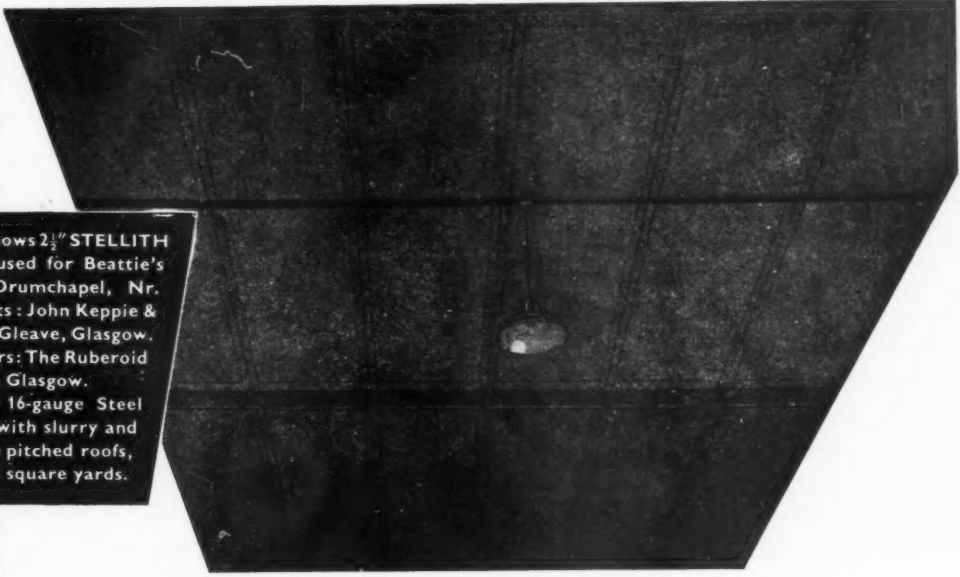
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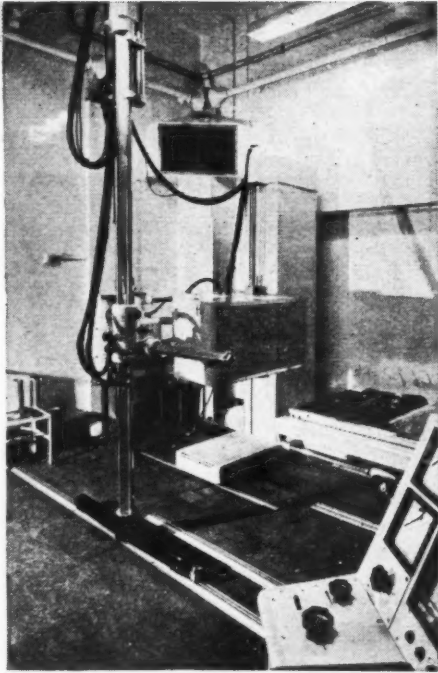
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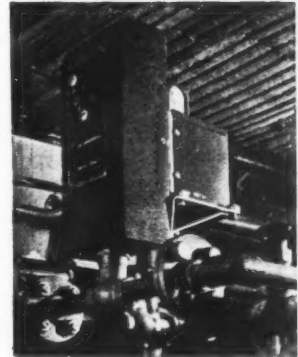


Part of X-Ray Diagnostic Department at Westminster Hospital.



Electronic Control Panels in Plant Room.

Modulating Motorized Valve on Steam Supply to Reheater.



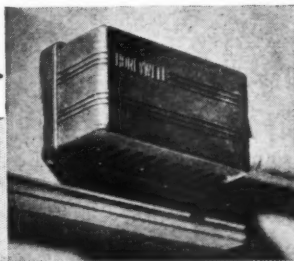
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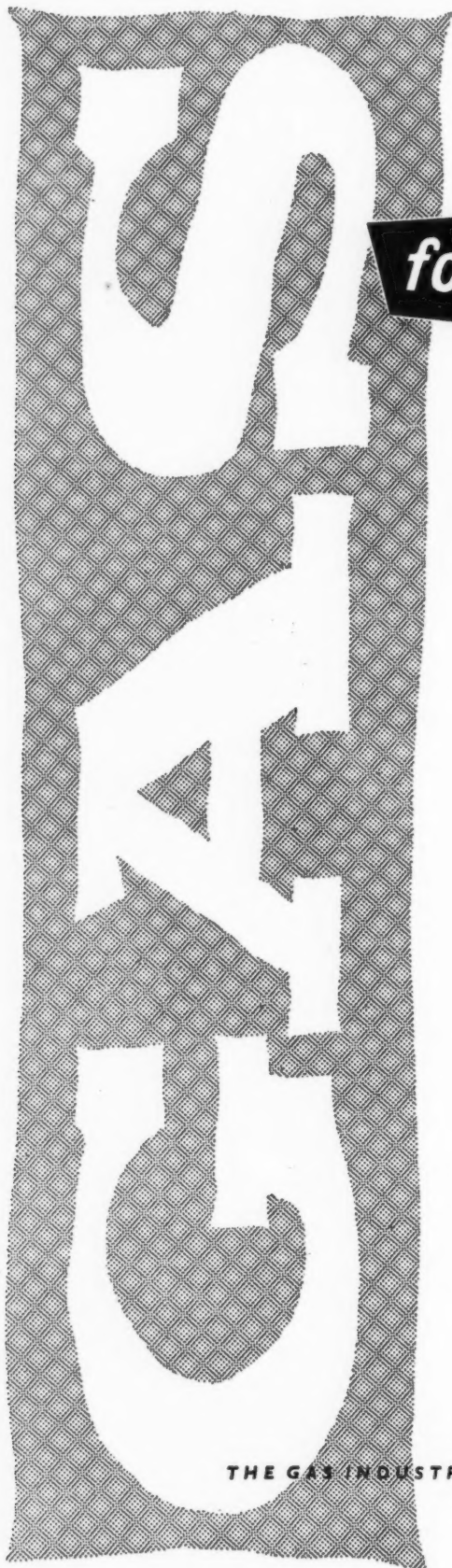


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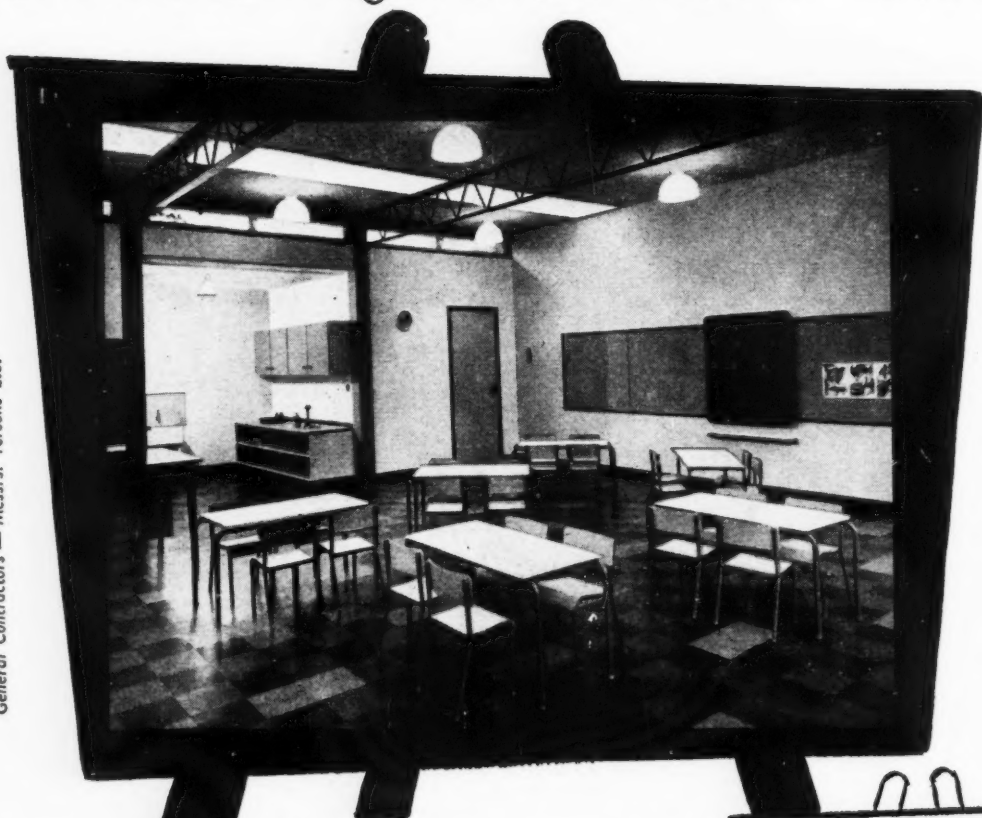


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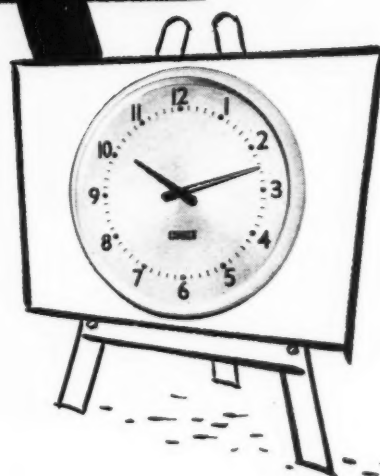
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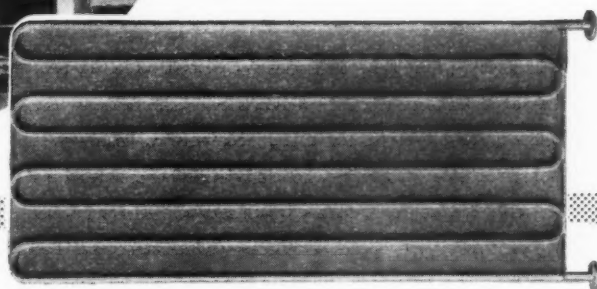
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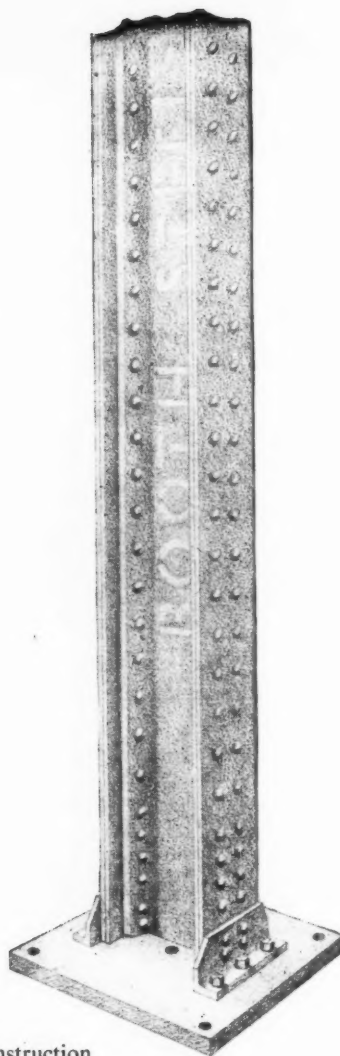
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B.P. 78



No hidden errors...

Schoolmasters may sometimes consign their pupils to the
nether regions though not usually so literally as this. In construction
work of any kind it is always the undiscovered fault which produces unexpected
consternation at a moment's notice. That is why it's better to build with
steel—steel which has all its connections clearly visible, and into which
no hidden errors can creep to destroy its security.



better build it with **BOOTH** *Steelwork*

JOHN BOOTH & SONS (BOLTON) LTD., HULTON STEELWORKS, BOLTON

Telephone: BOLTON 1195

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YOU CAN NOW BUY

CANADIAN DOUGLAS FIR PLYWOOD

—every panel bonded with Phenolic Formaldehyde Glue!

Engineers, architects, contractors and master builders who have once used waterproof Douglas Fir Plywood continue to specify and buy this versatile material. Standard 8' x 4' panels are available in grades and thicknesses suitable for most applications—special sizes can be supplied to your order.

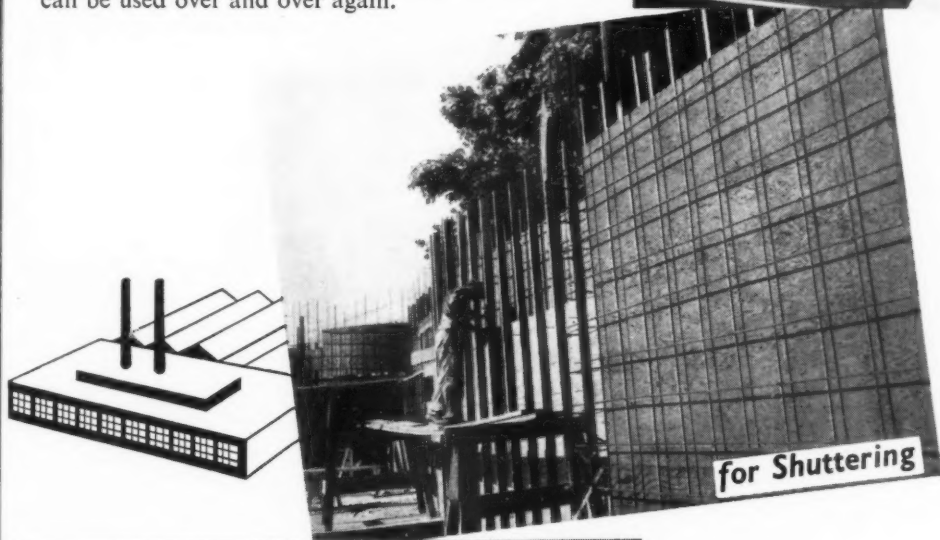
An excellent flooring and ideal base for linoleum or carpet. A single panel covers 32 square feet—requires less nailing—less handling.

Its high strength/weight ratio and diaphragm action will add strength and rigidity to the structure you are building.

Properly designed Douglas Fir Plywood concrete shuttering produces superior concrete finishes and can be used over and over again.



for Flooring



for Shuttering



for Roof Sheathing

FOR FURTHER INFORMATION concerning Canadian woods contact The Commercial Counsellor (Timber), Canada House, Trafalgar Sq., London, S.W.1

Canadian Douglas Fir Plywood is :

Easy to handle Speedy to use

Split-proof Dimensionally stable,

Bonded with Phenolic Formaldehyde Glue

This advertisement is one of a series featuring Canadian Spruce, White Pine, Western Red Cedar, Red Pine and Pacific Coast Hemlock.

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It's infuriating to have all one's beautiful ideas on interior decoration ruined by ugly, old-fashioned heating equipment. It's equally infuriating to the owner to have the newly decorated walls disfigured with dirty streaks.



The solution is simple. Specify 'Copperad' Convectors. They will adequately warm offices, showrooms, private houses and flats without in any way detracting from the appearance.

Simply and beautifully designed, 'Copperad' Convectors are thoroughly efficient and require the minimum of attention.

*May we tell you more
about Copperad Convectors?*

Copperad

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- ★ Avoids rotting timber
- ★ No painting required
- ★ Elegant, distinctive eaves line
- ★ Guaranteed lining service

**at
LOWER
COST**

A saving of at least
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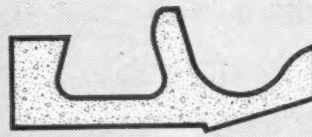
TYPE P



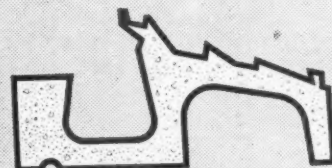
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TYPE H



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Technical Literature today

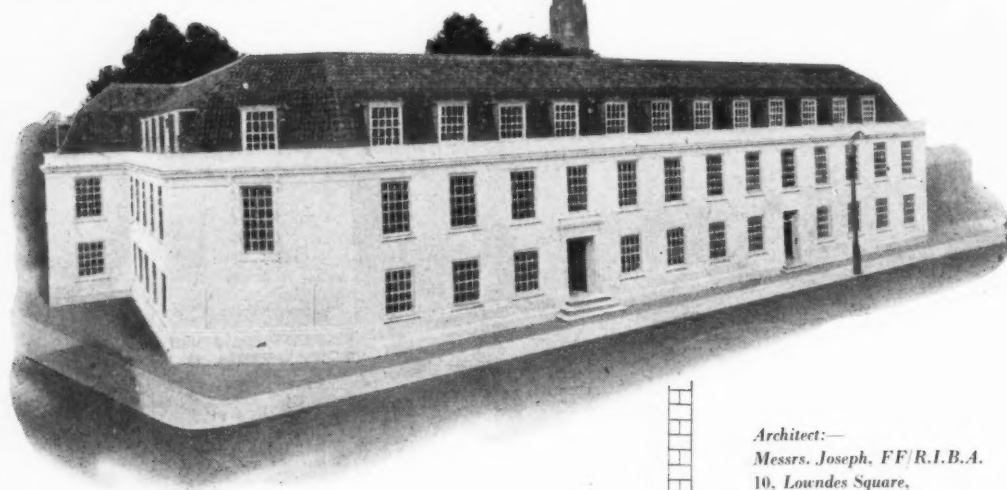
FINLOCK GUTTERS LTD.

Finlock House, Frant Road, Tunbridge Wells, Kent.

Telephone: Tunbridge Wells 3396/9

Works at:
Southborough, Kent; Royston, Herts; Cwmbran, S. Wales; Crewkerne, Somerset; Leeds, Yorks; Wakefield, Yorks; Musselburgh, Scotland; Belfast, N. Ireland.

LIGNACITE *at Salisbury*



The new N.A.A.F.I. at Salisbury, in the construction of which approximately 6,000 yards super of Lignacite Blocks were used. This is a further example of the wide variety of buildings, public or private, large or small, for which Lignacite Blocks are proving their superiority.

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Contractors:—
Messrs. Lavender McMillan Ltd.
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● IMPROVES INSULATION

Lignacite Blocks provide excellent sound and heat insulation, the latter showing a recurring saving over the years.

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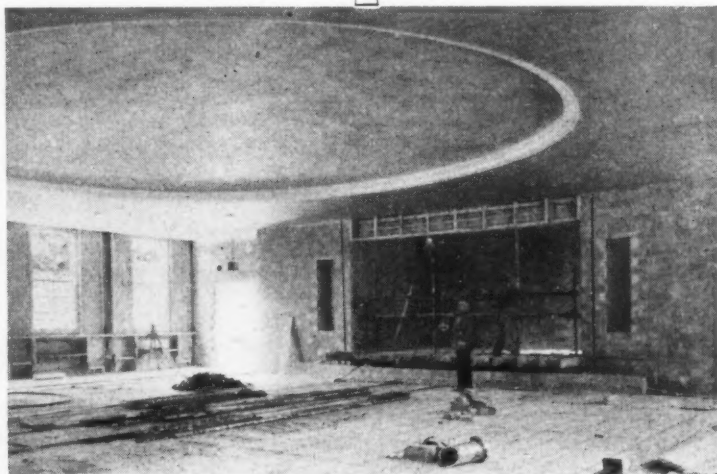
A recent Fire Resistance Test conclusively proved the stability, integrity and insulation value of Lignacite. A non load-bearing Lignacite wall fulfilled the test requirements of B.S. 476/1953, providing fire resistance of the four-hour grade.

● SAVES LABOUR —

REDUCES WEIGHT

Lignacite Blocks can be laid in less than half the time of Brickwork and can be sawn, chiselled, drilled, channelled or bolted. Lignacite Blocks are half the weight of concrete, yet load-bearing to all domestic requirements.

Illustrated brochure on request



Interior of N.A.A.F.I., Salisbury, under construction

LIGNACITE

TRADE MARK

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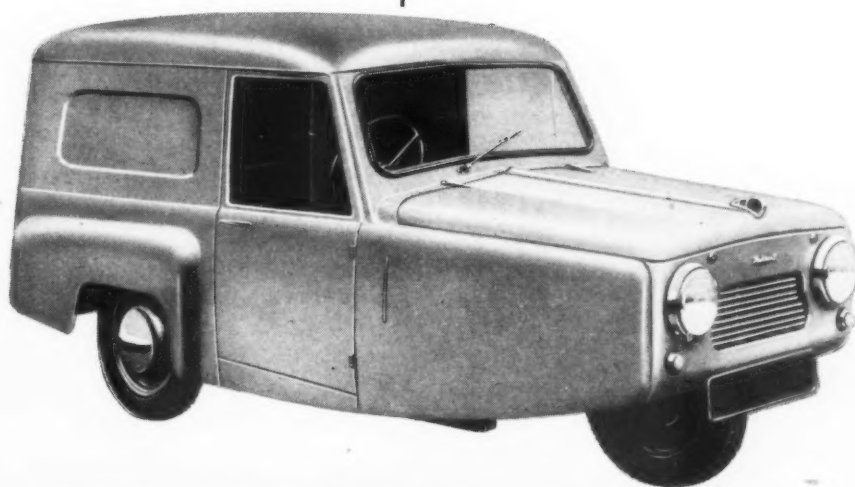
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Telephone: Fordingbridge 2177

Moulding the future...

Three wheels mean £5 tax instead of £12-10. if the van weighs less than 8 cwt. But... install a sturdy chassis, a 4-cylinder, water-cooled engine, a 4-speed and reverse gear box, a car-type rear axle with differential and 3 car size wheels—and what have you left for body weight! And come to that body cost! The bright answer is F.R.P.—as applied to this 5-cwt van by the Reliant Engineering Co. (Tamworth) Ltd. This tough little customer

has a featherweight body with a heavyweight's strength. Its many curved panels, which would have cost a fortune to form by hand, were perfectly and simply moulded. There you have Fibreglass to the core!

Fibreglass have an advisory service which is expert, confidential and free.



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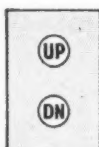
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● ELECTRIC LIFT INFORMATION

H & C automatic **COLLECTIVE**

LIFTS are needed in busy buildings

Press the Landing button



and the nearest car travelling in the

required direction will stop and the doors will open for you to enter.

You then press the car button

want, and on reaching that floor,

will open for you to alight ...

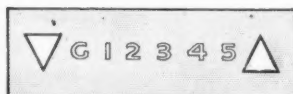


corresponding to the floor you

the lift will stop and the doors

That's all there is to it!

The indicator in the car



tells you when you've arrived.



Remember! Other people are also pressing buttons.

Going up, coming down. This floor, that floor.

But you cannot flurry the H & C automatic **COLLECTIVE** lift.

It remembers every instruction and deals with every UP call

on the way up and every DOWN call on the way down.

It's **COLLECTIVE**

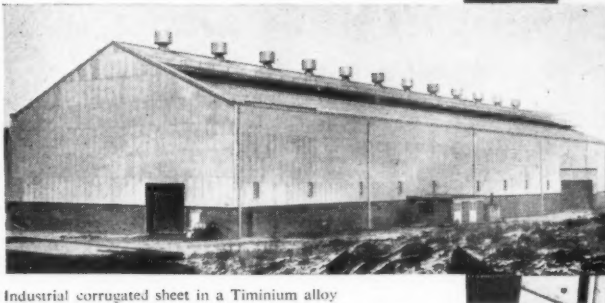
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Timinium^{*} was chosen

Not only for its business-like, clean-cut appearance was Timinium alloy sheet chosen. Experience has shown that no painting and virtually no maintenance during a long life are needed even in a concentrated industrial atmosphere. Timinium alloy protects itself. Further economies are made by reduced fuel costs: the low thermal transmittance of aluminium sheet cuts heat losses through the structure by a half, and sometimes by a third, of those which have been recorded when other common materials are used. Roofing is one obviously good way of building with aluminium, cladding another.

Aluminium has many applications, new and traditional, in the architecture of today, but there are so many exciting possibilities for the future. The Development Department of T I Aluminium Ltd., will be pleased to give advice.

^{*} *A fully comprehensive range of wrought Aluminium alloys purpose-produced by T I Aluminium Ltd., to meet the exacting demands of modern industry and to conform to British Standards and associated specifications.*



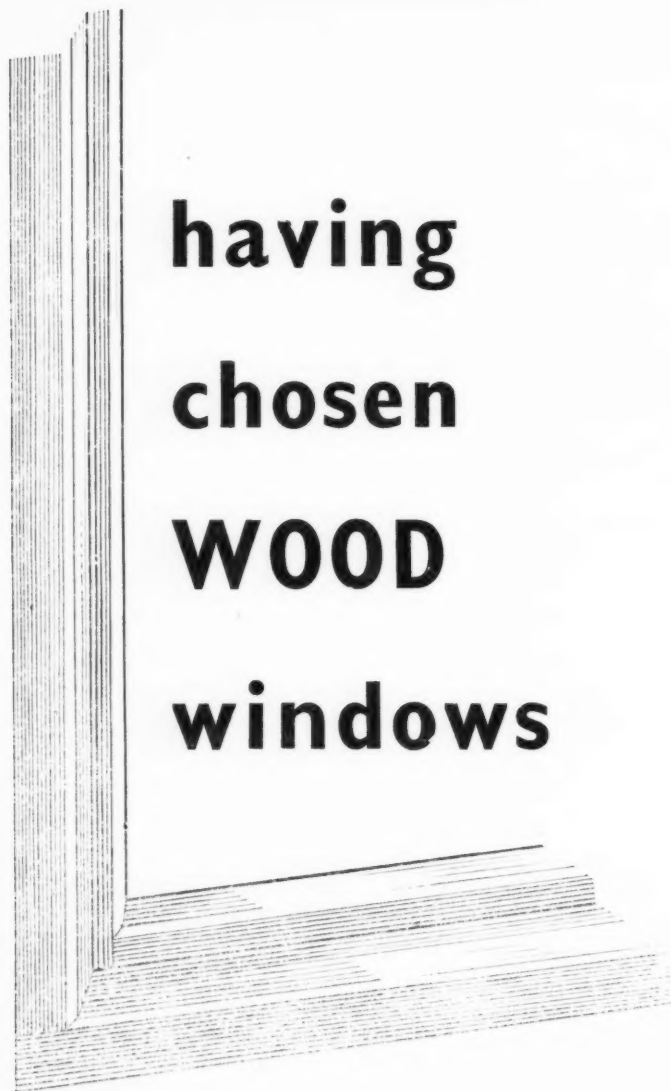
Industrial corrugated sheet in a Timinium alloy was used in the construction of the walls and roof of this Heat Treatment Shop for the Weldless Steel Tube Co. Ltd., Wednesbury.



T I Aluminium Ltd

ONE OF THE LARGEST U.K. MANUFACTURERS OF SHEET, CORRUGATED SHEET, STRIP, CIRCLES, PLATE, EXTRUDED SECTIONS AND TUBES IN ALUMINIUM AND ALUMINIUM ALLOYS.

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**having
chosen
WOOD
windows**

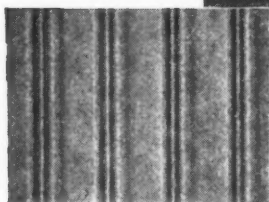
You are free to use—utmost flexibility in planning in the sure knowledge that WOOD is the ideal material for modern windows. With its friendly charm it combines adaptability with economic cost and maintenance. Its use minimises heat losses and sound transmission and reduces condensation.

SHARP BROS. & KNIGHT LTD.



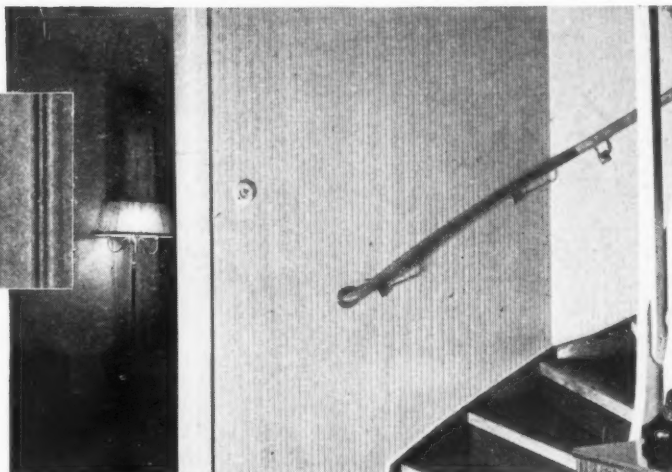
Head Office and Works :
BURTON-ON-TRENT

London Office : LION HOUSE,
RED LION STREET, RICHMOND, SURREY



Type 'A' Linenfold

Type 'A' Moulded Hardboard used as wall panelling in the entrance hall to private house.

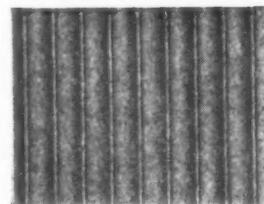


material benefits

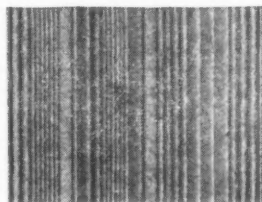
The many "material benefits" of LW Swedish Hardboard have been greatly increased by the introduction of Moulded Board. Supplied in standard 4' x 9' sheets, $\frac{1}{8}$ " thick, the six distinctive designs and ease of fitting give LW Board a versatility ideally suited for home modernisation, hotel bars, shops, foyers, exhibitions and partitions. Both the normal and oil tempered quality are equally effective either in their rich natural colours, or painted. To cover unsightly walls, for the speedy erection of large areas or as the basis of attractive design, LW Moulded Hardboards are the obvious answer. Send to-day for full details.



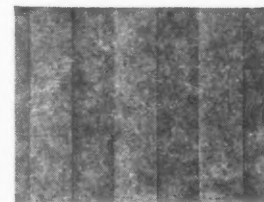
Type 'A' Hardboard used in the Lounge Bar of the Llanrumney Hall Hotel, Cardiff. Owners: Wm. Hancock & Co. Ltd. Architect: G. L. H. Rogers, L.R.I.B.A.



Type 'B' Reed & Bead



Type 'C' Striated



Type 'D' Slatted



Type 'E' Close Slatted



Type 'F' Tiled (4" Tiles)



MOULDED HARDBOARDS

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**FACIA WORKS WOODHILL RD
BURY. LANCs. Telephone BURY 1599**

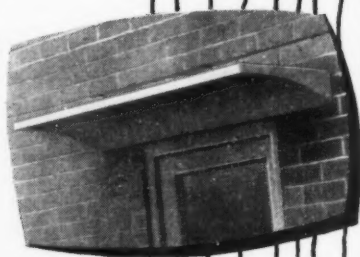
ALICANOPIES are specially designed to give the architect economy and speed in canopy construction, for if these shapes were designed and constructed in other materials in such a way as to require no maintenance other than the periodic painting given to the exterior of the house, the cost would be very considerable. Furthermore, the construction is such that labour for fixing both frame and canopy is cut down to a minimum duration.



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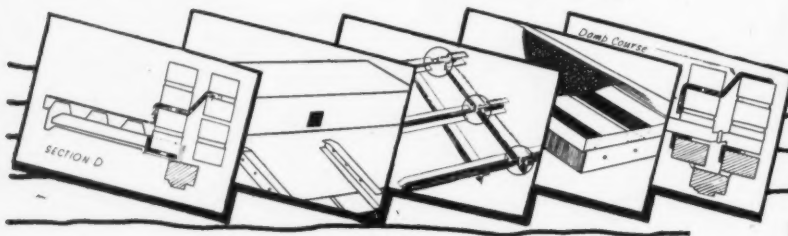
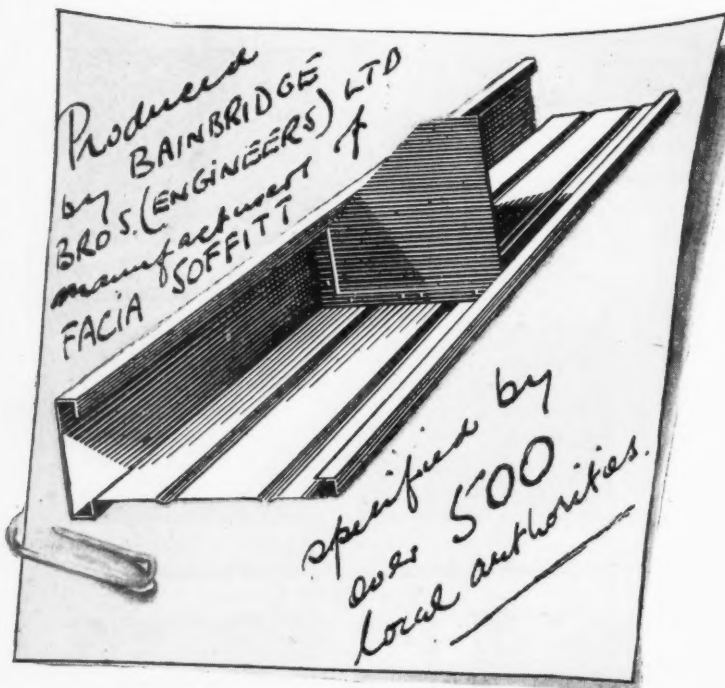
CONTEMPORARY



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REGD.

CONSTRUCTED OF RESIN BONDED PLYWOOD

provide the answer to the steel shortage

**these are some of
their advantages**

LIGHT AND EASY TO HANDLE. SIMPLE AND QUICK TO ERECT
SUITABLE FOR FIXING TO ANY TYPE OF WALL CONSTRUCTION
NEAT AND ATTRACTIVE IN APPEARANCE
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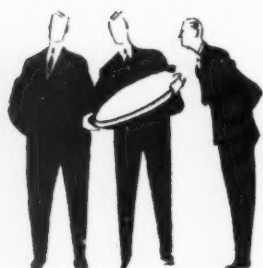
Full details and prices will gladly be given on request.

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Write for illustrated brochure describing
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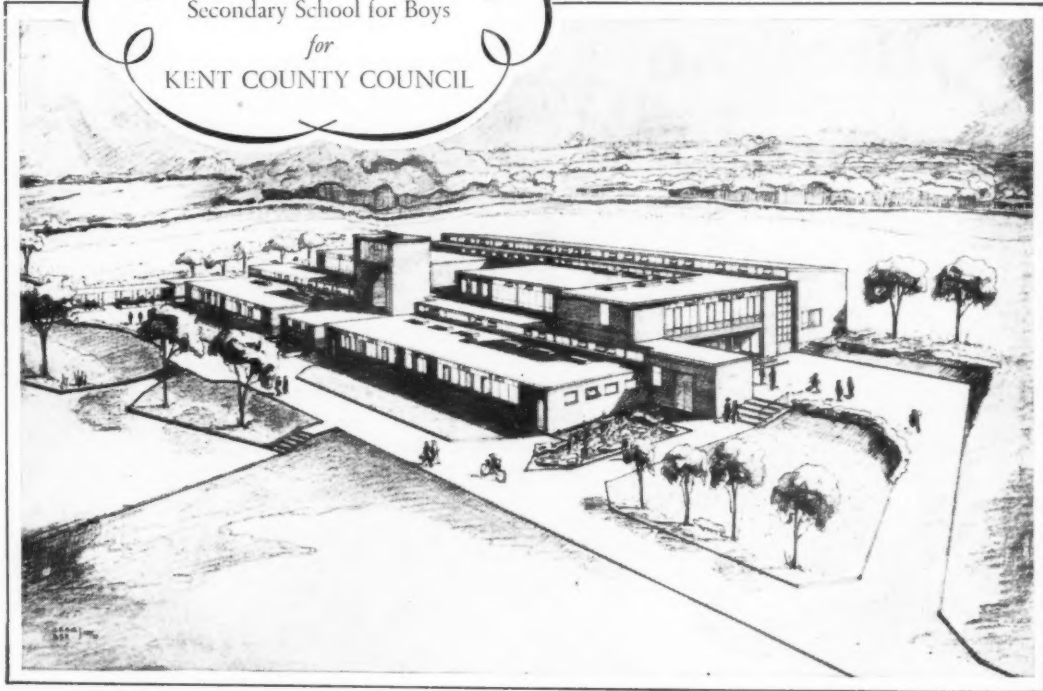


TS 16

PADDOCK WOOD

Secondary School for Boys
for
KENT COUNTY COUNCIL

*Architects: Downton & Hurst, in collaboration with
E. T. Asbley Smith, Esq., F.R.I.B.A., County Architect.
Consulting Engineers: Messrs. G. H. Buckle & Partners
Quantity Surveyors: Messrs. C. John Mann & Son.*



THE 'Two Form Entry' Secondary School for Boys now being built at Paddock Wood for the Kent County Council is part of a group of buildings which will include a Girls' School and a Canteen Block. The Boys' School is 'stepped' on a sloping site, enabling rooms and corridors to be lit at each step in the roof, thus forming a compact plan.



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CIVIL ENGINEERING
CONTRACTORS*

33 ST. GEORGE'S PLACE • CANTERBURY • KENT

Head Office: 111 WESTMINSTER BRIDGE ROAD • LONDON • S.E.1

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Time alone can substantiate the claims for a building material. Lime/sand mixes gauged with cement have proved the ideal mortar for all types of construction. Lime/sand/cement mortars can be designed to give maximum strength to the brickwork in relation to the particular strength of the brick used. (See B.R.S. Digest No. 75 on the strength and stability of walls.)

HYDRALIME

SCIENTIFICALLY HYDRATED LIME COMPLIES WITH
ALL THE REQUIREMENTS OF B.S.890



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Marketing Company Ltd.
Portland House,
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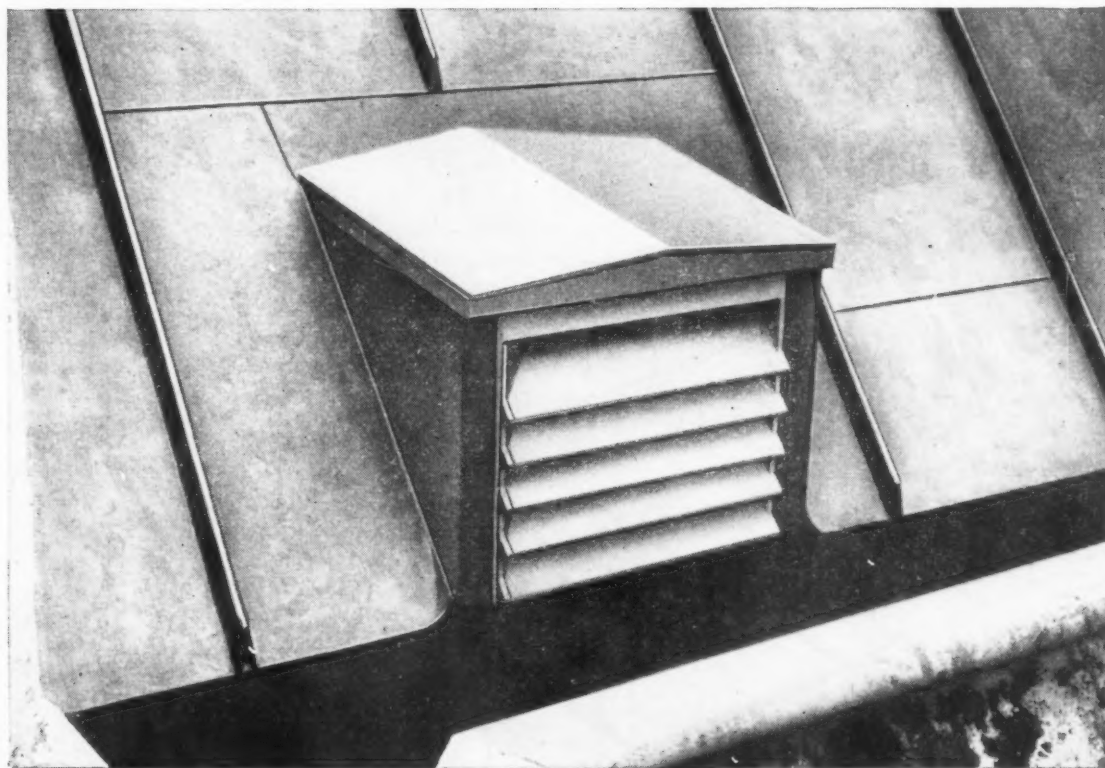
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makes a good job better



West front, Chichester Cathedral

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COPPER DEVELOPMENT ASSOCIATION

KENDALS HALL • RADLETT • HERTS • RADLETT 5616

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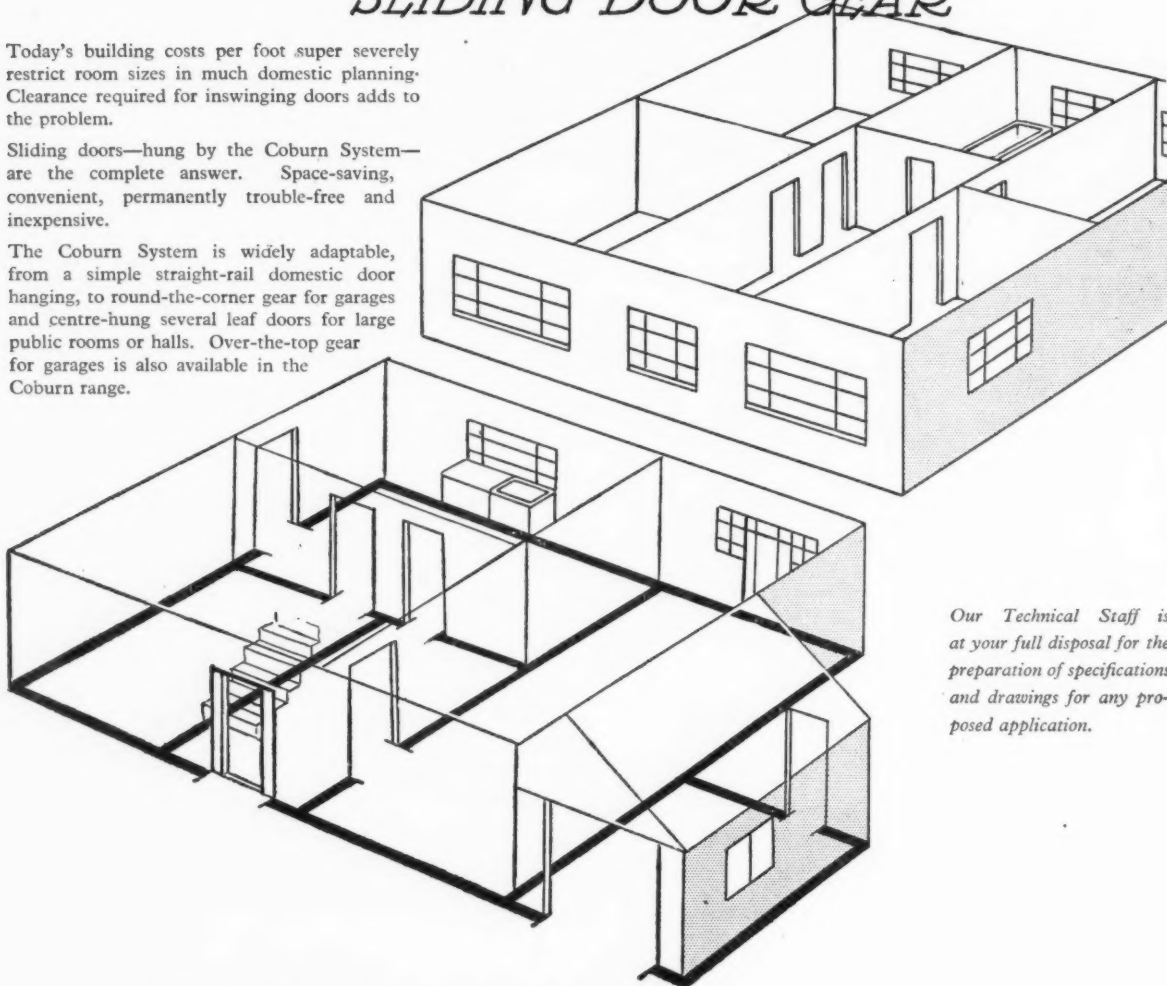


MODERN PLANNING *demands* SLIDING DOORS *operated by* **Coburn** SLIDING DOOR GEAR

Today's building costs per foot super severely restrict room sizes in much domestic planning. Clearance required for inswinging doors adds to the problem.

Sliding doors—hung by the Coburn System—are the complete answer. Space-saving, convenient, permanently trouble-free and inexpensive.

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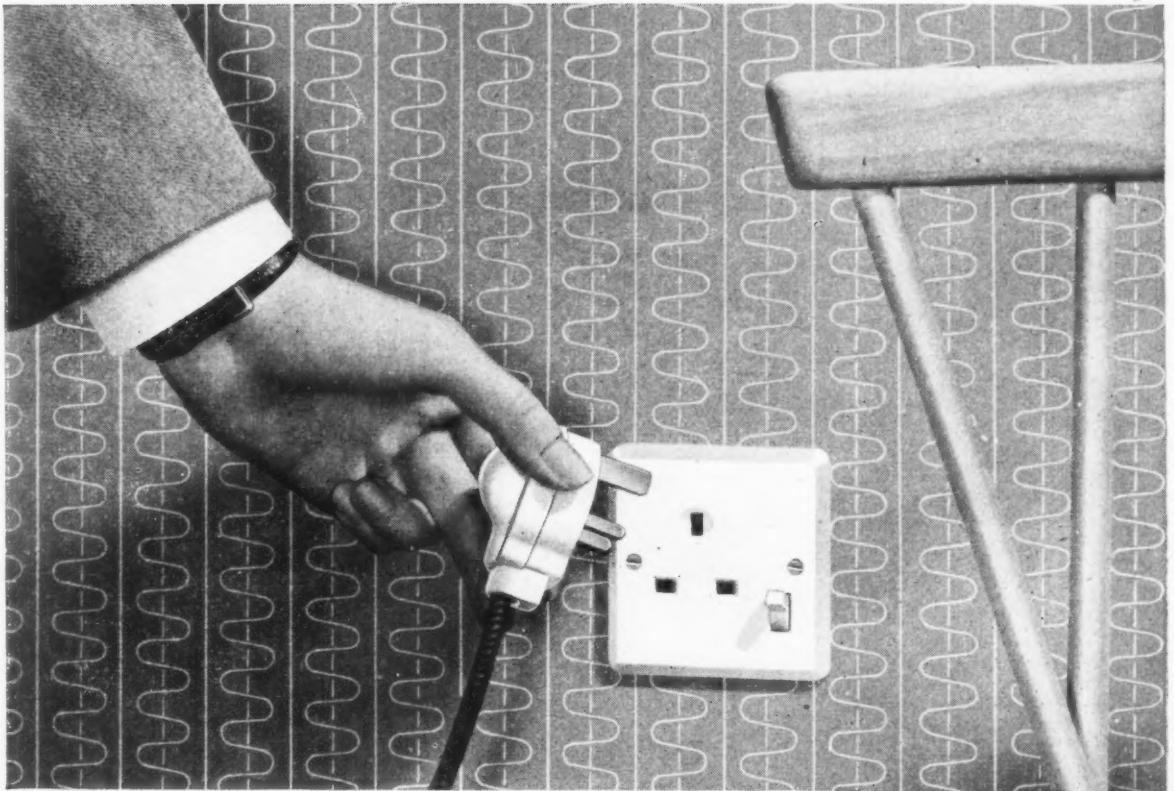


Our Technical Staff is at your full disposal for the preparation of specifications and drawings for any proposed application.

Write for catalogue, prices, questionnaire and advice:—

The British Trolley Track Co. Ltd.

COBURN WORKS • COPPERFIELD STREET • LONDON, S.E.1. TELEPHONE: WATERloo 4311 (3 LINES)



Better by far

Whether you are building a new house or modernising an old one it is far better to plan the electrical installation so that there are an adequate number of socket outlets in each room for all the appliances needed.

It is best too, in your own and your clients' interests, to specify only the finest quality socket outlets, switches, flex, plugs and lampholders. Badly designed accessories are always false economy in the long run.

The WINDSOR range of Ediswan Electrical Accessories includes fittings of every type that may be required. They are accessories of the highest quality at competitive prices. They comply with the British Standards specifications and can be relied upon to give long and trouble-free service. The Windsor range includes the Easy-Fuse plug that can be re-fused in 15 seconds without the use of tools. Full details on request.

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THE EDISON SWAN ELECTRIC COMPANY LIMITED

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Part of specialised production of coils for refrigerators.

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choose WEDNESBURY TUBE

Obtainable from your local stockist or builder's merchant. Manufactured by

THE WEDNESBURY TUBE CO. LTD, BILSTON, STAFFS



MAGNET

FOR THE

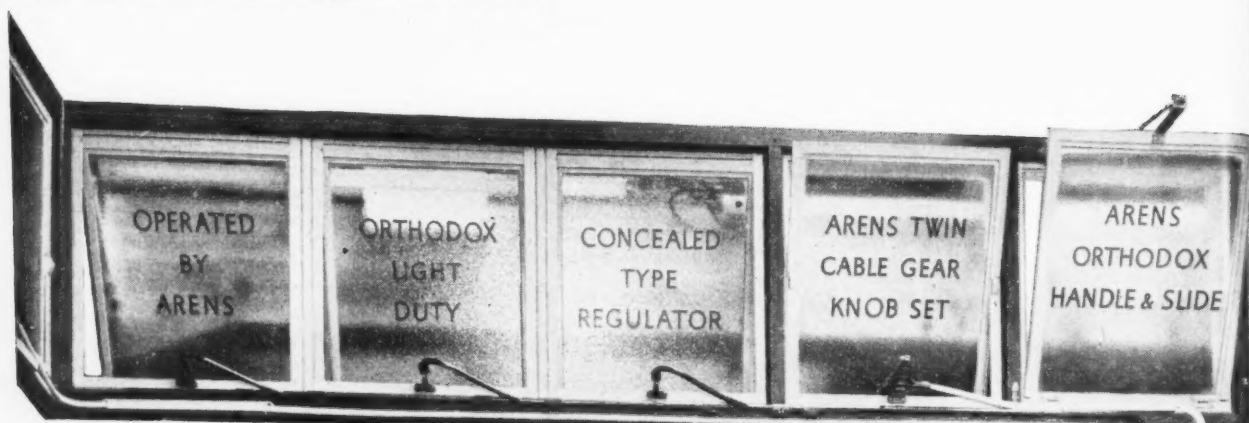
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Magnet could be chosen for its looks alone ; for its lustrous gloss
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OPEN FOR INSPECTION!
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ON EXHIBITION
AT THE BUILDING CENTRE

STORE STREET, TOTTENHAM COURT ROAD, W.C.1 MUSeum 5400

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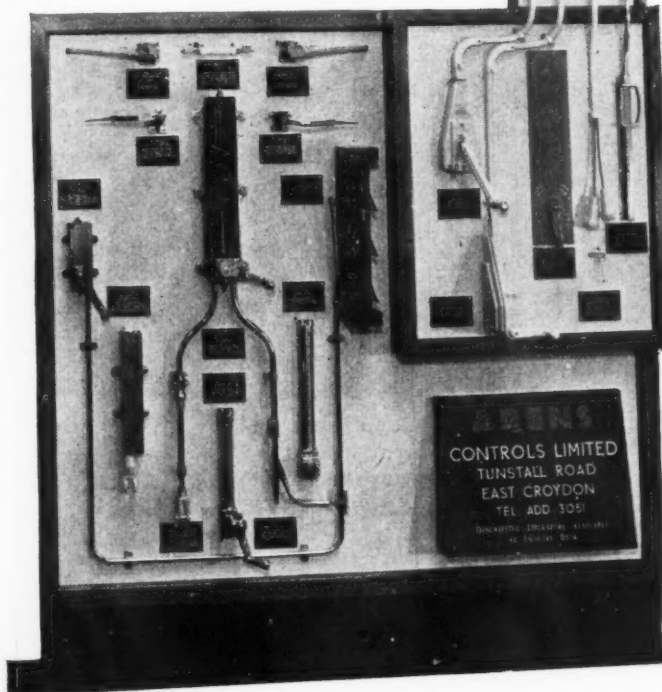
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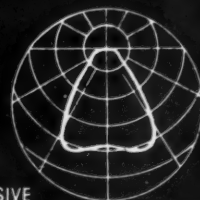
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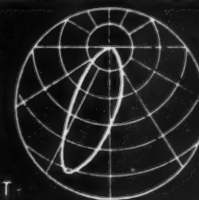
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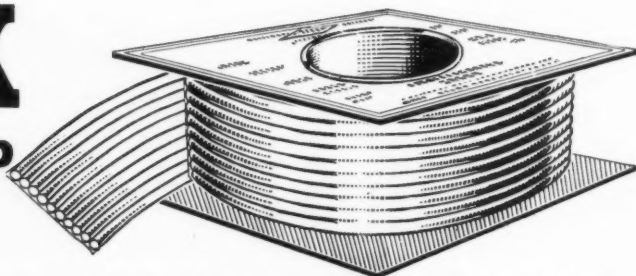
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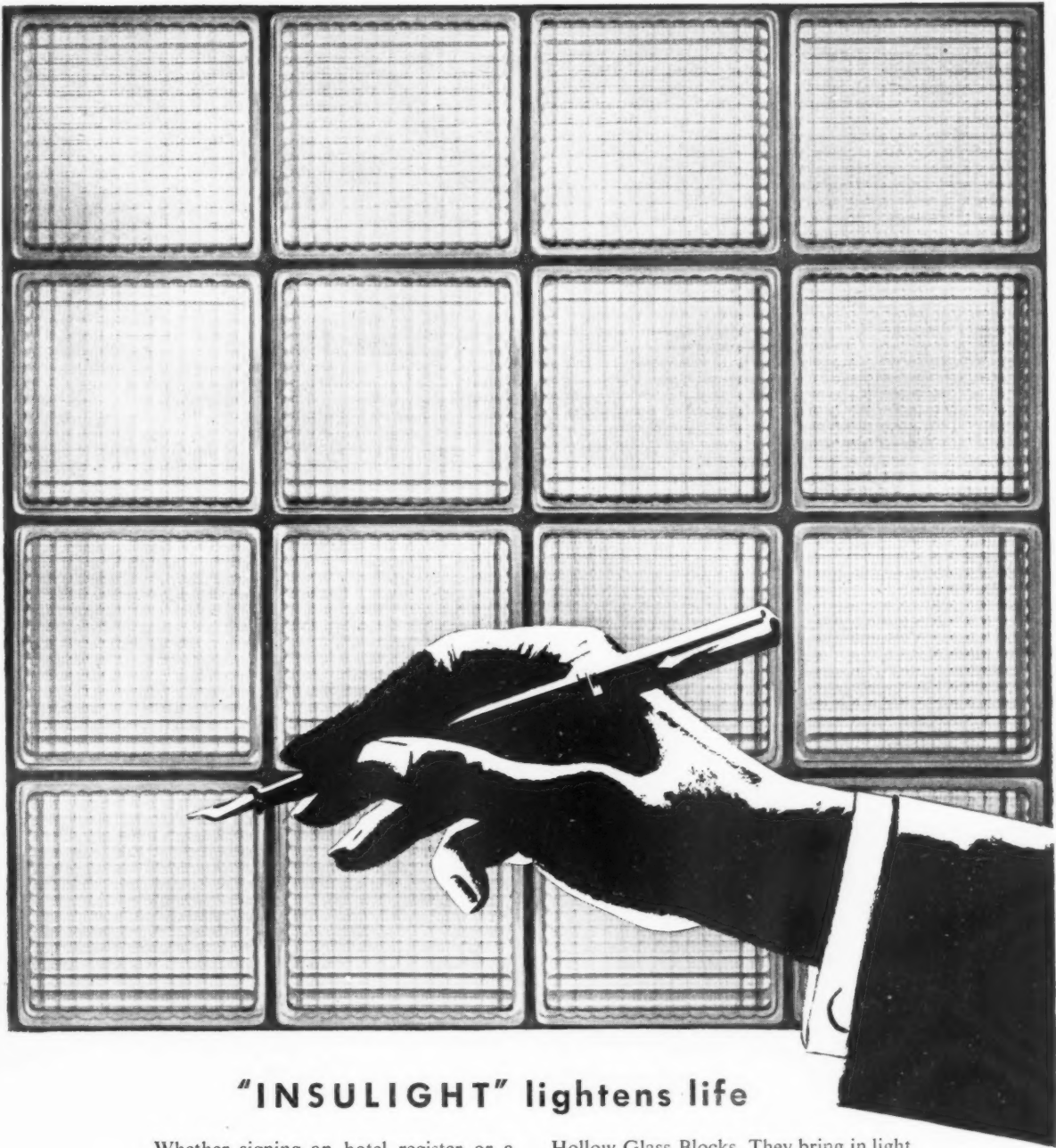
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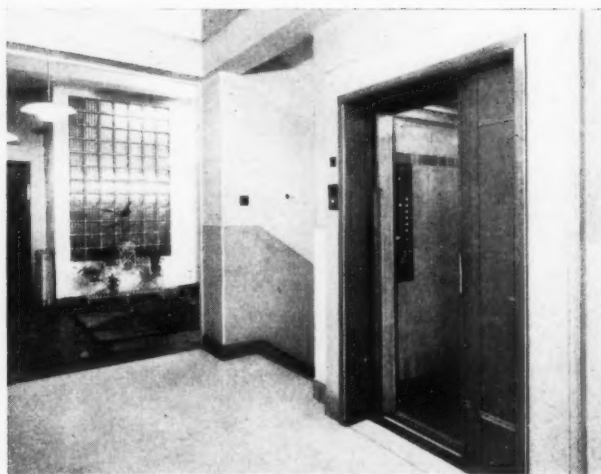
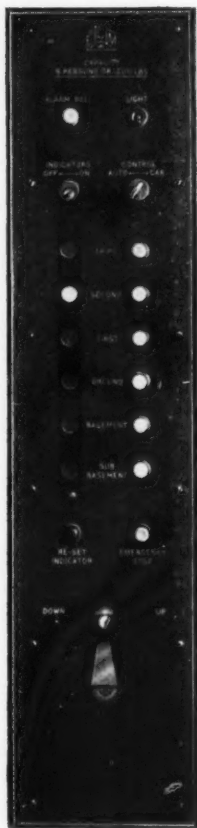
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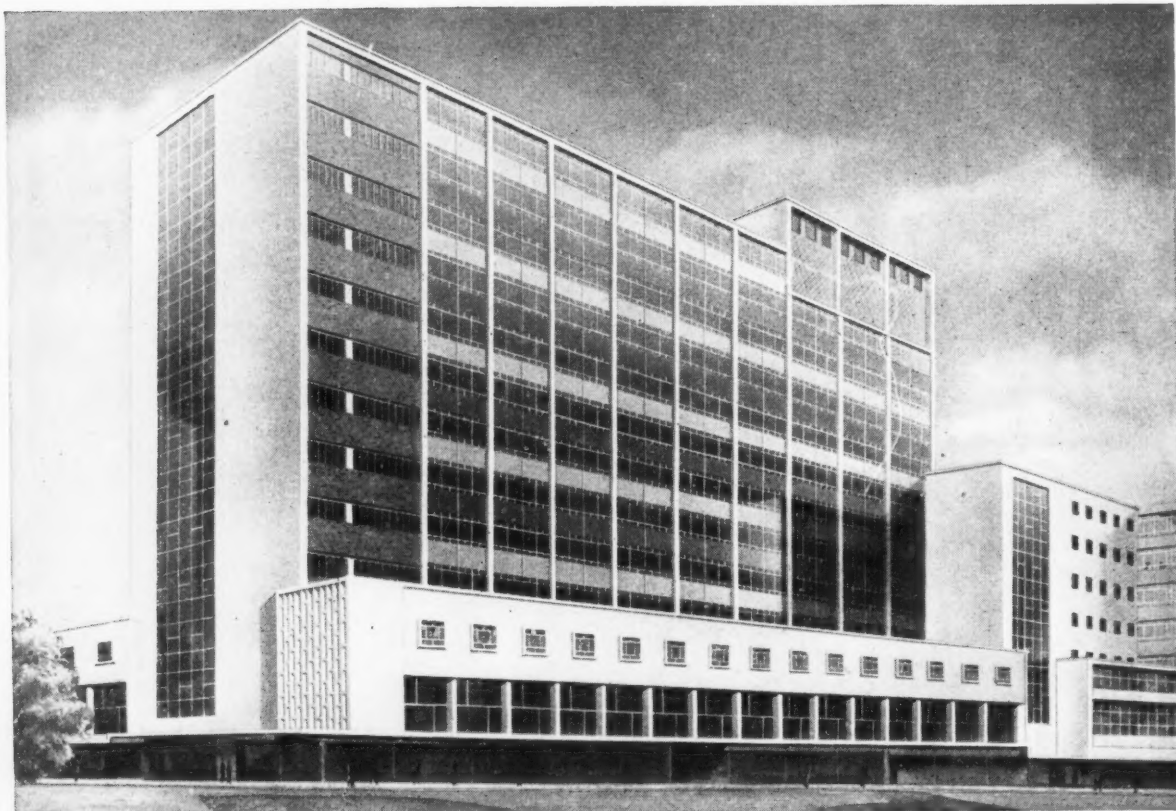
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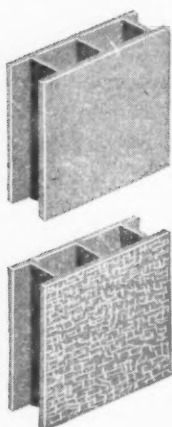
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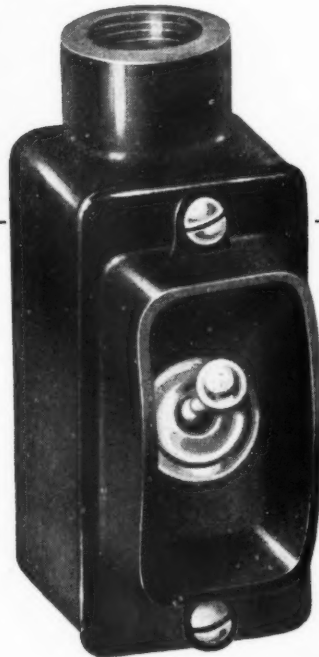
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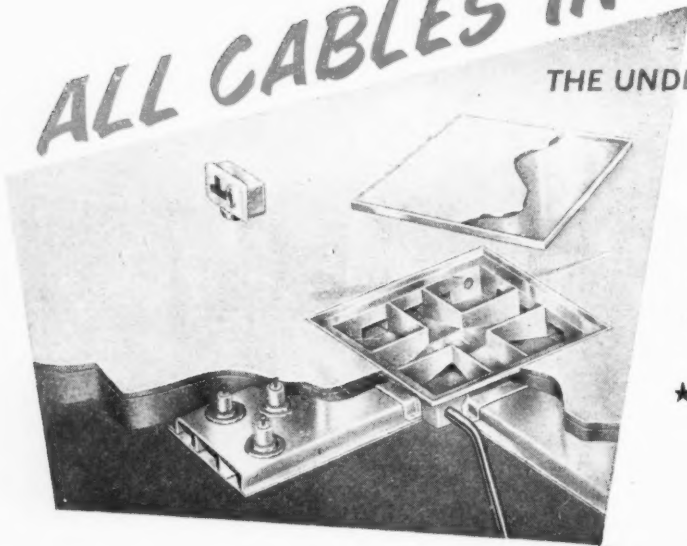
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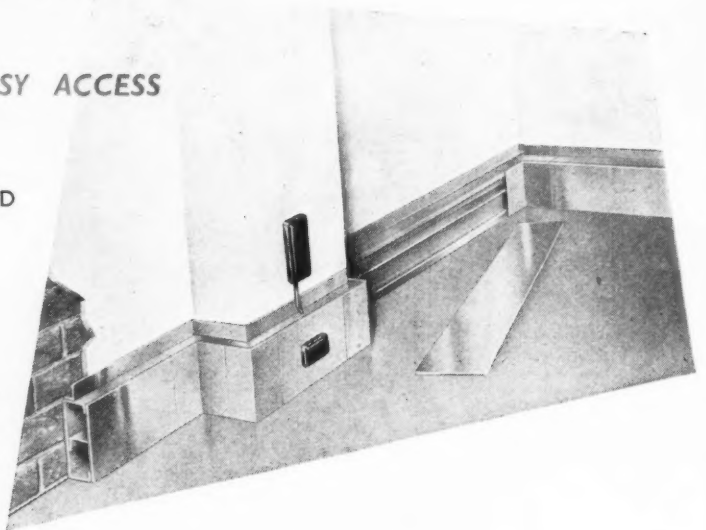
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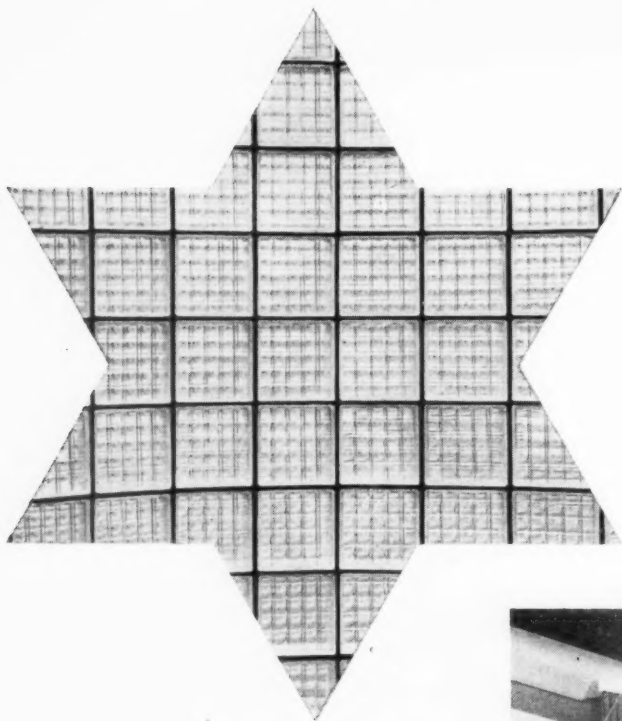
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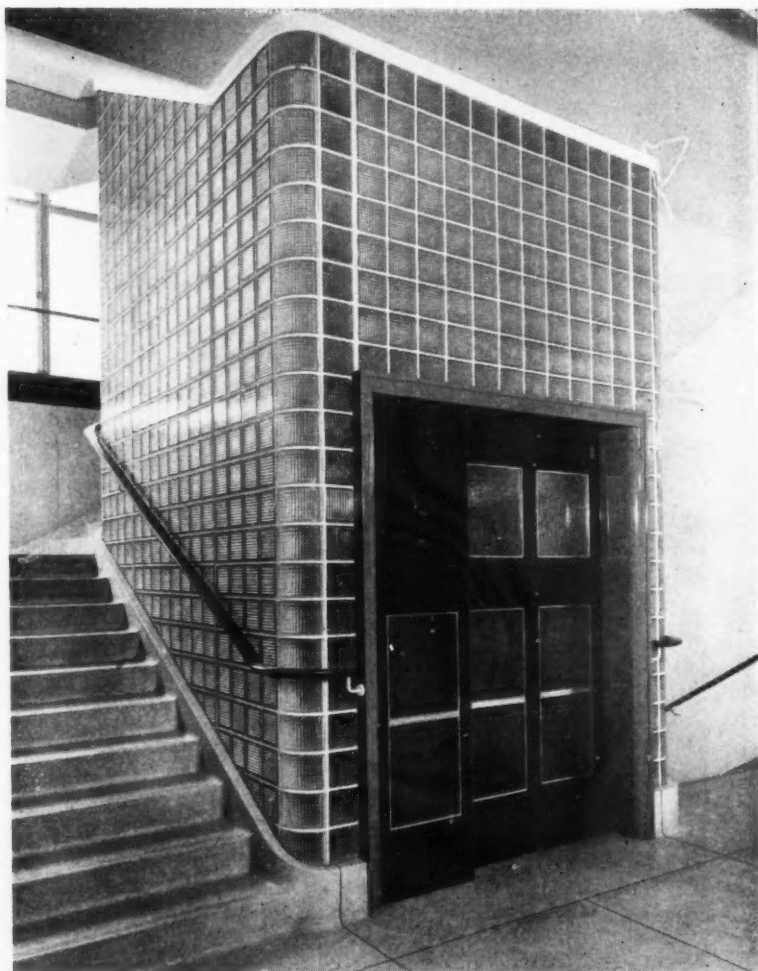
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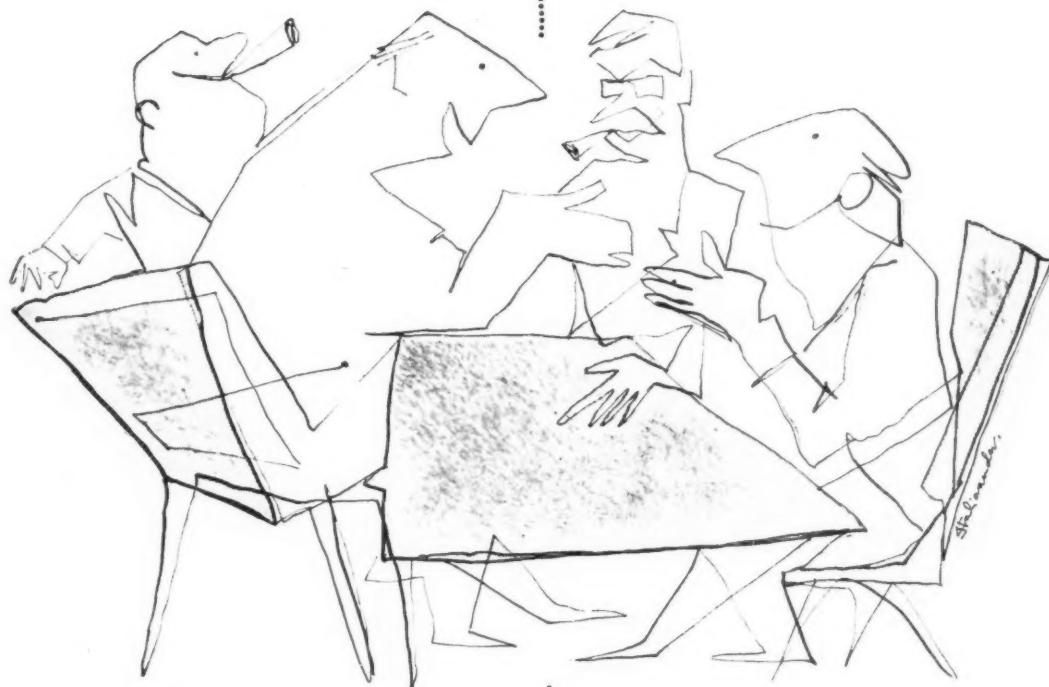
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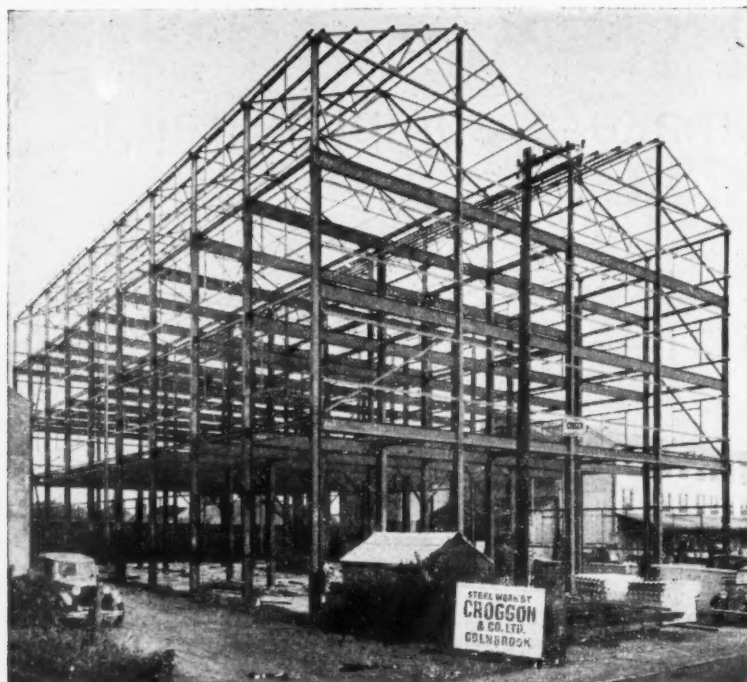
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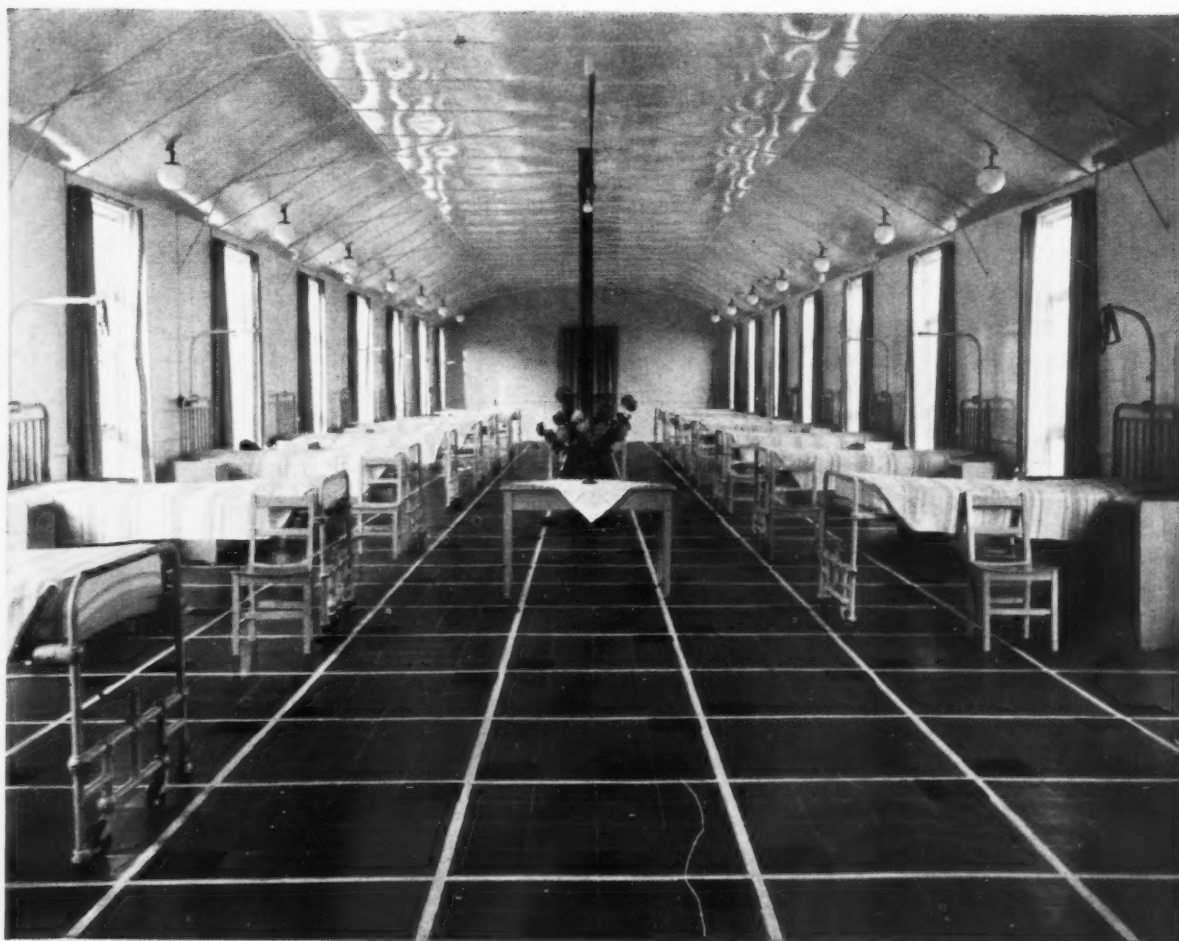
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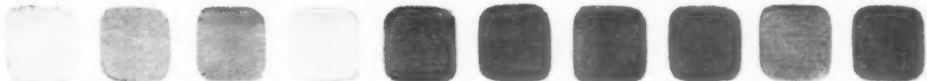
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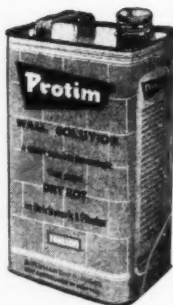
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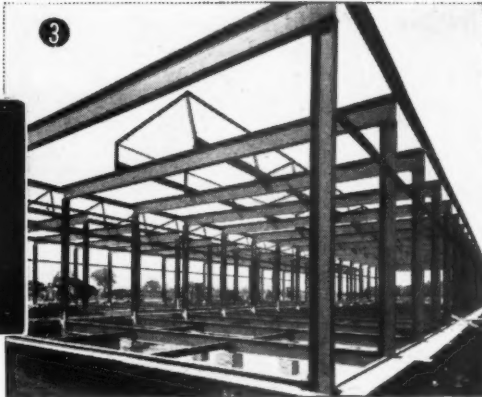
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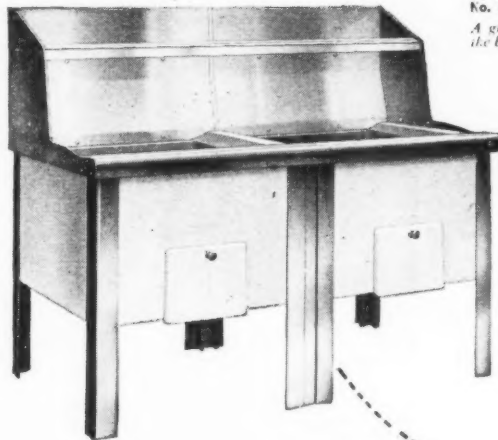
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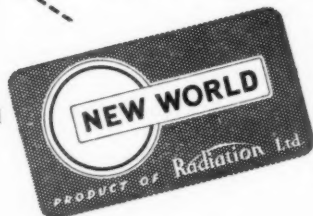
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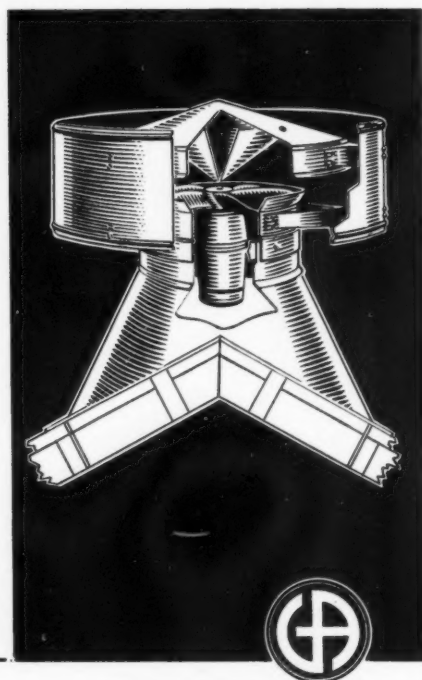
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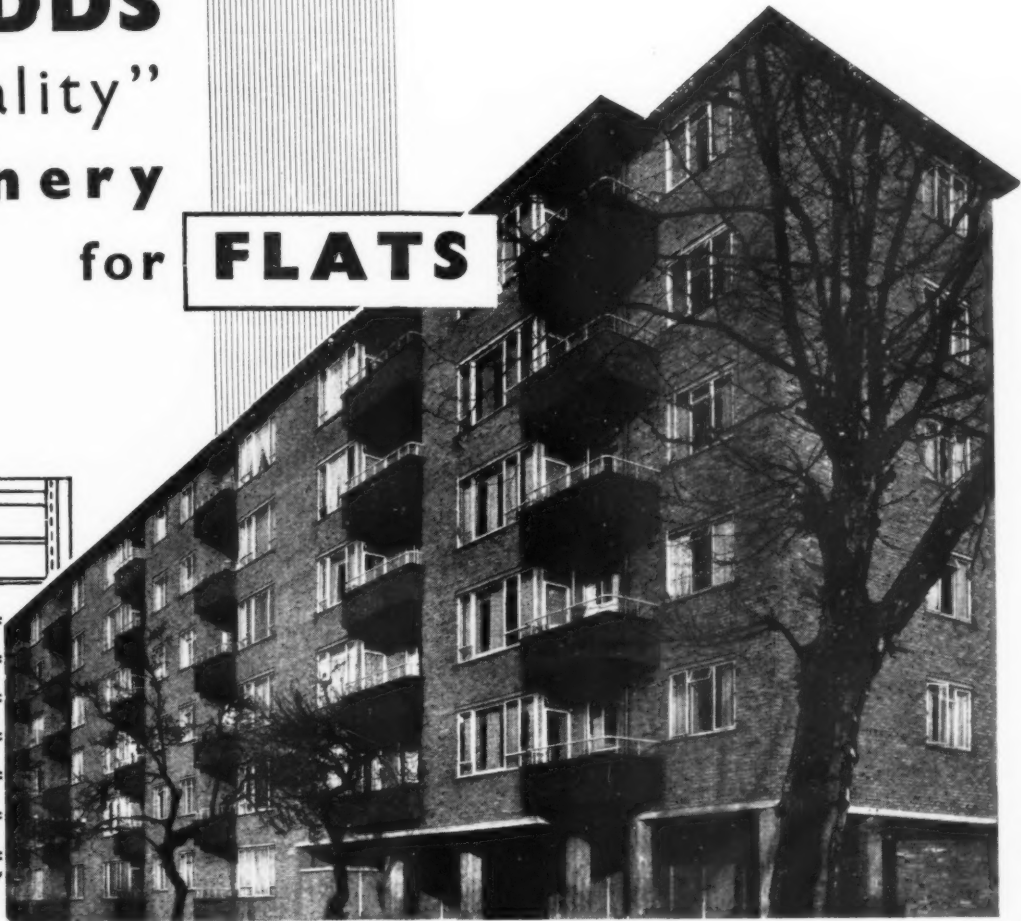
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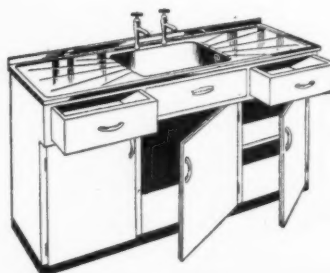
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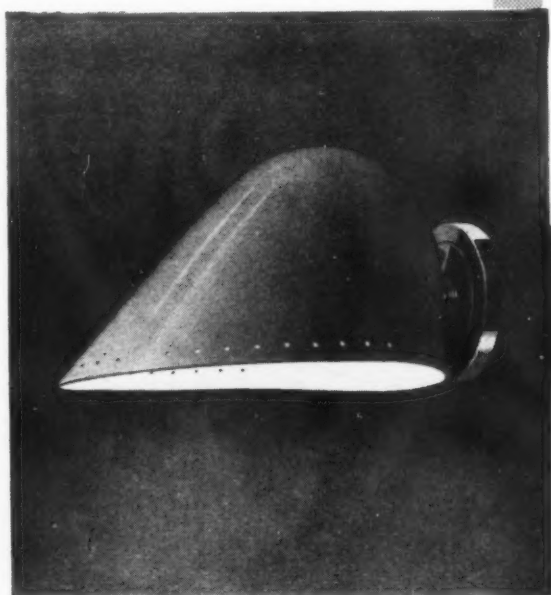
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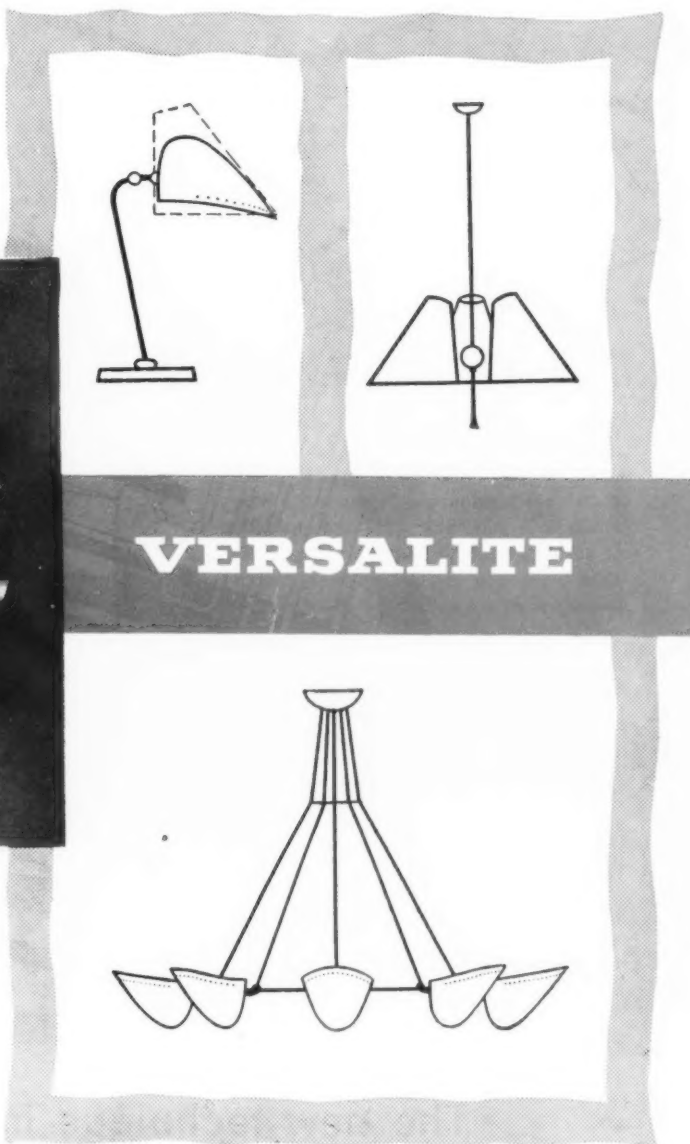
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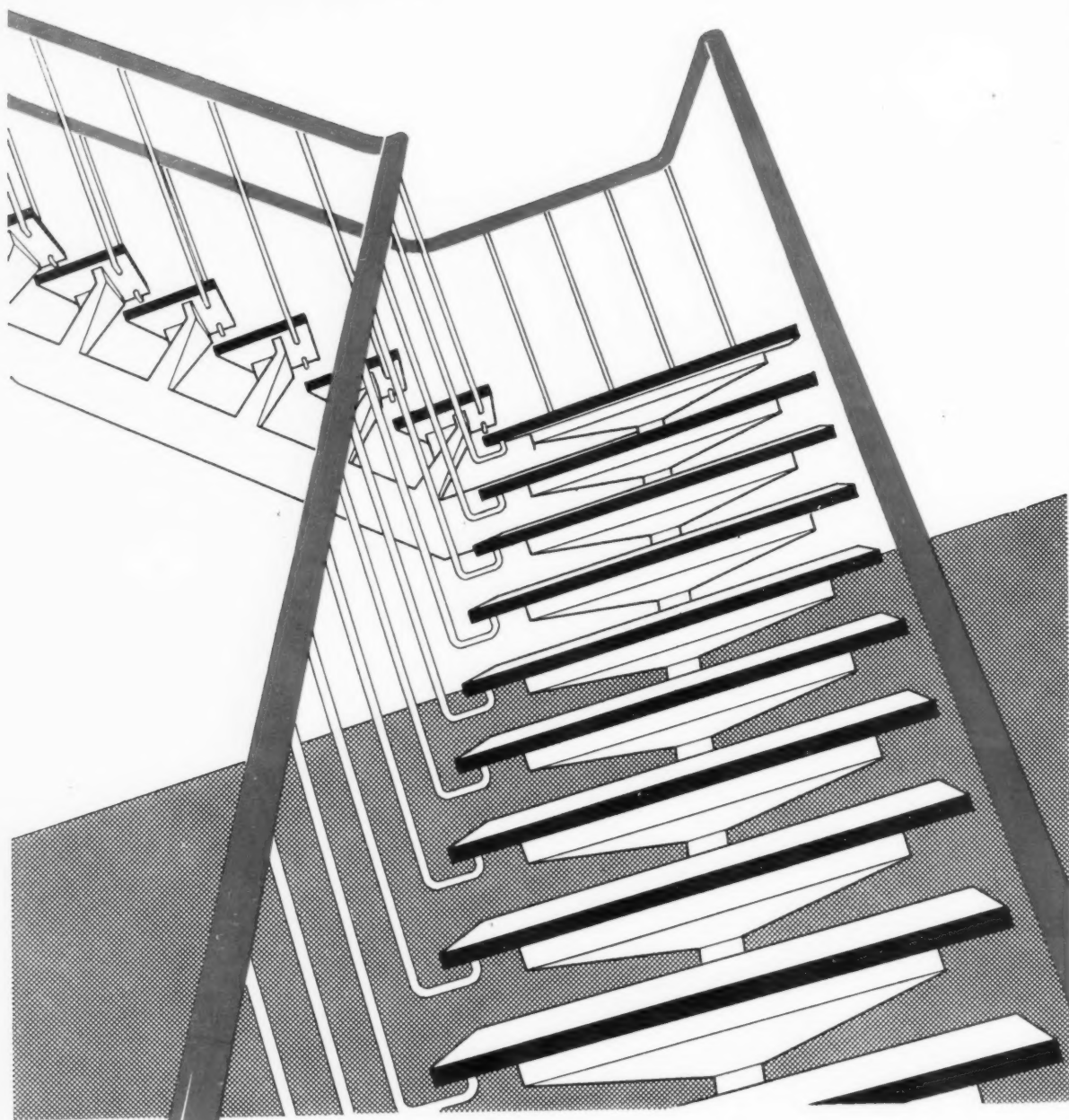
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THE ARCHITECTS' JOURNAL

No. 3201 Vol. 123 July 5, 1956

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NOT QUITE ARCHITECTURE*

CRICKET: AN OPEN LETTER TO AN OLD ADVERSARY

Dear Roy Case,

Tails? I never call tails; you had me there. I only called tails because at the very last moment you imbued me with a wild suspicion that the coin, if it didn't actually vanish in mid-spin, was going to finish up on the back of your hand as at prep school, not heads up on a perfect wicket for AA run-makers. After darts, liardice, French cricket and being bowled to in a serious match with a squashy rubber ball, legerdmain is the least of the pranks I could suspect you of, particularly on bringing my own personal XI along to thrash the AA.

Pity Roy Hill couldn't get your openers out; I suppose they're rather in a class above park cricket. Jack Thompson's 30 runs I thought were very good. He swings his bat accurately at anything overpitched and unlike so many of these tennis players can bring it down on sneaks. He should make a lot of runs for the AA in his coming four seasons. Keep him off tennis courts. He is too good for a girl's game.

Didn't Ron Hurst have you all in trouble? Coming up over after over with his short curving run and remorseless, quick swinging left arm he looked like a man engaged for the entire afternoon in flogging his horse. Sharma played him, but then Sharma plays anybody. What a batsman. Deft, aggressive, patient where necessary, particularly prolific on the off-side and a great user of his feet. Only his fifty, to be frank, made a game of it with Hurst running through the side.

* Meaning exactly what it says.



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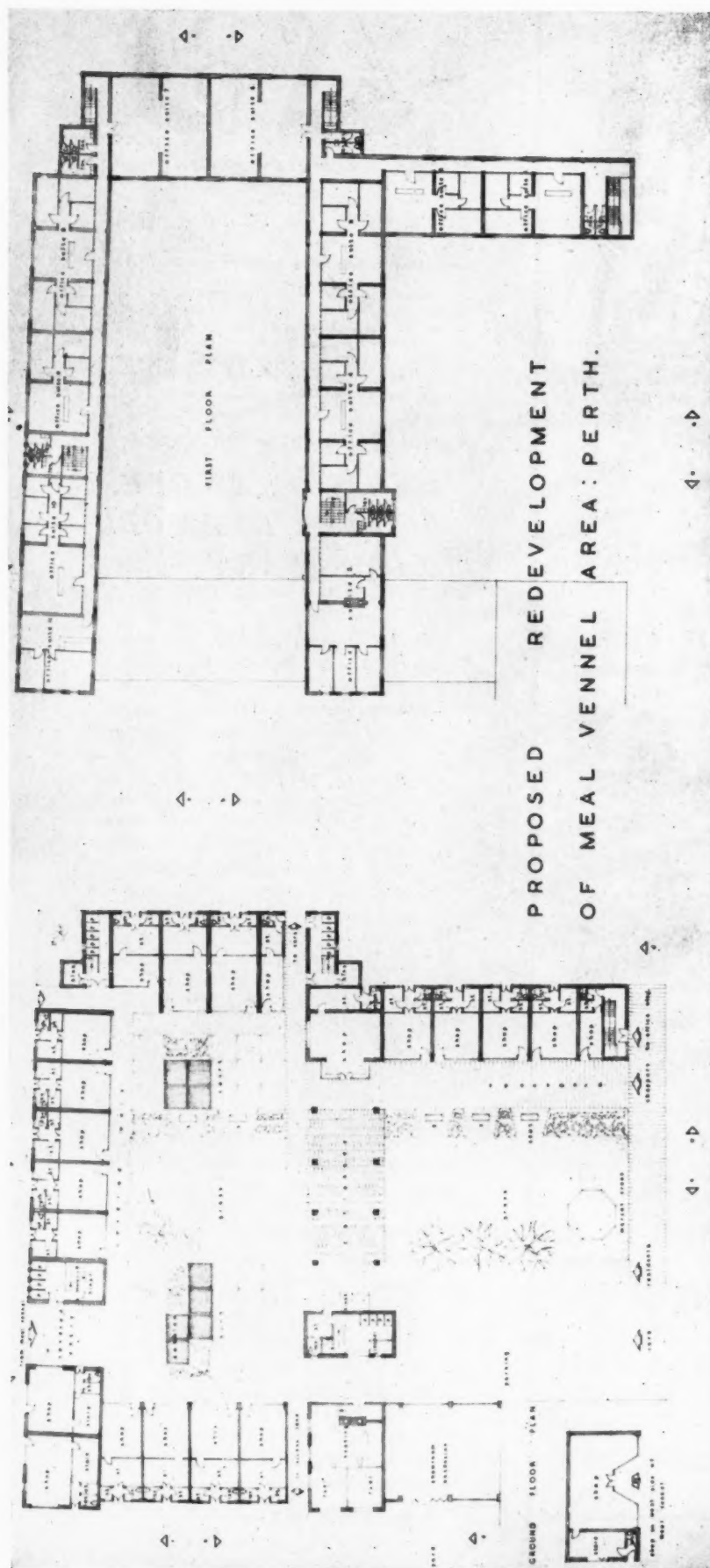
This 28-page booklet is a complete step-by-step guide to planning and equipping large-scale kitchens for schools, hospitals, hotels, restaurants, industrial and institutional canteens. Send now for your copy (ref. no. AA.33) to be sent free of charge and remember that our Advisory and Planning Departments are always at your service.

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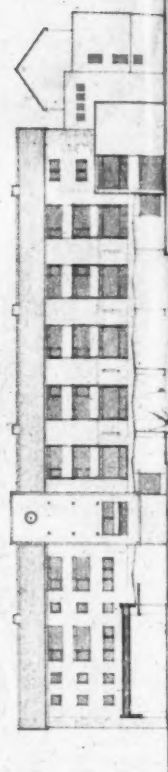
Precinctual Planning In Perth

In their winning design in the competition for redevelopment in Perth city centre, H. G. West and Robert E. G. Miller, of Glasgow, have made use of a well-established Scottish tradition—the placing of houses on the upper floors of buildings. Although this custom has been regarded with disfavour in recent times it seems likely (as the assessor, R. J. Naismith, points out) that it will be largely revived in the future. Problems of light, ventilation and aspect can be more easily solved today because modern construction permits more pliable internal planning. Commenting on the winning design, which is also illustrated on page 9, the assessor wrote:

"The proposed buildings in this scheme are pleasantly arranged in relation to the site and its principal features. The single storey buildings on the south side ensure ample penetration of sunlight into the gardens. The vehicular and pedestrian accesses have been convincingly arranged to avoid most of the inconvenience of a shopping precinct. The positioning of the shops themselves is cleverly designed to attract attention and invite inspection."

Other prizewinners were Frederick Selby, of Glasgow, who won the second prize of £375,

and T. Findlay Lyon, of Uddington, Lanarkshire, who won the third prize of £250. Kenneth G. Wallace, of East Kilbride, and Robert A. Strang, of Glasgow, were commended. The first prize was £450.



This is true. 8 for 54 is fine bowling anywhere. If your later batsmen got themselves out hitting out it was because we had pegged you down well behind the clock. We would have had you all out for less than 145 but for half a dozen missed chances; one or two of these by D. le M. Brock, who was undergoing a rather dazed and dreamy experience behind the stumps after a busy night before. "I'm not sure," he confessed with charming vagueness in the middle of the innings, "if I'm keeping wicket—or batting." So it was 145.

Well, what a finish. I never doubted we should knock the runs off even after you personally had made a ball rise from some slough of despair to have the indefatigable Hurst caught at the wicket for a mere 16. Nor when you soon bowled Batty. There was Alastair Boyd up in the forties, struggling out of a recent bad patch, and Roy Hill in the twenties beginning to live up to his CCC sweater. Then you brought Kwan on and between you (4 for 68 you and 3 for 19 Kwan) you might have polished us all off but for Roy Hart's forcing 24 not out and Peter Winton Lewis's strengthened defence this season. Also, by some twist, you had Brock caught behind. What did he think he was doing then?

As for that last over started two minutes before time, what could be more exciting than 4 wanted in even runs and our last man in? Win, lose, tie, or draw—which? I will be satisfied with the draw. If I am sorry we didn't win I am just a little pleased you didn't lose. As captain, bowler, hitter, and chief administrator for several seasons at the AA, you were able to walk off the field undefeated in your last match for the AA. I think you probably deserved that.

Yours very sincerely,

ROBIN MUDIE



FILE THIS WEEK

Domestic Heating. This week we publish four papers on this subject which we could not find room for in last week's special issue. The first is on Oil-fired Appliances, the second on Warm-air Systems, the third on Architectural Problems of Heating Multi-storey Flats and the last on Water Heating relative to Housing Design

page 13

Airport Building. The air terminal building at Turnhouse, Edinburgh, designed by Robert Matthew, is the first airport building to be analysed in the JOURNAL page 21

Working Details. One of these is the pergola at the rear of the terrace outside the dining balcony at Turnhouse Airport. (It is also shown on page 25.) The other is a litter bin specially designed for the airport. (This is also shown on page 29.)

The Editors

HOW TO LOSE FRIENDS AND LOSE INFLUENCE AS WELL

GOOD news has been received about the International Committee for Regional Planning and Development.

After a final meeting in Paris a few days ago the International Committee has completed, we understand, the following arrangements. First, an International Regional Planning and Development Centre is to be set up and located in Brussels with the full support of the Belgium Government. Second, there is to be a large international conference next June at the Hague, co-sponsored by NUFFIC (the body which represents all the Dutch Universities in international matters). Third, a branch of this Regional Planning organisation is being set up in Paris, and the British have been asked to form a similar branch.

It is interesting to note that at the recent meeting of the International Committee in Paris, the First Secretary of the French Ministry of Reconstruction and Housing was present and expressed his wholehearted approval of its endeavours. Now this International Committee was set up as a result of a highly successful conference on Regional Planning and Development held in this country last September. It is discomfiting to see the approval and help given by foreign governments to this organisation compared with the extraordinary action taken against it by the British Government last summer. This action consisted of advising its own civil servants and "other Commonwealth and friendly Governments" not to attend the conference. The reason given was that the Government feared that the conference would be used for communist propaganda. As a result a debate was held in the House of Commons in which the Government spokesman Sir Hugh Lucas-Tooth (then, but now no longer, Joint Under Secretary of State for the Home Department), managed to imply, by association, communist sympathies on the part of those concerned with organising the conference and on the Board of the former School of Planning, which includes such a respected—one would have thought—figure as Sir George Pepler.

The Government's action prevented the formation of an International Centre for Regional Planning in England. Such a Centre would have been very desirable. This country has a world-wide reputation for town-planning, and it would be naturally looked-to, by other nations, to set a lead in the even more important, all-embracing subject of regional planning. A centre in Britain would have increased opportunities for the export of our most valuable commodity—brains and know-how, while also giving unique opportunities to British contractors, civil engineers and manufacturers to provide the right equipment, material and skilled labour to help the essential expansion of under-developed countries in the Commonwealth and elsewhere. The initiative has now been seized by Belgium. Some people over here have been very foolish, as well as vicious.



AT THE NATIONAL GALLERY

ASTRAGAL perambulated the newly re-opened and reorganised rooms at the National Gallery, and came out feeling rather fifty-fifty. On the credit side: the technical work. MoW have done a good job here, with a loop of six rooms air-conditioned and their walls damasked to give added moisture stabilisation. These rooms also have properly louvred top-lighting (with the colour-adjusted fluorescent coming down from the same source) and this coupled with the absence of glass in front of the pictures gives added visibility that is as good as a thorough cleaning in some cases.

*

Doubts and Debits side. The hanging of some of the rooms is a little too carefully balanced and symmetrical, particularly in room XXVIII, where the similarity of format of Botticelli's *Mars and Venus* and Piero di Cosimos *Mythological Subject*, is over-emphasised by their formal arrangement on the wall to the extent that the pictures themselves lose individuality. The other big doubt is the use, in two rooms, of a gold damask. Not only is this of such a tone that it drinks the gold skies and highlights out of the pictures, but it is also that cold gold for which MoW has a mysterious pre-

dilection these days, and it's a curiously chill and unfriendly colour

*

On the other hand, Sir Philip Hendy's hanging has achieved one undoubted triumph in room XVII. This used to be a square room under an octagon dome, a rather pointless architectural feature which has now been regularised by making the room octagonal as well. Damasked in a delicate silver-blue, it contains pictures that, for the most part, have a strong blue as a dominant colour, like Masaccio's *Madonna*, or else have a strong anti-blue tendency, like Mantegna's *Sacra Conversazione*, and the effect is quite breathtaking—a work of art in its own right, that in no way detracts from the status of the works of art that it contains.

SCHOOL'S DIAMOND JUBILEE

Sir David Eccles, whom this column has scarcely seen since he ceased to be Minister of Works, was on his best form at the diploma ceremony of the Central School of Arts and Crafts—a rather special ceremony since this worthy brain child of W. R. Lethaby was celebrating its sixtieth birthday. The Minister was brief and to the point, observing that his prime function was to distribute the diplomas, which lay in an appetising row in front of him, and the main burden of his homily was that designers should not run too far ahead of public taste—(the aim, he said, should be to narrow the gap, rather than widen it)—and that the designer should be prepared to go some way to meet the public.

*

A tour of the student work on exhibition suggested that this advice had been taken telepathically to heart before the Minister arrived, and there was very little that was either arty or *outré* on show, though there was a good deal of concealed cleverness when you came to look closely at things. One doubts very much whether Lethaby could approve of these designs that are being produced under such fantastically different conditions to those of his own time, but one suspects that he might approve of the way they were arrived at.

MOW EXHIBITIONS

Following on their admirable MoW exhibition of the Historic Building Council's work (a show that would have

softened the heart of the most ruthless advocate of credit-squeeze and economy) the administration at Kenwood now has something never before seen off its home ground—an exhibition of drawings by Sir John Soane and his office.

*

This is quite a scoop, but it is also an exhibition worth seeing on its own merits and, since it runs until September, there will be a fair chance to get to it. It shows Soane and his circle in most of their characteristic moods; the scenic, the triumphal, the half-section-and-ruination, the starkly tectonic and the mysteriously luminous, and there are sketch-books and the model of Tyringham House for a garish. Four stars on any guide to architectural pleasures, and a spare star for being in such a setting as Kenwood.

*

The MoW, I should add, are continuing their good work elsewhere. They have just prepared an admirable portable exhibition, on the same lines as that shown at Kenwood, on the subject of Hadrian's Wall. It opens this week at the Laing Art Gallery, Newcastle, and will later be shown elsewhere in the north. Explanations of the kind these exhibitions provide are just the way to arouse a more intelligent interest in our ancient monuments.

BR HERALDRY

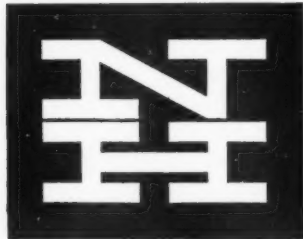
Somewhere on these pages you will find, I'm afraid, British Railways new badge, symbol, device or what have you. What you have, in fact, is the work of a distinguished amateur authority on heraldry, who conspicuously does not happen to be an amateur authority (or any kind of authority) on design. BR's handout about this—*er—thing* contains a hearty self-administered pat on the back for having got the heraldry right, but not a word of apology for not having bothered to get the resultant array of symbols pulled into an eye-gratifying, or even eye-catching shape by a designer. The messy arrangement of wheel, lion and crown within the circle makes one feel slightly apologetic for having been rude about the new coinage, and the lettering would cause grave misgivings at sixth-form art-class level.

*

Anything that British Railways does affects the visual environment of citi-



Above: an example of how well-meaning improvement can result in a cleaner, more tidy Subtopia—a Subtopia that is even more depressing than one created by shabbiness and neglect. This particular "improvement"—the tidying-up of an advertising site at Turnpike Lane bridge—was carried out by British Railways, in collaboration with Hornsey Borough Council.



Left: the new BR symbol and the New Haven Railroad symbol. (See ASTRAGAL's note.)

zens all over the country, but their attitude to this enormous responsibility seems completely null, as if it didn't exist. The July issue of the *Architectural Review* will contain some pretty crisp observations on the completely careless attitude of BR to the disastrous landscape effects of their overhead electrification policy, and ASTRAGAL, who has had a preview of the article, feels that every word of it is justified.

In the meantime, as food for thought, and to prove that being a railway is not the essential cause of the trouble, this page also contains a reproduction of the eye-teasing, but extremely effective new symbol of the New Haven Railroad, designed by Herbert Matter as part of a drastic visual overhaul of all that company's static and rolling stock, a programme that has also included Breuer, Yamasaki and Saarinen. Are you listening BR?

Some people can get architecture taken seriously—Walter Gropius, for instance, whose new book *The Scope of Total Architecture** has just appeared in a series entitled "World Perspectives" that also includes Maritain on God, Radhakrishnan on Faith, Adenauer on the World and Mumford on Man. Gropius's contribution is a curious one, a paste-up, somewhat edited, of sundry essays and articles covering a big span of time and a variety of subjects. Thus you will find

him considering optical illusions and the physiology of the eye, the ratio of divorces to illegitimacy in Germany in the twenties, the morality of Collegiate Gothic, Square Mile rehabilitation and goodness knows. Not such chaos as you might imagine; far from it. The fundamental Gropian theme of architecture and science runs deep through all he writes, and gives to these sundry papers the unity of an austere dignity.

While on the subject of Architecture and Science, let me recommend a new book on Robert Hooke*, best known nowadays as the inventor of the universal joint which still bears the name of Hooke's Coupling, and as one of the inside men of the early days of the Royal Society. But he was also an architect and surveyor, co-adjutor to Sir Christopher Wren on much of the re-building of churches and such after the Great Fire of London, designer of the old Bedlam Hospital and—check your references before you argue—the Monument. Miss Espinasse devotes only one chapter to Hooke's building activities, but the whole book is fascinating, and should be on the shelf alongside John Summerson's *Wren*.

SAY INSISTO

The Italian Institute's symposium on Italy's contribution to modern architecture was a somewhat complex affair in its organization, but conducted with great aplomb by R. Furneaux Jordan, who introduced themes, chaired

speakers, set keynotes, summed up, showed slides and one thing and another, and held together a discussion which by its nature was in danger of coming apart all the time.

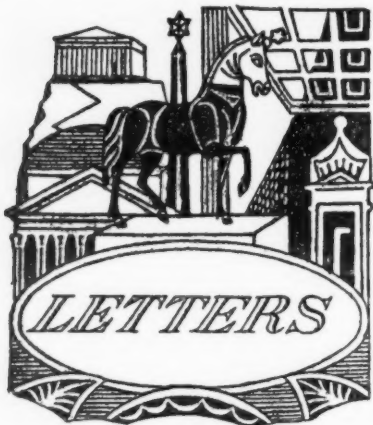
From the floor one sensed a certain hostility between the two sides of the platform; Hitchcock and Banham on the right, speaking for History, and Brawne and Burton on the left, speaking for Practice, but tempers, thanks to Jordan, never flared. As for what was said—everybody agreed to differ on the keynote themes, viz.: Form and Content, Rationalism and Romanticism, Craftsmanship and Engineering, Present and Past. Nothing very new, though the historical side had some facts to throw in that do not usually get thrown in. One learned from Michael Burton that the way to get your own way on a building site in Italy is to say "Insisto" very loud and often, and from Banham that the rise of the scooter is due entirely to the existence of an enormous stock of unwanted small petrol-motors in Italy at the end of the war, originally destined for use in aircraft.

THE WHITE LADY

What, or who, is the White Lady? No, it is not a new branch of whiskey, or even sheerer nylons, and it has nothing to do with Dornford Yates. It is, in fact, a fascinating project for a French new town. That is all that can be said at the moment, but watch—as the saying goes—this page.

* By George Allen & Unwin, 15s.

* By Margaret Espinasse. Heinemann, 21s.



Helen M. Challen, A.R.I.B.A.

Sir Howard Robertson,
PP/R.I.B.A.

Jeffrey Webb

H. Hallwood Lingard, A.R.I.B.A.

E. Maxwell Fry, F.R.I.B.A.

No. 1, St. Paul's

SIR,—I was appalled and concerned at the nature of the criticism on No. 1, St. Paul's Precinct, quoted in your issue of June 14, made by Sir Hugh Casson and Neville Conder, J. M. Richards, Sir William Holford, Misha Black and Jane Drew. "Criticism" can only be used as a mere generic term here, for such as there was came across as a timid undertone to a little chorus of polite praise.

In any case, this is a personal reading of the matter. Delicate innuendos and reading between lines should not have to be undertaken by readers of a publicised critique. Critics are, surely, morally obliged to uphold, without compromise the standards in which they believe. A critic who finds it professionally embarrassing to do so, for some reason or other, should decline to make any comment at all. Even within the closed circle served by the ARCHITECTS' JOURNAL it seems indefensible to do otherwise.

If one, therefore, has to believe that the statements made were, in actual fact, "frank" and that the authors of them are willing to accept this architecture with only the mildest comment, then one must despair at the disintegrating standards of some of the leaders of our profession.

As each new mammoth block rises out of the city, one is sickened, not only by the lost opportunity embodied in it, but for the actual aesthetic offence which is to stand for several centuries as an example of 20th century architecture. It is in this respect that one looks to the critics, who appear to be upholding the same architectural values as oneself, to express their views with far greater clarity and force than has been done in the case in point.

It can only be fervently hoped that the children now being educated in the modern schools will have absorbed the spirit of some of the best contemporary architecture to make it impossible for them, later, to accept No. 1, St. Paul's Precinct, and its kind.

HELEN M. CHALLEN.

London.

New York And London

SIR,—For the benefit more particularly of the younger members of the profession I

would like to comment on some of the problems of design in air-conditioned tall buildings, particularly in reference to illustrations and captions published on page 699 of the JOURNAL of June 21.

These are both of buildings of up-to-the-minute package design, with very large glass areas, and consequently high reflection values. Reflecting facades have both virtues and drawbacks, particularly in the London climate, but this would be a major question for separate discussion.

In the caption to these pictures of the two proposed office buildings, both in New York, there is a quotation from Sir Gerald Barry: "The skyscrapers in New York . . . seem to be floating away, because they've got wonderful new materials, glass and aluminium, and they're able to use height and use it lightly."

I would venture to question the strict accuracy of this pronouncement, in that the vast majority of New York skyscrapers are not as yet faced with such materials. There has indeed been an outcrop of aluminium-faced buildings around Park Avenue ever since the Alcoa building in Pittsburgh illustrated the possibilities of this material, but in fact they are mostly not at all distinguished architecturally. Imitators of Lever House have jumped in to make all-glass facades, which are detracting from the novelty impact of the elegant first example. And now there is the steel-faced Socony-Mobil building by Wallace Harrison, and soon to be built is the bronze-clad Seagram building by Mies Van de Rohe, Philip Johnson and Kahn & Jacobs.

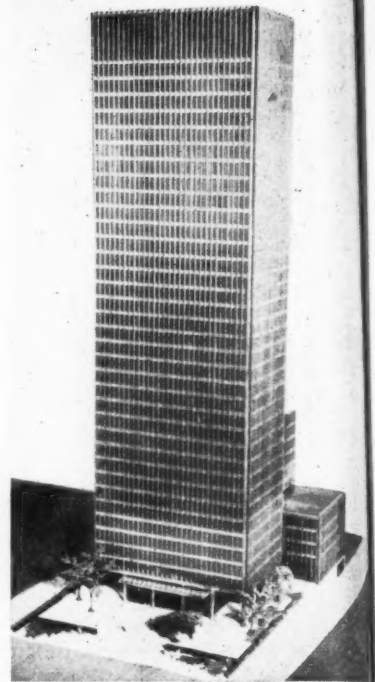
But none of these materials are, in themselves, very "new" or very "wonderful"—new only in their large scale use in a fabricated application. Particularly the all-glass front is an antique, having been exemplified by Willis Polk in a San Francisco store some 50 years or more ago. This building and a number of others such as the Tietz store building in Berlin have indeed been illustrated years ago in two books of mine published by the Architectural Press.

We are now entering upon a phase when the metal and glass curtain wall is in full vogue, and these and other less familiar materials such as porcelain enamel are being tried out again in an effort to solve the problem of a light-weight, impervious, economical, trouble-free, and speedy cladding for tall buildings in particular.

There are, here, in my experience, two main problems, the practical or functional, and the aesthetic. I have given much study and consultation time to both, and—again with your younger readers in mind—I would like to set out some of the problems.

The fenestration is one of them, a major one. We all know that there are ribbon or continuous window treatments, and those with isolated window openings. The former are not satisfactory for all office conditions, since the placing of partitions inside is determined by the mullion module, and there is in consequence only limited modular freedom of partition adjustment. It is a treatment best adapted to large open-space offices, but not for large numbers of small offices such as are required by certain clients. The former strip pattern is exemplified in much New York work, but the latter at present very greatly predominates, a classic example being the Rockefeller Centre buildings which, over twenty years, have proved exceedingly satisfactory and popular buildings for office purposes.

With the curtain wall, the stanchions must be detached and placed either inside or outside, the wall being an ostensible curtain, though not a true expression, since solid upstands below the window sills are required in most cities for fire protection. The detached column inside, either set back or near the outer curtain, is a terrible obstruction to partitions and their free displacement to meet demands for varying office



The Seagram Building, New York

sizes. With the solid Rockefeller wall type the stanchions may still partially project in the rooms, and some of us who are thoroughly conscious of this objection are trying to design in such a way as to eliminate stanchion bulges altogether by burying them in the outer wall. To do this automatically eliminates the 100 per cent curtain wall expression.

We now turn to window areas, and questions of heat and cold insulation. The "all-glass front" places an enormous and unjustified load on the air-conditioning, producing as it does quasi-greenhouse conditions. The result is that heat-repelling glass is resorted to, and Venetian or other blinds are more or less continually down, necessitating burning electric light for most of the day, a factor in itself adding enormously to the demands on the cooling plant. Several interesting articles on this problem have appeared recently in the American monthlies, and they are truly revealing. Further, eminent American specialist consultants have uttered direct warnings to me on this point, and urged the use of smaller individual windows, a recommendation privately backed by some of the most experienced American architects who have designed tall office buildings.

Individual works like the Lever building, and the Manufacturers Trust Company with its all-glass front, are no doubt justified for special publicity or other purposes, highly important to certain businesses in U.S.A., but it is noticeable that the latter building loses all its brilliance of effect unless the totally illuminated ceiling is on all day. It is a question here of setting advertising or similar values against other considerations.

On the maintenance side, very great drawbacks have been discovered during the few years of the life of some of these buildings. Leaking joints, defective caulking, deterioration of mastics, cracking of glass due to distortion, etc., have all been frequent and expensive. Further, these all-metal or glass buildings have to be continuously maintained in a clean polished state if they are to maintain their glossy virtues. They are, in fact, exactly like a shiny new motor car,

in that they deteriorate with even a minimum of neglect. If allowed to get shabby, as they well might under English conditions, the effect may be depressing; whereas materials such as stone and brick actually improve with age. Clearly the search for a perfect material goes on, and its discovery is not yet; and here I would refer readers to the interesting reports of objective architects such as Edward Mills.

To my mind the question of weathering remains of prime importance from the æsthetic angle in this country. Whether tall buildings in general should appear to "float away" is a matter of opinion. No doubt this is a true expression of the age of inflation, but it is not in accord with the facts. Buildings mostly stand on the ground, and the balloon or aeroplane analogy is perhaps a trifle forced and, if multiplied, might become tiresome. When Mies builds in bronze (not a "floating material"), no doubt yet another new æsthetic will be born.

Incidentally, the glass and metal buildings are not all free from falsehoods. The total glass curtain wall effect is a basic untruth, and what of the RSJs hung on the windows

seen the illustrations of the "House off the Peg" designs in the *Manchester Guardian*. (See also the AJ frontispiece for June 14.) This scheme aims to save the client the cost of employing an architect. It will have a great appeal and in view of the personalities involved cannot have been vetoed by the RIBA. I wonder whether it will be so attractive to those younger associates in the habit of eating off the fees from this kind of work.

It simply isn't true that small houses are unprofitable to every architect though they must be to the bigger firms, which description may include our legislators. We begin our careers with work of this kind and graduate on the merits of our handling of it. What a blow it would be for the beginner if this suggestion should catch on. Perhaps the last straw.

The umbrella of official employment will not be enough to protect the casualties in need of opportunity. And all the while we accept the creation of architect's departments by industrial and commercial agencies, the domination of the great official bureaux and a few "name" firms. There may be jobs for most, but what of the outlets for design, responsibility and all-round knowledge upon which the schools lay so much emphasis?

But to come back to the point, here we have the raw material of a native pepper-pot Exurbia. As the poet very nearly wrote:

After all the planning
The decisions and revisions
The layouts and the layabouts
With bow ties and nice eyes.

... The need for grouping
(If I should fall tell Spragg
To keep the flag
Drooping.)

What a game to play on a windy Sunday in the Zephyr spurring through Subtopia—2 Scotts—1 Yorke—1 Spence—3 Yorkes—1 Scott. . . And the surveyors bawling the odds—"50s. a foot, on the building line please, room for garage, sorry lady, only Scott's left, here's your leaflet on the compensations of small windows." And the Ad-angle "And now the only house, with XPM the structural additive that prevents cracking." And the human angle as required.

As Perelman would say, any budding Rattigan who would care to adapt this roundelay for performance in the Albert Hall, can have it. Proceeds to the ABS Barbican Fund for the professional destitutes of 1984. The prologue should be spoken by the first Culpin-Comp inmate with minstrel face and lute as follows:

"In the beginning there was a client, an opportunity and a task. . . ." (Sounds of heavy breathing and a reek of vinegar.)

As an afterthought and in view of the professional services cut rate (of about £100) implied in this scheme (and therefore presumably RIBA sanctioned) I wonder how many of your readers would be prepared to join me in a serious offer to the public of similar though improved services for £75. Plans to be of greater variety, all details to be supplied and to accommodate the interchange of plan types. This could give a better service to the client and could offend no ethic that has not been already apparently abandoned.

JEFFREY WEBB.

Salop.

SIR.—It is inconceivable that the architects concerned with this scheme do not realise that the chances of a stock plan giving complete satisfaction on any one site are very slim. Possibly the original intention was to persuade the speculative builder to adopt the stock plans in preference to the "eternal semi." This will certainly not happen in a competitive market if the builder is asked to pay £100 for each house. When the

scheme is adopted by an individual client, who is to settle the question of boundary walls, terraces, drives and gates, drainage, work below ground, client's second thoughts, the twelve weeks' delivery on the pink tiles and above all, the final account? These are obvious points to us all, but it has only become necessary to raise the matter because the scheme is backed by some of the most eminent members of the profession. To see the announcement of the scheme in a responsible paper (the *Manchester Guardian*) linked with an assertion that the profession cannot really be bothered with the small (£4,000!) house, could cause a great deal of damage.

We have read quite enough in both the national and technical press about the reluctance of architects to design and supervise the erection of private houses. There are many firms more than willing to undertake commissions of this nature and the layman should not be misled.

B. HALLWOOD LINGARD.

North Wales.

New Towns

SIR.—ASTRAGAL'S comments on Hemel Hempstead New Town and your editorial on the lowering cost of school building invite a comparison which has not been sufficiently considered by the profession.

It is a sad fact but true that the building of the New Towns, into which so much effort has gone, has barely advanced the design of contemporary house design, and largely as a result of this, the New Towns themselves, considered as unified conceptions, are a disappointment to us all.

House design has a core of unregenerate romanticism to which it is only human in the directors of New Town policy to cling, but if the cost of education is so important a consideration, can the cost of housing be less so?

And if the combined skill and determination of architects and the industry can bring down the cost of education in face of rising costs, can it not, resolutely applied, do the same for housing?

What is needed are progressive programmes of house building under single direction with closely associated teams of architects and industrialists; and these the New Towns could amply provide. It pre-supposes also at least as much uniformity, or structural conformity, as could once be found in the best 18th century urban development.

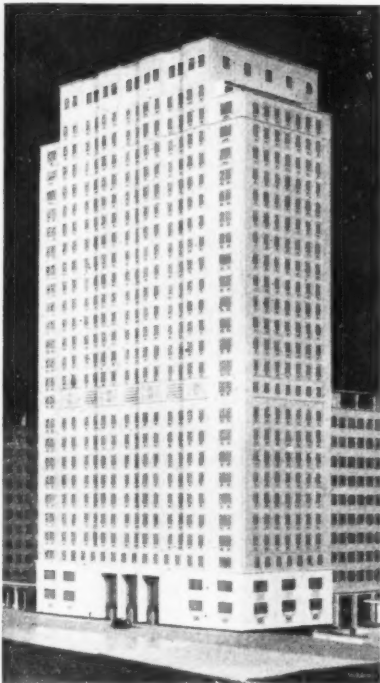
This latter consideration is the point of final departure from the gentle fantasy of garden city ideology towards full urbanism, but this calls for a degree of resolution that neither the directors nor the architects of New Towns have been able so far to summon, and for lack of which the New Towns remain uninteresting as works of art.

It calls in fact for an exact reversal of the aims put forward at the opening of the Hemel Hempstead Exhibition at the RIBA, by the Chairman of that Corporation. But think what flows from such a reversal. In place of the restless variety of the housing, playing down to a supposed public taste for the romantic and nostalgic, having nothing to say to the schools dropped like inconsequential greenhouses among the odd pitched roofs, or to the factories that belong to another world, or to the chain stores, offices and public buildings of the centre; in place of this medley of good intentions, we should have the material of grand urban design, congruous in structure, in design, in the so important item of scale and rhythm, without which no architecture sings.

Among these elements of urban design it is housing that is out of step. Is it not time that we set about the making of a complete town in which the 20th century could come of age and accept its future?

E. MAXWELL FRY.

London.



The Shell Building, South Bank.

of certain Chicago flats just for decorative effect? I mention these things in the hope that true and honest architectural expression of the real basic problems will emerge.

One last word on materials. The New York architect who has probably pioneered more, and built most, in the skyscraper world in America was asked by us what material he would use for a facing if he had the choice. His answer was, "stone."

Far be it for me to become an all-stone advocate. I think there is place in English architecture for many materials in proper juxtaposition. But I still feel that Portland in particular—a beautiful and traditional material—has its place in many key London positions, and that no architect should be panicked into neglect of it, however great the clamour or novelty or the fashionable but fickle mode.

HOWARD ROBERTSON.

London.

Boxgrove Houses

SIR.—I have read the announcement and

NEWS

H. MYLES WRIGHT

New Appointment

Professor H. Myles Wright, F.R.I.B.A., has been appointed by the Secretary of State for the Colonies, Alan Lennox-Boyd, to be a member of the British Caribbean Federal Capital Commission. Other members appointed are Sir Francis Mudie (chairman) and Alexander E. Cook.

The terms of reference of the Commission are as follows:—

In accordance with the recommendations of the Conference on the British Caribbean Federation, held in London in February, 1956, to visit those federating territories whose Governments wish them to be considered for the location of the Federal Capital or desire to express views on the site, to examine the facts concerning possible sites, and, within a period of four months from the appointment of the Commission, to make recommendations for the consideration of the Standing Federation Committee on the three most suitable sites for the Federal Capital in order of preference, bearing in mind, *inter alia*, the following factors:—

- (i) political and social sentiment throughout the area;
- (ii) the convenience of the site in relation to the Federal area;
- (iii) the availability of land both for immediate building and for future expansion;
- (iv) the cost of site preparation and the necessary buildings on the selected site taking into account the availability of temporary accommodation;
- (v) The suitability of communication by sea, air, cable, telephone and road;
- (vi) the services available.

RIBA

London Bronze Medal

The passenger-handling building at London Airport, designed by Frederick Gibberd, is

the subject of the award of the London Architecture Bronze Medal for 1955.

Hampshire Bronze Medal

The factory at Basingstoke, designed by Leslie Wood for L. M. Van Moppes & Sons Ltd., is the subject of the award of the RIBA Architecture Bronze Medal awarded by the Hampshire and Isle of Wight Architectural Association for the four-year period which ended on December 31, 1954.

Australian Bronze Medal

The RIBA architecture bronze medal awarded by the Western Australian Chapter, RAIA, for the five-year period ending December 31, 1955 (in the area of the Chapter), has been made in favour of the King Edward Memorial Hospital, Perth, designed by the Public Works Department (principal architect, A. E. Clare).

JOURNAL is "Satisfactory"

A sub-committee appointed to review the presentation and contents of the *RIBA Journal* has reported that the results of a "reader-critic" scheme shows that "the general content of the *Journal* was satisfactory to the majority of members and that no more than some minor changes shall be put into effect."

A further reader census will be taken in about a year's time.

Small House Designs

Approval was given recently by the Council to the details of the scheme formulated by the public relations committee for the provision of RIBA designs for small houses and for the setting up of a designs executive committee and the initiation of a competition for the production of these designs. Full details of the scheme are to be published in the *RIBA Journal* and the technical press at a later stage.

Borough Councils' Power

The Council has been informed of proposals to transfer certain powers from the LCC to metropolitan borough councils. The majority of the proposals are not connected with architectural or town planning matters. The Council has agreed to reserve for future comment a proposal to delegate the power to make orders for preservation of trees and woodlands and to consult the Town and Country Planning and Housing Committee. On the general point of the delegation of planning powers, it has been agreed that any extension of delegated powers was not in the best public interest.

Provisions for Retirement

The Council recently considered a report from the RIBA representatives on meetings convened by the Law Society and attended by representatives of the leading professional institutions to consider and make representations on the provisions of the Finance Bill 1956. The Bill provides for the purchase of retirement annuities by self-employed persons, the premiums of which up to certain limits will be tax-free. As a result of representations made, certain further concessions were to be made by Parliament, especially in regard to those who were partly self-employed and partly salaried. The Council were also informed that the Architects' Benevolent Society were arranging for the provision of suitable annuity schemes for architects in private practice.

Motion on WC's

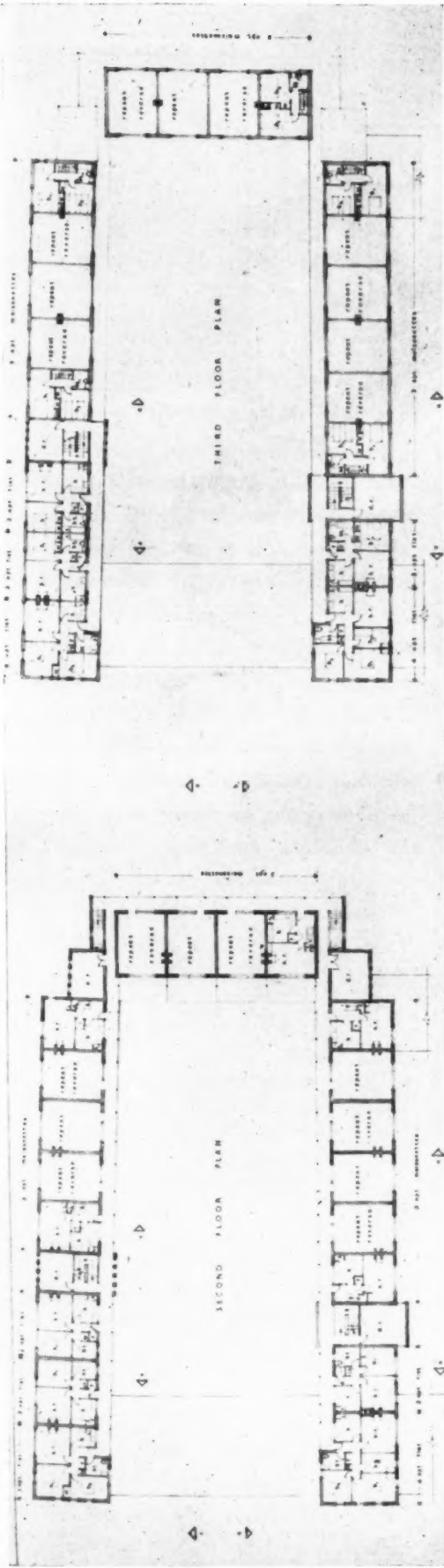
The Council recently agreed to give support to a motion to be moved in the London County Council for the reconsideration by the Health Committee and Housing Committee, of the LCC By-laws on the provision of ventilated lobbies. While it was accepted that the provision of a ventilated lobby between a water closet and any other room was desirable in principle, it was agreed that there were many occasions, especially in conversion work, where the provisions of such a lobby involved disproportionate cost and loss of otherwise valuable accommodation, and that there should be powers to grant waivers.



This is the design that won Colin Laird first place in the competition for Trinidad's new concert hall. The assessor, J. R. Firth, chose it because "its efficient planning fully provides the promoters with all they require." Twelve designs were received by the promoters in this competition, which was limited to architects practising in the West Indies and was the first architectural competition to be held in this part of the world.

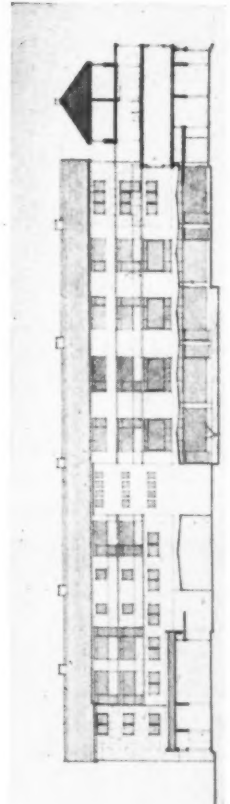
DESIGN COMPETITION FOR HOUSING IN PERTH CITY CENTRE

WINNING COMPETITION DESIGN FOR HOUSING IN PERTH CITY CENTRE

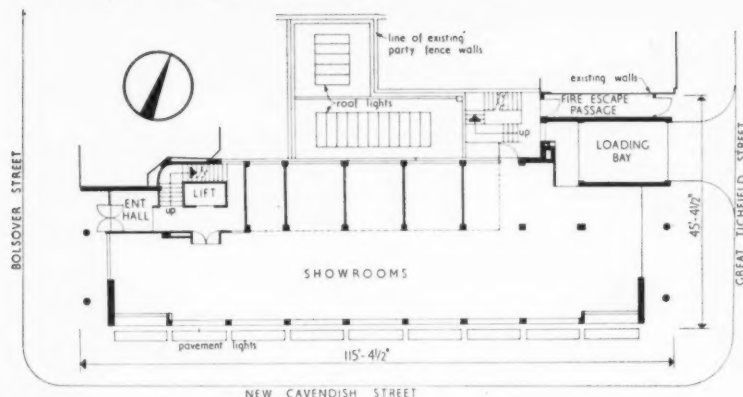


Here are more plans (north to the right) and sections by the competition winners for a Perth redevelopment scheme which is also illustrated as this week's frontispiece. The winners, H. G. West and Robert E. G. Miller, say that their scheme "seeks to create a focal point to the centre of the City of Perth, to impart a civic atmosphere and to reconcile and combine this atmosphere with the domestic scale of residential development . . . The accommodation provided is as follows:—23 shops; 6 2-apartment houses; 17 3-apartment houses; 2 4-apartment houses; 1,336 square yards of garden ground; and parking space for 20 cars. The total estimated cost is £146,000. The shops have been designed to form a pedestrian precinct excluding all wheeled traffic, but parking spaces are provided so that cars can set down their passengers very near to the shops. Vehicular access for unloading goods is provided to all shops by means of roads on the perimeter of the site. The shops shown in the drawings are generally in units 18 ft. 0 in. wide from centre to centre of the cross walls, but any shop can be extended to another unit by merely forming an opening of reasonable size in the crosswall and by reconsidering the layout of the lavatory and storage accommodation. Similarly the offices can be redivided by altering the openings in the cross walls, and the area within each unit can be subdivided according to the needs of the occupier. Owing to this crosswall construction any of these units can be used as first floor premises for shops, the area on the first floor of the small north block being particularly suitable for this purpose. A staircase tower with clocks has been carried up to just above the ridge

level on the east block parallel to King Edward Street. This forms a focal point when the precinct is entered through the pend from Meal Vennel, and on the elevation facing the City Hall, it provides an emphasis and imparts civic character to the east elevation facing the City Hall. Most of the outer walls have a 6-in. stone facing."



BUILDINGS IN THE NEWS



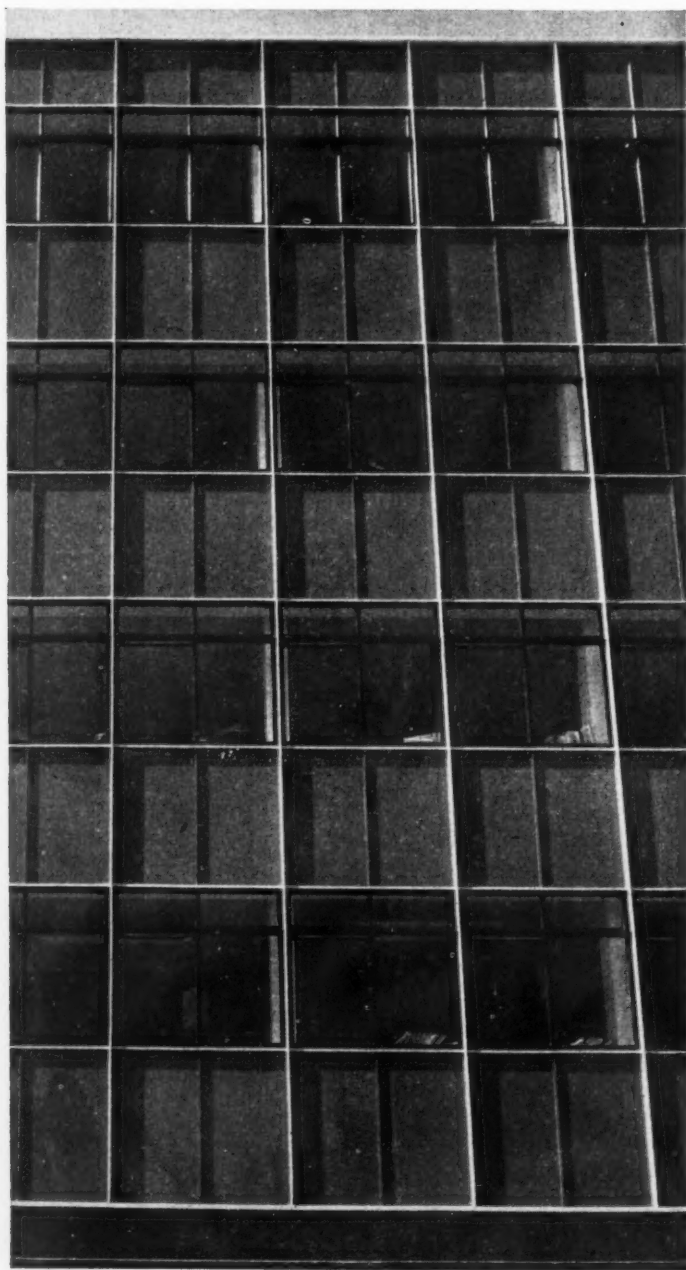
Ground floor plan [Scale: 1/8" = 1' 0"]



Offices in New Cavendish Street, London, W.1.

This office building was designed by Gollins, Melvin Ward and Partners, to give the maximum area of divisible office space on the upper floors and showroom space on the ground floor. The basement was designed for storage only. The construction is of monolithic reinforced concrete carried on multiple pile caps on bored piles. Internal partitions are of lightweight concrete blocks. The building is faced with curtain walls on a 2 ft. 10 in. module. The curtain wall is constructed of extruded aluminium sections with steel opening lights painted black, the infilling panels being of blue/grey glass slabs. Due to the LCC Fire Officer's requirements, there is a 4-in. thick reinforced-concrete inner skin up to window sill level, behind the curtain walling.

The building is heated by an oil-fired boiler serving radiators with low-pressure hot-water circulation, with the



exception of the main entrance hall which is heated from the ceiling. Summer hot-water service is supplied from a gas-fired boiler. Other services include separate landlords' and tenants' electrical installations designed to give maximum flexibility, provision for GPO services, hot and

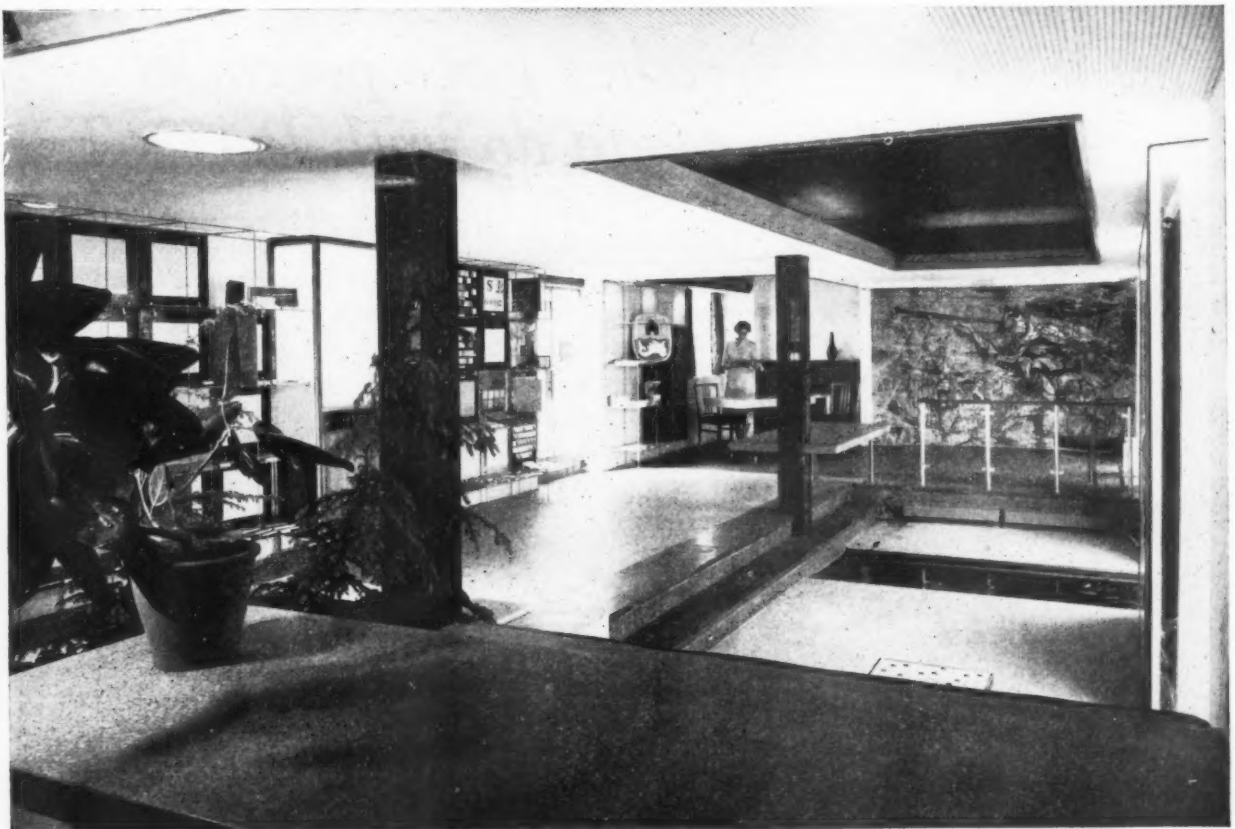
cold water and drinking water points, electrically-operated incinerators in women's lavatories, and lightning conductor installation. A passenger lift for eight persons and a loading bay with electrically-operated roller shutters are also provided. The main entrance in Bolsover Street has armour plate glass doors and fanlight, black and white terrazzo tiled floor and one wall of Bleu Belge marble, which extends the width of the arcade externally. The free-standing columns in the arcades at

each end of the building are finished with black terrazzo. The main staircase and landings are finished with white terrazzo, and office and showroom floors throughout with sapele wood block floors. Walls and ceilings are plaster painted. The architects were not responsible for the design of the ground floor, apart from the entrance hall. The main entrance doors will be illustrated as a Working Detail in a future issue of the ARCHITECTS' JOURNAL.

Showrooms at Poole, Dorset

This showroom has been designed in the existing building of Poole Pottery to show the products and services of the Carter Group of companies. The architects were Farmer and Dark; the assistant-in-charge, Edward M. C. Butcher. In addition to the showroom, below, there is a sample store and an interview room. The flooring and walls of the showroom are the work of contracting units of the Carter Group. The table tops in the foreground and at the far end, and the treads and risers are of precast green terrazzo. The flooring below the metal display frame is of hexagonal ceramic tiles. The ceiling is acoustic sheets, painted white, with light recesses

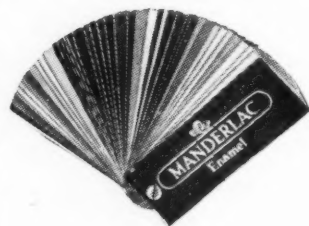
painted matt black. On the lower floor is a pool, lined with ceramic mosaic, which is continued through the window into the garden. The columns are Ashburton marble. On the right-hand wall is a tiled decorative panel designed by Gordon Cullen, and on the far curved wall is a tiled mural, "An Apotheosis," designed by Hans Tisdall. This was executed by Leslie Coombe of Carter & Co. The mural, made from English materials, has been built up by applying the individual pieces to coarse hessian, through the interstices of which cement has been pressed. Thus the joints between the pieces are open, creating an unusual, highly textured, effect.





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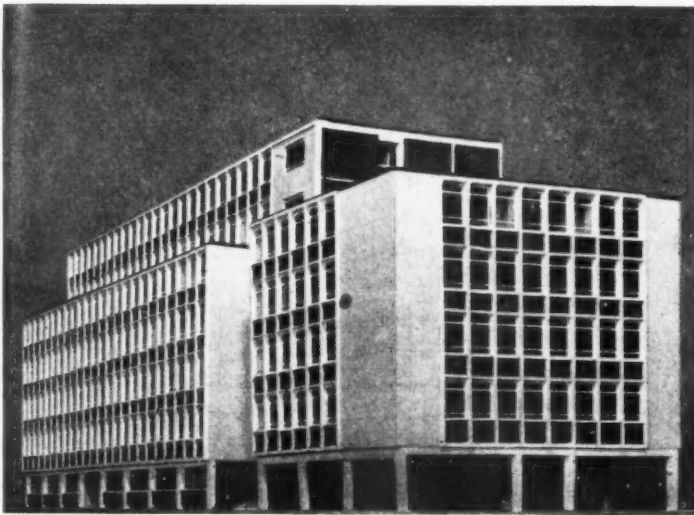


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BUILDINGS IN THE NEWS continued



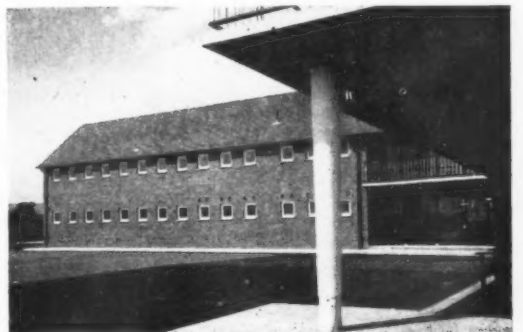
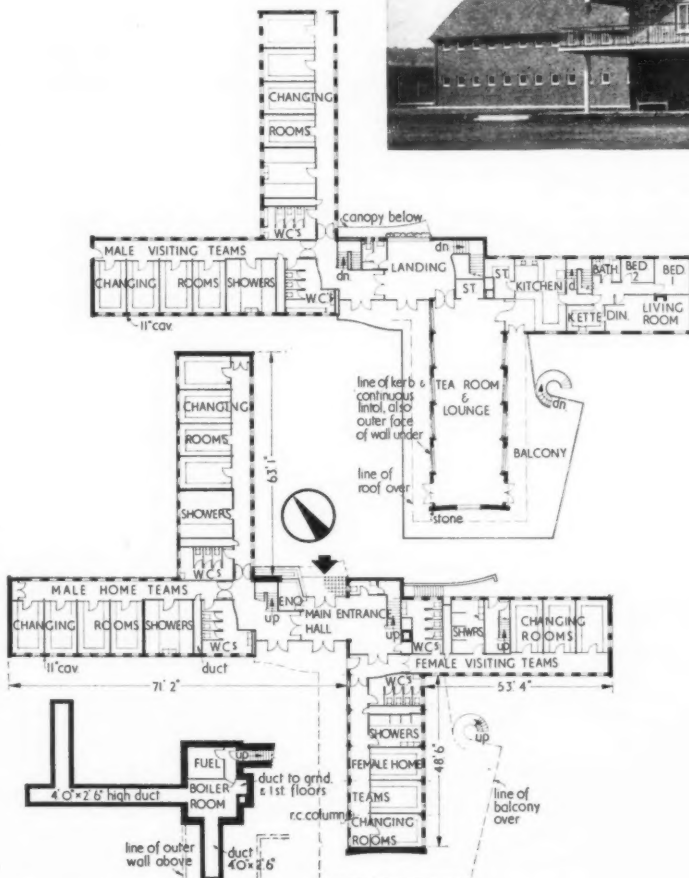
Offices in Red Lion Street, W.C.1

The office building seen in the model photograph left, is now under construction at 29-37, Red Lion Street, Holborn, and was designed by Lander, Bedells and Crompton. The offices will be occupied by the Law Society as headquarters for their legal aid department. Accommodation will consist of 65,000 sq. ft. of office space and 18,000 sq. ft. of basement storage and car parking. The general contractors are A. Roberts & Co., Ltd.



Sports Pavilion at Cardiff

This sports pavilion at Llanrunney, Cardiff, for the University College of S. Wales and Monmouthshire was designed by T. Alwyn Lloyd and Gordon (assistant architect, D. E. Humphreys). Above, from the south. Below, the north-west wing as seen from under the projecting balcony. There are 32 acres of college playing fields. The general contractors were Hinkins & Frewin.

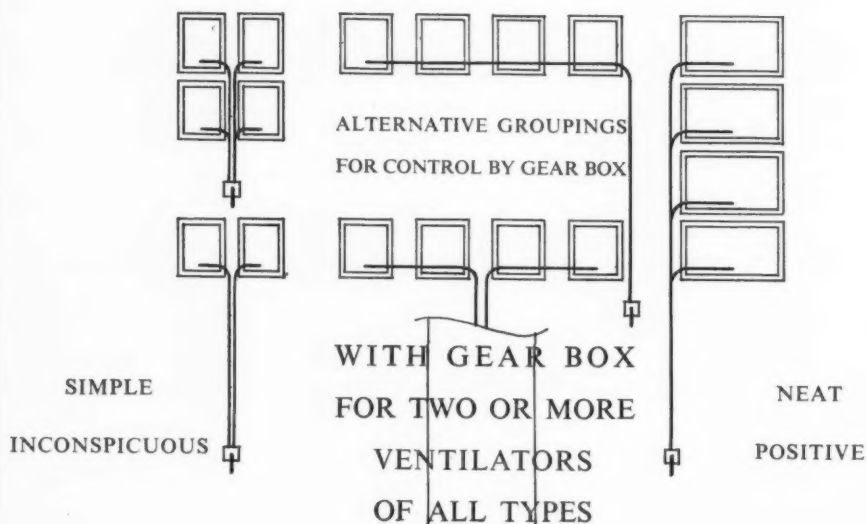


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DOMESTIC HEATING

Last week we published a special issue devoted to the Institute of Fuel's recent Conference on Domestic Heating. Unfortunately we were unable to find room for four out of the 16 papers summarised, so here they are. The first two papers, entitled *Oil-fired appliances for domestic heating* and *Warm-air systems* complete our summaries of the section entitled *Appliances and Systems*: the second two, entitled *Architectural problems of heating multi-storey flats* and *Space and water heating relative to housing design* comprise the last section, *Applications*. We have two editorial comments to make. On oil-firing equipment the architect wants more positive guidance on which type of burner to use and on warm air systems he wants more data on the standards of heating realised and on seasonal costs.

technical section

Appliances and systems (continued)

Oil-Fired Appliances for Domestic Heating

by G. J. Gollin, M A, M I Mech E, F Inst F, F Inst Pet, technical adviser, Fuel and Light Oils Department, Shell Petroleum Co. Ltd.

This is a summary on one section only of a long paper. The other sections described in detail the mode of operation of each variety of oil burner, but as these descriptions did not conclude with any data which would enable an architect to make his choice we have omitted them. In the section summarised here the author discusses the choice of oil-firing equipment in relation to five characteristic heating problems. He concludes by remarking that if only a few producers were enabled to go into quantity production more people would be able to afford fully automatic burners, by promising that more boilers specially designed for oil firing are on the way, and by welcoming the new large "packaged heat" boilers which are now coming on to the market.

In the choice of oil burning equipment there are two main decisions which have to be made: first whether to use a "heavy" oil which requires pre-heating but is comparatively cheap, or whether to use a distillate such as kerosene or so-called "gas" oil which costs more but does not need pre-heating: this decision will be made chiefly on the size of the installation. The second decision (which applies only to the use of distillate fuels) is whether to use a vaporizing burner which will be manually lit and adjusted or an atomizing burner which will be automatic in operation: this decision will depend on whether the client is prepared to spend more money in first cost in order to escape bother in running. From the architect's point of view it is considered more helpful to consider the alternatives which would apply to different types of building since there is already a considerable (and to him confusing) literature on the modes of operation of the different appliance types.

The Small House with no Electric Supply

The choice is effectively limited to equipment of the vaporizing class. For space heating there are various free-standing heaters both of the radiant (Fig.1) or of the convector type. These mostly use kerosene (paraffin) and must normally be refilled at frequent intervals: a more elaborate version of the convector type (illustrated in Fig. 2) uses a pot burner and contains a supply tank which holds enough oil for 72 hours burning at minimum consumption and 10½ hours at maximum. Alternatively the burners can be connected to an outside tank fitted with a draw-off tap in which is inserted a constant level feed device. If the house already contains a solid fuel boiler this could be converted by applying a natural draught burner of either the pot or perforated drum type. With any type of burner which uses a flue it is essential to install an automatic draught regulator (Fig. 3) to ensure that the draught will remain constant irrespective

of pot and chimney temperature.

New Single-storey House with Electrical Supply

With an electrical supply the choice is widened to include both fan-assisted vaporizing burners (which burn for longer periods without cleaning) and fully automatic burners which can either be of the pressure jet or the medium pressure air type. The main differences between these two are that the pressure jet is quieter and has less to go wrong: it is, however, more apt to become choked than the medium pressure air.

In the case of a new house it would be feasible to design the building round a service chamber (Fig. 4) which delivers hot air to four adjacent rooms, though the economy of a system of this kind will depend on the extent to which the unit can be fed by recirculated warm air: it is thus important that windows should not be opened more than necessary.

Two Storey Eight-roomed House

In the unusual event of the house having a basement, an economical method of

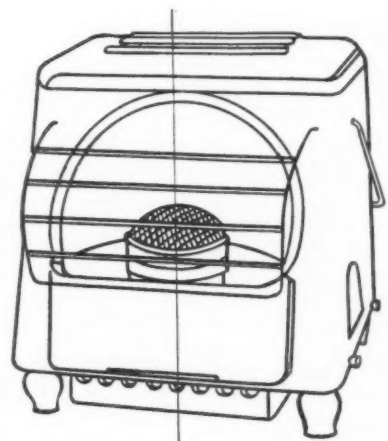
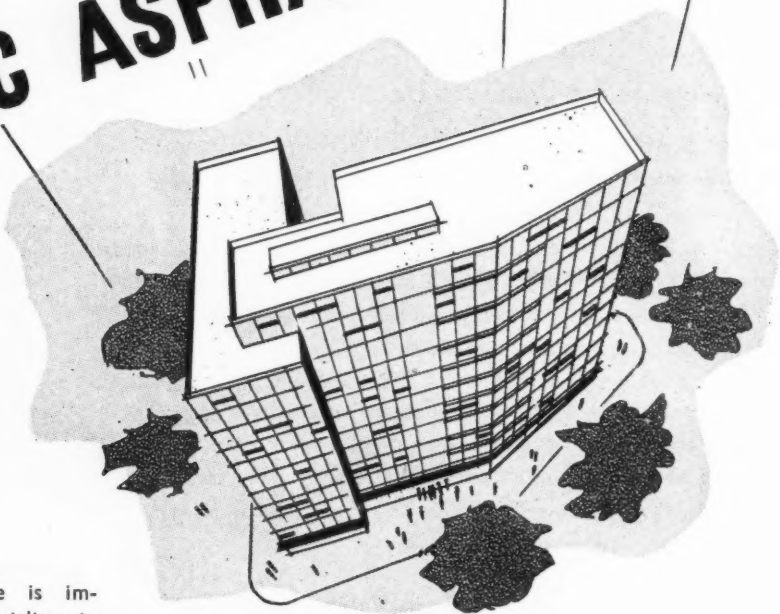


Fig. 1. Radiant heater (kerosene).

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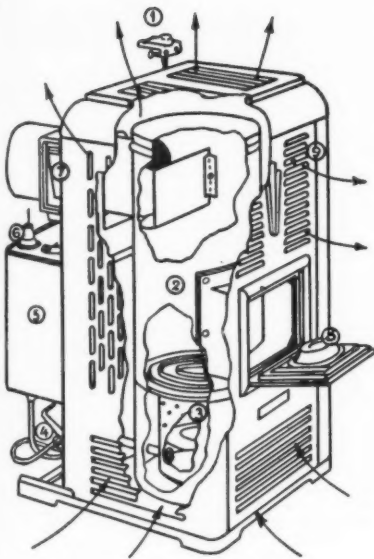


Fig. 2. Pot burner in convector space-heater. 1: heat controller. The heat output is regulated by a controller, operated from near the top of stove, which adjusts the consumption of oil. A safety device automatically shuts off the oil if the flame fails. 2: heat exchanger. 3: vaporizing burner. 4: oil feed pipes to burner with cleaning device. 5: supply tank. Holds sufficient oil for 72 hours burning at minimum consumption, or 10½ hours at maximum. 6: oil level indicator. 7: flue outlet for connection to chimney, with damper for draught regulation. 8: lighting-up door, with window which lets the glow of the flame be seen. 9: side air vents.

this from a thermostat in the secondary. The boiler can then be worked at a temperature to suit weather conditions.

The Larger House

In installations of this size it is usual to have two oil-fired burners for heating and domestic water. When this is done there is a good case for installing a heating boiler large enough to do both duties and to rely

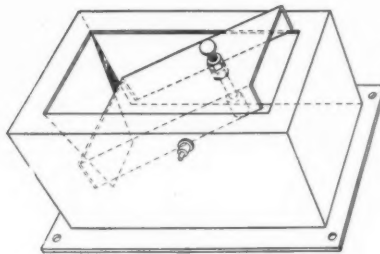


Fig. 3. Automatic draught regulator.

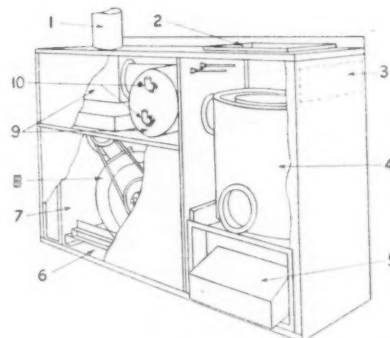


Fig. 4. Hot-air and water heater. 1: stack. 2: discharge—12 in. x 12 in. standard. 3: alternative discharge. 4: air heater. 5: burner. 6: alternative position for filter. 7: filter. 8: fan and motor. 9: water heater and smoke box. 10: 1-in. bore water-pipe connections.

obtaining whole house heating would be to install an oil-fired burner in the basement with hot air ducts to the rooms above. Owners of this type of house will want to combine hot water heating with a measure of space heating giving a total requirement of between 40,000 and 60,000 Btu. For this three different oil-fired systems are possible. These (in ascending order of cost) are: (a) fan assisted vaporizer run on a high or by-pass small flame operated by a clock switch; (b) fully automatic intermittently operating medium pressure air atomizing burner; (c) boiler burner unit (Fig. 5) incorporating a boiler specially designed for oil firing.

The annual fuel consumption of a house of this kind will be between 500-600 gallons. The owner, therefore, has the option of installing a 275 gal. tank and of paying a surcharge of about 1d. per gal. (i.e. 50s. p.a.) for small deliveries or of spending an extra £25 or so on a 650 gal. tank. If he uses the former alternative and chooses the vaporizing burner, the whole installation will cost £100-£140, while a boiler-burner unit with full controls will cost about three times this figure.

On running costs, it is worth noticing that though it is comforting to run the radiators in cold weather at 150° F.—170° F., the water in the tap need rarely be more than 130° F. and that for this reason there is a good case for setting a motorized valve in the primary to the calorifier and to control

only on the smaller in the summer months. There is also a good case for installing a mixing valve regulated by an outside thermostat. The alternative oil-fired heat sources are (a) boiler burner unit; (b) pre-heating burner. The present opinion in the trade is that it is not worth while installing a pre-heating burner if the rating is less than 400,000 Btu/hr.

With these larger appliances there is liable to be difficulty over the flue. This must be sufficiently large: a common practice is to run two 9 in. by 9 in. flues together, but in this case it is important to ensure that the cross-sectional area is not diminished by chimney pots at the top. To avoid repercussions in the flue the flue pipe from the burner must be brought into the stack at an angle of 45° and to avoid constriction the flue pipe must not project into the stack. Storage tanks must be large enough to take full deliveries of 500 gal. at a time and must be designed to comply with BS. 799:1938.

Blocks of Flats

Installations for most blocks of flats will be above the 400,000 Btu/hr. figure which represents the point at which a pre-heating burner is an economic proposition. In this case a small problem arises as between the central heating and the hot water boilers. A common expedient is to have a large boiler for heating and a small boiler for hot water and to fire both by pre-heated heavy oil burners. This is unsatisfactory for the small boiler and a better expedient is to have a light oil burner (with separate oil storage) for the latter.

If the chimney is not to be carried up above the roof line in low blocks of flats an induced draught fan should be installed to reduce the pressure in the stack when the automatic burner lights up.

Future Developments

At the present moment the relatively high initial cost of oil firing equipment compels purchasers to turn towards the cheaper semi-automatic vaporizer. This high cost reflects the fact that manufacturing is in the hands of a large number of small producers. If the pattern were to change and a few producers were enabled to go into quantity production then first cost would fall and purchasers would be inclined to favour more automatic control. We shall doubtless shortly see more thermostatically controlled domestic hot water units with vaporizing burners. The present necessity for installing an economizer in order to get the best use out of a solid fuel type of shell boiler will soon no longer apply, as new boilers specially designed for oil-firing are beginning to appear on the market. Some boiler makers in fact have gone so far as to eliminate the primary heating surface altogether and to use only a refractory lined combustion chamber with easily cleaned secondary surfaces. Designs of this type can achieve efficiencies of 80-83 per cent. Among the larger boilers of the 2 million to 4 million range we already have three or four types of the "packaged heat" boilers which are so much used in USA, and which carry automation to such a pitch that they can work for long periods in locked boiler rooms.

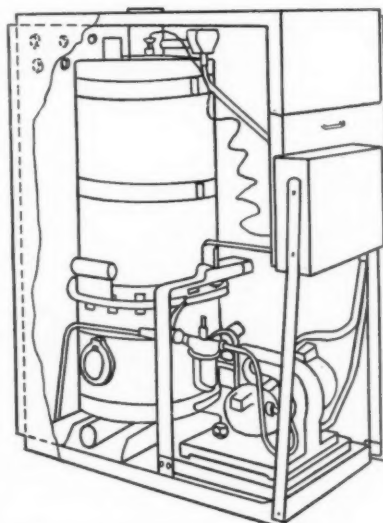
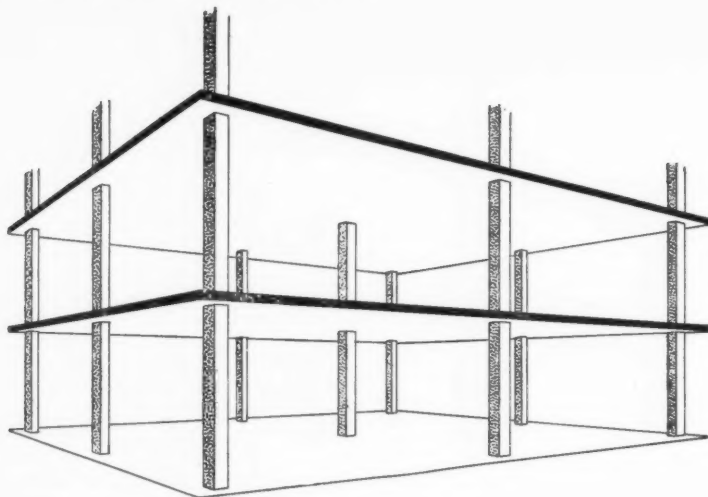


Fig. 5. Boiler-burner unit.



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Appliances and systems (continued)

Warm Air Systems

by W. Davidson, Ph D, M Inst Gas E, M Inst F, of Radiation Ltd.

The author contrasts the systems of convection heating which are practised in America with those now being developed for use in England where flexibility is so important and where intermittent and partial heating are the order of the day.

In America, where the use of warm-air systems is common, four types are distinguishable: these are the gravity system, the forced warm-air system with high level registers, the same with low level registers, and perimeter heating. In the first of these, the *gravity system* (Fig. 1), the heater is usually placed in the basement, the warm air ducts are carried up the inner walls and discharge into the rooms at high level, and the return air is taken from the rooms at low level, usually in or near the outside walls. This system is generally considered to require a basement, it gives high vertical temperature gradients and the high level discharge dirties the ceiling.

The second system is likewise a basement type and differs from the first only in that a fan is used to improve air circulation. Ducts can be smaller and the air discharge velocity is increased. Temperature gradients are smaller, particularly on the ground floor, where the vertical gradient is countered by heat from the source rising up through the basement ceiling.

The third system is one which has been specifically evolved for non-basement houses. The warm air registers are placed at low level, often in the outer walls (Fig. 2B) while the return grilles are on the inner walls.

The fourth and last system was evolved for single-storey non-basement houses, particularly for those with solid floors. The heater is placed in the middle of the house and heat is distributed from its base by means of under-floor ducts radiating to an under-floor perimeter duct (Fig. 3). The

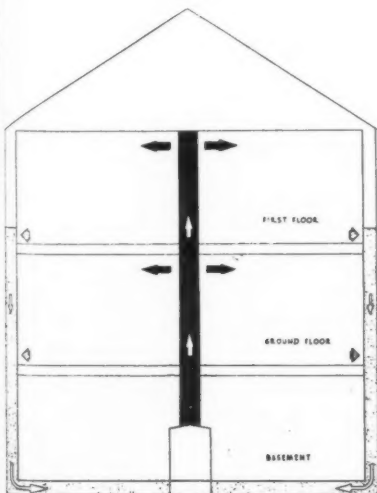


Fig. 1. Gravity warm-air system. Heater in basement, warm air discharged at high level and return air at low level.

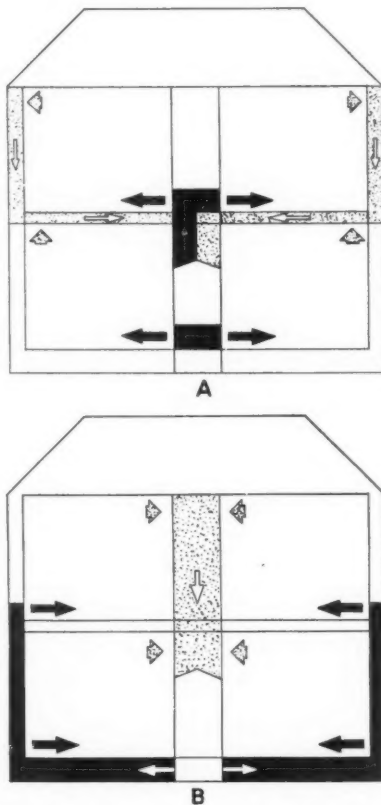


Fig. 2. Forced warm-air systems—low level registers. A: warm-air registers on inner walls; B: warm-air registers on outer walls.

edge of the slab is insulated but the ducts are not. This system takes a long time to heat up, since much of the initial heat is dissipated into the floor slab: thereafter, it is found, about 20 per cent. of the heat is supplied by radiation from the floor slab and about 80 per cent. from the warm air discharged into the room. This system gives excellent distribution with low vertical gradients and works very well in America, where heating is continuous, but would not

be so effective in this country where heating is usually intermittent.

Table 1 shows the comparative running costs of these four systems, the temperature gradients they realize, and descriptions of their heating-up rate.

The relatively high running costs of the first two systems are probably attributable to the high vertical temperature gradients, which require higher room temperatures and give rise to correspondingly greater heat losses.

In this country flexibility in heating is essential, both because we have rapid temperature fluctuations in winter and because the outside temperature is seldom low

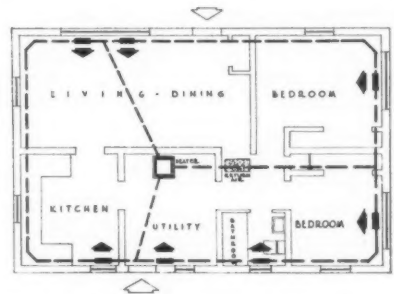


Fig. 3. Perimeter heating.

enough to require continuous heating. In order to provide this flexibility English warm air systems are designed with insulated ducting and short runs. Air is distributed from the inner core outwards towards the windows and the cooler outside walls. These last are insulated to reduce the wall/air temperature difference to within 3° F. Return air is taken through ceiling grilles placed near the outer walls and windows. A comparison between English and American methods is made in Fig. 4. The English version has the following characteristics: Air is distributed through the registers at temperatures varying between 120° F. and 140° F., at velocities of 250 to 350 ft./min. Temperature gradients for downstairs rooms are 3°–6° F. floor to ceiling, for upstairs rooms 2°–3° F. Variations on the horizontal plane are not more than 1°–2° F. It will be noticed that the "hot head and cold feet" effect is not felt with temperature gradients less than 10° F. Temperatures are adjustable for each room and are usually balanced to give temperatures 5° F. lower in hall and bedrooms than in living-rooms.

Desired temperatures are quick to obtain: in a house of 1,500 sq. ft. insulated to the Egerton standard, a heater rated at 35,000-

TABLE 1. SOME COMPARISONS OF WARM-AIR SYSTEMS

Warm-air system	Comparative operating cost	Vertical temp. gradient Inside temp. 65° F. outside 30° F.	Heating-up rate.
Gravity (basement house)	122	20° F.	Very good
Forced, with high-level registers (basement-less house)	110	17° F.	Very good
Forced, with low-level registers (basement-less house)	100	5° F.	Very good
Perimeter (basement-less house)	110	4° F.	Very poor



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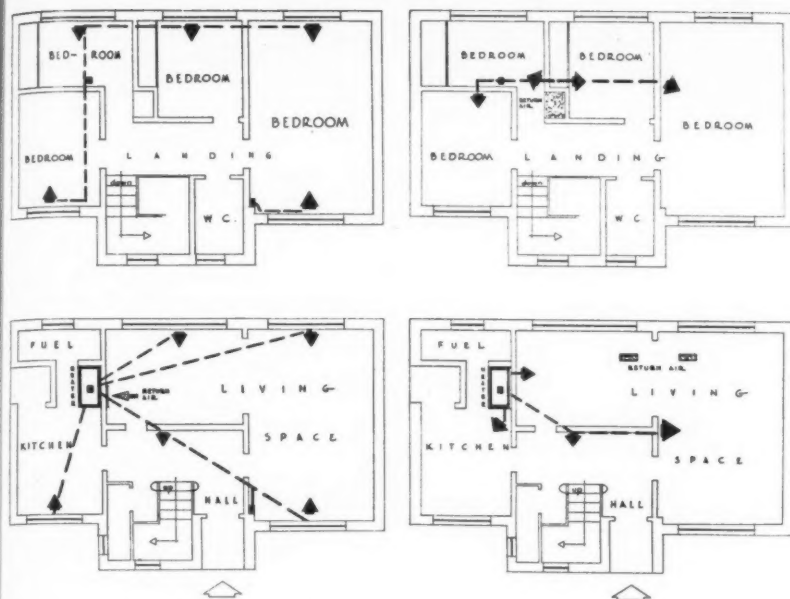


Fig. 4. Top and above, warm air discharging from outer walls. American method. Top right and above right, warm air discharging from internal walls. British method.

40,000 Btu/hr. can raise the temperature of the whole house, by 5° F. in 30 to 40 minutes. Conversely, with average winter temperatures of 40°-45° F. the overnight drop in temperature due to shutting off the heating at bedtime would be approximately 10° F. (i.e. from 67° F. to 57° F.). It therefore takes only a few minutes to raise this temperature to the 60° F. generally needed in the morning.

In order to dispel the sense of stuffiness often associated with convection heating it is necessary to provide some fluctuation in the mean room temperature (1-2° F. above and below room thermostat temperature) and an air movement of 25 to 40 ft./min. The low level discharge (at a velocity of some 300 ft./min.) prevents the air from brushing against and hence dirtying wall surfaces.

In addition to this fully ducted system of whole house warming, warm air systems have been applied to partially ducted and non-ducted systems. These have been designed for use in smaller houses of 750-

1,000 sq. ft. total floor area and to give full heating in the living-room but only background heating in the bedrooms.

Solid fuel, gas- and oil-fired appliances are available for whole house warming: ratings of 35,000 to 50,000 Btu being sufficient to provide full comfort conditions in houses of from 1,500 to 2,000 sq. ft. when insulated to the Egerton standard. The solid fuel units work to an overall efficiency of 80 per cent., the gas fired units to 75 per cent. and the oil-fired units to efficiencies which vary between 70 and 80 per cent.

Appliances with ratings of 15,000 and 25,000 Btu/hr. are also available for partially ducted and non-ducted warm air systems in houses of 1,000 to 1,500 sq. ft. floor area. The latter have been the subject of tests by the manufacturer, and Table 2 shows the consumption in fuel required to maintain whole house temperatures of 55°-60° F. at all times, living-room temperatures of 67° F. for eight hours a day, bedroom temperatures of 65° F. for four hours a day and 50 gal. of hot water at 140° F. per day at the tap.



Fig. 5. Warm-air heating system for LCC house.

TABLE 2. ANNUAL FUEL CONSUMPTIONS FOR SPACE- AND WATER-HEATING

Floor area of house, sq. ft.	Solid-fuel unit		Gas unit	Oil unit	
	S.F., tons	Gas, therms*	Therms (space- and water-heating)	Oil, gal.	Electricity, kWh*
1,000	4	90*	850	600	2,000*
1,500	5½	100*	1,050	850	2,250*

* Summer water-heating.

3 Applications

Architectural Problem of Heating Multi-storeyed Flats

by A. W. Cleeve Barr A R I B A, senior architect (Development), Architect's Department L C C

The author points out that it is the LCC's policy to try and ensure that no heating installation compels a tenant to pay out more than he would pay if his heating were by an open fire in the living room. He describes the effect of this policy on the choice of heating methods, and of this last on site and house planning. He discusses the problem of fire design, the planning dilemmas caused by the back boiler and the effectiveness of insulating by reducing the area of the enclosing walls.

The general policy of the L.C.C. in regard to the space heating of both flats and houses has been and still is to supply individual open fires in the living room only; and where departures have been made from this policy they have been made on the basis that the tenant must not have to pay more for his heating than he would expect to pay using an open fire.

This decision on the open fire has a considerable effect on planning layout, an effect which differs in the different residential densities. There are four density zones: the central at 200 persons per acre, the sub-central at 136 persons per acre, and two lower density zones of 100 and 70 persons per acre respectively. The use of solid fuel in fact causes difficulties at both ends of the density range: in the 100 and 70

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density zones because low blocks must be sited away from trees at a distance at least equal to the height of the tree if chimneys are not to smoke; and in the central zones because densities require at least some tall blocks which are difficult to flue and to supply with fuel stores and access, and because you cannot place tall and low blocks close to one another without inflicting the low blocks with downdraughts and smoke blown from their tall neighbours. A scheme like that of Pimlico, with four-storeyed maisonnettes between parallel rows of ten-storeyed flats would have been unthinkable if solid fuel had been used.

The natural answer to heating in densities such as these would be central heating. But here we must remember the Council's wish not to increase the basic cost of heating to tenants above that which is normal with an open fire and back boiler. Though it is difficult to establish exactly what this criterion amounts to, it is interesting to note that the Council have approved three major schemes for central heating during the last few years and have agreed in principle to half a dozen more. So far, however, central heating has only proved "economic" in this sense in tall blocks of ten storeys or more and provided these blocks are sited close together. The effect of this on develop-

ment can be seen at the Fitzhugh Estate, Trinity Road, Wandsworth (see Fig. 1) where a compact group of eleven-storeyed blocks are supplied through a central boiler house which also supplies an adjacent secondary school. The flue from this boiler house travels some 40 ft. underground and comes up through the centre of one of the blocks. An incidental virtue of this scheme is the preservation of a number of forest trees which would almost certainly have had to come down with low storeyed development.

The next stage is to build taller blocks of fifteen to twenty storeys containing enough flats to justify the use of one boiler house per block. One such block as this is being built at Tidey Street, Stepney (Fig. 2) with nineteen storeys containing upwards of 100 flats. In schemes of this kind oil is much to be preferred to solid fuel, if only on account of the difficulty of finding room for a sufficiently large reserve fuel yard.

Individual gas heaters are being tried out in eleven-storey point blocks at Wimbledon, and individual electric heaters in some point blocks at Stepney: but though these are cheap to install and give the greatest planning freedom, it is too early to give figures on the cost of maintenance and running.

Heating and the Design of Individual Dwellings
Despite BRS Digest No. 18 (October, 1955) and BS.CP.131.101:1951, it is surprising how many mistakes are still made in the design of flues for solid fuel appliances. A survey made last year by the Director of Housing, Works Division of the LCC showed that most complaints come from top floor tenants, usually because the stack was not high enough. Experience shows that the top of the stack should not be less than 15 ft. above the top floor hearth level, a condition which is more cheaply fulfilled in a maisonnette than in a flat. Other causes were overshadowing by tank rooms, parapets and ducts, straight flues and poor workmanship—particularly the "pinching" of flues in bends, a defect which can only be brought to light by proper coring before handing over. The use of a "throat-unit" is now standard practice in all LCC work and the insertion of such a unit in existing flats where there is smoke nuisance has been found to correct 40 per cent. of the cases of trouble and to improve conditions in a further 35 per cent.

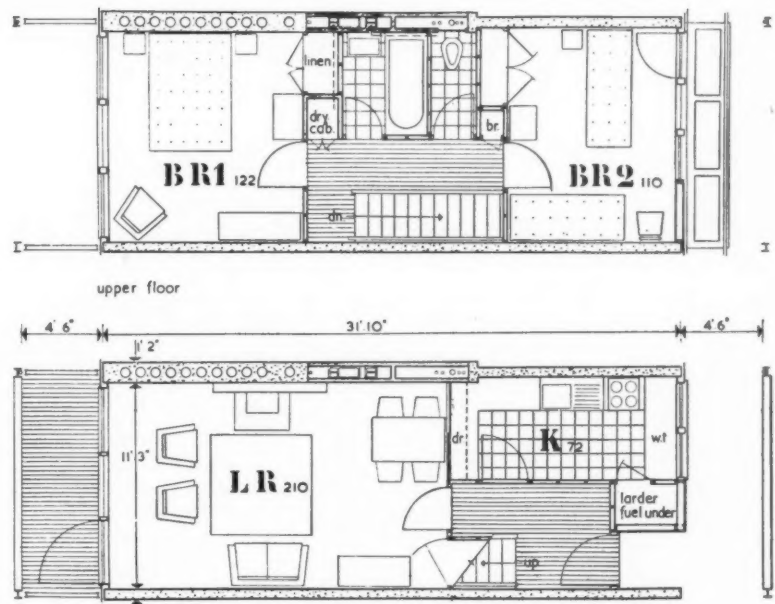
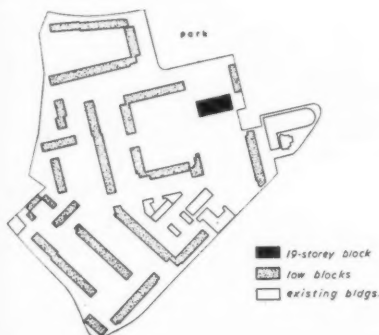
The use of solid fuel presents special problems of space saving in tall dwellings, in respect of the fuel store (about which little can be done), in respect of the flues, and in respect of the chimney breast. This matter becomes the more critical as motives of building economy (and incidentally of heat conservation) lead to the reduction in the frontage of each dwelling. A method of dealing with this can be seen in the maisonnette plans in Fig. 3 where individual flues have been accommodated in the thickness of a 14 in. party wall and a low openable closed stove has been used in lieu of a built-in open fire (with chimney breast). One of the new free-standing open fires would have done as well. The saving in space and in the



Fig. 1 (above). Centrally-heated point-blocks in LCC Fitzhugh Estate, Trinity Road, Wandsworth.

Fig. 2 (below). Layout of LCC housing project for Tidey Street, Stepney, in which a single 19-storeyed block, with its own boiler house and central-heating scheme, is sited as the focal point of a group of four-storeyed maisonnettes.

Fig. 3 (right). Upper and lower floor plans in typical LCC maisonnette with frontage of only 11 ft. 6 in. and with individual flues accommodated in the thickness of the 14-in. party wall. The use of a free-standing fire or stove avoids the cost and projection of the chimney breast.





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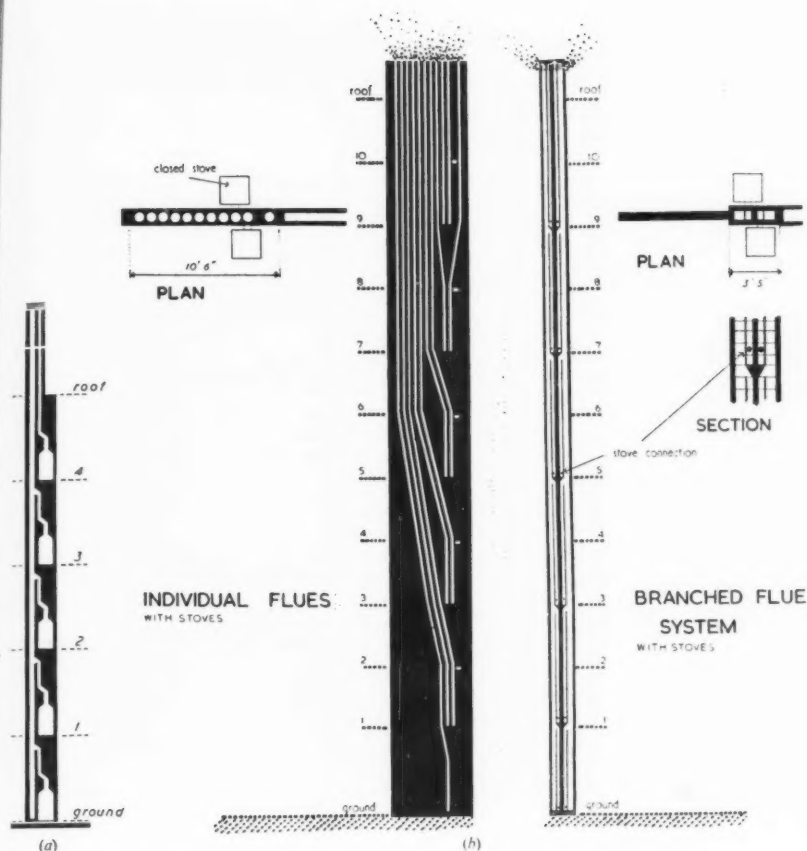


Fig. 4. Diagrams showing arrangement of flues in two LCC experimental "branched flue" installations, now

undergoing tests. Left: five-storeyed flats with open fires. Right: 11-storeyed maisonettes with stoves.

volume of brickwork probably pays for the appliance.

A further large economy in the flue construction will be shown (see Fig. 4) if present experiments in branched flues prove successful.

The question of space heating by solid fuel cannot be divorced from that of water heating. Here the salient fact is the amount of trouble caused to the architect by the back-boiler system. For it to function properly it is essential that the living room fire be close to the hot water cylinder (so that flow and return are short) and that the cylinder be close to sink, bath and washbasin. Again the horizontal runs of flow and return must be connected to the back boiler at some

15 to 18 in. above floor level and must be hidden in a cupboard, false chimney breast or something of the kind. Then each cylinder must be provided either with an expansion pipe discharging above the level of the cold storage tank or with a small pressure tank with an overflow to the outside walls: both give awkward problems of detailing and both are frost hazards. Most of the troubles caused by the back boiler are obviated by independent gas or electric storage heaters and especially by multi-point gas heaters.

Here it is worth noticing first the rapid change in our standards* concerning water heating, and second the fact that we have retained the back-boiler system largely

because it is most economical for a large family with a wife at home all day. Now that the tendency is for the wife to go out, independent gas or water heating may prove cheaper—and certainly more convenient. Central heating releases the architect from the tyranny of flues and fuel stores, but if it is to be "economic" requires that more attention be given to insulation. The most effective method of insulating is to reduce the external wall surface area of each dwelling, and it is found that by abandoning the usual 30 ft. deep block in favour of a "thick" block 50 ft. deep (whether square or oblong) this can be reduced by about 50 per cent. A plan of one such block in the twelve-storeyed point blocks at Roehampton can be seen in Fig. 5 and another, of a 19-storeyed block of maisonettes at Tidey Street, Stepney, can be seen in Fig. 6. It will be noticed that this requires that bathrooms and w.c.'s are placed in the centre of the block and have therefore to be mechanically ventilated. It is important to give uninterrupted vertical ducts running from top to bottom so that pipes do not have to dogleg, which in turn usually demands that like accommodation is placed over like. One way of doing this can be seen in Fig. 3 where the ducts run in the party wall and where the structure is carried on "split beams" at floor level. Considerations such as this make it all the more necessary for the architect to consult the structural and heating engineers as soon as possible.

* In 1934 the standard five-storeyed block dwelling had a solid fuel burning copper in the kitchen (discharging into a branched flue!). The bath was in the next room and water was pumped by hand from the copper into the bath. There was no washbasin. Cooking was by a range, with a coal bin beside it. Kitchen contained a gas cooker and sink but no running hot water. In the late 'thirties the copper was exchanged for a gas-fired wash boiler. A multi-point gas heater supplied water to a washbasin, to the bath and to the sink. After World War II under draining board type electric storage heaters came in. Then in 1949, the Housing Manual of that year recommended the back boiler with the immersion heater for summer use.

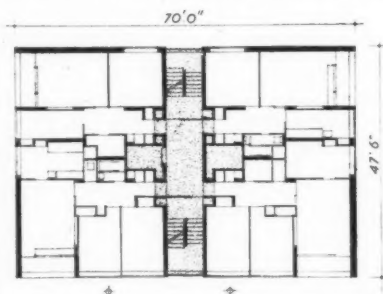
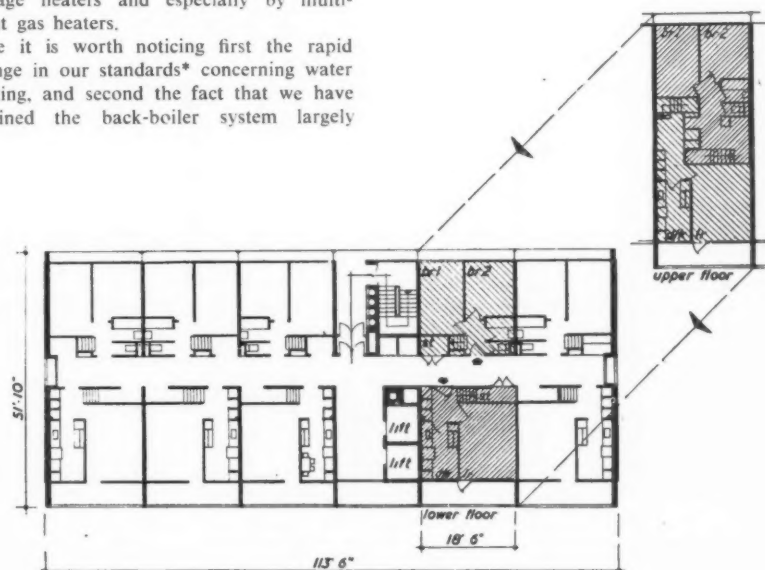


Fig. 5 (above). Floor plan of LCC 12-storeyed point-blocks at Roehampton designed for economic central heating. Fig. 6 (right). Floor plan of LCC 19-storeyed maisonette project for Tidey Street, Stepney—another centrally-heated, deep tower-block with mechanically ventilated bathrooms and w.c.'s.



*Applications (continued)***Space and Water Heating Related to Housing Design**

by J. H. Forshaw CB, MC, FRIBA, MTPI, Chief Architect, MOHLG

This is a summary of part of a paper entitled "Future trends in housing" the other part of which is covered in the main by that of Mr. Cleeve Barr (see page 16). The author begins by discussing the recommendation of his Ministry's Housing Manual 1949, to the effect that the most economical way of heating the average dwelling is by a single appliance, and concludes that the use of two appliances may well prove cheaper in both first and running costs. He then describes various alternative means of heating open plan houses, gives his opinion that gas and electric space heating are not suitable for public housing and calls for the publication of appliance ratings.

The ministry's standards for space and water heating follow closely the recommendations of the Egerton Report. Ways of attaining these standards were set down in the Housing Manual of 1949. Since that time we have had more experience and certain new problems have arisen.

One Appliance Systems

One of the chief recommendations of the Housing Manual was that the most economical method of supplying space and water heating in the average house was by the use of a single solid fuel appliance. Though this is still the most common solution adopted by Local Authorities it presents certain inherent planning difficulties. The first of these is most acutely felt in houses designed for four persons or more. To reduce heat loss the appliance must be placed centrally in the house and to provide sitting space round it, it must be placed centrally on one wall (Fig. 1 A1, B1), but when this is done it is difficult to free the sitting space from circulation so that the living room is almost certain to be inconvenient. Chimney breasts must often be rather large so that the fire can be suited to the first floor plan. The appliance will have to be kept on all day if heat is wanted in the kitchen, and all the summer if there is no auxiliary water heater. Houses with kitchens of 90 sq. ft. and living rooms of 230 sq. ft. are too large to be heated by this

means as there are no appliances powerful enough.

Two Appliance Systems

The use of two appliances (e.g. a solid fuel space heater in the living room and an independent boiler for water heating in the kitchen) makes for easier planning and shorter pipe runs (Fig. 1 A2, B2). In intermediate terrace houses each can be located in a party wall and the flues therefore paired with those of the next door houses. The living room fire can be lighted only when wanted and though the kitchen may get hot in summer this might be prevented by the development of boilers with controlled space heating.

Individual appliances in open plan houses

The method recommended (on the advice of the Ministry of Fuel and Power) for heating open plan houses is to use an independent boiler in the kitchen with radiators in the living room. This represents a higher capital cost than the methods just discussed for conventional plans and three ways of doing the same thing more cheaply are now being considered. They are:

- (a) an independent boiler in the kitchen, with or without radiators and a space heater in the living room.
- (b) an open-fire with large back boiler in the living room and hot-water radiators in the living room and kitchen.

(c) a closed stove with a boiler in the living room and a radiator in the kitchen.

Individual Appliances in Maisonnettes and Flats

Maisonnettes need no back door and thus lend themselves more readily to one-appliance systems. Flats are more difficult: efficient heating by single appliance is only possible when kitchen and living room adjoin without intervening doorways, while two appliance systems are uneconomic on account of heavy flue costs. A good compromise is to provide hot water by gas or electricity.

To sum up, in certain circumstances two appliances may be no more expensive than one appliance either in first or running cost. At the same time there seems to be an opening for a one appliance system perhaps using a continental type closed stove which would warm the living room evenly by warm air (Fig. 1 A3, B3). This could be placed in the middle of the plan and could be serviced from the kitchen.

Appliance Ratings

The technical appendices of the Housing Manual 1949 give full details of how to calculate heat loss. Unfortunately this information is largely useless since the rating data of appliances are still not available. If only the Institute of Fuel would push for and obtain the publication of ratings, architects could design their heating more effectively and they would, in the process, come to appreciate the real significance of insulation.

The use of gas and electric appliances and of central space and water heating

Gas and electric appliances are cheap to instal but expensive to run. Therefore in Local Authority housing their uses (apart from cooking and lighting) must generally be confined to main water heating in flats and to auxiliary water heating in all dwellings. Water and space heating from a central source eases planning considerably but its application is held up first because until a satisfactory heat meter is provided the tenant cannot control his costs and second because up to the present it is not considered economical for blocks of less than 100 dwellings. It is claimed, however, that this figure can be reduced by oil firing and the LCC are experimenting with a method of central warm air heating which, if successful, will make this method a more likely choice.

Thermal Insulation

Architects have still to be made aware of the importance of thermal insulation. In particular, now that there are so many solid floor finishes there is no case for a return to the wood suspended floor. Again, large windows which span from wall to wall seriously upset heat loss calculations and there may be a case for fitting internal shutters of stiff sheet insulating material to fold back or be completely removed when not wanted. Alternatively if living room windows are reduced in size, double glazing may become an economic proposition.

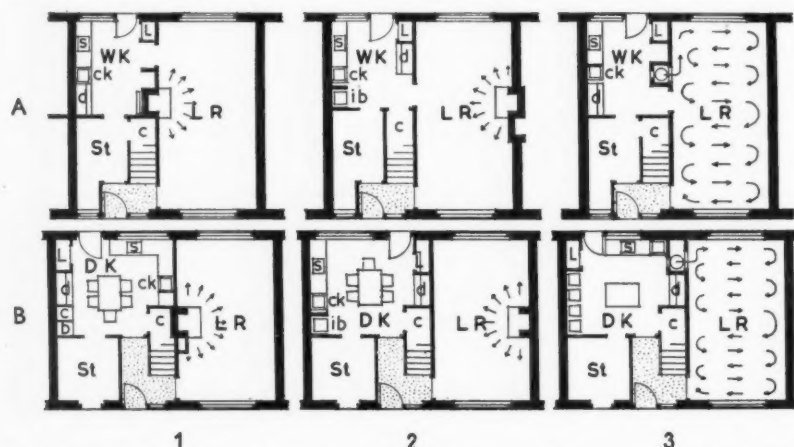


Fig. 1. Diagrams illustrating the effect on planning of different forms of heating. A: working-kitchen houses; B: dining-kitchen houses. 1: one-appliance system; 2: two-appliance system; 3: "new approach."

building illustrated

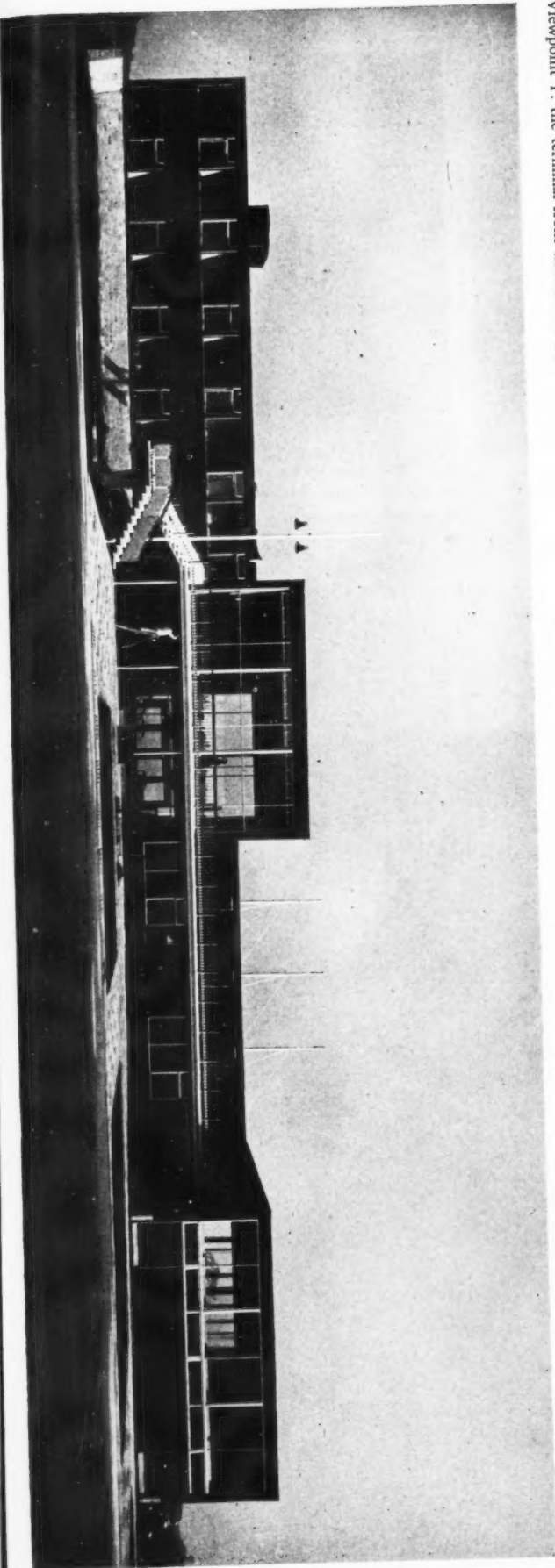
AIRPORT BUILDING

at TURNHOUSE, EDINBURGH, for the MINISTRY OF TRANSPORT and CIVIL AVIATION (SCOTTISH DIVISION)

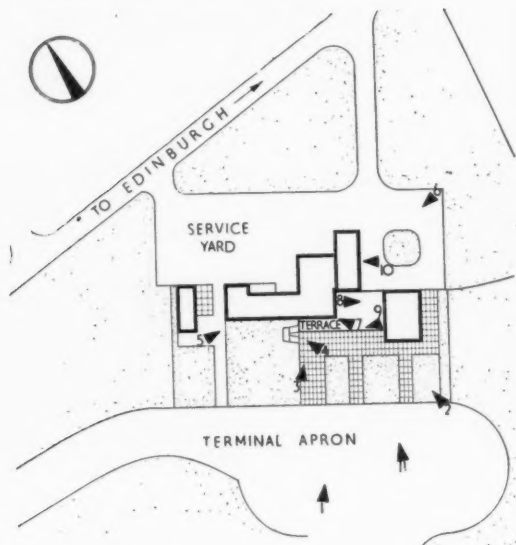
designed by ROBERT H. MATTHEW; chief assistant architect, T. R. SPAVEN; assistants, J. D. DUNBAR-NASMITH, MARGARET BROWN
quantity surveyors, DAVID REID and GIBSON; consultants (structural) T. H. HADDOW; (heating, ventilating and electrical services) IAN HUNTER and PARTNERS

The terminal building at Turnhouse is the first airport building to be analysed in the JOURNAL. The passenger-handling building and control tower at London Airport (AJ, April 21, 1955) were illustrated without costs, as the architect, in this instance, was unable to obtain his clients' permission to provide the cost analysis. Turnhouse became an RAF station in 1915 and in 1947 was established as a civil airport, with the Ministry of Civil Aviation operating from RAF buildings. The number of passengers using the airport rose from 16,000 in 1951 to 70,000 in 1955 and, as traffic is still increasing, the terminal has been designed for easy extension at a later date.

Viewpoint 1: the terminal from the airfield side.



building illustrated



Key plan showing photographic viewpoints

AIRPORT BUILDING

at EDINBURGH

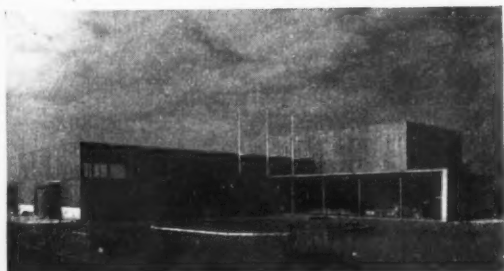
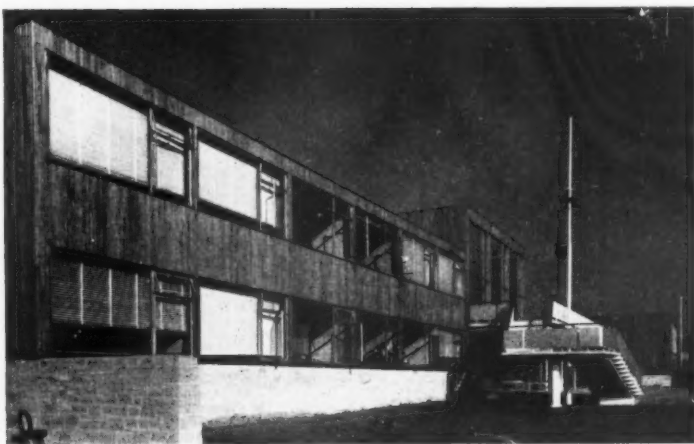
designed by ROBERT H. MATTHEW



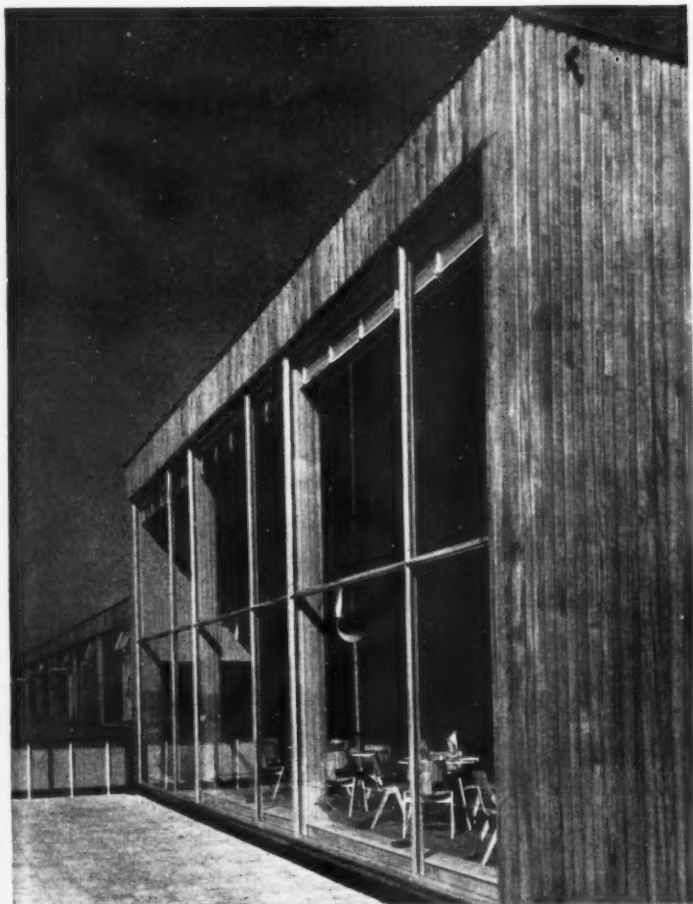
Above (viewpoint 2): general view of airfield side of the building at night—when the thought given to lighting and its exposure makes the building as clearly appreciated as it is by day. Below (viewpoint 3): concourse and exit doors from the west. Lighting has been particularly well handled and the reflections on glass from within the myriad small fittings make for new interest after dark.



building illustrated



Top left (viewpoint 4): stair up to the sun terrace. Hardwood strips provide shuttering to the soffit of the reinforced concrete spine below. Above (viewpoint 5): looking south along the west elevation. Sandstone and wood are the two predominant materials externally and their natural textures are fully exploited in calculated composition together. Left (viewpoint 6): general view of the entrance for outward-bound passengers. The backstays to the pergola suspension are a feature on this side. The specially-designed parking lights used in this area were illustrated as a



Working Detail in the JOURNAL for June 14, 1956. Above (viewpoint 9): looking towards the "apron" which passengers traverse to and from aircraft on the tarmac. The granite setts, laid in alternate panels between pre-cast concrete slabs, were obtained cheaply from Edinburgh Corporation who are rapidly ripping them up from city streets. Left, (viewpoint 7): the glass front wall to the dining balcony.

building illustrated

AIRPORT BUILDING

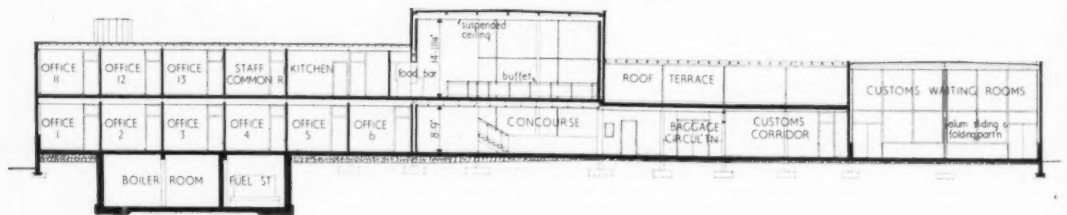
at EDINBURGH

designed by

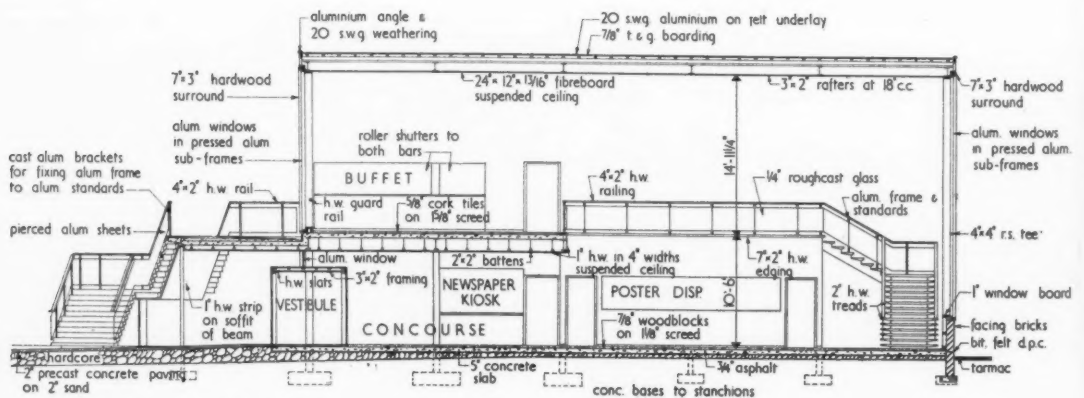
ROBERT H. MATTHEW



Ground, first floor, basement and part roof plans [Scale: $\frac{1}{4}" = 1' 0"$]



Section B-B [Scale: $\frac{1}{8}" = 1' 0"$]

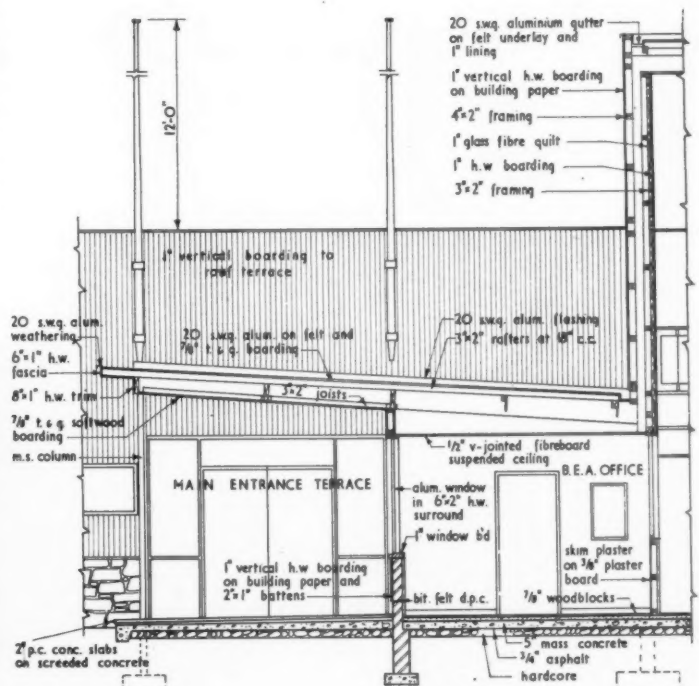


Section A-A [Scale: $\frac{1}{8}" = 1' 0"$]

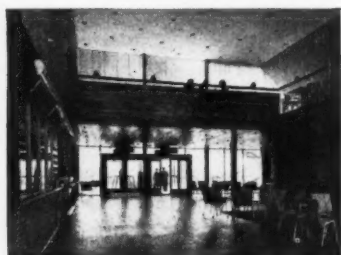
building illustrated



Above (viewpoint 8): looking south below the pergola at the rear of the terrace outside the dining balcony. This pergola is suspended from the flagpoles at the back (see viewpoint 6) which are tied to act as a braced beam connected to the steel frame. The three wire ropes seen here act as restraining ties in high wind conditions. The pergola is illustrated as a Working Detail in this week's JOURNAL. Below (viewpoint 10): close-up of the entrance doors with loudspeaker housing over.

Section C-C [Scale: $\frac{1}{4}'' = 1' 0''$]

building illustrated



AIRPORT BUILDING

at EDINBURGH

designed by ROBERT H. MATTHEW



Above left: view of concourse from main entrance doors. The ceiling is of acoustic tiles painted white. Above right: looking north in the concourse from below the dining balcony. The feeling for wood and the quality of its detailing in these interiors is reminiscent in elegance and propriety of some of the old railway carriages (first-class!)

Left: the processing desks, with opening left to customs beyond. The BEA arrival and departure boards here are modified to the architect's design. Below left: the staircase (of hardwood treads on reinforced concrete spine) from the concourse to the buffet-bar. The refinement here is consistent with precision design throughout. Below: looking into the dining balcony from below the pergola. Opposite page, top: dining space, bar and buffet counter. Venetian blinds take care of glare and heat problems from the west-facing glass wall. Opposite page, bottom: view through the concourse to the gravel-covered parking area on east side of the building.





building illustrated



Above: looking down to the specially designed poster display board from the half-landing on the stairs to the dining balcony. The clock seen in this photograph will be illustrated as a Working Detail in the JOURNAL. Below left: looking back to the main entrance doors from the north-west corner of the concourse. Below right: the newsagent's kiosk designed for the concessionaire in this building.



building illustrated



AIRPORT BUILDING

at EDINBURGH

designed by ROBERT H. MATTHEW

Top left: passengers on UK domestic routes depart through the doors seen at far end below the waving terrace. The lights in the timber lined soffit are simply semi-recessed naked bulbs. Centre left: looking towards the entrance doors at the south end of the customs hall. Fire extinguishers in a framed glass case may be discerned on the left of the doorway; all emergency equipment is similarly housed throughout the building. One of the specially designed litter bins, as seen on the left in this photograph, is illustrated as a Working Detail in this week's JOURNAL. Below left: looking through the customs waiting room from the examination hall. These rooms, which separate incoming and outgoing traffic streams, may be used as one room by opening the sub-dividing glass sliding partition.



Above (viewpoint II).

analysis

AIRPORT BUILDING

at TURNHOUSE, EDINBURGH
designed by ROBERT H. MATTHEW

CLIENT'S BRIEF: his stated requirements

The client, in November 1952, required new buildings to replace passenger facilities provided in buildings needed for Air Ministry purposes, Turnhouse being a permanent RAF station. The new Terminal buildings were to be limited in the first place to the size necessary for traffic of the immediate future, but were to be capable of easy extension at a later date.

SITE: topography, surroundings, access

Very slight fall from north to south. Immediate

surroundings featureless, but fine view of Pentland Hills to south. Access to site is from the main Edinburgh-Sterling road (closed at present but shortly to be re-opened). The entrance from this road is approximately one quarter of a mile west of the main entrance to the aerodrome. Area of site 2.5 acres.

The site was selected with the object of achieving complete segregation of civil from military activities.

PLAN: general appreciation and relation of units

The main elements in the design are (a) concourse, which is a general public area having traffic offices, passenger-handling facilities and waiting space on ground floor, and a buffet and bar on first floor balcony. (b) customs hall, to

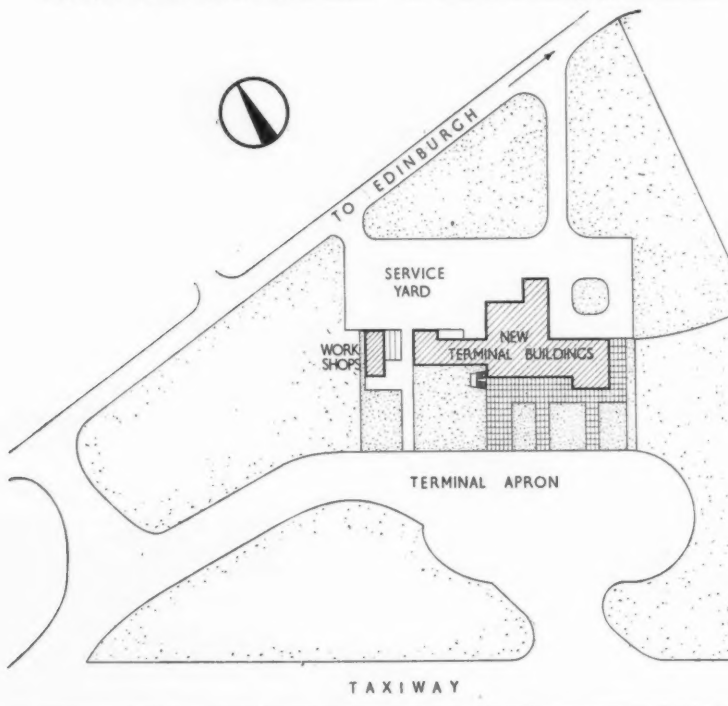
east of concourse, and separated from it by customs offices and baggage circulation corridor, (c) two storeys of offices to west of concourse for MTCA and airline staff. The plan makes allowance for concourse to extend to north, customs to east, and offices to west and north.

Passenger-handling: Passengers arriving by road enter by a covered way screened from the prevailing winds. The passenger-handling accommodation is so arranged that the passengers proceed by a direct route from the main entrance to the aircraft on the apron; their baggage moves separately but "in parallel," the two circulation routes meeting at the processing counters for unaccompanied and hand baggage to be checked and weighed. Thereafter passengers for destinations in the United Kingdom wait until instructed to join the aircraft, and passengers for foreign destinations proceed to the customs hall for examination of baggage.

Customs: Customs hall comprises an examination area and a waiting room, which can be divided by a sliding-folding partition to permit the simultaneous handling of outgoing and incoming passengers. Immigration examination is not required for the scheduled flights operating at present; for the occasional charter flights to and from the continent this examination will be held in the waiting rooms. Customs offices require to have a clear view of aircraft landing and taxi-ing and they are therefore on the "air side" of the building. The customs bond and baggage boxes and the freight store are closely related to the baggage circulation route.

MAIN CONSTRUCTION: general appreciation

A steel-framed structure was considered to be best suited to meet demands of economy and to give flexibility needed to allow for future expansion; for same reasons timber was chosen as the main cladding material. Again it was hoped to avoid delays owing to anticipated adverse weather conditions by using dry materials for frame (steel), walls (timber) and roofs (aluminium).



Site plan

STRUCTURAL ELEMENTS

Work below ground floor level: foundation type	Location	Sub-soil	Depth	Reasons and comments
R.C. bases	Under stanchions	Sandy clay	Average 4 ft. below ground	
Mass concrete strips	Under stone and brick walls	Sandy clay	Average 2 ft. 6 in. below ground	Most economical
Mass concrete slab	Ground floor	Hard core and blinding		
R.C. slab	Basement floor	Clay	12 ft. below ground	
Concrete on hard core and blinding	Ground floor	Mass concrete with cement and sand screed		Finish: Gurjun strip concourse; quarry tile lavatories; granolithic stores; thermoplastic tiles elsewhere

cost per sq. ft.	s	d
preliminaries	6	5½
contingencies	5	10½

work below ground floor level

7 2½

analysis

s d

<i>External walls and facings</i>	<i>Location</i>	<i>Material</i>	<i>Finish</i>	<i>Reasons and comments</i>		
9 in. and 13½ in. solid	Generally from foundations to 3 ft. above ground; blank gable walls	Natural sandstone or pulverised fuel ash, brick facing, vertical D.P.C. and common brick backing	White cement-lime-sand pointing	Appearance; hard wear in service yard		
Hardwood boarding on softwood framing	All other walls	1 in. African Mahogany tongued, grooved and ship-lap	Phenolic resin	Appearance; speed of erection		
external walls and facings					5	9½
<i>Frame or load bearing element</i>	<i>Location</i>	<i>Beam spans</i>	<i>Column grid</i>	<i>Reasons and comments</i>		
R.S.J. stanchions and beams	Generally	12 ft., 18 ft., and 24 ft.	12 ft. × 12 ft., 12 ft. × 18 ft. and 12 ft. × 24 ft.	Flexibility and economy; ease of fixing for timber cladding. Economy of steel		
Welded portal frame	Concourse roof	36 ft.	12 ft. × 36 ft.	Economy of steel		
Brick and stone external walls	Workshops	18 ft.		More suitable for single-storey structures which had to withstand very hard wear in any case and part of which had to be fireproof		
frame					6	3½
<i>Upper floor construction</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
In situ R.C.	First floor	R.C. with cement and sand screed	Fitted carpet, buffet; quarry tile, kitchen; granolithic stores; thermoplastic tiles elsewhere	Most suitable for the particular areas in which they are situated		
upper floor construction and stairs					2	5
floor finishes					4	2½
<i>Roof construction</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Slight pitch and 5° pitch	Generally	Fully-supported 20 s.w.g. super-purity aluminium with standing seam transverse joints; and double lock cross welt and joints laid on roofing felt and boarding fixed to timber rafters on R.S. purlins		Appearance of roofs particularly important where bird's-eye view is a common one		
Flat	Roof terrace	12 in. × 12 in. asbestos-cement tiles on 3-ply bituminous felt on lightweight screed		Appearance and wear		
roof					8	2½
<i>Windows</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
½ in. polished plate glass or No. 2 prismatic glass in aluminium sections and hardwood surrounds	Generally			Office and corridor windows treated as panel in filling between stanchions to simplify construction and give glare-free lighting. All south-facing windows fitted with venetian blinds. Most offices require good view of apron or entrances		
¾ in. polished plate glass in aluminium sections and pressed aluminium surrounds	Large window walls in concourse, buffet and customs					
windows					3	7½
glazing					1	11

PARTITIONING

<i>Internal partitions</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Partition walls	Generally	3 in. light-weight concrete	Glazed tiles in public lavatories; hardwood in concourse; plaster painted elsewhere	Hard wear in public areas		
Timber-framed inner skins	Concourse and customs	1 in. tongued and grooved beech or mahogany boarding on softwood framing	Wax polish or phenolic resin	Appearance		
internal partitions					3	1½
doors					1	10½
wall finishes					4	3½
ironmongery					1	6½

analysis

Ceiling finishes	Location	Materials	Finish	Reasons and comments
Acoustic tile	Concourse	½ in. rabbit-warren fibre-board secret fixed to aluminium T-sections	Fire-retardant and water paint	Noise reduction in public areas
Insulation board	Generally	½ in. V-jointed fibreboard secret fixed to aluminium T-sections	Fire-retardant and emulsion paint	Economy and sound insulation
Hardwood	Entrances; soffit of balcony	1 in. T. & G. beech or mahogany fixed to softwood framing	Wax polish or phenolic resin	Appearance

ceiling finishes

3

7½

Decorations	Location	Paint types	Munsell or other ref.	Colour scheme and comments
	External woodwork	Phenolic resin		The amount of applied finish in the form of paintwork kept to a minimum. A limited colour range (two reds, one purple-blue, one green-yellow, two greens, black and white) has been used with discrimination and has been carefully co-ordinated with the more brilliant colours used for furnishings, which were all designed or selected by the architect.
	Plastered surfaces; ceilings generally	Emulsion paint		
	Concourse and customs ceilings exposed metalwork	Oil-bound water paint		
	Softwood joinery	Oil paint		
	Internal hardwood joinery and lining	Wax polish stain		
	Internal hardwood doors	French polish and wax polish		

decoration

1

10½

SERVICES

built-in fittings (see fittings and equipment page 34)

1

10½

Plumbing internal	Location	Materials	Finish	Reasons and comments
Heating and oil piping	Generally	Mild steel		Welded fittings where piping is concealed, malleable cast iron screwed joints where piping is accessible
H.W.S. piping	Generally	Light gauge copper		Compression on capillary fittings

Cold water storage	Location	Materials	Capacity	Reasons and comments
Open-top cistern	Tank room on roof of office block	Galvanised steel	300 ^g gallons	Tank room accessible from within building and insulated with 2 in. glass fibre-quilt in walls

plumbing: internal

1

2

Heat exchanger type	Location	Criteria temp.	Air change rate	Reasons and comments
C.I. hospital type radiators	Generally	Concourse customs and buffet 65° F.	3 air changes per hour in concourse, customs	Reasons for heat exchanger types (a) Cast-iron radiators because of good general distribution of heat; easy access for control and cleaning; low cost (b) Radiant panels in concourse to counteract high local heat loss and to provide background heating; radiant panels in concourse lavatories to minimise wall projection in restricted space. (c) Concealed convectors on balcony to eliminate interference to public and for appearance (d) Cabinet heater units in large public areas to provide quick reaction to fluctuating heat demands
C.I. radiant panels	Concourse and lavatories			
Concealed convectors	Buffet balcony			
Cabinet heater units	Concourse, customs			

Boiler type and capacity	Heat load	Fuel type	Stoking method	Reasons and comments
Cast-iron sectional, two in number, each rated at 445,000 B.T.U./hour	625,000 B.T.U./hour	220 seconds viscosity oil	Fully-automatic oil burners of pre-heating type	Boilers suitable for conversion to solid fuel; oil burning to minimise labour costs and give smokeless combustion

Water heater type	Location	Fuel type	Stoking method	Reasons and comments
Winter, from heating boilers	Boiler room	Oil		Economy
Summer, immersion heaters	Boiler room	4-kW/cylinder electricity		Avoids use of large boiler for small load
Storage water heaters	Customs lavatories	Electricity		Uneconomical to serve from central plant

Hot water storage type	Location	Materials	Capacity	Reasons and comments
Two indirect cylinders	Boiler room	Copper with cast-iron chest	150 gallons each	Cylinders serve kitchen as well as lavatories

Mechanical ventilation	Location	Method
	Concourse, customs	Roof mounted, propeller-type fan-powered extracts; air is extracted from false ceiling spaces via special ceiling grilles formed as part of flush lighting fittings
	Kitchen	Canopies connected to roof-mounted fan-powered extracts

heating and ventilation installation

8

9½

analysis

<i>Drainage: type of system</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>
Combined system to main sewer	General	Best quality fireclay; cast-iron under buildings		
<i>Drain types</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>
General soil and waste	Lavatories and kitchen	Copper and cast iron		All vent pipes in ducts within building
<i>Rainwater disposal type</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>
Lead outlet boxes	Parapet gutters	Lead to cast-iron down-pipes		All down pipes in ducts or in wall thicknesses

plumbing: external	0	6½
sanitary fittings	1	1
drainage	3	0

SERVICES

<i>Source and fitting type</i>	<i>Location</i>	<i>Illumination level</i>	<i>Quality</i>	<i>Reasons and comments</i>
Tungsten, recessed with prismatic lenses	Offices, corridors and generally			Local lighting by desk lamps in offices
Tungsten, recessed with bulbs exposed	Concourse, customs, balcony soffit	Not yet measured but designed to comply with statutory requirements		Special fittings designed to give "sparkle" on selected horizontal planes. Local lighting from wall brackets. Special low-level fittings.
Tungsten, street lighting	Entrance road			
<i>Wiring and switching type</i>	<i>Location</i>	<i>Materials</i>	<i>Reasons and comments</i>	
V.I.R. cables in screwed conduit	Buried in carcass of building in false ceilings	Switch and switch socket units in cast iron boxes; flush plates are of cadmium-plated steel		
<i>Power supply type</i>	<i>How distributed</i>		<i>Reasons and comments</i>	
415 240, 3 phase, 4 wire 50 cycles, from local sub-station	Main switch panel to sub-main switches; thence to local fuseboards and points; switchgear and distribution boards are of the totally enclosed ironclad type with H.R.C. fuses			

electrical installation	5	4½
paved areas	1	2
total cost per sq. ft.	91	5½

THERMAL INSULATION

<i>Type</i>	<i>Location</i>	<i>U-value</i>	<i>Reasons and comments</i>
Hardwood boarding with 1 in. glass fibre quilt	Generally at hardwood walls	0.18 for whole wall with plaster-board lining	At main entrances to concourse and customs double doors and vestibules are designed to reduce heat losses due to rapid air change
1 in. insulation board below aluminium roofs	Generally	0.20 for whole roof structure	
Foam-slag screed on R.C. flat roofs and 1 in. insulation board ceiling	Roof terrace	0.15 for whole roof structure	

FIRE

<i>Structural precautions</i>	<i>Grade of protection</i>	<i>Apparatus</i>	<i>Reasons and comments</i>
R.C. first floor and staircase structures	2 hours	Hose-reels and fire extinguishers; asbestos blanket in kitchen; hydrants at front and rear of buildings. Fixed foam inlet to fuel store. Five telephones	
Concrete casing to all boiler-room steelwork; fireproof wall between fuel store and boiler room	2 hours		
Fire-retardant coating to all fibreboard giving resistance to spread of flame	Class I		
<i>Planning precautions</i>	<i>Access for fighting</i>	<i>Means of escape</i>	<i>Reasons and comments</i>
Paved areas immediately adjacent to fire hydrants and continuous round buildings		Alternative staircases from two-storey offices	

SPECIAL ACOUSTICAL TREATMENT

<i>Sound absorption material</i>	<i>Location</i>	<i>Absorption coefficient</i>	<i>Reasons and comments</i>
Acoustic-tile ceiling	Concourse	0.5 at 500 c/s	The aim in these areas is to reduce noise levels without impairing the efficiency of the public address system
Fibreboard-tile ceiling	Customs	0.25 at 500 c/s	
Fitted carpets	Customs and buffet		Improved comfort conditions
Fibreboard ceilings	Offices		

analysis

TIME SCHEDULE

Drawings	Contract signed	Work commenced	Work completed	Type of contract
September 1953 to July 1954	August 17, 1954	September 1954	April 1956	Separate contracts for: 1. structural steel; 2. reinforced concrete; 3. heating and ventilation; 4. electrical; 5. several works contract covering all other trades

RATIOS

Area of enclosing wall	1.175	Area of windows and external doors	0.332
Total floor area	1	Total floor area	1
Area of solid wall	0.843	Area of roofs (incl. roof terrace)	0.804
Total floor area	1	Total floor	1

COST ANALYSIS

Total ground floor area of superstructure	8,765 sq. ft.	Tender date: July 1954	£	s.	d.
Total floor area (excluding basement)	11,995 sq. ft.	Tender cost of superstructure, installations and finishings	49,723	4	7
Total floor area of basement	875 sq. ft.	Tender cost of basement and foundations	5,667	9	4
Storey height of basement	10 ft. 6 in.	Tender cost of ancillary buildings and external works	10,639	11	4
Total depth of basement	12 ft. 0 in.	Gross total cost	65,430	5	3
		Nett total cost (i.e. gross total cost less external works)	58,826	12	6
		Nett cost per ft. super of floor area including basement	4	11	5½
		Nett cost per ft. cube including basement	5	11	5½



FITTINGS AND EQUIPMENT

All built-in furniture and fittings were designed by architect, and special lay-outs or designs were prepared for items such as indicator boards, insurance machine, GPO letter-box, GPO telephone booths, newspaper kiosk, external and internal signs, clocks, street lighting fittings, loudspeaker outlet grilles.

Left: south-west corner of concourse, showing some of the furniture (and the ashtrays) which is architect-designed. The timber, slatted grille (top right on the back wall) is typical of the induction points from the warm-air heating system.

COST COMMENTS

Any comparisons between this analysis and other analyses should be made bearing in mind that one of the functions of this particular building is to present a "good front," and that this factor is strongly reflected in the general high standard of finishings and fittings. The following notes affecting costs will be of value when using this analysis as a basis for future planning. *Contingencies:* Note that of a total cost per foot super of 91s. 5½d., contingencies amount to 5s. 10½d. *External walls:* The requirements of this building result in an unavoidably high external wall to floor area ratio which, together with the materials chosen to give hard wearing qualities and flexibility for future extensions, reflects in the cost per foot super of floor area. *Roof construction:* Although the cost appears high, the roof terrace must take foot traffic and the unusual factor of appearance from the air

must be considered. A separate cost for the terrace would have been useful. *Heating installation:* Note that the heating installation costs must provide for the large heat loss in concourse circulation areas requiring extra radiant panels and cabinet-heater units. *Site organisation:* It is a point to note that the method of placing separate contracts for the various sections of the building must have an effect, not only on the time taken to complete, but also on the costs of the elements per foot super.

CONTRACTORS

General contractors: Messrs. Nathaniel Grieve. *Sub-contractors (structure):* Excavations, damp courses, concrete blocks, bricks, stone: Messrs. Russell & Swanson. *Foundations and reinforced concrete:* Stuart's Granolithic Co. Ltd. *Structural steel:* Fleming Brothers Ltd. *Special roofings:* aluminium fixed by Patrick Knox & Son Ltd.

Roofing felt and roof terrace finish: Wm. Briggs & Sons Ltd. *Partitions (aluminium) and casements:* Williams & Williams Ltd. *Glass:* Cunningham, Dickson & Walker Ltd. *Woodstrip flooring:* A. M. MacDougall & Son Ltd. *Patent flooring (Accotile):* Neuchatel Asphalt Co. Ltd. *Sub-contractors (equipment):* Central heating: Underhill Heating Engineers Ltd. *Boilers:* Ideal Boilers & Radiators Ltd. *Electric wiring:* James Scott & Co. Ltd. *Electric light fixtures:* Merchant Adventurers Ltd.; Frederick Thomas & Co. *Special door furniture:* Bell Donaldson & Co. Ltd. *Door furniture:* Alfred G. Roberts Ltd. *Roller shutters:* Arthur L. Gibson & Co. Ltd. *Ventilation:* Greenwood's & Airvac Ltd. *Plumbing:* Patrick Knox & Son Ltd. *Sanitary fittings:* Adamsez Ltd. *Subcontractors (decorations and specialities):* Plaster: Farish & Birnie. *Metal work:* Kingston Brass Co. Ltd. *"Porcellanite" mosaic to bar:* supplied by Dennis M. Williams. *Tiling:* R. Campbell & Sons. *Rugs:* R. MacDonald Scott. *Garden furniture:* Metal Developments Ltd.; Conran Furniture. *Furniture (customs seating and garden seating):* Ernest Race Ltd. *Furniture (cane chairs in concourse and customs):* Scottish National Institution for War-Blinded. *Furniture (general):* Hille & Co. Ltd. *Carpets:* James Templeton & Co. Ltd. *Shrubs and trees:* Edinburgh Corporation Parks Department. *Planting and seeding:* Air Ministry Works Directorate. *Hand hoist:* Douglas & Bryden Ltd. *Clocks:* E. Baume & Co. Ltd. *Paint:* T. W. Scott

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working detail

COVERED WAYS AND CANOPIES: 19

CANOPY: TURNHOUSE AIRPORT, EDINBURGH

Robert H. Matthew, architect

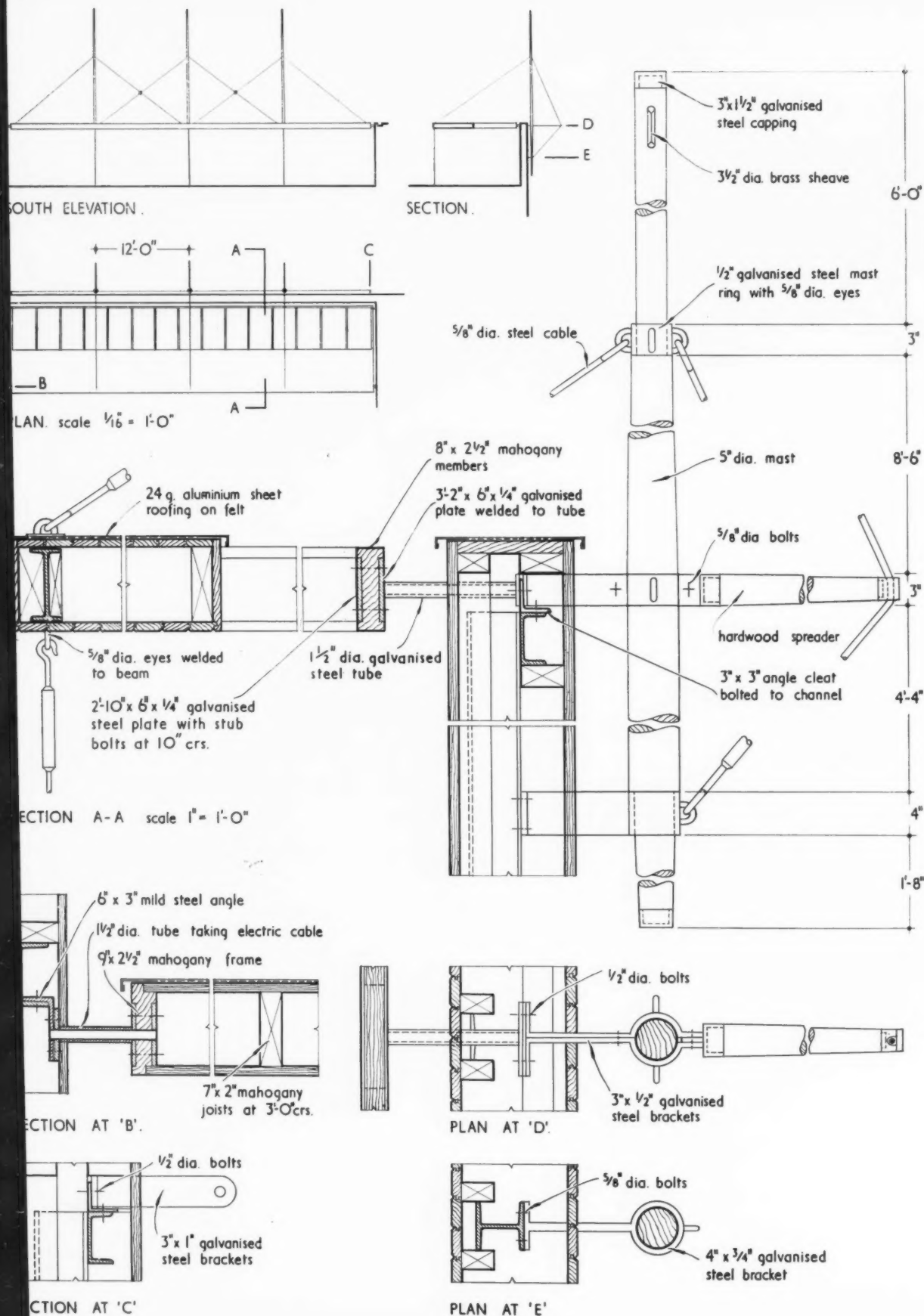
The wall at the rear of the canopy comprises a steel frame with 5 in. by 4½ in. r.s. stanchions opposite each flagpole and a 5 in. by 2½ in. r.s. channel running horizontally near the head. A stud framing is bolted to this steelwork back and front to support the t. and g. mahogany boards. The canopy itself was built in situ, supported on shoring. The forward edge is reinforced at the points of support by 3 ft. 2 in. lengths of built-up m.s. joist, to the top and bottom flanges of which are welded the galvanised steel eyes which engage the cables. The cables are galvanised and painted white and are tightened by means of bottle screws.

working detail

COVERED WAYS AND CANOPIES: 19

CANOPY: TURNHOUSE AIRPORT, EDINBURGH

Robert H. Matthew, architect



working detail

MISCELLANEOUS: 11

LITTER BIN: TURNHOUSE AIRPORT, EDINBURGH

Robert H. Matthew, architect



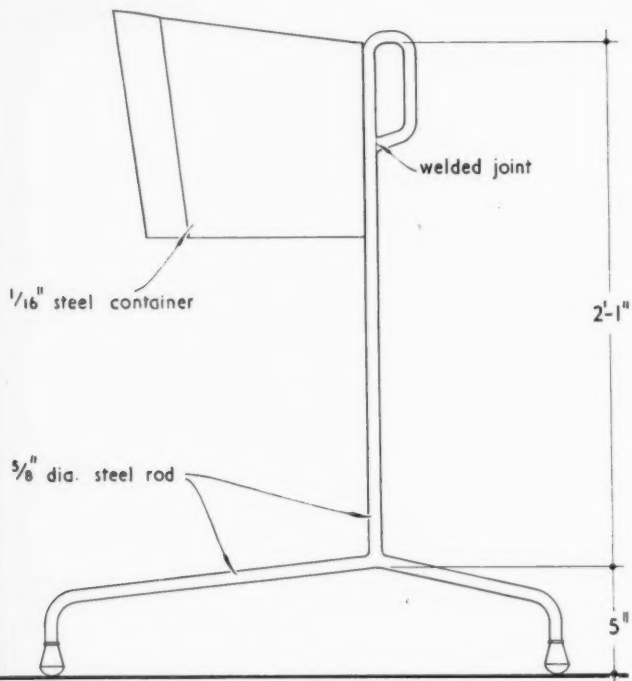
The bin is designed to lift off the stand for easy emptying. Two ribs on the top of the bin drop into two slots in the top of a plate welded to the top of the stand. It was originally intended that the bin should be further secured by a screw and butterfly nut engaging in the base of the plate; but it was found that this was inconvenient and that a stud engaging in a third slot at the bottom of the plate was sufficient to hold the bin in place. All metal parts are galvanised and painted, the bin itself being painted dark blue.

working detail

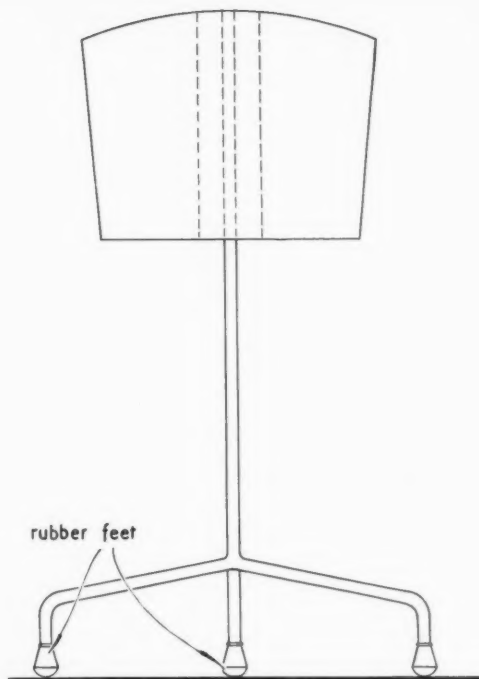
MISCELLANEOUS: 11

LITTER BIN: TURNHOUSE AIRPORT, EDINBURGH

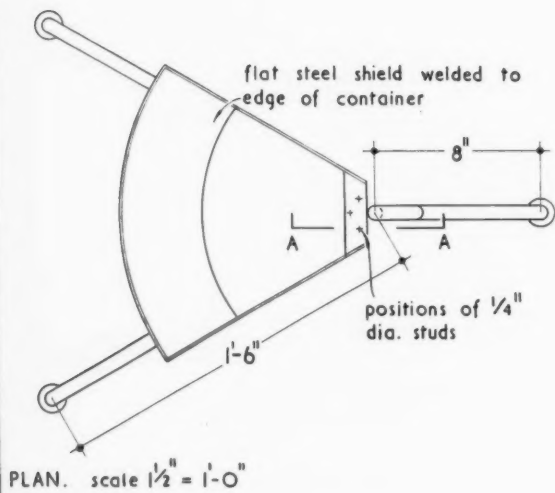
Robert H. Matthew, architect



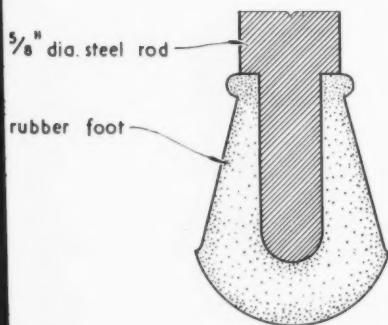
SIDE ELEVATION



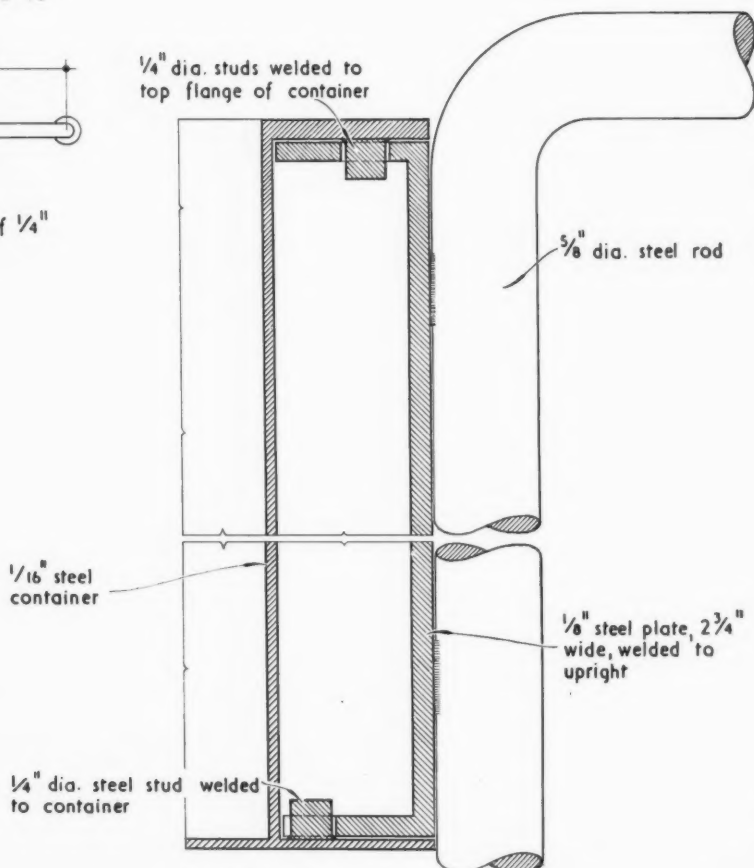
FRONT ELEVATION



PLAN. scale 1 1/2" = 1'-0"



SECTION THRO' FOOT. scale full size



SECTION A-A scale full size

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BUILDINGS RECEIVED



Tea Bar in Regent Street, S.W.1

Misha Black and Kenneth Bayes, of DRU, have designed a Tea Bar providing 80 seats, with standing counter space for about a further 40, in the basement of the Tea Centre, Regent Street. The service counters have been designed as free-standing units and "stepped" on plan to allow for easy by-passing of the toastery and food counters. An effect of increased height has been obtained by the four barrel vaults between the beams (under the beams the room is only 8 ft. high). Flamingo, buttercup yellow and lime green are the predominant colours and are combined with ebonized mahogany on the counters and screen.

Police Station at Corby, Northants

The new Corby Police Station, which was opened recently by the Home Secretary, was planned in May, 1954, to replace the old police station in The Jamb, Corby. The old police station was inadequate to serve the New Town population, which will ultimately be 40,000. Below, a view down Corporation Street of the west facade of the police station, which will be extended later to the north by the addition of two magistrates' courts. The site was allocated to the County Council by the Development Corporation and is of 2.09 acres, allowing ample room for future extension. The present accommodation consists of administrative offices on the ground floor, offices, recreation room, rest room, dining room and kitchen on the first floor, and four three-bedroom flats for

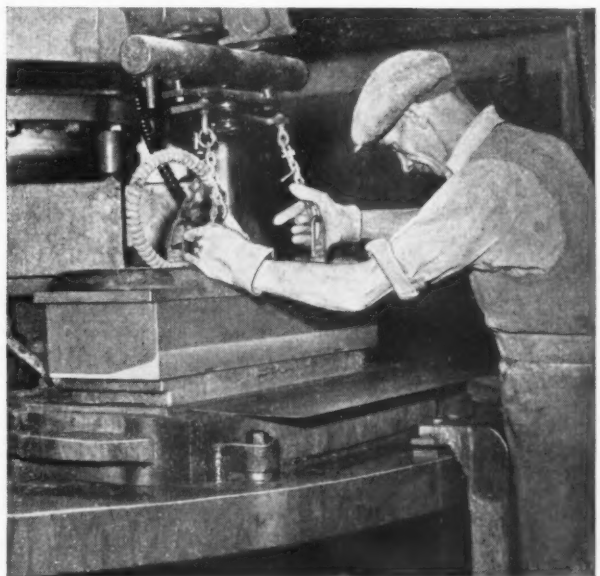
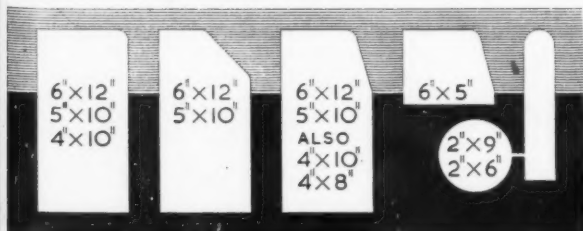


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police officers on the second floor. These flats, which are accessible from two staircases and a verandah on the east side of the building, are divided up by temporary demountable partitions so that the floor space can be easily changed to offices when the station is converted from a sub-divisional to a divisional headquarters. The construction consists of a steel frame, cavity brick external walls and the roof covering is

copper sheeting. The tender cost, which includes a single-storey cell block to the north of the station, garages and a parade ground, is £66,164. The furniture is estimated to cost £2,340. The architects are A. N. Harris, County Architect, Northants; J. F. Goff, Chief Assistant; D. R. Kightley and B. W. H. Claypole, assistants. General contractors, Robert Marriott, Ltd.

Announcements PROFESSIONAL

Mrs. A. Clark, A.R.I.B.A., Idwal, Lower Park, Shipley, Torquay, will be pleased to receive trade catalogues, etc., especially those of use in teaching.

Davis, Belfield & Everest, Chartered Quantity Surveyors, have opened an office at 29, Cabinet Chambers, Lower Basinghall Street, Leeds, 1, telephone Leeds 2-9318, and will be pleased to receive trade catalogues, etc.

Edward Craven, A.R.I.B.A., M.T.P.I., has opened a branch office at 3, St. Mary's Place, Stamford, where he will be pleased to receive trade catalogues, etc.

Messrs. Thurgood, Son & Chidgey, Chartered Quantity Surveyors, 2, Broad Street Buildings, Liverpool Street, London, E.C.2, have taken into Partnership Mr. M. J. E. Fuche and Mr. D. J. Barton, formerly practising as Fuche & Barton. They have also taken into Partnership, in respect of their Ipswich office, Mr. R. C. Gibson. In both cases the appointments will be taken up as from July 1 and the style and address of the firm will remain unchanged.

Mr. F. R. Hornby, M.B.E., M.A., has been appointed Secretary of the National Council for Technical Awards. He will take up his duties on September 1. Meantime, all communications should be addressed to the Acting Secretary to the Council at the Ministry of Education, Curzon Street, W.1.

Robert Steane, A.A.D.P., Gerald Shipman, M.A.(Cantab.), A.A.D.P., and Sherban Cantacuzino, M.A.(Cantab.), Chartered Architects, have formed a partnership under the name of Steane, Shipman & Cantacuzino, and will have their offices at 18 Buckingham Street, Strand, W.C.2. Telephone: TRA 2774. They will be pleased to receive samples and trade catalogues.

TRADE

Dr. Wojciech Domzalski has been appointed Chief Geophysicist of Hunting Geophysics Ltd. He graduated from the Royal School of Mines in 1948 and later gained a diploma in geophysics at Imperial College, London. He is 37 years of age.

Thomas de la Rue & Co. Ltd. have appointed Mr. A. G. Ludgater as Sales Manager of the Potterton Division. Previously Mr. Ludgater was Technical Manager of the Solid Smokeless Fuels Federation. He will take up his new duties on August 7.

The Fibre Building Board Development Organisation Ltd. held their third Annual Conference on May 31 and June 1, at the Krasnapolsky Hotel, Amsterdam. The Chairman, Mr. C. Geoffrey Cullen, Director of Bowater's Building Boards Division, reviewed the work of FIDOR during the past year and he stressed the satisfactory growth of all FIDOR activities since its foundation in 1953.

The Midland Area office of The Cape Asbestos Co. Ltd. has moved to new premises at 11, Waterloo Street, Birmingham, 2, telephone Midland 6565.

Courtney, Pope Ltd., of Amhurst Park Works, Tottenham, N.15, are preparing a showroom for self-service fittings under the management of Mr. H. P. Fountain, who will take up his duties from July 2.

British Insulated Callender's Cables Ltd. announce that as from July 1 the sole telephone number for their Cambridge depot will be Cambridge 55451/2.

T. & W. Farmiloe Ltd., Architectural and Contracts Division, announce the appointment of Mrs. Elizabeth Cowin, B.A.R.C.(Liv.), as Colour Consultant. She will primarily prepare colour schemes for those who wish to avail themselves of the Company's Free Advisory Service.

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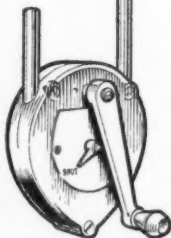
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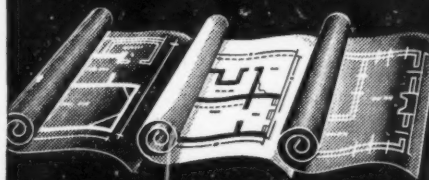
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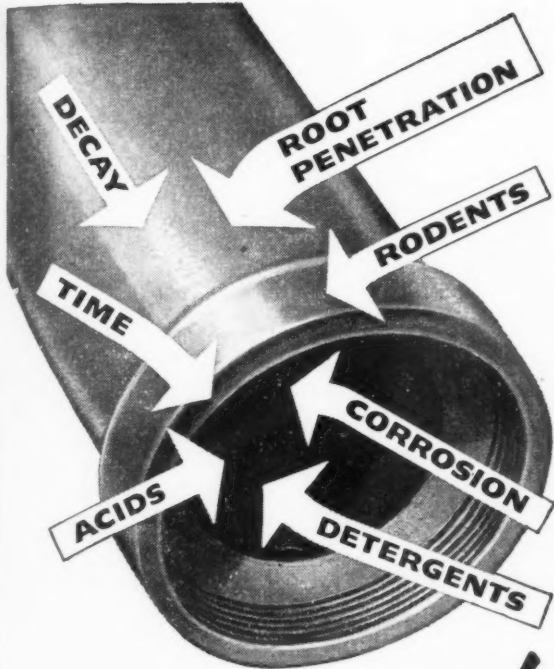


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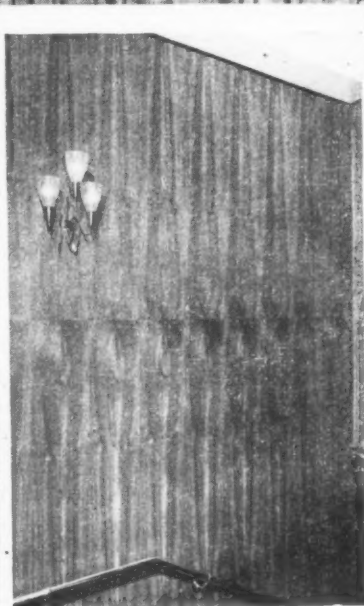
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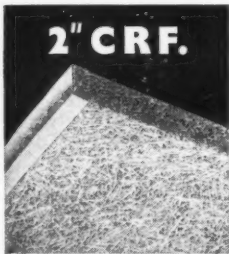
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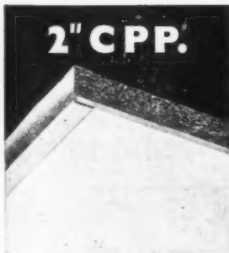
EVERY Architect knows that roofs, in most cases the largest single continuous surface in a building, demand the most careful attention. In the past, the Architect chose the roof structure and would frequently have to conceal its unsightly appearance from within. Although this great sound reflecting surface also provided the easiest path for heat losses, additional cost made the use of thermal insulators or sound absorbants a luxury.



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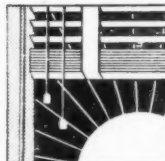
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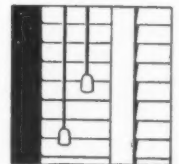
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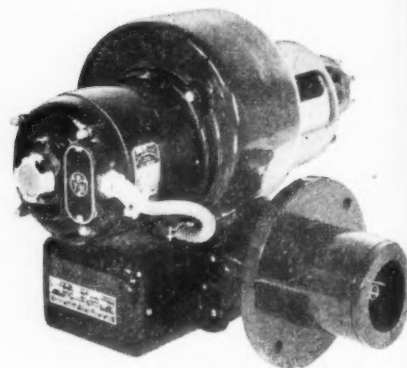
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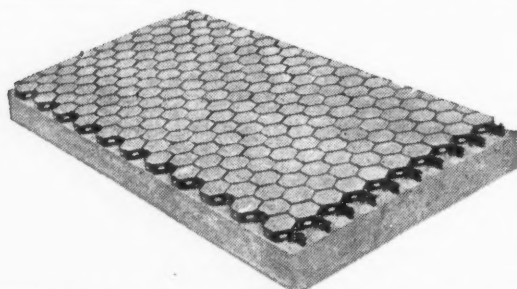
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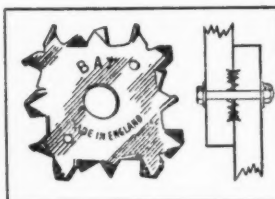


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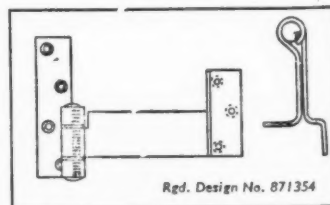
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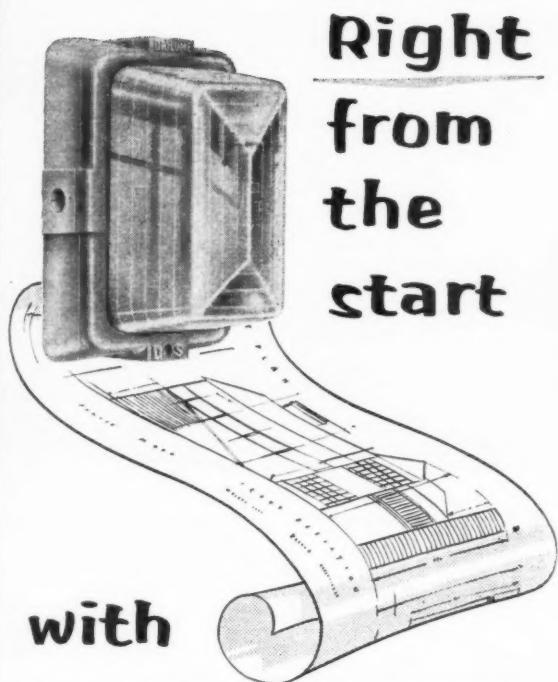
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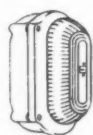
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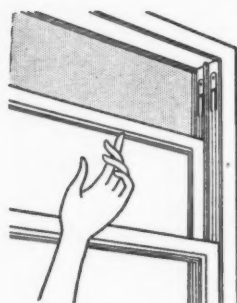


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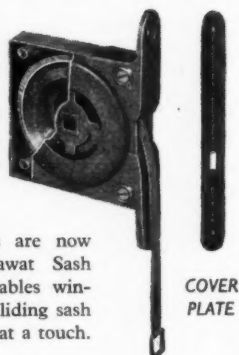
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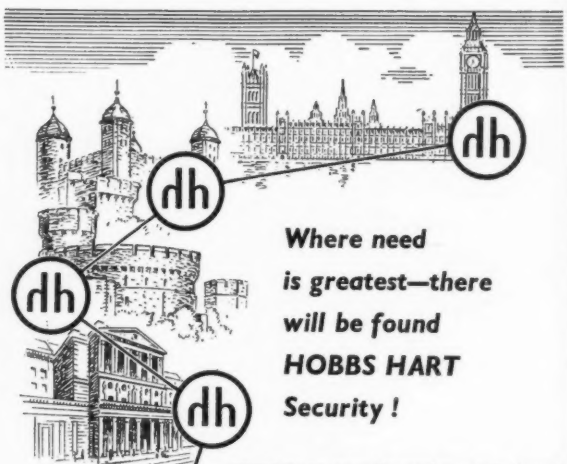
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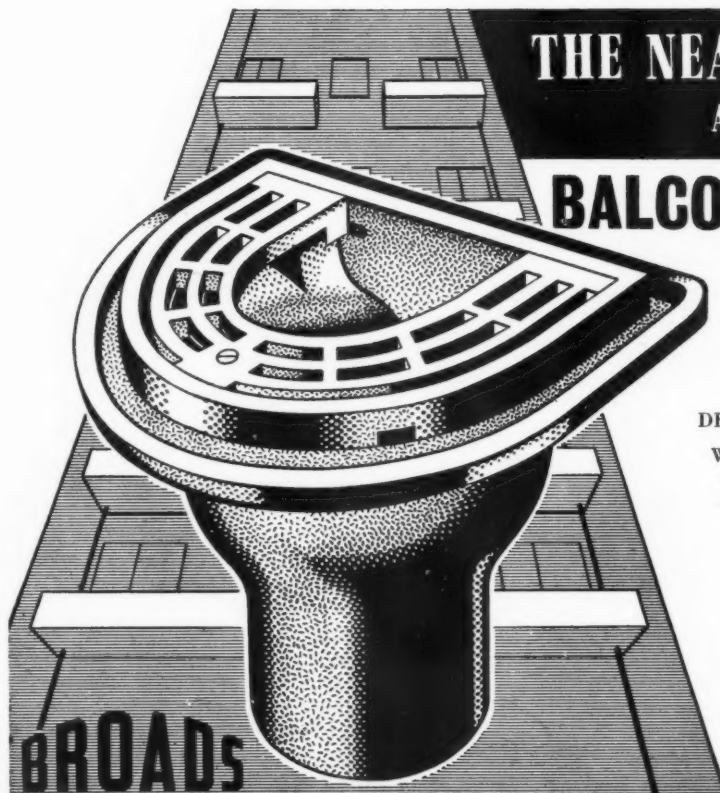


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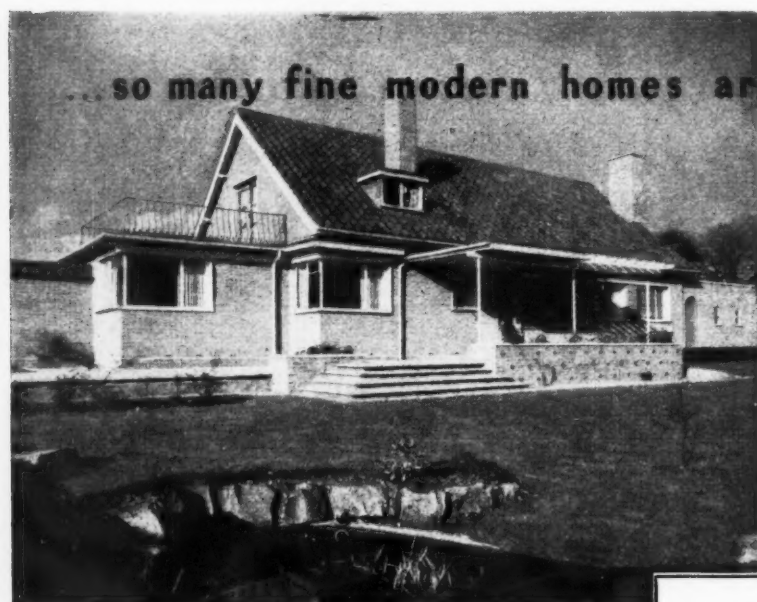



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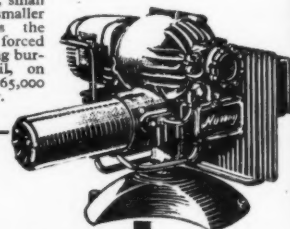
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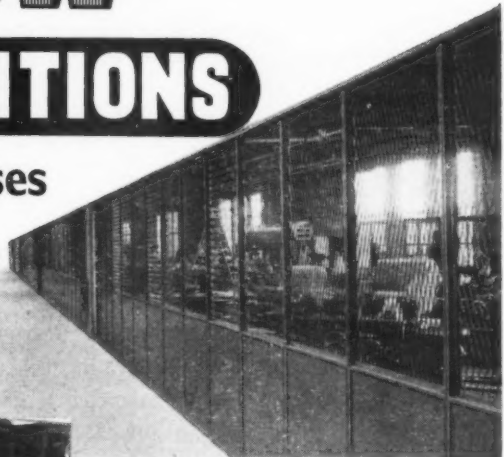
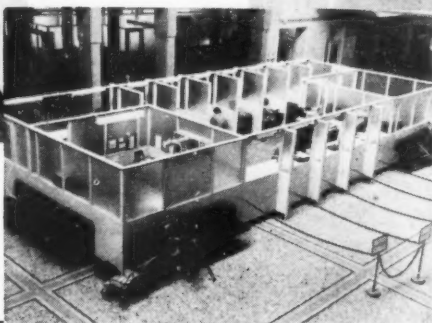
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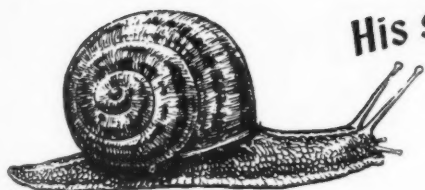
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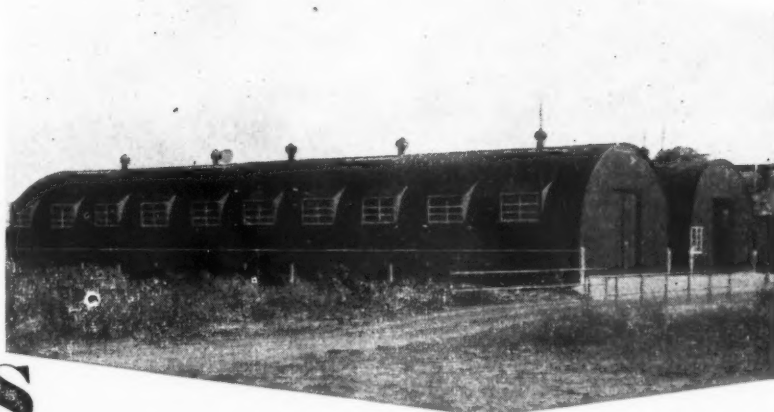


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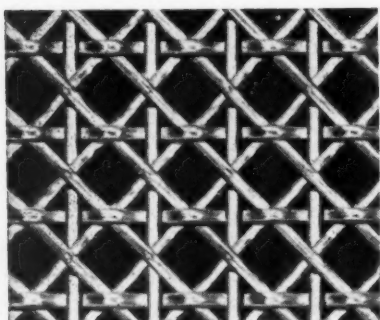
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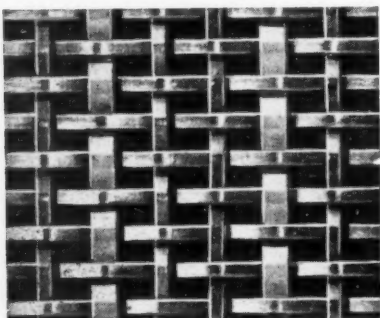
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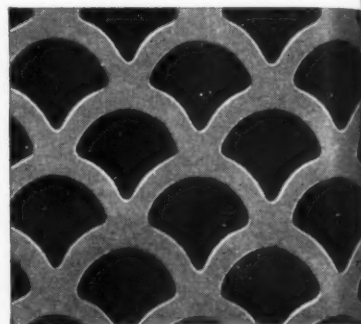
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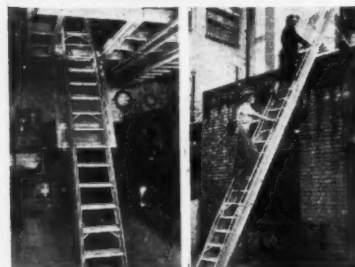
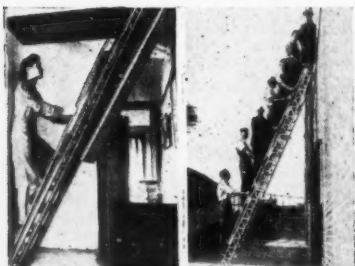
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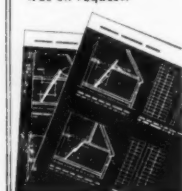
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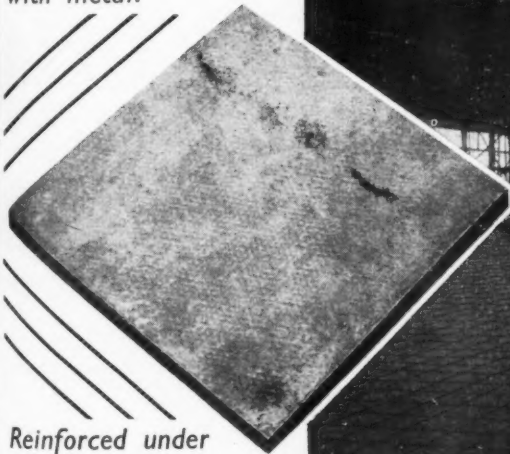
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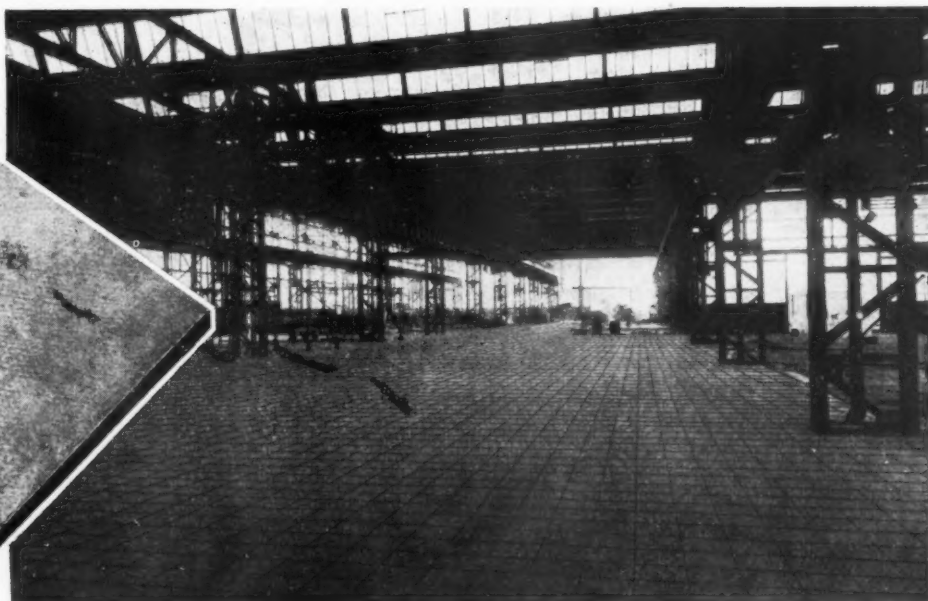
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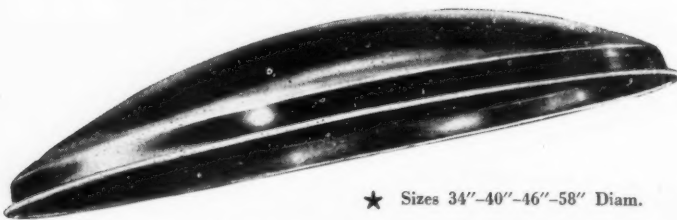
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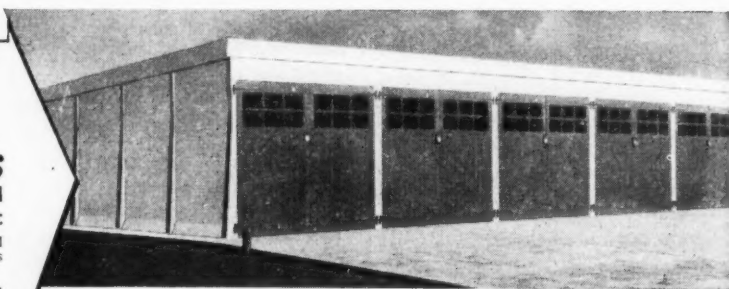
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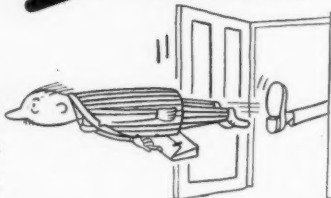
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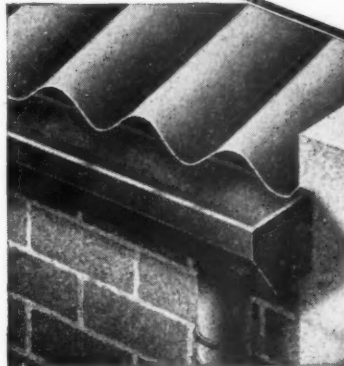


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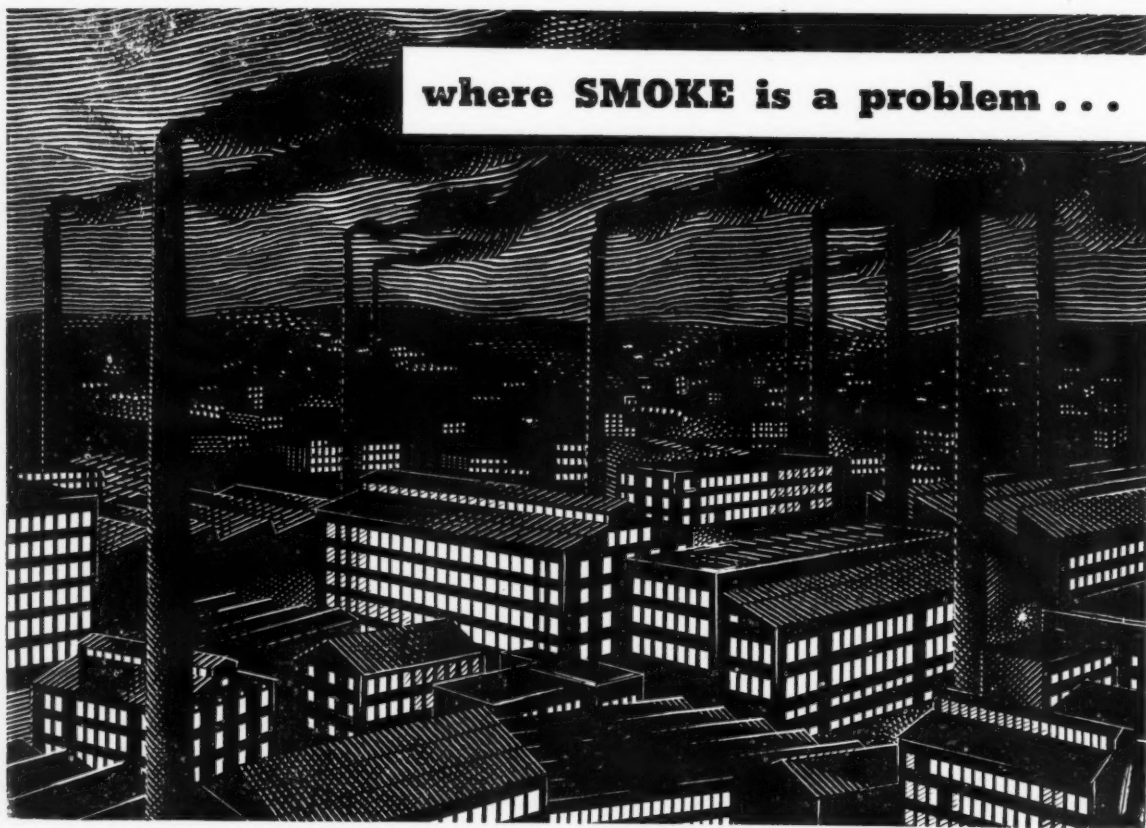
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CLASSIFIED ADVERTISEMENTS

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

Public and Official Announcements

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HAYES AND HARLINGTON URBAN DISTRICT COUNCIL

Applications are invited for:—
 (a) ARCHITECTURAL ASSISTANTS (PERMANENT) (two vacancies) within Grade A.P.T. II, i.e., £595-£675 per annum. (b) SENIOR ARCHITECTURAL ASSISTANT (TEMPORARY) within Grade A.P.T. IV, i.e., £710-£885 per annum, plus London weighting, in each instance, 21-25 years £20 per annum, 26 years and over £30 per annum. Candidates for (a) must have passed the R.I.B.A. Inter. Exam., good experience of housing work with local authority. Housing accommodation will be made available for one of these two appointments if necessary. (b) Must be a Registered Architect, have good general experience in design and construction in relation to municipal housing and other works, and capable of supervising large building contracts. Housing accommodation will be made available if necessary, 5-day week. Further particulars and form of application obtainable from the undersigned, which, when completed, must be returned as soon as possible.
 GEORGE HOOPER,
 Clerk and Solicitor.
 Town Hall, Hayes, Middlesex. 1277

LONDON COUNTY COUNCIL ARCHITECTS' DEPARTMENT
 Vacancies exist for ARCHITECT PLANNERS (salaries up to £817). Tasks include 3-dimensional planning within London's eight major Comprehensive Development Areas (including Stepney/Poplar, the South Bank, and Elephant and Castle) and other Redevelopment Areas.
 The work includes the preparation of comprehensive layouts covering all the important areas of new public and private development throughout the County, and covers the whole field of planning technique.
 Particulars and application form from Architect (AR/EK/AT/P.1), County Hall, S.E.1. (907) 1278

WARWICKSHIRE COUNTY COUNCIL ARCHITECTS' DEPARTMENT
 Applications are invited for the following appointments:—

- SENIOR ASSISTANT ARCHITECTS, Grade A.P.T. V (£795-£970). Applicants must be competent designers, having a knowledge of modern methods of construction, and be capable of handling large building projects from sketch plan stage to completion.
- ARCHITECTS, Grade A.P.T. IV (£710-£885). Applicants must be competent designers, having a good knowledge of construction and be capable of handling medium sized contracts.
- ASSISTANT ARCHITECTS, scale £690-£840. The successful applicants will work in teams on large projects, but opportunity will be given to men with enthusiasm and ability to design and carry out smaller projects under the Group Architect.
- CLERKS OF WORKS. Applicants are invited for the appointment of Clerks of Works to supervise the erection of new school buildings in various parts of the County. Salary £14 per week.

The commencing salaries can be within the grades according to the ability and experience. The appointments, except (d) are on the established staff and subject to the Scheme and Conditions of Service of the National Joint Council for Local Authorities. All appointments are subject to the Local Government Superannuation Acts, 1937-1953. Successful candidates will be required to pass a medical examination.

The Council is unable to offer successful candidates housing accommodation.
 Applications are to be on forms which can be obtained from G. R. Barnsley, F.R.I.B.A., County Architect, Shire Hall, Warwick.

L. EDGAR STEPHENS,
 Clerk of the Council.
 Shire Hall, Warwick. 1473

COUNTY BOROUGH OF OLDHAM BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT
APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT

Applications are invited from suitably qualified persons, for the above appointment, at a salary in accordance with Grade A.P.T. IV (£710-£885), commencing salary according to experience.

The National Conditions and Local Government Superannuation Acts apply. Housing accommodation available if required.
 Applications, suitably endorsed, together with the names and addresses of two referees, should reach me not later than Tuesday, 17th July, 1956.

A. L. HOBSON,
 Borough Engineer and Surveyor.
 75, Union Street, Oldham. 1564

COUNTY BOROUGH OF CARLISLE

Applications are invited for the following posts in the City Surveyor's Department:—

- SENIOR ASSISTANT ARCHITECT, A.P.T. IV (£710×£35-£885).
- SENIOR ASSISTANT QUANTITY SURVEYOR, A.P.T. IV.
- TWO SENIOR ASSISTANT ENGINEERS, A.P.T. IV.
- BUILDING SURVEYOR, A.P.T. III (£640×£25-£765).

Applicants for (a) to have passed R.I.B.A. Final Examination or equivalent at recognised School of Architecture, and to have at least 5 years' experience, including period of training. Applicants for (b) to have passed R.I.C.S. Final Examination. Applicants for (c) to be A.M.I.C.E. or A.M.I.Mun.E., or equivalent. Applicants for (d) to have R.I.C.S. (Building) or equivalent qualifications, and to be capable of handling minor building works, alterations, additions, etc. Some housing accommodation available if required.

Forms of application from City Surveyor, 18, Fisher Street, Carlisle. Closing date: 12th July.

H. D. A. ROBERTSON,
 Town Clerk. 1505

COUNTY OF LEICESTER

- SENIOR ASSISTANT ARCHITECT—£795-£970.
- ASSISTANT ARCHITECTS—£690-£840.
- ARCHITECTURAL ASSISTANTS—£595-£675 or £640-£765.

Candidates for (a) must be registered architects experienced in the design of modern buildings and capable of carrying through large projects from inception to completion; for (b) must have passed Parts I and II of the R.I.B.A. Final; for (c) must be of intermediate standard with some experience. Apply on form obtainable from County Architect, 123, London Road, Leicester. 1535

KENT COUNTY COUNCIL

Appointments for work on the Council's extensive Education Building Programme are open to Architects able to accept responsibility and display initiative within a group system. Ability for progressive thought on current design and cost problems an advantage.
 Candidates must be Associates of the R.I.B.A. Salary within scale £795-£970. N.J.C. conditions of service. Application forms from the County Architect, Springfield, Maidstone. Closing date 25th July, 1956. 1543

CRICKLADE AND WOOTTON BASSETT RURAL DISTRICT COUNCIL

APPOINTMENT OF ENGINEERING AND SURVEYING ASSISTANT
 Applications are invited for the appointment of ENGINEERING AND SURVEYING ASSISTANT to the Engineer and Surveyor, Mr. J. C. Grindley, A.M.I.C.E., A.R.I.C.S., M.I.Mun.E., A.M.T.P.I., at a salary in accordance with the Special Grade of the National Conditions of Service (£690 × £30 to £840 per annum).

The appointment will be subject to the provisions of The Local Government Superannuation Act, 1937, and to the successful candidate passing a medical examination.

Preference will be given to applicants who have had experience in housing works.
 Applications, endorsed "Engineering and Surveying Assistant," stating age, qualifications and experience, together with copies of not more than three recent testimonials, should reach the undersigned, not later than Tuesday, the 24th July, 1956.

W. J. HOSIER,
 Clerk of the Council.

Council Offices,
 Manor House,
 Wootton Bassett,
 Wilts.
 25th June, 1956. 1545

WEST SUSSEX COUNTY COUNCIL COUNTY ARCHITECTS' DEPARTMENT

Applications are invited for the following appointment:—
 ASSISTANT STRUCTURAL ENGINEER, at a salary in accordance with A.P.T. Grade VI (£880 to £1,080). Commencing salary according to experience.
 Further particulars should be obtained from the County Architect, County Hall, Chichester, to whom detailed applications must be submitted not later than the 25th July, 1956.

T. C. HAYWARD,
 Clerk of the County Council.

County Hall, Chichester.
 28th May, 1956. 1503

COUNTY BOROUGH OF BURY

Applications invited from suitably qualified persons for the following permanent positions in the Borough Engineer's Department:—

- SENIOR ARCHITECTURAL ASSISTANT (2 vacancies).
- SENIOR ASSISTANT QUANTITY SURVEYOR.

Each appointment is superannuable and salary is in accordance with Grade A.P.T. IV (£710-£885).

Applications stating age, details of training, qualifications and experience, together with the names and addresses of two referees, must reach me not later than 23rd July.

EDWARD S. SMITH,
 Town Clerk.

Town Hall,
 Bury.
 27th June, 1956. 1627

CITY OF LEICESTER CITY ENGINEER AND SURVEYOR'S DEPT. MAINTENANCE SECTION

Applications are invited for the appointment of MAINTENANCE ASSISTANTS in the City Surveyor's Department, in Grade A.P.T. V (£795-£970 per annum).

Candidates should be Members of the R.I.B.A., R.I.C.S., or equivalent.

The appointments will be subject to the provisions of the Local Government Superannuation Acts, 1937 and 1953.

Applicants should have a good knowledge of and be fully experienced in the maintenance of public buildings, preparation of plans, specifications, estimating and schedules, etc. Previous Local Government experience would be an advantage.

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

Applications, stating age, qualifications, training and experience, together with the names of not less than two persons to whom reference may be made, should reach the undersigned not later than Saturday, 14th July, 1956.

The Council are unable to assist with housing accommodation.

JOHN L. BECKETT, M.Inst.C.E.,
 City Surveyor. 1559

TOWN HALL, LEICESTER.

URBAN DISTRICT COUNCIL OF BASILDON APPOINTMENT OF ASSISTANT ARCHITECT

Applications are invited from experienced Architects for the above appointment in the Engineer and Surveyor's Department. The post is established on A.P.T. IV (£710×£35 to £885), and commencing salary will be fixed according to experience and qualifications. The provision of housing accommodation will be considered.

The Urban District has a population of approximately 57,000, covers 27,000 acres, and includes the New Town area and two Townships designated as Expanding Towns. Rapid development will provide an increasing variety of interesting works. Full particulars and application forms from and returnable to Mr. S. A. Wadsworth, A.M.I.C.E., A.M.I.Mun.E., Council Offices, High Street, Billericay, Essex; closing date: 16th July, 1956. 1555

CITY AND COUNTY OF BRISTOL CITY ARCHITECTS' DEPARTMENT

Applications invited for under-mentioned permanent appointments on staff of City Architect's Department:—

- SENIOR ASSISTANT ARCHITECTS, Grade A.P.T. V (£795×£35-£970 p.a.).
- SENIOR ASSISTANT ARCHITECTS, Grade A.P.T. III (£640×£25-£765 p.a.), or Specialist Scale (£690×£30-£840 p.a.).
- ASSISTANT ARCHITECTS, Grade A.P.T. II (£595×£20-£675 p.a.).

Starting grade will be appropriate to professional experience and qualifications.

HOUSING ACCOMMODATION AVAILABLE IF NECESSARY, AT AN ECONOMIC RENT.

Further particulars and application forms obtainable from me. Applicants must state post for which they are applying. Completed application forms to be received by 16th July, 1956.

J. NELSON MEREDITH, F.R.I.B.A.,
 City Architect.

The Council House, College Green,
 Bristol, 1. 1553

METROPOLITAN BOROUGH OF BERMONDSEY

BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT

CHIEF ARCHITECTURAL ASSISTANT

Applications are invited from persons under 45 years of age for the position of Chief Architectural Assistant, to take charge of the Architectural Section of the Borough Engineer and Surveyor's Department.

Salary will be in accordance with Scale A of the Joint Negotiating Committee for Chief Officers, commencing at an incremental point according to experience.

Candidates must be A.R.I.B.A., with considerable office experience, particularly of multi-storey housing projects. They must be capable of organising and supervising the work of the Architectural Section, and should have a contemporary approach to Architecture.

Applications on the appropriate form obtainable from the undersigned, must be returned not later than 18th July, 1956.

S. E. FREEMAN,
 Town Clerk.

Municipal Offices, Spa Road, S.E.16. 1611

PADDINGTON BOROUGH COUNCIL

SENIOR ASSISTANT ARCHITECT (APT VI-£910 to £1,110 p.a.)

Applications are invited for the above-mentioned appointment from candidates with practical experience of building work and a personality likely to obtain results with other staff. A.R.I.B.A. essential. Applicants should also have experience in the design and supervision of housing schemes, including multi-storey flats, and be acquainted with local government procedure. Some experience in town planning would also be an advantage.

Applications in writing to the undersigned by 25th July, 1956 (quoting A. 290), must state age; qualifications; present and past appointments, with dates and salaries; experience; and names and addresses of three referees.

W. H. BENTLEY,
 Town Clerk.

Town Hall,
 Paddington Green, W.2. 1620

**BOROUGH OF HEMEL HEMPSTEAD
ARCHITECTURAL ASSISTANT**

Applications are invited for the appointment of an Architectural Assistant in the Borough and Water Engineer's Department at a salary in accordance with A.P.T. Grade II of the National Joint Council's Scale commencing at £595 rising to £675 per annum. Housing accommodation available.

Preference will be given to candidates who have passed the Intermediate examination of the R.I.B.A. and have had experience in the design and working drawings of dwellings or public buildings for Local Authorities.

The appointment will be subject to the Local Government Superannuation Acts, to the National Conditions of Service from time to time in force and to the passing of a medical examination and will be terminable by one month's notice in writing on either side.

Applications stating age, qualifications and experience, together with copies of two recent testimonials should be sent to A. H. Turner, A.M.I.C.E., Borough and Water Engineer, High Street, Hemel Hempstead, Herts., not later than Monday the 23rd July, 1956.

Canvassing will disqualify and applicants must state whether to their knowledge they are related to any member or senior officer of the Council.

C. W. G. T. KIRK,
Town Clerk.

Town Hall,

Hemel Hempstead, Herts.

25th June, 1956.

1596

**URBAN DISTRICT COUNCIL OF CORBY
JUNIOR ARCHITECTURAL ASSISTANT,
GRADE A.P.T. I (£530-£610)**

Applications are invited for the above appointment in the Architectural Section of the Engineer and Surveyor's Department.

Applicants must have passed the R.I.B.A. Intermediate Examination, or its equivalent at one of the recognised schools of architecture, and preference will be given to those who have had practical office experience in housing and general architecture.

The provisions of the Local Government Superannuation Acts, 1937/53, will apply to this appointment.

Housing accommodation will be made available to the successful candidate if married.

Forms of application may be obtained from the undersigned, to whom they should be returned not later than the first post on Saturday, 14th July, 1956. Testimonials will be required only from applicants selected for interview.

G. B. BLACKALL,
Clerk of the Council.

Council Offices, Corby, Northants.

26th June, 1956.

1566

**BOROUGH OF HEYWOOD
APPOINTMENT OF ARCHITECTURAL
ASSISTANT**

Applications are invited for the above-mentioned appointment in the department of the Borough Engineer and Surveyor, at a salary in accordance with A.P.T. Grade III (£640-£765) of the Scale of Salaries.

Applicants must have passed the Intermediate R.I.B.A. Examination, and must have had experience in housing, general architectural work, quantities and final accounts.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, to the National Joint Council's Conditions of Service, and to one month's notice in writing on either side.

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

Applications, suitably endorsed, stating age, qualifications and experience, accompanied by copies of two recent testimonials, should reach the undersigned not later than Saturday, 28th July, 1956.

Canvassing in any form will be a disqualification.

W. R. PARKER,
Town Clerk.

Municipal Buildings, Heywood.

25th June, 1956.

1593

**BOROUGH OF HESTON AND ISLEWORTH
APPOINTMENT OF (a) SENIOR ARCHITECTURAL ASSISTANT, A.P.T. IV, and (b) ARCHITECTURAL ASSISTANT, A.P.T. II**

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

Appointment (a): Salary in accordance with A.P.T. Grade IV (£710×£35-£885, plus London weighting), per annum.

Applicants must have had good experience in architectural design and building work under construction. Other things being equal, preference will be given to applicants who have passed the examination for the Associateship R.I.B.A. or hold a University degree or diploma in architecture accepted by that Institute.

Appointment (b): Salary in accordance with A.P.T. Grade II (£595×£20-£675, plus London weighting), per annum.

Applicants should have passed the R.I.B.A. Intermediate Examination and have had one year's office experience.

Applications, on forms to be obtained from the Borough Engineer and Surveyor, 88, Lampton Road, Hounslow, Middlesex, must be returned to him not later than noon on 23rd July, 1956, appropriately endorsed.

D. MATHIESON,
Town Clerk.

Town Hall, Hounslow.

1563

**NORTHERN IRELAND HOUSING TRUST
ARCHITECT**

The Trust invites application for the post of ASSISTANT ARCHITECT, on the salary scale £700×£25-£800.

Candidates must be qualified Architects.

Preference will be given to ex-Service candidates.

The person appointed will be required to participate in a contributory superannuation scheme, which allows for the reciprocal transfer of benefits in Local Government Schemes in suitable cases.

Assistance in obtaining housing accommodation may be given in suitable circumstances to the successful candidate.

Application should be made not later than 23rd July, 1956, stating post applied for, and giving full details of age, education and experience, including present post and salary, to the General Manager, Northern Ireland Housing Trust, 12, Hope Street, Belfast.

Please mark envelope 35/56.

1585

**HODDESDON URBAN DISTRICT COUNCIL
(The Urban District has an area of 4,423 acres and is within the Greater London Green Belt)**

Applications are invited for the appointment of ARCHITECTURAL ASSISTANT, at a salary in accordance with Grade A.P.T. III and the National Joint Council's Conditions of Service will apply.

Applicants must have a good experience in architectural design and construction, and preference will be given to those who have passed the R.I.B.A. Intermediate Examination. The appointment is subject to the Local Government Superannuation Acts, to the successful candidate passing a medical examination, and to one month's notice in writing on either side. Housing accommodation will be provided for the successful candidate, if necessary.

The Council has a varied building programme, which includes a new Office Block and Council Depot.

Applications, stating present appointment, age, experience and qualifications, together with the names of two referees, must be delivered to the undersigned not later than 23rd July, 1956.

Applicants must disclose in writing whether or not they are related to any member or senior officer of the Council. Canvassing in any form will disqualify.

T. J. WREN,

Clerk of the Council.

Council Offices, Hoddesdon, Herts.

26th June, 1956.

1592

**BOROUGH OF FINCHLEY
HOUSING AND TOWN PLANNING
DEPARTMENT**

ARCHITECTURAL ASSISTANT

Salary: A.P.T. Grade II (£595×£20-£675), plus London weighting.

Subject to satisfactory service the duration of the post will be approximately two years.

Candidates should have passed the R.I.B.A. Intermediate Examination, and preference will be given to those with practical office experience in housing work.

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

Applications, stating age and full particulars of qualifications and experience, with names of two referees, to the Borough Housing and Town Planning Officer, The Avenue, Finchley, N.3, by first post on Wednesday, 11th July, 1956.

R. M. FRANKLIN,
Town Clerk.

Municipal Offices, Finchley, N.3.

26th June, 1956.

1580

**BEESTON AND STAPLEFORD URBAN
DISTRICT COUNCIL**

Vacancy for an ARCHITECTURAL ASSISTANT within Grade A.P.T. III (£640 to £765), according to qualifications and experience.

Housing accommodation will be made available if required.

Applications, naming two referees, to the Surveyor, Town Hall, Beeston, Nottingham, by 14th July, 1956.

H. D. JEFFRIES,

Clerk of the Council.

1570

**BOROUGH OF HENDON
Applications are invited for the following appointment:**

ARCHITECTURAL ASSISTANT, Grade A.P.T. V, £825-£1,000, including London Weighting.

Salary in excess of the minimum may be paid according to qualifications and experience.

Applicants for the post must be Associates of the Royal Institute of British Architects.

The Council is prepared to consider assisting applicants in suitable cases by the provision of housing accommodation.

The appointment will be subject to: (a) The provisions of the Local Government Superannuation Acts.

(b) The National Scheme of Conditions of Service.

(c) The satisfactory passing of a medical examination.

Applications stating age, qualifications and experience, together with names and addresses of two referees, should be sent to the Borough Engineer and Surveyor, Town Hall, Hendon, N.W.4, not later than 20th July, 1956.

R. H. WILLIAMS,
Town Clerk.

Town Hall,

Hendon,

N.W.4.

1616

COUNTY BOROUGH OF ROCHDALE

Applications are invited for the following appointments in the Architects' Department of the Borough Surveyor's Office:—

ASSISTANT ARCHITECT, Grade A.P.T. IV (£710-£885).

ASSISTANT QUANTITY SURVEYOR, Grade A.P.T. IV (£710-£885).

Applications for either appointment will be considered from candidates who are not fully qualified, on Grade A.P.T. III (£640-£765). The commencing salary, in each case, will not necessarily be the minimum of the grade, and will be fixed according to ability and experience.

The appointments will be subject to the National Scheme of Conditions of Service, the Local Government Superannuation Acts, and to passing a medical examination. Canvassing is prohibited, and applicants must disclose whether they are related to any member or senior official of the Council.

Housing accommodation will be provided by the Council in appropriate circumstances.

Applications, stating age, qualifications, training and experience, together with the names and addresses of two persons to whom reference can be made, and endorsed "Assistant Architect" or "Assistant Quantity Surveyor," must be delivered to the Borough Surveyor, Town Hall, Rochdale, by 9 a.m. on Monday, 23rd July, 1956.

K. B. MOORE,
Town Clerk.

1577

**HACKNEY BOROUGH COUNCIL require
ARCHITECTURAL ASSISTANTS and JUNIOR
ARCHITECTURAL ASSISTANTS for extensive
programme of new housing, public baths,
libraries, and other public buildings. Appoint-
ments may be in Grades A.P.T. I (£530-
£610), A.P.T. II (£595-£675), or A.P.T. III
(£640-£765), singly or combined, plus London
allowance of up to £30 p.a. Candidates must be
Probationers or Students of R.I.B.A. Grade and
commencing salary according to training, qualifi-
cations and experience. Application form
obtainable from the Town Clerk, Town Hall,
London, E.8, returnable by 12th July, 1956,
quoting reference J.2.**

1611

**BOROUGH OF TAUNTON
ARCHITECT'S DEPARTMENT**

Applications are invited for the post of ARCHITECTURAL ASSISTANT, Salary (Grade II-Special Grade) £595-£675, £690-£840, in the Borough Housing Architect's Department.

The appointment will be subject to the National Scheme of Conditions of Service, and the provisions of the Local Government Superannuation Acts.

Applications, together with the names of two referees, should be submitted to C. Bacon, F.R.I.B.A., Borough Housing Architect, Flood House, Station Road, Taunton, by not later than 9th July, 1956.

Consideration may be given to the provision of Housing accommodation if required.

K. A. HORNE,
Town Clerk.

1569

Municipal Buildings, Taunton.

26th June, 1956.

1569

**COUNTY BOROUGH OF WEST HAM
BOROUGH ARCHITECT AND PLANNING
OFFICER'S DEPARTMENT**

Applications are invited from suitably qualified and experienced Architects and Planners for the following permanent appointments:—

ARCHITECTS:

SENIOR GROUP ARCHITECT, Grade VII (£975×£45-£1,200).

GROUP ARCHITECT, Grade VI (£880×£40-£1,080).

DEPUTY GROUP ARCHITECTS (4 posts), Grade V (£795×£35-£970).

ASSISTANT ARCHITECT, Grade IV (£710×£35-£885).

ARCHITECTURAL ASSISTANTS (2 posts), Grades I/II (£530×£20-£675).

PLANNERS:

SENIOR ASSISTANT PLANNING OFFICER, Grade VI (£880×£40-£1,080).

ASSISTANT PLANNING OFFICER, Grade V (£795×£35-£970).

PLANNING ASSISTANT, Grade IV (£710×£35-£885).

PLANNING ASSISTANT, Grades I/II (£530×£20-£675).

London allowance in addition.

The County Borough has an extensive reconstruction and slum clearance programme, and offers varied and interesting work.

Application forms and details from the Borough Architect and Planning Officer, Thomas E. North, O.B.E., F.R.I.B.A., Dist.T.P., M.T.P.I., 70, West Ham Lane, Stratford, E.15 (returnable by 23rd July, 1956).

1666

**COUNTY COUNCIL OF ESSEX
COUNTY PLANNING DEPARTMENT**

Applications are invited for the post of AREA PLANNING OFFICER, J.N.C. Scale "C" (£1,295-£1,515), in the East Central Area Office at Chelmsford.

Candidates must be Corporate Members of the Town Planning Institute, and should possess an additional recognised professional qualification. They should have had considerable and wide experience in the planning of both Urban and Rural areas, and be experienced in the administration of an office and the control of staff.

Application forms from County Planning Adviser, Bloomfield Place, Bloomfield, Chelmsford, returnable by 21st July, 1956.

Canvassing disqualifies.

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BOROUGH OF TAUNTON

ENGINEER AND SURVEYOR'S DEPARTMENT

ARCHITECTURAL ASSISTANT (GRADE IV)
Applications are invited from suitably qualified and experienced persons for the superannuable appointment of Architectural Assistant in the Borough Engineer and Surveyor's Department, to deal with all architectural matters other than housing, at a salary in accordance with the National Scale, £710 to £885 per annum.

Applicants must be capable of preparing designs, working and detail drawings and specifications for architectural and general building work executed by contract or direct labour.

Consideration will be given to housing accommodation if required.
Applications, made in accordance with details, to be obtained from the Borough Engineer and Surveyor, St. Paul's House, Taunton, Somerset, must be received by him not later than Tuesday, 24th July, 1956.

Canvassing in any form will disqualify.
K. A. HORNE,
Town Clerk.
Municipal Buildings, Taunton, Somerset. 1552

DENBIGHSHIRE COUNTY COUNCIL

Applications are invited for the following appointments in the Department of the County Architect (Mr. R. A. Macfarlane, A.R.I.B.A.), Wrexham, viz.:

- THREE ARCHITECTURAL ASSISTANTS, A.P.T. Grade II (£595-£675).
- QUANTITY SURVEYING ASSISTANT, A.P.T. Grade IV (£710-£885).
- HEATING ENGINEERING ASSISTANT, A.P.T. Grades III/IV (£640-£885).
- BUILDING INSPECTOR, A.P.T. Grade IV (£710-£885).

Further details and application forms may be obtained from me. Completed application forms are to be received by me not later than 25th July, 1956.

W. E. BUFTON,
Clerk of the County Council.
County Offices, Ruthin. 1599

CITY AND COUNTY OF NEWCASTLE UPON TYNE

CITY ARCHITECT'S DEPARTMENT
The City Architect will be pleased to receive applications for the following Architectural vacancies:

- SENIOR ASSISTANT ARCHITECT, A.P.T. Division, Grade V (£795-£970), General, Housing or Education Sections.
- SENIOR ASSISTANT ARCHITECT, A.P.T. Division, Grade IV (£710-£885), General, Housing or Re-housing Sections.
- ASSISTANT ARCHITECT, A.P.T. Division, Grade III (£640-£765), Housing or Re-housing Sections.
- ASSISTANT ARCHITECT, A.P.T. Division, Grade II (£595-£675), Housing Section.
- ARCHITECTURAL ASSISTANT, A.P.T. Division, Grade I (£530-£610), General or Housing Sections.

Candidates for the Senior posts must be fully qualified Members of the Royal Institute of British Architects by examination, and preference will be given to those trained at a recognised School of Architecture. Candidates should possess a lively and creative approach to architectural design, combined with sound practical experience appropriate to the responsibility of the post they apply for.

The above are all established posts, and will be subject to the provisions of the Local Government Superannuation Acts, 1937-1953, and to one month's notice on either side. Successful candidates will be required to pass a medical examination.

Applications, stating position applied for, age, particulars of training, qualifications, experience, present and past appointments, together with copies of two recent testimonials or the names and addresses of two persons to whom reference may be made, should be addressed to George Kenyon, Esq., A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle upon Tyne, 1, to arrive not later than Thursday, 19th July, 1956.

JOHN ATKINSON,
Town Clerk.
Town Hall, Newcastle upon Tyne, 1. 1594

BOROUGH OF WATFORD

APPOINTMENT OF SENIOR ASSISTANT ARCHITECT

Applications are invited for the above post, at a salary within Grade A.P.T. V (£795-£970). Housing accommodation will be made available if required.

Forms of application returnable by 18th July, 1956.

F. C. SAGE,
Borough Engineer, Surveyor and Architect.
Town Hall, Watford. 1569

THE UNIVERSITY OF SHEFFIELD

Applications are invited for the post of LECTURER IN ARCHITECTURE, to begin duties as early as possible. Applicants must have had not less than three years' practical experience. Salary scale: £650-£850-£1,350, with F.S.S.U. provision and family allowance, commencing salary according to qualifications and experience. Further particulars may be obtained from the Registrar, with whom applications (three copies), including the names and addresses of two referees, should be lodged by 31st July, 1956. 1581

CITY AND COUNTY OF NEWCASTLE UPON TYNE

CITY ARCHITECT'S DEPARTMENT

The City Architect will be pleased to receive applications for the following vacancies in the Quantity Surveying Section of his Department:—

- SENIOR QUANTITY SURVEYOR, A.P.T. Division, Grade V (£795-£970).
- SENIOR ASSISTANT QUANTITY SURVEYOR, A.P.T. Division, Grade IV (£710-£885).

The above are established posts, and will be subject to the provisions of the Local Government Superannuation Acts, 1937-1953, and to one month's notice on either side. Successful candidates will be required to pass a medical examination.

Applications, stating position applied for, age, particulars of training, qualifications, experience, present and past appointments, together with copies of two recent testimonials or the names and addresses of two persons to whom reference may be made, should be addressed to George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle upon Tyne, 1.

JOHN ATKINSON,
Town Clerk.
Town Hall, Newcastle upon Tyne, 1. 1606

COUNTY COUNCIL OF NORTHUMBERLAND

COUNTY ARCHITECT'S DEPARTMENT

Applications are invited from qualified Architects having some previous office experience for post of ASSISTANT ARCHITECT on the staff of this Department. Salary within A.P.T. Grade IV (£710), rising to a maximum of £885 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, 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, not later than Monday, 16th July, 1956. 1607

BEDFORDSHIRE COUNTY COUNCIL

ASSISTANT QUANTITY SURVEYOR

Applications are invited for the post of Assistant Quantity Surveyor, Grade IV (£710-£885). Commencing salary will be at any point within the scale, dependent upon candidates' qualifications and experience. Preference given to Members of the R.I.C.S. Candidates must have had experience in taking off quantities for all types of buildings, measurement of work on site, valuations for interim certificates, etc. Application forms from County Architect, Shire Hall, Bedford, to be returned by 27th July, 1956. 1609

DURHAM COUNTY COUNCIL

ARCHITECT'S DEPARTMENT

ARCHITECTURAL ASSISTANTS and QUANTITY SURVEYING ASSISTANTS on the following scales:—

- A.P.T. IV (£710-£885).
- A.P.T. III (£640-£765).
- A.P.T. II (£595-£675).
- A.P.T. I (£530-£610).

Forms and particulars from County Architect, South Street, Durham. Closing date: 14th July, 1956. Canvassing members of the Council is prohibited.

J. K. HOPE,
Clerk of the County Council. 1591

THE NORTH WESTERN ELECTRICITY

BOARD

THIRD ASSISTANT ENGINEER (ARCHITECTURE AND BUILDING), SUB-AREA

ENGINEER'S DEPARTMENT, KENDAL.

The successful candidate will be required to carry out building and civil engineering design work and produce sketch and working drawings. Ability to take off quantities will be an advantage. The duties may also include some site supervision of works let to outside Contractors.

Salary scale: £850-£1,200-£910 p.a., Grade K.10, N.B. Conditions.

Applications, naming three referees, to Sub-Area Manager, No. 6 Sub-Area, The North Western Electricity Board, Castle Green, Kendal, by 14th July, 1956. 1583

GOVERNMENT OF NORTHERN RHODESIA

ARCHITECT, PUBLIC WORKS DEPARTMENT

To design, prepare working drawings and specifications for various Government projects, and supervise construction.

Appointment on contract for three years. Salary scale £1,245 to £1,995 p.a. Gratuity £37 10s. for each completed 3 months' service, on satisfactory completion of contract.

Free passages for officer and wife, and up to the cost of one adult fare for children. Five days' leave for each month of resident service. Quarters at low rental.

Candidates aged 32-45 must be A.R.I.B.A., and have had considerable experience of design, construction and supervision of large building schemes.

Write Director of Recruitment, Colonial Office, London, S.W.1, giving age, qualifications and experience quoting BCD 112/3/02. 1628

EAST RIDING OF YORKSHIRE

COUNTY COUNCIL

Applications are invited for the appointment of ASSISTANT ARCHITECTS on the permanent staff of the County Architect. The salaries to be in accordance with Grade IV N.J.C. Scales (£710-£885).

Applications, giving particulars of qualifications and experience, age, past and present appointments and salaries, together with the names of three referees, should be sent to the County Architect, County Hall, Beverley, not later than Friday, 27th July, 1956.

THOMAS STEPHENSON,
Clerk of the Council. 1622

COUNTY COUNCIL OF RENFREW

Applications are invited for the post of JUNIOR ARCHITECTURAL ASSISTANT in the County Engineer's Department (A.P.T. I-£550-£595). Applicants should be Students, R.I.B.A. or equivalent, and have 5 years' office experience. The appointment is superannuable. Applications, stating age, qualifications and experience, together with names and addresses of two referees, should be sent immediately to the County Clerk, P.O. Box 12, Paisley. 1604

LONDON COUNTY COUNCIL

ARCHITECT'S DEPARTMENT

Vacancies exist for SURVEYING ASSISTANTS and ARCHITECTURAL ASSISTANTS for maintenance and improvements work respectively. Commencing salaries up to £817 according to experience and qualifications. Particulars and application form, returnable by 27th July, 1956, from The Architect (AR/EK/M&I/L, etc.), County Hall, S.E.1. (1272). 1634

ABERDEEN HARBOUR

Aberdeen Harbour Commissioners invite applications for the post of ARCHITECTURAL ASSISTANT AND BUILDING SURVEYOR in the office of the Harbour Engineer.

Applicants should have suitable qualifications and good general experience in building design and construction and property procedure.

The salary offered is £850 rising to £925 by annual increments of £25.

The appointment is subject to the Commissioners' Superannuation Scheme and selected candidate will require to pass a medical examination before appointment.

Applications stating age, qualifications and giving full particulars of experience together with copies of recent testimonials should be lodged with the Harbour Engineer, 15, Regent Quay, Aberdeen, not later than 11th August, 1956. 1629

COUNTY BOROUGH OF SOUTHEND-ON-SEA

SENIOR ASSISTANT QUANTITY SURVEYOR

IN BOROUGH ARCHITECT'S DEPARTMENT

Applications are invited for this appointment. Salary Grade A.P.T. VI (£820-£1,080).

Candidates must be Corporate Members of the Royal Institute of Chartered Surveyors (Quantities) and have had a wide experience in large scale Local Authority Housing, Schools and other Municipal projects. Medical examination.

Applications stating age, qualifications and experience, with the names of two referees, should be submitted to the Borough Architect, 30, Alexandra Street, Southend-on-Sea, by Friday, 20th July, 1956.

Canvassing will disqualify. Relationship with any member or officer of the Council must be disclosed.

ARCHIBALD GLEN,
Town Clerk. 1633

COUNTY BOROUGH OF SUNDERLAND

DEPUTY BOROUGH ARCHITECT

Applications are invited from Members of the Royal Institute of British Architects for the above appointment.

Forms of application, particulars of duties and conditions of appointment can be obtained from the undersigned, Town Hall, Sunderland, by whom all applications must be received not later than 3rd August, 1956. Canvassing will disqualify.

G. S. MCINTIRE,
Town Clerk. 1651

Architectural Appointments Vacant

4 lines or under, 7s. 6d.; each additional line, 2s.

LONDON Consultants require ARCHITECTURAL ASSISTANTS for design work on Atomic Power Stations. The vacancies offer great opportunities and scope for the right applicants, who should be qualified or have reached Final Standard for A.R.I.B.A. Staff Pension Scheme. Please apply in confidence to Box 353, Glovers Advertising, Ltd., 351, Oxford Street, London, W.1 9078

A SENIOR ASSISTANT ARCHITECT required for large practice in West Indies, to work under resident partner. First-class opportunity for capable man with initiative and tact. Applicants should be qualified, preferably school-trained, and be able to produce highest references as to ability and character. Previous tropical experience an advantage but not essential.—Apply in writing, giving age and experience, to W. H. Watkins, Gray, FF./R.I.B.A., & Partners, 57, Catherine Place, Palace Street, London, S.W.1 1408

ARCHITECTURAL ASSISTANTS, Senior and Junior required, preferably with London practice experience, office and factory buildings. Write, giving particulars of experience, etc., to Messrs. Bates & Sinning, 89, Chancery Lane, W.C.2. 2508

CO-OPERATIVE WHOLESALE SOCIETY, LTD. ARCHITECT'S DEPARTMENT, MANCHESTER. APPLICATIONS are invited for the following appointments:—

(a) **SENIOR ASSISTANT ARCHITECTS**, with experience of work on commercial and industrial projects.

(Salary range £820 to £975 per annum.)
(b) **ASSISTANT ARCHITECTS**, capable of preparing working drawings from preliminary details.

(Salary range £550 to £820 per annum.)
There is a five-day week in operation, and both appointments offer prospects of upgrading.

Applications, stating age, experience, qualifications and salary required, to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester, 4. 3871

ARCHITECTURAL ASSISTANT required in busy London office with varied practice. Good salary and prospects for suitable applicant. 5-day week. Write, giving particulars of age, qualifications, experience, etc., to Box 775, c/o 7, Coptic Street, W.C.1. 9313

LONDON CONSULTANTS require immediately **ASSISTANTS** of Intermediate and R.I.B.A. standard for varied and interesting contemporary industrial projects. Responsibility given to applicants with good design sense and constructional ability. Apply, giving full particulars and salary required, to Box No. 401, Glovers Advertising Ltd., 351, Oxford Street, London, W.1. 9341

CO-OPERATIVE WHOLESALE SOCIETY, LTD. ARCHITECT'S DEPARTMENT, BIRMINGHAM. APPLICATIONS are invited for the following appointments in a newly formed Branch Office. Interesting and varied commercial and industrial projects.

(a) **SENIOR ASSISTANT ARCHITECT**, with experience in Store and Shop Design.

(Salary range £820 to £975 per annum.)
(b) **ASSISTANT ARCHITECTS**, capable of preparing working drawings and details from preliminary sketches.

(Salary range £550 to £820 per annum.)
Both appointments offer prospects of upgrading. Applications, stating age, experience, qualifications and salary required, to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester, 4. 3872

ARCHITECTURAL ASSISTANTS required for St. Albans office for work on School, Commercial and Housing projects. Should be good draughtsmen with contemporary outlook. Good Salaries. Write to Box 9579.

CROYDON office. **ARCHITECTURAL ASSISTANT** required, with initiative, preferably qualified. Varied and interesting work. Write, stating experience, age and salary required, to George Lowe & Partner, 4, High Street, Croydon, Surrey. 1105

QUALIFIED ASSISTANT required immediately. Apply in writing, stating age, details of practical experience and when available, to S. P. Jordan, A.R.I.B.A., M.S.I.A., Dip.T.P., 11, King's Road, Sloane Square, S.W.3. 1145

W. H. WATKINS, GRAY & PARTNERS require **ASSISTANTS** of Intermediate standard for interesting work on hospitals and schools. Pension scheme in operation. Write or 'phone 57, Catherine Place, S.W.1. Victoria 7761. 1350

ARCHITECTURAL ASSISTANTS required for small West End Office. Good salaries. Write to Box 9580.

CO-OPERATIVE WHOLESALE SOCIETY, LTD. ARCHITECT'S DEPARTMENT

ASSISTANT ARCHITECTS, WORKER-UP. Applications are invited from suitably qualified persons. Salary on a scale £485-£945 inclusive of L.W., with placing according to age, qualifications and experience. The posts are superannuable, subject to medical examination. Five-day week in operation. Applications, stating age, experience, qualifications and salary required, to—W. J. Reed, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 99, Leman Street, London, E.1. 2824

ARCHITECTS—One experienced Senior and one competent Junior Assistant required by West End Architects for interesting airport projects. Aptitude for engineering and industrial detail essential. Salary according to experience.—Box 1360.

ARCHITECTURAL ASSISTANT required, up to Intermediate standard, Westminster office. Pension and Bonus schemes. 5-day week.—Write, stating experience, age, and salary required, to Box 1339.

ARCHITECTURAL ASSISTANT required in Architect's Department of London Brewery Company. Must be good draughtsman.—Write, stating age, experience, salary required, Box 1428.

SENIOR ASSISTANT required in small West End private office. Good prospects; ability the main qualification. Salary £800. Write in confidence; all letters answered.—Box 1396.

NORMAN & DAWBARN invite applications from **ASSISTANTS** or **ASSISTANT ARCHITECTS**, of Inter. or higher standard, with at least 3 years' office experience. Interesting and varied programme of U.K. and overseas work.—Write to 7, Portland Place, London, W.1, or 'phone Langham 8011. 1398

WEST INDIES—Qualified **SURVEYOR** required for West Indies office. Site surveyor, contractor's account, etc. Must be able to prepare quantities. Good salary and prospects. Highest references as to ability and character required.—Apply, giving particulars of experience, age, etc., to W. H. Watkins, Gray, F.F./R.I.B.A., & Partners, 57, Catherine Place, Palace Street, London, S.W.1. 1409

SCHERRER & HICKS, of 19, Cavendish Square, W.1 (Tel. Museum 1105) require immediately a number of **ARCHITECTURAL ASSISTANTS**, of Intermediate standing, with imagination and initiative. The work is varied and covers Research Laboratories, Offices, Housing and Schools. 5-day week. Salary by arrangement. 1418

ARCHITECTURAL ASSISTANT required for small busy West London practice. Intermediate to R.I.B.A. Final standard, with office experience. 5-day week. Salary £600-£700 per annum. Some overtime if desired. Holiday bookings respected.—Shaw & Lloyd, 74, Gt. Russell Street, W.C.1. Museum 9693. 1549

SENIOR ASSISTANT required in West End office. Very busy on interesting commercial work. Must be prepared to take responsibility.—Please write, giving details of experience, etc., Box 1509.

ASSISTANT required in busy practice in West End, in early twenties, about Intermediate R.I.B.A. standard. Excellent opportunities for gaining all-round experience. Box 1510.

BARTLETT & GRAY, Dip.Arch., A./A.R.I.B.A., require **ARCHITECTURAL ASSISTANT**, in salary range £300-£500. Varied programme.—Castle Gate Chambers, Castle Gate, Nottingham. Tel. 53214/5. 1486

DAMS, HOLDEN & PEARSON require **ARCHITECTURAL ASSISTANTS** immediately.—Write, giving particulars of experience and salary required, to 38, Gordon Square, W.C.1. 1450

ARCHITECTURAL ASSISTANTS wanted for September onwards. London office experience an advantage. Intermediate or higher standard. 5-day week. Salary according to ability, but not below £700 p.a.—Percy V. Burnett & Partners, 12, Bloomsbury Square, London, W.C.1. HOLBORN 6177. 1494

ARCHITECTURAL ASSISTANT required in small, but busy West End office, engaged upon varied schemes.—Apply by letter or telephone Hastie, Winch & Kelly, 1, Bentinck Street, W.1. WELBEC 8863. Mark letters "Private." 1481

ARCHITECTS' CO-PARTNERSHIP require **ASSISTANT** for working drawings and detailed design. Salary according to experience. Office doing work in U.K. and West Africa. Holiday can be taken this year.—Write 44, Charlotte Street, London, W.1, or telephone Langham 5791. 1496

SENIOR and JUNIOR ASSISTANTS required by London Architects with widespread practice covering all types of work.—Box 1499.

ARCHITECT'S ASSISTANT required by Manchester Brewery. Non-contributory pension scheme. Preferably with knowledge of Quantities. Salary by arrangement.—Box 1498.

ARCHITECTURAL ASSISTANT (Intermediate) or **ARCHITECTURAL DRAUGHTSMAN** (Male or Female) required in the Estate Office of Flowers Breweries Ltd., for work in connection with alteration and maintenance of licensed houses.—Applications to be made in writing, stating age, experience, and salary required, to the Estate Office, Flowers Breweries, Ltd., The Brewery, Luton, Beds. 1550

JUNIOR ASSISTANT required in small contemporary London office. Must be good draughtsman. Salary according to capabilities. Good prospects. Ring Vic. 7088 for appointment. 1546

APPLICATIONS are invited for an **ARCHITECT** to take charge of a group in the Divisional Architect's office. Salary within the scale £1,000-£3,500. Applicants must be Associates of the R.I.B.A. with at least five years office experience, after qualification, in the design and administration of large building schemes. Applications, stating age, training and giving full details, including salaries of past and present appointments, should be submitted not later than 18th July, 1956, to Divisional Chief Staff Officer, National Coal Board, Northern (N. & C.) Division, Ellison Buildings, Ellison Place, Newcastle-upon-Tyne, 1. 1635

PIONEERING SPIRIT. ASSISTANT ARCHITECT required with hospital experience for KITEMAT, new town in developing north west of CANADA, planning population expansion from 6,000 to 25,000 by 1962. Conditions raw, opportunities considerable. Salary in region of \$4,000 p.a. Further details quoting OSS.95.3 from O.T.S., 5, Weldon Crescent, Harrow, Middlesex. 1632

EXPERIENCED ARCHITECTURAL ASSISTANT required for Works Engineers Department. Capable of surveying, designing and detailing all types of industrial buildings and with experience of factory services. Only first-class man need apply. Apply stating age, qualifications, experience and notice required. Box 1639.

INTERMEDIATE and JUNIOR ASSISTANTS required in Progressive London Office. Lewis Solomon, Son & Joseph, 21, Bloomsbury Way, W.C.1. HOLBORN 7082. 1440

REQUIRED, early in July, an **ARCHITECTURAL ASSISTANT**, of Intermediate or Final standard, in busy practice in South Worcestershire country town. The work is of a varied nature, including schools, housing and industrial buildings. Applicants must be keen, and able to act on own initiative, with a sense of design. Travelling expenses will be paid for interviews. Either male or female assistants will be considered, or one just finishing at Architectural School.—Reply to Box 1426.

ARCHITECTS, Jackson & Edmonds have vacancies for **ASSISTANTS** in salary grades between £250 and £500 per annum. Write stating age and experience to 116, Colmore Row, Birmingham, 3. 1590

ARCHITECTURAL ASSISTANT required in the Regional Architect's Office. Should be Associate of the R.I.B.A. and must have keen interest in contemporary design and knowledge of modern structural technique. Salary range £470-£635. Five-day week. Superannuation Fund. Residential and other travel concessions available. Applications to Chief Civil Engineer (Ref 30), London Midland Region, British Railways, Euston Grove, N.W.1. 1589

EXPERIENCED SENIOR ARCHITECT required, contemporary office. Salary according to experience. C. H. Elsom, F.R.I.B.A., 10, Lower Grosvenor Place, S.W.1. VIC 4304. 1588

ARCHITECTURALLY TRAINED SURVEYOR required for specification and supervision of work in Architect's Office in Birmingham. Apply stating salary required to Box 1582.

ARCHITECTURAL ASSISTANT required in busy West End Office engaged on commercial work. Able to prepare sketch schemes and working drawings. Five-day week, luncheon vouchers. Reply stating age, experience and salary required to Box 1584.

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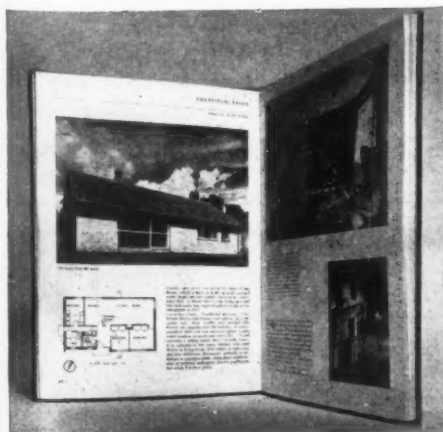
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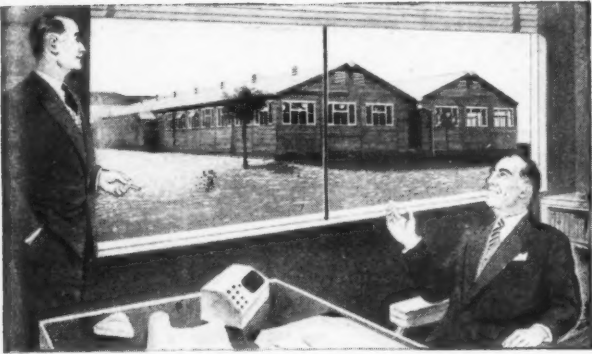
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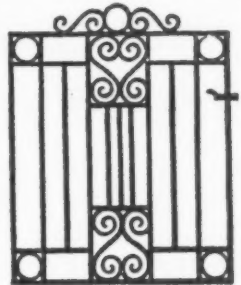
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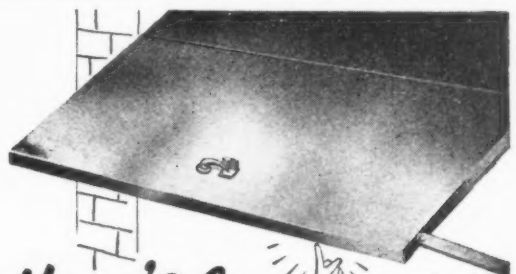
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