

THE ARCHITECTS' JOURNAL



standard contents

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

NEWS and COMMENT

Astragal's Notes and Topics

Letters

News

Diary

Societies and Institutions

TECHNICAL SECTION

Information Sheets

Information Centre

Current Technique

Working Details

Questions and Answers

Prices

The Industry

CURRENT BUILDING

Major Buildings described:

Details of Planning, Construction,

Finishes and Costs

Buildings in the News

Building Costs Analysed

Architectural Appointments
Wanted and Vacant

No. 3167]

[VOL. 122

THE ARCHITECTURAL PRESS

8, 11 and 13, Queen Anne's Gate, Westminster,
S.W.1. Phone: Whitehall 0611

Price 1s. 0d.

Registered as a Newspaper.

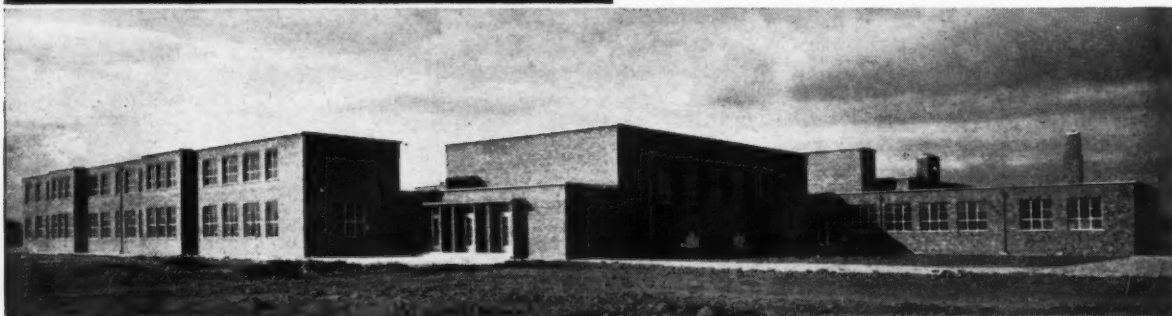
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to I one week, I to Z the next. In all cases where the town is not mentioned the word LONDON is implicit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

IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square.	Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers. Drayton House, Gordon Street, W.C.1.	Euston 2450
ILA	Institute of Landscape Architects. 12, Gower Street, W.C.1.	Museum 1783
I of Arb	Institute of Arbitrators. 35/37, Hastings House, 10, Norfolk Street, Strand, W.C.2.	Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197/5176
IQS	Institute of Quantity Surveyors, 98, Gloucester Place, W.1.	Welbeck 1859
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3.	Avenue 6851
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1.	Abbey 6172
ISE	Institute of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Sloane 7128
LDA	Lead Development Association. Eagle House, Jermyn Street, S.W.1.	Whitehall 7264/4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	Museum 3891
LSPC	Lead Sheet and Pipe Council. Eagle House, Jermyn Street, S.W.1.	Whitehall 7264/4175
MAFF	Ministry of Agriculture, Fisheries and Food. Whitehall Place, S.W.1.	Trafalgar 7711
MARS	Modern Architectural Research Group (English Branch of CIAM). Secretary: Trevor Dannatt A.R.I.B.A., 71, Blandford Street, W.1.	Welbeck 4713
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1.	Mayfair 9400
MOH	Ministry of Health. 23, Savile Row, W.1.	Regent 8411
MOHLG	Ministry of Housing and Local Government. Whitehall, S.W.1.	Whitehall 4300
MOLNS	Ministry of Labour and National Service. 8, St. James' Square, S.W.1.	Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, Victoria Embankment, W.C.	Gerrard 6933
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1.	Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1.	Reliance 7611
NAMMC	Natural Asphalte Mine Owners and Manufacturers Council. 94/98, Petty France, S.W.1.	Abbey 1010
NAS	National Association of Shopfitters. 9, Victoria Street, S.W.1.	Abbey 4813
NBR	National Buildings Record. 31, Chester Terrace, Regent's Park, N.W.1.	Welbeck 0619
NCBMP	National Council of Building Material Producers. 10 Storey's Gate, S.W.1.	Abbey 5111
NEFMAI	National Employers Federation of the Mastic Asphalt Industry. 21, John Adam Street, Adelphi, W.C.2.	Trafalgar 3927
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Latham 4041/4054
NFBTO	National Federation of Building Trades Operatives. Federal House, Cedars Road, Clapham, S.W.4.	Macaulay 4451
NFHS	National Federation of Housing Societies. 12, Suffolk St., S.W.1.	Whitehall 1693
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1.	Latham 4341
N.P.L.	National Physical Laboratory. Head Office, Teddington.	Molesey 1380
NSAS	National Smoke Abatement Society. Chandos House, Buckingham Gate, S.W.1.	Abbey 1359
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1.	Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1.	Abbey 4504
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh. Fountainbridge 7631	Latham 5721
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Latham 5721
RICS	Royal Institution of Chartered Surveyors. 12, Great George St., S.W.1.	Whitehall 5322/9242
RFAC	Royal Fine Art Commission. 5, Old Palace Yard, S.W.1.	Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1.	Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Trafalgar 2366
RSH	Royal Society for the promotion of Health. 90, Buckingham Palace Road, S.W.1.	Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19.	Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1.	Victoria 2186
SCR	Society for Cultural Relations with the USSR. 14, Kensington Square, London, W.8.	Western 1571
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1.	Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3.	Mansion House 3921
SIA	Structural Insulation Association. 32, Queen Anne Street, W.1.	Latham 7616
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen.	Holborn 2646
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Temple Bar 5006
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2.	City 4771
TDA	Timber Development Association. 21, College Hill, E.C.4.	Victoria 8815
TPI	Town Planning Institute. 18, Ashley Place, S.W.1.	City 5051
TTF	Timber Trades Federation. 75, Cannon Street, E.C.4.	Whitehall 4341
WDC	War Damage Commission. 6, Carlton House Terrace, S.W.1.	Grosvenor 6636
ZDA	Zinc Development Association. 34, Berkeley Square, W.1.	

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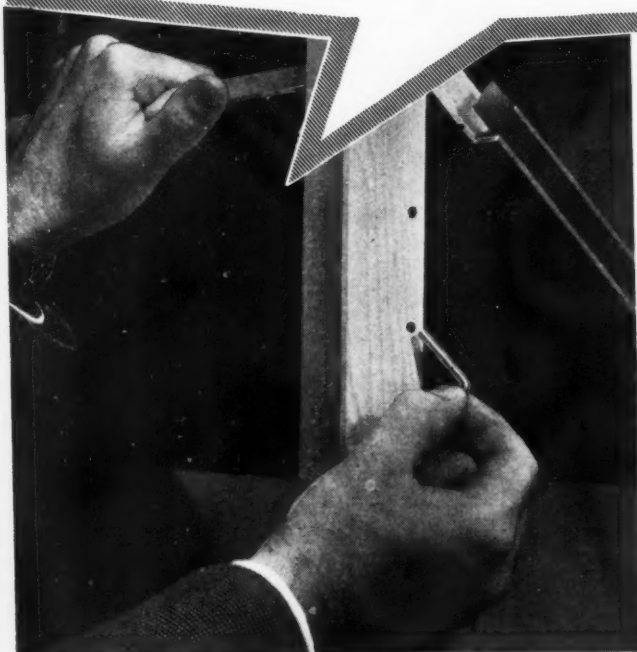
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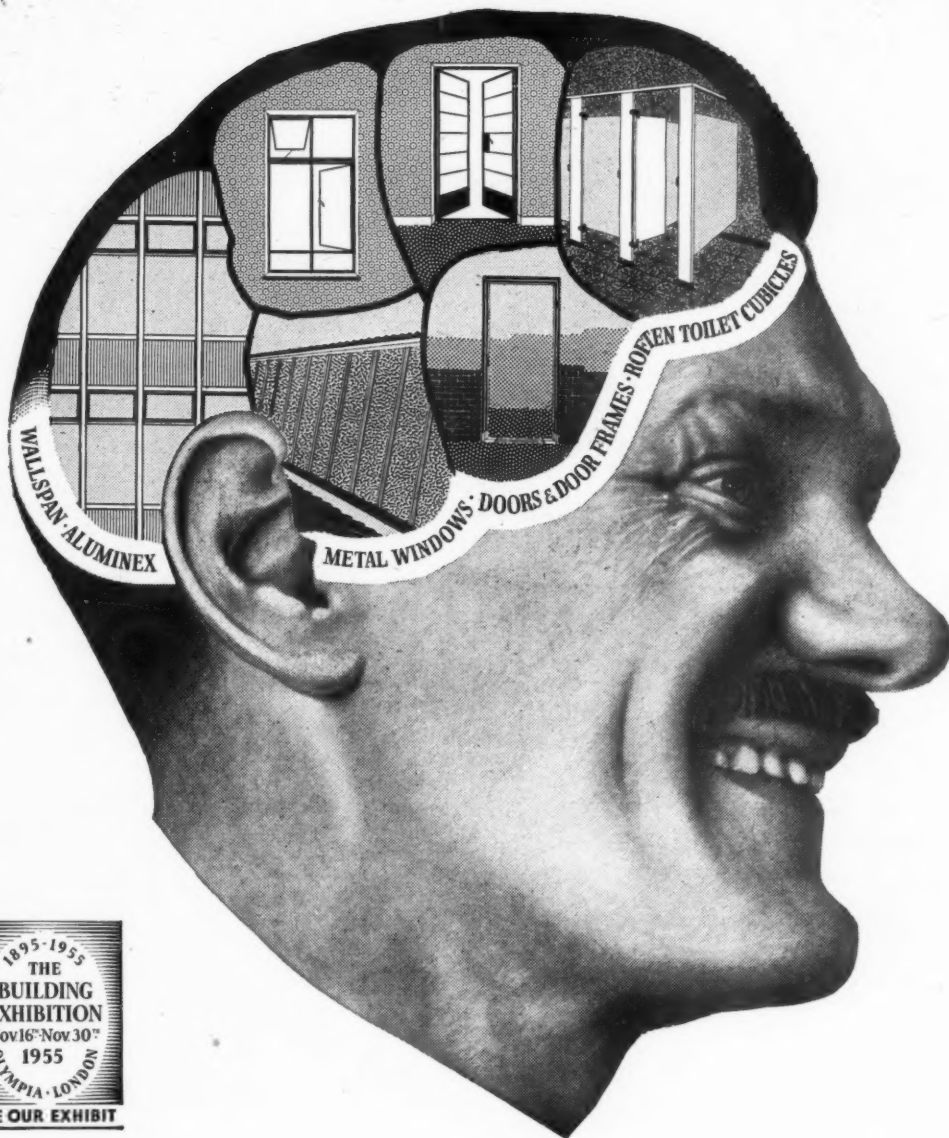
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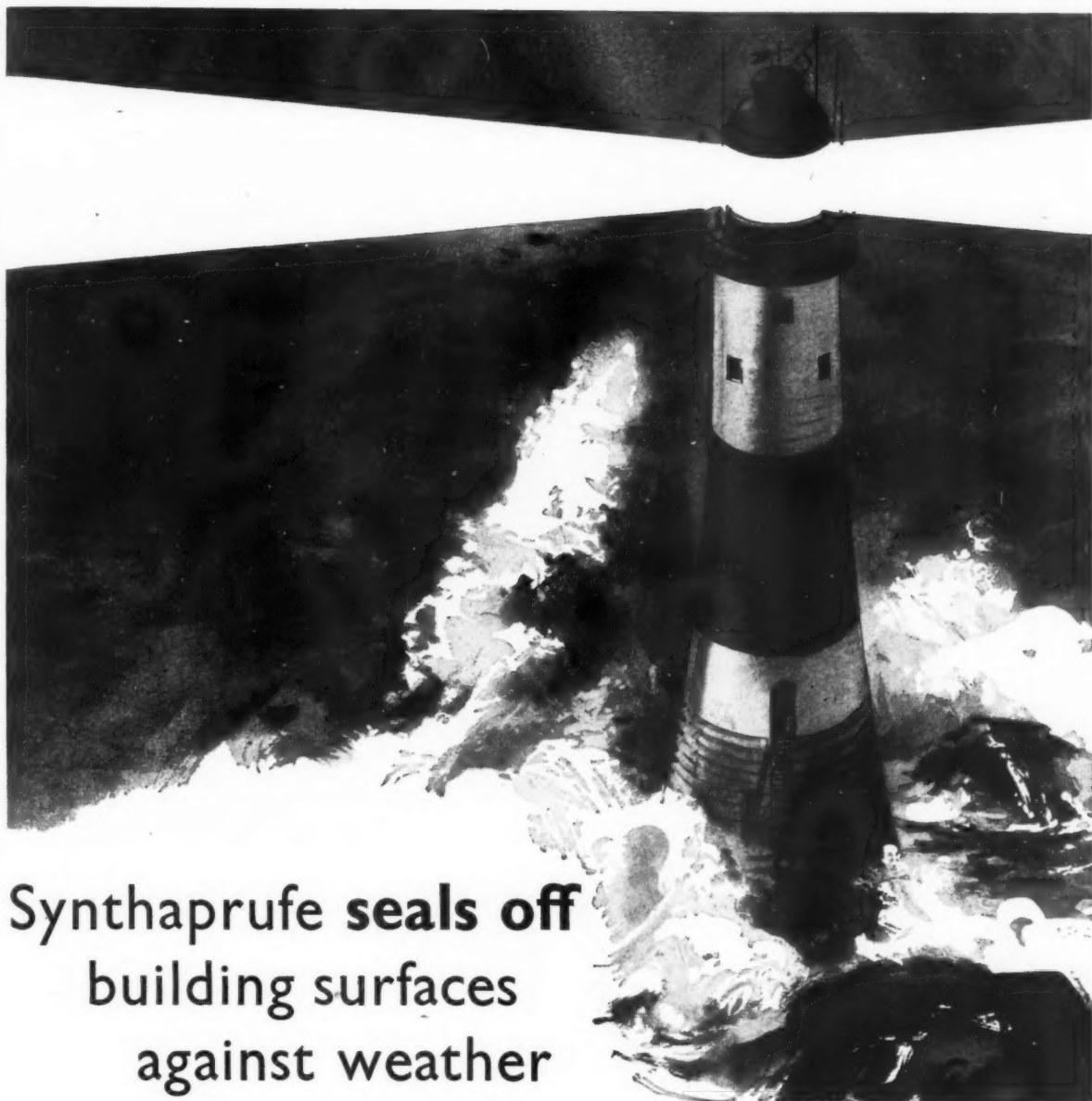
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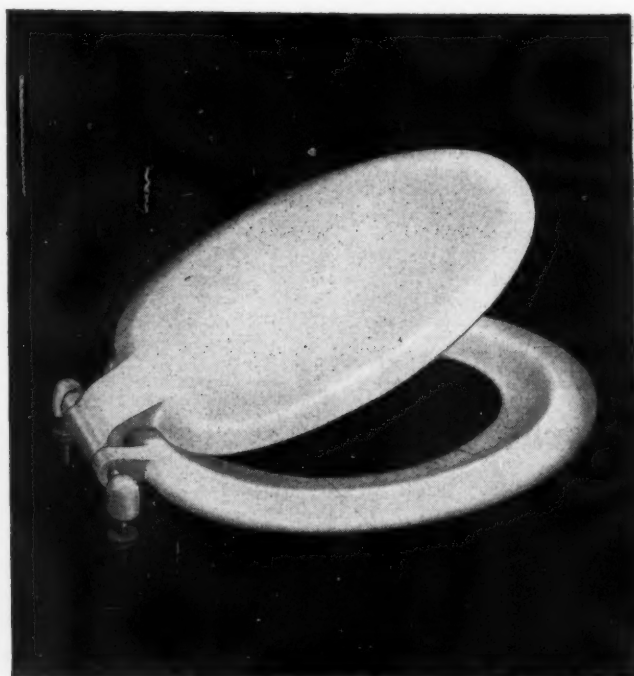
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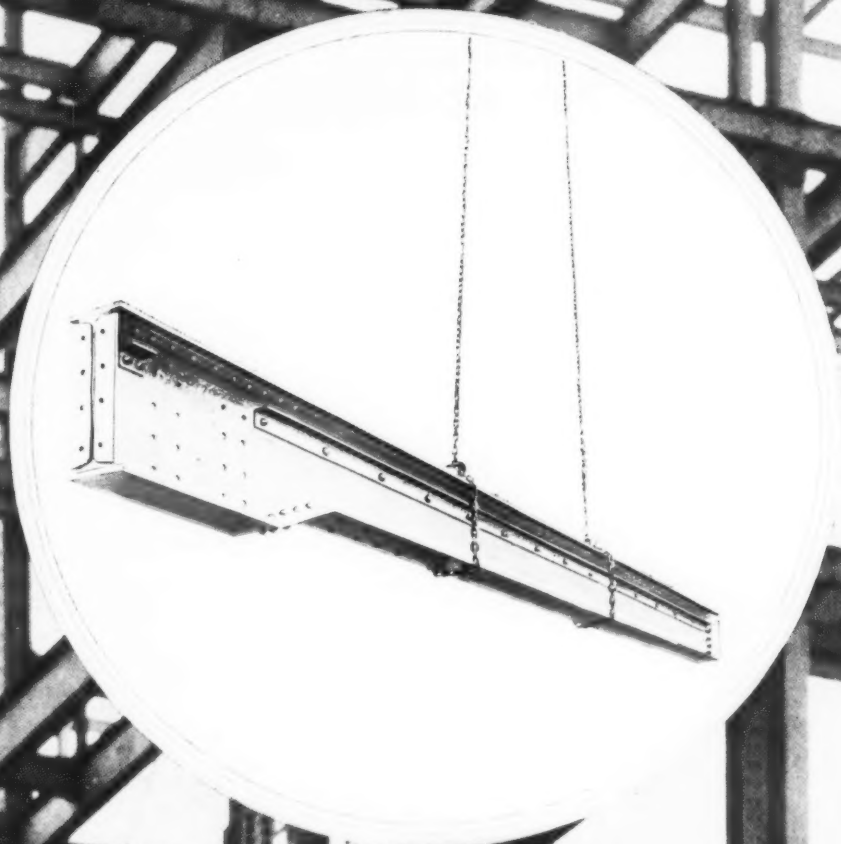
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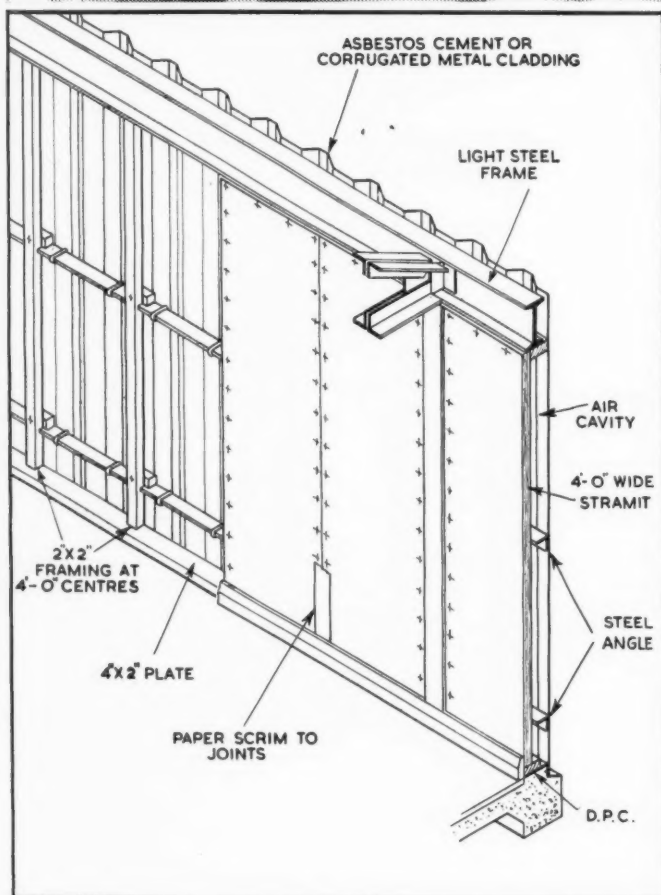


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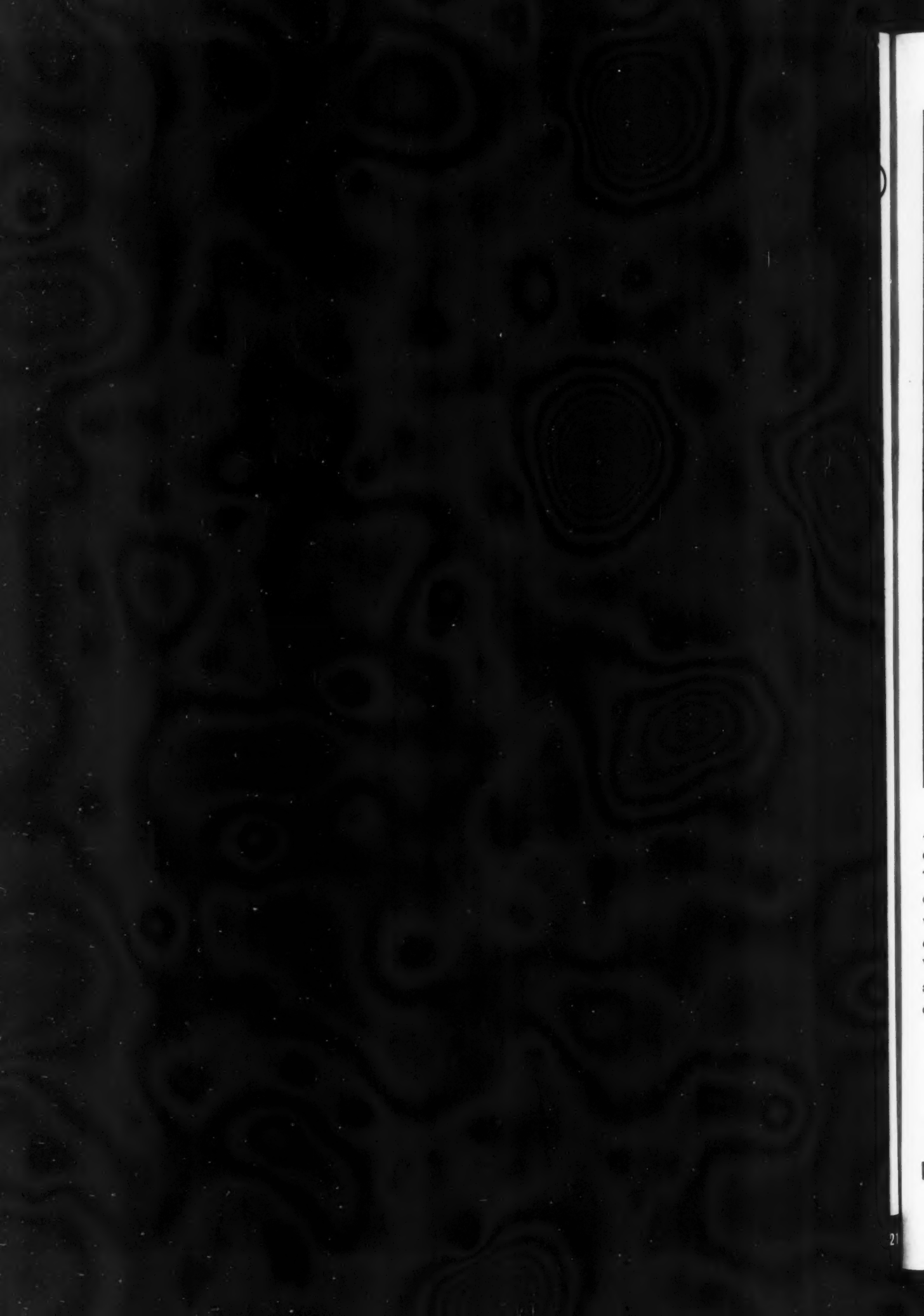
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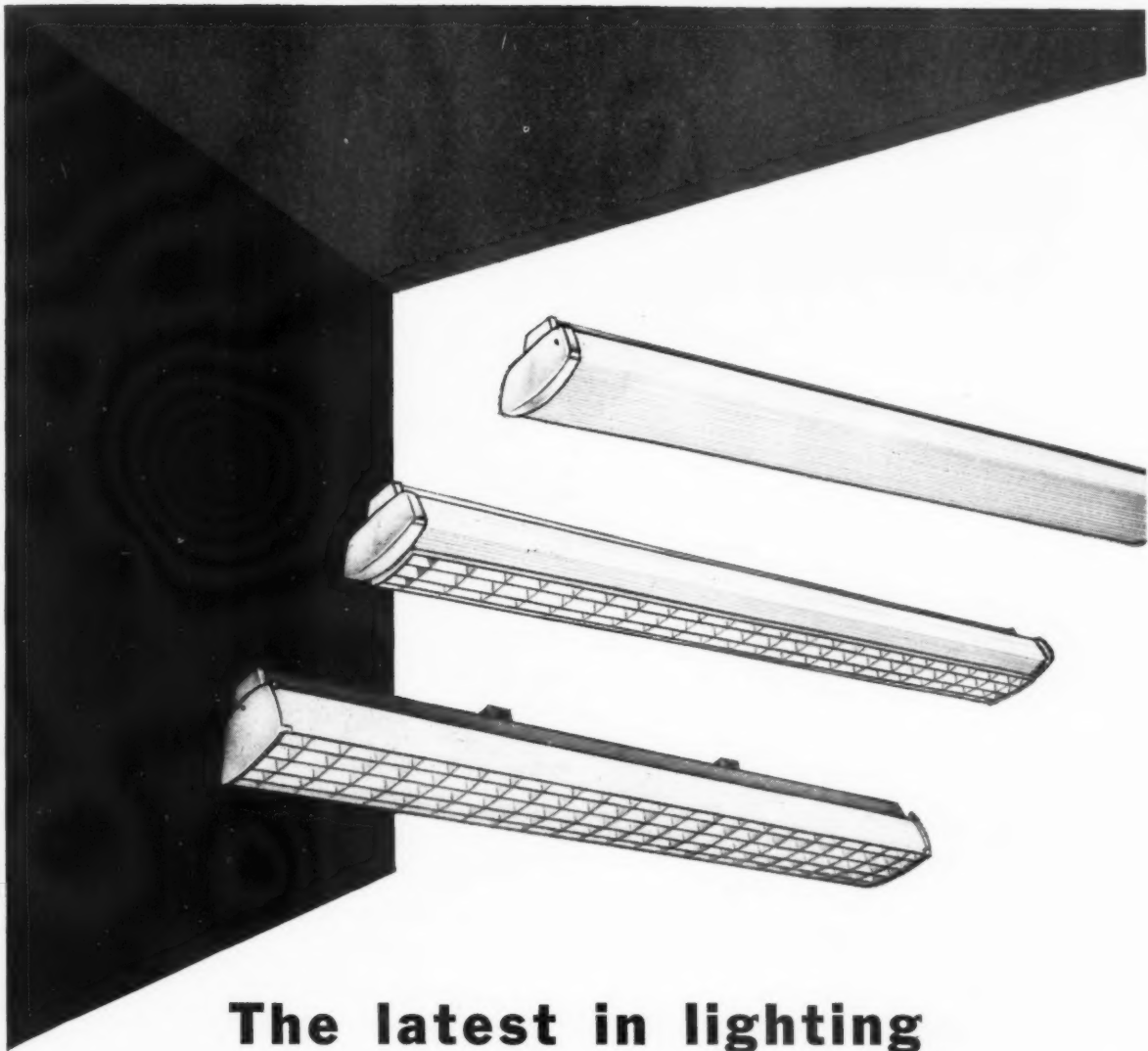
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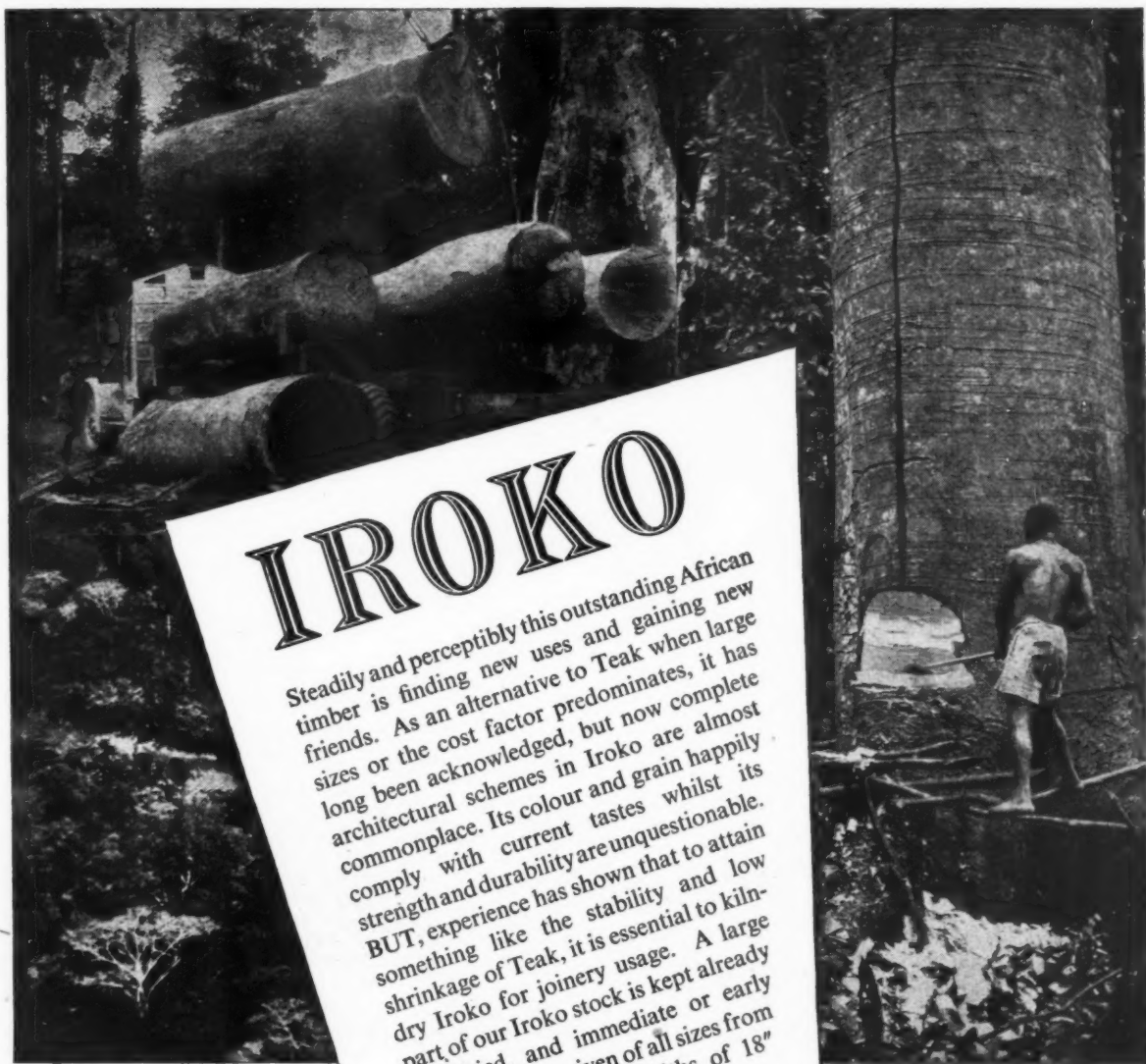
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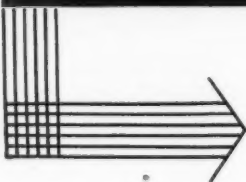


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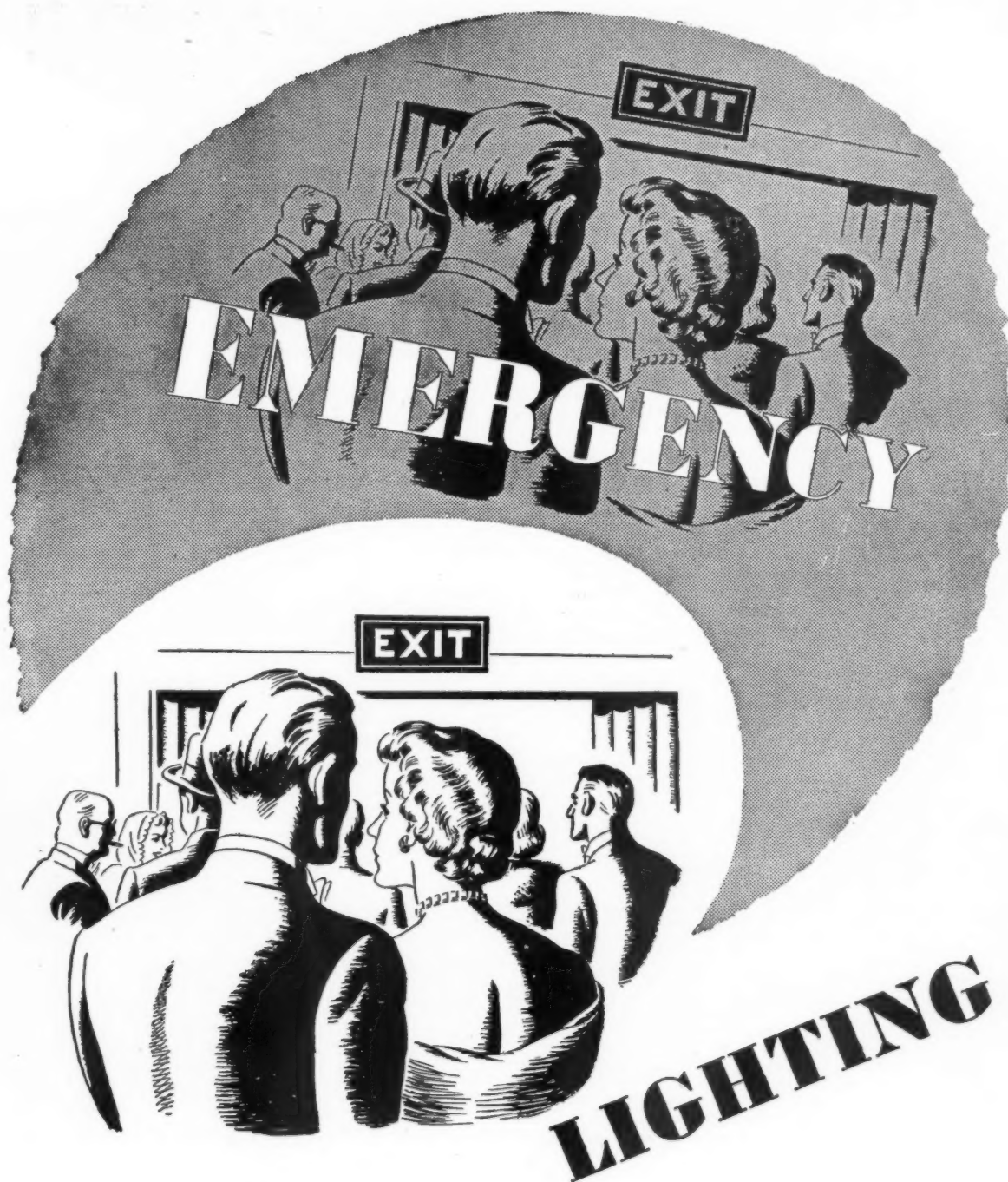
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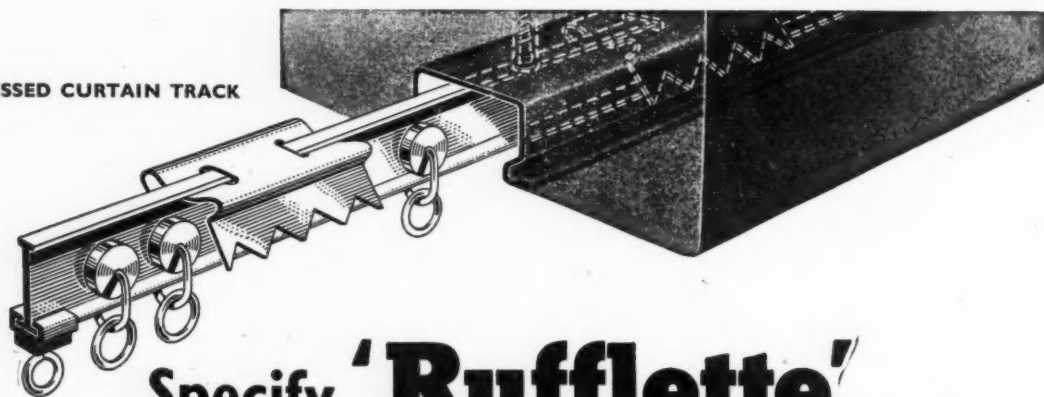
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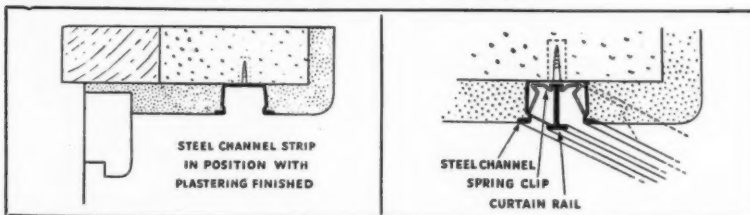


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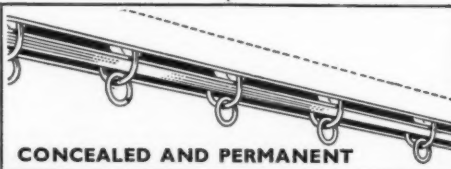
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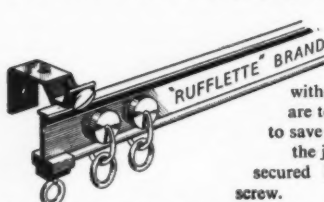


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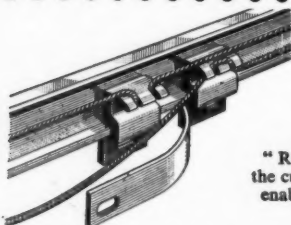
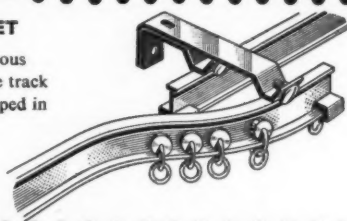


B/L TYPE TRACK

A strong track for all types of window, with or without cord control. Brackets are top or face fixing, designed to save valuable time and cost on the job, the track being rigidly secured by a single front-facing screw.

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In order to give a generous overlap for curtains, the track can be cut and over-lapped in the centre, using the special BL7 bracket.

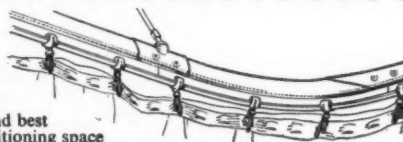


CORD CONTROL

On straight track curtains can be effortlessly opened and closed with this "Rufflette" Cord Control. Note the curved travelling section which enables curtains to be overlapped without cutting the track.

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The simplest and best method of partitioning space by curtains, in hospitals, schools, hairdressing establishments, clinics and stores. Suspension is from ceiling or wall and silent runners make the operation of curtains almost inaudible.



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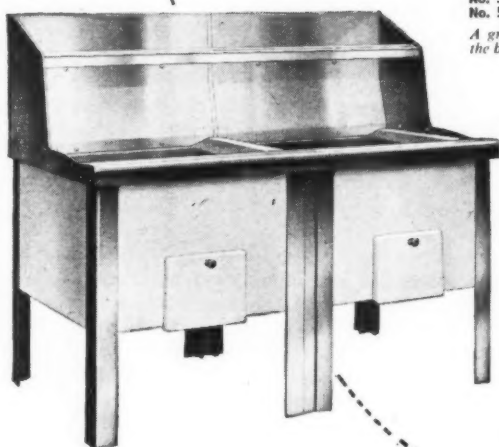
The **STRATFORD RANGE** is designed on the unit principle to permit of wall or central pattern suites being built up to meet requirements.

The oven is **REGULO** controlled; large, medium and small boiling burners are included in the hotplate, and being in vitreous enamel finish, the whole is easy to clean.

The two different Models of the **STRATFORD RANGE** have these overall dimensions:

	Width	Height	Depth
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No. 5136	36"	36"	31½"

A grill can be supplied instead of some of the boiling burners at a small extra cost.



The **KINGFISHER FRYER** for deep fat frying is constructed on the unit principle and so is easy to install singly or in any number. Units are available with pans 24" or 18" wide. The fat temperature in either model is thermostatically controlled.

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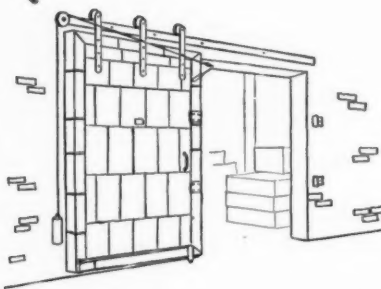
Please consult us on all large cooking problems



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Fire Resisting Doors



Wherever rooms are in communication with one another through doorways, or where floors are connected by means of stairways or lift wells, there are vulnerable points which demand protection against the passage of fire. All should be sealed by the fitting of efficient fire resisting doors.

The above photograph shows a Mather & Platt double-swing folding composite type fire resisting door with wired glass panels at the works of well-known pharmaceutical chemists.

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ELECTRIC HEATING

DOMESTIC HEATING

To many people, electricity for heating means an electric fire, used as a substitute for an open fire on chilly days before or after the main heating season or for occasional use, but in fact its uses and advantages go far beyond this: there are electric heaters for all heating requirements—the electric fire is only one of many. All electric heating appliances are silent, clean, and capable of the most accurate control, so as to provide exactly the right amount of heat of the right quality whenever and wherever it is required, without trouble or labour of any kind.

Radiation and Convection

Although there are many ways of warming a room, the heat is mainly distributed in two forms — radiation and convection.

Radiant heat does not impart any of its energy to the air: solid objects absorb or reflect it in varying degree according to their physical characteristics, and shade anything behind them from the heat. Convection heating, on the other hand, is warming by means of currents of hot air. The air warmed by the heating appliance rises, displacing the cooler air, thus setting up convection currents which transfer heat to the walls and ceiling of the room, and the objects within it. With convection heating the air temperature is always higher than the temperature of the surfaces in contact with the air, the reverse being the case with radiant heating. All domestic space heating appliances give off radiant and convected heat in varying proportions according to the type and design.

A heating element does not have to be red hot in order to emit radiant heat. As long as its temperature is above that of its surroundings it will radiate heat to them. A person sitting in a beam of radiant heat will feel comfortably warm even though the air temperature is relatively low.

As a convector operates by warming the air in a room, it must of necessity be placed near the floor where the air is coldest, whereas a radiant heater will operate at full efficiency at any level.

Radiant Fires

In all electric fires, the heat is produced by a resistance wire, usually of nickel-chromium alloy, which glows red hot. In the so-called 'firebar' type of fire, this wire is wound into a long spiral of about 3/16" diameter, laid in grooves formed in the surface of a moulded fireclay holder (Fig. 1), which is heated up by the resistance wire and emits radiant heat. This firebar also warms the casing of the heater and the air in contact with it, with the result that a considerable amount of heat is given off by convection in addition to the radiant heat from the front.

In the reflector type of fire, the resistance wire is closely wound on a tube or rod set in front of a polished metal reflector (Fig. 2), with the result that a high proportion of the heat generated is emitted in the form of radiation, an average figure being 70%, compared with about 50% radiation from the firebar type.

Reflector type fires reach their maximum heat output within two minutes of switching on, and are thus ideal when heat is required quickly, as in a bedroom for dressing or undressing. The firebar type, however, takes longer, but distributes its radiant heat more widely, and its convected heat warms the air: it is particularly suitable where comfortable conditions are required all over the room.

Radiant Panel Heaters

For situations such as a small dining room or bedroom where a radiant fire may be too hot for anyone sitting at the table, or might scorch the furniture, low temperature radiant panel heaters may be used. The surface temperature is not too high to cause discomfort if accidentally touched, while the heat output is adequate for local or background heating. In some types the heating element is fused into a



Fig. 1 Typical firebar

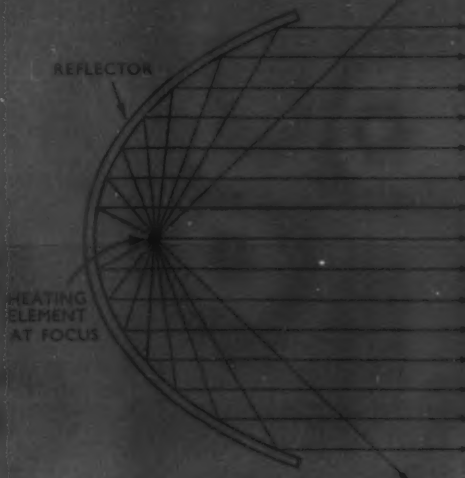


Fig. 2 Parabolic reflector

A parabolic reflector provides a concentrated beam of heat; other shapes of reflector distribute heat more widely.

TABLE 1 LOADING OF FIRES

Floor area of Room (8 ft. ceiling)	Loading of Fire	
	A	B
100 sq. ft.	1.5 kW.	1.5 kW.
140 " "	2.0 kW.	1.5 kW.
170 " "	2.25 kW.	1.75 kW.
210 " "	2.75 kW.	2.0 kW.
240 " "	3.0 kW.	2.25 kW.

Col. A: 11" cavity brick wall plastered, suspended floor, and plaster ceiling.

Col. B: More efficient construction giving average 'U' value of 0.20.

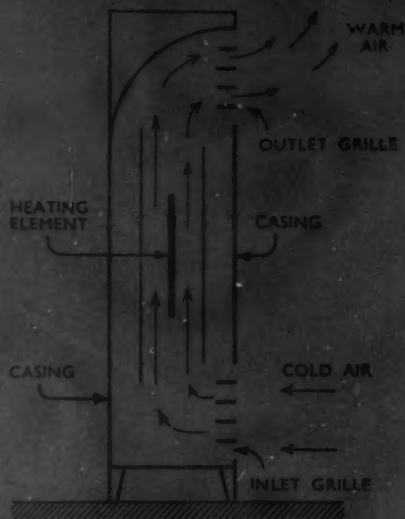


Fig. 3 Convector

showing principles of construction and operation

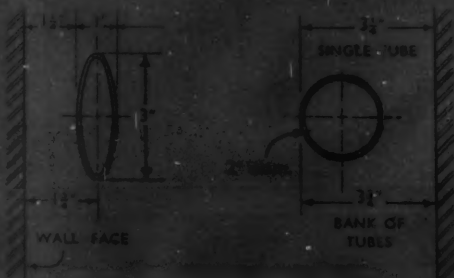


Fig. 4 Tubular heaters

TABLE 2 LOADING OF CONVECTORS

Capacity of Room in cu. ft.	Halls, Landings, Living rooms			Bedrooms	
	Loadings in kW			Loadings in kW	
	50/55°x.	60°x.	65°x.*	50/55°x.	60/65°x.
600	0.80	0.90	—	0.50	1.10
700	0.90	1.00	—	0.60	1.20
800	1.00	1.10	—	1.00	1.30
900	1.10	1.20	0.75	1.10	1.50
1000	1.20	1.30	0.90	1.20	1.60
1100	1.30	1.40	1.00	1.30	1.70
1200	1.45	1.60	1.00	1.45	1.90
1300	1.60	1.70	1.00	1.60	2.00
1400	1.70	1.80	1.20	1.70	2.20
1500	1.80	1.90	1.30	1.80	2.30
1600	1.90	2.00	1.40	1.90	2.40
1700	2.00	2.20	1.40	2.00	2.60
1800	2.20	2.30	1.50	2.20	2.80
1900	2.30	2.50	1.60	2.30	3.00
2000	2.40	2.60	1.70	2.40	3.20

For intermediate sizes take average of the two nearest sizes above and below.

For rooms with outside walls facing North or East, add 10 per cent.

The cubic capacity of halls must include staircase and top landing.

Column headed * is for living rooms where the heating is auxiliary to a coal fire in constant use. Where electric fires are used as well as heaters, the latter should be used for 50/55° F.

This table is only applicable to buildings of sound construction with an average 'U' value of 0.4 or better.

sheet of toughened glass, which has an insulated back and is mounted for fixing to the wall: in others the panel is portable and gives off heat from both sides.

Another type of radiant panel operates at a much higher temperature, but on account of appearance and the need of mounting out of reach, is more suitable for industrial and commercial premises.

Convectors

These appliances, as the name suggests, operate by convection, and are generally used for continuous heating with automatic control by thermostat. The construction consists of a metal or plastic case containing a heating element operating at black heat. Cool air is drawn in at floor level, warmed by the heater, and discharged through a grille at the top (Fig. 3). The thermostat, when fitted, is placed so as to respond to the temperature of the in-coming air.

Because the heating elements are out of reach and the casings never get uncomfortably hot, electric convectors are quite safe for use in nurseries. It should be emphasised however that clothes or towels must not be hung over them so as to restrict the air flow, for fear of scorching.

Convectors are also made for mounting on the face of a wall or in a recess, the back of the convector being insulated to prevent unnecessary loss of heat. The electric convector, being somewhat similar to a hot water 'radiator' in its heating effect, should preferably be installed under a window to obtain a more even temperature than would be produced if it were on an inside wall: a different window should be opened for ventilation.

Combined Heaters

Electric heaters are also made which are designed to emit radiant and convected heat simultaneously, either by arranging for the front of the heating element to emit radiant heat while the back warms a stream of air which is discharged at the top of the case in the usual way, or by incorporating a radiant type fire in an otherwise normal convector casing with its own separate black-heat element. Both types are free-standing and portable.

Tubular Heaters

Made in lengths from 2 ft. to 17 ft. in multiples of a foot, tubular heaters are available in circular or oval cross section with holders for fixing to wall or floor (Fig. 4). The standard loading is 60 watts per foot run, which under ordinary conditions gives a surface temperature of about 180°F. Higher loadings can be obtained for use in special cases. As their thermal capacity is low, the tubes heat up rapidly—in 10 to 15 minutes.

Tubular heaters provide the simplest and most flexible method of distributing gentle heat over a wide area and are particularly suitable for thermostatic control, but owing to the very considerable length needed to obtain the required amount of heat, they are not so suitable for heating living rooms: They can be used in banks, two or three or more tubes being placed one above the other as required. Cold down draughts of air from skylights and clerestory windows can be effectively checked by fixing tubular heaters high up below the glass line.

As with other low temperature heaters, the surface temperature is affected by the finish, and for this reason metallic paints (e.g. aluminium and bronze) and plated finishes should not be used.

Thermal Storage Heating

There are many situations where electric floor warming or block storage heaters may be used with advantage: these systems are described in H1 and H2.

For further information apply to:

H.3 British Electrical Development Association

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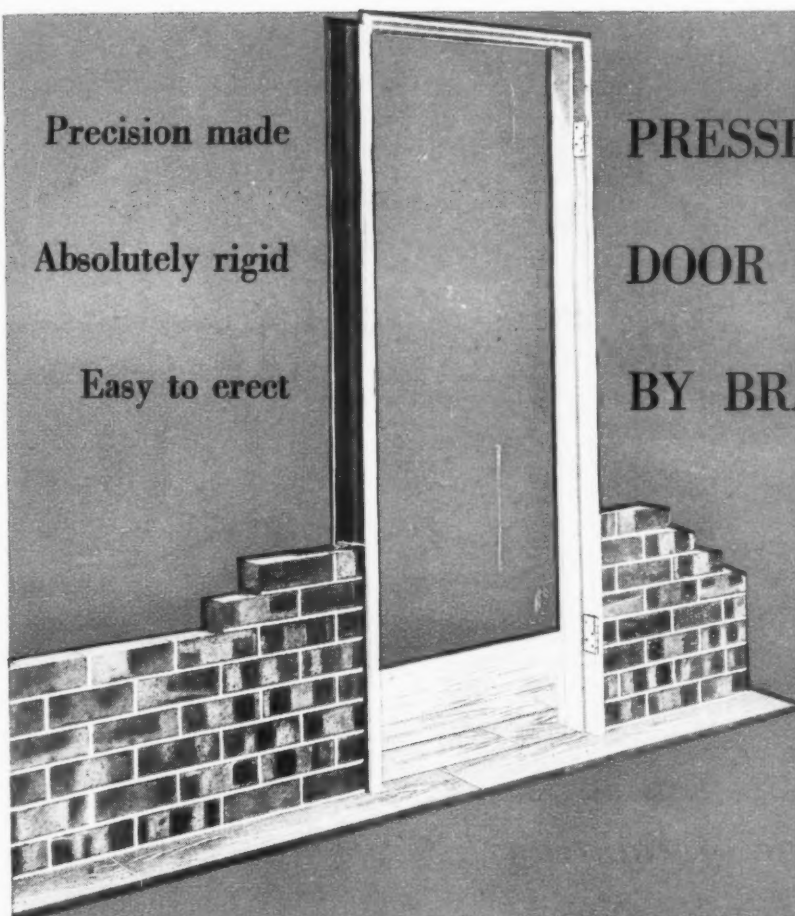
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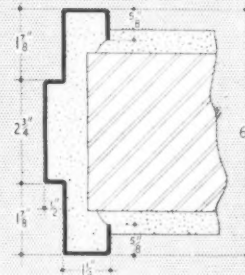
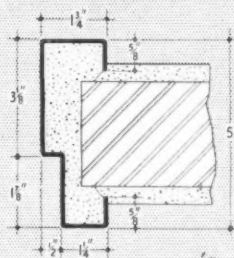
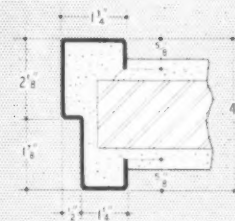
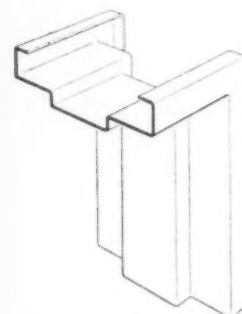
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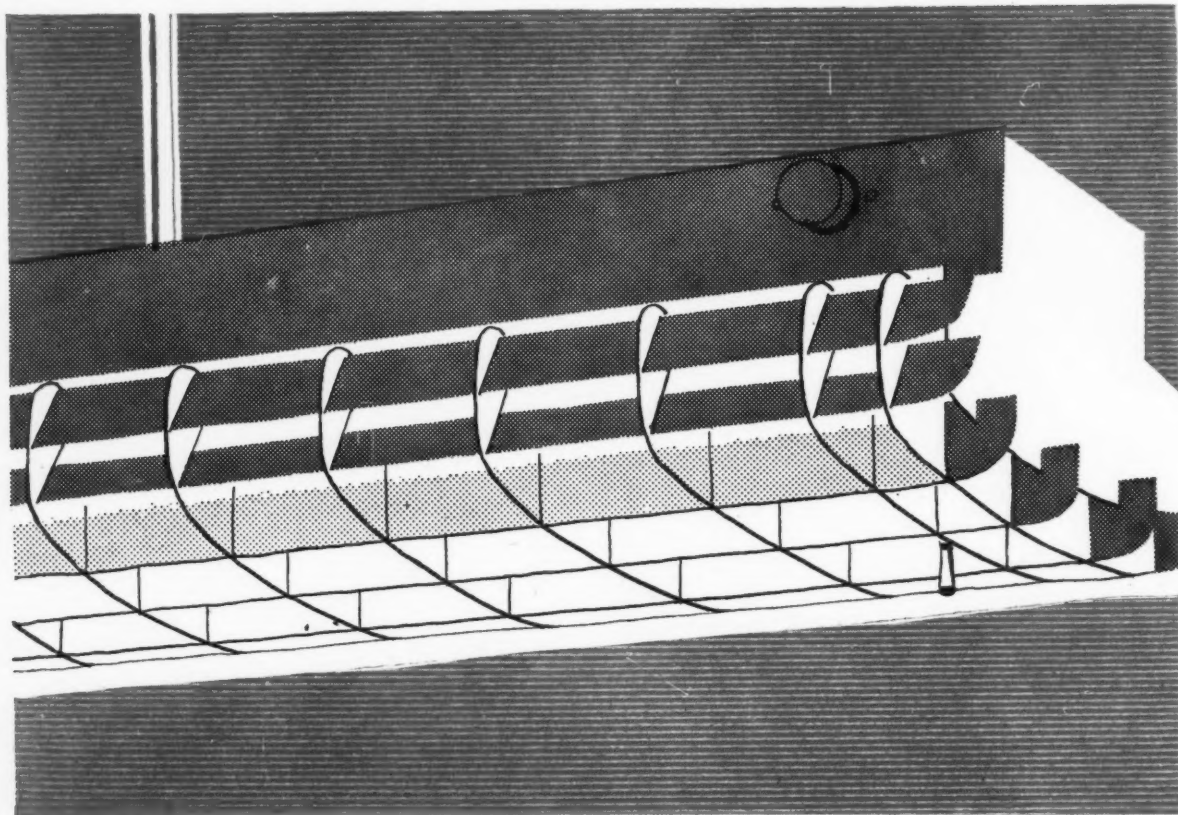
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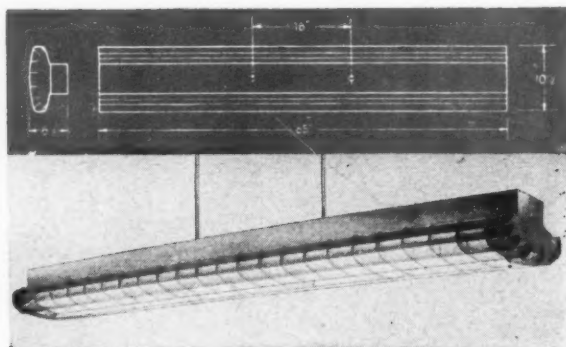
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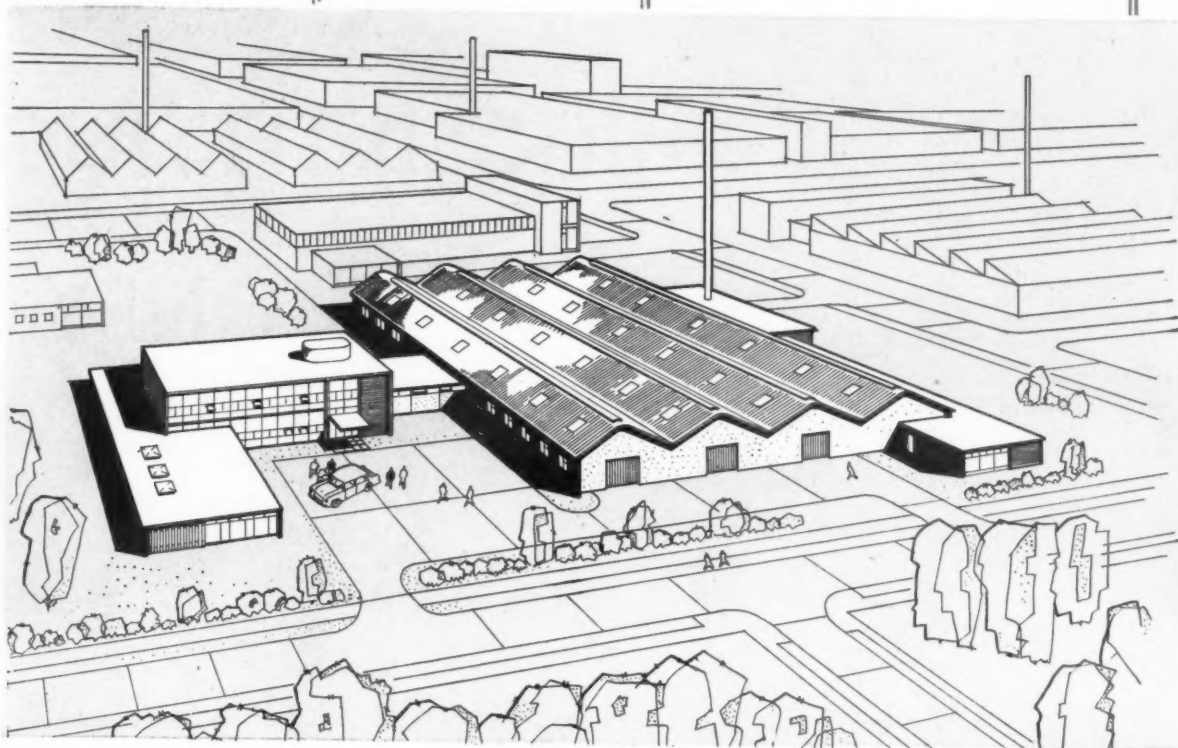


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So he spoke to a pal
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Was thinking about his
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Would be very boring
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Said Dante engulfed in
the fire
Of the Inferno while
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Six hundred years hence
Any fireman with sense
Will specify PVC
for a remarkably
effective, tough,
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* * lively lads at Lorival... * *



Said the Amp
to the Volt with a titter
No wonder, my dear,
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This leak they can mend
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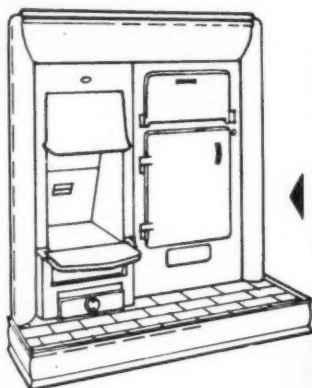
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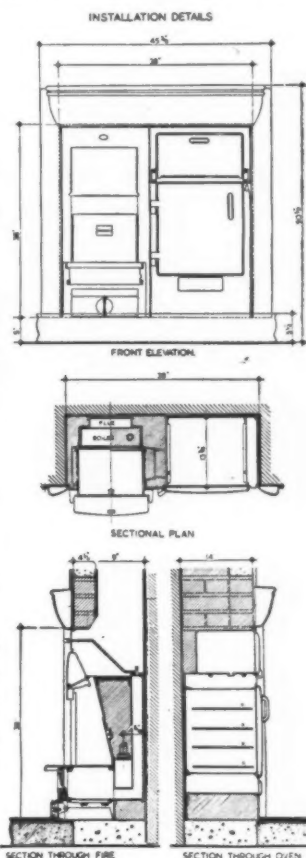
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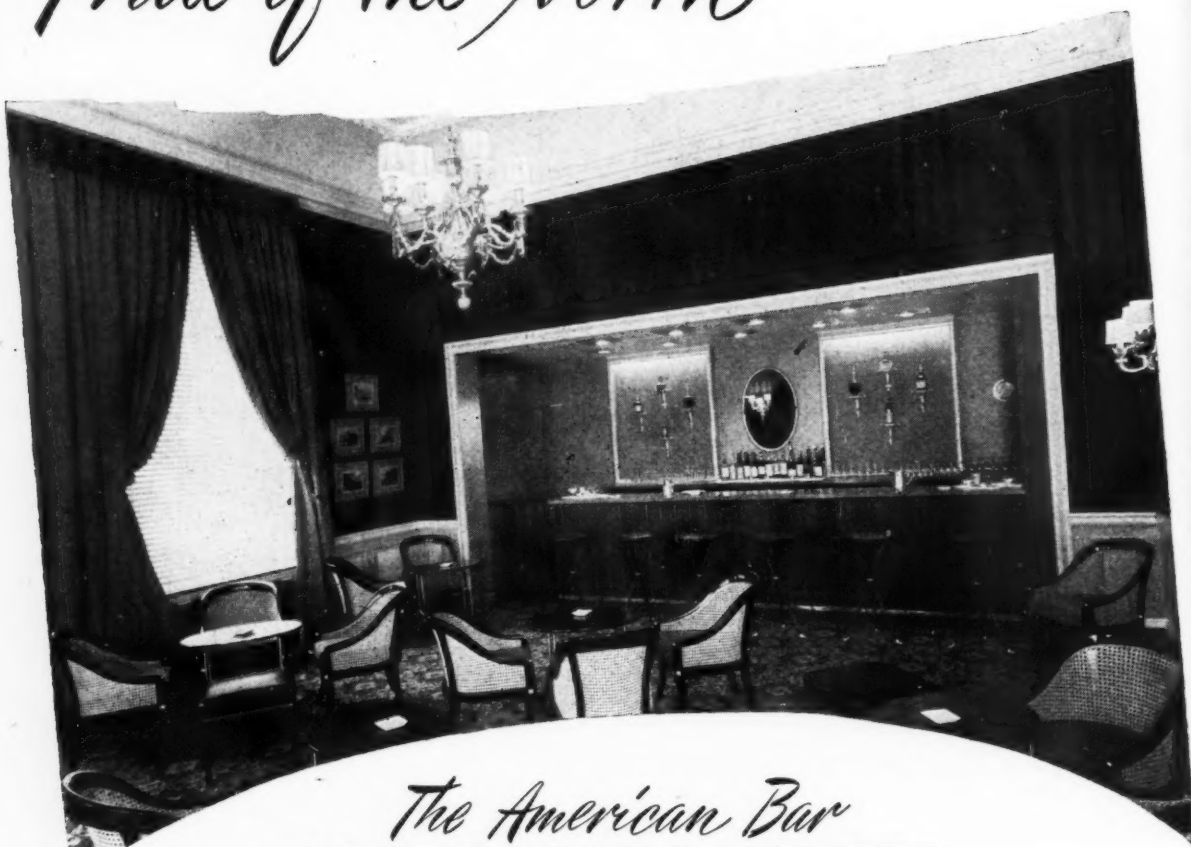
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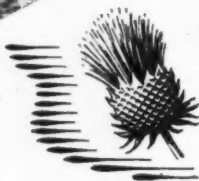


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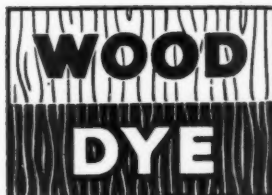
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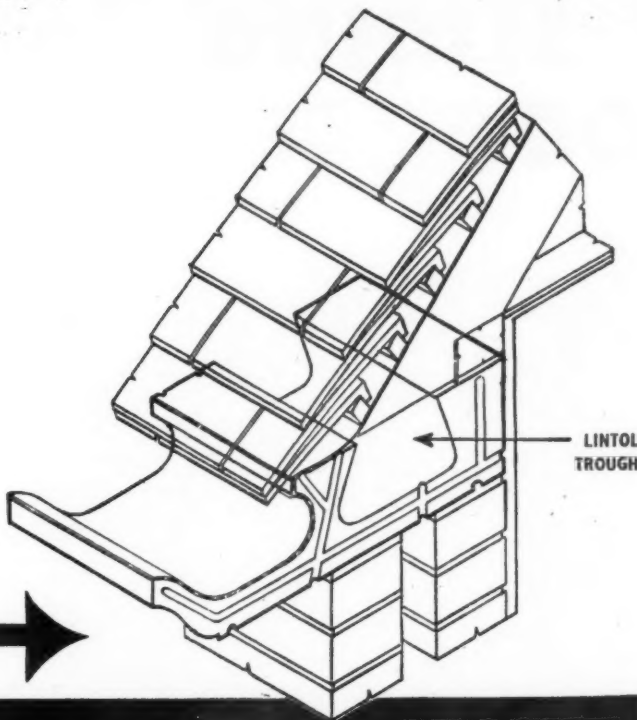
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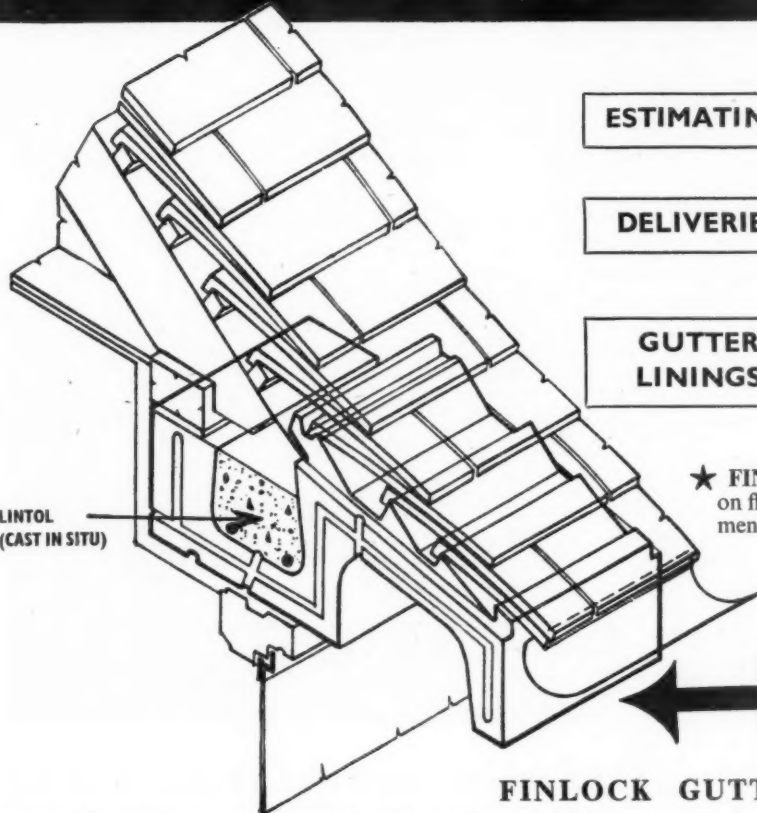
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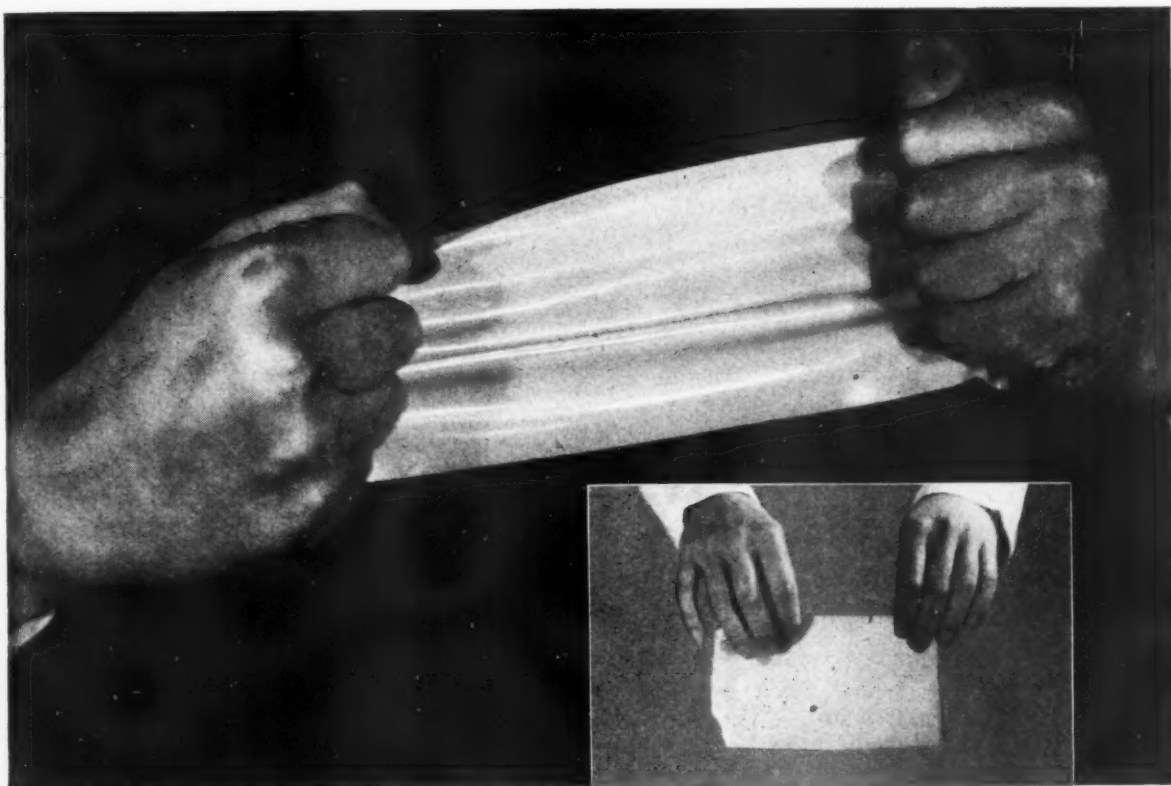
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INSIDE STORY



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The illustration below shows not so much an accurate scientific experiment as a demonstration of the extreme flexibility of Kinsheen Plastic Emulsion Paint. A film of paint has been built up and is here shown being subjected to conditions many times as severe as those which would be experienced under natural stresses from expansion, flexible under-surfaces etc. This flexibility is only one of many special qualities of Kinsheen. Kinsheen gives a pleasing finish with a subtle sheen and has very great obliterating and covering powers. Why not write for further details or ask our representative to visit you?

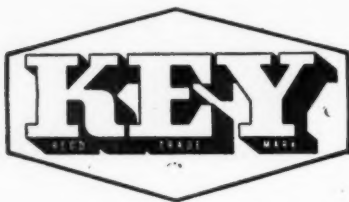


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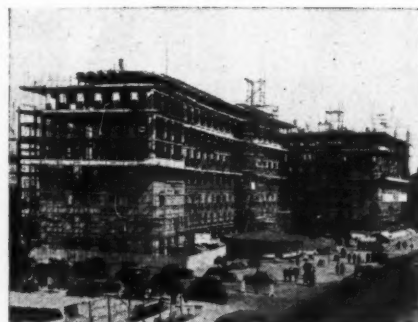
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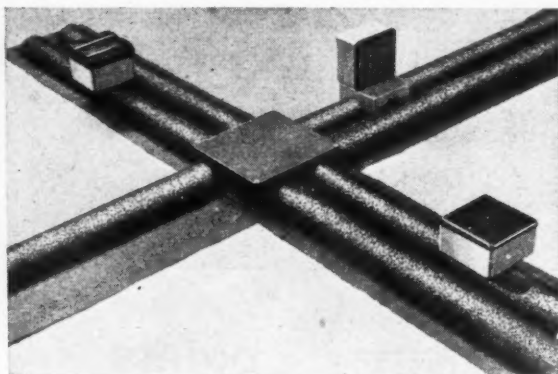


Gateway House, Cannon Street (in the course of construction). Architects: Trehearne & Norman, Preston and Partners. Contractors: Trollope & Colls Ltd.

'KEY' Underfloor Ducts were used in the construction of the Central Terminal Buildings at London Airport which were officially opened to the public on the 17th April, 1955.

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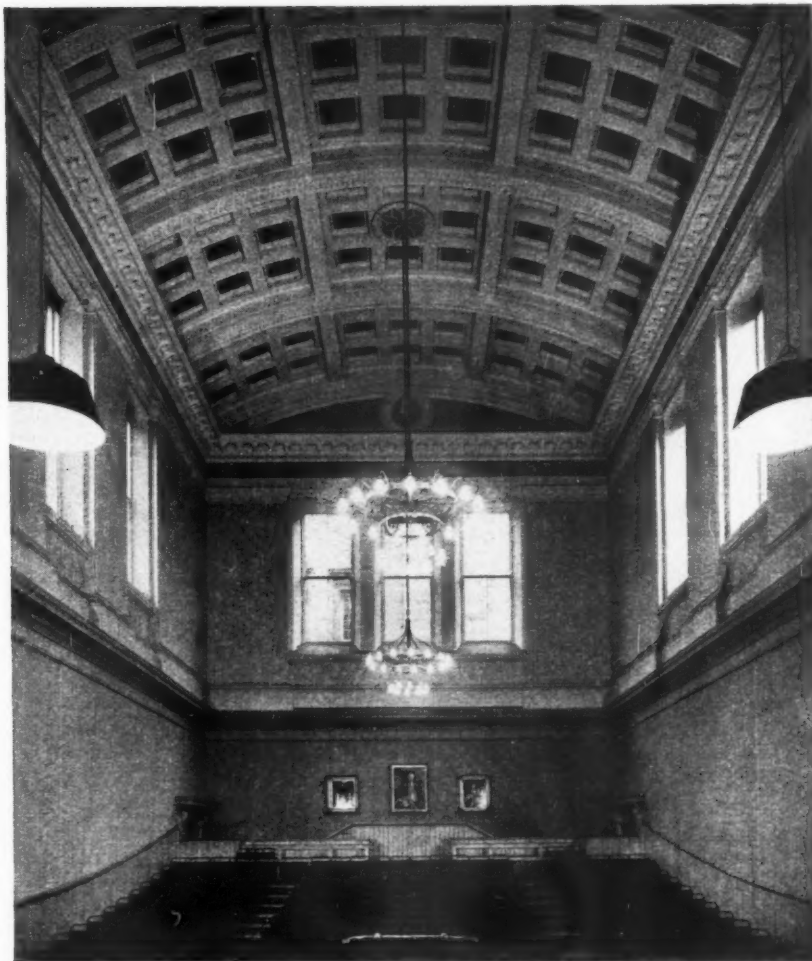
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Also at: Elevator Road, Trafford Park, Manchester, 17. Tel.; Trafford Park 1903

Reed

Don't turn a deaf ear

to sound advice!



*Photo: Courtesy of the Reid College of Music, University of Edinburgh
J. Hamilton Esq., Master of Works, University of Edinburgh*

In a concert hall *every* instrument is important. Strings, woodwind and percussion alike, have all to carry out the composer's intentions. If there's an irritating echo or sound distortion due to bad acoustics, the offending hall is likely to find itself without a conductor, an orchestra and an audience. Fortunately, concert halls can be made

acoustically right without either great expense or lengthy inconvenience. The answer, as in the hall illustrated here, is to have Acousti-Celotex tiles. Easily installed they can be painted to fit in with any decorative scheme without impairing their efficiency. Consult your regional Acousti-Celotex Distributor for full details.

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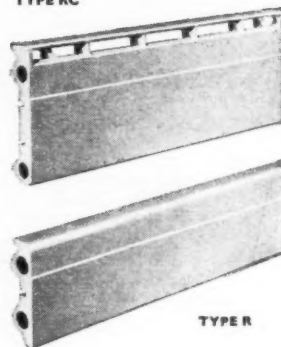


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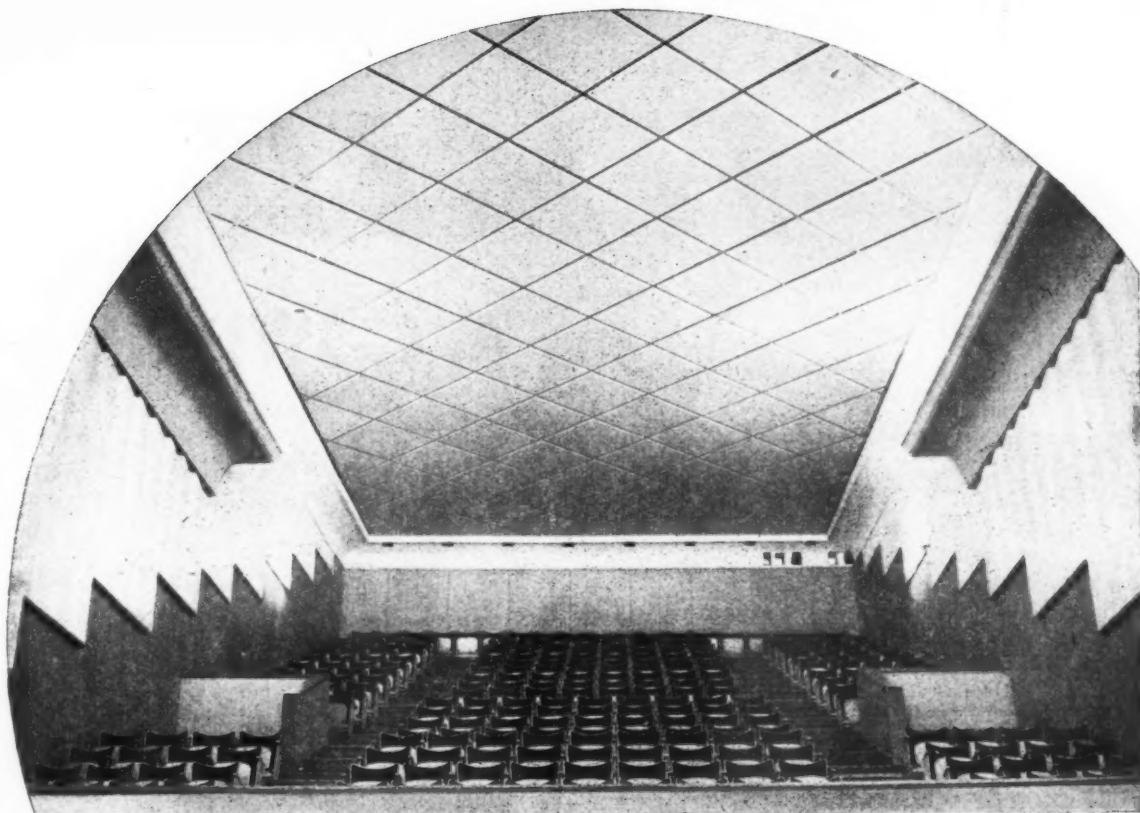
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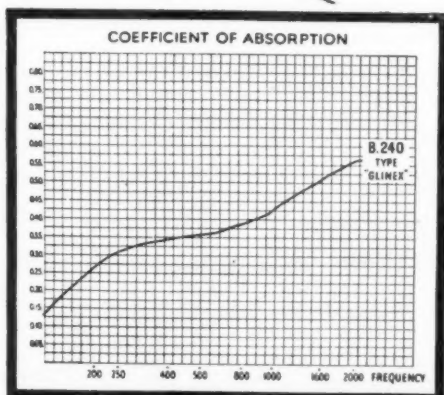
The illustration shows the use of "Glinex" in a cinema in Antwerp.

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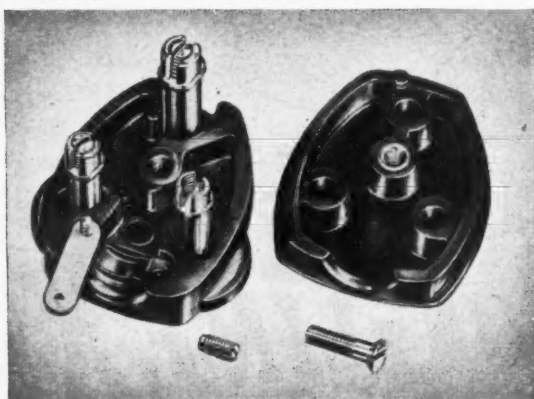
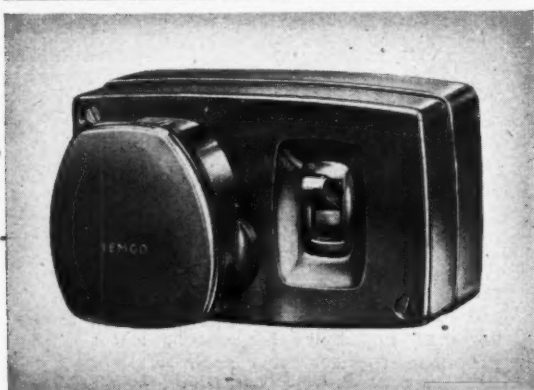
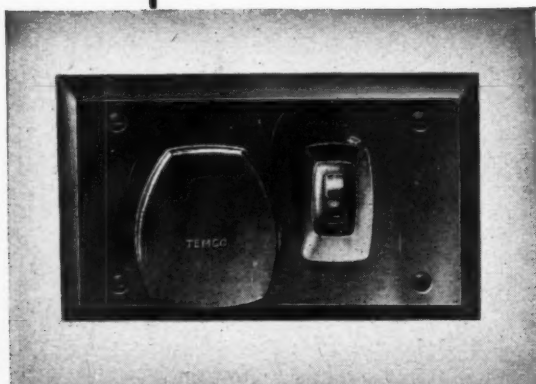
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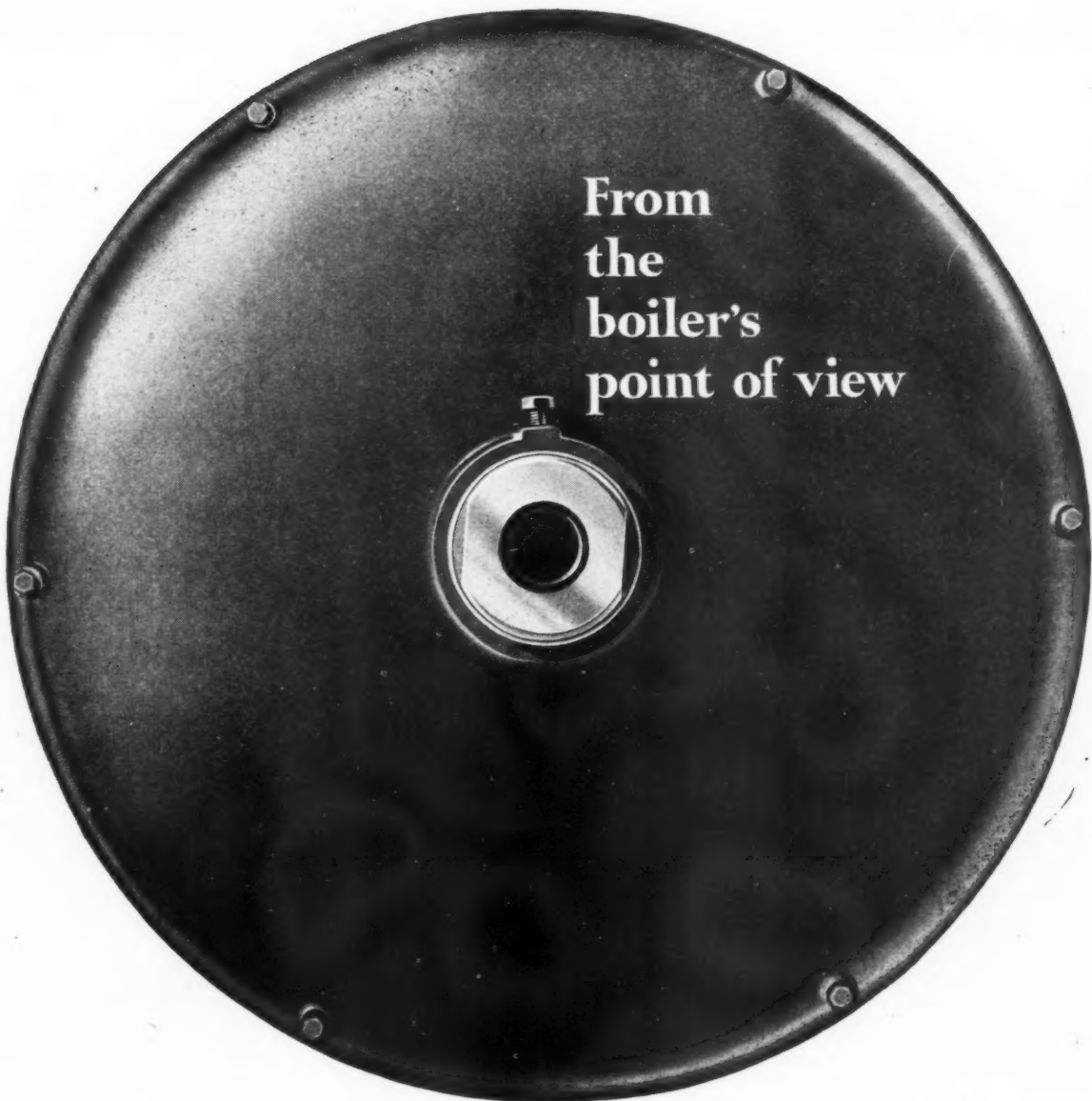
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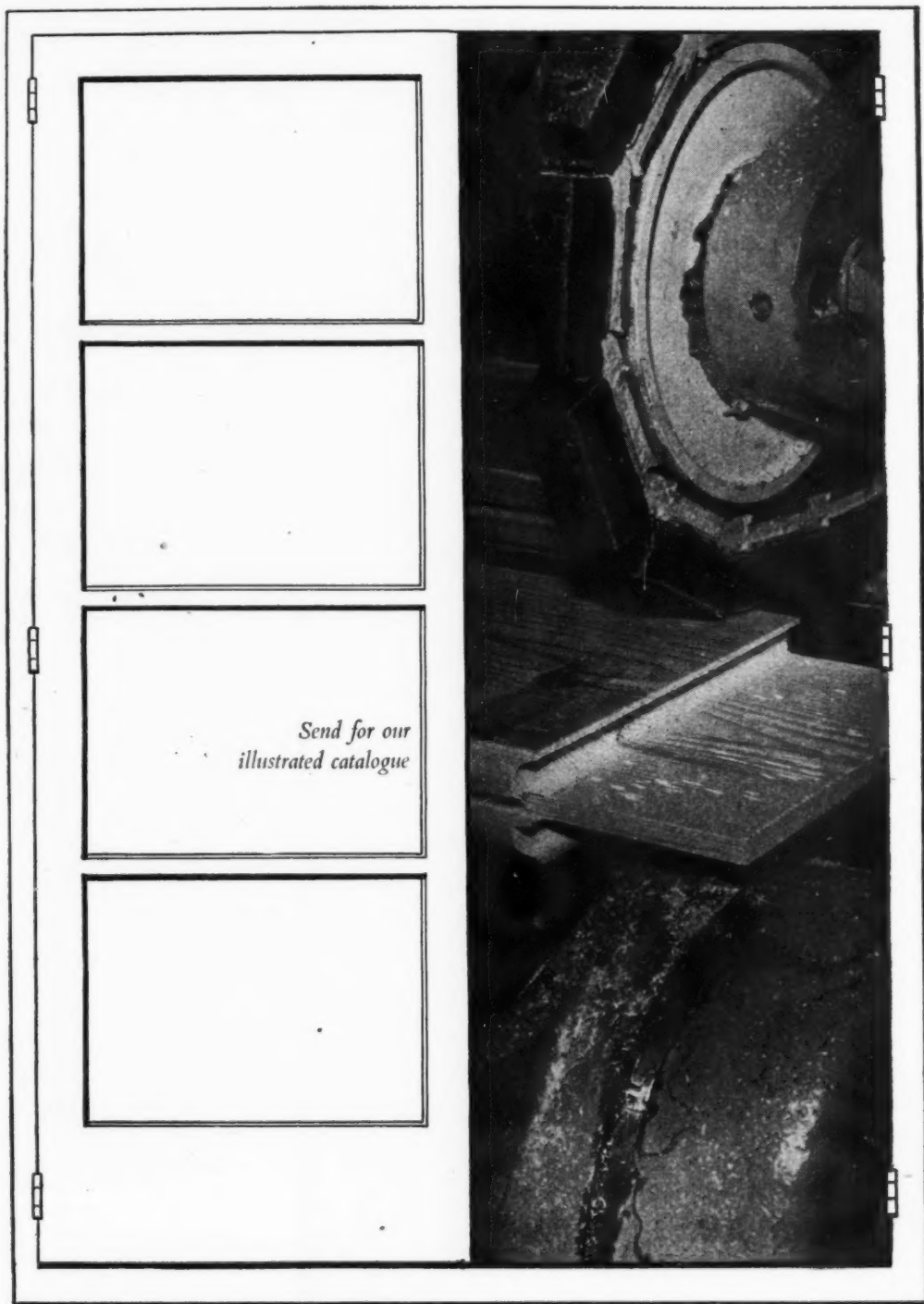
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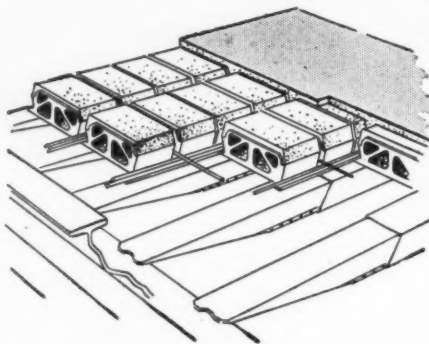
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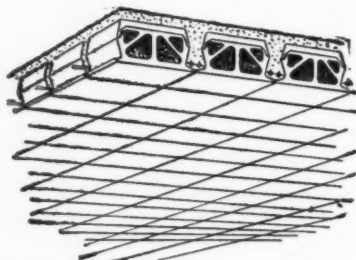
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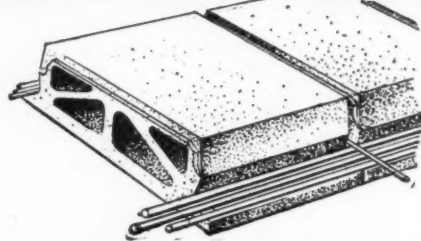
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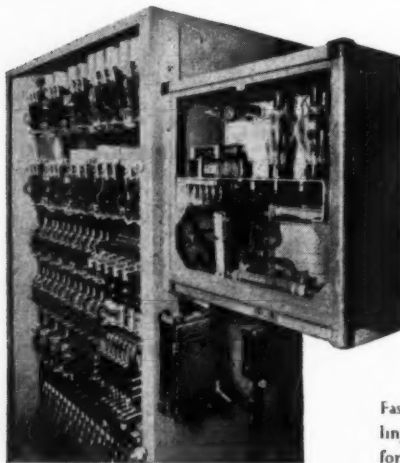
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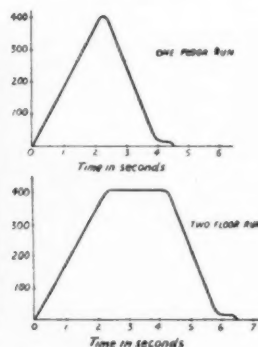
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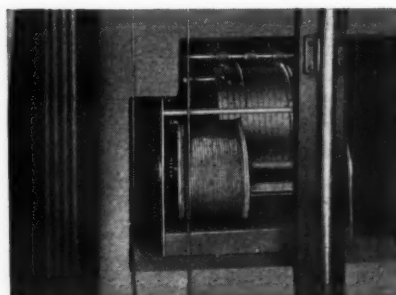
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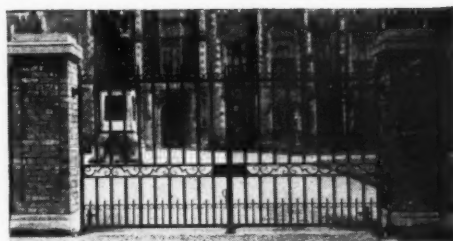
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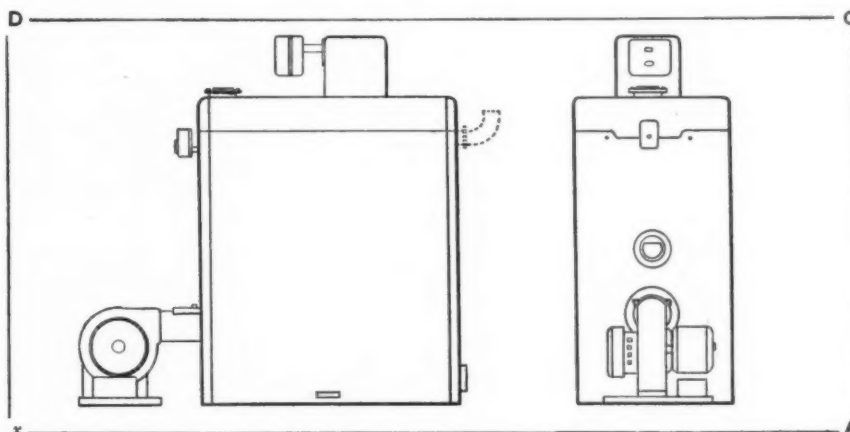
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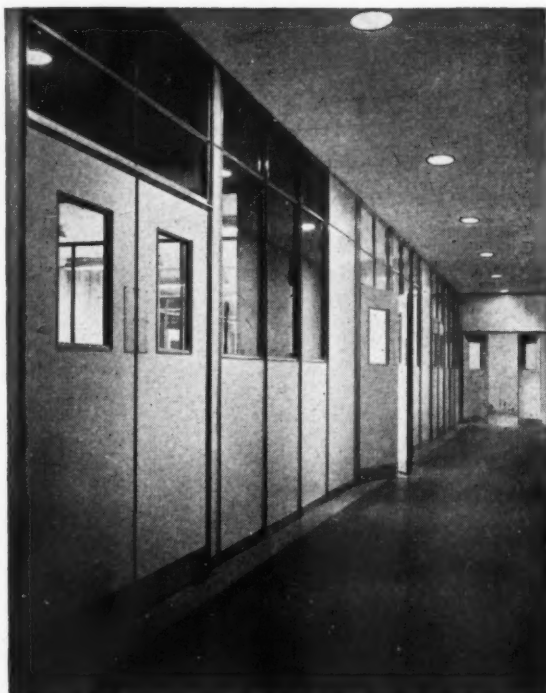
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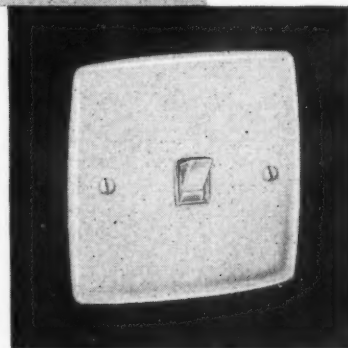


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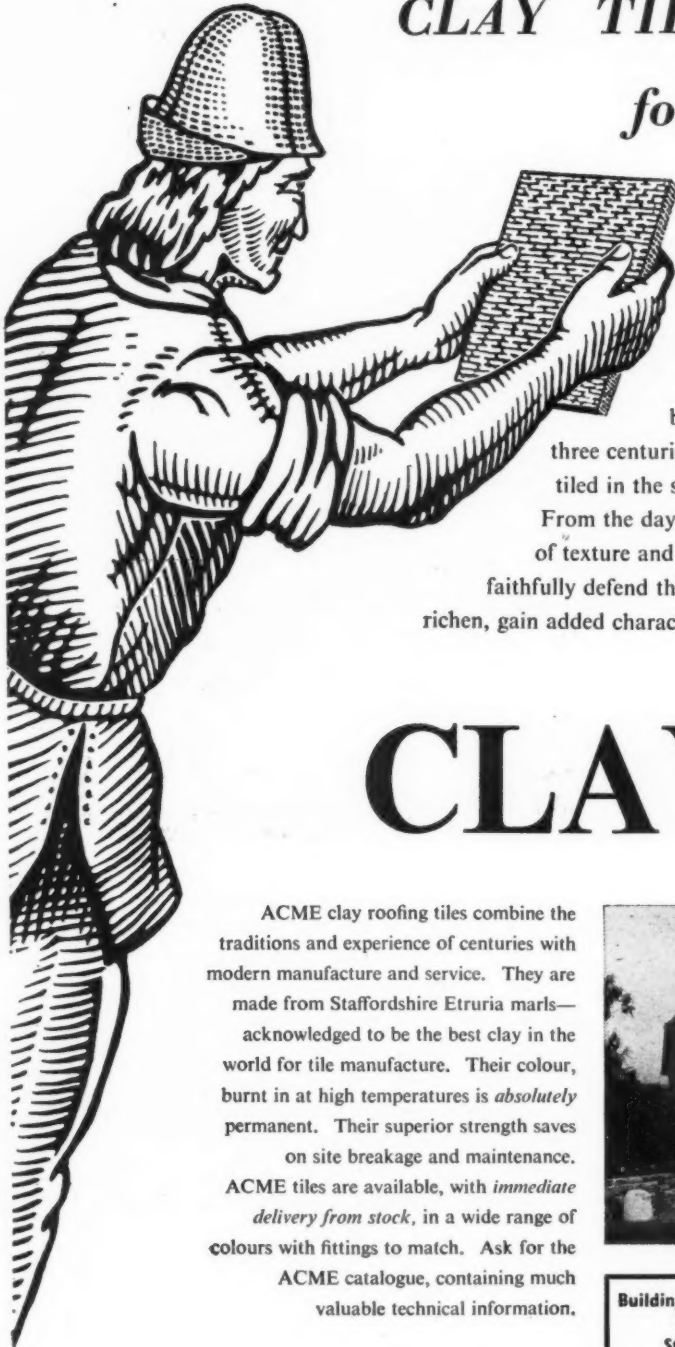
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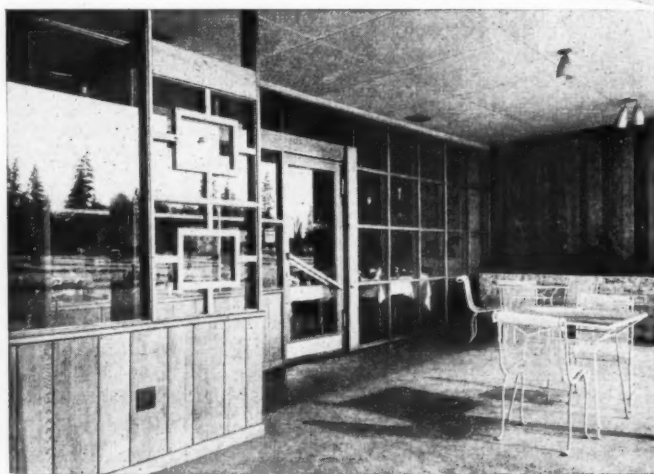


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BUILDINGS



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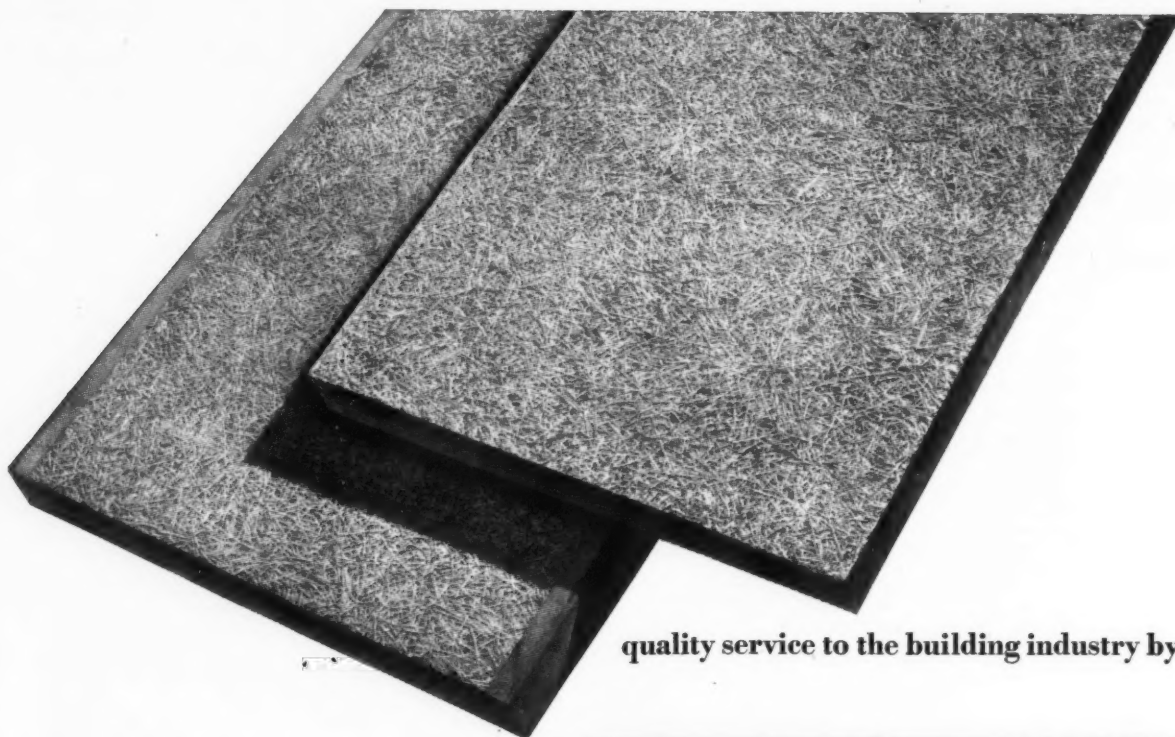
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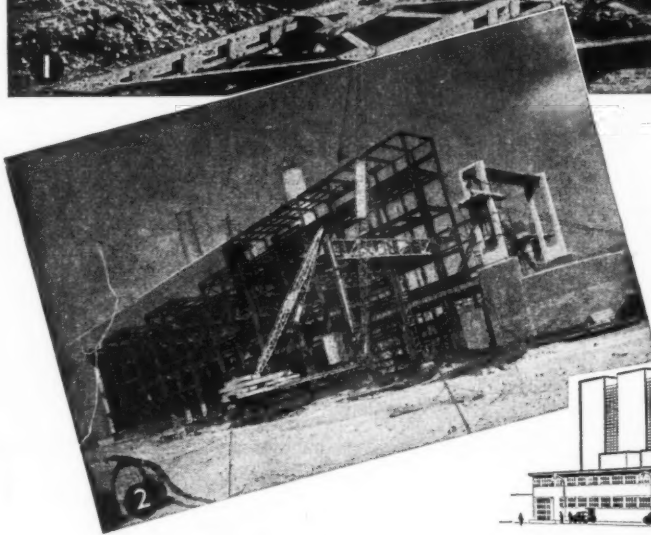
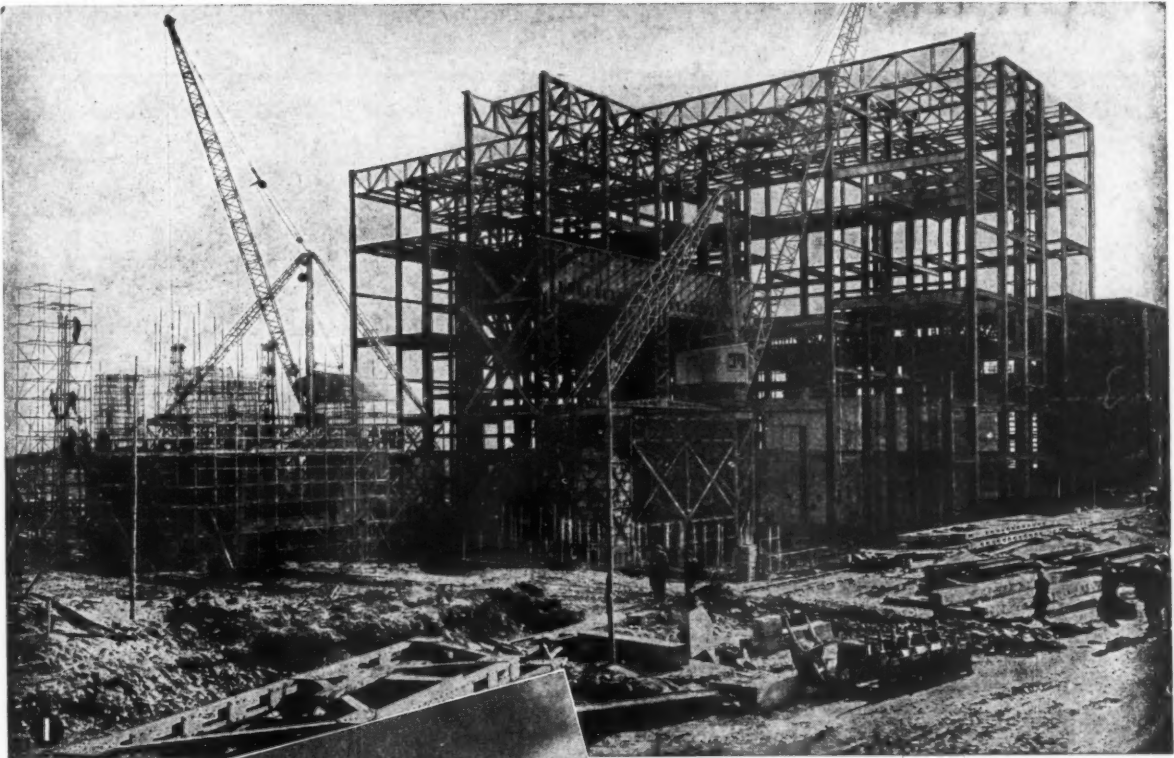
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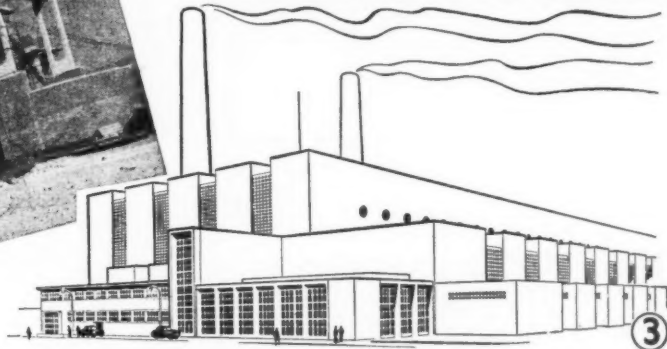
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2. Main Building. General view of No. 3 Turbine Room and tank annexe steelwork from South side, looking North-West.
3. Main building. General view of Station building from foreshore, looking North-East.

*Photographs by courtesy of the Central Electricity Authority, South Wales Division.
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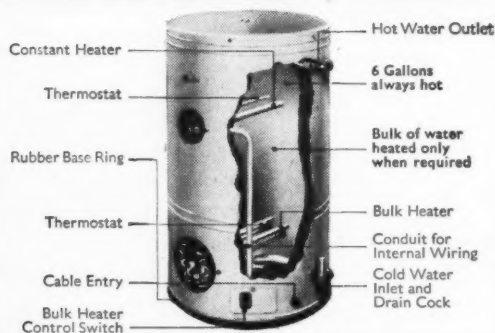
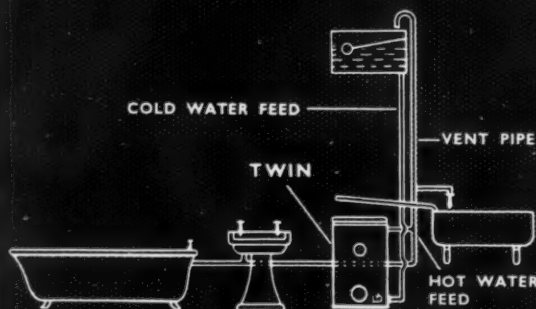
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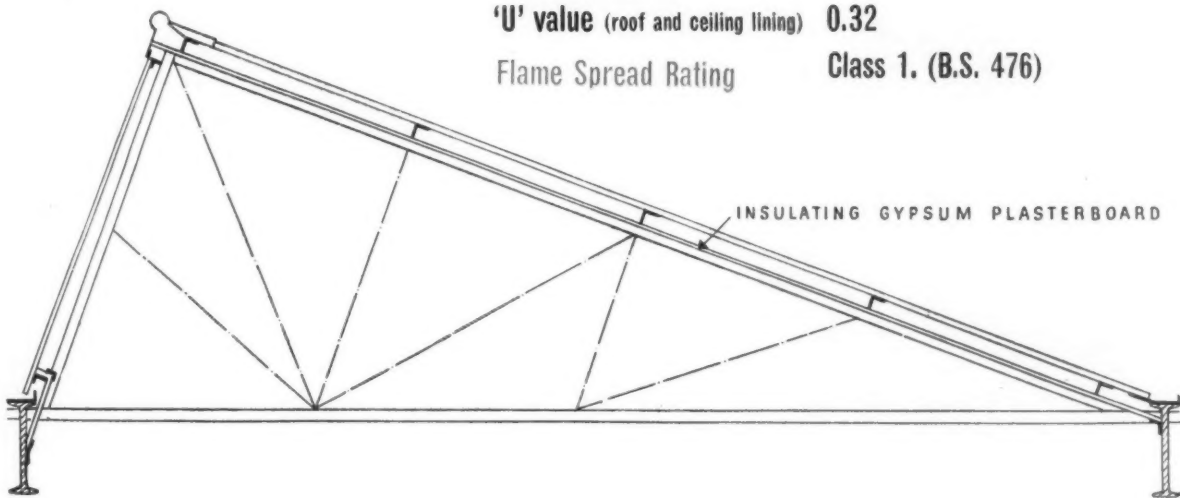
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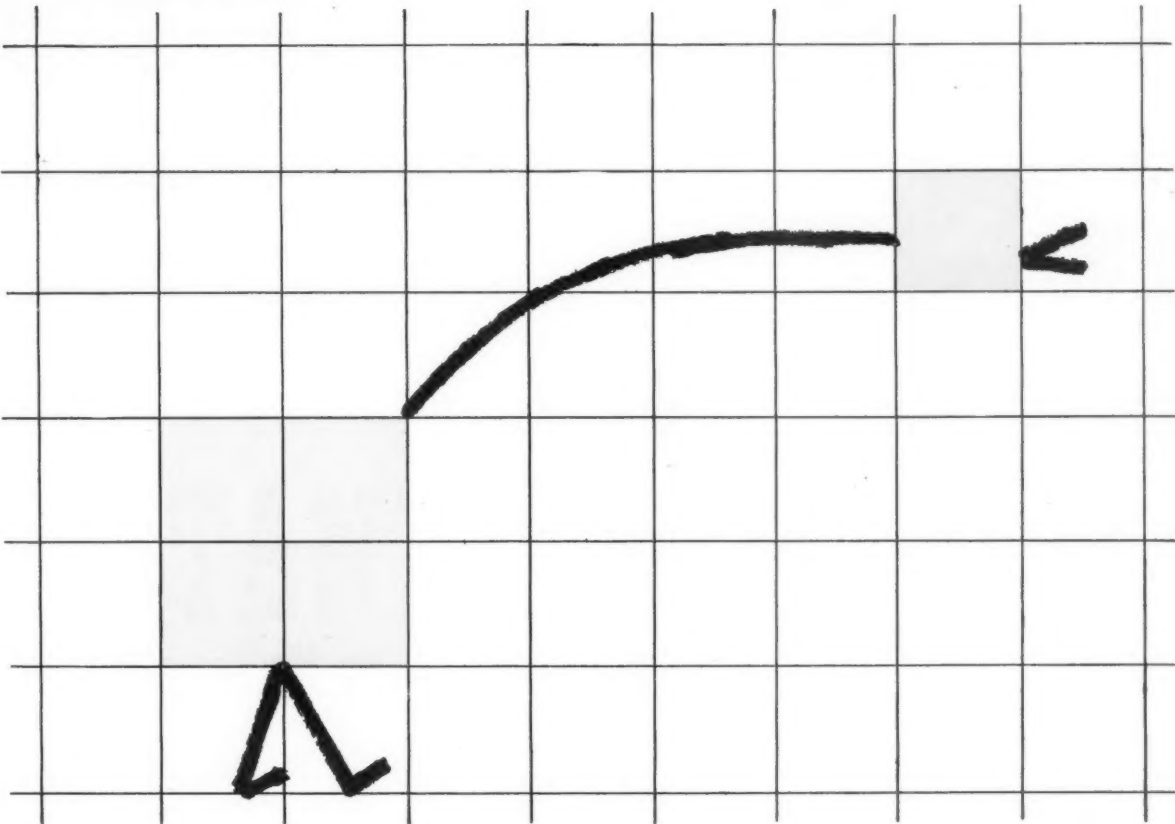
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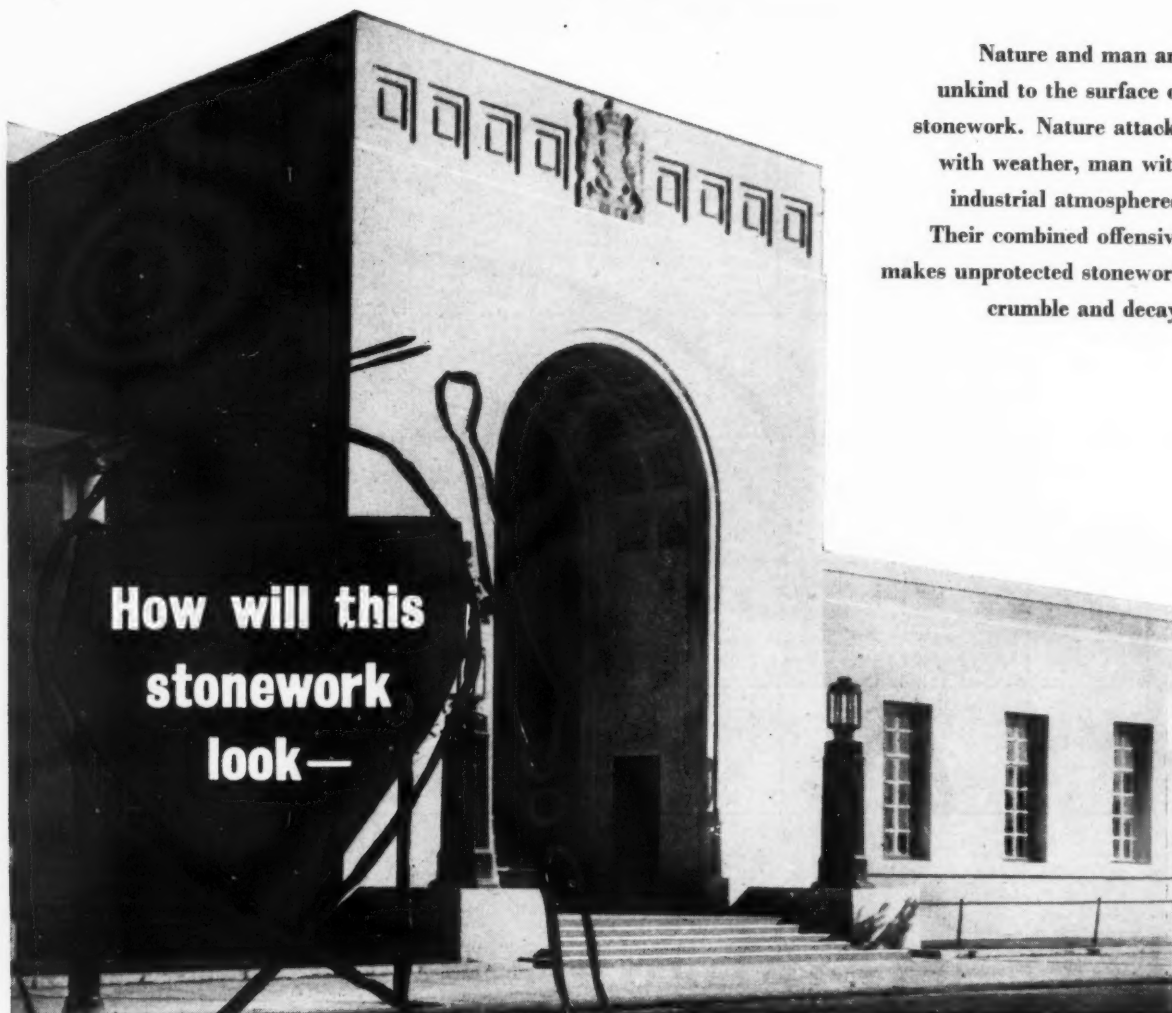
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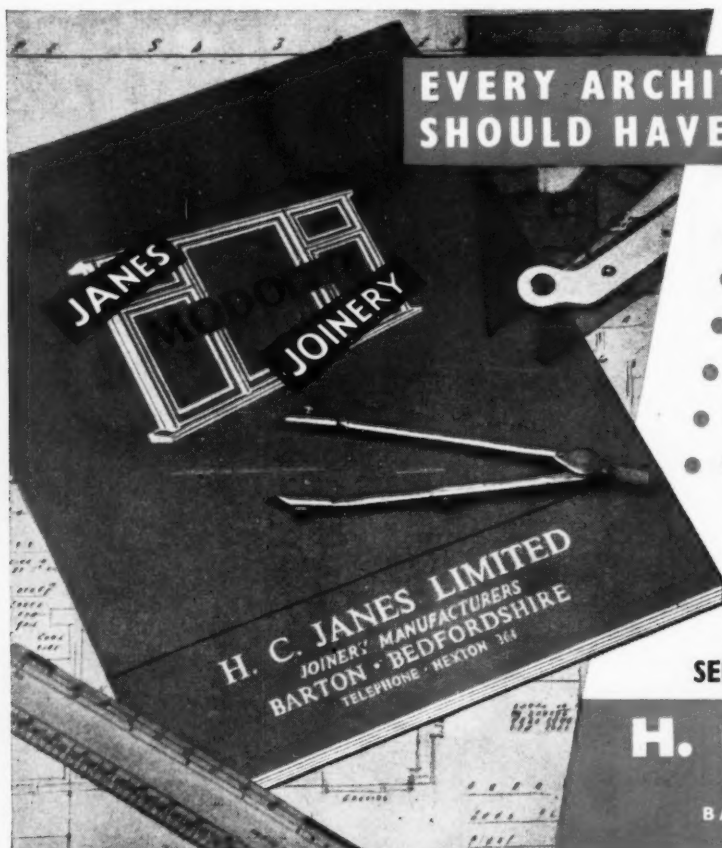
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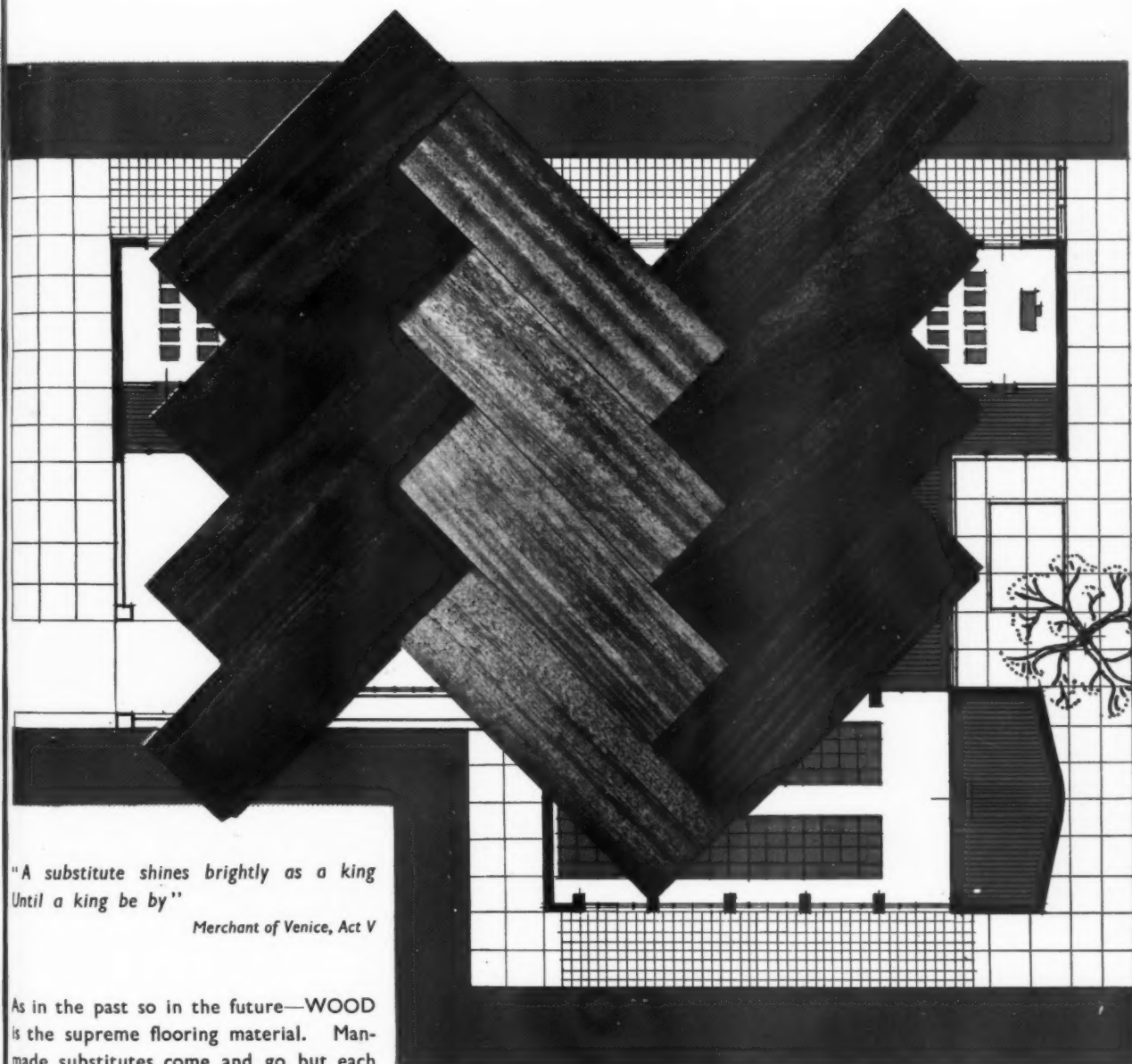
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No. 3167 November 10, 1955 VOL. 122

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ENGLISH ENOUGH . . .

With the fourth in the present series of BBC Reith lectures, the outlines of Pevsner's England begin to appear fairly clearly. What is curious is the way in which the qualities he finds characteristically English in English Art are the qualities which we ourselves take for virtues in the Island Race—rationalism, detachment, eccentricity, middle-class common sense, moralizing, suspicion of foreigners, and so forth. This is reassuring in a way, but it would have been even more reassuring—paradoxically enough—if Dr. Pevsner's German-trained spotlight had picked out some hitherto unidentified English trait. However, there are three more lectures to come and the best may be yet to be.

But that best will have to be pretty good if it is to outdo the masterly analysis of the English love of plane geometry which emerged from his study of Perpendicular architecture in last Sunday's talk. There were some odd moments, ASTRAGAL thought, such as when the Houses of Parliament rather than the Crystal Palace were adduced as an example of a mid-Victorian grid-façade, and the utter silence about Modern Architecture in a talk which cried out for comparisons to be drawn between Perp and Contemporary; but one suspects that there must be good, if un-obvious, reasons for this.

*

Wait a minute, though. . . . Whoever accused the English before of being struck on the "verticals and horizontals of rationalism"? Francophiles, Corbusians and the Basil Taylor connection have always maintained that the English are weak on geometry, and that historical studies of the English past only make them weaker. But now let Smithson speak unto Smythson—Hunstanton school, whose brutalist geometry has hurt so many sensitive souls is, of course, a true descendant of Professor Pevsner's arch-example of English griddishness, Hardwick Hall, the work of the Smithsons' Elizabethan namesakes.

*

Incidentally, these lectures are to be published—in expanded form and with 120 illustrations—by the *Architectural Press*. More about this later.

. . . FOR "PUNCH"

And in the meantime, Professor Pevsner has received the ultimate accolade of Englishness, and has been found good enough for *Punch*, which

last week published a poem upon the celebrated imaginary feud between him and John Betjeman. This elaborate jape (surely too recondite to appear in a journal one of whose functions is still that of being read in surgery waiting rooms) contrasted the attitudes of Poet and Pedant—no names, of course, no pack-drill—with such verses as

Poet:

I thought I saw a folly tall
of stucco built and thin wood
It played on my emotions
as a visit to "East Lynne" would.

Pedant:

(Ho-ho, that was no folly tall
but a Mortuary by Inwood!)

and much more of the like, concluding with an epilogue which is a pretty good comment on the current fancy for Victoriana, whether poetic or pedantic—

All things bright and Butterfield,
With Features Great and Small;
All things weird and Waterhouse,
Work wonders for us all!

*

Thank you Malcolm Muggeridge; will you "do" the PRA next?

OUR PRA AER

Professor Richardson is considering standing for another year as PRA. The good he has done in drawing public attention to architects and architecture has been more than counterbalanced by the ill-considered views he expresses—views so admirably described by colleague Abner, of the *Architect and Building News*, as "not only playing to the gallery, but to the bottomless pit as well." No doubt the semblance of influence the post holds, the ability to get a hearing in high places, attracts the serious side of the Professor's clowning personality. But the sequence of Munnings, Kelly, Richardson, although a charming trio of comedians, makes one pray for a more serious, and more responsible, representative of the arts for a change.

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NO HOME FOR THE SAILOR

The Queen, judging from the buildings she has been opening in the last few weeks, must see more large and expensive bad designs than any of her subjects. Among the more recent were the Veterinary School at Cambridge, the Birmingham College of Technology, and—last week—the Memorial to merchant seamen and men of the fishing fleets lost at sea in the last war. The design is shown on the right. It takes the form of a sunken garden in Trinity Square, on the central axis of the '14-'18 seamen's Memorial. The difference in size of the two bastions forming the cross-axis is due, it is said, to nearby Trinity House objecting to the left-hand one in the photograph projecting so far across the lawn and thus into the view of the occupants of Trinity House.



The new Merchant Navy Memorial designed by Sir Edward Maufe at Trinity Square, on Tower Hill, London. In the background is the 1914-18 memorial. Bronze panels around the walls of the sunken garden bear the names of 24,000 merchant sailors and fishermen who lost their lives.

Ignoring detail considerations of the style of the memorial, one cannot help wondering why the architect, Sir Edward Maufe, placed his sunken garden so that it cuts up and destroys one-third of the square. Unrelated to the buildings around, it is also entirely unrelated to the garden. The remainder of the garden is in sorry condition. Surely a vastly better memorial could have been made if the whole garden had been restored and laid out to form the memorial? Exception may also be taken to the provocative naked mermaids with which sculptor Charles Wheeler has tried to enliven the scene, but the great misfortune is the opportunity which has been missed to create a proper setting for a memorial to twenty-four thousand seamen "with no graves but the sea."

duced by "a patron with exacting demands, an irritating site, and an acute shortage of money." Second, when referring to professional worries over pay and status, and looking *you*, dear reader, straight in the eye, "the first thing to do is to deserve them."

David Bowes-Lyon, Lord Lieutenant of Hertfordshire, and Sir William Acland proposed and seconded a vote of thanks. Both said, as is almost traditional, that they knew nothing about architecture. But the former described the new building immediately east of St. Pauls as "the biggest public convenience I've ever seen," which should please both extremes, if not the centre, of professional opinion; and the latter claimed the distinction of a grandfather who lectured Ruskin on drains at Oxford.

The next item on the programme was the presentation of the London Bronze Medal to Dr. J. L. Martin, architect to the LCC, for the excellent Ackroyden estate. This estate is the first tall feather in the cap of Whitfield-Lewis, who, you will remember, took over the newly formed housing division when housing left the valuer's department. W. G. Fiske, chairman of the LCC housing committee, one of Mr. Aslin's exacting "patrons," was also rewarded, and duly spoke, as did W. L.

Marchant, a representative of Tersons, the contractors. The latter pointed out that the scheme was completed ahead of schedule, through the close co-ordination of operative, contractor, and architect.

EDUCATION

The joint conference of builders and the professions, on training, promised in the McMorran report, has been announced this week. This is splendid news. No architect with direct experience in teaching is to speak for the RIBA. D. H. McMorran is the official RIBA speaker. This may be a good thing, because it is said that a vicious attack on school training, prepared by the type of architects who are short of cheap assistants, was only prevented from appearing in the McMorran report by the astute and enlightened chairmanship of Mr. McMorran himself. At least, that is what is said. But ASTRAGAL cannot remember any occasion when Mr. McMorran has made public his own views on education—surely a useful preliminary before representing a profession? Anyway, it is a pity the RIBA cannot put forward an enlightened principal as well to speak.

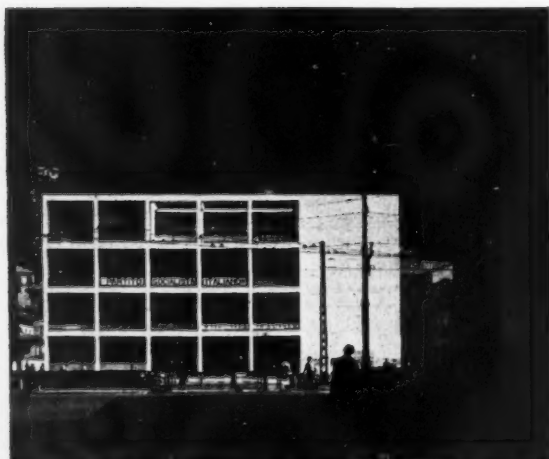
A NEW SOCIETY

A meeting of The William Morris Society will be held at 6, Queen's Square on November 16 at 8 p.m. when John Brandon Jones will lecture on

ABSENT MEMBERS

ASTRAGAL was surprised, bearing in mind the AGM of last May, to find President C. H. Aslin talking last week to a half-empty hall at the RIBA. The Institute must have been a little surprised, too, because, just before the President entered, the sliding wall slowly rose into place, as a depressing emphasis of a "half-house." But no doubt the ravaging wolves of the AGM are now the sucking doves of full employment.

The President's speech is referred to in one of this week's leading articles, but ASTRAGAL found two sentences worth stealing for this column. First: the perfect architectural conception is pro-



From Vernacular to Modern

In his new book, *Italy Builds*, which will be published next Tuesday by the Architectural Press (56s.), G. E. Kidder Smith gives almost half his 264 pages of photographs and comment to architecture of the past. But although he analyses the great piazzas, with the help of pictures and plans, not all his historical section is concerned with familiar buildings. There is an excellent section on "the Land and Its Architecture," from which the photograph above is taken. This building has, in the author's opinion, one of the finest exposed frameworks in all Italy. "I feel," he writes, "that this type of structure must have influenced Giuseppe Terragni in the 'space integration' of the Casa del Popolo (photograph on left), and from this the whole range of contemporary 'cage' exhibitions which have been so successful in Italy." The Casa del Popolo (1936) is one of the first of the hundreds of buildings in the section on modern architecture, which includes a surprising number of not-so-familiar examples of post-war building. The book will be reviewed in next week's JOURNAL.

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Philip Webb and other architects associated with Morris & Co. Readers may not have previously heard of The William Morris Society; this is its first public meeting. It was, however, founded some two years ago at Red House. It may seem a simple thing to found such a society but for those two years the founding committee have been busy conducting talks with Sir Sydney Cockerell—who has given the venture his blessing—and in negotiating with the old stalwarts of such bodies as the Kelmescott Fellowship.

The Society now has over a hundred members and wants more. Its aims—which will be proclaimed at the meeting on the 16th—will include publication and a general vigilance over those good things in which Morris was interested. Those interests were so diverse that several of them have in the past been represented by various societies. This is the first attempt to bring all the threads together; it is also the first society to be started by a generation for whom Morris is part of history rather than a fading memory. Success depends upon funds. The subscription is 10s. a year. The secretary is Graeme Shankland, 35, Christchurch Avenue, N.W.3.

GIVE US A RING

My title is also the title of a film made by BEDA for showing to the general public the advantages of ring circuit wiring systems. ASTRAGAL saw the film last week and had an all too rare bright thought: why do not local architectural societies have film shows for prospective clients?

ASTRAGAL realized why this is not, perhaps, such a good idea after all when he had seen part of "Give Us a Ring" which otherwise one must haste to add—was technically very competent, due, no doubt, to the Film Producers' Guild. The architect depicted in the film, plump, bow-tied, suave, very typical, presents to the newly-wed couple, whose home-creating efforts with an abundance of electric gadgets form the main feature of the film, the most appalling set of drawings for a house ASTRAGAL had seen since he last met a planning officer—the sort of thing licentiates draw for a pint of beer and ten guineas from a spec. builder.

ASTRAGAL

The Editors

THE ENGLISHNESS OF MODERN ARCHITECTURE

"BLOCK added to Block . . . and facades designed as grids." The phrase could describe a Hertfordshire school, or one of the new "reformed" power-stations, yet what its author had in mind was the architecture of the first Elizabeth's reign, not the second's. Nevertheless, Professor Pevsner's Reith lecture* last Sunday must have brought home to many listeners the extent to which contemporary design fits into the English tradition of flat-faced buildings patterned over with a grid—structural or otherwise—of horizontals and verticals.

His discretion in not drawing attention to the innumerable parallels between the Modern Movement and our Perpendicular past was a compliment to the intelligence of his listeners—but this gap of silence will also prove, one hopes, to be an elephant pit to catch the pseudo-traditionalists of Burlington House and St. Paul's churchyard, whose so-called neo-Georgian insults the perpendicular tradition with set-backs and retreating wall-planes that break the continuity of the grids. Theirs is a building silhouette which belongs to the French Academic tradition, and not to Georgian, whose flat fall from parapet upstand to area pavement provided an ideal surface on which the eighteenth century, as Professor Pevsner also pointed out, executed its own version of the endless rectangular grid.

Now that he has reclaimed the "verticals and horizontals of Rationalism" for our native building tradition, let us hear no more about Bankers' Beaux-Arts or Academicians' Baroque being "English" or "New Elizabethan." New techniques such as patent glazing, a new rationalism of approach to design, and a native constructional aesthetic combine to make Modern Architecture the only proper building style of our time—in the City, or anywhere else.

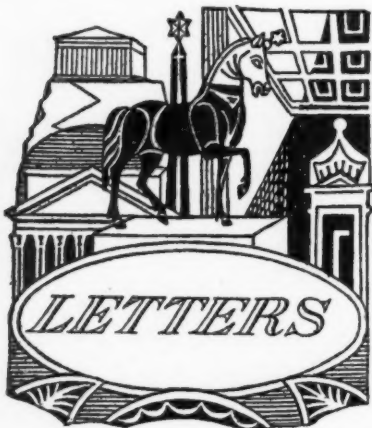
THE PRESIDENT AND THE PROFESSION

C. H. Aslin, the President of the RIBA, may not go down in history as a great public speaker, but he will surely be remembered for his sincerity, judgment, and his scrupulous endeavours to be fair. Only the second public architect to be President, and head of what is becoming a world-famous office, he devoted time in his inaugural address for the second year of his Presidency to assuring private architects that their practices "must always be sustained . . . with as much work as is possible . . . Any course which did not encourage private practice . . . would be a disaster for the profession." It was obvious from Mr. Aslin's words, however, that he does not see the form of the profession remaining unchanged. He notes, where so many senior architects have failed to, that architectural training should produce men able to perform the complete duties of an architect; the junior architect

*Astragal comments on page 613

lagging behind the senior only in experience. "It is evident," he said, "that all young architects cannot hope to obtain one or other of the various senior posts either in Local Government or private practice, and . . . it seems to me to be clear that the structure of the profession must be varied to allow the kind of employment which will take full account of the qualities and training of the architect." He then went on to point out that the Ad Hoc Committee, under the chairmanship of Richard Sheppard, which was set up as a result of the motion carried at the last AGM, will shortly be presenting some "interesting proposals." He hoped that as a result of the proposals "it may be possible to take such steps as will satisfy the whole body of architects and the interests of architecture, and the profession can more closely marry in with changing conditions."

These words, taken in conjunction with the phrase "the old method of using the bulk of the profession as assistants is no longer valid" can only mean that the President is alive to the value of professional status, in the true sense, to the qualified man and anxious to destroy the hierarchical pyramid of the "drawing factory." Good luck to him, and his committee.



Walter Segal, Registered Architect

H. A. Furness, L.R.I.B.A.

Mrs. H. Z. Prauss, A.R.I.B.A.

Patrick Cocks, of International Paints, Ltd.

Bending and Caning

SIR,—In 1938, I designed an armchair in bentwood which then could not be made in this country, presumably because it was too difficult to bend wood; and political complications made it impossible to have this done abroad.

In 1955, I needed some reasonably good-looking armchairs for the entrance hall of a building I had just completed, and finding it impossible to obtain these from the usual sources in London I remembered the 1938 design and thought that with the light of progress now shining upon the furniture industry, which has clasped the adjective

"contemporary" firmly to its ample bosom, I might get some chairs made to those 16-year-old drawings.

And though I had to resign myself with some sadness in my heart to the apparent truth that a 16-year-old effort was still (modestly) some chairlengths ahead of what I could buy, I still could not get it made in this country; presumably because it is still too difficult to bend wood.

As to the use of caning, I am quite sure the furniture industry will insist with some shudder that this is only known at Eton, and other places that supply education but not chairs.

Perhaps my poor client will acquiesce if I show him some nice plants (rubber for preference), which he might put into the entrance hall to his block of flats. After all, who wants to sit down. . . ?

WALTER SEGAL.

London.

Not Enough Money

SIR,—A Birmingham city councillor has just been criticizing increased professional fees on a scheme for the city's new Colleges of Technology, Commerce and Art. The fees work out at four-and-a-half times those for a similar job in 1939, and the councillor thinks this is too much.

However, he may have done a service to part of the architectural profession by spotlighting, once again, the great injustice which exists in the disproportionate difference between the rates of pay of private-practice architects (four-and-a-half times those of 1939) and official architects (at the very most twice their 1939 salaries).

One cannot help wondering how long this sad state of affairs is to be allowed to continue.

London.

H. A. FURNESS.

Why Poachers Poach

SIR,—In all the letters to you condemning or defending the salaried architect for doing private work in his spare time, there is an important factor missing.

Neither the salaried architect nor the archi-

tect in private practice designs solely for money; he has also pleasure in creating. And for the salaried architect there is the added pleasure of designing without guidance from a superior officer, whether that guidance be good or bad.

Not every architect with a vocation has a good head for business and, in addition, not every woman architect can win public confidence and get commissions.

So please don't deny the salaried architect the dream that a client will come with a commission, even if it is only for a little house.

MRS. H. Z. PRAUSS.

London.

Why Archrome is Hard To Get Quickly

SIR,—In a recent edition of the JOURNAL you published a letter from Derek Phillips under the heading of "The Archrome Range of Colours."

Mr. Phillips's letter criticized the paint industry for not holding a stock of the Archrome colours so that small redecorating jobs could be supplied without delay. It raises the point that perhaps not all architects really appreciate the difficulties facing the paint industry in its endeavour to supply the requirements of the profession.

We make our flat and gloss building paints in many standard colours, and in addition to this we are called upon to supply paints to the colours of the old Air Ministry range; the House and Garden range; British Standard Colours for Ready Mixed Paints; Archrome range; Munsell Colour Book; British Colour Council Dictionary; and now the RIBA range. It must therefore be obvious that it is quite impossible to hold stocks of all sizes in all these colours, against every contingency.

Notwithstanding this, we have assessed the most frequently called for Archrome colours and have laid in a stock of these, thus enabling delivery to be effected in the Greater London area within 48 hours. Colours not held in stock can be manufactured in 10-14 days.

In an average contract there is, of course, a fair period of grace between the architect issuing his contractor with the colour schedule and the contractor commencing his painting. This period is normally sufficient for any special or unusual colours to be manufactured. However, we must agree with Mr. Phillips that in the case of a small redecorating job it is more than probable that the builder may have difficulty in obtaining an unusual Archrome colour at short notice. At the same time it should not be overlooked that the small builder may well delay ordering his paint until the day before he wants to use it.

The question of these special ranges of colour is not only a matter of stock, but is also largely a matter of production. The requirements of architects tend to call for supplies of paint in an ever-widening variety of colours. The cost of tinting a large batch of paint, say 200 gallons, is no higher than tinting one or two gallons, especially in view of the fact that when tinting small quantities a considerable amount of wastage must be allowed for.

It is not general in the paint industry to charge extra for small quantities of paint in non-standard colours. Indeed, we in this company fully appreciate that it is not only an architect's privilege, but his undeniable right, to have exactly the colours he requires; subject, of course, to it being scientifically possible to make them. However, there are certain disadvantages which must arise as a result of trying to fulfil architects' requirements, the principal one being that delivery is bound to be slower.

The coming of the PICRC/RIBA shade card, if it is used by architects, will go a long way towards rationalizing what is fast

FURTHER COMMENTS ON

THE AJ £1000

RESEARCH FOUNDATION

becoming an extremely difficult situation. The colours on this card have all been studied by paint technologists and have been accepted by the RIBA. Lists are available showing the types of paint which can be used and are therefore recommended as being technically feasible for each colour. If the architect will specify according to these lists he can be sure of satisfactory results, always provided, of course, that labour and site conditions are good.

In conclusion, Sir, this company maintains a special department whose services are entirely at the disposal of architects.

PATRICK COCKS.

London.



RIBA

Conference on Training

A one-day conference on training in the building industry is to be held at the RIBA, 66, Portland Place, W.1, on January 31.

This conference, which has "arisen from the report of the Joint Committee on Architectural Education," is being arranged by the RIBA's Joint Committee of Architects, Quantity Surveyors and Builders.

The chairman will be Harvey Frost, President of the NFBTE, and the speakers will be D. H. McMorran, F.R.I.B.A., who was chairman of the Joint Committee on Architectural Education, W. James, F.R.I.C.S., and David Woodbine-Parish (for the NFBTE).

ASTRAGAL writes about the conference on page 615.

CRITICISM

Architects Should Not Serve on Planning Panel

The Eastern Chapter of the Hants and Isle of Wight Architectural Association deplores the fact that members who serve on the Architectural Advisory Panel to the South East Hants Planning Office are involved in "commenting on each other's work in circumstances prejudicial to the good of the profession as a whole."

At a meeting of the Chapter it was resolved that "members of the Chapter should abstain from service on the panel except in so far as arrangements can be made that their advice is confined to the submissions of persons who are not registered architects."

LCC

Death of Schools Architect

We regret to announce the death of S. Howard, the school's architect in the LCC Architect's Department. Before his last

(Continued on page 621)



From The Rt. Hon. Duncan Sandys,
Minister of Housing and Local Government

I congratulate THE ARCHITECTS' JOURNAL on their decision to sponsor a Fellowship for architectural research.

Any work which will increase the knowledge on which architects can draw and help them to make use of that knowledge must be welcome to all who are concerned to improve the standard of building in city and countryside.

I therefore wish you every success in your initiative.

DUNCAN SANDYS

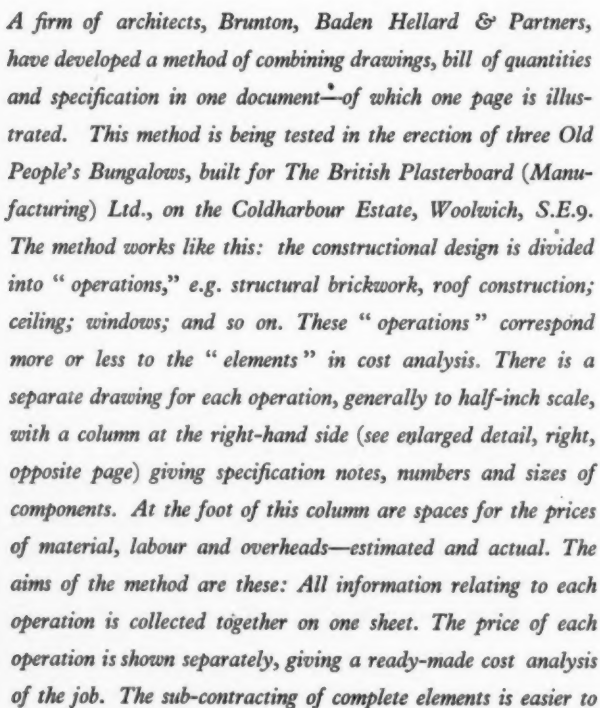


From F. M. Lea,
Director of the Building Research Station

I welcome the initiative of THE ARCHITECTS' JOURNAL in establishing a Fellowship. There is much need both for more architectural research and for studies, such as envisaged for the first Fellowship, of the ways in which existing knowledge can be made most readily available to the architect. I hope the imagination of young architects may be stimulated by the challenge.

F. M. LEA

£1000 RESEARCH FELLOWSHIP: Readers are reminded that the last date for the receipt of applications for the AJ Research Fellowship is Monday November 14—in less than a week's time. The membership of the Research Board, under whose direction the successful candidate will work, the details of the subject for study, and the reasons for the choice of subject, were all described in the Journal of October 13. The advertisement appears once again on page cxi of this week's issue. We should like to remind readers that the important subject for study is: "Information for the architect: what does he need and where will it come from?"



organize, and changes of policy in substituting one material for another more easily managed. [N.B. The roof covering eventually used was different from that shown above.] Ivan Tomlin, one of the JOURNAL'S Guest Editors (Costs) makes the following comments: "The system would probably be limited to small fairly simple buildings. The unfamiliar form in which the prices are required might, at first, make it difficult for an estimator to use his pricing knowledge and experience to the full, and entries in the price column would require calculation on separate sheets. The system allows the builder less flexibility in pricing, in waste allowances and the balancing of high against low rates relative to the quantities involved. The architect might not be able to list all the items and components the builder would need; thus some things might be missed. These criticisms arise mainly from the unfamiliarity of the system. On the other hand the principle of giving such concisely presented information in one document is a marked advance on the eighth scale and specification and would help in the ordering of materials and organization of work."

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Above: A. W. Cleeve Barr puts a problem to the other Guest Editors at a recent meeting during the preparation of this week's article. Left to right: N. Stanley Farrow, the builder; Ivan Tomlin, the estimator; A. W. Cleeve Barr, the architect; James Nisbet, the quantity surveyor and E. F. L. Brech, the management consultant.

THE COST OF BUILDING:

THE BUILDING CONTRACT

In their past articles (see the list above) the Guest Editors (Costs) have considered separately, the contribution that can be made to the cost problem, by the architect, the quantity surveyor and the builder, individually. They now turn their attention to the building contract, the procedure which regulates the relationship

Examination of present methods

For some considerable time there has been a certain amount of dissatisfaction with existing contract procedure. During the war it was recognized that the post-war demand for buildings—which the Minister of Health said, in March, 1943, would demand a rate of building twice that of pre-war—might require a revision of contracting methods, and the subsequent examination of the problem resulted in the publication of the Simon Report (The Placing and Management of Building Contracts, 1944). Although this report, which many consider to be the standard work on building contracts, anticipated many post-war problems, it could at that time advocate only the best pre-war procedure. In 1952 contractual procedure became the subject of comment in Parliament and the Press, causing the Minister of Works to ask the President of the RIBA to consider the need to develop “contracting arrangements which will encourage pre-planning and organization of work.” Under the chairmanship of Sir Howard Robertson, a committee was formed which confined its attention to orthodox tender-

As a guide to readers we give a list of the articles that the Guest Editors have published so far:

- January 27 and February 3 The Office Building, the unhappy story of a fictitious contract
- February 10 E.F.L. Brech comments on the Office Building Story
- February 17 Why Building Costs? An examination of the cost problem
- February 24 Cost Analysis, a technique for showing where the money goes in a building
- April 14 Symposium of readers' letters on Cost Analysis
- May 19 The Architect's Control of Costs, a discussion of problems and recommendations
- July 14 The Quantity Surveyor's Control of Costs, a note on the origin of the profession, and the needed changes in present methods
- July 28 Cost Planning, a method of budgeting the total cost at the design stage, using cost analyses
- September 1 The Builder's Control of Costs, a description of efficient estimating and tendering
- September 15 The Builder's Control of Costs, a description of a carefully planned and conducted contract
- October 13 Programming for Architects, an article on the planning of an architect's work, commissioned from Clive Wooster
- October 28 Efficiency in Building, an article on a modern builder's approach, commissioned from O. J. Masterman

between these three in the design and erection of buildings. This week's article by the Guest Editors, it deals with the shortcomings of the orthodox procedure—the competitive tender with its separation of builder and architect at the design stage. The drawings are by Kenneth Browne.

ing procedure—a rather narrower issue than the Minister's original letter had appeared to imply. The Report on Tendering Procedure appeared in 1954.

Neither this, nor the many other reports concerned with building published since the war, have done much to dispel general uneasiness over such matters as level tenders, cover prices, and monopolies, which have helped to bring about a questioning attitude towards orthodox contractual procedures. The whole tenor of these reports is that everything would be all right, *if only* all the parties to the contract, and all those in any way concerned with it, were to carry out their obligations completely, expeditiously and in a proper way. The recommendations of the Robertson Report may be summarized:

1. Selective tendering should be universally adopted.
2. Early steps should be taken to consider ultimate abolition of the fluctuation clause.
3. The maximum degree of planning in advance should be adopted wherever possible.
4. Enquiry as to the willingness of contractors to submit

a tender should be made, giving advance information on the work contemplated.

5. The number of tenders invited should be limited.
6. Adequate time for tendering should be allowed.
7. Results of tendering should be immediately notified.
8. Tenders should be accepted without unreasonable delay; and sufficient time for preparation should be allowed before the contract starts.
9. The contractor should be in full control of all sub-contractors.
10. Consultants should be employed for specialist work (where suitable).
11. The intentions of the architect in the matter of nominated sub-contracts should be made known to the main contractor as early as possible.
12. More discretion should be allowed contractors in minor matters.

The detailed recommendations of the Simon Committee (1944) on the management of traditional forms of contract are still sound and well worth reading, although the general conclusions ("our examination of the system of placing contracts has not disclosed any serious weaknesses") reads rather oddly after ten years of post-war forms of building. If all the recommendations of the Simon & Robertson Committees were observed, many difficulties, including some of the causes of wide tender fluctuations, would diminish. To this extent, we wholeheartedly support these recommendations. But they leave untouched the deeper problems to be solved in the cause of more efficient design and construction: divorce of architect from builder at design stage; the decreasing proportion of builder's work in the average contract; the use of long-term arrangements between the client with a building programme and construction companies; standardization and dimensional co-ordination; and the need for a more rational costing system.

Reasons for Dissatisfaction

THE BUILDING OWNER. Until recently the building owner's voice has been rarely heard, and is rarely represented on a committee of enquiry. This is because the building owner, although he is the most important party to the contract, is not organized. He has no institute to look after his interests and must therefore look to the professions for guidance and protection. Since the war, however, government and local authorities have become the largest building owners; they are responsible for over 40 per cent. of the annual building programme—and thus are taking a greater interest in the building industry and are making their views known through various associations. It is the local authority building owner who is most vocal in the latest outcry against "rings" and monopolistic trading as it affects building. He is greatly concerned at the mounting cost of building, believing that much of it is due to the loss of free competition. Hence the attempt to break down any association or agreement which seems to stand in the way of competitive open tendering.

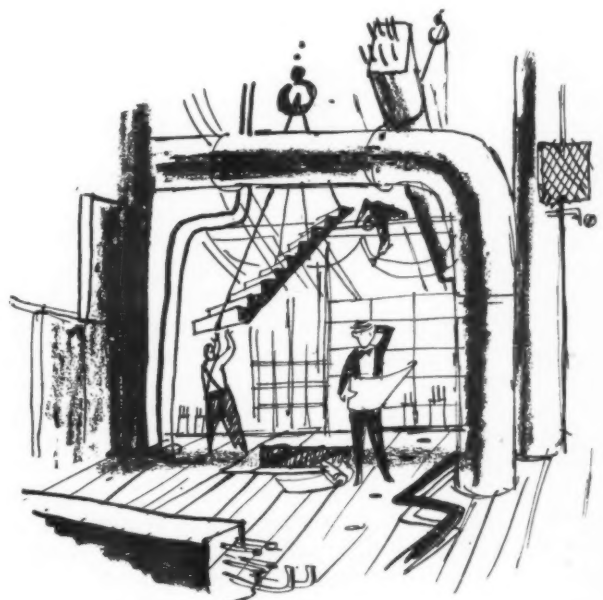
But from the client's point of view there is a paradox: he reads in the Press of monopolistic trading in building materials such as cement, bricks, metal windows and cast iron goods; and of price rings among certain kinds of contractors, such as steel erection firms. Yet there are still wide fluctuations in tender figures. This paradox must weaken public confidence in the orthodox competitive procedure



"... more discretion should be allowed contractors in minor matters."

and in the industry generally. Building owners are also dissatisfied with orthodox procedure because it seems an unnecessarily slow method of getting a building put up. This is particularly important to commercial and industrial clients who need to put an expensive site into "production" as quickly as possible, or to meet a critical date in the trading year.

THE ARCHITECT is also dissatisfied with present procedure. He finds that his efforts on the drawing board to rationalize construction or use new techniques too often result in higher costs to the client. If strictly operated, the orthodox procedure would prevent his using any proprietary method of construction or service, for the assumption underlying it is that *all* the work is tendered for competitively. The architect circumvents this by nominating and collaborating with specialist firms. When he uses traditional materials and methods the architect has little difficulty in planning and designing without the advice and assistance of builders and specialists. Most buildings, however, are now so complex that to achieve maximum economy, the



"Most buildings, however, are now so complex. . . ."

architect must have specialist advice, including that of the builder who is to carry out the job, so that his design will benefit from the knowledge of plant, techniques and special resources that can contribute to efficient execution.

A most vivid illustration of this problem is in school construction using prefabricated or standardized systems, which offer new and exciting aesthetic ideas, flexible planning, speed and economy, if used in the right way. With such systems, the architect gets over the difficulty of his design solution by nominating the main sub-contractor and co-operating with him, obtaining his advice in selection of the most appropriate components for an efficient and economical solution. Where the architect is developing a new system or modifying an existing one, nomination of the sub-contractor is essential so that they may work together: on comparing, for example, the relative economy of pre-cast or *in situ* concrete, particularly as to the size and shape of elements for handling; methods of jointing; prestressing; the vacuum treatment of concrete surfaces; the structural use of lightweight concrete; surface finishes and so on. If co-operation is required on a limited scale, for example on cladding panels, the architect can make these a p.c. item and obtain the benefit of discussion with sub-contractors and visits to their works, but there are serious problems to be met in extending this system to a large proportion of the building contract, and the architect may later on have the problem of inadequate co-operation between a general contractor and the sub-contractor. From the point of view of design—of taking advantage of a full knowledge of the techniques of production and erection of the components in the design of a building—this method certainly gives the architect the basic material he needs. From the point of view of economy the competitive element within the contract is, of course, considerably reduced, and to obtain a competitive tender for a "standard" system is impossible, unless an "equivalent" building is designed in a traditional or alternative system of construction. But the method of cost planning suggested by the Guest Editors (AJ: July 28), based on previous experience of such a wide range of buildings, is perhaps the best way in which the architect can assure himself, and also his client, that the cost of such a building is, in fact, competitive.

THE BUILDER is not satisfied with orthodox procedure. His main objections are these: first, with open tendering the large overhead expenses of estimating departments, which must be carried by the small proportion of successful tenders; second, the increasing proportion of work not in his hands; third, poor support from the architect.

When he thumbs through the bill of quantities he finds a large proportion of the work already nominated, much of it without competition. If successful in obtaining the tender he has to accept many unknown sub-contractors (since he has no means of objecting), and suppliers who look to the architect for instructions and future orders. The builder therefore tends to have little authority with these firms, and yet the contract places responsibility for a satisfactory job, done on time, solely on his shoulders. Present procedure also puts the builder entirely in the architect's hands. His desire to plan, organize and make economic use of plant and labour may be baulked by delay of drawings and instructions, against which he may be afraid to protest. There is no obligation upon the architect to provide firm, complete and timely instructions. Even the RIBA "Conditions of



... THE TRADESMAN is held up because ...



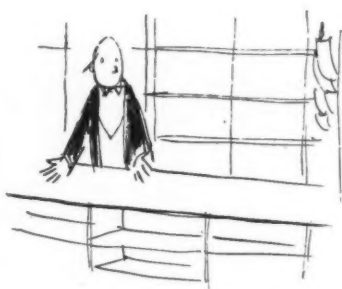
... THE FOREMAN is waiting for instructions from ...



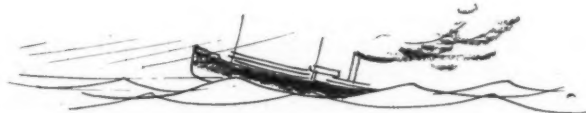
... HEAD OFFICE, who in turn are waiting for drawings from ...



... THE ARCHITECT, who cannot complete them for want of information from ...



... A SUPPLIER, who doubtless has his own hold ups, ...



... reaching even further away from the man on the site.

Engagement" impose no specific duties in this respect.

SPECIALIST SUB-CONTRACTORS are not content with the present situation. Although nominated by the architect they must look to the general contractor for the provision of facilities and for payment. They cannot know which builder will be responsible for paying them until the contract is let and if they should have some objection to the successful builder it would be difficult for them to withdraw. If the builder should turn out to be inefficient and apathetic the sub-contractor may lose money and if the builder should go bankrupt, the sub-contractor may have some difficulty in obtaining redress from the building owner.

All in all practically every section of the building industry has some cause for dissatisfaction with the orthodox methods, which post-war enquiries and recommendations have done little to assuage.

Objectives of a contract procedure

Before discussing any remedies to the situation we have outlined, we suggest the objectives which a contractual procedure should satisfy:

- (a) The sum to be paid by the client and received by the builder should be determined before the job starts. The client should know that there will be no increase in this sum for any reasons other than (i) increases in basic costs of labour and certain scheduled materials, or (ii) variations necessitated by some change of policy or circumstance on his own part.
- (b) The client should have some assurance that the cost of the work is comparable with work of a similar kind.
- (c) The completion date should be known at the start of the job and the client should have some assurance that the contract time will not be exceeded.
- (d) The system should permit the fullest exploitation of techniques and materials appropriate to the design.
- (e) The architect should be fully aware at the design stage of all aspects of the erection of the building and of the production of components which in any way affect detailed design, in order that advantage may be taken of the integration of design and construction.
- (f) The experience of the contractor's organization, as well as that of specialist firms, should be utilized to the full in the interest of the client during all stages of the work.

Present conditions

These aims can be attained only so far as conditions will allow, and therefore we must look to see how the present situation might develop in the future. The orthodox system was based on the assumption that the general contractor would carry out all the work in a particular contract. He therefore had complete control and was in a position to accept complete responsibility. Nowadays this is no longer the case. A growing proportion of the work is carried out by nominated contractors, and of his own work, the builder sub-lets a high proportion (an average of about 25 per cent. of the total contract sum). He thus becomes more an organizer and co-ordinator of separate firms. In housing work there is evidence (Productivity in House Building, 2nd Report, 1953) that labour expenditure by sub-contractors was some 15 to 20 per cent. less than that of general contractors doing the same work, and a similar difference may be true of other types of building). The builder cannot be expert in the work of all the various

firms who will be employed upon the site, and the real responsibility for the proper execution of specialist works must rest on the specialist. This situation must play its part in deciding an appropriate contract procedure.

With the increasing application of scientific knowledge to building technique the development of new methods and materials requires a large capital investment. Hence such development is mainly the preserve of large, well-financed firms which adopt industrial techniques. New proprietary methods and materials of this kind are constantly appearing on the market, but it is becoming increasingly difficult to obtain a competitive price by using the orthodox procedure of a bill of quantities and specification since any one method or material is marketed by only one firm. Competition exists between the proprietors of these methods but the architect has to judge the relative qualities of them as well as the price before making a decision.

The increasing number of such factory-produced techniques and building systems has, in part, been linked with the growing number of building owners with long term programmes of buildings. Owner and manufacturer enter into long term agreements for the supply and perhaps erection of components or even whole buildings, an arrangement which suits both the needs of the owner and the production economics of the manufacturer, but which is far removed from orthodox procedure. If the advantages which it offers to both parties—and to the architect—cause the amount of building put up in this way to increase, then a new contract procedure for it should be devised. Another consequence of the increase of factory-produced techniques is that the builder is becoming more and more an organizer and co-ordinator of an assembly process; the competitive element in the orthodox procedure narrowing down to his skill as a job organizer. This change must also be accounted for in any revised procedure.

If the architect is to prepare a balanced design he must be able at an early stage to co-ordinate all the specialized knowledge and techniques which go to produce a modern building. The resources of the site assembler must influence the constructional design and help to satisfy the needs of the client. Orthodox procedure makes this very difficult, and tends to restrict the architect to more familiar methods and the use of materials which are commonly available from a number of sources.

There have been great advances in scientific knowledge of building design and the behaviour of materials. The most important feature of this knowledge is the establishment of objective standards by which the performance of materials or functional characteristics may be measured and compared. It is unfortunate that the techniques of costing have not developed likewise, for the lack of objective cost standards presents the most difficult problem of all in devising contractual procedures fitted to our present situation. For the essential feature of such procedures is that architect and builder co-operate from the start, but this makes the traditional method of ensuring a fair price—the competitive tender—difficult to use. No doubt this is why the various committees mentioned earlier have reaffirmed financial competition as the only method of determining a fair price, despite the evidence that many sections of the industry show a loss of faith in financial competition by forming monopolies and rings, and despite the fact that a rapidly diminishing proportion of the average contract is

in fact competitive. If the amount of free and open competition continues to decrease, clearly the need for a rational costing method establishing objective cost standards becomes more urgent; but the difficulties and problems of such a method should not be underestimated.

Meanwhile, contractual procedures designed to meet the problems we have outlined so far, must in some degree rely upon prices established by competitive tendering, but, if they meet some of the objectives listed above, they should improve value for money in building work, and thus, in effect, lower the general level of costs over a period of time. But with an eye to the future, such procedures should be so arranged that they provide the opportunity for the gradual working out of a rational pricing system.

One problem which should be mentioned—although of a different kind from those discussed so far—is that of fostering and maintaining a sufficient sense of responsibility among all concerned in building. For everyone daily work involves reliance upon other people—to take some action or to supply information—which they sometimes fail to do, often because they in turn have been let down by someone else. The tradesman is held up because the foreman is waiting for instructions from head office, they in turn are waiting for drawings from the architect. He cannot complete them for want of information from a supplier, who doubtless has his own hold-ups reaching even further away from the man on the site. The man on the site meanwhile is put on to some other job and everyone blames everyone else all down the line. We suggest that the more closely and continuously people work together and the more they share a common aim, the less they are likely to fail each other. For example, liaison between architect and engineer is generally better than that between architect and builder. It seems then that a contractual procedure which draws those concerned together, and makes them *more closely* dependent on one another is likely in time to improve the sense of responsibility. This should extend to the men on the site, who too often, are thought to be not interested in the ideas and purposes behind the work they are doing. Lack of close co-operation at all levels is probably responsible for the mutual suspicion and mistrust that unquestionably exist. At its worst this engenders a lack of trust, the multiplication of safeguarding clauses in the bill, and builders' claims departments. Yet some of the best work done—particularly pioneer development—has been on the basis solely of good faith and identity of aim.

To conclude, we may add to the "Objects of Contract Procedure" a summary of the trends in "Present Conditions":

1. The contractor becoming more a site assembler and co-ordinator of;
2. factory made components and proprietary systems put up or supplied by;
3. sub-contractors or suppliers whose work forms the bulk of the contract, which very often is for;
4. a client with a long term building programme, and in which the amount of
5. open competition is decreasing, thus making more urgent the need for a more rational costing system.

We shall discuss in our next article, a number of contractual procedures which depart from the orthodox method, and we shall then consider in greater detail the problems and possibilities of architect-builder collaboration.

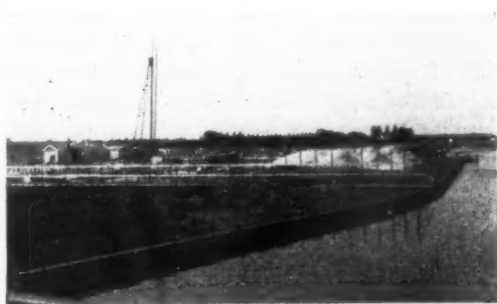
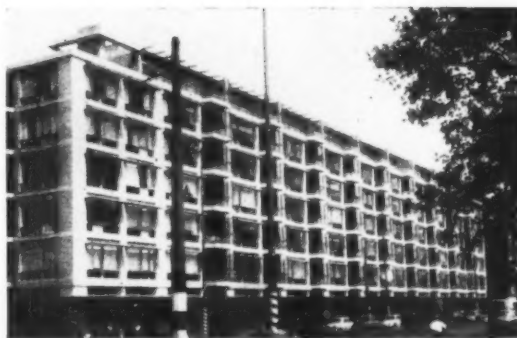
Percy Johnson-Marshall, an architect who has had probably as much planning experience as anyone in the country, writes his second article on post-war Rotterdam. In his first article, published on October 27, he discussed planning as a whole; this week he deals with housing—the subject of “a great deal of imaginative thought”—which is nearly always designed by architects.

ROTTERDAM ITS POST-WAR HOUSING

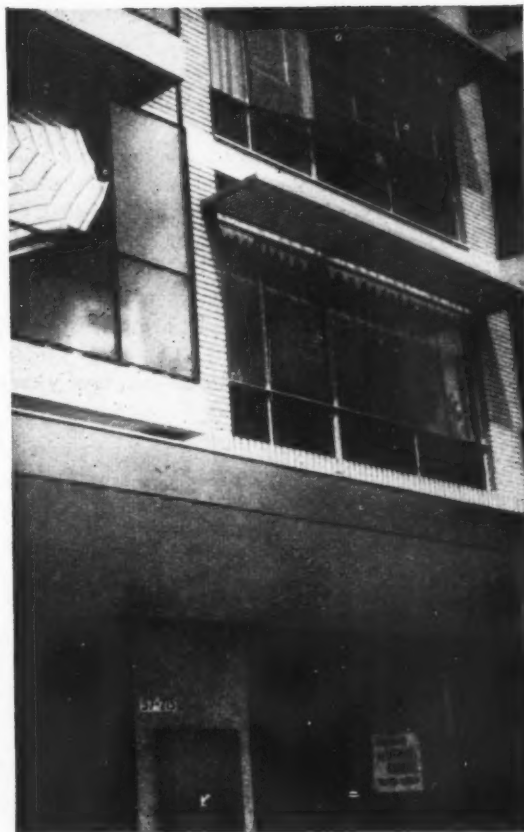
By PERCY JOHNSON-MARSHALL

Post-war residential development in Holland is so extensive and varied in character that it would require a whole book to do it justice. In a short article only a few schemes, and limited aspects of those schemes, can be dealt with.

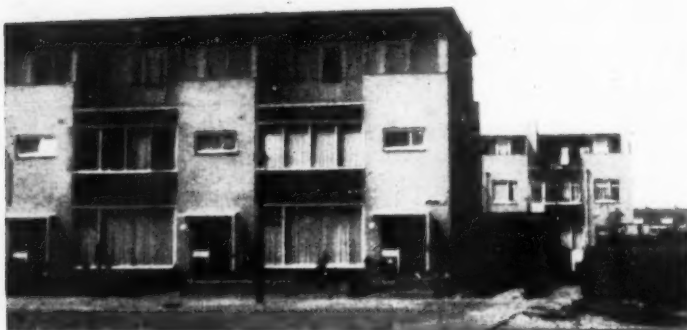
Residential development is of three main types; central area flats for middle and upper income groups, suburban mixed development of houses and flats for middle income groups, and large municipal schemes, generally on the periphery of the large towns. In all cases it appears to be the rule always to employ architects, often of first-rate quality, and a great deal of imaginative



Above: site preparation in Amsterdam. Owing to the waterlogged nature of the ground, extensive draining and piling has to be undertaken before building can be commenced. Above right: An upper-income block of flats on the Groenendaal in Rotterdam, designed by Merkelbach. It is part of the reconstruction of the blitzed city centre. Right: detail of the Groenendaal flats. High-grade brick, finely-finished metalwork, and mosaic all contribute to the excellent design.



thought has gone into the post-war work. It is also usual for the municipalities to own the land, since so much of it has to be drained and piled before it can be used. Normally, too, the municipalities will have prepared overall three-dimensional layouts, which must be in broad terms adhered to by individual architects. Then, great efforts are made to ensure good landscaping, and tree transplanting is done on a large scale.



Top left: houses near the Baronielaan, Amsterdam. These 3-storey houses are laid out in short terraces. They are part of a mixed development scheme for middle-income families. Above left: a mixed development scheme in Amsterdam. In the foreground is a group of garages at the end of a block of flats. Behind are terraces of 2-storey

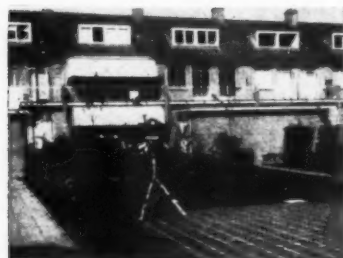
Central Area Flats

Of the central area flats there are as yet not many examples, but as the reconstructed centre of Rotterdam is, for instance, scheduled to have 12,000 new dwellings (as compared to 28,000 pre-war), there are obviously plenty to come. The important thing is that they are now always built as part of the town design, and not as isolated fragments of real estate. A good augury for this type of development is shown in a new block along the Groenendaal in Rotterdam by Merkelbach. It is of five storeys in height and is characterized by the use of plenty of glass and high quality facing materials.

Suburban middle-income group schemes

There are several excellently-designed state-assisted

Below: flats in the Stadhoudersplantoun in the Hague. This scheme, designed by Dudok, consists mainly of



houses and, extreme left, the end of a terrace of 3-storey houses. Top right: garages screening the gardens of 2-storey houses near the Baronielaan. The simple post-box and the well-designed cast-iron lamp post are typical features. Above right: gardens of 2-storey houses near the Baronielaan.

middle-income group schemes, consisting generally of short terraces of houses with broad frontages and groups of garages at each end. Careful attention has in all cases been paid to all the ancillary details, such as planting, paving, street-lighting, etc., and when one compares these schemes with much British post-war private enterprise development, the contrast is striking. In fact, the mechanics of such schemes should be studied carefully in this country by all sides of the building industry and widely publicized to its potential clients. A good example is now nearing completion in South Amsterdam. It consists of two- and three-storey houses, and three- and five-storey flats, the latter with shops on the ground floor. The houses are in short terraces, with reasonably large back and front gardens,

3- and 4-storey flats, laid out in open squares facing a park strip.



those at the front, as is usual in the Netherlands, having no physical division, and hence reading as one green space. A generous number of garages is provided, usually at the ends of terraces so as to mask the private gardens, but also in groups at the ends of the five-storey flats. The whole scheme, built in the traditional (and excellent) brick, and in line with the local tradition, has large windows with large uninterrupted glass areas. Pantiles are used for the roofs of the two-storey terraces, but flat roofs for three storeys and over. The scheme is still under construction, but it is already obvious that great care is being taken with the planting, street furniture, and paved surfaces, which have been thought of as part of the design.

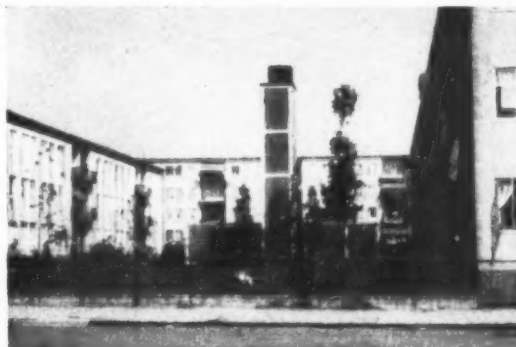
In the Hague is another middle-income group scheme, which is part of the Stadhouders-platoon area laid out by Dudok, and commenced in 1950. It consists of a series of four-storey parallel blocks of flats running east-west, with the eastern side closed by three-storey blocks. As the parallel blocks are well apart a large green space is created open to the west where it flows into a broad public open space strip between the flats and the main road.

A House Building Premium Scheme

Quite near the Amsterdam middle-income group scheme is one near the Baronielaan for lower incomes, built as a state-aided House Building Premium Scheme by the N.V. Nederlandse Maatschappij voor Volkshuisvesting, and designed by Prof. J. F. Berghoef. It is one of the many post-war prefabricated projects, and consists of 127 dwellings built on the Airey system. The layout is simple and sensible, being a series of $3\frac{1}{2}$ -storey blocks laid out on their north-south axis with the north end closed by a long $4\frac{1}{2}$ -storey block running the whole length of the scheme. The $3\frac{1}{2}$ -storey blocks are orientated with their living rooms facing each other across a green, and with an access road running down the staircase access side. Closing the north side of each green is a series of community buildings, one being the central heating plant, and the others being shops and a club-room. At the eastern end of the scheme are three parallel rows of two-storey terrace houses facing south. Although the general appearance of the exteriors are greatly enlivened by the traditional brightly coloured sun-shades, and the balconies are deep and well protected, nevertheless the grey precast concrete finish is not satisfying.

Low income schemes

One of the large new post-war neighbourhoods is the Overschie Extension scheme, which is being developed



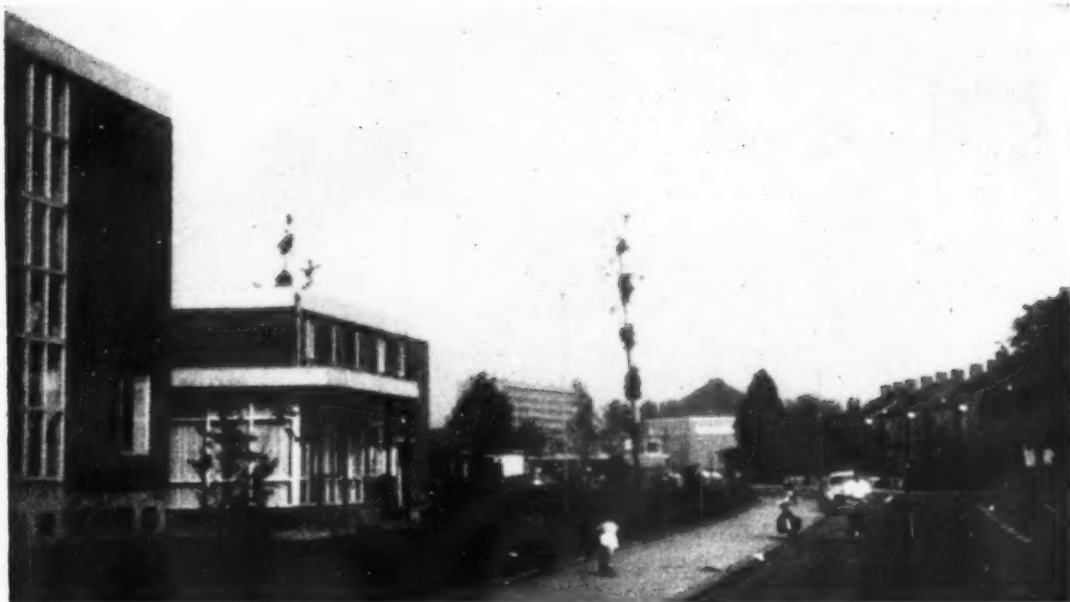
Right: flats on the Baronielaan, Amsterdam. This House Building Premium Scheme is developed in a series of open squares. At the top end of each square is a community building. Top to bottom: the central-heating plant for the whole scheme; one of the access squares; close-up showing the Airey scheme used for prefabrication; detail of one of the $3\frac{1}{2}$ -storey (semi-basement storage) blocks.



Layout of the Overschie scheme (scale in metres)

by the Rotterdam Municipality. It is planned for some 33,000 people in 6,450 dwellings, of which 650 were existing detached houses, and is being fully equipped with community facilities, even including the equivalent of a privately-run remand home (designed by H. Bakker). From a layout point of view Overschie is rather disappointing, partly because the density was

raised at a late stage in its design. It is based too rigidly on the north-south orientation theme, and sacrifices too much for what is only one of the many factors in layout design. Dominating the west side of the scheme are two groups of long 10-storey slabs. Without wishing to be unduly critical, and bearing in mind that the landscaping has not yet had time to grow (an official



Above: the Overschie scheme, Rotterdam; on the left is a remand home by H. Bakker. Behind it, in the distance, is one of the 10-storey blocks of flats, then a church designed as part of a shopping centre and a group of public buildings. On the right are detached houses which are part of the pre-war residential development. Left: 10-storey blocks of flats, in the Overschie scheme, with brick cladding and access balconies. In the foreground is a temporary school, of wood.



statement says "An aspect of this extension scheme is that the open spaces between the blocks of flats merge into the public open spaces"); nevertheless I feel that these slabs are a convincing demonstration of the unsatisfactory nature of a solution which involves a number of high long slabs laid out in parallel rows.

In between the groups of high flats are a series of four-storey blocks laid out on the same principle, and with somewhat similar effect. As these were all prefabricated, with a dull grey concrete finish, the effect was rather depressing. All the schools in this neighbourhood are, incidentally, of temporary timber construction.

"Another large municipal prefabricated scheme which is being built as a series of neighbourhoods is Zuidwijk in South Rotterdam, just to the south of a large planned park belt, and will consist when completed of some 6,000 dwellings. Here again careful attention has been paid to the community structure and to community

facilities. Most of the dwellings consist of two-storey terrace or semi-detached houses and three- or four-storey flats, with single-storey bungalows for old people interspersed throughout the scheme. I understand that it was intended to have a certain number of high blocks in the neighbourhoods, but that the sub-soil conditions were unsuitable. This was unfortunate, as the projects do lack vertical elements. So far, one sub-neighbourhood shopping centre has been completed with about 24 shops on the ground floor of a three- and four-storey block of flats, but it has not succeeded in giving the feeling of a centre. Too many of the blocks seem to have been laid out as though they were isolated buildings instead of components of building groups, which gives a somewhat unfortunate lack of spatial relationship between them. Add to this the fact that prefabricated systems of precast concrete with concrete

(Continued on page 634)

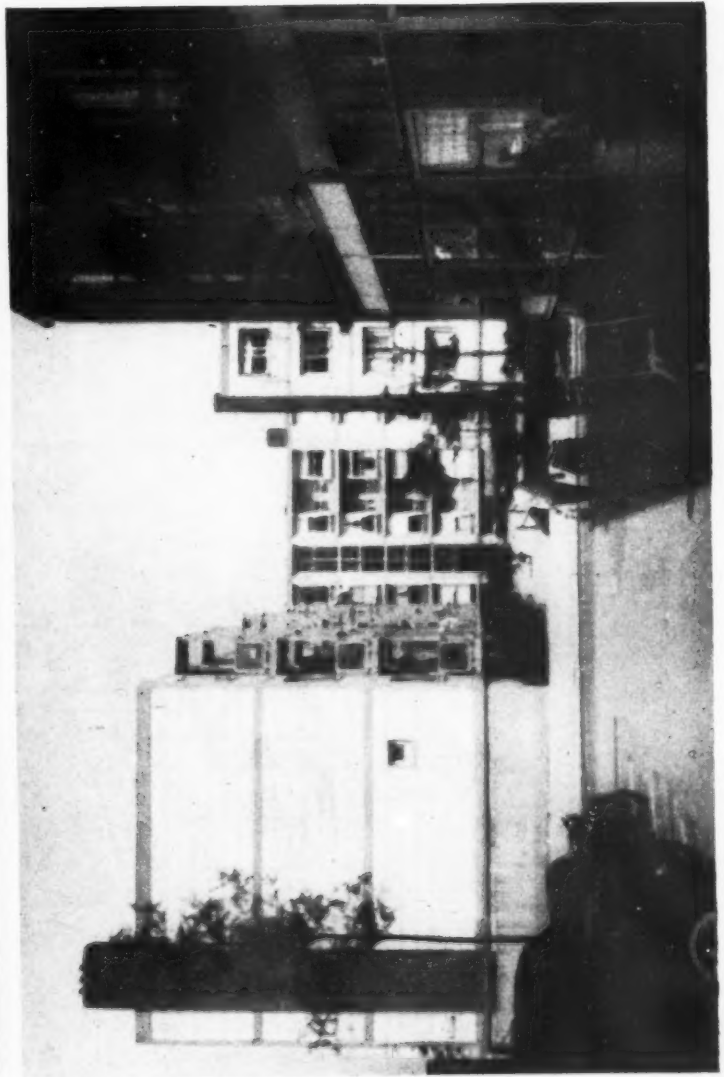


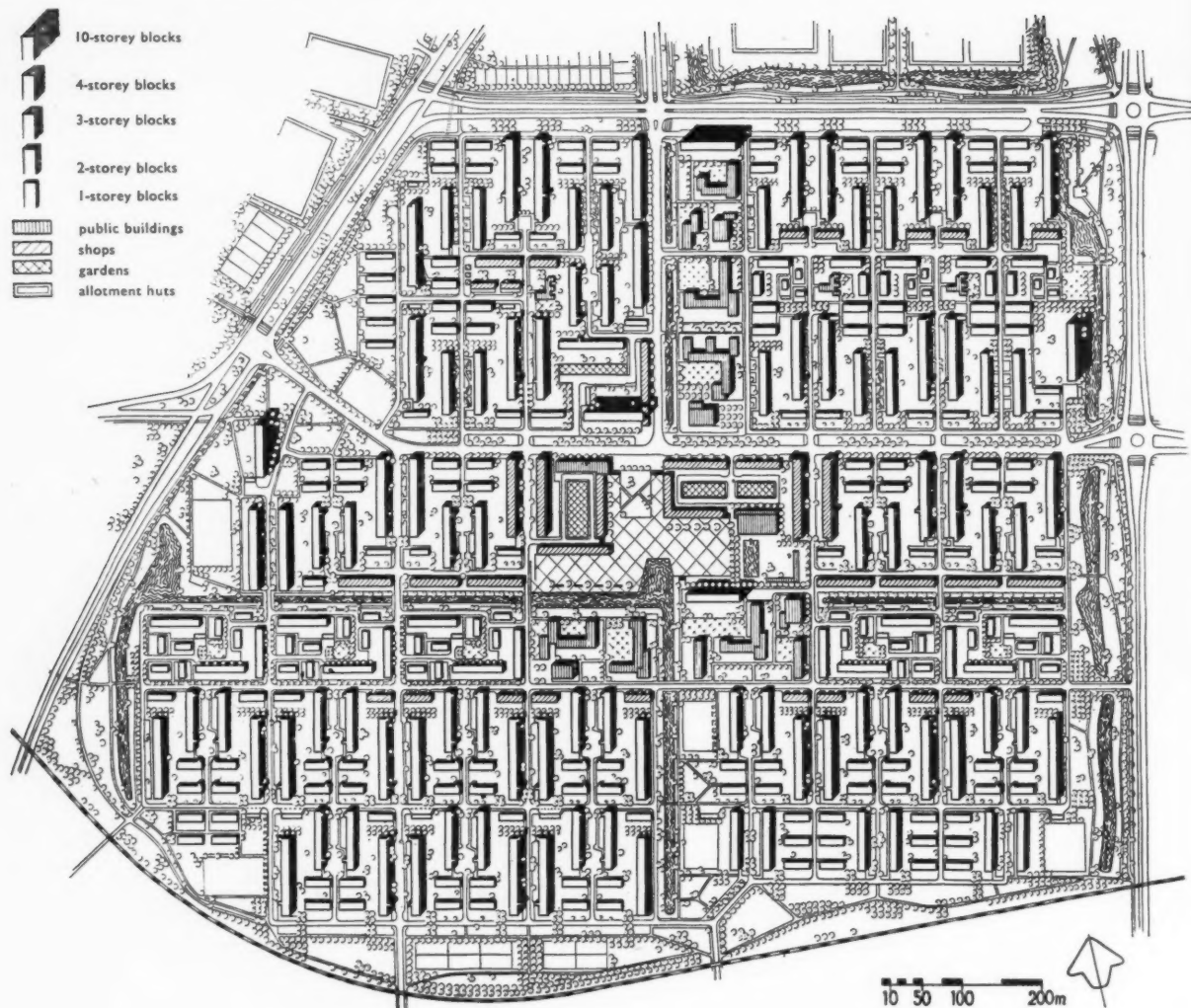
Above: layout of the Zuidwijk scheme, Rotterdam. On the opposite page are eight views of this scheme. Top left: a 4-storey block of flats with shops on the ground floor; on the right is one of the temporary schools. Bottom left: 3½- and 4½-storey block of flats. The scheme, which is almost

entirely prefabricated, was designed by Van Tijen and Maekant. Right, top to bottom: a shopping centre—the somewhat scattered nature of the centre is not very satisfactory; 2-storey terrace houses without front gardens; 2-storey semi-detached houses laid out in echelon, in this case without

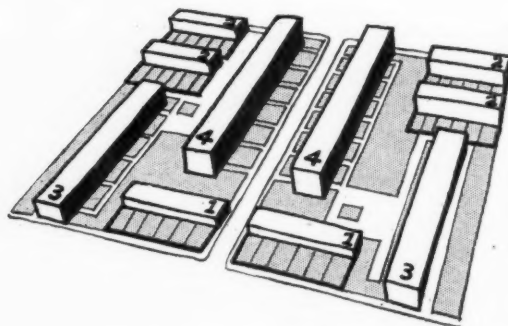
back gardens; a green way running through the scheme; old people's bungalows sited at the ends of 2-storey terraces; and a series of parallel terraces with open ends—this tends to give a dull and somewhat untidy effect.

right is one of the temporary schools. Bottom left: 3½- and 4½-storey block of flats. The scheme, which is almost semi-detached houses laid out in echelon, in this case without lory; 2-storey terrace houses without front gardens; 2-storey to give a dull and somewhat unity effect.





Layout of the Pendrecht scheme. Below: this unit is the root idea of the Pendrecht residential area. It consists of two 4 and two 3-storey blocks of flats, and two 2 and two 1-storey terraces of houses.



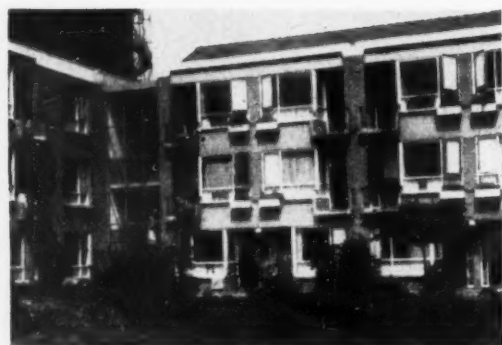
block facings have been used, and the total effect is rather depressing. Here again the landscaping has not had time to grow, but the provision of informal green ways running through the scheme is an excellent idea which can already be appreciated. There is, too, a general tidiness about the scheme as a whole, which, combined with the usual attention to detail, is very good.

Nearby, the Pendrecht scheme is being started. This has received a good deal of publicity owing to the fact that it has a basic unit consisting of 2 four-storey blocks and 2 three-storey blocks of flats, and 2 two- and 2 one-storey terraces of houses. Unfortunately the somewhat diagrammatic solution of this social unit has been repeated in interlocking form throughout the scheme—the old fault of building diagrams. Again, of course, high credit must be given to a carefully worked out system of community facilities. One other scheme is of particular interest to us. Before the war the Netherlands architects made several experiments including high blocks of flats as a foil to the predominant horizontality of their residential areas. The first was in the Nieuw Zuid quarter of Amsterdam as far back as 1917, and sited at the junction of three long wide boulevards. Later the Bergpolder and the



Two views of the Woongebouw Zuidplein, a 12-storey block of flats designed by Van Tijen and Maaskant which will form the dominant feature in a cultural centre for South Rotterdam. Built in 1949, the block consists of 72 2-bed-

room flats and 48 single-bedroom flats. Behind the block, in the top picture, can be seen some of the less successful examples of pre-war layouts, 3- and 4-storey blocks in long regimented rows.



Top left: flats and shops on the Zuidplein, Rotterdam; on the left is a 4-storey block of flats with ground floor shops, designed by Van der Broek and Bakema, which is part of the Zuidplein cultural centre for South Rotterdam, and on the right is the Woongebouw block. Above left: a corner of an old people's home designed by H. Bakker. The home is in the usual form of one-room flatlets and has two wings of

3 storeys and one of 2 storeys. It is well-equipped with club rooms and other communal facilities. Top right: flats on the Vredenoordlaan, Rotterdam. This well-designed municipal scheme, built in 1949 and designed by Van der Broek and Bakema, is part of the reconstruction of the blitzed centre of Rotterdam. Above right: shops with garages, masking the ends of 2-storey terrace houses at a scheme in south-east Amsterdam.

Kralingse Blaslaan blocks appeared in Rotterdam, and in 1949 the Woongebouw Zuidplein, similar in form and detailed planning (i.e., small flats with gallery access) was built as part of the South Rotterdam cultural sub-centre. It is a 12-storey block, designed by Van Tijen and Maaskant, and has 72 two-room and 48 one-room flats, a cafe-restaurant, and two shops. Although the design is rather heavy in appearance (an exposed concrete frame with brick infilling nearly always is), the block stands up well as a commanding feature among the predominantly four-storey surrounding development, and overlooks a broad and (what will be) leafy Place, around which is being built the cultural centre. So far a theatre designed by Van Ravesteijn, a church by Vermeer and Schmidt, and a block of flats for medical men with shops on the ground floor by Van den Broek and Bakema, have been completed.

Conclusions

To sum up; the Netherlands since the war have continued to take the great opportunities presented by the public ownership of most of the land to rebuild in a very successful and interesting way one major European city centre, and to develop a series of carefully planned communities instead of haphazard addi-

tions to their cities and towns. These new communities are based on an attempt to meet the diverse needs of family structure and economic differences, in addition to providing full community facilities and generous open spaces. They plan comprehensively, and have gone a long way economically, socially, and physically, to integrate housing into their broader city plans. Where they have not been quite so successful so far is in detailed layout design and building technique, both of which, as elsewhere, are still in an experimental state. Residential layout design is a long and complex task, and is not solved, as we have found, by concentrating on one or two aspects, such as achieving the optimum amount of sunlight in every living room, or by the repetitive diagrammatic expression of a number of social types. In building techniques, too, the change from craft to industrial production is in an early stage in most countries, and so far I cannot feel that the very serious attempts in the Netherlands at prefabrication have yet produced one really satisfying scheme in which consumer needs, space relationships, and building technique have all been harmoniously integrated—but, of course, this has not been done anywhere else.

(The author wishes to thank Rotterdam's Town Planning and Reconstruction Department, the Dutch Embassy and KLM Airlines for the help (including the loan of photographs) that they gave him in the preparation of this article and the one published in the JOURNAL on October 27.)



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WORKING DETAIL

SCREENS TO STAGE: SCHOOL AT PUTNEY

Powell and Moya, architects

MISCELLANEOUS: 9



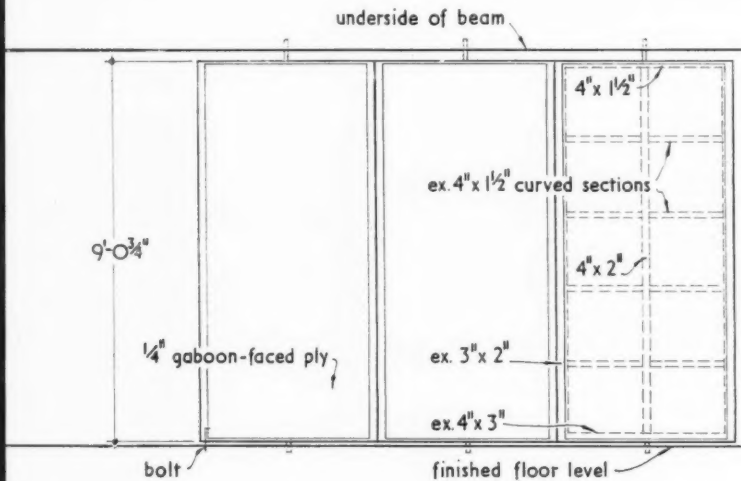
These screens have been designed to accommodate the all-purpose stage to several different uses. They can either be in line, when they form a continuous partition; they can be at right angles to this line, when they form traditional wings for theatrical shows; they can be fixed at an angle to act as directional sounding boards, either all at 45° or with the foremost screen tilted at 22·5° and the rearmost screen at 67·5° to reflect a single point source of sound towards the back of the room; lastly they can be lifted out and removed altogether.

WORKING DETAIL

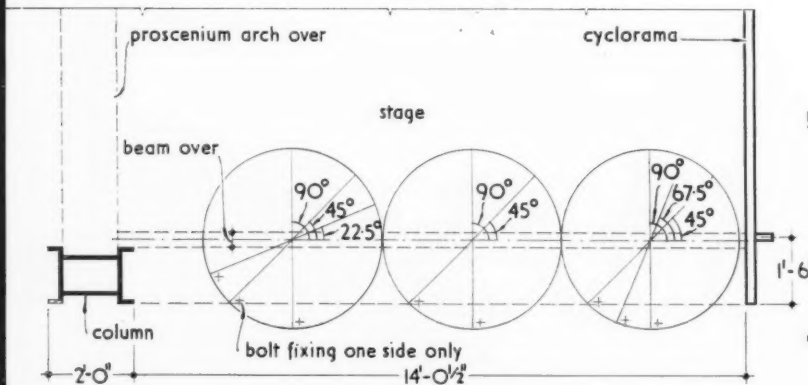
SCREENS TO STAGE: SCHOOL AT PUTNEY

Powell and Moya, architects

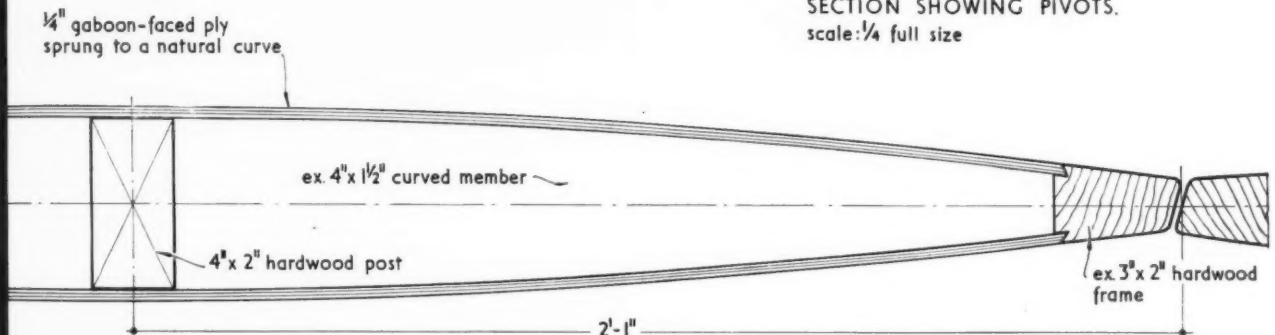
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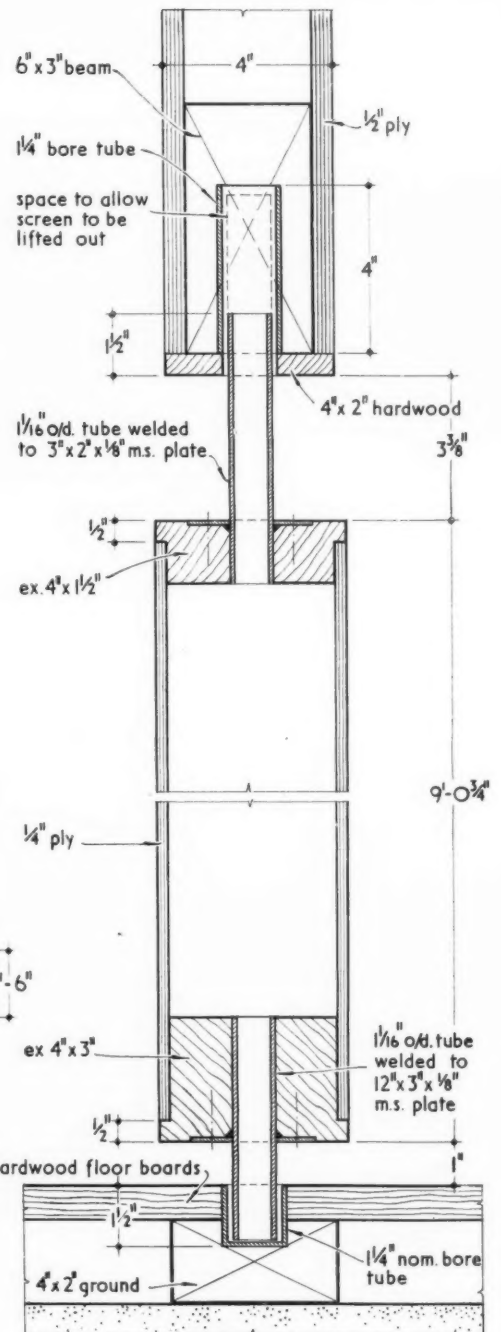
ELEVATION OF SCREEN. scale: 1/4" = 1'-0"



PLAN SHOWING BOLTING POSITIONS FOR SCREENS
scale: 1/4" = 1'-0"



PLAN THROUGH SCREEN scale: 1/4 full size



SECTION SHOWING PIVOTS.
scale: 1/4 full size

WORKING DETAIL

FURNITURE AND FITTINGS: 54

CLOAKROOM FITTINGS: SCHOOL AT HERNE BAY

Lyons, Israel and Ellis, architects, in collaboration with S. H. Loweth, architect to the Kent County Council



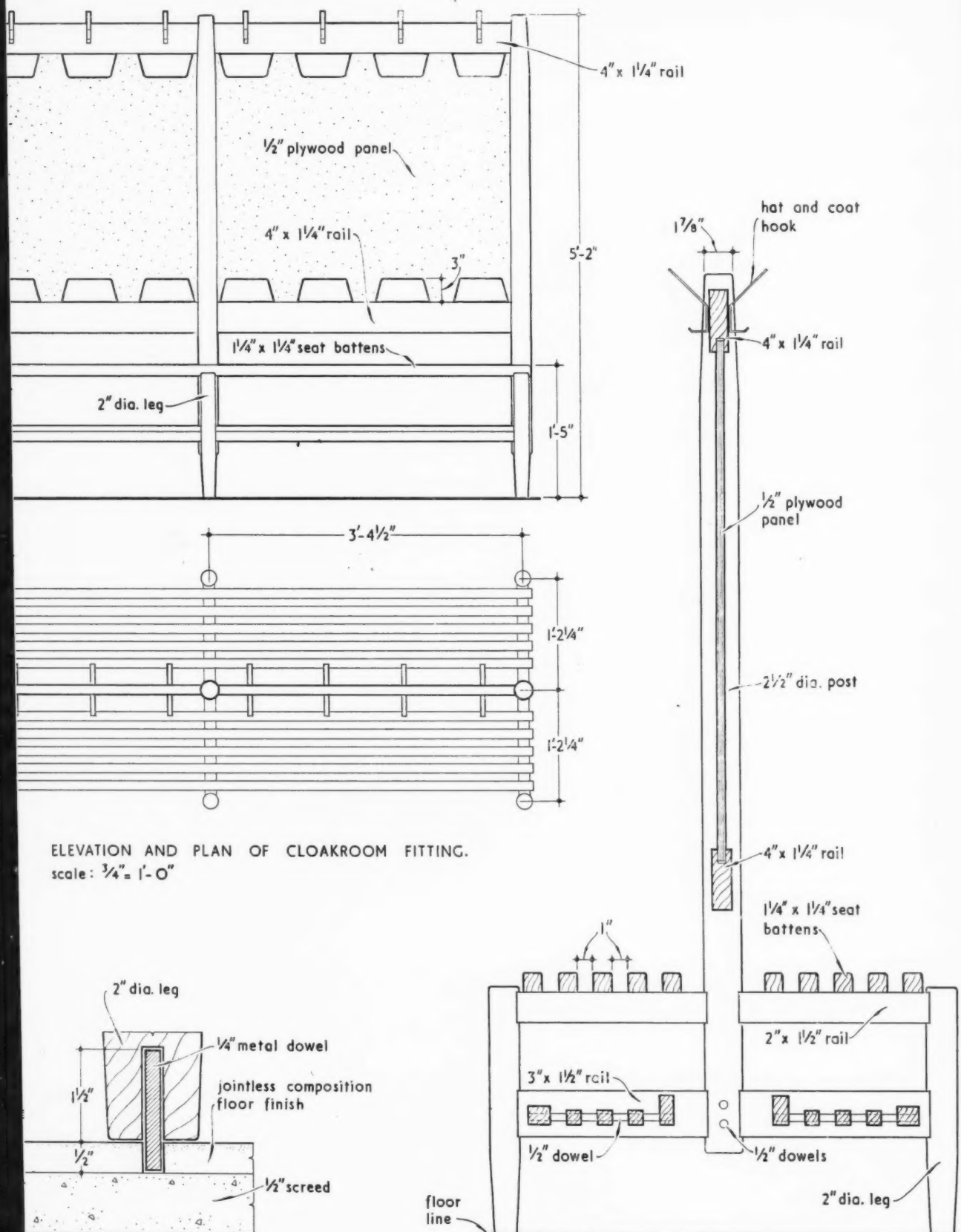
This timber version was designed because, at the time when this particular school was being built, the cost worked out at less than half the cheapest of the metal hanging units on the market. The dividing panels were inserted at the request of the client and the serrations were cut in them to remove an impression of heaviness.

WORKING DETAIL

FURNITURE AND FITTINGS: 54

CLOAKROOM FITTINGS: SCHOOL AT HERNE BAY

Lyons, Israel and Ellis, architects, in collaboration with S. H. Loweth, architect to the Kent County Council



ELEVATION AND PLAN OF CLOAKROOM FITTING.
scale: 3/4" = 1'-0"

SECTION THROUGH LEG SHOWING
FIXING. scale: 1/2" full size

VERTICAL SECTION THROUGH FITTING.
scale: 1 1/2" = 1'-0"

TECHNICAL SECTION

We take this opportunity of welcoming the new loose-leaf Building Handbook just published by BSI, which is to take the place of the bound Building Handbooks which have up to now been republished every two years. It is a handsome, serviceable quarto: the loose leaves are printed on strong paper, are clipped into an immensely stout binding and will surely stand up to the horny hand and the licked thumb on a building site. The idea, of course, is that new sheets are to be added and old sheets replaced from time to time without the need for complete new editions. This is the principle of our Information Sheets. As with them, it requires a rather heavy outlay at the start (the BSI binder and the sheets to date cost £3 10s.) and eternal vigilance (helped by regular announcements by BSI) to keep it up to date thereafter. As we have experienced, this system works—provided the consumers keep on their toes. But they should keep on their toes anyway.

This week's
special feature

20 CONSTRUCTION: COMPLETE STRUCTURES the LCC's Picton Street development

The number preceding the week's special article or survey indicates the appropriate subject heading of the Information Centre to which the article or survey belongs. The complete list of these headings is printed from time-to-time. To each survey is appended a list of recently-published and relevant Information Centre items. Further and earlier information can be found by referring to the index published free each year.

The great interest which attaches to the LCC's housing development at Picton Street (Architect to the Council, Dr. J. L. Martin) derives from the fact that the LCC have elected to use a nominated contractor. It is now two years since John Laing & Son Ltd. were nominated to carry out this work and the contract has now reached a stage where the parties concerned have felt justified in issuing a detailed Press statement on the work done so far. This week's article summarises this Press statement and adds to it such further information as we have been able to obtain.

The basic objection to the traditional system of tendering is, of course, that the architect who prepares the design cannot know beforehand what erection techniques the contractor will wish to use, and therefore cannot adjust his design to take these techniques into account. The practical difficulty of any departure from the traditional system is how to ensure that the price the client pays is

the lowest he need pay to get the building he wants. The first point to be noticed about this development therefore is that the LCC, which is the biggest employer of building labour in this country, should have been so far convinced of the basic objection to the traditional method to have sanctioned this experimental departure from it for a contract which amounts in value to about

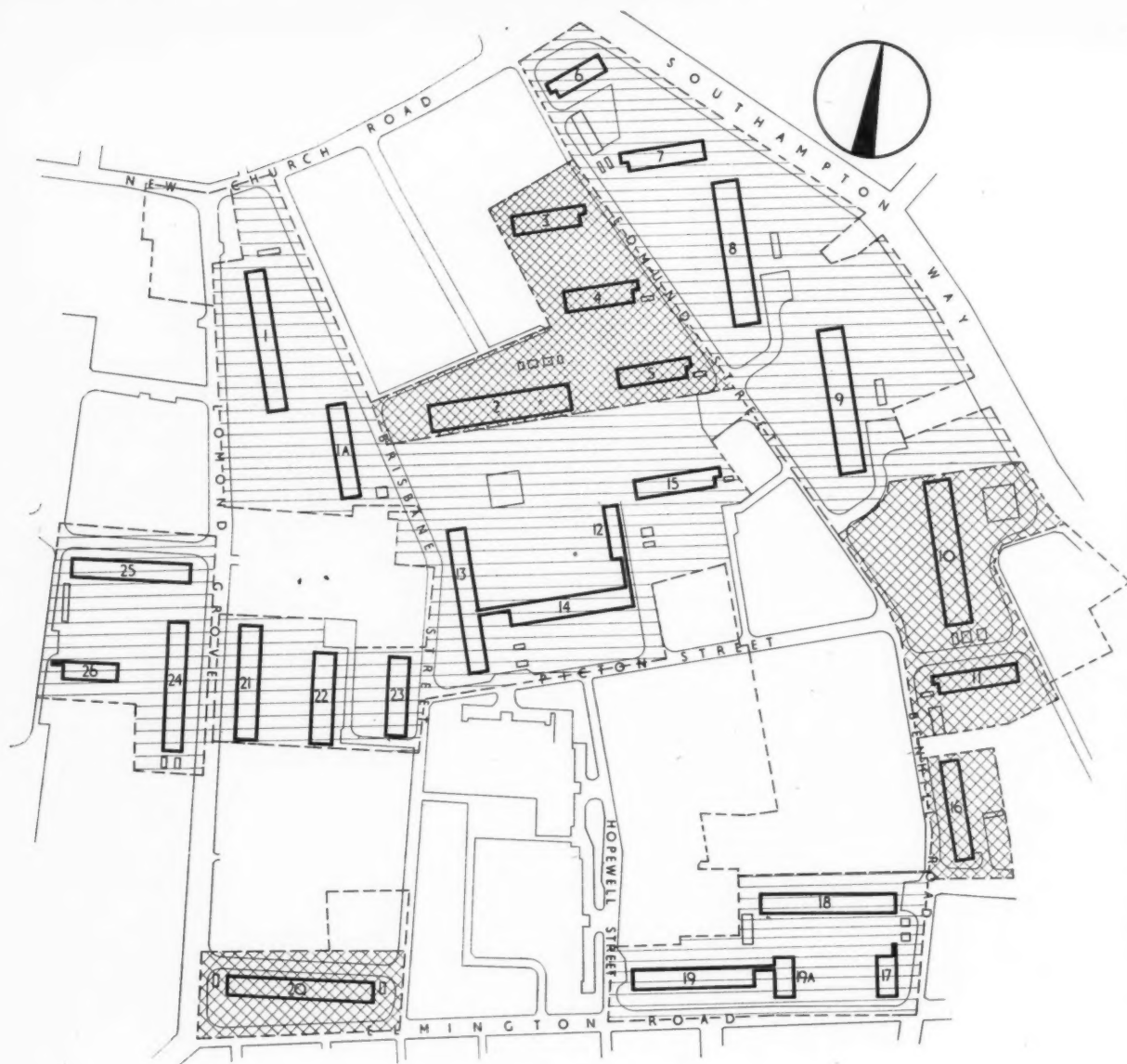


Fig. 1, Layout of the estate showing its division into Phase 1 (cross hatching) and phase 2 (single hatching).

£1,700,000. The second point is to notice the method the Council have used to give themselves the equivalent protection afforded by the older system.

Briefly the procedure is this. First the Council's architect prepares sketch designs and their quantity surveyor prepares an estimate of what the work should cost if it were built by traditional or previously used methods: this is the "target sum." Next, the Council's officers interview a number of contractors and, taking into account the nature of the work to be done and the resources each has at his disposal, choose one of them: whom, with his consent, they proceed to "nominate." The Council's architect, consulting engineer and quantity surveyor now go over the sketch plans together in detail and

modify the scheme to take into account the erection techniques the contractor proposes to use. Working drawings and specifications are then prepared in full consultation with the builder. Bills are now prepared for the modified scheme and the contractor and also the Council's quantity surveyor, price them to make sure that the final designs are reasonably related to the original target sum. The contractor now agrees this target sum as the maximum amount (subject to certain defined variations regarding wage rates and materials prices) the Council will pay. It is agreed also that savings on this figure are to be shared between the contractor and the Council. Final payments are to be made on a basis of actual costs, plus a fixed percentage for overheads and profits, although

for the purpose of convenience only and to allow checks to be made between actual cost and estimates, interim payments are made in valuations from the bills. This method has the advantage that it guards the London ratepayers against paying more than they might expect if orthodox tendering and relatively orthodox methods of construction were used; and while giving the contractor a fair incentive, it secures for the ratepayers a part share in the fruits of technical advance.

THE SCHEME

The housing site at Picton Street has an area of 17.9 acres and was acquired mainly under Part III of the Housing Act, 1936, as a "clearance area," being at that time

largely occupied by unfit and dilapidated houses. The area was acquired piecemeal and the scheme therefore relates to a site of very irregular outline with small pockets of development separated from the main area by existing residential and industrial buildings. The ground hereabouts is fairly level and most of the existing road pattern has been retained. The commencement of work on successive portions of the site had to be timed to accord with a rather complicated programme of acquisition spread over some two years.

The scheme provides for the construction of 682 dwellings: 320 in four 11-storey maisonette blocks, 295 in 16 four-storey maisonettes, 42 in three-storey balcony access flats and the remainder (25) in terrace houses. This gives a total density of 38 dwellings to the acre. There will also be a small number of shops, a club room, minor ancillary buildings and children's play spaces.

As a precautionary measure, the contract was divided into two phases. The phase I now in progress, which is shown cross-hatched on plan in Fig. 1, comprises 250 dwellings, and phase II, shown single-hatched, comprises 432 dwellings. The purpose of this division was to give both parties the chance to withdraw in mid-contract if they so wished. The fact that they have now both committed themselves to phase II is evidence of the success of the scheme to date.

THE DESIGN TEAM

John Laing & Sons were nominated to the job some 14 months before the commencement of the work on site. Their representatives then joined the design team, which included representatives not only of the architects department and of the engineer, Ove Arup and Partners, but of the Building Research Station. The LCC's architects chiefly concerned with the job were Dr. J. L. Martin, Architect to the Council, J. Whitfield Lewis and M. Powell, Principal and Assistant Principal Housing Architects respectively and A. W. Cleeve Barr, Senior Architect in Charge.

THE CHOICE OF CONSTRUCTIONAL METHOD

Of the buildings in phase I, only one of the 11-storey blocks and three of the four-storey blocks have so far been begun, and these alone therefore form the subject matter of this description. Before their construction was decided, alternative designs were prepared for most components of both building types and these were costed independently by the quantity surveyor member

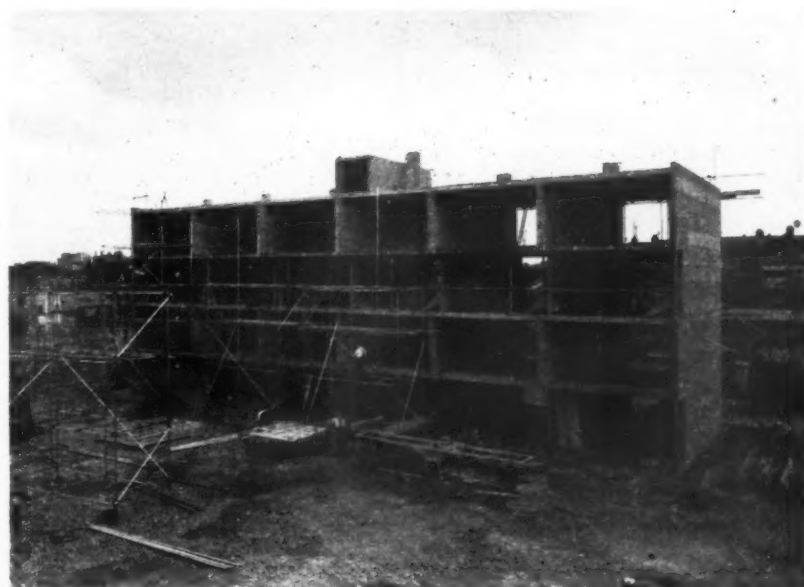
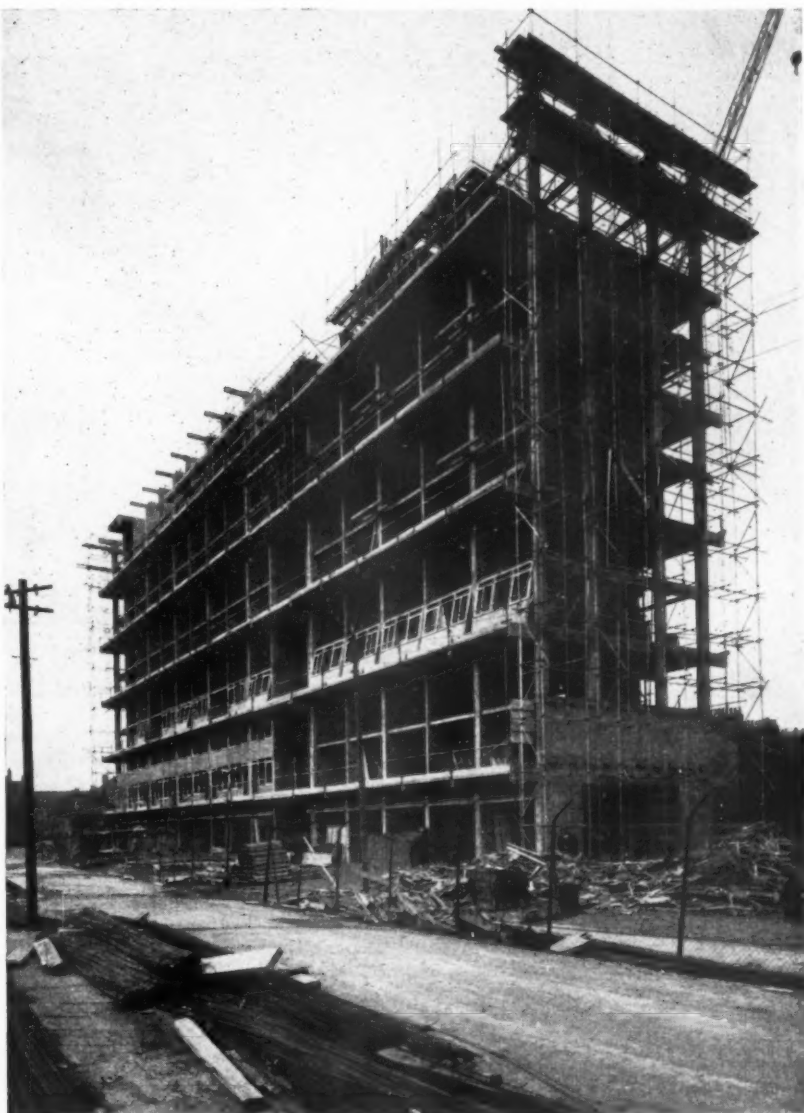


Fig. 2 (above right). Progress photograph of the most advanced 11-storey block taken from the private balcony side. Fig. 3 (right). Progress photograph of a 4-storey block.

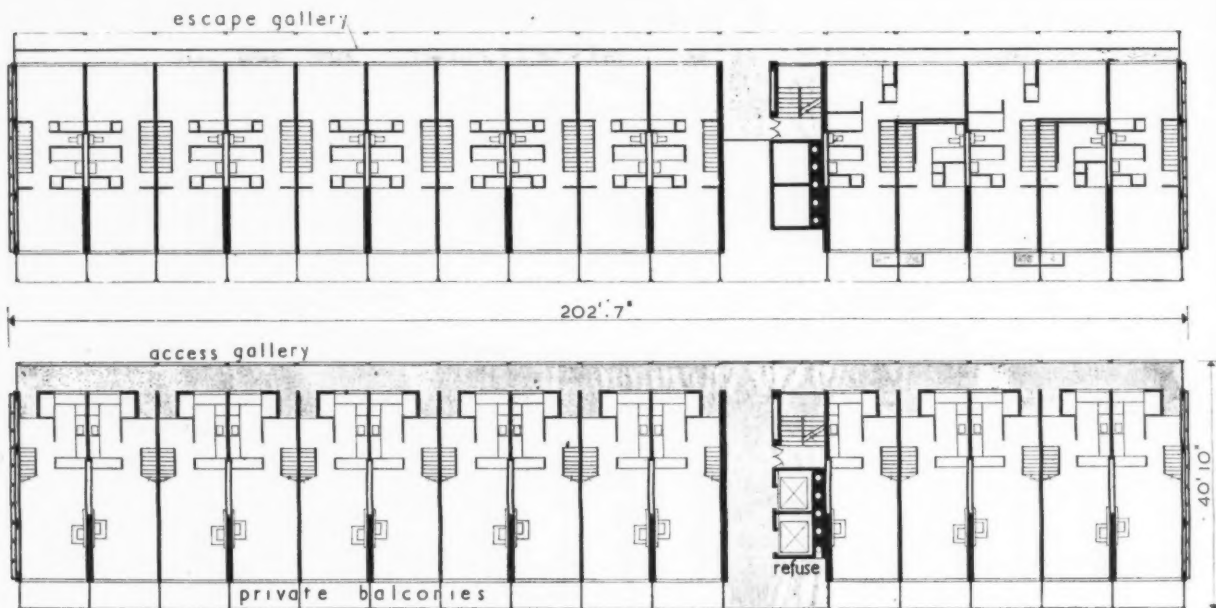


Fig. 4. Typical plans of 11-storey block. Above, plan of bedroom floor; below, plan of ground floor.

of the architects' team, by the contractor's staff and by the BRS surveyors, and the conclusions were based on their joint findings. The first element to be investigated in this way was the structure itself, the engineers preparing a series of schemes using column and beam frames, and, alternatively concrete cross-wall "box-frames," both alternatives being considered with *in-situ*, fully pre-cast or with a combination of *in-situ* and pre-cast units, and all combinations being considered with concrete and timber intermediate floors. One brain-child of Ove Arup, a fully pre-cast "box-frame" system, with two-storey height, ladder-like, interlocking units for the walls, was abandoned with great reluctance on grounds of economics and the heavy cost of prototypes involved. The most promising of the structural solutions were investigated in terms of the daily number of lifts for the crane, and from the point of view of the employment of a tower crane or of light cranes rising with the building.

MAIN STRUCTURE

The method finally chosen for the main structure was that of concrete cross walls. These are 7 in. thick and unreinforced for the four-storey blocks (concrete 2,250 lb./sq. in. after 28 days); and alternating walls 7 in. thick unreinforced and 14 in. thick reinforced (to contain ducts and flues) in the 11-storey blocks (concrete 3,000 lb./sq. in. after 28 days). The unreinforced walls represent an interesting economy and have been allowed experimentally under Part IV of the Building Act. Main floors separating maisonettes are precast concrete, while the intermediate floors are of prefabricated timber frames. It is interesting to notice here that it was found more economical to use *in-situ* concrete for the walls rather than the precast

units which the architects, in their desire to eliminate wet trades, would have otherwise preferred. The economics of this were to some extent influenced also by the use of crane-handled shuttering units in one piece, storey height by full building width, by the decision to omit reinforcement in alternate walls, and by the decision to attempt to eliminate two-coat plaster as a wall finish.

The choice of floor structure was made only after a number of different designs had been considered, including *in-situ* concrete and timber, with and without beams. Towards the end of the design period the contractors

set up a mock-up of a maisonnette of the 11-storey block type at their research department at Boreham Wood in order to test the handling of the components and to test also the possible use of a precast floor slab which would have a sufficiently good finish on the underside to allow the omission of plaster.

SEQUENCE OF OPERATIONS

Since the choice of hoisting equipment was a decisive factor in the architectural detailing, special interest attaches to the sequence of operations in erecting the main structural components. As explained above, the structural cross walls in the 11-storey block are

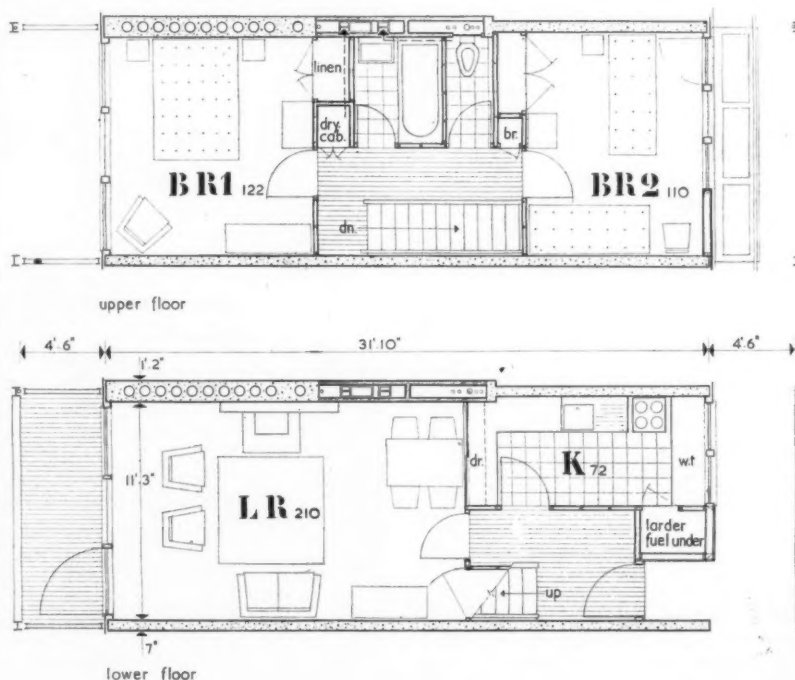
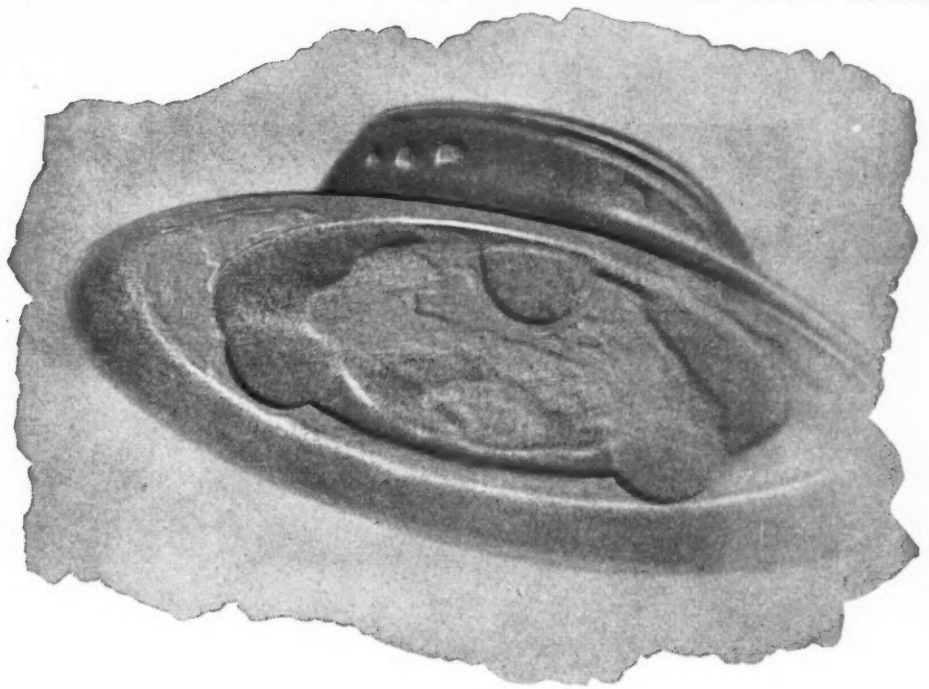


Fig. 5. Typical plans of a three-room maisonette in the 11-storey block.



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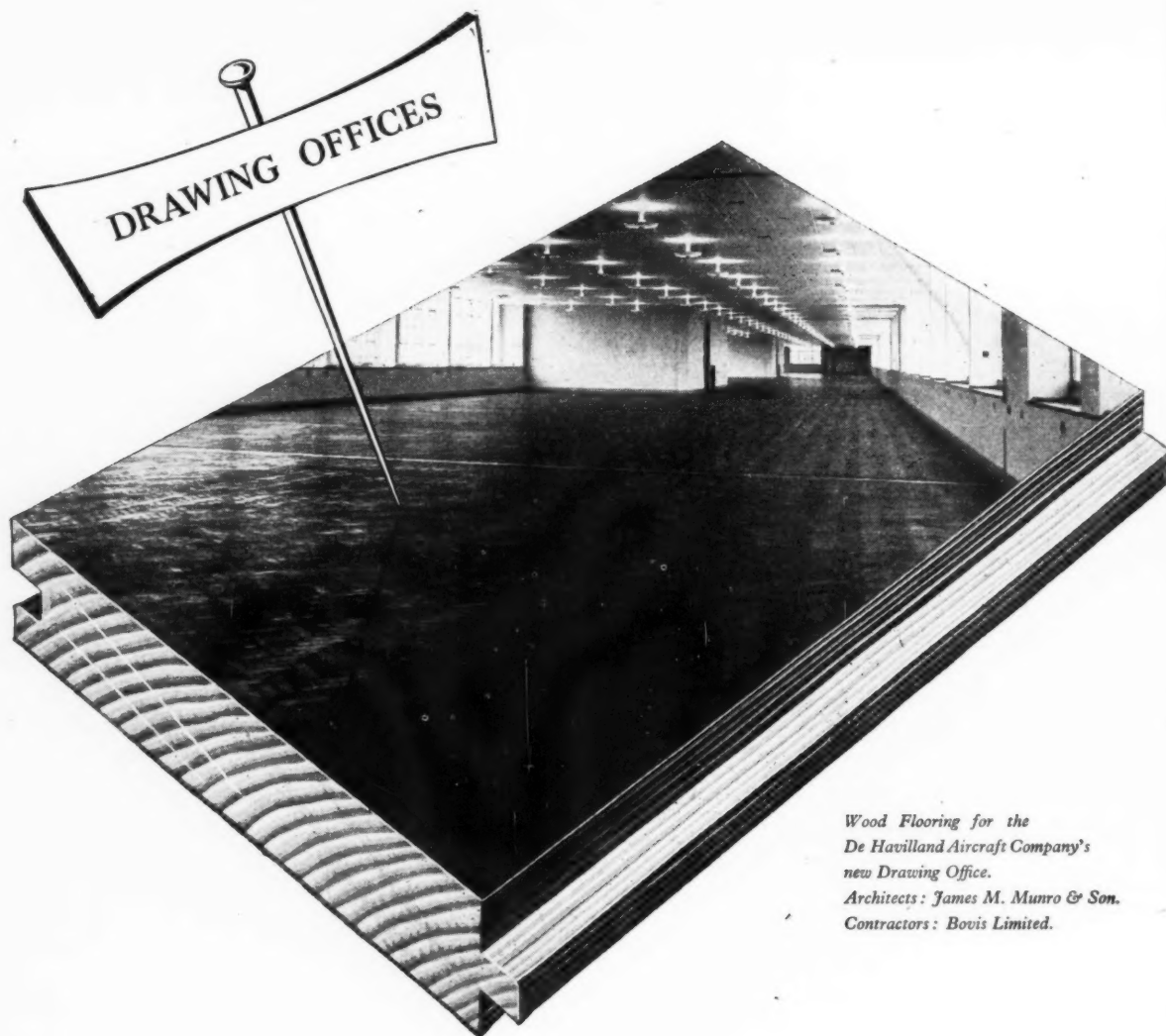
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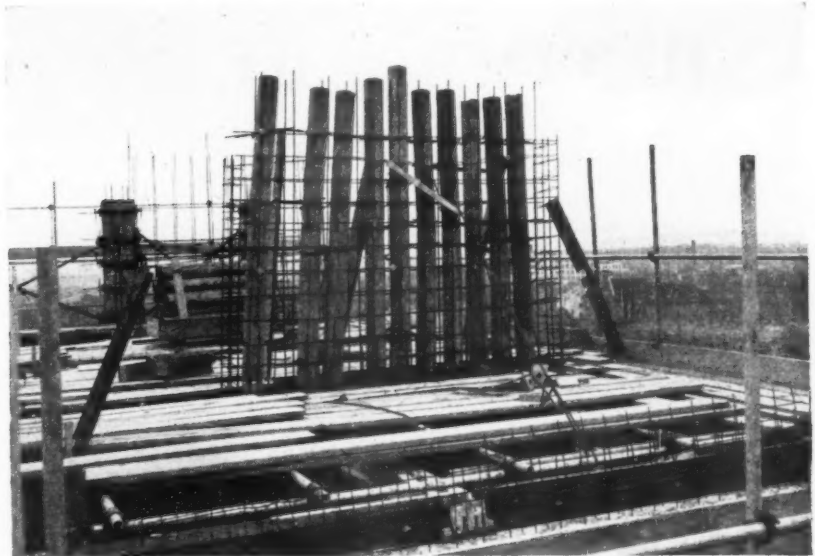
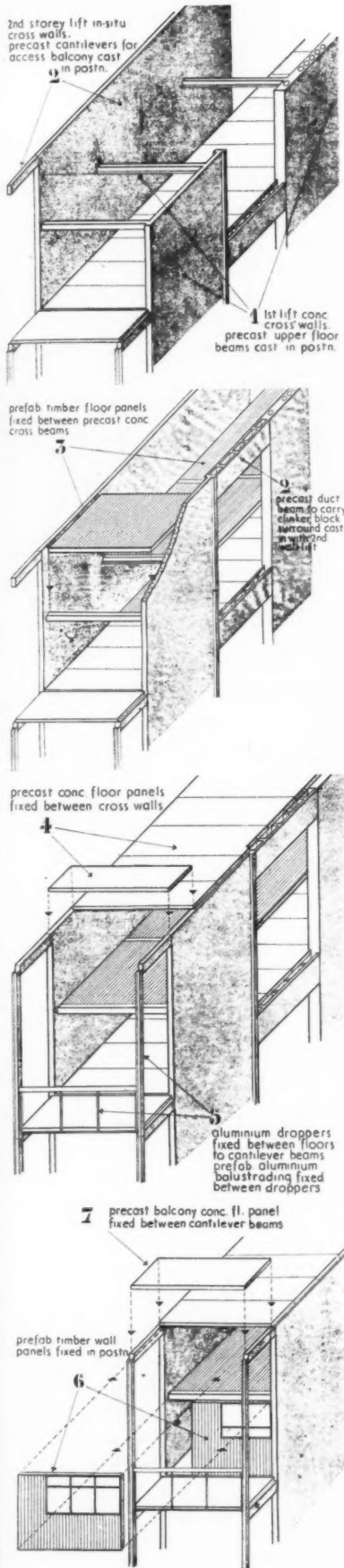
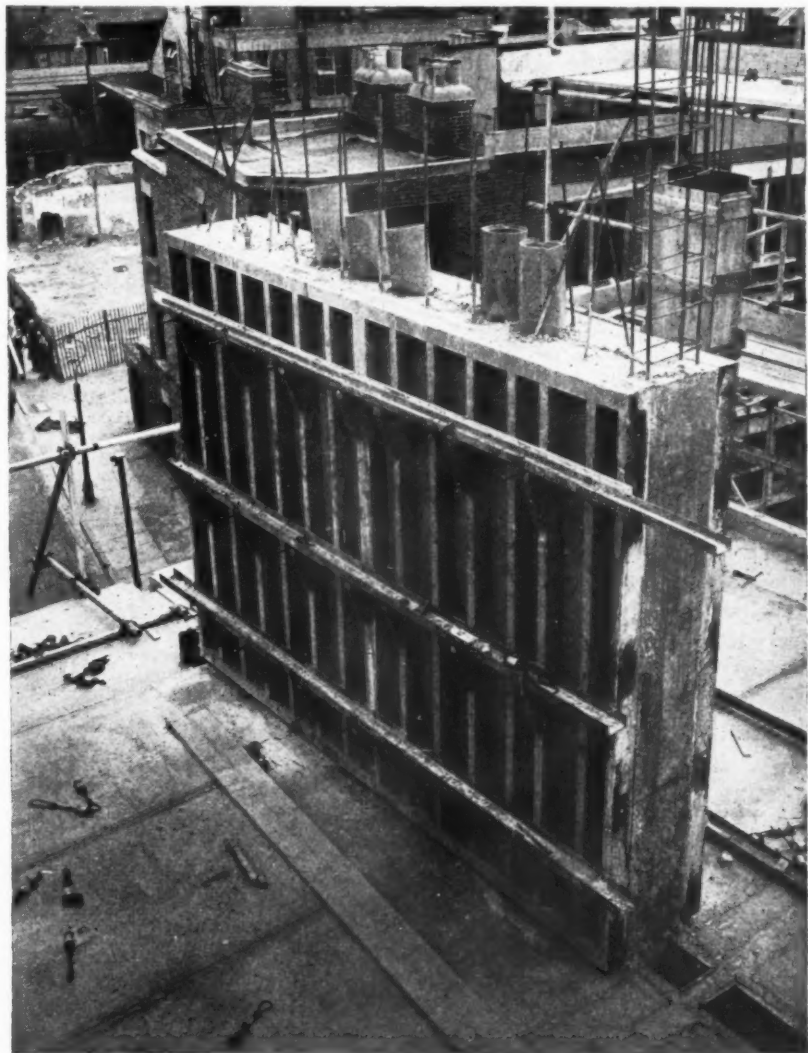


Fig. 6 (left). Diagrams illustrating the erection sequence of the structure enclosing one maisonette in the 11-storey block. Fig. 7 (above). Flue linings

placed in position, ready for shuttering. Fig. 8 (below). Wall containing flues prior to the removal of shuttering.



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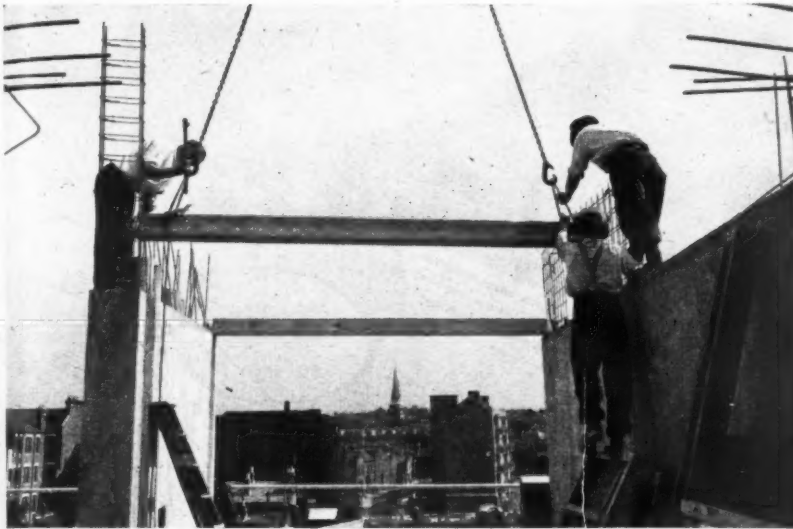


Fig. 9. Placing precast beams to receive timber floors. Holes in beams are for electrical wiring.

of two kinds: a 7-in. unreinforced concrete wall and a reinforced 14-in. wall. In the latter (which, in fact, only maintains the greater thickness through about two-thirds of its length) are cast all flues and ducts. The first sequence of lifts (see Fig. 6) carries both of these walls up one storey high, the precast flues (see Figs. 7 and 8)

and the upper floor beams being cast in position. It will be noticed that though the 7-in. wall is generally unreinforced, a square of mesh reinforcement is introduced round the bearing of the floor beams. The second sequence carries the walls up a storey higher. The precast cantilevers sup-

porting the access balcony and a precast "duct beam" (see Fig. 11 and description below under "ducts and flues") are cast in. The third sequence brings the prefabricated floors, each unit of which covers the full width between cross walls and spans from beam to beam.

The fourth sequence brings the precast floor panels which separate the maisonette from that above. These span between cross walls and are each 4 ft. 6 in. across. The fifth sequence brings the aluminium supports (or "droppers") and framing of the balconies. The sixth sequence brings the external panel wall and the seventh and last the concrete floor panels to the balconies.

PANELS AND PARTITIONS

The cost target for the lightweight external wall panels was that of traditional brick-cavity clinker panels, allowance being made for the cost of supporting beams and of the added cube of roof and foundations caused by the increased wall thickness. Matt-finished vitreous enamel panels were tried but were abandoned on account of cost, and the final choice was storey-high timber frames faced with teak boarding on the 11-

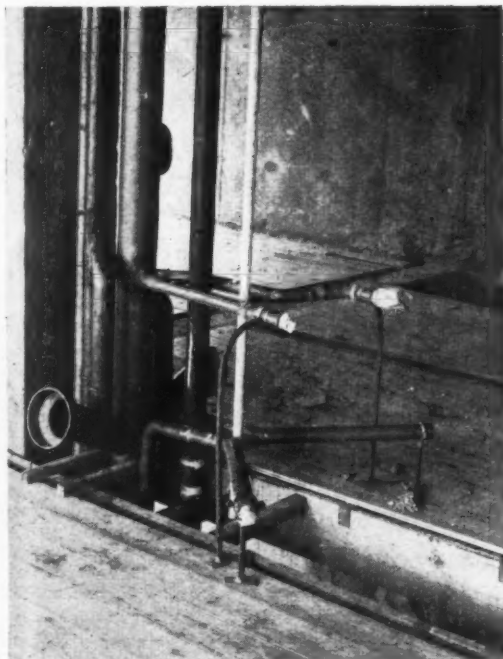


Fig. 10 (above). Plumbing at bathroom level in 11-storey block, with connections for back-to-back w.c., bath and basin. From left to right: rising main, vent pipe, soil stack, gas main and cold water supply. The supporting brackets are temporary, holding the branches in position pending the fixing of equipment. Note "push fit" sockets.

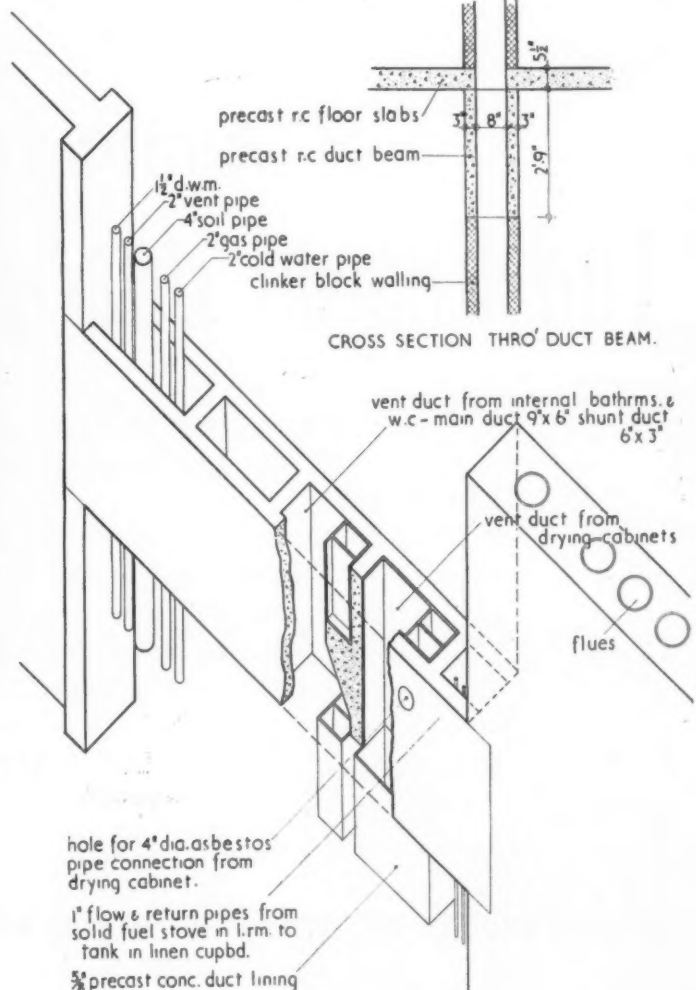
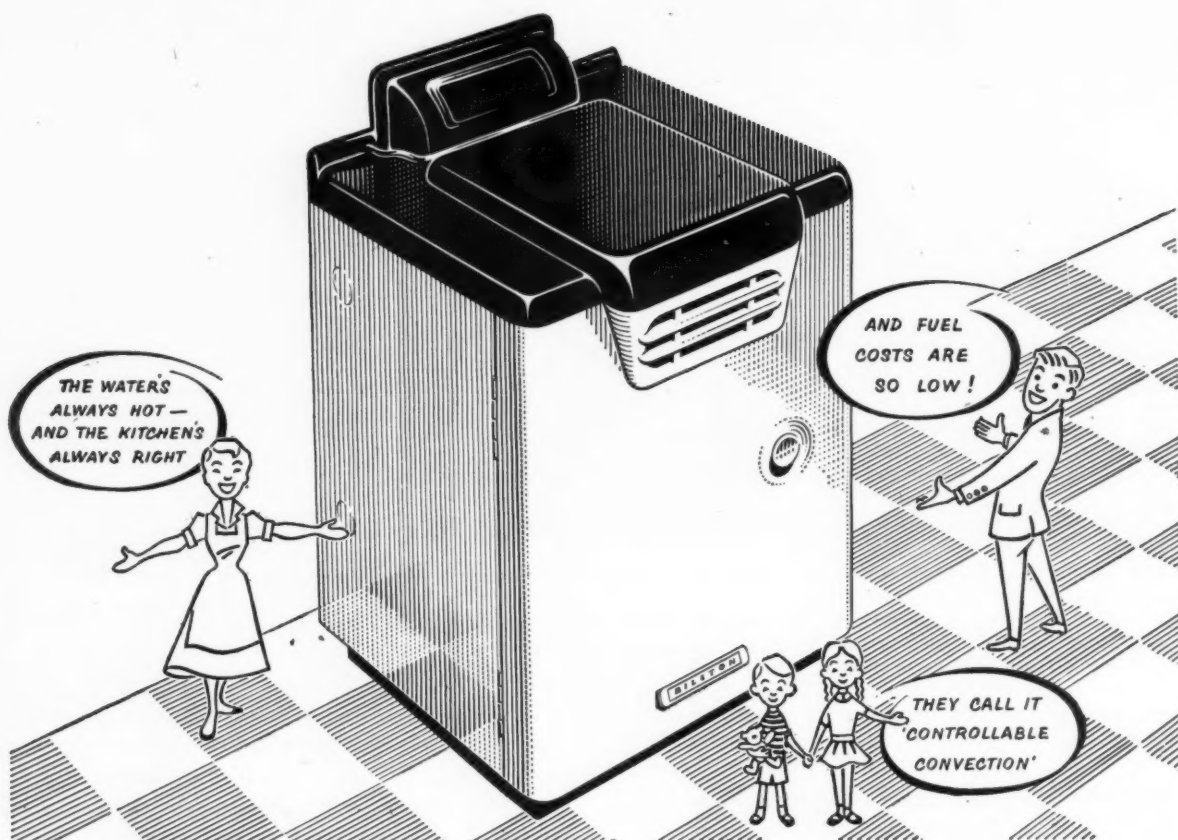


Fig. 11 (right). Axonometric diagram and section through duct beam.



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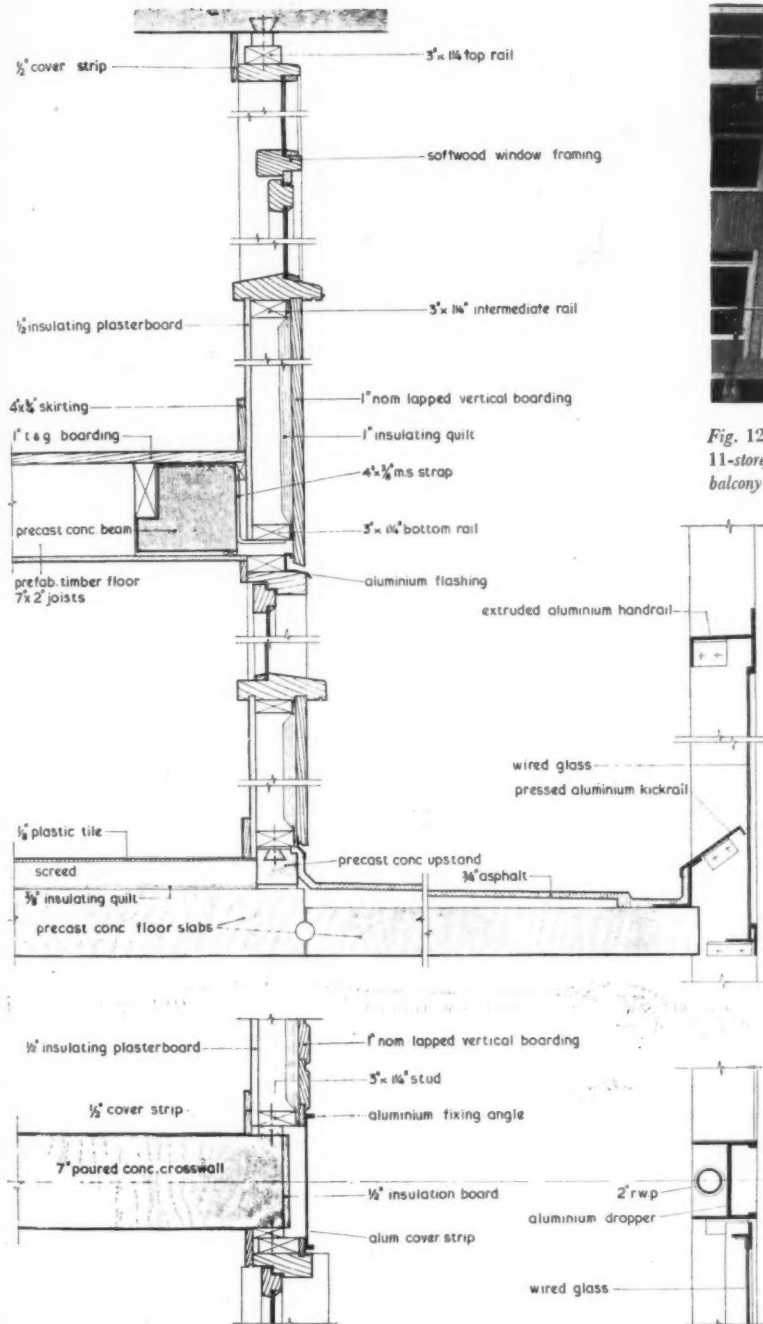


Fig. 12 (left). Details of external panels on access balcony side of 11-storey block. Fig. 13 (above). External panels on private balcony side of 11-storey block.

system in copper. An interesting feature is a new kind of "push fit" spigot and socket joint which uses a neoprene ring (see Fig. 10). This results in a great saving of plumbers' time and very rapid installation. In the 4-storey blocks with non-handed dwellings it was found that a cast iron system was the most economical.

FLUES AND DUCTS

The various flues and ducts, particularly in the 11-storey block, are of unusual technical interest. There are four different classes: chimney flues (for, surprisingly enough, heating is by individual openable slow combustion stoves), ventilation ducts for internal bathrooms and w.c.s, ventilation ducts for individual gas-heated drying cabinets and refuse chutes. The chimney flues are designed on the branched flue principle (see the article on this subject in the AJ for April 28, 1955), the precast linings being cast into the structural walls. Separate mechanical extract systems have to be provided for the bathrooms and w.c.s on the one hand and for drying cabinets on the other, since the latter require a far higher extraction rate. These ducts are likewise formed in the structural walls in straight vertical runs with special precast "duct beams" which run directly below each floor level and have the junctions between

storey blocks and with sheet aluminium over asbestos insulation board on the 4-storey blocks. Whereas in the former the external cladding is shielded by the fire-resisting balcony floors, in the latter it is not. A detail of interest in both is that the facing material (with certain limited exceptions) covers the softwood framing instead of being fixed into a frame with glazing bars, an expedient which saves maintenance in painting the frames.

BALCONIES

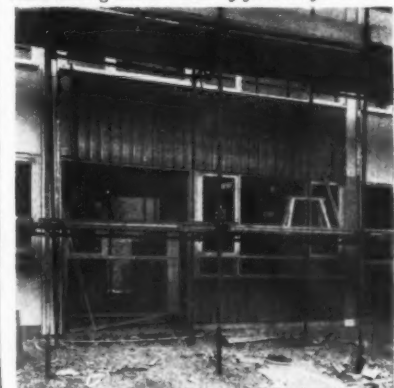
Quotations were obtained for forming the main structural members of the balconies of the 11-storey block in galvanized steel, but aluminium was chosen, partly because it was cheaper but also because it was

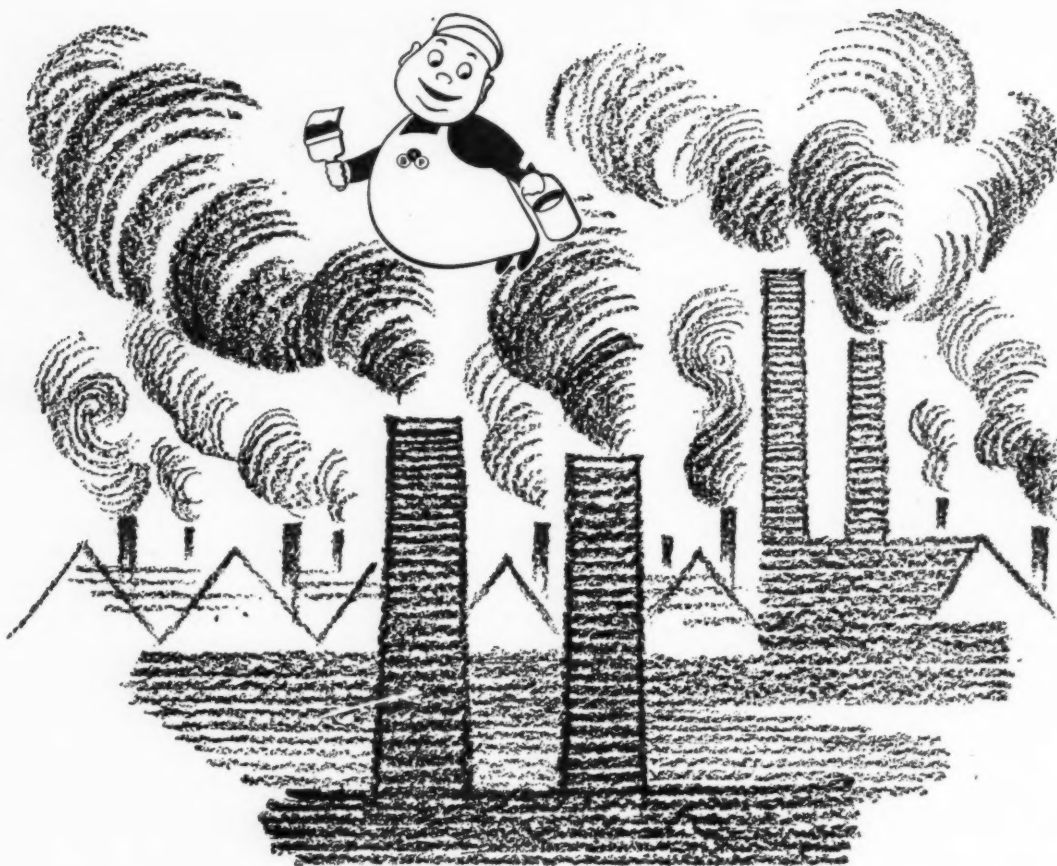
desired to reduce the weight at the ends of the cantilevers. The pipes carrying rain-water from the balconies run inside these uprights. For the balcony fronts, wired glass set in aluminium frames was chosen as being the cheapest acceptable finish to be had at the time.

PLUMBING

The plumbing was considered in terms of copper, cast-iron and galvanized steel, and quotations were obtained for comparable systems in each. The plumbing system is a modified version of the "single stack" with vents to w.c. fittings only. It was found that in the 11-storey block with back-to-back maisonettes, the greater complexity of the installation favoured a prefabricated

Fig. 14. Aluminium sheeting with asbestos insulation board backing external walls of four-storey blocks.





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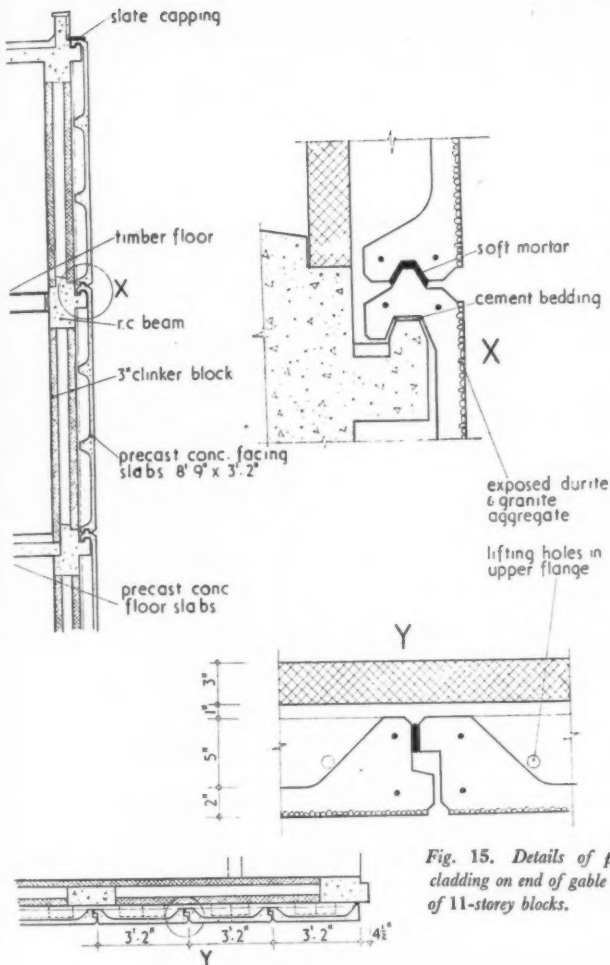


Fig. 15. Details of precast cladding on end of gable walls of 11-storey blocks.

branches and main stacks formed within them (see Fig. 11). This device allows the remainder of the duct walls to be built in ordinary clinker blocks.

Lastly there are the refuse chutes, which are precast in long lengths of circular cross section and are mostly cast in at a slight angle to the vertical. They are sited in a massive block of reinforced concrete walling at the back of the lift shaft, which, from the structural point of view, is designed to resist most of the longitudinal stresses due to wind loads.

SOUND INSULATION AND ROOF FINISH

For sound insulation purposes the floor finish to the main concrete floors separating maisonettes is "floated" on an insulating rock or glass wool quilt. Given this quilting it was found that tongued and grooved boarding, on timber battens, was as cheap as thermoplastic tiles on screed. As the former is better from the point of view of sound reduction, speedier to lay and permits the use of TRS electrical wiring in lieu of conduit, it was adopted except in kitchens and bathrooms, etc.

The roof finish consists of three-layer bitumen felt, with white stone chippings laid over three inches of lightweight screed (35 lb. per ft. cube). Expansion joints are provided in the 11-storey blocks at three points

only and are formed by dividing the top three feet of the cross walls into two reinforced concrete leaves separated by $\frac{1}{2}$ in. thickness of fibreboard.

GABLE END WALLS

One more element to be the subject of alternative designs was the gable end wall. For this, a solid in situ concrete wall was rejected because experience has shown that it is liable to give trouble due to thermal movement, and drying shrinkage, and because of the difficulties associated with providing insulation and with waterproofing the joints of facing slabs. The method chosen is to frame the gable end with beams and columns and to clad with storey-height precast concrete slabs faced with an exposed aggregate finish. Behind this is a cavity and an internal lining of insulating blocks. Pulverized fuel ash blocks are used throughout the scheme wherever thermal insulation is required for external concrete walls.

CONCLUSION

The LCC, in their recent statement to the

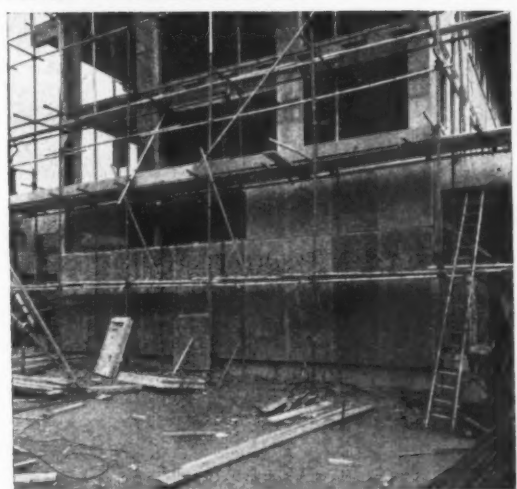


Fig. 16 (top). Cladding slabs for gable ends stacked on the site. The stiffening ribs on the back are shaped to reduce risk of cracking and to minimise dripping and splashing of any moisture which may find its way in. Fig. 17 (above). Cladding slabs being fixed to gable wall.

press, make it clear that they are not contemplating the major adoption of the principle of nominated contractors, but that they have sanctioned this particular application of it as an experiment and with a view to gaining knowledge of building technique. It seems that this limited end has been achieved, for much of the information on the relative cost of different methods is of general validity and can be applied to other jobs carried out by traditional tendering procedure. But though useful, this is a limited end. The fact remains that the contractor's advice on erection techniques is too valuable for a building client to be able to afford to disregard it until it is too late for him to profit by it.

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Announcements PROFESSIONAL

Messrs. Barnes, Challen & Cross, L.R.I.B.A., F.R.I.B.A., A.M.I.STRUCT.E., have acquired the practice of the late Arthur H. Russell, of 9, Duke Street Hill, London Bridge, S.E.1. The whole of the business is now transferred to 96, Gloucester Place, W.1. (telephone number Welbeck 0297), in the sole name of Barnes, Challen & Cross.

The partnership between C. B. Martindale, F.R.I.B.A., and F. G. Jackson, A.R.I.B.A., known as Martindale & Jackson, has been dissolved by mutual consent. C. B. Martindale will practice at Cathedral Chambers, Castle Street, Carlisle, and F. G. Jackson at Lowther Arcade Chambers, Lowther Street, Carlisle.

W. H. Saunders & Son, L.R.I.B.A., Architects and Surveyors, have transferred their Gosport Office to 133, High Street, Gosport. (Tel.: 88071.)

Geoffrey A. Rowe, A.R.I.B.A., has moved to Little Breton, Kirkburton, Nr. Huddersfield. (Tel.: Kirkburton 370.) He will continue to practice with Messrs. Abbey & Hanson at 11, Cloth Hall Street, Huddersfield, and 11, Wyle Cop, Shrewsbury.

J. S. Gibson & Gordon, F./F.R.I.B.A., have taken into partnership Adrian A. Montagu, F.R.I.B.A. They will practice under the name of J. S. Gibson, Gordon & Montagu, from their present address, 2, Devonshire Terrace, Marylebone Road, W.1.

The firm of Jackson & Fox, architects, structural engineers, surveyors and valuers, 1, Harrison Road, Halifax, has been taken over by Richard H. Pickles, A.R.I.B.A., and will continue under his direction from the present address.

C. L. Lister, A.R.I.B.A., is now practising from 64, Bethel Street, Norwich (Tel.: Norwich 23751), and will be pleased to receive trade catalogues.

Alan S. Raimes, A.R.I.B.A., has commenced practice at Terminus Chambers, 6, Holborn Viaduct, London, E.C.1. (Tel.: CITY 4201.) He will be pleased to receive trade catalogues.

Mr. John W. Poltock, A.R.I.B.A., of Gable End, Loose, Maidstone, Kent, is re-opening his office at 29, Sackville Street, Piccadilly, W.1, where he will be pleased to receive trade catalogues.

Projektivni Biro, Radovljica, Slovenia, Yugoslavia, has returned to Yugoslavia and would like any literature to be sent to the above address.

The Royal Fine Art Commission have moved to 5, Old Palace Yard, London, S.W.1. Telephone number: WHIttehall 3935.

Sir Hugh Casson, R.D.I., M.A., F.R.I.B.A., and Mr. Neville Conder, A.R.I.B.A., have moved to 35, Thurloe Place, S.W.7. Telephone number: KNightsbridge 4581.

Norman Thomas, A.M.I.C.E., A.M.I.STRUCT.E., has established a practice as a Consulting Engineer specializing in steel work and reinforced concrete at 148, Moor Lane, Woodford, Bramhall, Cheshire, and will be pleased to receive trade catalogues.

Eric W. Hall, A.R.I.B.A., A.A.D.I.P., has commenced practice at Rock House, Calton Hill, Edinburgh. Telephone number: WAVErley 7692.

The Partnership between Architects' Co-partnership and W. J. G. Godwin, A.R.I.B.A., who has been responsible for the Lagos practice, has been dissolved by mutual consent. Architects' Co-partnership will continue to practice from 1, Regis Aine Street, Lagos, Nigeria. (Private Mail Bag 2115).

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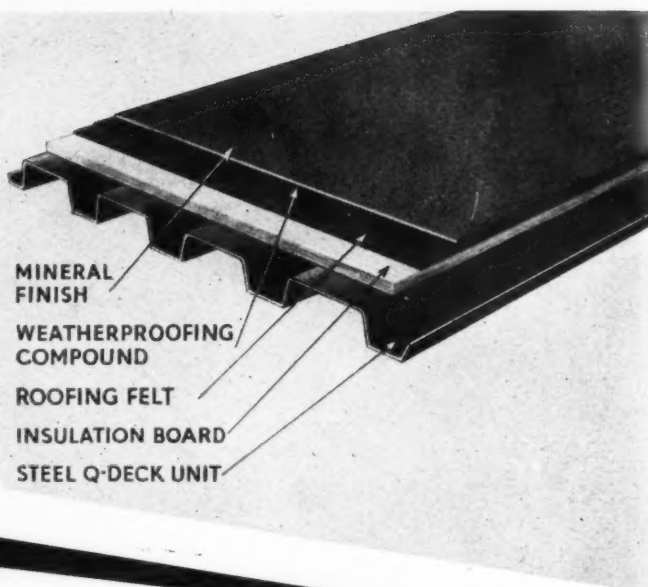
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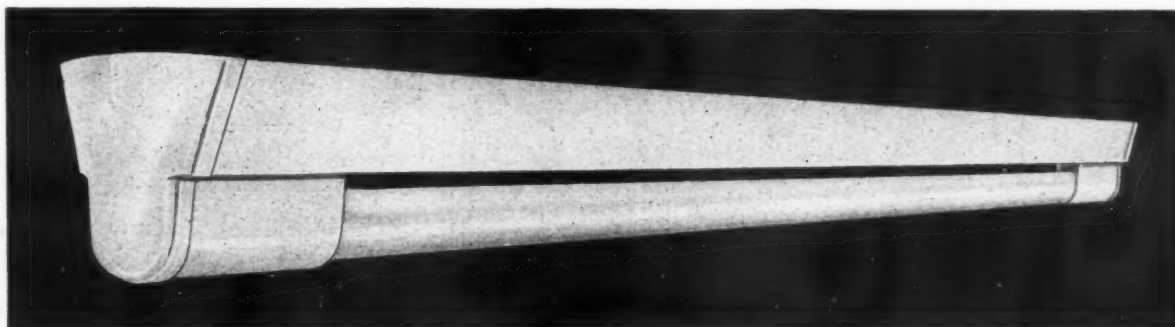
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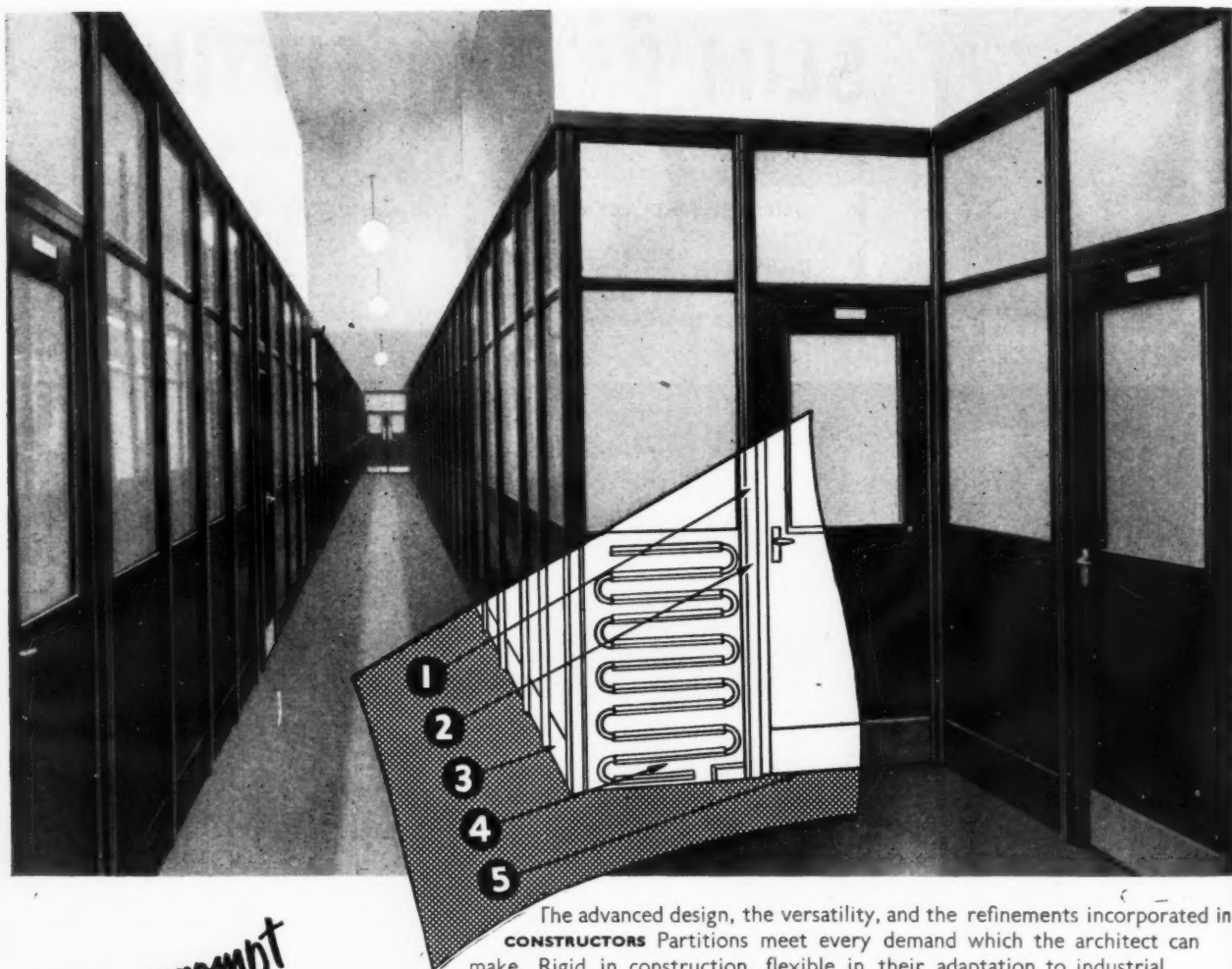
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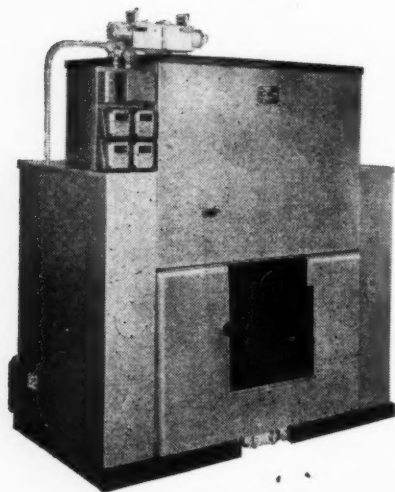


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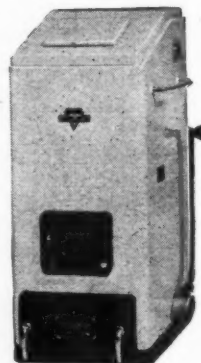
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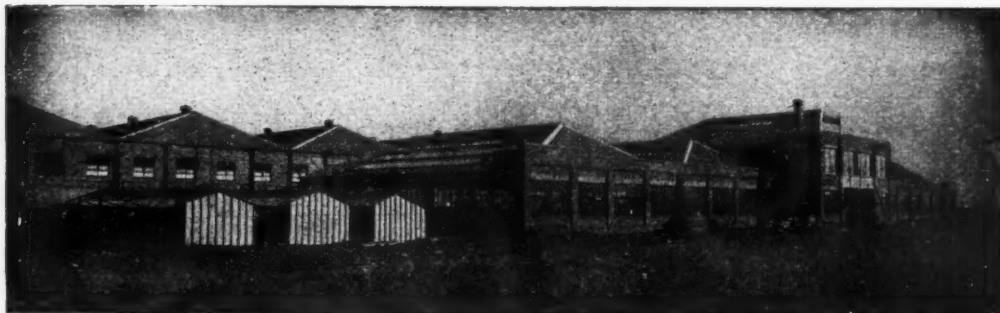


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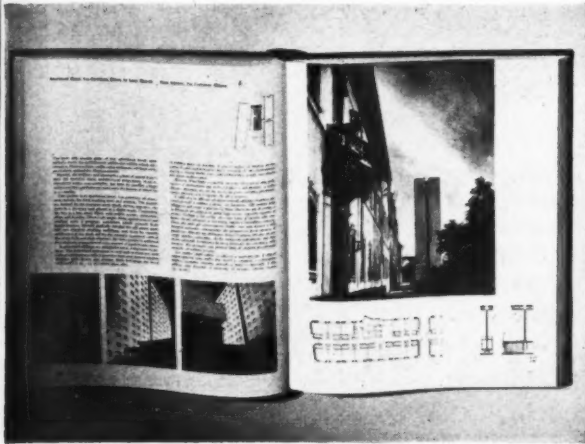
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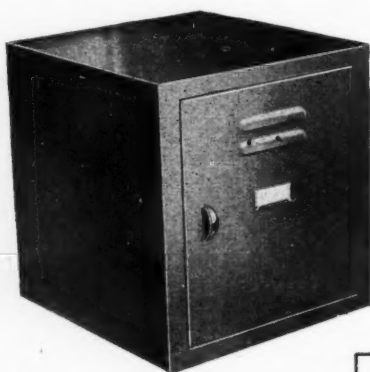
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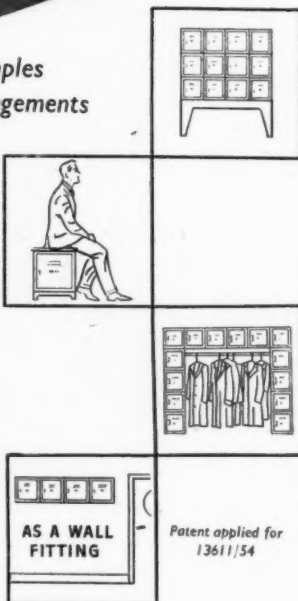
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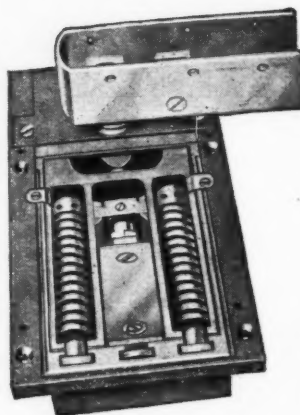


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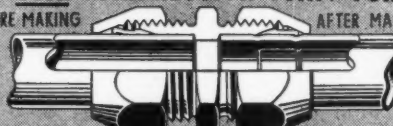
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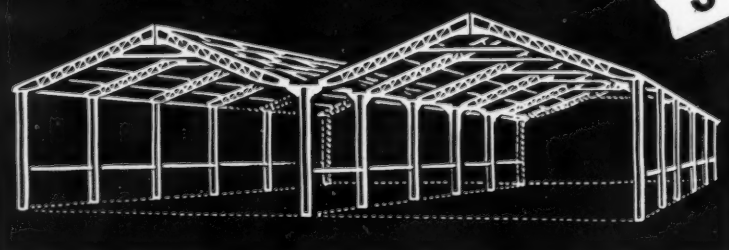


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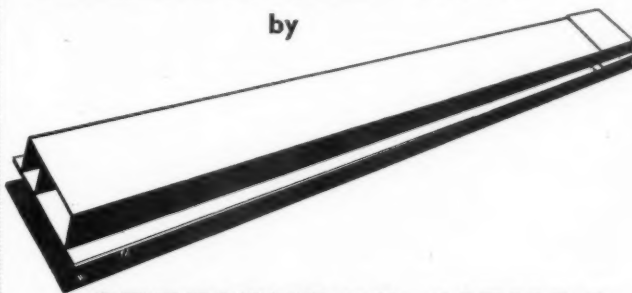
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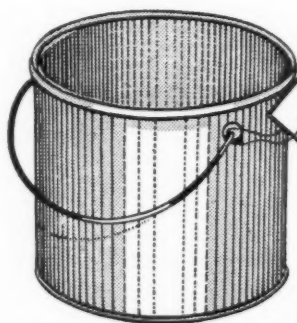
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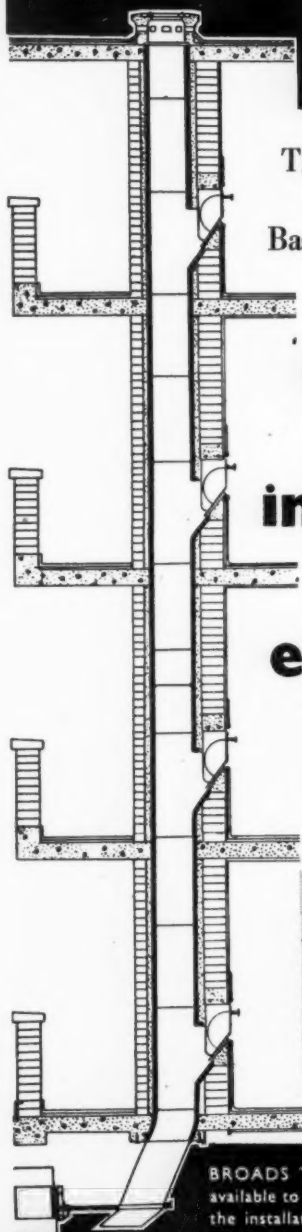
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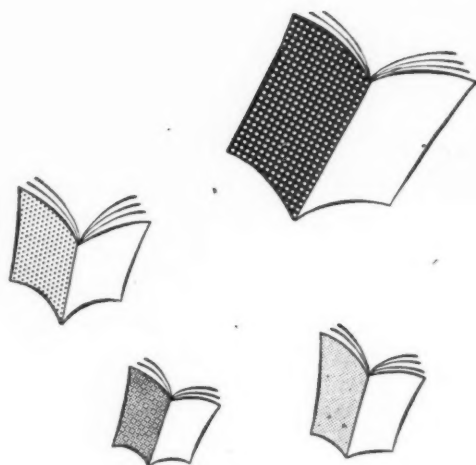
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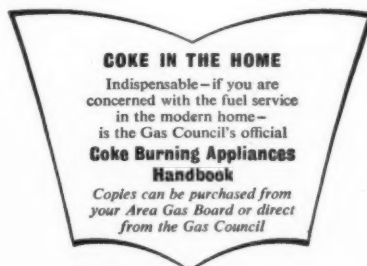


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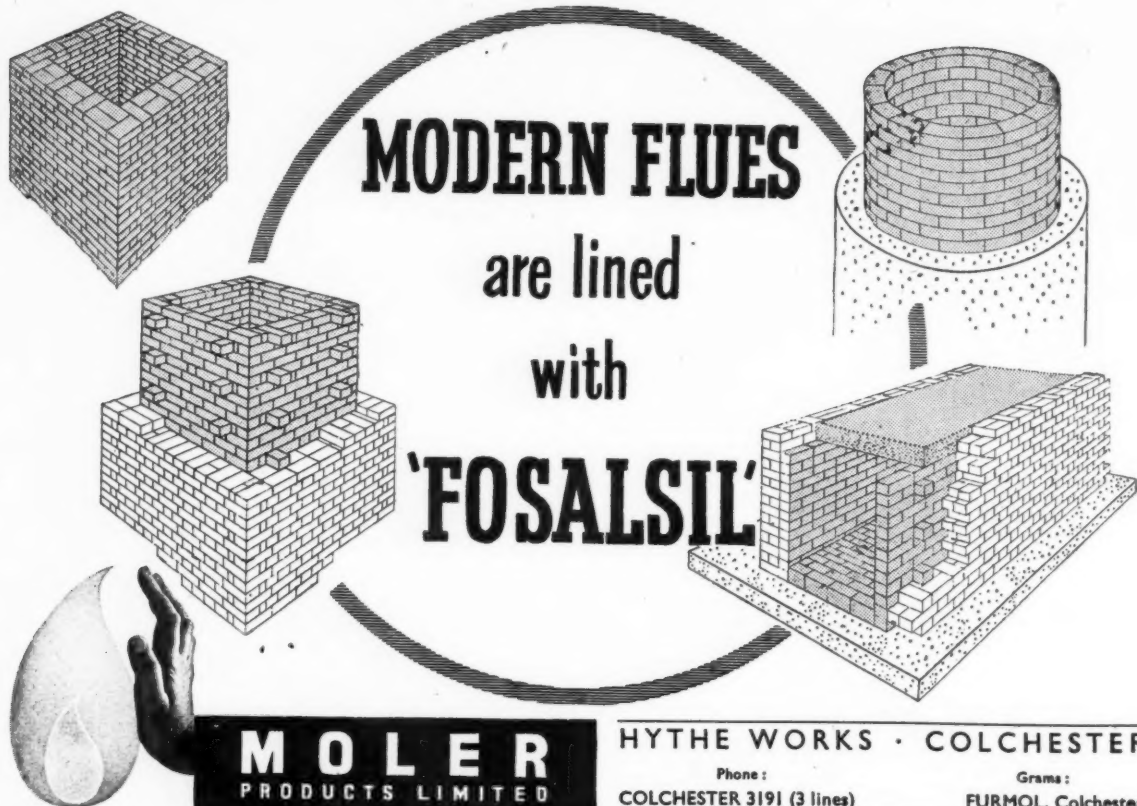
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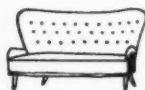


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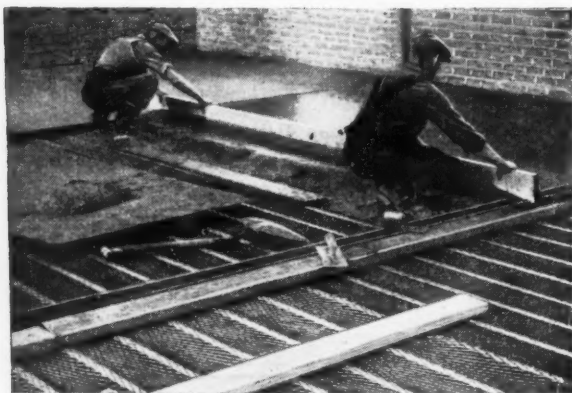
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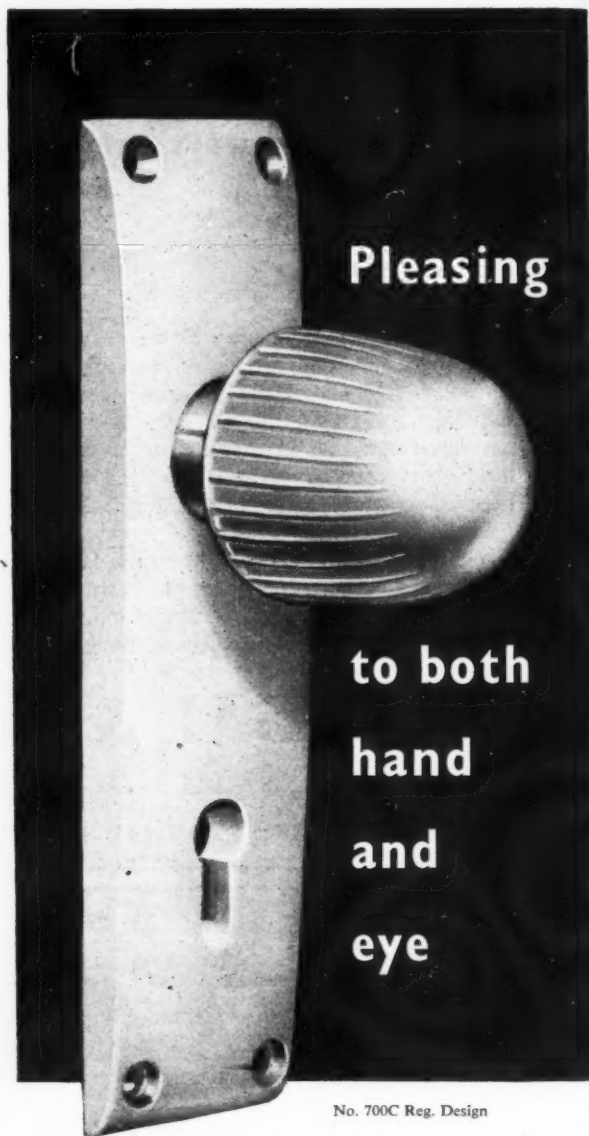


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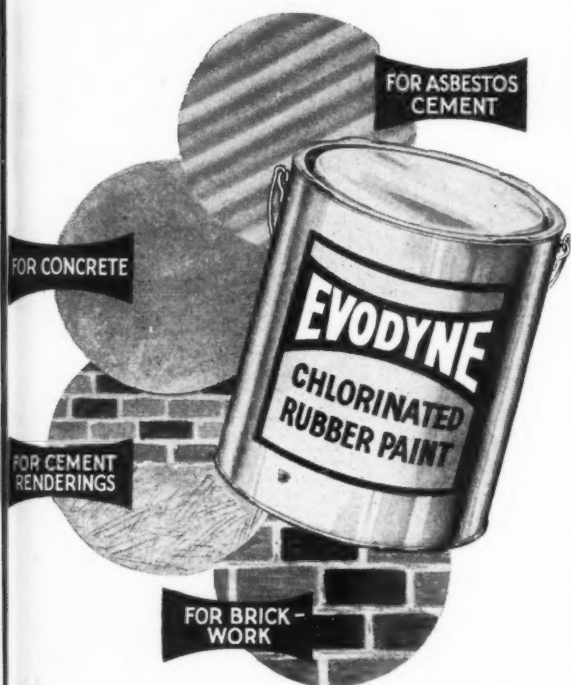
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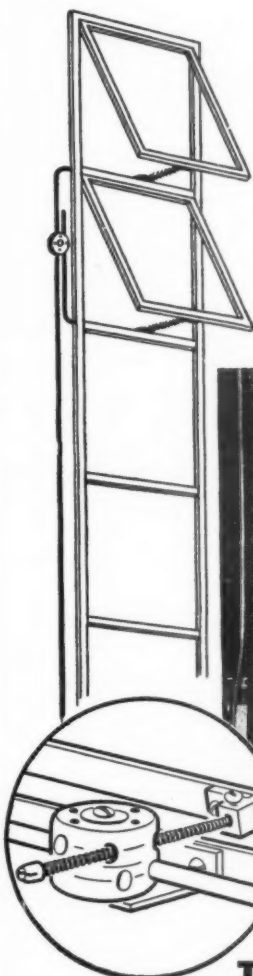
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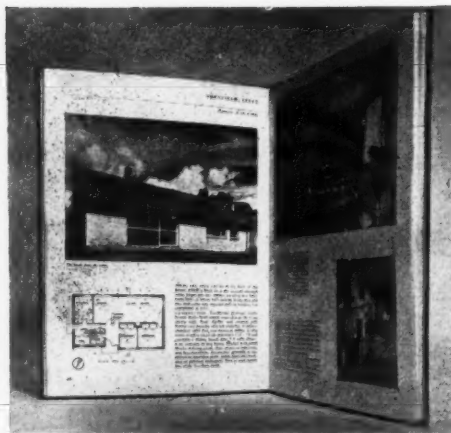
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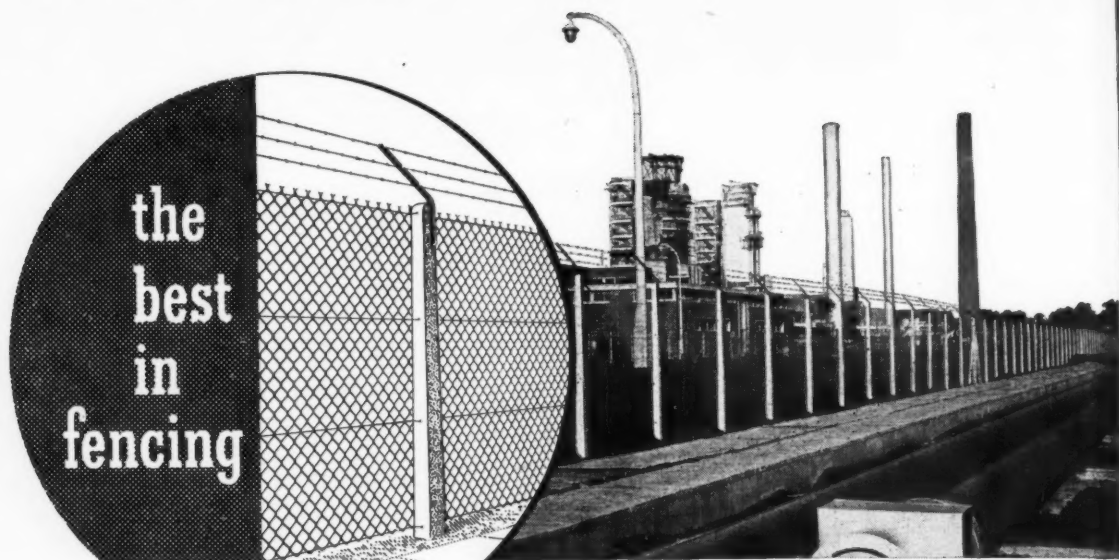
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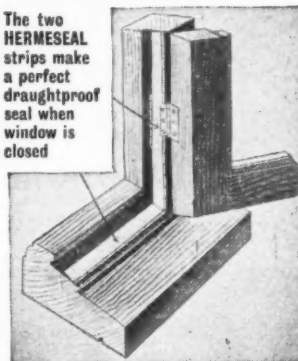
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(a) PRINCIPAL ASSISTANT ARCHITECT, Grade A.P.T. VI (£285—£1,000 p.a.).

(b) ASSISTANT QUANTITY SURVEYOR, Grade A.P.T. IV (£265—£225 p.a.).

Applicants for post (a) must be fully qualified and experienced, particularly in the design and construction of schools.

Applicants for post (b) will be required to take off quantities for schools and other works. Preference will be given to applicants holding technical qualifications.

Commencing salaries will be in accordance with qualifications and experience.

Favourable consideration by the Council to the provision of housing accommodation will be given if required.

Application Forms and Conditions of Appointment may be obtained from the Borough Engineer and Surveyor, Lancaster Building, High Street, Newcastle, Staffs., and must be returned to him not later than Monday, 21st November, 1955.

C. J. MORTON,

Town Clerk.

District Bank House, High Street, Newcastle, Staffs. 3463

BOROUGH OF BRENTFORD & CHISWICK. APPOINTMENT OF TEMPORARY ARCHITECTURAL DRAUGHTSMAN.

Applications are invited for the above appointment in the Borough Engineer and Surveyor's Department at a salary within the Miscellaneous Division, Grade IV, i.e., £465—£545 per annum, plus London weighting allowance. The commencing salary will depend on experience and qualifications.

Applicants should be competent draughtsmen. The appointment offers excellent opportunities for gaining architectural training and experience.

A MODERN FLAT CAN BE RENTED BY THE SUCCESSFUL APPLICANT.

Applications, stating age, qualifications and experience, together with the names of two persons to whom reference can be made, should be forwarded to the Borough Engineer and Surveyor, Town Hall, Chiswick, W.4 not later than Monday, 14th November, 1955.

W. F. J. CHURCH,

Town Clerk.

Town Hall, Chiswick, W.4. 28th October, 1955. 3583

NORTH RIDING EDUCATION COMMITTEE. Applications are invited for the following vacancies in the Education Architect's Department:—

(a) ARCHITECTURAL ASSISTANT.

A.P.T. II. Salary £560—£540.

A.P.T. I. Salary £500—£580.

Applicants to have passed the Intermediate R.I.B.A.

(b) ASSISTANT QUANTITY SURVEYOR.

Special Grade £650—£775.

Applicants to be Members of the R.I.C.S.

(c) QUANTITY SURVEYING ASSISTANT.

A.P.T. II. Salary £560—£640.

Applicants to have passed the Intermediate R.I.C.S.

Previous experience may be taken into account in fixing commencing salaries, and experience with Local Authority not essential. Car, travelling and subsistence allowance where applicable. Local Government Superannuation Act. Canvassing disqualifies. Further particulars from F. Barracough, County Hall, Northallerton, 3510

SURVEYING ASSISTANT required in the Architect's Department. Salary within the scale £480 to £670 plus £20—£30 London weighting. Candidates should have passed the Intermediate examination of the R.I.C.S. (IIIB) and be competent specification writers and able to prepare working drawings for alteration works. The work is varied and interesting and the Board operates a scheme of financial assistance to students studying for professional examinations. Apply, stating age, qualifications and experience and giving names of two referees to Secretary, North West Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, by 15th November. 3586

COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE.

COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of DEPUTY COUNTY PLANNING OFFICER at a salary within the range of £1,535—£1,797 10s. per annum. Applicants should have a wide and varied experience of planning and possess a considerable knowledge of local government procedure. They should be Members of one or more of the appropriate technical institutions and should preferably be Corporate Members of the Town Planning Institute. An architectural qualification would be an additional advantage.

Applications, stating age, qualifications and experience, and giving the names and addresses of three referees, should reach the undersigned not later than 14th November, 1955.

ARTHUR BATES,

County Planning Officer.

71, Northgate, Wakefield. 3460

COUNTY BOROUGH OF ROCHDALE.

Applications are invited for the appointment of SENIOR QUANTITY SURVEYOR in the Borough Surveyor's Department at a salary of £675, rising by annual increment of £30 to £825 per annum. The appointment will commence at a salary above the minimum, according to qualifications and experience.

The appointment will be subject to the provisions of the Local Government Superannuation Act and to the selected candidate passing a Medical Examination. Canvassing is prohibited and candidates must disclose whether to their knowledge they are related to any member or Senior Officer of the Council.

Applications stating age, qualifications and full particulars of experience, together with the names and addresses of two persons to whom reference may be made and endorsed "Senior Quantity Surveyor," must be delivered to the Borough Surveyor, Town Hall, Rochdale, by 9 a.m. on Friday, 2nd December, 1955.

K. B. MOORE,

Town Clerk.

GOVERNMENT OF NORTHERN IRELAND. ASSISTANT ARCHITECT (SCHOOLS ADVISORY).

Applications are invited for an unestablished appointment as ASSISTANT ARCHITECT in the Schools Advisory Section of the Directorate of Works, Ministry of Finance.

The salary scale, which attracts pay supplement of amounts between £55 and £95 per annum, is £675 × £25—£750 × £30—£960 × £40—£1,000. The minimum is linked to age 26 plus an increment for each year above that age, subject to a commencing salary not exceeding £500 plus pay supplement of £70. An officer between 25 and 26 will be given an inclusive commencing salary of £705; and if under 25 will be paid according to qualifications and experience.

Candidates must be Registered Architects by examination and have had experience in schools design, preferably in the Architect's Department of an Education Authority.

The duties of the successful candidate will be, *inter alia*, to assist in the examination of and report on plans for all types of school buildings and community centres which have been submitted to the Ministry of Education for approval.

Preference will be given to candidates who served in H.M. Forces in the 1914-18 or 1939-45 wars, provided that such candidates are, or within a reasonable time will be, able to discharge the duties efficiently.

Application forms may be obtained from the Director of Establishments, Ministry of Finance, Stormont, and should be returned, with copies of two recent testimonials, so as to reach him not later than 18th November, 1955. 3529

CARLTON URBAN DISTRICT COUNCIL. APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment at a salary in accordance with A.P.T., Grade IV, viz., £675 × £30—£825, the point of entry to be determined having regard to the applicant's experience.

Qualifications: Final R.I.B.A. or Registered Architect.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, National Scheme of Conditions of Service, and to satisfactory passing of a medical examination.

Applications, stating age, qualifications and details of experience, together with names of three referees, to be forwarded to the Engineer and Surveyor by 10 a.m. on Monday, 14th November, 1955.

HOUSING ACCOMMODATION WILL BE MADE AVAILABLE and removal expenses will be paid by the Council.

A. E. F. WALKER,

Clerk of the Council.

Council House, Burton Road, Carlton, Nottingham. 3505

CUCKFIELD URBAN DISTRICT COUNCIL. ARCHITECTURAL ASSISTANT.

The Council invite applications for the post of ARCHITECTURAL ASSISTANT in the Surveyor's Department. Salary Grade A.P.T. II (£560—£640).

Applicants must be able to undertake the design of houses and estate layouts and to prepare final plans, working drawings, specifications and estimates, and preference will be given to those who have passed the Intermediate Examination of the Royal Institute of British Architects or its equivalent.

The appointment is subject to the National Conditions of Service, Superannuation and the passing of a medical examination.

Consideration will be given to the housing needs of married applicants.

Applications, giving the names of two referees, should reach me by noon on Saturday, 19th November, 1955.

Canvassing will disqualify.

J. A. EVANS,

Clerk of the Council.

Oaklands, Haywards's Heath, Sussex. 3585

BOROUGH OF HESTON AND ISLEWORTH.

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

(a) SENIOR ARCHITECTURAL ASSISTANT.

Salary in accordance with A.P.T. Grade IV (£675 × £30—£825) plus London "Weighting." Other things being equal, preference will be given to applicants who have passed the examination for Associate R.I.B.A. or hold a University degree or diploma in architecture accepted by that Institute.

The person appointed must have had good experience in architectural design and building work under construction. Duties will include the preparation of sketch designs and working drawings, and the handling of building contracts under construction. Experience in alterations and additions to school buildings, etc., will be considered an advantage.

(b) SENIOR TOWN PLANNING ASSISTANT.

Salary in accordance with A.P.T. Grade IV (£675 × £30—£825) plus London "Weighting." Applicants must have obtained the qualifying examination of the Town Planning Institute, or an equivalent diploma in town planning recognized by that body. It will be an advantage if applicants hold additional examination qualifications of another professional institute of standing. Applicants must have had considerable experience in the Town and Country Planning Department of a local authority, and experience in the control of staff will be deemed an advantage.

The Council will be prepared to give assistance to the successful candidate in obtaining housing accommodation if such assistance is needed.

Applications are to be submitted by 5th December, 1955, on forms to be obtained from and returned to the Borough Engineer and Surveyor, 88, Lampton Road, Hounslow.

D. MATHIESON,

Town Clerk.

Town Hall, Hounslow. 3559

AYCLIFFE DEVELOPMENT CORPORATION.

Applications are invited for the following appointments:—

(i) ASSISTANT QUANTITY SURVEYOR—A.P.T. V (£750—£900).

(ii) QUANTITY SURVEYING ASSISTANT—A.P.T. I (£500—£580).

Applicants for (i) should be A.R.I.C.S. or Final standard, with experience in the preparation of bills of quantities, estimates and the settlement of final accounts.

Applicants for (ii) should be up to Intermediate R.I.C.S. standard.

Appointments subject to N.J.C. Conditions, superannuation and medical examination.

Housing accommodation provided if necessary. Applications stating age, qualifications and experience together with names of two referees to arrive not later than 26th November, 1955.

A. V. WILLIAMS,

General Manager.

Newton Aycliffe, Co. Durham. 3577

BOROUGH OF DAGENHAM.
ASSISTANT ARCHITECTS AND
ARCHITECTURAL ASSISTANTS.
 The Council invite applications for the following appointments:—
SENIOR ASSISTANT ARCHITECT Grade V
ASSISTANT ARCHITECT Grade IV
ARCHITECTURAL ASSISTANTS Grade II
 The salary of the Grade V appointment is £750 per annum rising by increments of £30 to £900 per annum and of the Grade IV appointment £675 per annum rising by increments of £30 to £825. Applicants must be Registered Architects and hold A.R.I.B.A. or similar qualification. Housing accommodation may be made available. The salary of the Grade II appointments is £560 per annum rising by increments of £20 to £640 per annum. Applicants must hold intermediate A.R.I.B.A. or similar qualification. All appointments carry London Weighting of £20 per annum at age 21-25 and £30 per annum at 26 years and over. Experience in Housing and Education work would be an advantage. Forms of application and further details from the Borough Engineer. Closing date 30th November, 1955. Canvassing disqualified.

KEITH LAUDER,
Town Clerk. 3595

Civic Centre,
Dagenham.
KENT COUNTY COUNCIL requires assistants in the Planning Department as follows:—
 (a) **SENIOR PLANNING ASSISTANT** to take charge of Divisional Office at Tunbridge Wells. Salary within grade £600-£825 per annum. (Grade will be £675-£900 as from 1st April, 1956.)
 (b) **SENIOR ARCHITECTURAL ASSISTANT** in the Central Office at Maidstone. Salary within grade £600-£825 per annum. (This post may be up-graded in the near future.)
 (c) **SENIOR PLANNING ASSISTANT** in the Divisional Office at Gravesend. Salary within grade £600-£825 per annum.
 (d) **PLANNING ASSISTANT** in the Central Office at Maidstone. Salary within grade £500-£640 per annum.
 Candidates for posts (a) and (c) should be A.M.T.P.I. or alternatively must possess an appropriate degree or diploma. Candidates for post (b) must be Chartered Architects. Candidates for post (d) should possess an appropriate degree or diploma or have passed a recognized professional intermediate examination. National Scheme of Conditions of Service applies and registered disabled persons will be considered. Applications, together with the names of two referees, must reach the County Planning Officer, County Hall, Maidstone, not later than the 22nd November, 1955. 3596

Amended Advertisement.
BOROUGH OF GRANTHAM.
CHIEF ASSISTANT ARCHITECT.
 (Grade A.P.T. V (£750-£900).)
 The closing date for the receipt of applications for the above appointment has been altered to 22nd NOVEMBER, 1955.
 The appointment will be made within Grade V and applicants must be Registered Architects with good general experience, and be capable of preparing and supervising all building schemes (principally housing) undertaken by the Corporation. HOUSING ACCOMMODATION will be available to the successful candidate, if required. The appointment is subject to the National Scheme of Conditions of Service, the Local Government Superannuation Acts, the passing of a medical examination, and is terminable by one month's notice on either side. Applications, stating age, qualifications, training, and experience, previous and present positions, together with the names of two referees, should be received by the Borough Engineer and Surveyor, Guildhall, Grantham, not later than Tuesday, 22nd November, 1955.
JOHN F. GUILF,
Town Clerk. 3591

BOROUGH OF TOTTENHAM.
BOROUGH ENGINEER AND SURVEYOR'S
DEPARTMENT.
 Applications are invited for the following established posts:—
ARCHITECTURAL STAFF:—
 (a) **FIRST ASSISTANT ARCHITECT, A.P.T. Grade VI** (£825 to £1,000 p.a.). (This post ranks next to that of the Chief Architectural Assistant.)
 (b) **SENIOR ARCHITECT—A.P.T. Grade V** (£750 to £900 p.a.).
 (c) **ARCHITECT, A.P.T. Grade IV** (£675 to £825 p.a.).
 (d) **ARCHITECTURAL ASSISTANT, A.P.T. Grade II or I** (£560 to £640 p.a. or £500 to £580 p.a.).
 The commencing salary in all the above posts will be fixed according to the qualifications and experience of the successful applicants. London weighting allowance of £20 p.a. at age 21-25 years and £30 p.a. at age 26 and over, payable in addition. Qualifications required: Posts (a), (b), (c) Final professional qualification; (d) Intermediate R.I.B.A. or equivalent. Application form and conditions of appointment from Borough Engineer, Town Hall, N.15, to whom applications must be delivered not later than 21st November, 1955. 3524

HERTFORDSHIRE COUNTY PLANNING
DEPARTMENT.
PLANNING ASSISTANT (Headquarters).
 A.P.T. II/Special (£660-£775).
 Qualifications required for A.P.T. II are Intermediate Town Planning Institute or the diploma of a recognised University. For Special Grade the Final Examination of the Town Planning Institute or Royal Institute of British Architects or a diploma of a recognised University, plus one year's experience. Promotion from Grade II to Special is automatic on obtaining the necessary qualifications and a satisfactory report upon service. Experience in preparing layout plans for large scale New Town or Town Development Act buildings will be an advantage. Forms of application from the County Planning Officer, County Hall, Hertford. Forms to be returned by 1st December, 1955. 3532

BRICK AND TILE INDUSTRY.
TECHNICAL LIAISON OFFICER.
 The National Federation of Clay Industries invites applications for a newly created position within the organisation. Duties will be concerned primarily with promoting the use of clay bricks and tiles, involving liaison with architects, engineers, local authorities and technical and other bodies. A sound knowledge of building materials and methods is essential. An ability to establish high-level contact is desirable, and experience in lecturing and the preparation of articles for the professional and trade Press would be an advantage. Remuneration will depend upon qualifications and experience, with a minimum of £1,000 per annum, plus expenses, and the appointment in the first instance will be for three years, subject to a probationary period of six months. Applications, stating age and giving full details of qualifications, experience and remuneration required, should be sent by November 30th to the Secretary, The National Federation of Clay Industries, Drayton House, 30 Gordon Street, London, W.C.1. 3552

LEEDS REGIONAL HOSPITAL BOARD.
 Applications are invited for the following appointments on the Board's Headquarters staff: **ONE SENIOR ASSISTANT ARCHITECT.** Salary £920 × £30 (5) + £25 (1) - £1,095 per annum. Applicants must be Registered Architects with Final R.I.B.A. or Diploma in Architecture. Experience in hospital planning not essential but ability to produce good contemporary architecture necessary. The applicant selected will work directly under the Regional Architect (P. B. Nash, A.R.I.B.A.) and will control a section of Architectural staff engaged on a new Hospital at Huddersfield.

TWO ARCHITECTURAL ASSISTANTS (One Permanent, One Temporary).
 Salary £480 × £20 (7) + £25 (2) - £670 per annum. Applicants must have passed Intermediate examination of the R.I.B.A. Commencing salary dependent upon applicant's age and amount of experience since passing Intermediate examination, but will not exceed £560 per annum. Applicants must have had a sound Architectural training and some practical experience in a Practising Architect's office is essential. Applications giving all relevant particulars, including age, experience, war service, if any, and the names of two referees, should be forwarded to the Secretary, Park Parade, Harrogate, not later than 25th November, 1955. 3551

DENBIGHSHIRE COUNTY COUNCIL.
 Applications are invited for the following appointments in the Department of the County Architect (Mr. R. A. Macfarlane), Wrexham, viz.:—
 (a) **ASSISTANT ARCHITECT, A.P.T. Grade IV** (£675-£825).
 (b) **ARCHITECTURAL ASSISTANT, A.P.T. Grade III** (£600-£725).
 (c) **TWO ARCHITECTURAL ASSISTANTS, A.P.T. Grade II** (£560-£640).
 (d) **ARCHITECTURAL ASSISTANT, A.P.T. Grade I** (£500-£580).
 (e) **ASSISTANT QUANTITY SURVEYOR, A.P.T. Grade IV** (£675-£825).
 (f) **QUANTITY SURVEYING ASSISTANT, A.P.T. Grade III** (£600-£725).
 (g) **QUANTITY SURVEYING ASSISTANT, A.P.T. Grade II** (£560-£640).
 (h) **SPECIFICATION WRITER, A.P.T. Grade III** (£600-£725).
 Further details and application forms may be obtained from me. Completed application forms are to be received by me not later than 26th November, 1955.

W. E. BUFTON,
Clerk of the County Council. 3555

COUNTY COUNCIL OF ESSEX.
 Applications are invited for four posts of **PRINCIPAL ASSISTANT ARCHITECT, J.N.C. Grade "B"** salary not exceeding £1,307 10s. The commencing salary will be fixed according to experience and qualifications in each case. Applicants must be members of the R.I.B.A. They should also be proved designers of very high quality, who can conduct original research, and are capable of co-ordinating and stimulating the work of others. These appointments offer exceptional opportunities of taking an important part in the work of an extremely busy office. Further particulars and application forms from H. Conolly, F.R.I.B.A., County Architect, County Hall, Chelmsford, to be returned with copies of three recent testimonials by 24th November, 1955. Canvassing disqualified. 3539

ARCHITECTURAL ASSISTANTS and ARCHITECTURAL DRAUGHTSMEN required by the **KENYA GOVERNMENT P.W.D.** for one tour of 36/45 months in the first instance. Outfit allowance £30. Liberal leave on full salary. Free passages. Salary scales (including Inducement pay and temporary Cost of Living allowance):—Architectural Assistants, £838, rising to £1,360 a year; Architectural Draughtsmen, £772, rising to £1,280 a year. Commencing salary according to experience. Appointment either on contract (with Gratuity of 13½ per cent. of total basic salary plus Inducement pay drawn during contract), or on probation to the pensionable establishment. Candidates, over 24, must be capable of working on sketch designs and preparing full working drawings for various types of Government buildings ranging from small domestic work to large multi-storied buildings. Candidates for Architectural Assistant must have passed the Intermediate examination of the R.I.B.A. and candidates for Architectural Draughtsmen must have had at least four years' actual experience in an architect's office and have a sound knowledge of building construction. Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience, and quote M2B/40529/AG. 3523

NATIONAL COAL BOARD—
NORTH EASTERN DIVISION.
 Applications are invited for the following appointments in the Office of the Divisional Chief Architect situated at Conisborough, near Doncaster:—
ARCHITECTS AND QUANTITY SURVEYORS
 Grade II (Salary Scale: £700 × £30-£1,000 per annum). Qualifications: A.R.I.B.A. and A.R.I.C.S.
ARCHITECTURAL AND QUANTITY SURVEYING ASSISTANTS GRADE I (Salary Scale: £625 × £25-£750 per annum (and up to £900 per annum in special circumstances)). Qualifications: Intermediate R.I.B.A. and Intermediate R.I.C.A.
ARCHITECTURAL AND QUANTITY SURVEYING ASSISTANTS GRADE II (Salary Scale: £520 × £20-£615 per annum). Qualifications: Preferably as above or studying for such examinations.
JUNIOR ARCHITECTURAL ASSISTANTS
 (Salary Scale: According to age, £4.5.0d. per week at 18 to £8.15.0d. at 25). Full details and application forms obtainable from Mr. J. A. Dempster, F.R.I.B.A., Chief Architect, P.O. Box No. 4, Denaby Main, near Doncaster. Closing date—25th November, 1955. 3570

H.M. PRISON COMMISSION
 have vacancies for three temporary **ARCHITECTURAL DRAUGHTSMEN** Male or Female, and three temporary **ENGINEERING DRAUGHTSMEN** Male or Female. Salary (Men) £463.10s. at age 21 rising to £635 at age 28, then to £725; (Women) £463.10s. at age 21 rising to £522 at age 28, then to £655. Starting pay according to age 28, then according to age and qualifications. The Women's scale is subject to the scheme for the introduction of equal pay into the non-industrial Civil Service. Hours of duty 44 plus overtime. Annual leave 24 working days rising to 28 working days after three years plus 9 days public and privilege holidays. Candidates for the former posts must have had a recognized training with a good general knowledge of building construction and surveys. Candidates for the latter posts should preferably have obtained educational training up to the ordinary National Certificate in Mechanical or Electrical Engineering course standard, or the equivalent in Heating and Ventilating Course. Regulations and application forms from the Establishment Officer (E.126/2/20), Prison Commission, Horseferry House, Dean Ryle Street, London, S.W.1, to be returned by 5th December, 1955. 3568

COUNTY BOROUGH OF NORTHAMPTON.
 Borough Architect & Town Planning Officer's Department.
 (a) **ASSISTANT ARCHITECT** (Scale £650-£775).
 (b) **TEMPORARY ARCHITECTURAL ASSISTANT, Grade A.P.T. II** (£560-£640).
 These posts are in the Education and General Section which has an interesting programme of major projects, including a Technical High School.
 (c) **TOWN PLANNING ASSISTANT, Grade A.P.T. II** (£560-£640), required to work on Redevelopment, Slum Clearance and general Town Planning problems. Full details and application forms returnable by 26th November, 1955, from Brian Bunch, A.R.I.B.A., A.M.T.P.I., Borough Architect and Town Planning Officer, Guildhall, Northampton. **C. E. VIVIAN ROWE,**
Town Clerk. 3590

COUNTY BOROUGH OF STOCKPORT.
SENIOR ARCHITECT (HOUSING) required. Permanent appointment. Must be member of R.I.B.A. Salary £900-£1,100 per annum. A high standard of design is required. Previous local government experience is not essential if this requirement is fulfilled. Applications, giving names of two referees, to Borough Architect, Town Hall, Stockport, by 9th December. Post pensionable, subject to medical examination. Applicants must disclose whether related to any member or senior officer of Council. Canvassing disqualified. 3540

BOROUGH OF MAIDSTONE **APPOINTMENT OF GENERAL ARCHITECTURAL DRAUGHTSMAN IN BOROUGH SURVEYOR'S DEPARTMENT.**

Applications are invited for the above appointment at a salary in accordance with Grade I (£500-£580).

Candidates must have a sound knowledge of building construction, and preference will be given to those who have passed parts or the whole of the Intermediate Examination of the Royal Institute of British Architects or other approved Institution, and who have had general experience in connection with housing estate development.

The appointment will be subject to the National Scheme of Conditions of Service, the Local Government Superannuation Act, 1953, the passing of a medical examination, and one month's notice on either side. Canvassing will disqualify. Where circumstances warrant, the Council will be prepared to give consideration to the provision of housing accommodation.

Applications, on forms to be supplied, must reach the undersigned not later than the 19th November, 1955.

S. F. DIXON,
Borough Surveyor.

Borough Surveyor's Department,
Palace Avenue,
Maidstone.
4th November, 1955. 3533

CITY OF CAMBRIDGE.

Applications are invited from suitably qualified architects for the following appointment in the Architects' Section of the City Surveyor's Department:—

ASSISTANT ARCHITECT, GRADE III (£600 to £725 p.a. commencing salary £625).

Applicants should have had good practical experience of Design and Construction in Housing and General Projects and the successful candidate will be employed in the first instance in a group working on contemporary schemes for Shopping Centres, with an interesting programme to follow.

The appointment is superannuable, subject to medical examination and terminable by one month's notice on either side.

The Council may be in a position to provide housing accommodation within a reasonable period of time.

Forms of application may be obtained from the City Surveyor, The Guildhall, Cambridge, to whom they should be returned by the 28th November, 1955.

ALAN H. I. SWIFT,
Town Clerk.

The Guildhall,
Cambridge.
31.10.55. 3576

COUNTY BOROUGH OF SOUTHAMPTON. **BOROUGH ARCHITECTS' DEPARTMENT.**

Applications are invited for the following appointments:—

(a) **SENIOR ASSISTANT ARCHITECTS, Grade IV** (£675-£825).

(b) **ARCHITECTURAL ASSISTANTS, Grade I** (£500-£580).

(c) **JUNIOR ARCHITECTURAL ASSISTANTS, Higher General Division** (£170-£475).

(d) **SENIOR ASSISTANT PLANNING OFFICER, Grade V** (£750-£900).

(e) **PLANNING ASSISTANT, Grade II** (£550-£640).

(f) **PLANNING ASSISTANTS, Grade I** (£500-£580).

(g) **TECHNICAL ASSISTANT (Plan filing, etc.)** Higher General Division (£170-£475).

Applicants for positions in the A.P.T. Division should possess the appropriate qualifications for Special Classes of Officers under N.J.C. Conditions of Service.

Applicants should state their housing needs.

Application forms from the Borough Architect, Civic Centre, Southampton. Closing date 21st November, 1955. 3538

COUNTY COUNCIL OF ESSEX.

Applications are invited for:—

(a) **Two SENIOR ASSISTANT ARCHITECTS, Grade VI**—A.P.T.D. salaries not exceeding £1,000.

(b) **Five SENIOR ASSISTANT ARCHITECTS, Grade V, A.P.T.D.** salaries not exceeding £900.

(c) **Five ASSISTANT ARCHITECTS in Special Grade**, salaries not exceeding £775.

Candidates for appointments (a) and (b) must be Associates of the R.I.B.A., and for (c) must have passed Parts I and II of the R.I.B.A. Final. Commencing salary in each case according to qualifications and experience.

The appointments offer opportunities for design and supervision on a variety of buildings—colleges, libraries, day and boarding schools, police and fire stations and health buildings—and successful candidates will have much responsibility within the group system.

Application forms from H. Connolly, F.R.I.B.A., County Architect, County Hall, Chelmsford (state post for which form is required) to be returned with copies of three testimonials by 24th November, 1955.

Canvassing disqualifies. 3537

COVENTRY CORPORATION require **ARCHITECTURAL ASSISTANTS, A.P.T. III** (£680 x £25 -£725) plus £26 (men), £19 10s (women) in certain circumstances. Three years' practical experience in an architectural office and Inter. R.I.B.A. essential. Housing accommodation may be available. Application forms, etc., from Arthur Ling, Bull Yard, Coventry. Closing date 15 days from advertisement. 3536

UNIVERSITY OF OXFORD. Applications are invited for the following appointments:—

(a) **ARCHITECTURAL ASSISTANTS** of Intermediate to Final standard capable of carrying out jobs from survey to final account under supervision. Salary £550-£675.

(b) **ARCHITECTURAL ASSISTANTS** of about Intermediate standard with some knowledge of modern building construction. Salary £450.

Varied and interesting work. Generous leave. Housing may be made available in connection with appointment (a). Apply for further particulars, stating age, experience and training, to the Surveyor to the University, 5, South Parks Road, Oxford. 3542

WESTMORLAND COUNTY COUNCIL.

COUNTY ARCHITECTS' DEPARTMENT.

Applications are invited for the following superannuable appointments:—

ARCHITECTURAL ASSISTANT—Grade III (£600-£725).

R.I.B.A. Intermediate standard or considerable practical experience in general work desirable.

ARCHITECTURAL ASSISTANT—Grade II (£650-£740).

Good general training and experience necessary.

JUNIOR ARCHITECTURAL ASSISTANT—Grade H.G.D. (rising to £475).

Applicants should have had good practical experience in general work desirable.

ASSISTANT BUILDING INSPECTOR—Grade I (£500-£580).

Duties include maintenance of Schools, Police Houses, etc. Practical knowledge covering emergency repairs to mechanical and electrical equipment in School Canteens an advantage. Ability to drive a car essential.

Commencing salaries according to experience.

Applications, stating age, technical training and qualifications, previous and present appointments and salary, full details of experience in duties indicated, and names of two referees, to County Architect, County Hall, Kendal, by 18th November, 1955. 3556

MINISTRY OF WORKS require **ARCHITECTURAL ASSISTANTS** for drawing offices in London, Edinburgh and various provincial offices, with at least three years' training, experience in an architect's office and of Inter. R.I.B.A. standard. London salary £463 to £725 p.a., elsewhere slightly less. Starting pay according to age and experience, prospects of promotion and permanency. State age, details of training and experience, to Chief Architect, Ministry of Works, A27 (F), Abell House, John Islip Street, London, S.W.1. 3168

LINDSEY COUNTY COUNCIL.

PLANNING ASSISTANT.

A.P.T. III £600-£725 if qualified T.P.I. Intermediate or Special Grade £650-£775 if qualified T.P.I. Final, and with at least five years' experience. Preference for candidates from county planning departments with experience on development plan preparation, particularly Town Maps. Superannuation and N.J.C. service conditions. Essential user car allowance. Apply with particulars of age, training, qualifications and experience, and naming two referees, to R. L. Stirling, County Planning Officer, The Castle, Lincoln, before 16th November, 1955. Canvassing will disqualify and relationship to any member or senior officer of the Council to be disclosed in application. 3587

NORTH THAMES GAS BOARD.

An **ARCHITECTURAL ASSISTANT** is required in the Drawing Office of the Chief Engineer's Department, Westminster.

Applicants should have passed the R.I.B.A. Final Examination, should be capable of preparing working drawings and specifications, and supervising the work on contracts. Experience in design and planning of industrial buildings would be an advantage.

Starting salary, depending on age and qualifications, will be within the range £650-£770 per annum, and the successful candidate will be required to join the Staff Pension Scheme.

Applications to the Staff Controller, North Thames Gas Board, 30, Kensington Church Street, London, W.8, quoting reference 666/278. 3588

MIDDLESEX COUNTY COUNCIL—COUNTY PLANNING DEPT.

JUNIOR PLANNING ASSISTANT, A.P.T. II (£560-£640 p.a., plus London weighting). Duties include preparation of plans and maps. Established, pensionable subject to medical assessment and prescribed conditions. Application forms from County Planning Officer, 10, St. George Street, S.W.1, returnable by 30th November (Quote R.536 A.J.). Canvassing disqualifies. 3526

MIDLANDS ELECTRICITY BOARD.

THIRD ASSISTANT ENGINEER (ARCHITECTURAL) required at the Wolverhampton and District Sub-Area Headquarters. Applicants should have reached the Final R.I.B.A. standard or hold equivalent qualifications and should preferably have a knowledge of quantities. The duties will include preparation of drawings, construction and detail of offices, service centres, stores and general building work. Salary £790/£850 per annum (N.J.B. Class K, Grade 10). Superannuable.

Apply in writing, within fourteen days, stating age, experience, present position and salary to Mr. D. Holt, Sub-Area Manager, Midlands Electricity Board, 83, Darlington Street, Wolverhampton. 3550

A. STEPHENS,
Secretary.

METROPOLITAN BOROUGH OF STOKE NEWINGTON.

Vacancy for **ARCHITECTURAL ASSISTANT** on permanent staff of the Borough Engineer and Surveyor's Department. A.P.T. III to A.P.T. V (£680 to £900) plus London weighting. Commencing salary according to qualifications and experience. N.J.C. conditions. Medical experience. Canteen facilities.

Application forms obtainable from the Town Clerk, Town Hall, Stoke Newington Church Street, N.16, to whom they should be returned by Monday, 28th November, 1955. 3549

CRANBROOK RURAL DISTRICT COUNCIL.

ARCHITECTURAL ASSISTANT required in Architect's Department, salary Grade II, commencing £560-£540. It is expected the appointment will be for a minimum period of twelve months. The appointment will be otherwise subject to the National Scheme of Conditions of Service, terminable at one month's notice on either side.

Applications stating age, qualifications, experience, and names of two referees, to be sent to The Architect, Council Offices, Cranbrook, Kent, by 28th November, 1955. 3554

BOROUGH OF SCARBOROUGH.

BOROUGH AND WATER ENGINEER'S DEPARTMENT.

APPOINTMENT OF CHIEF ASSISTANT ARCHITECT.

Applications are invited for the permanent appointment of **CHIEF ASSISTANT ARCHITECT** at a salary within Grade V of the A.P.T. Scale of the National Scale of Salaries (£750-£900 per annum).

Applicants must be Chartered Architects capable of undertaking the design and supervision of building schemes (including housing) carried out by the Corporation.

The appointment will be subject to the provisions of the Local Government Superannuation Acts 1937/53, and to the passing of a medical examination.

In a suitable case the Council will be prepared to pay part of the removal expenses and assist in the provision of housing accommodation.

Applications, on a form to be obtained from the Borough Engineer, must be delivered to the undersigned not later than 28th November, 1955.

H. V. OVERFIELD, M.I.C.E.,
Borough and Water Engineer.

Town Hall,
Scarborough.
November, 1955. 3704

LONDON COUNTY COUNCIL.

ARCHITECTS' DEPARTMENT.

Applications are invited for the following appointments:—

SCHOOLS ARCHITECT—Responsible to Architect to the Council for organisation and direction of Schools Division, dealing with the design and erection of educational buildings of all types. Salary scale: £2,050 x £100-£2,250 a year. Commencing salary in accordance with qualifications and experience.

SENIOR ARCHITECT (GENERAL DIVISION)—Responsible to Architect to the Council for organisation and direction of General Division, engaged on programme of new buildings including fire stations, homes for the aged, welfare clinics, children's homes, industrial units and a wide range of other buildings. Salary scale: £1,775 x £100-£2,075. Commencing salary in accordance with qualifications and experience.

Both positions call for design ability, knowledge of modern methods of construction, qualities of leadership and organising ability of a high order. Full particulars and application forms (which must be returned by Monday, 12th December, 1955) obtainable from the Clerk of the Council (CL/G), County Hall, Westminster Bridge, London, S.E.1. (1842) 3705

COUNTY BOROUGH OF SUNDERLAND.

Applications are invited for:—

(a) **SENIOR ASSISTANT ARCHITECTS**, salary within Grade A.P.T. (£750-£900).

(b) **ASSISTANT ARCHITECTS**, salary within Grade A.P.T. IV (£675-£825).

(c) **ASSISTANT QUANTITY SURVEYORS**, salary within Grade A.P.T. IV (£675-£825).

Applicants for (a) and (b) to be members of the R.I.B.A., and for (c) to have passed the final examination of the R.I.C.S. Commencing salaries will be fixed according to experience.

Particulars of the appointment and application forms may be obtained from the Borough Architect, Grange House, Stockton Road, Sunderland.

Applications must be addressed to me and received at my office, Town Hall, not later than 25th November, 1955.

Canvassing will disqualify.

G. S. MCINTIRE,

Town Clerk.

Town Hall,
Sunderland. 3708

BOROUGH OF ACTON.

BOROUGH ENGINEER'S DEPARTMENT.

Applications are invited for the appointment of **ARCHITECTURAL ASSISTANT, A.P.T. 2** (£560 p.a. x £20 p.a. to £540 p.a., plus London "weighting").

Conditions of appointment and form of application may be obtained from the Borough Engineer, Town Hall, Acton, W.3. to whom applications must be delivered by 28th November, 1955.

Canvassing will disqualify.

H. C. LOCKYER,
Town Clerk.

Town Hall,
Acton, W.3.
4th November, 1955. 3697

**CITY OF ST. ALBANS.
CITY ENGINEER AND SURVEYOR'S
DEPARTMENT.
TECHNICAL ASSISTANT/DRAUGHTSMAN
(A.P.T. II—£560 × £20—£840).**

Applicants should have good draughtsmen and have technical knowledge suitable for the Department.

HOUSING AVAILABLE.

Applications with full details and names of two referees must reach me by 25th November, 1955.

W. B. MURGATROYD,
Town Clerk.

38, St. Peter's Street,
St. Albans 3710

**DERBYSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.**
Applications invited from Clerks of Works for five temporary appointments for the supervision of the erection of new schools at:—

- (a) Etwell, Hatton and Mickleover.
- (b) Chaddesden and Breaston.
- (c) South Normanton.
- (d) Hope.
- (e) Swadlincote.

Wage £11 per week, increasing to £14 per week on 1st April, 1956, subject to satisfactory service. Travelling expenses will be paid.

Candidates should have a sound knowledge of all building trades.

Appointment subject to Local Government Superannuation Acts.

Application forms from F. H. Crossley, County Architect, St. Mary's Gate, Derby, returnable by 28th November, 1955. 3501

**COUNTY BOROUGH OF DERBY.
BOROUGH ARCHITECT'S DEPARTMENT.
ARCHITECTURAL STAFF.**

- A.P.T. Grade IV (£675—£825 per annum).
- A.P.T. Grade III (£600—£725 per annum).
- A.P.T. Grade II (£560—£640 per annum).
- A.P.T. Grade I (£500—£580 per annum).

Higher General Division (£275 to £20, rising to £475).

QUANTITY SURVEYING STAFF.
A.P.T. Grade V (£750—£900 per annum).
A.P.T. Grade III (£600—£725 per annum).
A.P.T. Grade II (£560—£640 per annum).
Starting grade will be appropriate to professional experience and qualifications.

HEATING, VENTILATING AND MECHANICAL ENGINEER.

A.P.T. Grades V/VI (£750—£1,000 per annum). Applicants must be experienced in design of heating, ventilating and hot and cold water services, preparation of estimates and drawings for large public buildings and schools, and should be Associate Member of the Institution of Heating and Ventilating Engineers. Commencing salary will be according to qualifications and experience. Permanent superannuable appointments, subject to one month's notice and to medical examination. National Conditions of Service.

Applicants must state for which post they are applying.

Further particulars and application forms obtainable from and to be returned to The Borough Architect, The Council House, Corporation Street, Derby, not later than Monday, 28th November, 1955.

G. H. EMLYN JONES,
Town Clerk.

2nd November, 1955. 3711

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

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment is excepted from the provisions of the Notification of Vacancies Order, 1952.

VARIED experience in all branches of Building, Surveying and Architecture for young ASSISTANT (R.I.C.S. Inter. standard and 2 years' practical experience) in City firm of Chartered Surveyors and Architects. Box 3563.

ARCHITECTURAL ASSISTANTS, with approx. 5 years' office experience, required for West End Architect's office engaged on large office building and cinema contracts. Commencing salary £625. Phone Whitehall 1624 for appointment. 3561

ARCHITECTURAL ASSISTANTS required immediately. Salary by arrangement. Five-day week. Scherrer and Hicks, 19, Cavendish Square, W.1. 3506

ARCHITECT, practising N.W.3 district, with large hospital programme, requires experienced ASSISTANT (minimum of 3 years). Reply, giving details of experience, Box 3541.

NEW BRANCH OFFICE being opened in West Hartlepool offers opportunity for newly qualified or Final standard ASSISTANT, to obtain all-round experience. Varied practice. Salary by arrangement. Apply to Warren Neil & Elder, Stonebow, Lincoln. 3543

NAIROBI—Required for leading office SENIOR ASSISTANT. Salary from £1,200 to £1,440 p.a. Free passage, bonus and leave scheme, etc. Further details from OSS.17/10. Overseas Technical Service, 5, Welidon Crescent, Harrow, Middx. 3546

ARCHITECTS require (a) SENIOR ASSISTANT, salary £700—£800; (b) JUNIOR ASSISTANT, salary £450—£600, and (c) SHOP FITTING DESIGNER-DRAUGHTSMAN, salary according to experience. Good prospects and permanency offered to capable applicants. Stephenson, Gillis & Partners, 2, Saville Chambers, North Street, Newcastle-on-Tyne. 3525

ARCHITECTURAL ASSISTANTS required, of Intermediate R.I.B.A. standard, for work on contemporary industrial buildings. Good salary and plenty of opportunity for initiative. London office. Write, giving details of salary, experience, to Howard, Souster & Fairbairn, 81, Piccadilly, W.1. 3527

SENIOR ASSISTANT required in the Architects' Department of the Co-operative Permanent Building Society, to work on new Head Office Building in London. Position offered is one of responsibility. Write, giving age, experience, etc., and salary required, to The Chief Architect, The Co-operative Permanent Building Society, New Oxford House, Bloomsbury Way, London, W.C.1. 3528

INTERESTING and permanent positions offered to ARCHITECTURAL ASSISTANTS, Intermediate to Final standard. Must be fully conversant with building construction and particularly services, fittings and finishing work required in industrial and commercial buildings. Assistance in house accommodation given. Write stating age, qualifications, experience and salary required, to Dept. P.B., Becham Buildings, Ltd., Shipston on Stour, Warwickshire. 3226

ARCHITECTURAL ASSISTANTS with drive and enthusiasm needed for design and detail work on atomic energy buildings and temporary factories. This work offers good opportunities for assistants of up to final standard, in a pleasant office opposite Victoria Station. Please reply in confidence giving qualifications, previous experience, age, etc., to Box 275, Glovers Advertising Ltd., 351, Oxford Street, W.1. 3265

ARCHITECTS' CO-PARTNERSHIP require unmarried, qualified, experienced ASSISTANT in their Lagos office. Maximum four 14 months. Flat provided. Write 44, Charlotte Street, London, W.1, or telephone Langham 5791. 3274

ARCHITECTS' CO-PARTNERSHIP require qualified ASSISTANT with experience. Write 44, Charlotte Street, London, W.1, or Telephone Langham 5791. 3275

ARCHITECTS' Department of a large multiple retail concern with offices in London require the following:—

- (1) SENIOR ARCHITECTURAL ASSISTANTS.
- (2) JUNIOR ARCHITECTURAL ASSISTANTS.
- (3) SHOPFITTING DRAUGHTSMAN.
- (4) BUILDER'S CLERK.

There is a pension scheme, and a five-day week is in operation with the exception of December and January. Dining room available for the use of staff. Applicants should write giving particulars of age, experience, and salary required. Box 3257.

DEACON & LAING, 9, St. Paul's Square, Bedford, have a further vacancy for a keen ASSISTANT, under 30, for a variety of interesting work. 3344

ARCHITECT'S ASSISTANT required to work under Staff Architect of a large and expanding multiple combine in the West End of London. Splendid opportunity for responsible young Architect interested in shop premises. Good salary. 5-day week. Excellent canteen. Write, stating in confidence previous experience and salary required, to the Personnel Manager, Jax Stores, Ltd., 49/53, Poland Street, London, W.1. 3581

ASSISTANT ARCHITECTS, of Intermediate or Final R.I.B.A. standard, are required for busy N.W. London office engaged on interesting and varied works of contemporary character, including office and industrial schemes, multi-storey flats and maisonettes, private and municipal housing. Superannuation scheme and 5-day week. Applications should be made in writing, stating age, qualifications, experience, and salary expected, to Sydney Greenwood, A.R.I.B.A., 33, Bunsen Lane, London, N.W.7. 3555

R. A. BOXALL, A.R.I.B.A., has vacancies at Chelmsford for:—

CHIEF ASSISTANT. Salary according to qualifications and experience.

SENIOR ASSISTANT. A.R.I.B.A. with good office experience. Salary about £700.

INTERMEDIATE ASSISTANT. R.I.B.A. Inter., with some office experience. Salary £450—£500.

JUNIOR ASSISTANT. Salary £100—£150, with facilities for part-time study.

INTERMEDIATE ASSISTANT. As above. Good variety of work, but mainly schools. Applications in writing please, with full details, to 81, Moulsham Street, Chelmsford. 3364

ARCHITECTURAL ASSISTANTS, of R.I.B.A. Final or Intermediate standard (or equivalent), required immediately for interesting and varied work in private practice, 50 miles London. Salary in accordance with age and experience. Please send full details to Box 3345.

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 736, c/o 7, Coptic St., W.C.1. 2526

**CO-OPERATIVE WHOLESALE SOCIETY LTD.,
ARCHITECTS' DEPARTMENT,
LONDON.**

ASSISTANT ARCHITECTS, WORKER-UP, AND SHOP FITTING DRAUGHTSMAN. Applications are invited from suitably qualified persons. Salary on a scale £485—£745 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, Leaman Street, London, E.1. 2524

**CO-OPERATIVE WHOLESALE SOCIETY LTD.,
ARCHITECTS' 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.

(B) ASSISTANT ARCHITECTS capable of preparing working drawings and details from preliminary sketches.

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. 2562

**CO-OPERATIVE WHOLESALE SOCIETY LTD.,
ARCHITECTS' DEPARTMENT, MANCHESTER.**

Applications are invited for the following appointments:—

(A) SENIOR ASSISTANT ARCHITECTS with experience of work in commercial and industrial projects.

(B) ASSISTANT ARCHITECTS capable of preparing working drawings from preliminary details.

There is a five-day week in operation, and applications stating age, experience, qualifications and salary required should be addressed to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society Limited, 1, Balloon Street, Manchester, 4. 2561

ARCHITECTURAL ASSISTANTS required in West End office, qualified or Intermediate standard. Varied and interesting work. Five-day week. Salary range £600—£800. Box 2999.

WANTED urgently: Capable DRAUGHTSMEN for preparing working drawings of industrial buildings from sketch designs. Salary according to experience. Write or telephone to Percy Bilton Ltd., 113, Park Street, W.1. Telephone number MAYfair 8240. 3437

ARCHITECTURAL ASSISTANT, about Intermediate standard, required for busy country practice. Agricultural, domestic and industrial work. Box 3451.

JUNIOR ARCHITECTURAL ASSISTANTS required in busy office handling a wide variety of interesting work, including commercial, domestic, school and brewery projects. Please apply stating experience and salary required to:—Portess & Richardson, Lloyds Bank Chambers, Peterborough. 3439

POTTERS BAR, Middlesex, office, requires capable ASSISTANT, about Intermediate stage, with good experience of estate development and private domestic work. Please write in first instance to Booth and Booth, Leighton House, Potters Bar, Middlesex. 3476

BUSY London Office requires two ARCHITECTURAL ASSISTANTS, approximately Intermediate standard or upwards. Also requires one ASSISTANT with considerable perspective experience, particularly able to do quick interior colour sketches. Five-day week, good salaries. Lewis Solomon, Son & Joseph, 21, Bloomsbury Way, W.C.1, HOL 5108 or 7082. 3463

SENIOR ARCHITECTURAL ASSISTANT required in small City Office for varied and interesting projects. Possibility of partnership later to right man. Please reply with details of age, experience and salary required, to Box 3453.

ARCHITECTURAL ASSISTANT, about Intermediate standard, required in busy London Office with varied practice. Please write with details of age, experience and salary required, to Box 3464.

DEVEREUX AND DAVIES, 3, Gower Street, W.C.1, require ASSISTANT—Inter. to Final standard with some practical experience. Vacancy suitable for keen person wanting to work in relatively small office where freedom and a high standard of individual responsibility encouraged. 3465

JUNIOR ARCHITECTURAL DRAUGHTSMEN urgently required for work at head office. Reply giving details of experience to Sir Alfred McAlpine & Son, Ltd., The Oaks, Hooton, Cheshire. 3470

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 1942.

SENIOR SHOPFITTING DRAUGHTSMAN required by leading London Shopfitters. Salary £800 to £1,000, plus bonus and pension scheme. Box 3018.

ARCHITECT'S JUNIOR ASSISTANT, with previous office experience, required immediately. Varied and interesting work. Apply, stating age, experience, and salary required, to Arthur J. Penberthy, F.R.I.B.A., 74, Bath Road, Wolverhampton. 3182

ONE SENIOR ASSISTANT ARCHITECT and ONE JUNIOR ARCHITECTURAL ASSISTANT urgently required at Welwyn Garden City for work on industrial and commercial projects of a contemporary character. Salaries according to experience and ability. Please apply in the first instance by letter to Chas. W. Fox, F.R.I.B.A., 22, Parkway, Welwyn Garden City, Hertfordshire. 3548

ARCHITECTURAL ASSISTANTS (Senior) required by Consulting Engineers for work in their Wimbledon Office and in Central London. Commencing salary £650 to £750 p.a., according to qualifications and experience. The Coniston Company, Eagle House, High Street, Wimbledon, S.W.19. 3575

GOLLINS, MELVIN, WARD & PARTNERS, 15, Manchester Square, W.1, require **SENIOR and JUNIOR STAFF.** Competent Working Drawings essential. Opportunity to work on contemporary buildings. Write or telephone WELBEC 9991. 3579

ARCHITECTURAL ASSISTANT for professional firm in Westminster. Experienced and qualified. Salary from £800 upwards, according to experience in industrial work. Box 3578. 3579

ARCHITECTURAL ASSISTANT, Intermediate standard, required by large Midlands Brewery Company. Please reply, giving full details of qualifications, age, experience, and salary required, to Box 3571. 3579

CANADIAN firm requires **ASSISTANT ARCHITECT** for friendly growing practice in Fredericton, N.B. Applicants should have several years' experience as draughtsmen and be capable of producing working drawings and details from preliminary plans and designs. Initial salary of over £70 p.m. is offered, rising to £90 at end of first year. Free passage for applicant and assisted passage for wife included in contract. Further details apply, quoting 288.26/2, to Overseas Technical Service, 5, Welldon Crescent, Harrow, Middx. 3569

ATOMIC ENERGY RESEARCH ESTABLISHMENT, Harwell, has vacancies in its Engineering Services Division for **ARCHITECTURAL ASSISTANTS.** Vacancies exist in both the Building Section and the Chief Architect's Department. Duties will include the preparation of schemes and drawings required in connection with new buildings, or in connection with works of extension and conversion of the technical and domestic buildings of the Establishment. The range of work covered is very wide, and many aspects are of a novel nature. Applicants should be of not less than Inter. R.I.B.A. standard, and should have had several years' experience in an Architect's office. Experience in surveying and in the preparation of detailed drawings and specifications is essential. Salary scale is £478 (at age 21)–£748 p.a. Officers selected for the above appointments will be required to join the Authority's contributory superannuation scheme. Requests for Application Form on a post card to the Establishment Officer, U.K. Atomic Energy Authority, A.E.R.E., Harwell, Didcot, Berks., quoting reference 2/103/440. 3519

TWO ARCHITECTURAL ASSISTANTS required, with good office experience, for work of a contemporary nature in small congenial office. Five-day week. Salary £600–£800 p.a. Telephone CITY 4086. 3589

CLIFFORD CULPIN & PARTNER require keen **ASSISTANTS,** with progressive ideas, to work on large and interesting projects, including schools, offices and municipal buildings. Firm shortly moving to new excellently equipped offices. Please apply in writing with full details to 3, Southampton Place, W.C.1. 3593

KEEN ARCHITECTS' ASSISTANT required. Prefabrication experience desirable. Apply, stating age, experience, and salary required, to T.I.U., Ltd., 78, Buckingham Gate, S.W.1. Tel.: ABBEY 5291. 3592

JUNIOR ASSISTANT, competent to make measured surveys and prepare working drawings, required by Wallis & Smith, Chartered Architects, Basingstoke. Apply by letter, stating salary required. 2533

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

THE London Hospital, Whitechapel, E.1, requires **JUNIOR ARCHITECTURAL ASSISTANT.** Salary £440 to £650 p.a., according to experience, plus London weighting. Post superannuable. Applications stating age, present salary and brief particulars of experience to be sent to the House Governor. Accommodation is available in Kensington if successful candidate is a woman. 2677

ARCHITECTURAL ASSISTANTS, SENIOR and JUNIOR, required for varied and interesting work. Please write stating age, experience and salary required. Martin & Martin & W. H. Ward, F.A.R.I.B.A., 106, Colmore Row, Birmingham, 3. 3514

QUALIFIED and Experienced SENIOR ASSISTANT ARCHITECT required for varied work. Salary £800–£900. Pension scheme available. T. H. Johnson & Son, F.R.I.B.A., 20, Priory Place, Doncaster. 3516

BAMS, HOLDEN & PEARSON require **ARCHITECTURAL ASSISTANTS** immediately. Write, giving particulars of experience and salary required to 38, Gordon Square, W.C.1. 3517

INTERMEDIATE grade ASSISTANT required: interesting and varied work of contemporary character; modern offices. J. Seymour Harris & Partners, 4, Greenfield Crescent, Edgbaston, Birmingham, 15. 3513

JUNIOR ASSISTANT required in City Office—good draughtsman—salary by arrangement and according to ability. Write stating age and experience, Box 3509. 3518

ARCHITECTURAL ASSISTANT required by a firm in Home Counties. General practice. Apply, stating experience and salary, to Manning & Steel, F.R.I.B.A., 3, George Street West, Luton, Beds. 3518

ARCHITECTURAL ASSISTANTS, Senior or Junior, required for general country practice. Salary up to £14 per week, according to experience and ability. Write, stating full particulars and when free, to Forsyth Lawson, Cunningham & Partners, 30, Horse Fair, Banbury, Oxon. 3522

ARCHITECTURAL ASSISTANT required in interesting and varied practice: schools, churches, commercial building and housing. Salary according to age and experience within the range £500 to £700. Apply, giving details, to Burles & Newton, 25, Bedford Row, W.C.1. Chancery 9538. 3573

ARCHITECTURAL ASSISTANTS (TWO), of Intermediate to Final R.I.B.A. standard, required by Orman and Partners, Chartered Architects, for their Guildford Office. Salaries related to experience. Apply, stating age and previous experience, to 23A, High Street, Guildford. Telephone 67688-9. 3530

ERIC LYONS requires **SENIOR ASSISTANT and JUNIOR ASSISTANT.** Write brief details to Mill House, Bridge Road, Hampton Court, Surrey. 3531

SIXTY-FIVE POUNDS PER MONTH for **JUNIOR DRAUGHTSMEN or WOMEN** offered by leading Nairobi firm to work on large contemporary exciting schemes of office blocks, shops, cinemas, etc. In early 20's, passed Intermediate. Fare out paid. Further particulars from OSS 74/3, Overseas Technical Services, 5, Welldon Crescent, Harrow, Middx. 3600

YORKE, ROSENBERG and MARDALL require **ASSISTANTS,** capable of producing good detailed working drawings. Pension and Disability Schemes for permanent staff. Apply 2, Hyde Park Place, W.2. Ambassador 2451. 3535

ARCHITECTURAL ASSISTANT, Intermediate R.I.B.A. standard. Good draughtsmanship essential, together with sound knowledge of general construction and specification writing, including repairs, alterations and maintenance of existing buildings. Salary between £435 and £728, according to qualifications and ability. Applications in writing to The City Surveyor, Corporation of London, 55/61, Moorgate, London, E.C.2. 3598

A.R.I.B.A., required by leading Sydney, Australia, firm of Architects. Age 22-40. Commencing salary £A1,300 p.a., passage paid. For interview in London reply to Box 3599. 3599

ARCHITECTURAL JUNIOR and SENIOR ASSISTANTS required. Apply in writing, stating experience and salary required, to Lucas, Roberts & Brown, 4, Barnfield Hill, Exeter. 3603

WESTWOOD, SONS & HARRISON, F.R.I.B.A., require a **SENIOR ARCHITECTURAL ASSISTANT, A.R.I.B.A. standard,** with office experience, also **JUNIOR ASSISTANT.** Apply in writing, giving brief outline of experience and qualifications, to 46, Baker Street, W.1. 3709

JUNIOR DRAUGHTSMEN required at Head Office of Dolcis Shoe Co. Experience desirable, but not essential, providing candidate has capacity for mechanical drawing. Good remuneration, non-contributory pension scheme. Apply to Dolcis Shoe Co., 7-13, Great Dover Street, S.E.1. HOP. 3551. 3707

ARCHITECTURAL ASSISTANTS, Intermediate to Final standard required. Herbert, Son & Sawday, 18, Friar Lane, Leicester. 3461

ARCHITECTURAL ASSISTANTS urgently required for detailed planning work. Intermediate and Junior. Salary according to experience. Please apply to L. O. L. Hannen & John H. Markham, 7, Victoria Street, Westminster, S.W.1. Tel. Abbey 5861. 3115

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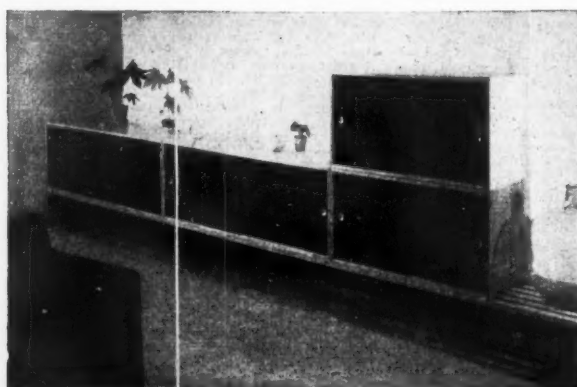
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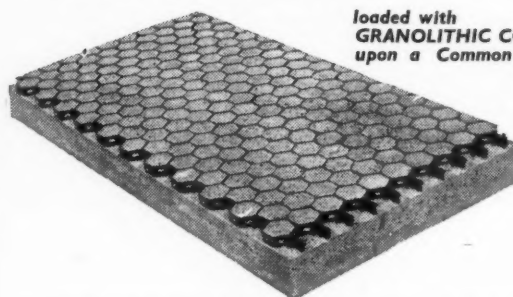
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Aerov (Engineers), Ltd.	cxv	Ekco-Ensign Electric, Ltd.	xc	National Coal Board, The	xv
Adams, Robert (Victor), Ltd.	ciii	Ellis School of Architecture	lxxxv	Newsum, H., Sons & Co., Ltd.	vi
Aircrow Co. & Jicwood, Ltd.	xcii	Evode, Ltd.	cxiii	North British Chemical Co., Ltd.	lxxxii
Alexandria Trading Corporation, Ltd. ...	xcii	Falk Stadelmann & Co., Ltd.	ci	Panelac (G.B.), Ltd.	cx
Allied Ironfounders, Ltd.	xxix	Finlock Gutters, Ltd.	xxiv	Penfold Fencing & Engineering, Ltd. ...	civ
Architectural Press, Ltd., The ...	xcii, cii, civ, cxi	Foyle, W. & G., Ltd.	xxviii	Phillipson Studios	cii
Ascot Gas Water Heaters, Ltd.	xxvi	French, Thos., & Sons, Ltd.	xxvii	Pynford, Ltd.	cxv
Associated Metal Works (Glasgow), Ltd.	cii	Furse, W. J., & Co., Ltd.	cxiii	Radiation Group Sales, Ltd.	xix
Bailey, Ernest, Ltd.	xc	Gas Council, The	xxvii	Rawlings Brothers	lxx
Bawn, W. B., & Co., Ltd.	xcii	Gaskell & Chambers, Ltd.	xxx	Race, Ernest, Ltd.	xviii
Bilston Foundries, Ltd.	lxxviii	Gliksten, J., & Son, Ltd.	xxxix	Remploy, Ltd.	cxvii
Blacknell, H. & H., Ltd.	cxv	Greenwood's & Airvac Ventilating Co., Ltd.	xcv	Richardson & Starling, Ltd.	xviii
Boulton & Paul, Ltd.	xlii	Gypsum Building Products Association	lxiii	Robertson Thain, Ltd.	lxxxv
Braby, Fredk., & Co., Ltd.	xxiii	Hall & Kay, Ltd.	xcvi	Ronuk, Ltd.	xxxi
British Aluminium Co., Ltd., The	vi	Harvey, G. A., & Co. (London), Ltd.	xc	Rycroft & Co., Ltd.	lxvi
British Columbia Lumber Manufacturers' Association	lvi, lvii	Hickson's Timber Impregnation Co. (G.B.), Ltd.	lxxxii	Sadd, John, & Sons, Ltd.	lxix
British Electrical Development Association	xi	Hill & Smith, Ltd.	cxii	Salopian Engineers, Ltd.	xxiv
British Hermesal, Ltd.	xxii	Hill & Smith, Ltd.	cxii	Salter, T. E., Ltd.	lxxxviii
British National Electrics, Ltd.	lxii	Holoplast, Ltd.	lxix	Sanderson, A., & Son, Ltd.	xxv
British Steel Constructions (Birmingham), Ltd.	lxxviii	Hope, Henry, & Sons, Ltd.	lxix	Shannon, Ltd., The	lxxvii
British Titan Products Co., Ltd.	lxxxv	Hydran Products, Ltd.	xii	S.I. Buildings, Ltd.	cv
Broads Manufacturing Co., Ltd.	xcvi	Industrial Engineering, Ltd.	xiv	Simplex Electric Co., Ltd.	lii
Brown, Donald (Brownall), Ltd.	xciv	International Correspondence Schools ...	cxiii	Small & Parkes, Ltd.	lxv
Building Industry Distributors	iv	Ioco, Ltd.	xcii	Smith's Fireproof Floors, Ltd.	lxvi
Burn Bros. (London), Ltd.	cxiv	Janes, H. C., Ltd.	lxx	Sommerfelds, Ltd.	cxiii
Cable Makers' Association	lxvii	Johnson Bros., Ltd.	xcv	South Durham Steel & Iron Co., Ltd.	lxi
Cafferata & Co., Ltd.	viii	Jones, T. C., & Co., Ltd.	xvi	Spencer-Bonecourt-Clarkson, Ltd.	lxix
Canadian Government	lxiv	Key Engineering Co., Ltd.	xxxvi	Stella Building Products, Ltd.	lxvii
Carlisle Plaster & Cement Co.	lxxxv	Lacrinoid Products, Ltd.	c	Stott, Jas., & Co. (Engineers), Ltd.	xii
Carter & Co., Ltd.	lxvii	Legal & General Assurance Society, Ltd.	xcix	Strait Boards, Ltd.	xiv
Causeway Reinforcement, Ltd.	cxii	Le Grand Sutcliffe & Gell, Ltd.	cxv	Sugg, William, & Co., Ltd.	lxviii
Celotex Ltd.	lxxxvii	Lever, Jas., & Sons	cxv	Sutcliffe, Speakman & Co., Ltd.	lxxxix
Chloride Batteries, Ltd.	xvii	Logicol Fuel Storage Units	cxvii	Tarmac, Ltd.	lxxxix
Church & Co. (Fittings), Ltd.	xcii	London Brick Co., Ltd.	lxxxvii	Taylor Woodrow (Building Exports), Ltd.	xxv
Clarke Ellard Engineering Co., Ltd.	lxxxv	Lovell & Hanson, Ltd.	xciv	Teleflex Products, Ltd.	cx
Compactum, Ltd.	lxxxv	Main, R. & A., Ltd.	ix	Terradura Flooring Co., Ltd.	cvi
Constructors' Group	lxxxvi	Mander Bros., Ltd.	lxxxvii	Thornton, A. G., Ltd.	cxii
Crabtree, J. A., & Co., Ltd.	iv	Marley Tile Co., Ltd., The	lix, lxxxii	Timber Development Association, Ltd.	lxxxvi
Crane, Ltd.	lxxxviii	Mather & Platt, Ltd.	xx	Timber Fireproofing Co., Ltd.	lxvi
Crompton Parkinson, Ltd.	xiii	McArt, Robert, & Co., Ltd.	x	T.M.C. Harwell (Sales), Ltd.	xi
De la Rue, Thos., & Co., Ltd.	lxix	McCarthy, M., & Sons, Ltd.	cxiii	Trianco, Ltd.	lxxxviii
Docker Brothers	lxxxii	Metropolitan-Vickers Electrical Co., Ltd.	lxvi	Tucker, George, & Son, Ltd.	xii
Doulton & Co., Ltd.	lxxxii	Midland Joinery Works, Ltd.	ciii	Twistell Design Service	i
Downing, G. H., & Co., Ltd.	liii	Mills Scaffold Co., Ltd.	cxvi	United Ebonite & Lorival, Ltd.	xxvii
Duresco Products, Ltd.	xcvii	Moler Products, Ltd.	xcvii	United Steel Structural Company, Ltd.	lxxxiii
		Monk, A., & Co., Ltd.	ii	Ward & Co.	cxiii
		Monsanto Chemicals, Ltd.	lxviii	Wheatly & Co., Ltd.	liv
				Wheeler, F. H., & Co., Ltd.	cii
				Williams & Williams, Ltd.	lii

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PAGE
xv
vii
lx
lxxxix
c
civ
ciii
cxv
xix
lxx
xcviii
i
xcviii
lxxxiv
xxxii
lxvi
lxix
xciv
lxxxviii
xxxv
lxxxvii
cv
lii
lxv
xlv
cxlii
lxi
xcix
lviii
lxxxvii
xii
xiv
v
lxxxix
xxv
cl
cvi
ciii
lxxxvi
lxvi
xi
lxxxviii
xlii
i
xxvii
lxxxlii
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liv
ciii
iii

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MOUTH

c.
c.

8