

THE ARCHITECTS' JOURNAL



standard contents

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

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No. 3219]

[Vol. 124

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

IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square. Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers. 100, Park Street, Grosvenor Square, W.1. Mayfair 7086
ILA	Institute of Landscape Architects, 2, Guilford Place, W.C.1. Holborn 0281
I of Arb	Institute of Arbitrators. Hastings House, 10, Norfolk Street, Strand, W.C.2. Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1. Museum 7179
IQS	Institute of Quantity Surveyors. 98, Gloucester Place, W.1. Welbeck 1859
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3. Avenue 6851
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1. Abbey 6172
ISE	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, W.C.2. Gerrard 6933
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1. Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1. Reliance 7611
NAMMC	Natural Asphalt Mine Owners and Manufacturers Council. 94/98, Petty France, S.W.1. Abbey 1010
NAS	National Association of Shopfitters. 9, Victoria Street, S.W.1. Abbey 4813
NBR	National Buildings Record. 31, Chester Terrace, Regent's Park, N.W.1. Welbeck 0619
NCBMP	National Council of Building Material Producers. 10 Storey's Gate, S.W.1. Abbey 5111
NEFMAI	National Employers Federation of the Mastic Asphalt Industry. 21, John Adam Street, Adelphi, W.C.2. Trafalgar 3927
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1. Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives. Federal House, Cedars Road, Clapham, S.W.4. Macaulay 4451
NFHS	National Federation of Housing Societies. 12, Suffolk St., S.W.1. Whitehall 1693
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1. Langham 4341
NPL	National Physical Laboratory. Head Office, Teddington. Molesey 1380
NRDB	Natural Rubber Development Board. Market Buildings, Mark Lane, E.C.3. Mansion House 9383
NSAS	National Smoke Abatement Society. Palace Chambers, Bridge Street, S.W.1. Trafalgar 6838
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1. Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1. Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1. Abbey 4504
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh. Fountainbridge 7631
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1. Langham 5721
RICS	Royal Institution of Chartered Surveyors. 12, Great George Street, 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 of Health. 90, Buckingham Palace Road, S.W.1. Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19. Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1. Victoria 2186
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1. Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3. Mansion House 3921
SIA	Society of Industrial Artists. 7, Woburn Square, London, W.C.1. Langham 1984/5
SIA	Structural Insulation Association. 32, Queen Anne Street, W.1. Langham 7616
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1. Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2. Temple Bar 5006
TDA	Timber Development Association. 21, College Hill, E.C.4. City 4771
TPI	Town Planning Institute. 18, Ashley Place, S.W.1. Victoria 8815
TTF	Timber Trades Federation. 75, Cannon Street, E.C.4. City 5040
WDC	War Damage Commission. 6, Carlton House Terrace, S.W.1. Whitehall 4341
ZDA	Zinc Development Association. 34, Berkeley Square, W.1. Grosvenor 6636

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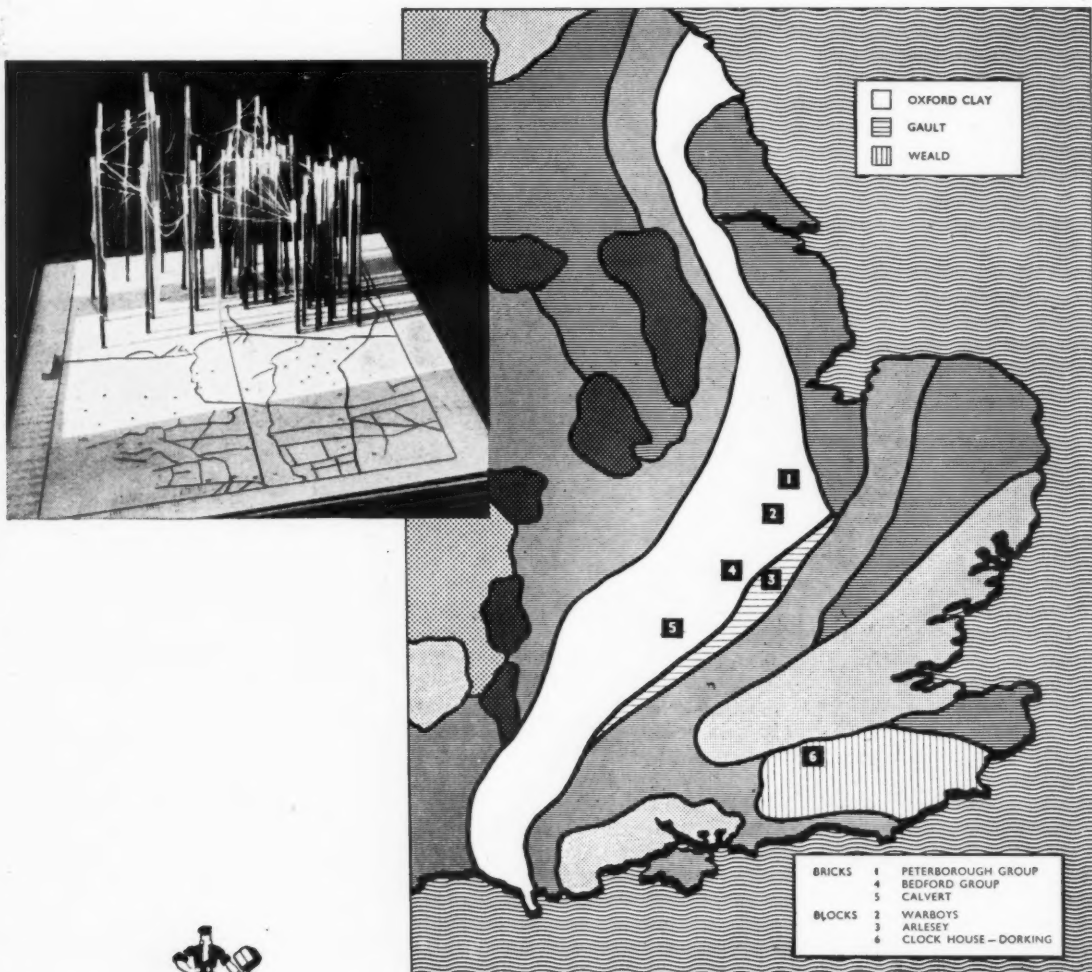
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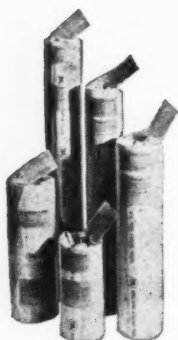
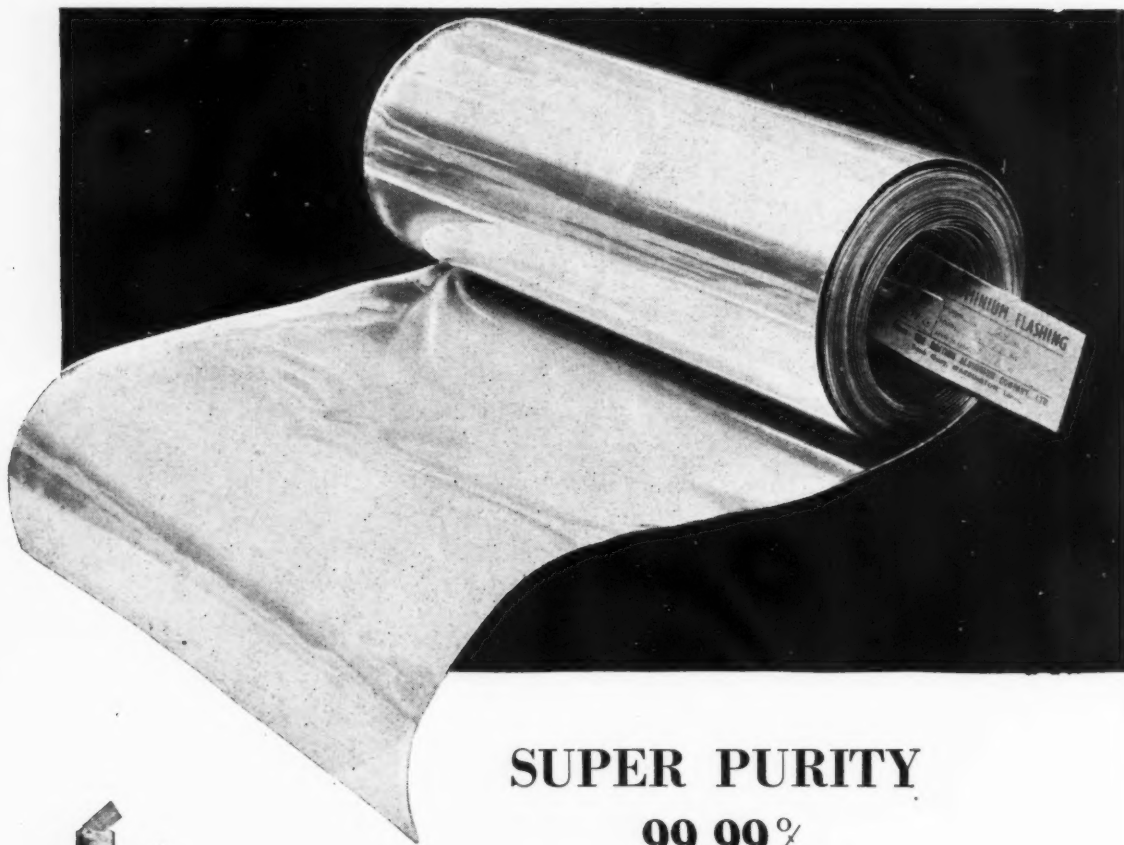
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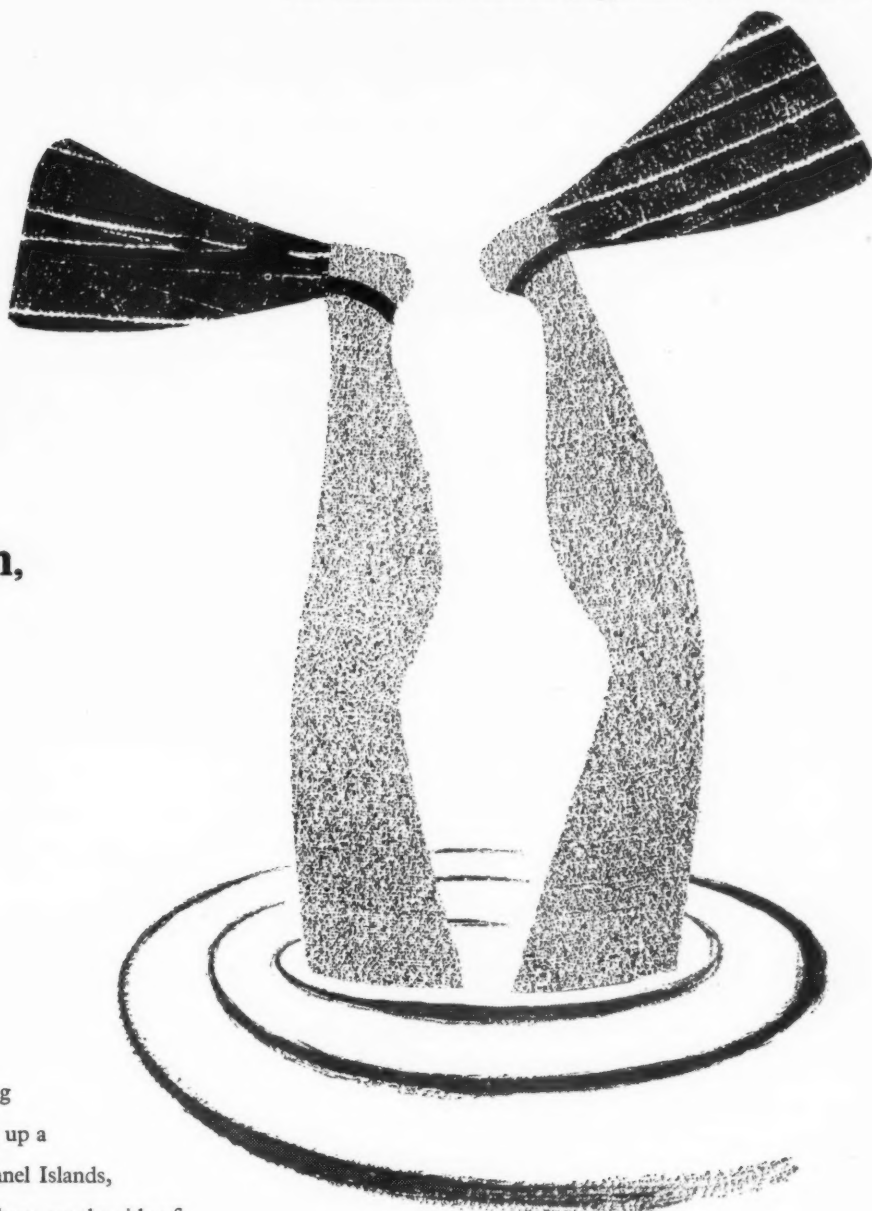
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going
down,"
said the
frogman,
"to look
at our
walls"**



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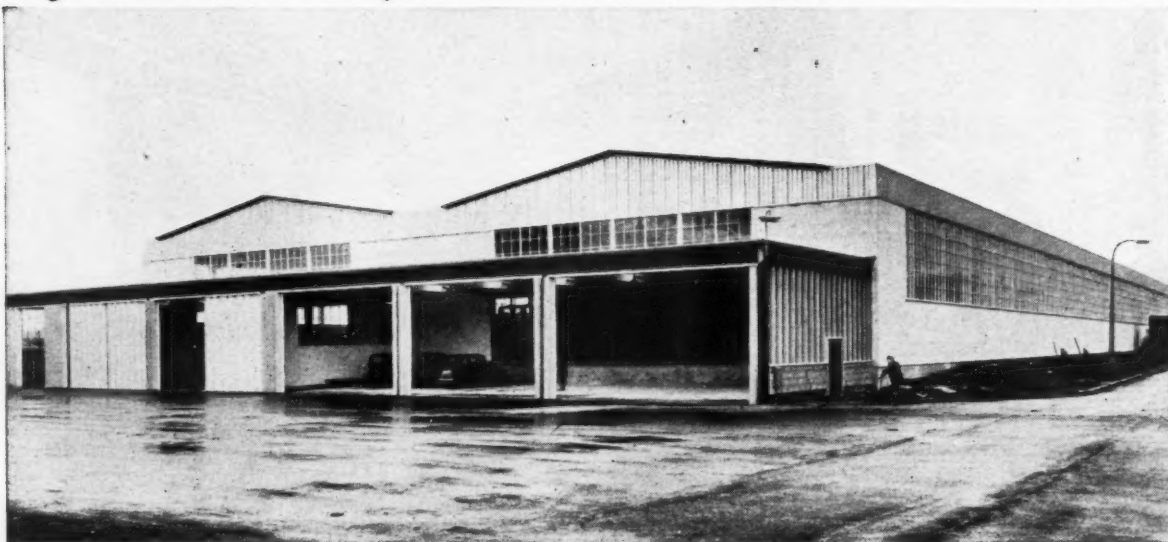
But this happy misuse provides a dramatic demonstration of a point that deserves publicity—*Pammastic*
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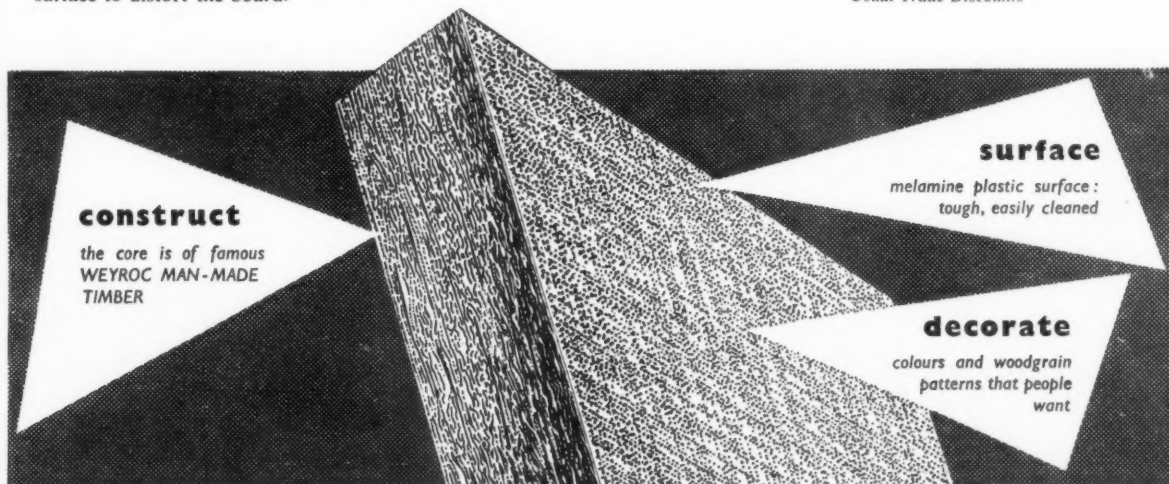
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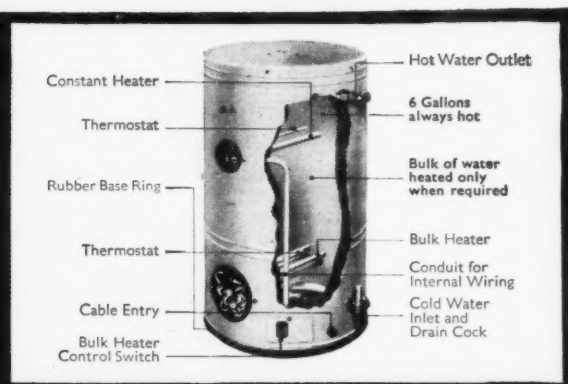
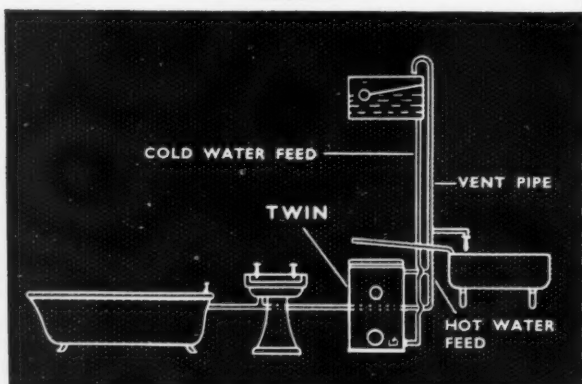
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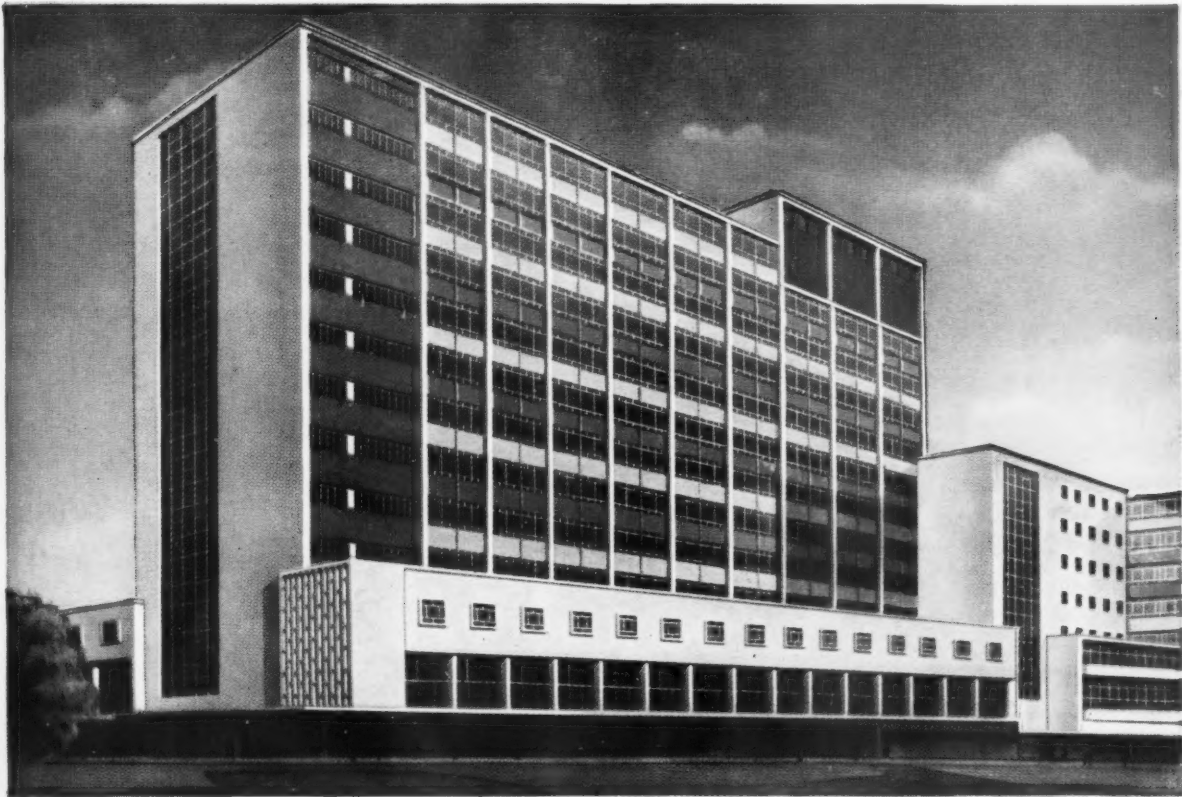


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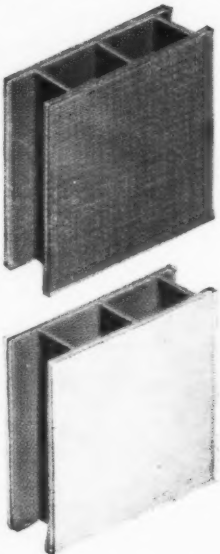
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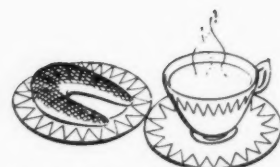
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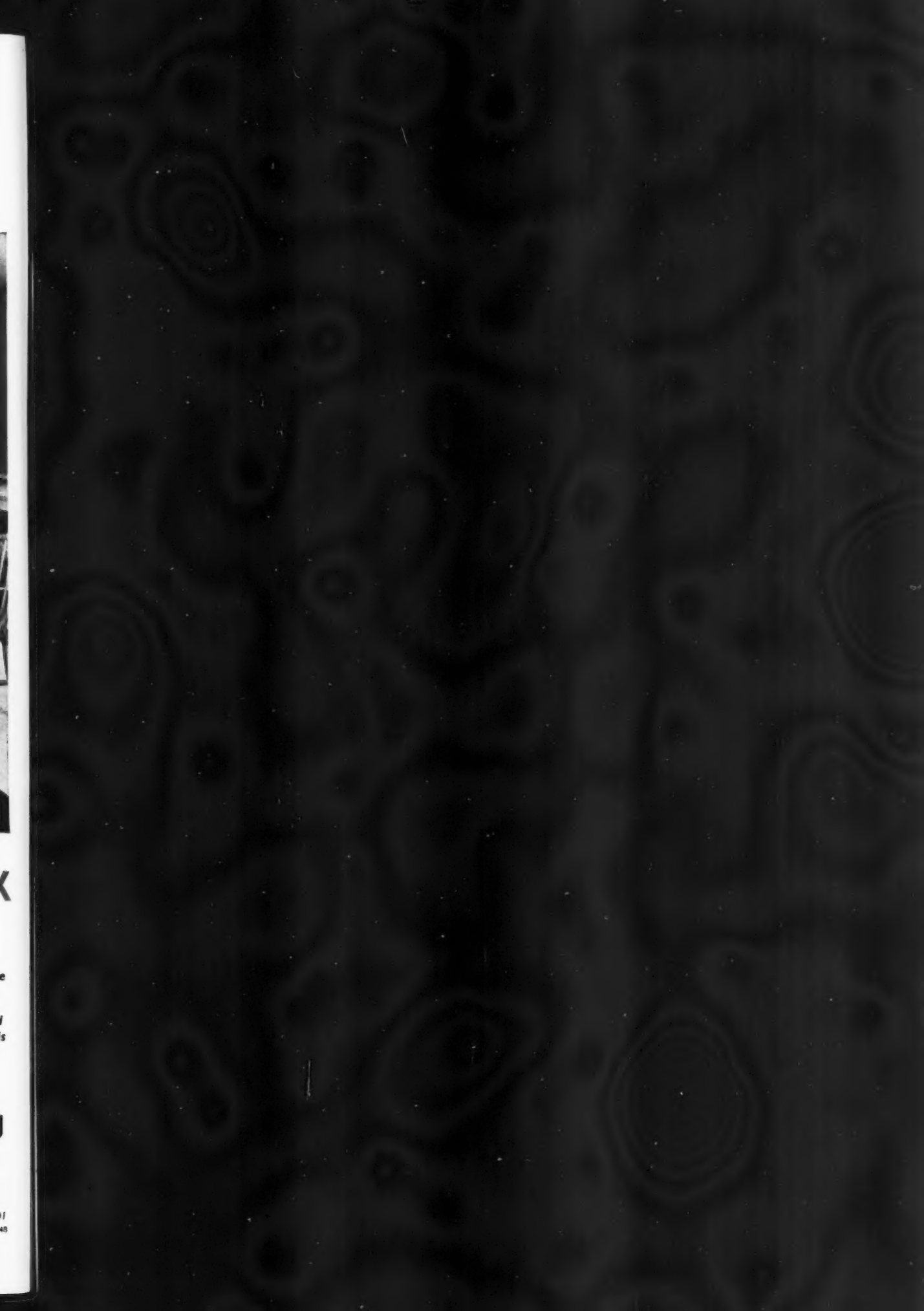
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48

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Illustration by courtesy of J. Harrison, Esq., A.R.I.B.A., County Architect, Surrey County Council.

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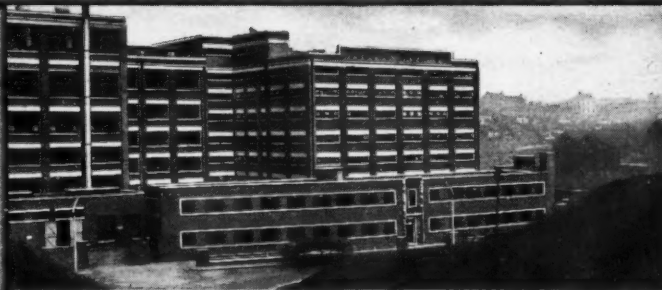
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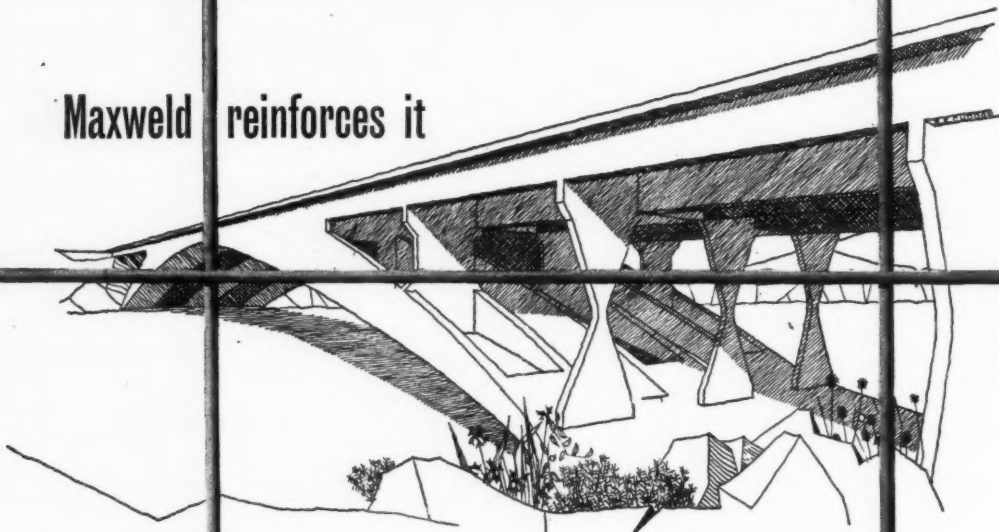
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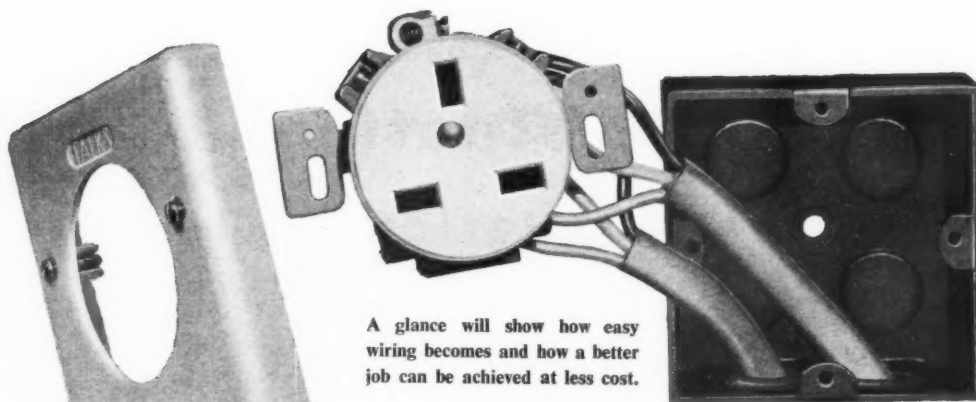
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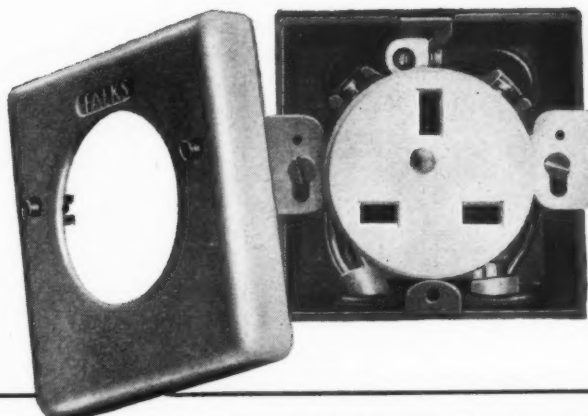
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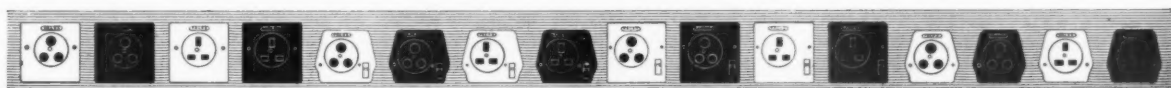
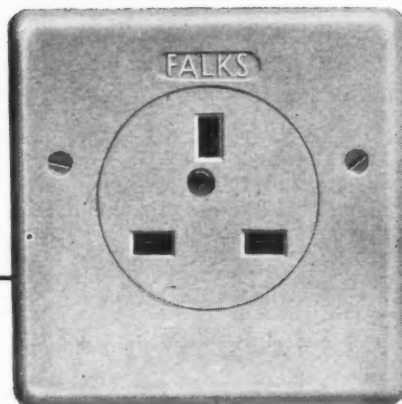


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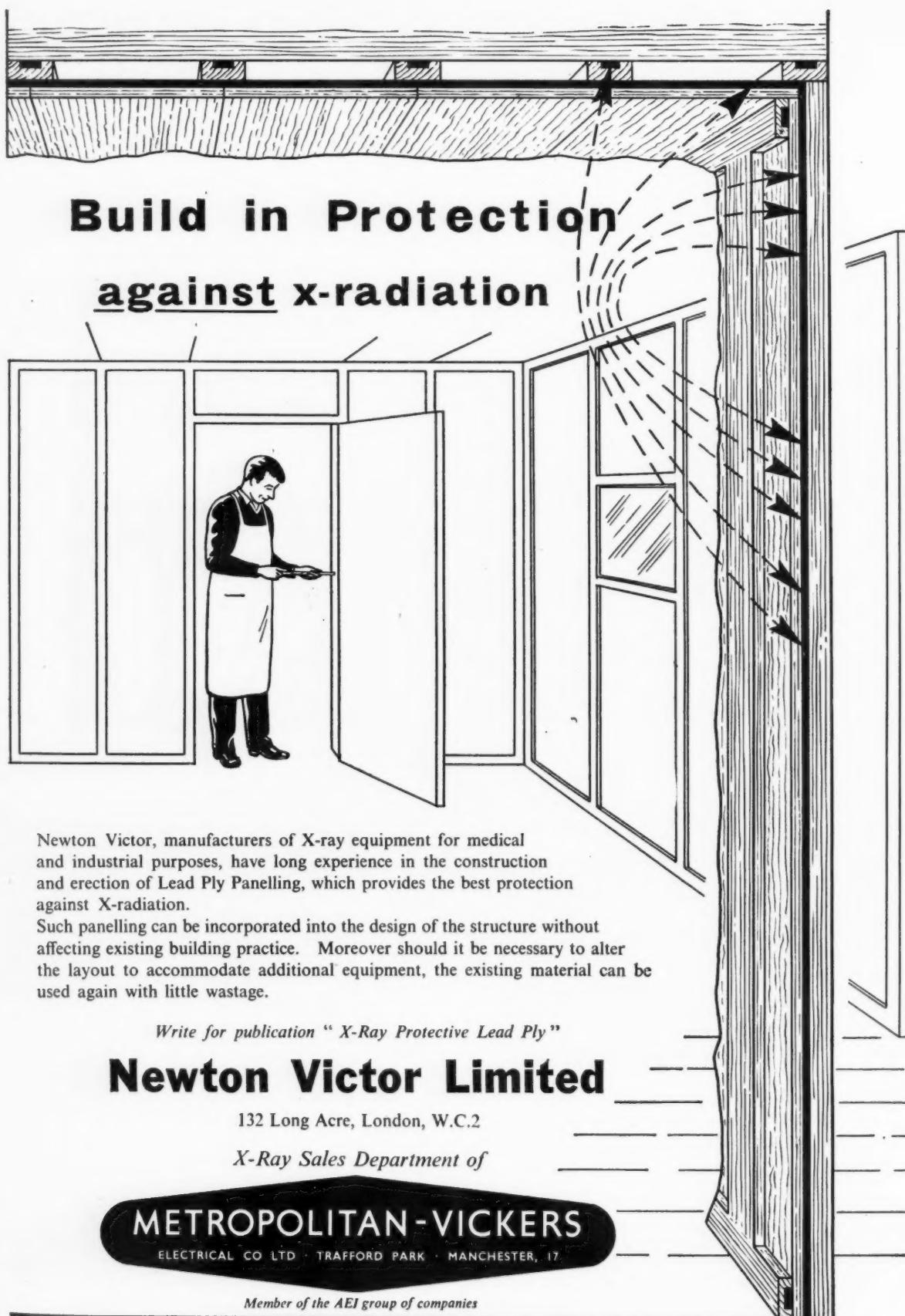
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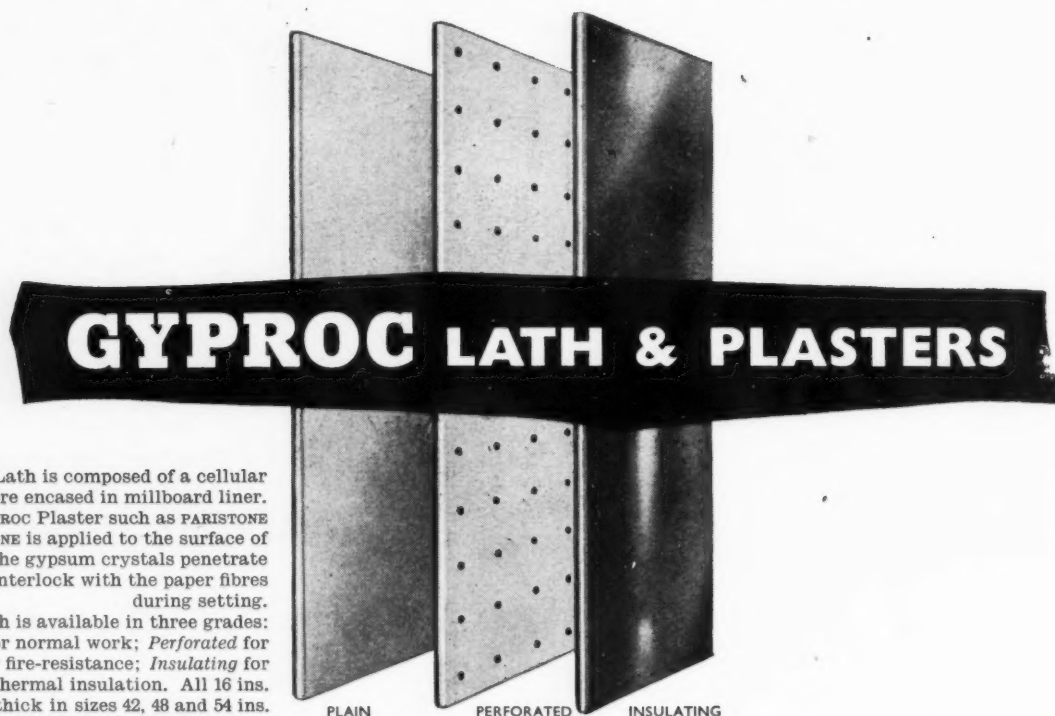
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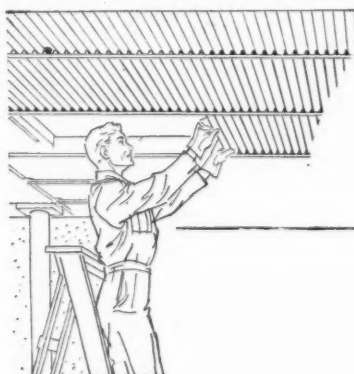


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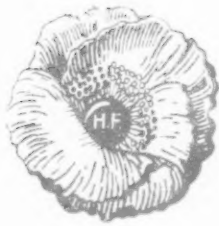
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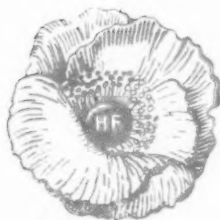


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To you from falling hands we throw
The torch; be yours to hold it high.
If ye break faith with us who die
We shall not sleep, though poppies grow
In Flanders fields.

*"In Flanders Fields" — John McCrae
(d. 1918)*



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NOVEMBER 10th**

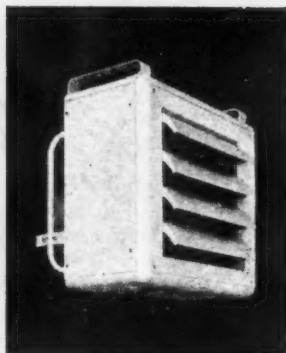
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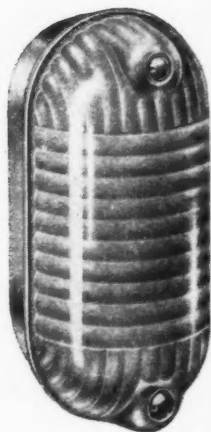
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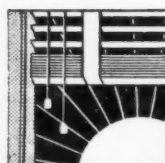
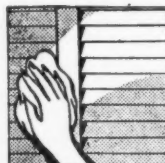
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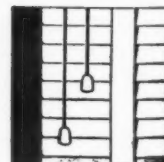


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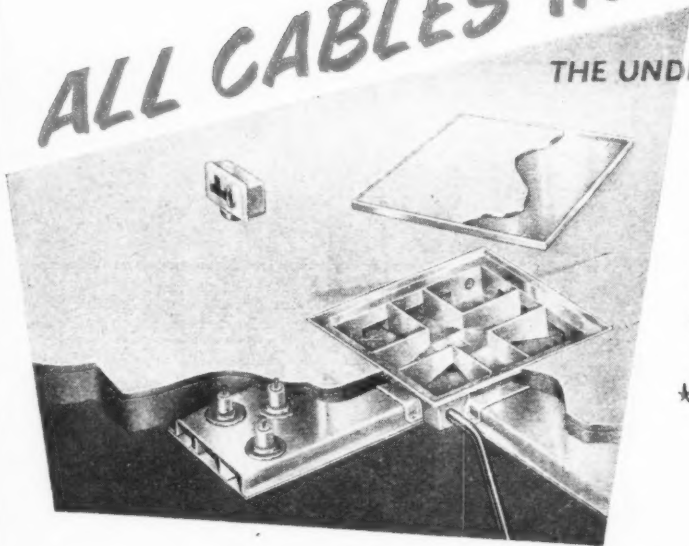
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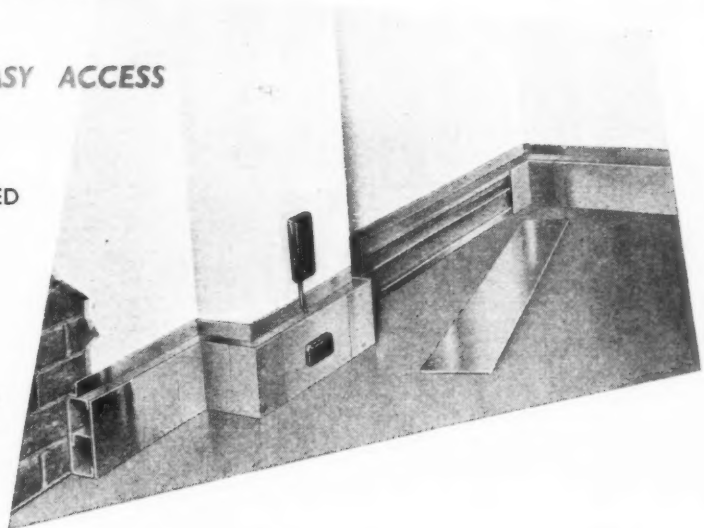
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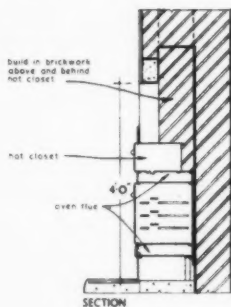
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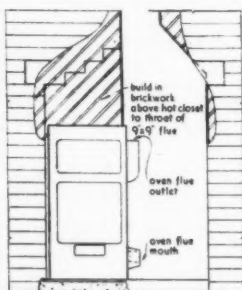
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For a modern kitchen-living room the Yorkist No. 12 has outstanding merit owing to its compact, space-saving design—it occupies a floor space of only $44\frac{3}{4}'' \times 13\frac{1}{2}''$. This continuous-burning side-oven combination grate is made to harmonise with a living room. It has an open fire fitted with a drop-down fire cover for overnight burning and for use as a fast-boiling hotplate. The large cooking oven has an insulated door; and heat is evenly distributed by a loose sheet convection plate. An open fire with a very low front for increased radiation is obtained by lowering the fall bar and polished hob. The overall dimensions (without mantel, jambs and hearth) are: 38" wide x 38" high x 14" deep.

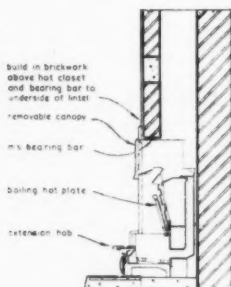


SECTION

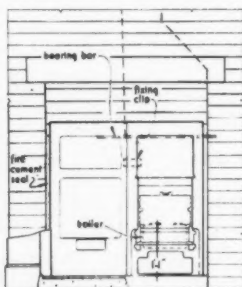


ELEVATION

FIRST STAGE INSTALLATION OF OVEN UNIT OF APPLIANCE



SECTION



ELEVATION

SECOND STAGE INSTALLATION OF FIRE UNIT OF APPLIANCE

PERFORMANCE

The Yorkist No. 12 has a boiler rating of 100,000 B.Th. U/24 hr. Under cooking conditions it will heat about 10 gallons of water an hour from 50°F. to 140°F. and give cooking and hot water facilities to a household of 6-8 people. The open fire is particularly welcome in a combined kitchen-living room: it will heat a room up to 1,600 cu. ft. The shovel-type ashpan normally need only be cleared once in 24 hours. Weekly fuel consumption is $1\frac{1}{2}$ -2 cwt. in normal use, including daily cooking. A wide range of fuels is used, including smokeless fuel such as coke.

INSTALLATION

The hot water storage cylinder should be not more than 30 gallons capacity. It should be lagged and placed as near to the boiler as possible. The flow and return pipes—1" B.S.P.—should be not more than 30 feet long and should be lagged if they exceed 15 feet. The Yorkist is suitable for an opening 40" wide x 45" high (from hearth level) x 14" deep, and should be connected to a uniform 9" x 9" flue.

An additional advantage is the method of delivery. The Yorkist is packed in two self-contained units—the oven and fire units—ready to be assembled. This saves time and precious man hours in installation.

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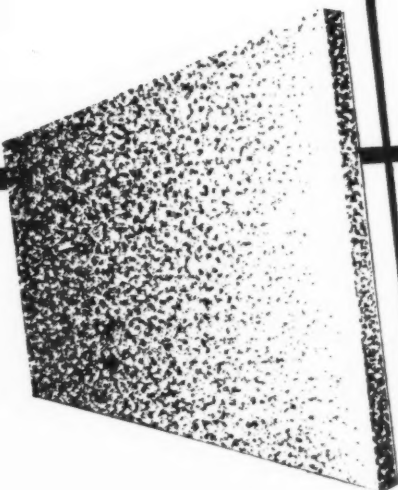


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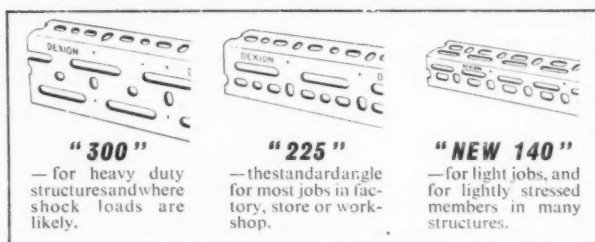
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• NEW DEXION 140—light weight, low cost

Dexion 225 (2½" x 1½") is the popular industrial size for most jobs. Dexion 300 (3" x 1½") is the robust, heavy-duty angle. New Dexion 140 (1⅜" x 1⅜") slashes costs on the light jobs. All are available in rust-protected, stove-enamelled steel, or in aluminium alloy, and all can be used in combination. (For even lighter applications, there is also the new Dexion 112—half the size of 225.)

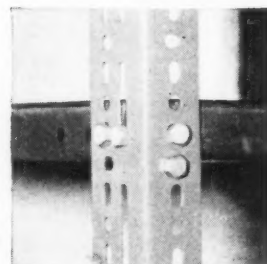


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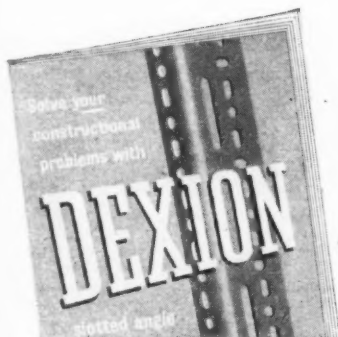
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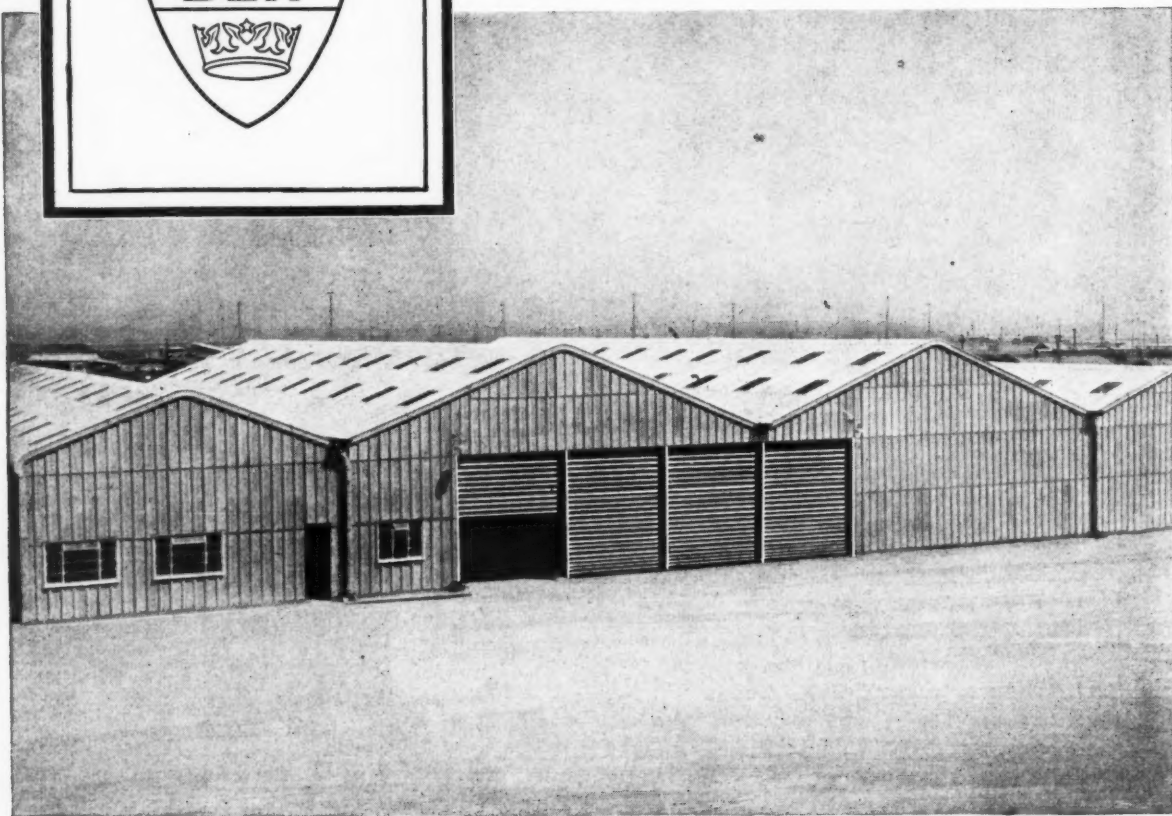
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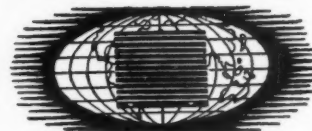
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TYPE G



TYPE P



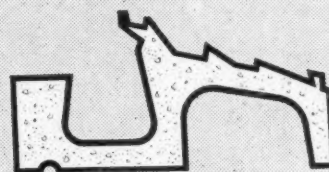
TYPE N



TYPE H



TYPE T



SPROCKET

FINLOCK *Guaranteed* LINING SERVICE

A fully illustrated folder dealing with every aspect of this service is now available and will be sent to you immediately you write or phone to us for a copy, together with full Technical Literature on our products.

FINLOCK GUTTERS LTD.

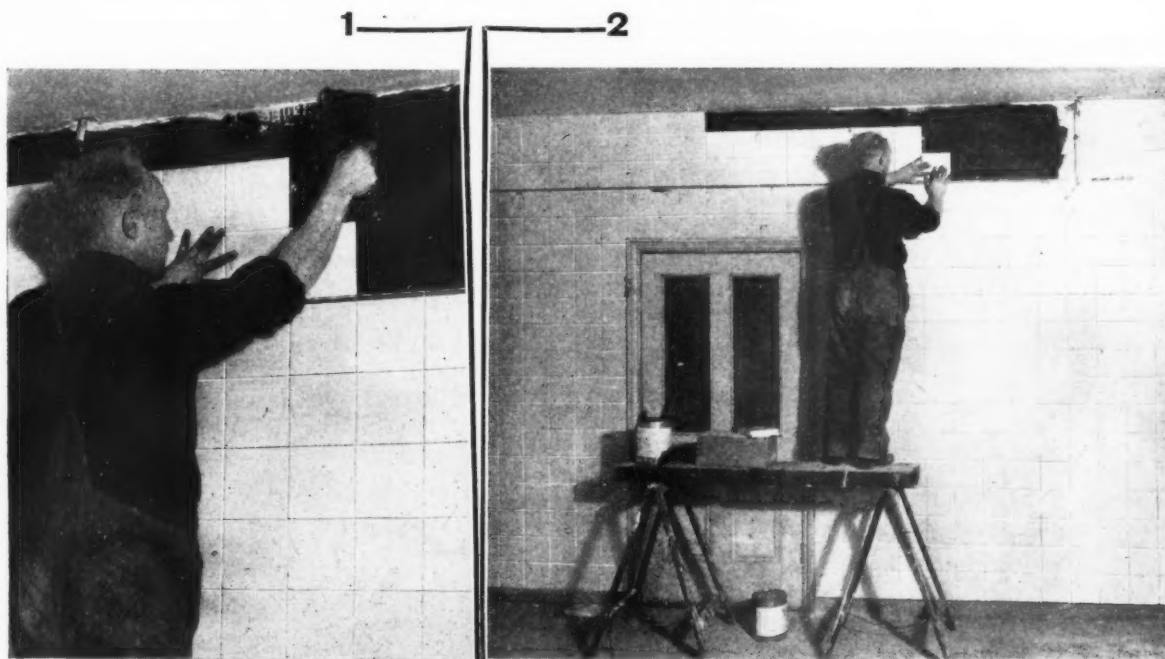
Finlock House, Frant Road, Tunbridge Wells, Kent. Telephone: Tunbridge Wells 3396/9

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

Why more and more tiling is being carried out by

RICHAFIX

The British Tile Adhesive



1 SPREAD THE RICHAFIX

2 FIX THE TILES IN POSITION

The RICHAFIX PROCESS IS AS SIMPLE AS THAT!

- (1) Richafix gives **permanent** adhesion on walls and floors.
- (2) It is immune to temperature variations and humidity : may be used on exteriors.
- (3) The resilience of the Richafix bond withstands cement contraction, vibration etc, to a very high degree.
- (4) It is the complete answer to "arching" or lifting of floor tiles.
- (5) Tiles may be fixed to almost any dry surface e.g, plasterboard, hardboard, wood, steel etc.; no hacking or keying required.
- (6) The weight factor is reduced to a minimum.
- (7) Speed of fixing is greatly increased.

Special Heat Resistant and Waterproof grades available.

Booklet R.F.3. on request

RICHARDS TILES LTD

Factories : TUNSTALL, STAFFORDSHIRE.

Stoke-on-Trent 87215

London Office and Showrooms: GRAND BUILDINGS, TRAFALGAR SQUARE, W.C.2 WHITEHALL 2488 & 8063



Recently the Swindon Press built an extension to their newspaper and printing offices. In a printing works, a controlled temperature is essential, and this has been achieved with an oil-fired central heating system assisted by insulation of the walls and roof. The oil fuel is supplied by Shell-Mex and B.P. Ltd.

A PRINTING WORKS NEEDS A CONTROLLED TEMPERATURE

The Swindon Press installed oil-fired heating in their extension

A FEW MONTHS ago the Swindon Press Ltd. built an extension to their newspaper and printing offices. Work was completed in November 1955, and now this fine building provides 50% more floor space, and relieves severe congestion in many departments.

In a printing works, constant temperatures are vital to the efficient operation of inks and paper surfaces. The walls and the roof of the new extension have been insulated, and an oil-fired central heating system installed. This provides a comfortable, even warmth throughout the building, enabling it to be kept at a controlled temperature for as long as necessary,

which can be altered at the touch of a switch. No other system demands so little maintenance—only a few minutes is needed every few weeks. There is no stoking. No ash to be cleared out. Oil burns cleanly, is easily stored in quantity, and is easy to handle and deliver.

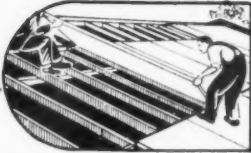
It is a well-known fact that there is a steadily growing gap between this country's demand for fuel and available home supplies. Already last year Britain was forced to import 11 million tons of coal. By 1960, this figure may well have reached 50 million tons. It has been estimated that by that date no less than one in four of Britain's indus-

trial fuel consumers will have to change to oil-firing. Aware of this serious situation, more and more industrialists and property-owners are installing or converting to this most flexible and labour-saving heating system. Shell-Mex and B.P. Ltd. have had over forty years' experience in the handling of oil fuel and providing information on applying it to the best advantage. If you are considering oil-firing for the heating system of any building which you are designing or altering, please write to Fuel Oil Dept. 42F, Shell-Mex House, Strand, London, W.C.2. This of course will place you under no obligation.

CEILINGS

ROOF-DECKING

Under Sheet-metal (Traditional or Patent), Asbestos, Bituminous Felt, etc.

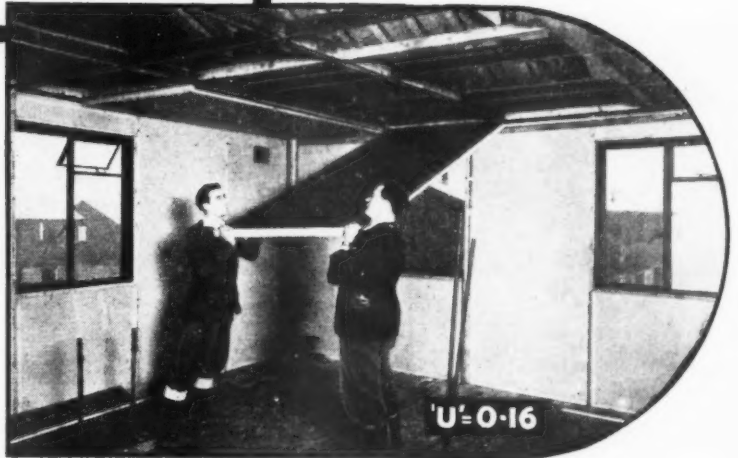
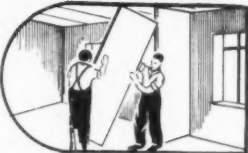


WALL-LININGS



PARTITIONING

- ★ Factory Screens
- ★ Divisions, etc.
- ★ Permanent or temporary
- ★ Glazed or unglazed



STRAMIT

—THE TWO-INCH THICK

BUILDING SLABS

—the low-cost

dry-construction material, which combines great strength and rigidity with exceptionally good values of thermal insulation, sound absorption and fire resistance

*

THOUSANDS OF TONS ARE USED ANNUALLY IN THE CONSTRUCTION OF FACTORIES, HOSPITALS, SCHOOLS, OFFICES, FLATS AND HOUSES, THROUGHOUT THE COUNTRY

*

STOCK SIZES:

4 ft. wide x 8, 9, 10 & 12 ft. long

SPECIAL SIZES (made to order):

Any width, of 4 ft. or less, and any length, greater or less than 12 ft.

NOW AVAILABLE IN
3 QUALITIES AND 3 FINISHES
—supplied through leading merchants

STANDARD quality

HARDBOARD faced

ROOFING quality

ALUMINIUM faced

LOW-DENSITY quality

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For latest details
technical data & B.R.S. Reports
**FILL IN COUPON
AND POST NOW**

Please send details of NEW range of STRAMIT Building Slabs:

Name of firm

Address

For the attention of Status

STRAMIT BOARDS LTD. COWLEY PEACHEY, UXBRIDGE, MIDDLESEX
Phone: West Drayton 3021
A.J.

CANADIAN

Spruce

A Canadian wood, creamy white in colour and sometimes tinged with red, that has a wide range of uses.

TYPICAL USES

Light and medium construction, agricultural implements, windows and doors, shelves and general carpentry

Scaffolding, ladders, kitchen furniture

Wagon boxes, concrete forms, pumps, tanks and silos

Oars and paddles, organ pipes, sounding boards for musical instruments

Pulp and paper, rayon pulp and cellophane

Food containers, butter and cheese boxes, cooperage

SPECIAL ADVANTAGES

Strong for its weight, yet comparatively soft and very resilient

Seasons readily and uniformly

Easily worked, takes smooth satiny finish

Takes paints, varnishes and enamels well

Minimizes "wood tainting" in packaging of foods, butter, etc.

Takes nails without splitting and holds them well.

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



WOOD IS NATURE'S BEST BUILDING MATERIAL

Reproduced here is figure of Canadian Spruce.

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

TIM 6

ELLARD

ESTATE

SLIDING DOOR GEAR

The illustration on right shows yet another example of the use of ELLARD "Estate" Sliding Door Gear in the modern dwelling house. See how simple it is to convert a spacious room to one of a cosy, intimate atmosphere. The finger-tip smoothness of door action offers immediate reduction of living space when desired with the additional advantage



of fuel economy. Elegant appearance, ease of operation and long service are the main selling features of this attractive ELLARD Door Gear. Excellent design, moderate cost and maximum use of floor space make ELLARD Door Gear the obvious choice for both council estates and private houses.



RADIAL

SLIDING DOOR GEAR

Illustration on left shows ELLARD "Radial" Sliding Door Gear fitted to a private garage. Sliding doors are of great advantage in protecting cars against damage caused by accidental swinging of hinged doors. In addition, valuable working space is offered where it is most desired, at the entrance to the garage. Note also how ELLARD Door Gear provides easy access to and from the garage by a personal entry door. ELLARD "Radial" Sliding Door Gear is low in price and gives long service without maintenance. This gear is also suitable for the larger openings of commercial and industrial garages.

OVERDOR

GARAGE DOOR GEAR

ELLARD "Overdor" Gear, illustrated on right, represents the best method of operating an overhead type door, and it requires the minimum space, fixing time and maintenance. An entirely clear threshold is achieved, and both side walls are available for windows or shelves. "Overdor" Gear is designed for doors from 6ft. to 7ft. 3in. high and up to 200 lbs. in weight. The door is safely balanced and can be opened and closed with ease. The width of the door is not critical, but the construction should ensure that the door does not sag when in the raised horizontal position, and we suggest a maximum width of 10ft. The balance springs impose a compression force along the iamb, thus relieving the building of all stress until the door is raised, when less than half the weight of the door is supported by the twin top tracks. ELLARD "Overdor" is therefore especially suitable for lightly constructed buildings.



Immediate delivery of ELLARD "Estate", "Radial" and "Overdor" Sliding Door Gear can be obtained from ironmongers and builders' merchants throughout the country.



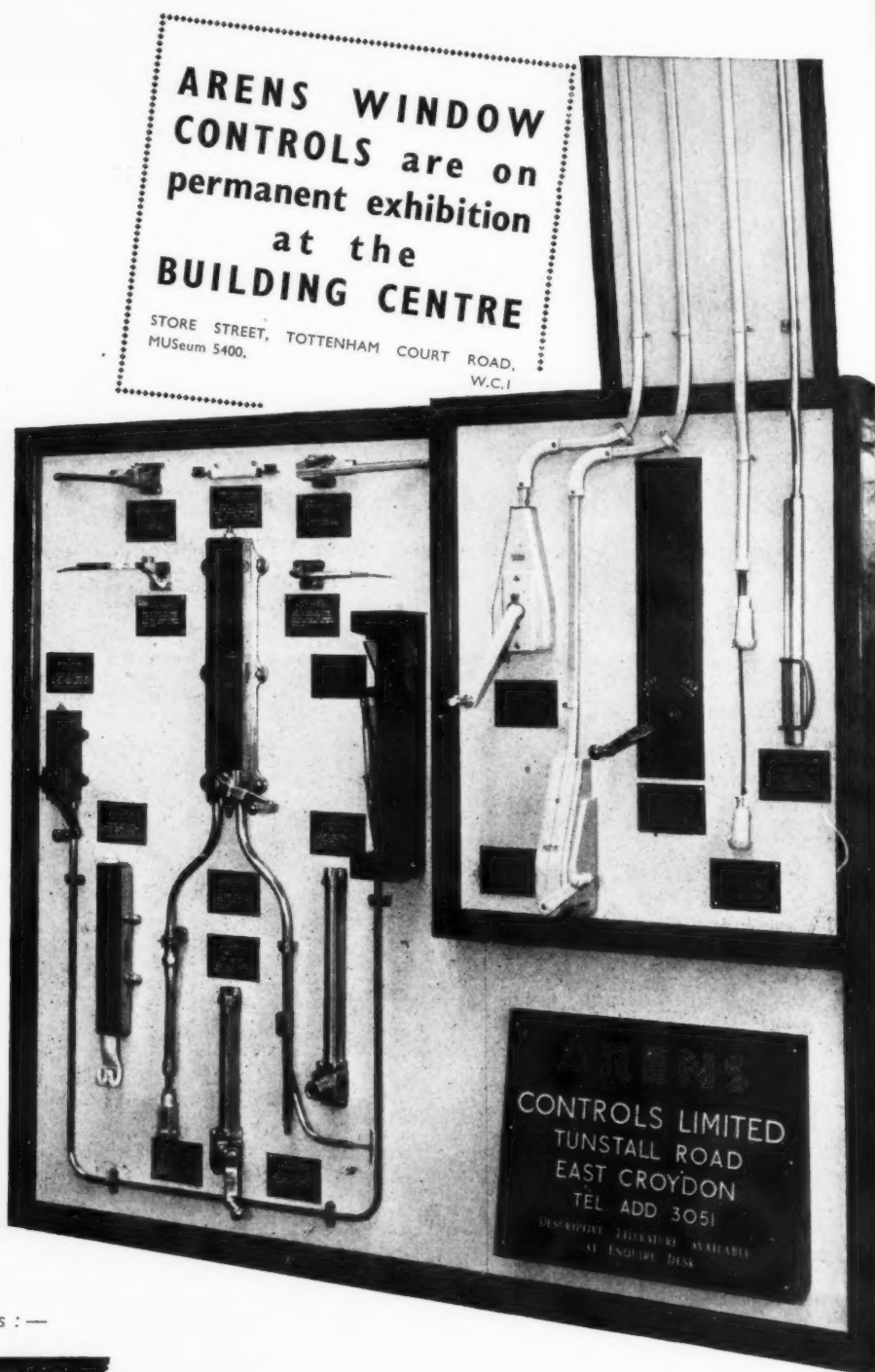
ELLARD SLIDING DOOR GEARS LTD., WORKS ROAD, LETCHWORTH, HERTS. • TEL: 613/4

BMJ.

A CLOSE-UP OF WINDOW CONTROL

The more closely you examine an ARENS control the more you will appreciate its high standards of quality and performance. All ARENS controls are beautifully finished, with an attractive casing calculated to win the approval of all discerning architects. The unobtrusive conduit used can be painted to harmonize with the decorations, or concealed beneath the wall surfacing, as desired. Totally enclosed, precision-built mechanisms ensure accurate control and trouble-free service, and require scarcely any maintenance.

★ For further details please contact our Contracts Department.



Sole Manufacturers:—



CONTROLS LIMITED

TUNSTALL ROAD · EAST CROYDON · SURREY

Telegrams: UNICONTROL, SOUPHONE, LONDON. Telephone: ADDiscombe 3051/4

OVERSEAS AGENTS: Australia: AREN'S UNIVERSAL CONTROLS PTY. LTD., G.P.O. BOX 1000 H. MELBOURNE. New Zealand: L. J. FISHER & CO. LTD., 30 ANZAC AVENUE, AUCKLAND. Kenya and Tanganyika: KENYA CASEMENTS LTD., P.O. BOX 2832, MOMBASA. Rhodesia: CRITTAL-HOPE (RHODESIA) LTD., P.O. BOX 2301, WORKINGTON, SALISBURY. South Africa: WIRE INDUSTRIES STEEL PRODUCTS & ENGINEERING CO. LTD., OPHIRTON, JOHANNESBURG. Western Canada: WILLIAMS & WILLIAMS (WESTERN) LTD., VANCOUVER & WINNIPEG. Holland, Belgium and Luxemburg: ELAND-BRANDT, DISTELWEG 84A, AMSTERDAM-N, HOLLAND.

**First choice of
local authorities
for new housing**



**An instant
hot water service
at an average cost
of only 4/6d. per week**



ASCOT 715

**balanced flue multipoint
gas water heater**



ASCOT GAS WATER HEATERS LTD
WHG/A256

255 NORTH CIRCULAR ROAD

LONDON N.W.10



Reproduced by permission of Hicklenton & Phillips, London, E.C.4

This fine example of George III Silver was made in London by Andrew Fogelberg in 1771.

Products of Integrity

In this age of synthetics and substitutes
the authentic production still commands the
respect and favour of the discriminating.

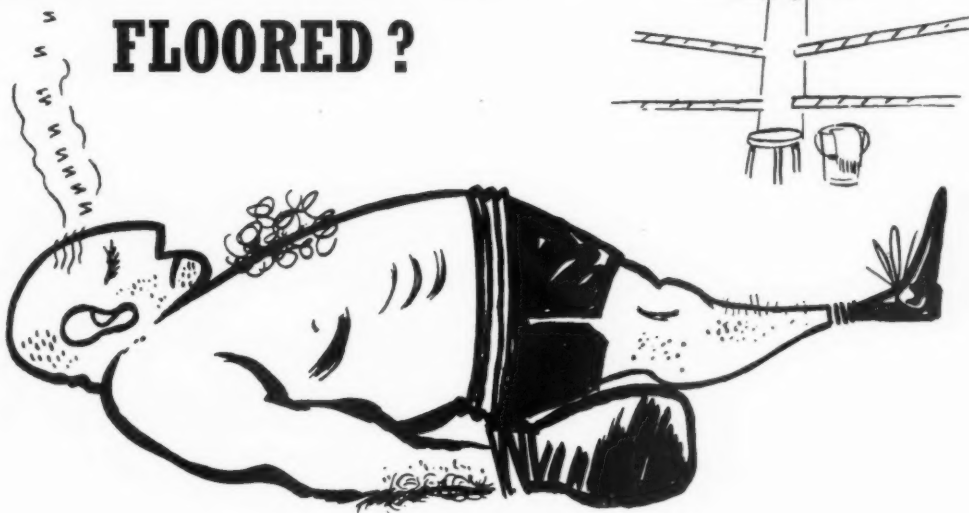
Specify—

CLAY ROOFING TILES

Issued by the National Federation of Clay Industries, Drayton House, London, W.C.1

'The Clay Tile Bulletin,' post free on request

ARE YOU COMPLETELY FLOORED?



If our picture depresses you, just consider the awful punishment a floor gets. Especially when it's being jabbed and pummelled (when it's down) by the feet of schoolboys, for instance, or roller-skaters or soldiers. With no Queensberry rules to protect it, how can a floor defend itself? Before you reject the problem as insuperable, remember the tried and trusted material without substitute in this field—

CANADIAN HARD MAPLE FLOORING

- extreme resistance to abrasion
- freedom from splintering
- smooth, close-grained surface
- absence of open pores
- light, pleasant colour easily preserved
- the perfect flooring for schools, gymnasias, skating rinks, dance halls, factories, drill halls and all types of public building
- available for immediate delivery from our London stock: *prime quality, 1" x 3" nominal size, finishing 25/32" x 2 1/4" surface, kiln dried, tongued and grooved sides and ends, 3' and up long, average 4 1/4' at 23/9 a yard, finished measure.*

M·A·MORRIS·LTD



RAVENSDALE WHARF · STAMFORD HILL · LONDON · N.16 · TEL: STAMFORD HILL 6611 (6 lines)



PLEASING AND PRACTICAL



the new **CRANE** **20** domestic boiler

DESIGNED TO PLEASE
THE MODERN WOMAN

THE new, thermostatically controlled, CRANE 20 domestic boiler combines a modern, attractive appearance with all the practical features your customers expect from a first-class boiler. With an easily attained rating of 20,000 B.Th.U's per hour, it's suitable for use on hot water storage tanks of 25 to 35 gallons capacity. The hot water supply is ample for all domestic uses—bath, basin, sink and a towel airer. The boiler burns well on solid smokeless fuels—especially coke—and the circular firepot is entirely surrounded by water—for maximum efficiency. Available in Cream or White, with Black top finished all enamel. The thermostat control knob and ashpit door handle are supplied in a choice of colours.

B.Th.U'S PER HOUR FOR HOT WATER SUPPLY		FUEL CAPACITY (CUB. FT.)	HEATING SURFACE (SQ. FT.)	GRATE AREA (SQ. FT.)	GALLONS PER HOUR (FROM 50°F-130°F)	
NORMAL RATING	SLOW-BURNING RATING				NORMAL RATING	SLOW-BURNING RATING
20,000	12,000	0.70	1.82	0.45	25	15

DIMENSIONS (IN INCHES)							
HEIGHT TO TOP-PLATE	SIZE OF TOP-PLATE	OVERALL PROJECTION BACK TO FRONT		HEIGHT TO CENTRE OF TAPPINGS		TAPPINGS BOTH SIDES	SMOKE PIPE DIA.
		ASHPIT DOOR CLOSED	ASHPIT DOOR OPEN	FLOW	RETURN		
24	16½ x 16	18½	32	16½	9½	1½	4

women will love these easy to manage features

* A joy to clean—no dust—no mess * Large deep ashpan complete with handle for easy carrying * Smooth, compact design—no awkward projections * Rids itself of ash with small amount of shaking * Hinged fuelling lid * Vitreous enamel top-plate.

PRICE £25 (Extra for bower-barffed firepot—for soft water areas)

Write today for descriptive leaflet to: CRANE LTD., 15-16 RED LION COURT, FLEET STREET, LONDON, E.C.4. Works: IPSWICH, London Showrooms: 115 Wigmore Street, W.1. Branches: Birmingham, Brentford, Bristol, Glasgow, London, Manchester.

Vizusell

—in New Bond Street



ARCHITECTS: Messrs. NORTH & PARTNERS, 40 BROADWAY, MAIDENHEAD.

SHOPFITTERS: Messrs A. DAVIES & CO (SHOPFITTERS) LTD., HORN LANE, LONDON, W.3.

COLOUR CONSULTANTS: GEORGE COLLETT, M.S.I.A. Associates, 30 HIGHGATE WEST HILL, LONDON, N.6.

VIZUSELL is basically a system of standard upright metal channels, spaced 30 in. apart, to which shelf brackets are attached at *any height* by the simple turn of a screw—simultaneously retaining any type of panel or mirror between the uprights.

VIZUSELL is ideal for Wall, Counter, Island, Window, or any other form of display. It is also remarkably inexpensive.

**WHATEVER THE SIZE OF
YOUR BUSINESS — VIZUSELL
WILL ENLARGE IT**

Messrs. H. J. RYMAN LTD., have opened their new West End Self-Service Store at 106, New Bond Street—the first in this Country for the sale of commercial Stationery—and VIZUSELL fittings have been used throughout. “WE ARE MORE THAN SATISFIED WITH THE RESULT, AND DELIGHTED WITH VIZUSELL” say Messrs. Ryman.

VIZUSELL makes it easy for the customer to *See*, to *Select*, and to *Buy*, and displays *more goods*—in an attractive manner. It is fully responsive to design and the planned use of colour, and lends itself to easy changes in display.

Used mainly in this instance for self-service, it is equally adaptable for all other methods of selling, **IN ALL TRADES.**

Consult your local Shopfitter, or write for full illustrated details to:—

**VERSATILE FITTINGS (WHS) LTD.
55 FETTER LANE, LONDON, E.C.4.**

PHONE: FLEET STREET 6262/3

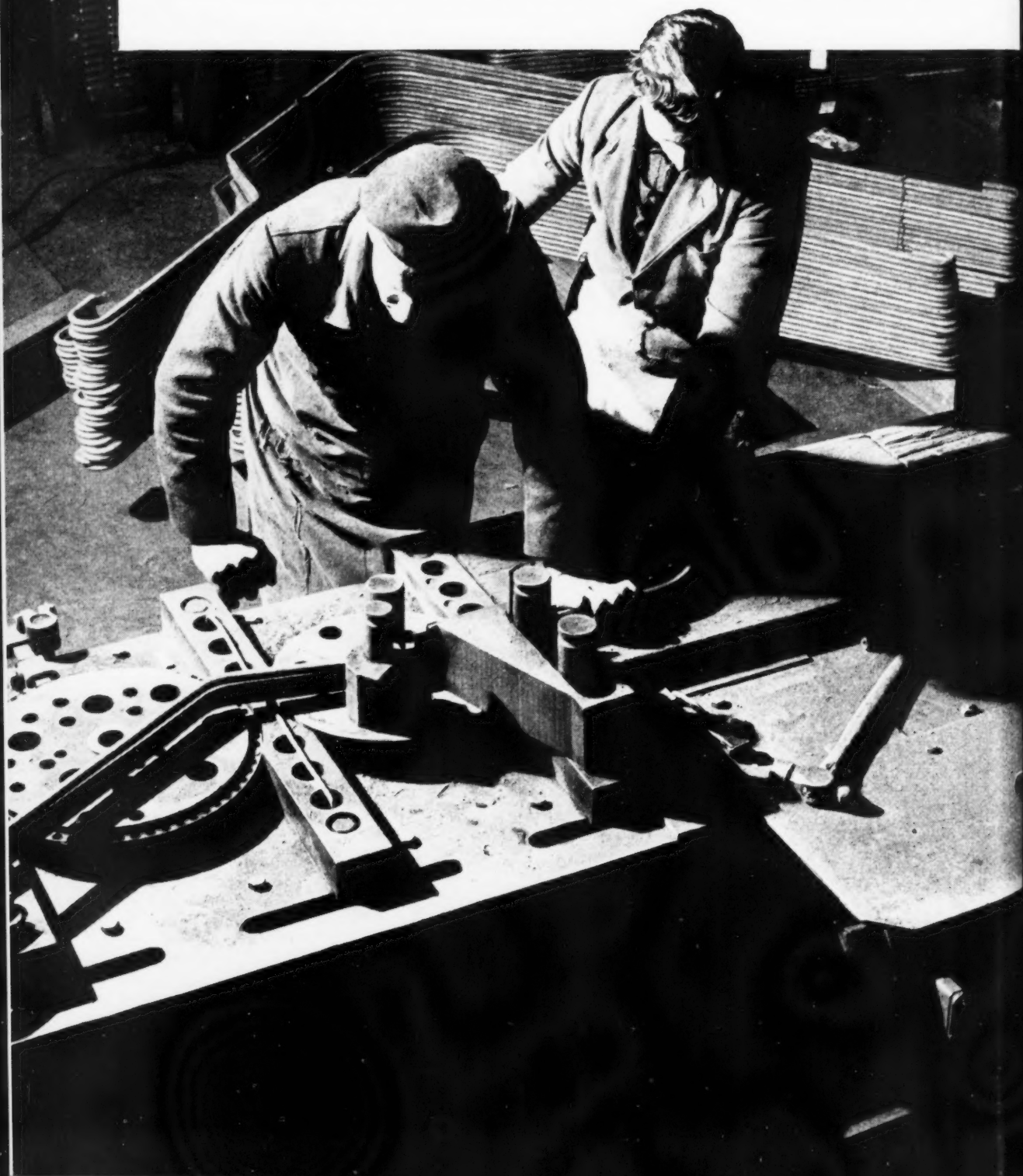
A SUBSIDIARY OF W. H. SMITH & SON LTD.

For SCOTLAND ask GRAHAM & WYLIE LTD., MILL STREET, BRIDGETON, GLASGOW, S.E. Phone: Bridgeton 4831.

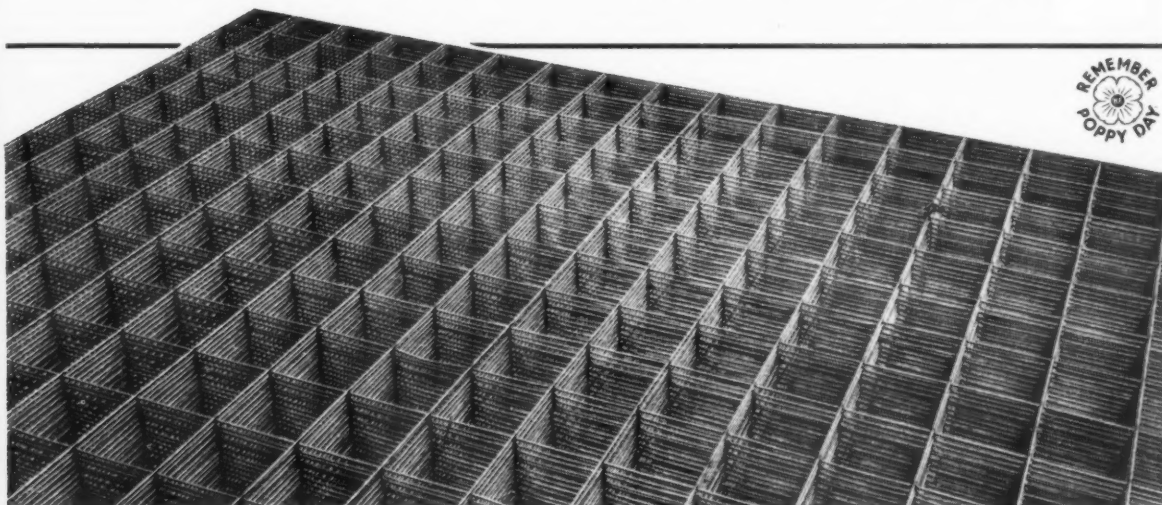
THE ARCHITECTS' JOURNAL
(Supplement) November 8, 1956

T. C. JONES

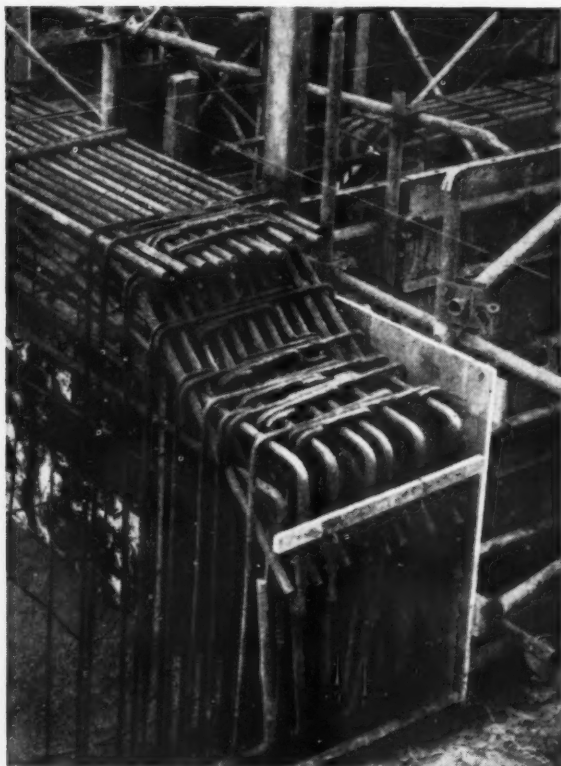
skill, experience and immense resources



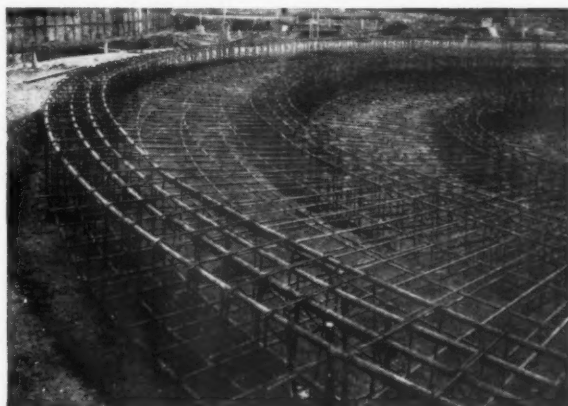
STORY of STEEL *for concrete reinforcement*



FRAMEMESH High Tensile Welded Fabric Reinforcement to British Standard 1221, 1945, Part A. Supplied in rolls or flat sheets.



ROD REINFORCEMENT in 9' 0" foundation beam for extension to the Kodak Works, Harrow.



CIRCULAR BEAMS for Sedimentation Tanks at Hereford Sewage Works.

T. C. JONES
AND COMPANY LIMITED

HEAD OFFICE:
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Tel: Cardiff 28786

REINFORCEMENT DEPARTMENT:
17 BUCKINGHAM PALACE GARDENS, LONDON, S.W.1
Tel: SLOane 5271

WORKS:
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TREORCHY, GLAMORGAN

ALL REINFORCEMENT ENQUIRIES PLEASE, TO:
17 BUCKINGHAM PALACE GARDENS, LONDON, S.W.1

A COMPLETE SERVICE FOR DESIGN, FABRICATION AND ERECTION

Scheme for better cooking



Specialist attention, based on the most up-to-date knowledge of all aspects of large scale cooking, is freely available through the Radiation service to architects. All we ask is to be called in at the earliest possible moment, as special equipment may be needed, or unusual arrangements for services, drainage and ventilation required.

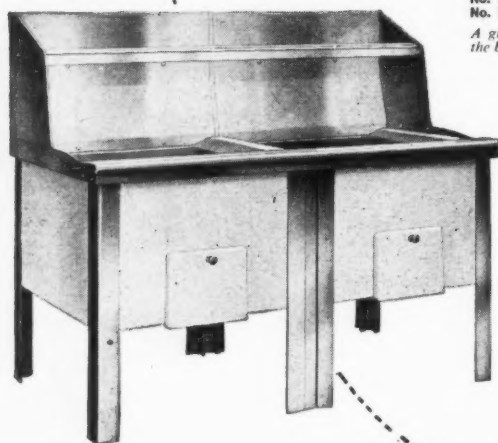
The **STRATFORD RANGE** is designed on the unit principle to permit of wall or central pattern suites being built up to meet requirements.

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
No. 5127	27"	36"	31½"
No. 5136	36"	36"	31½"

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



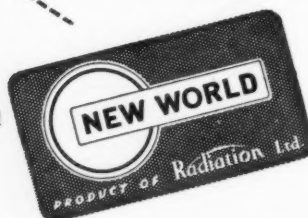
The **KINGFISHER FRYER** for deep fat frying is constructed on the unit principle and so is easy to install singly or in any number. Units are available with pans 24" or 18" wide. The fat temperature in either model is thermostatically controlled.

Finish includes vitreous enamel and stainless steel.



Please consult us on all large cooking problems

Insist on

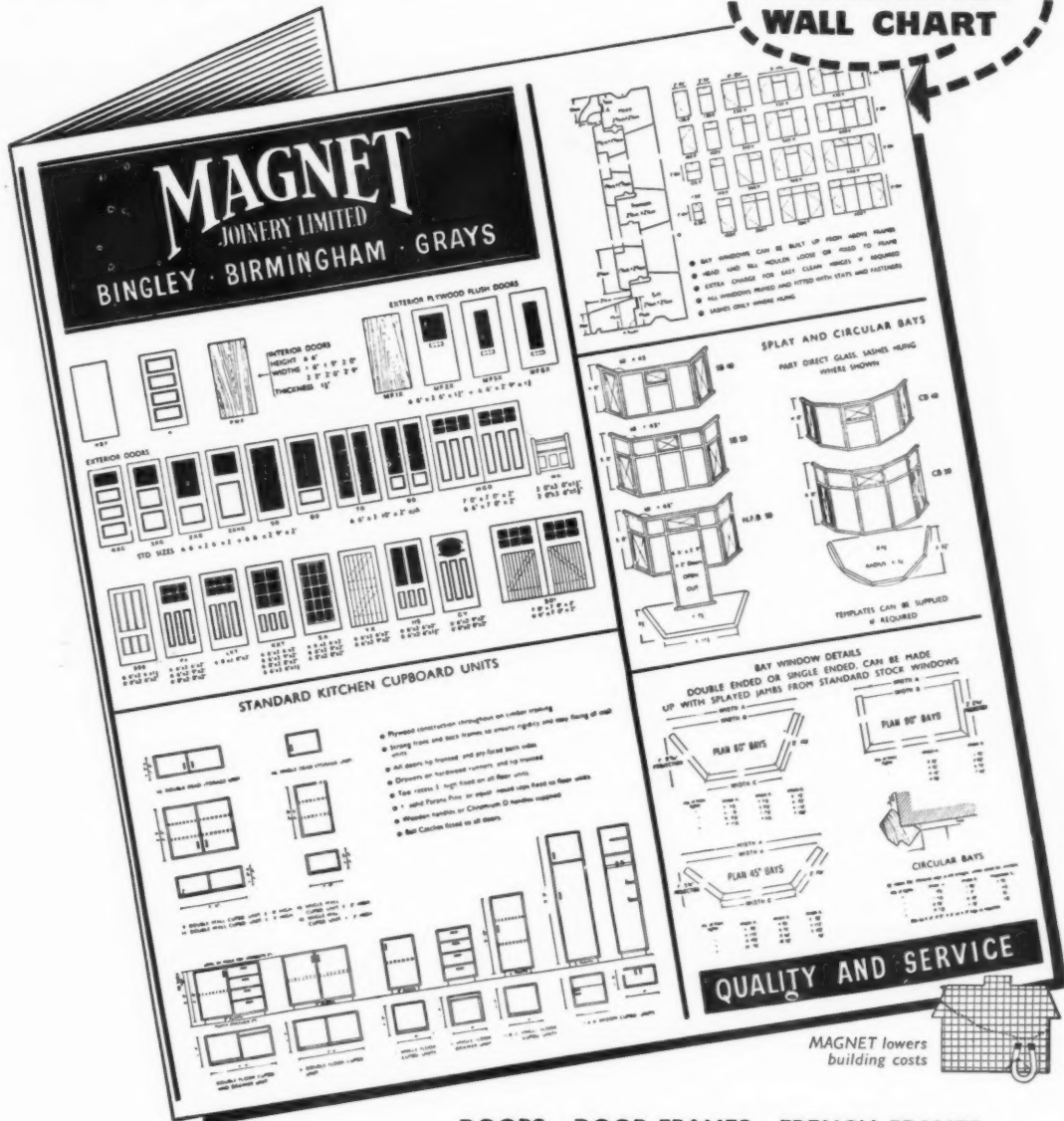


appliances

RADIATION GROUP SALES LTD · LARGE APPARATUS DIVISION · 7 STRATFORD PLACE, LONDON, W.1 · MAYfair 6462

FREE ON REQUEST!

The **MAGNET**
WALL CHART



DOORS • DOOR FRAMES • FRENCH FRAMES

WINGS AND VESTIBULE FRAMES • STANDARD STOCK WINDOWS

SPLAYS AND CIRCULAR BAYS • BAY WINDOW DETAILS

STANDARD KITCHEN CUPBOARD UNITS

FOR STANDARDISED JOINERY

For service and immediate delivery from stock write to:—

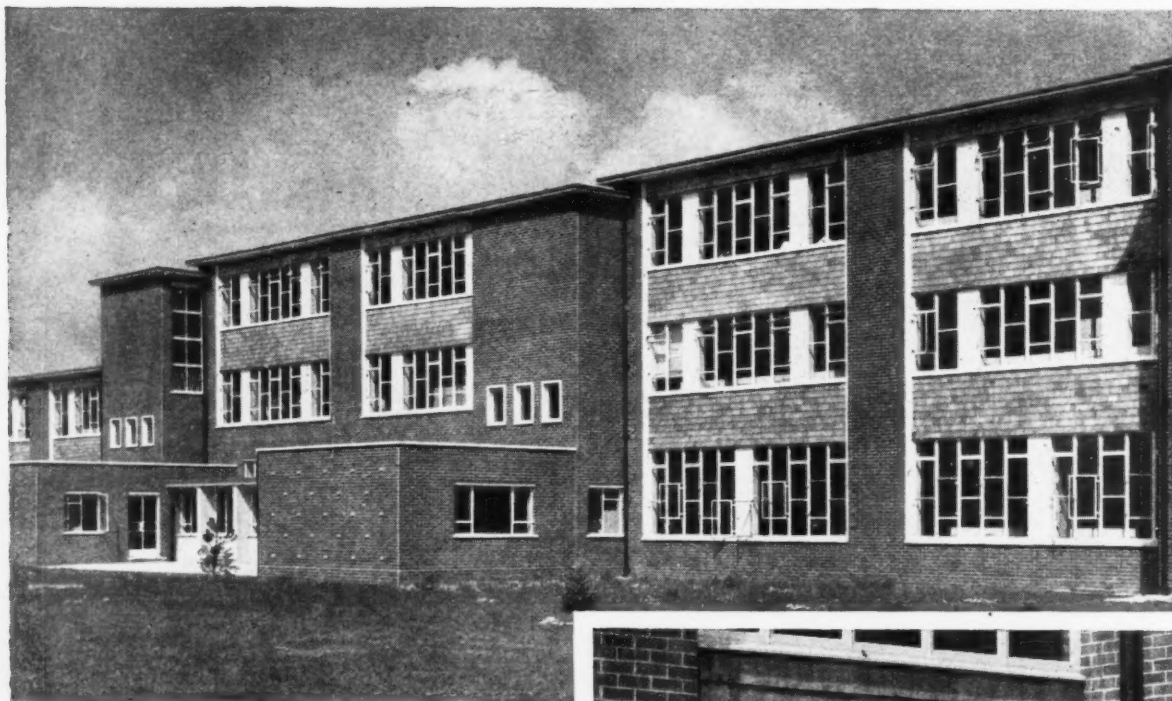
Whitley Street, **BINGLEY**, Yorkshire 'Phone: Bingley 4401 (5 lines)

London Road, **GRAYS**, Essex. 'Phone: Grays Thurrock 2077 (5 lines)

Love Lane, Aston, **BIRMINGHAM** 'Phone: Aston Cross 3291 (3 lines)



COLT *Canadian Cedar Wood* SHINGLES



Southern Grammar School for Boys, Baffins, Portsmouth.
City Architect, Frank Mellor, F.R.I.B.A.

NEW STYLE WALLS with an old and well tried method. Weathering to a pleasant silver grey, Shingles are a most attractive method of providing a distinctive elevation. Nailed to battens on brick, breeze or timber studding, the construction is most economical and is completely weatherproof.

The high thermal insulation of Western Red Cedar makes Shingles a valuable addition to the Architect's vocabulary of modern cladding materials.



Send for full details to Dept. L.138/11

W. H. COLT (LONDON) LTD., SURBITON, SURREY

Telephone: ELMbridge 6511 (10 lines)

Fixing can also be undertaken if required



WHITES

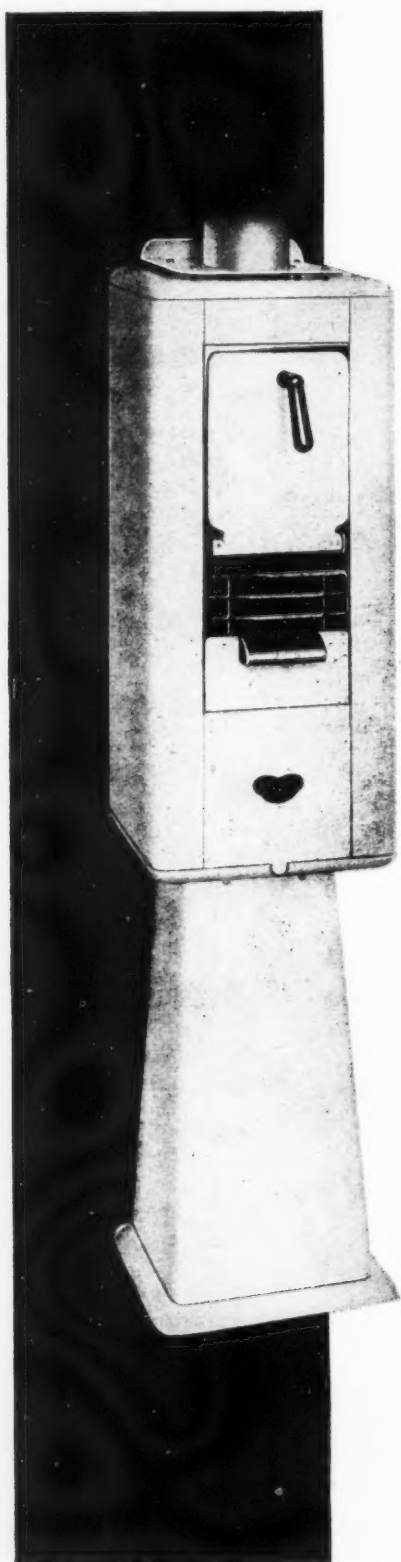
OF HEBBURN (ENGINEERS) LTD., PRINCE CONSORT ROAD, HEBBURN, CO. DURHAM

Firepak



FUEL OIL BURNERS *for central heating boilers.*

supported by 40 years experience and research in oil burning



*Safeguard
Public Health
Encourage
Personal Hygiene*

in FACTORIES · HOSPITALS · CLINICS
SCHOOLS · HOTELS AND OFFICES

Investment by British industrialists and others in modern equipment to safeguard the health and welfare of the vast and growing numbers of workers, has proved beyond doubt the wisdom of a policy both far seeing and democratic in concept.

The installation of Sugg's incinerators wherever women employees form part of an organisation is plain commonsense.

Our sales and technical staff will be glad to advise and co-operate.

*The Sugg
Incinerator*
Gas-Fired

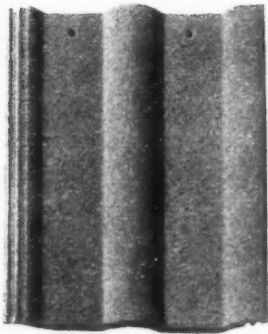
WILLIAM SUGG & CO. LIMITED
(Incorporating Cowper Penfold & Co. Ltd.)
VINCENT WORKS, REGENCY ST., LONDON, S.W.1. Tel: VIC 3211



Redland '50'

Redland '50'—roman pattern interlocking tile, for a good-looking roof at a moderate cost.

It has the traditional charm of the double roman pattern plus the strength and impermeability of all Redland tiles



Redland tiles



good — for 50 years and more

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Moorhouse Nr. Westerham Kent Tel: Westerham 3206/9

A DIVISION OF THE REDLAND HOLDINGS GROUP

Houses at Potters Bar
Builders: Messrs MacManus



They never let you down

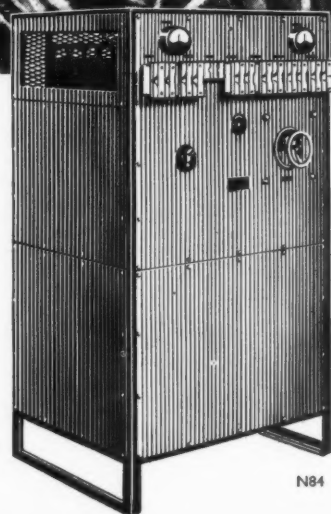


THE FIRE BRIGADES

No one who lived in a blitzed town or city during the war needs reminding of the sterling deeds performed by the N.F.S. and A.F.S. The latest figures show that the Fire Brigades answer, on an average, over 390 calls a week in the London area alone. They turn out at all hours of the day and night to deal with every emergency from chimney fires to blazing factories. Anyone unfortunate enough to need their help can rest assured that the Fire Brigades will be on the spot as soon as humanly possible. They never let you down.

YOU CAN BE CERTAIN TOO that Nife-Neverfayle Emergency Lighting Equipment will never let you down. *Whenever needed*, these reliable units will instantly, automatically, spring into action. That is the special advantage of the Nife Steel Alkaline Battery—it never deteriorates, even after long periods of inactivity.

Nife-Neverfayle units occupy only one-third of the space required by conventional equipment and, as they can be installed adjacent to other equipment, a separate battery room is not needed—a point worth remembering when planning new buildings. Maintenance costs are negligible—after years of trouble-free service you will realise just how economical your Nife-Neverfayle equipment has been.



NIFE - NEVERFAYLE

THE EMERGENCY LIGHTING EQUIPMENT WITH THE **STEEL** ALKALINE BATTERY

NIFE BATTERIES • REDDITCH • WORCESTERSHIRE

NEW DEVELOPMENTS NEED NEW DEPARTURE BUILDINGS



B.R. Recruitment Centre,
Euston Station.



Medical Officer's Suite.
Sound proofed and
double glazed.



Main foyer and corridor

NEW DEVELOPMENTS in Commerce, Industry and Recreation arise from man's inherent instinct to reach New Horizons—the conquest of higher mountains; the harnessing of unleashed power of water, heat and the atom; and the exploitation of the earth's mineral wealth.

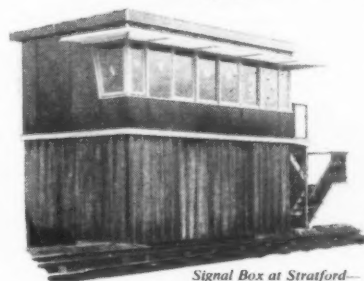
NEW STEPS towards any of these fruits of ambition call for careful planning and organisation. For many such projects Stephenson Developments have been proud to provide the first steps by designing and supplying the building accommodation.

NEW DEPARTURE Stress-bonded Timber Buildings have provided a superior standard of contemporary accommodation for British Railways as well as for electricity undertakings, government agencies, municipalities, educational, commercial, industrial and social organisations both at home and overseas.

NEW HORIZONS for you mean opportunity—and effort. Call in Stephenson Developments at the outset for technical advice and practical assistance with your accommodation standard.



Pent House Office—
Six storeys up at
Paddington Station. For
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Region.

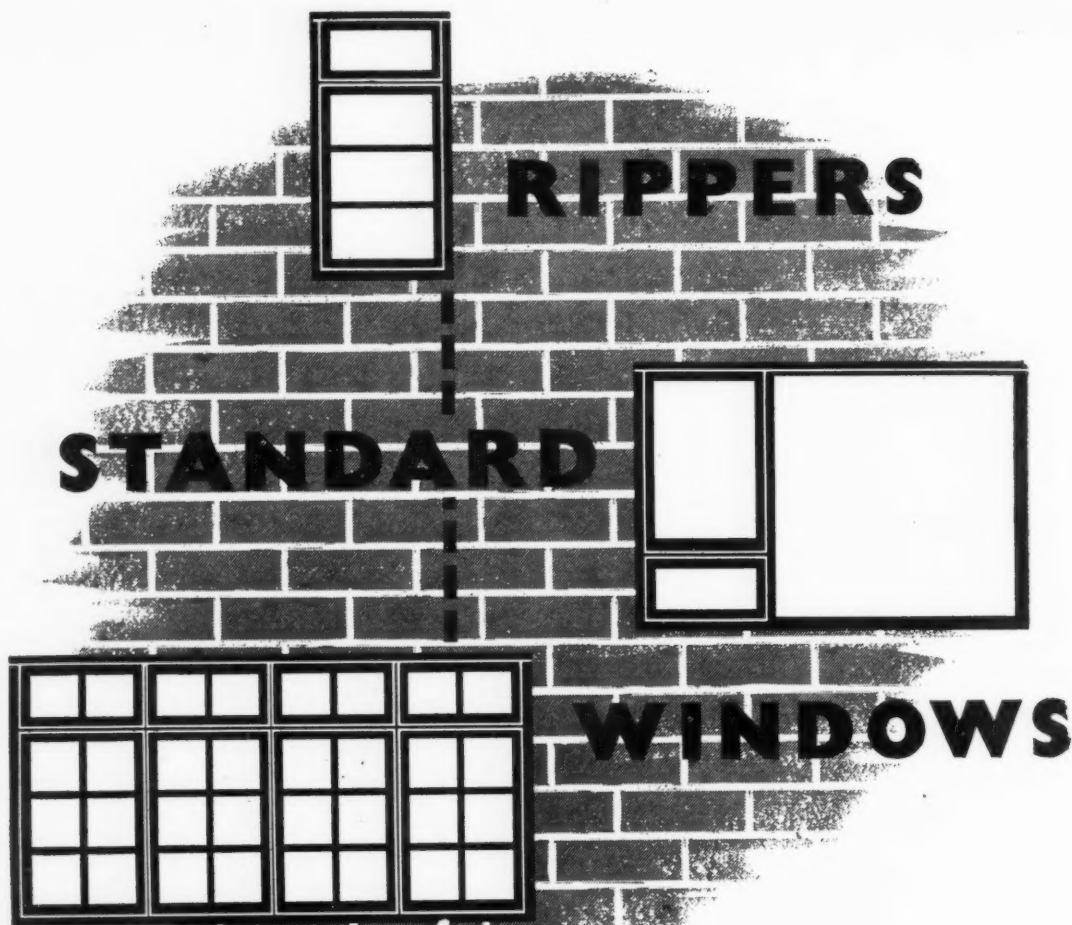


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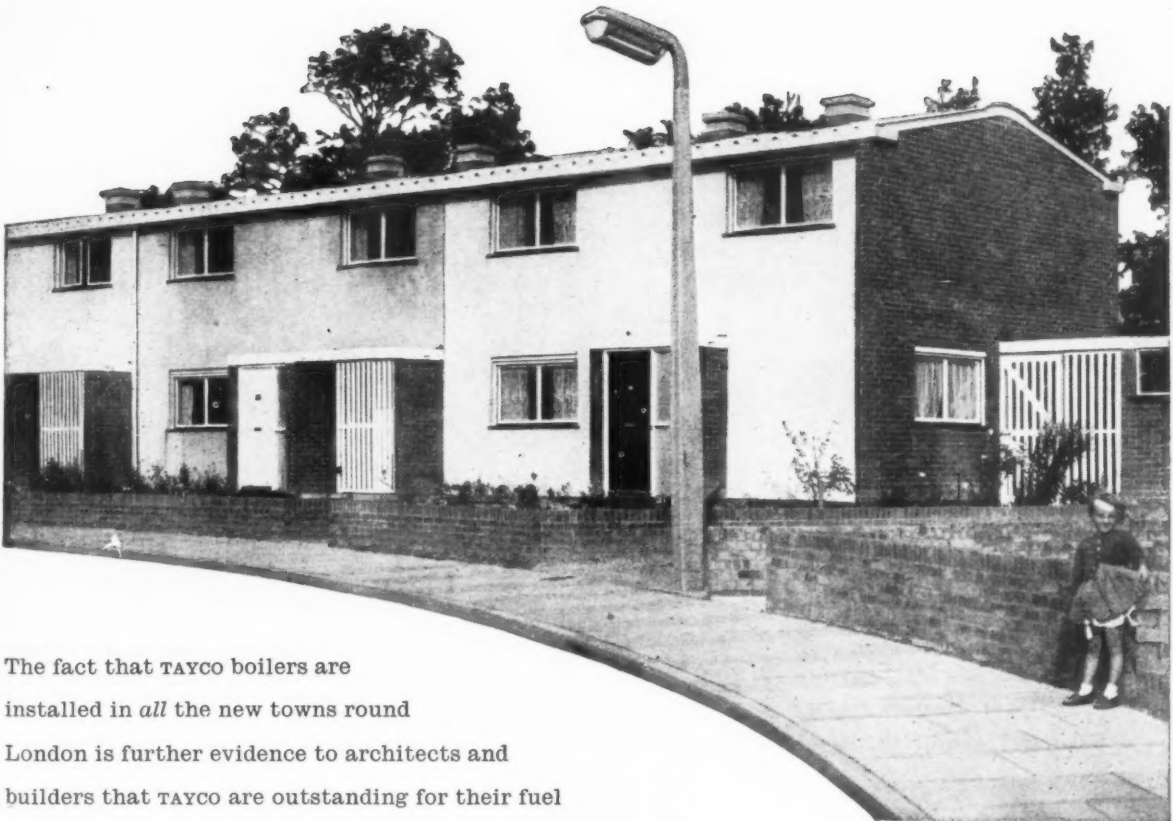
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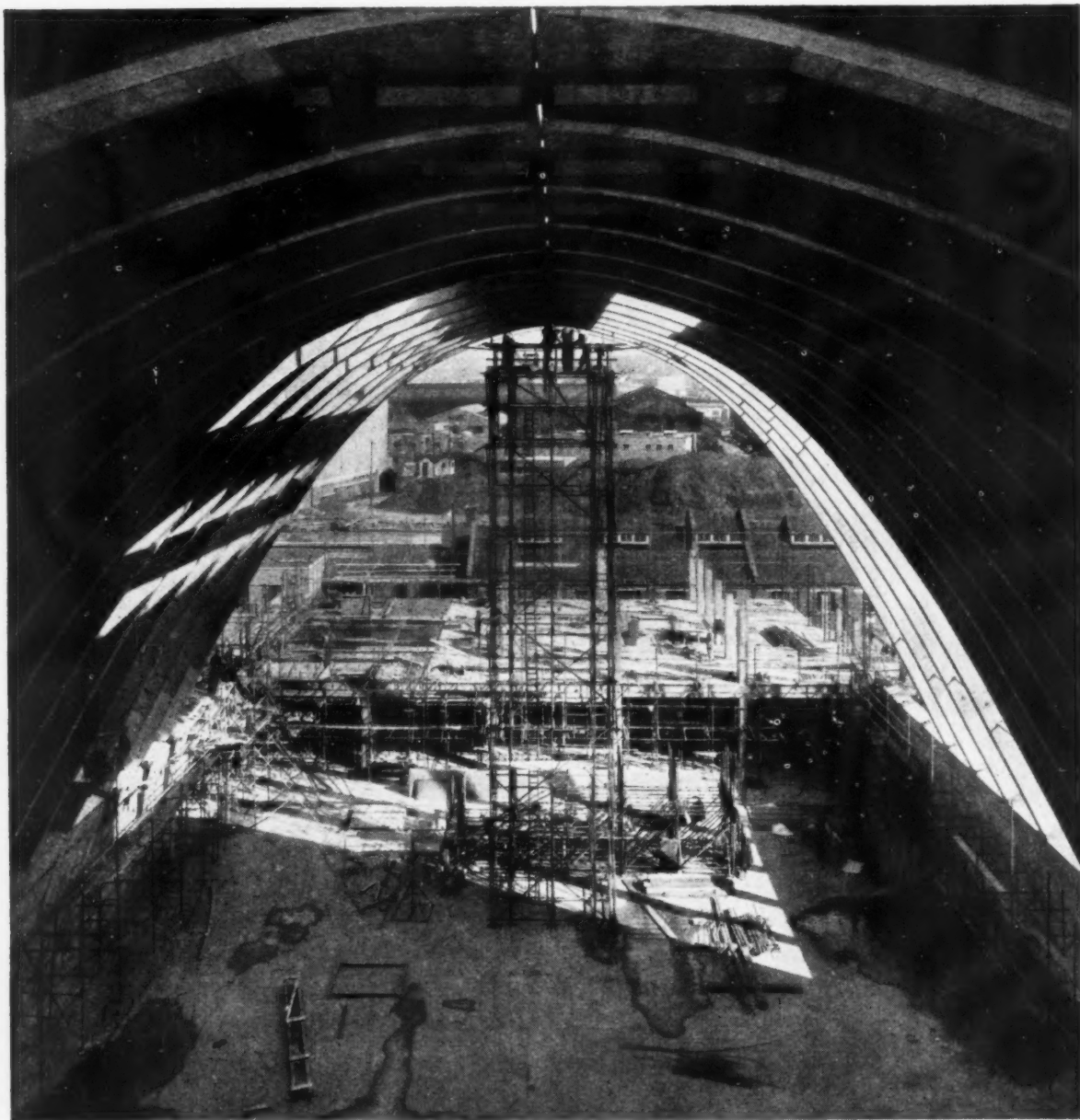
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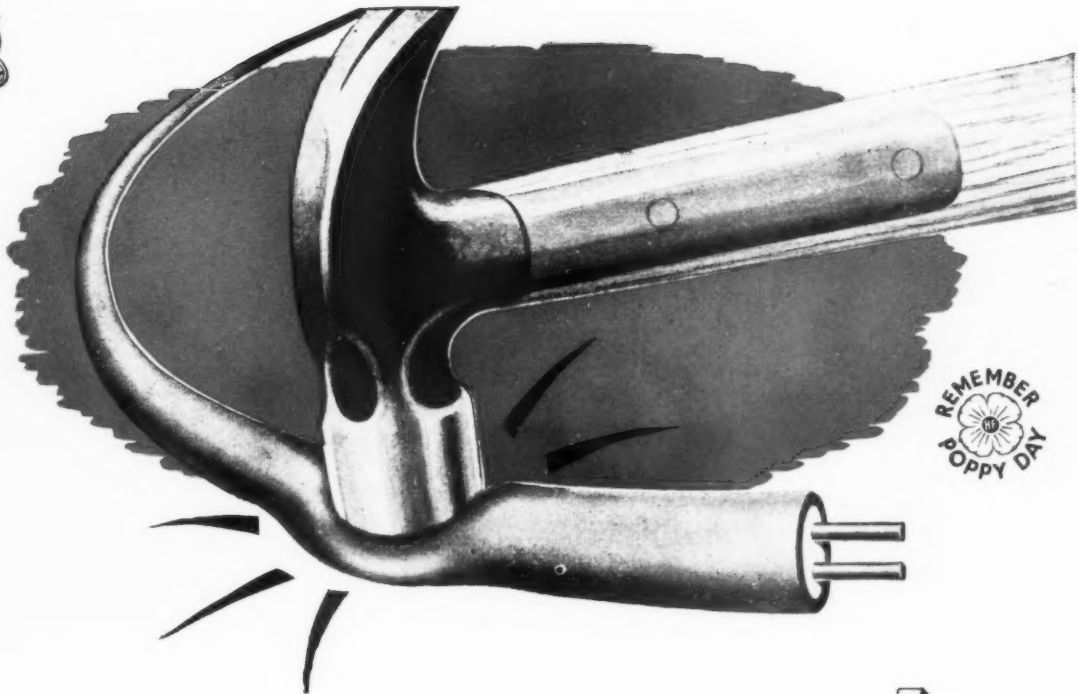


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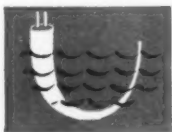
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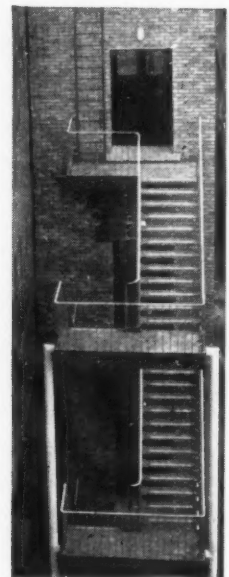
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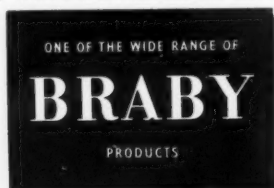


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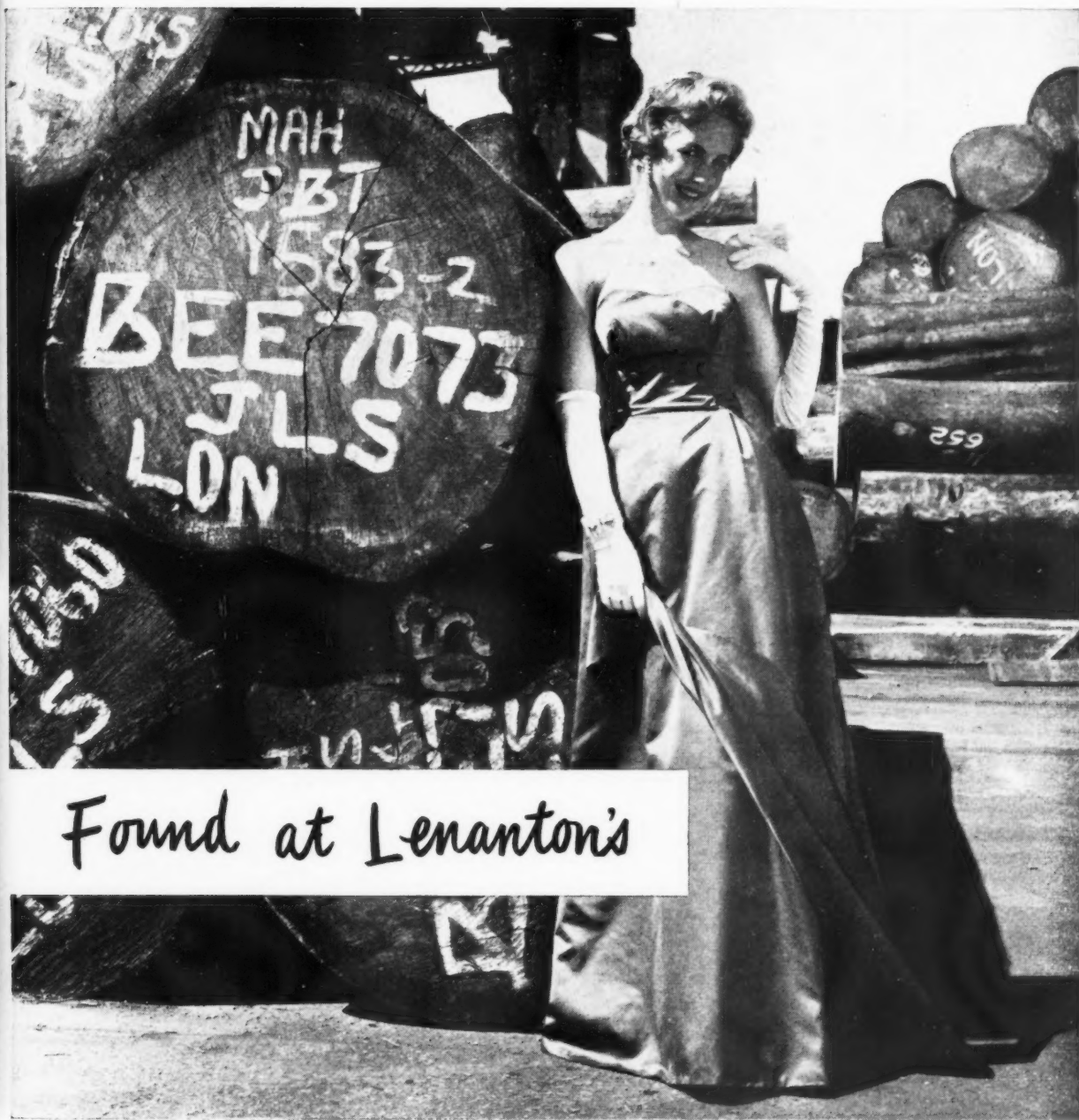
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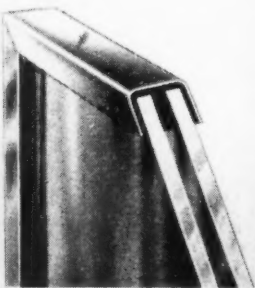
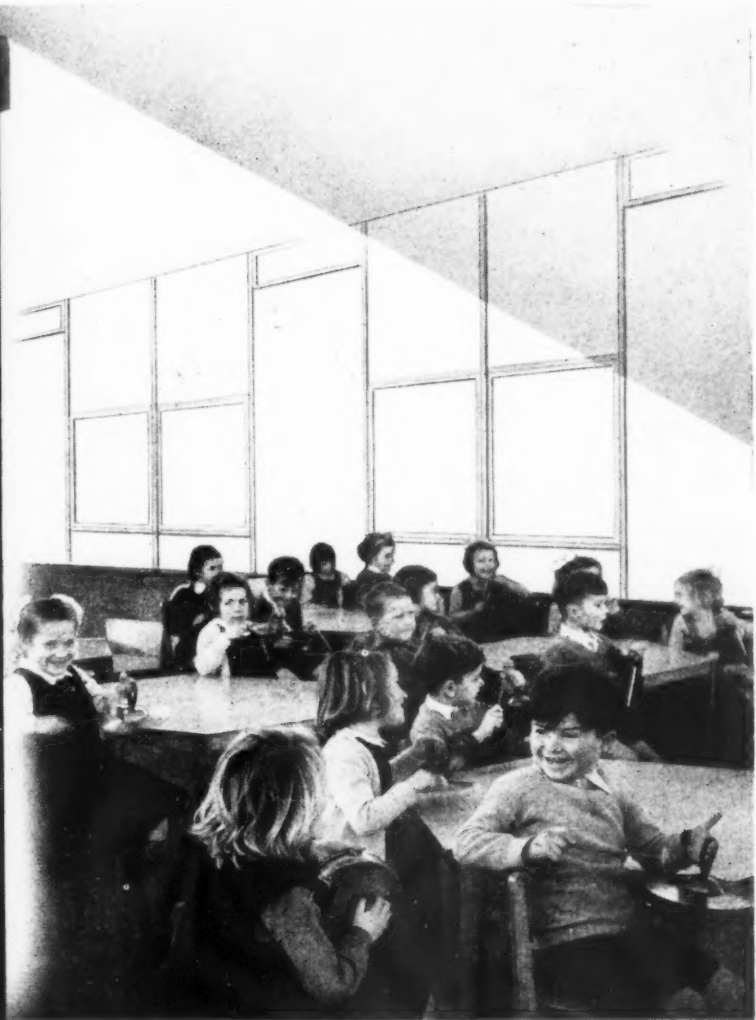
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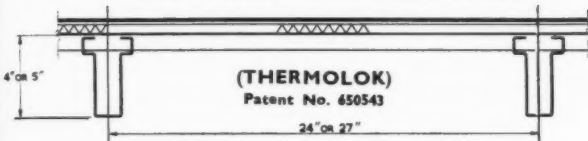


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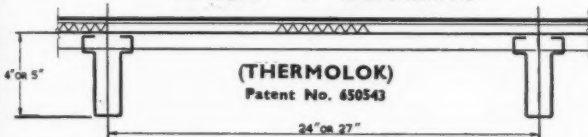
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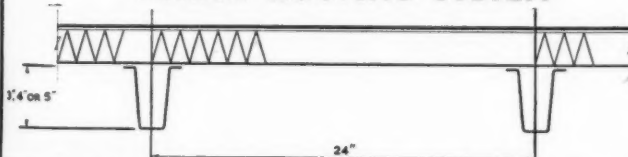
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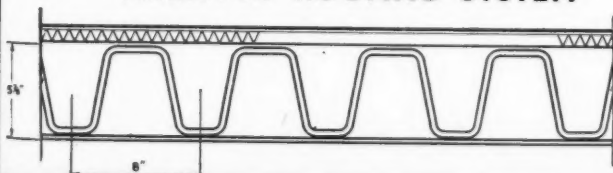
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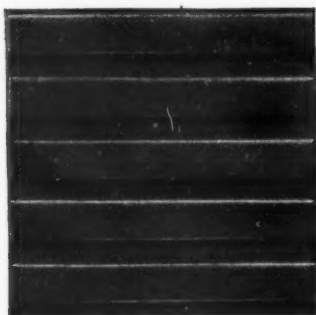
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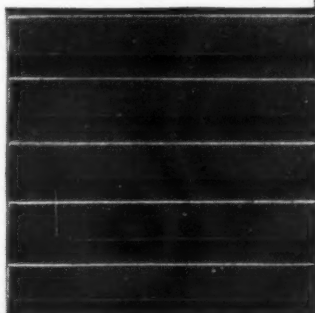
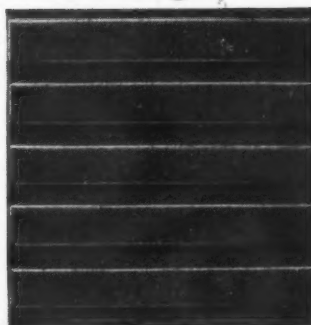
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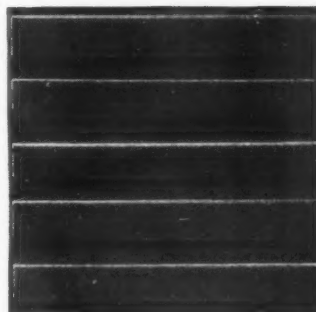
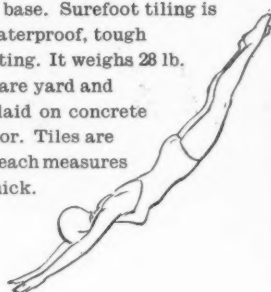
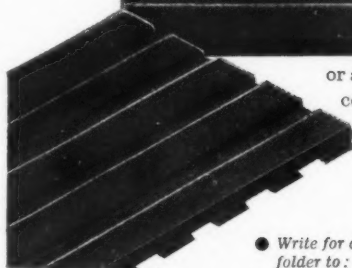
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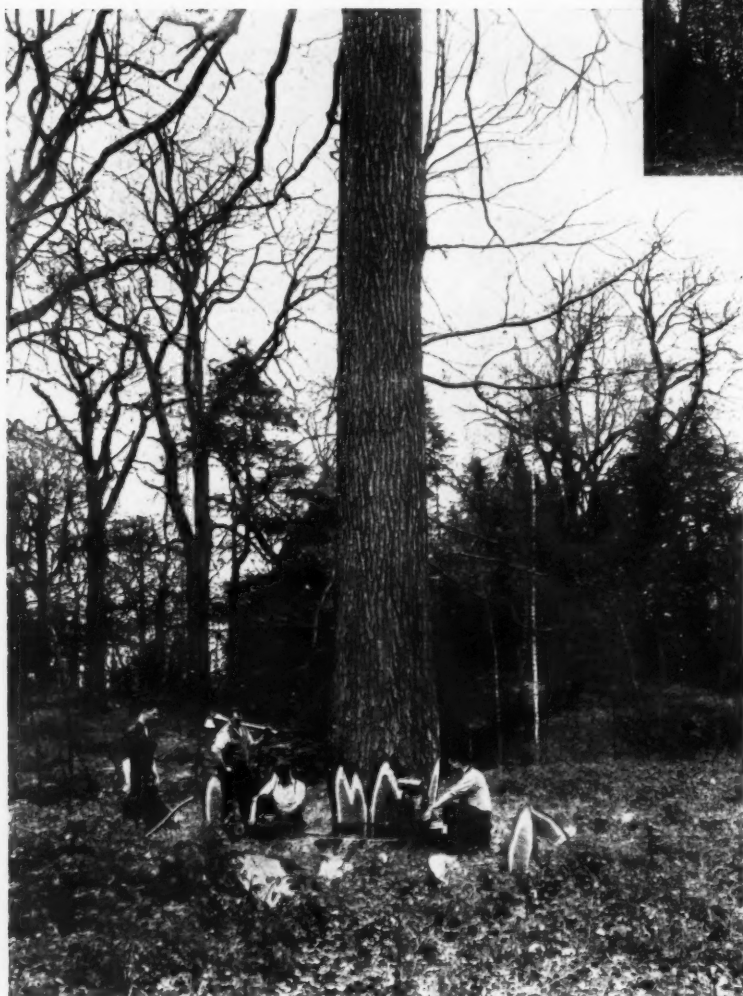


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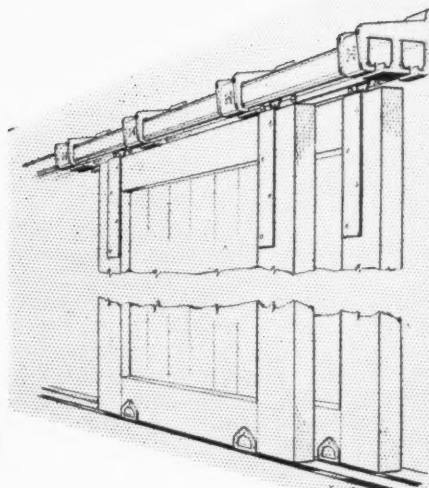
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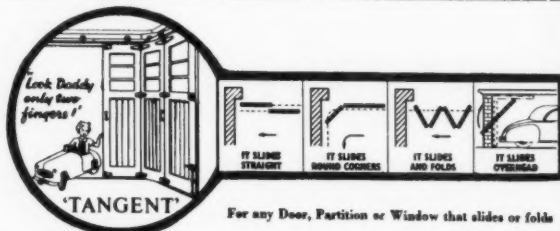
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NOT QUITE ARCHITECTURE

AN INNOCENT AT THE DAIRY SHOW

The posters were gay and had a feeling of fresh air about them. There was a dairy maid balancing two buckets from a yoke round her neck; and the Disneyesque heifer tossing a laugh over its shoulder seemed designed to conjure up pictures of the simple rural life which we all try to persuade ourselves still exists, even though we know we are fighting a losing battle. Mechanization has taken command. Ploughing teams have vanished. Farming is a stern, practical business, and the dairying side of it not least. So I set out for Olympia bent on discovering just how mechanized the dairy business has become. If combine harvesters are commonplace in the cornfield, why not automation in the cowbyre?

*

I pushed through the swing doors of the Empire Hall, and thoughts of automation quickly dissolved while I found myself wondering how anyone should suppose he could fill the cavernous spaces that confronted me with a show concerning itself simply with dairying. The answer is: no one had.

*

A pleasantly weatherbeaten man beneath a floppy grey hat was sitting on a packing crate selling Bladderwrack, and many other herbs, from a farm in Dorset. (B'adderwrack is that heavy seaweed that goes pop when you tread on it, and if taken as directed apparently replaces all those complicated slimming diets.) "Arts and Crafts of China" (and of Baker Street) have created paper lanterns of even greater variety and ingenuity than the ones that come from



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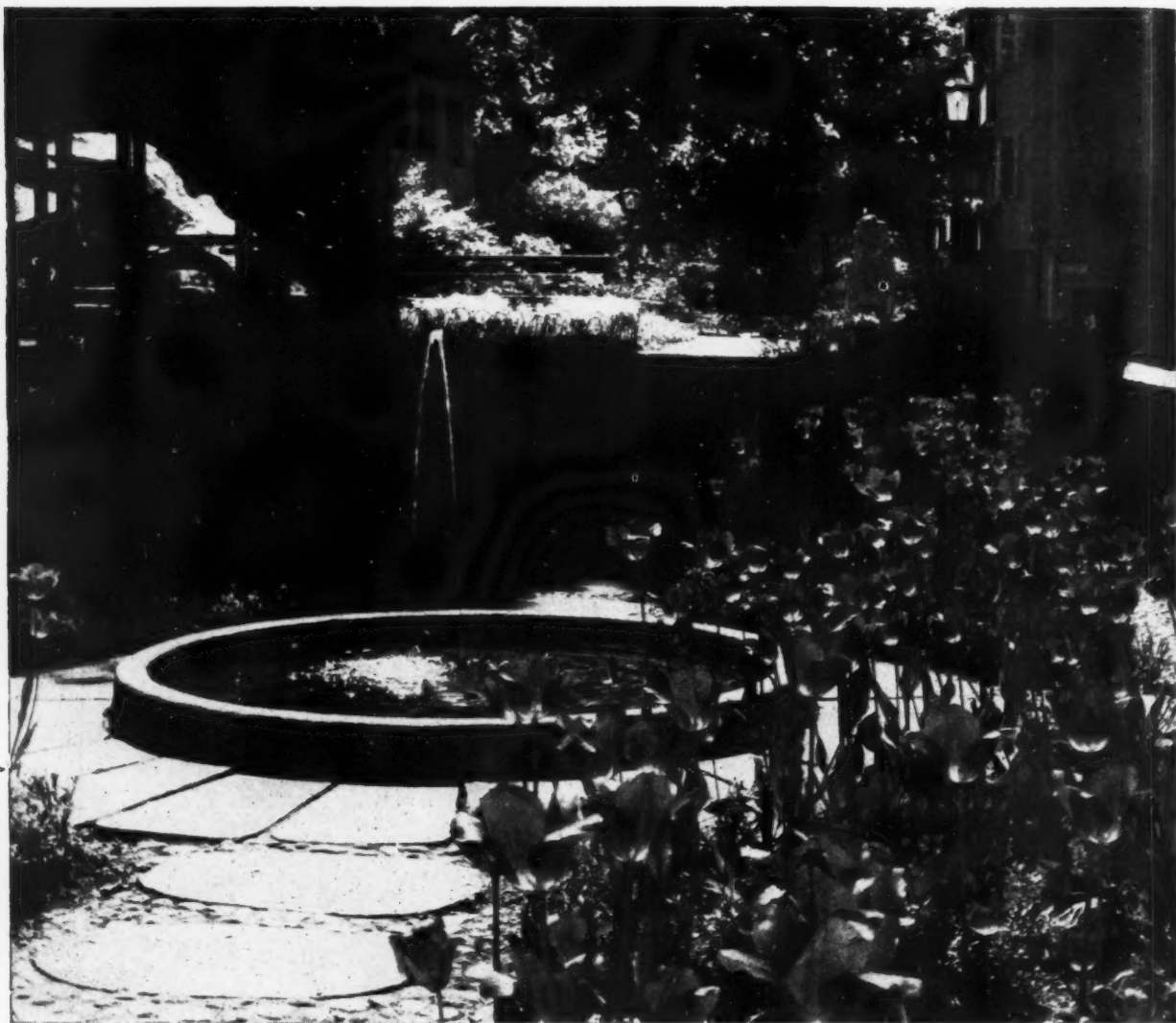
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What the New Towns didn't do

In recent years the attention of the sophisticated English architect has been directed to Italy and to the visually enclosed urban delights of piazza and court. However, as Holger Blom, the chief landscape architect to the city of Stockholm, showed architects at the AA, Bedford Square, last week, the lessons of Sweden have been ill-learned and ill-practised. A portion of the criticism of the English New Towns would have been stilled if the landscaping had been carried out with the skill in paving, contour planning and planting with which the Swedes embellish Stockholm. Above is a small garden in central Stockholm, with open-sided shelter, pools, sculpture, random-growing tulips (so much more effective than the English regimented beds) and neatly patterned footpath. On the left is a small shopping centre at Höckärängen, on the outskirts of Stockholm. Children are allowed to play in the triple-layer fountain while their parents shop. Holger Blom evidently agrees with Richard Neutra (see *ASTRAGAL*, page 654) that the architect's job is the arrangement of visual lures and stimuli, and the pictures he showed of Stockholm illustrated clearly the care he gives to exercising the aesthetic eye with contrasting long and short views, carefully related areas of high and low buildings and high and low planting, and with the splash and gleam of moving water to give life to the whole.

Denmark. ICI were there with Alkathene pipes and corrugated perspex. A stand displaying sheepskin rugs seemed very popular; but another which offered an astonishing variety of country wines was unaccountably deserted. You were given the opportunity of ordering your new set of chimney-sweeping brushes, or of laying in a stock of horse brooches from the stall which made it clear that mid-October was the time to "Buy your Christmas Gifts". To put the gadget designers on their mettle, a firm who produce folding chairs (the lightweight, brightly upholstered kinds that are now *de rigueur* for all up-to-date picnickers), was displaying a set of four chairs and table which all folded neatly away into a flat package measuring only 30 in. x 15 in. x 6 in., easily carried in one elegant feminine hand. And so, haphazardly, stands would continue to confront the eye without apparent rhyme or reason. That was both the first and subsequent dominating impression of the show. Among the affable goats, a sudden blaze of flowers. At the end of a parade of Aylesbury and Khaki Campbell ducks (warm and friendly fellows, but holding themselves stiffly, and very much on their best behaviour), a solitary woman selling combs of prize English honey. This was up in the galleries. But back on the main floor there was no more obvious thread to follow. At the moment when a portable grain silo, ingeniously constructed out of sheets of very light pressed metal appeared to merit a more detailed inspection, my eye was distracted by a stall doing a brisk trade in vintage cigarette cards. From that moment all was lost. Neither the milk float entirely moulded from fibre-glass, nor some interesting models of farm buildings displayed by the *Farmer's Weekly* could compete with "Girls of Many Lands" at 2s. a set; "Aesop's Fables" at 2s. 6d., "Notable M.P.s, 1929", going very cheaply at 1s. 6d.; or "Careless Moments (Pin-ups of 1924)", which promised even better value at only 9d.

*

If you were expecting to hear something about dairying, or something of immediate or practical importance to you, perhaps I have disappointed you. Perhaps the heifer on the posters had the last laugh after all. As I left the exhibition I sighted a large notice reading "Stairs Up To Gallery", and "Milk Going Up: Official" ran the heading on placards round about. It could have been a portent of automation, of course; but I suspect it may simply mean less work for dairy cows.

JOHN TRELAUNY-ROSS

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* To preserve freedom of criticism these editors, as leaders in their respective fields, remain anonymous

The Editors

HOW'S YOUR BLOOD PRESSURE?

LAST week, when a one-day Conference was held at the Royal Society of Arts, 77 organisations sent representatives to listen to the nine speakers. Little labels flapping on the chests of the design-conscious showed that the Conference was of interest to Fisheries, Food and Forestry, not to mention the Girl Guides, the Brewers' Society, the Town Planning Institute and the RIBA. The subject conferred upon was "Perils and Prospects in Town and Country." After a day of speech-making it was clear that the perils were great and the prospects small. And the JOURNAL representative who had spent his day wedged between the YMCA and the Women's Institutes wondered who had benefited from the Conference. Did anyone leave the RSA with increased awareness of the horrors of Subtopia? Did anyone carry away the spark of an idea for combating visual outrages? Consider what was said during the meeting. The causes of Subtopia were listed as follows: (1) lack of agreed standards of taste; (2) lack of local men as planning officers; (3) lack of history teaching in architectural schools; (4) lack of pleasing environments in which people may acquire sensitive minds; (5) lack of the right people in the right planning jobs; (6) lack of aesthetic appreciation among the "masses," and (7) lack of aesthetic appreciation among the intellectuals.

Several cures were mentioned at the Conference. Sir Hugh Casson wanted unceasing vigilance ("every citizen should speak up for beauty") and higher buildings. Sir Frederick Osborne wanted lower buildings. Lionel Brett said that 100 people in the right jobs "could make all the difference." ("The Ministry of Housing should use people of quality in the planning machine.") Desmond Heap said that better taste must be inculcated in people, and that the best way of doing it was to give them better buildings to grow up in. Lady Brunner thought that an exhibition of our history would help, by making us feel part of our heritage and of our future. Mr. Campbell, of the Outdoor Advertising Association, wanted "progress bodies" as well as "preservation bodies." Mr. Henderson, of the Council of Visual Education, put his hopes in the film-strip-fed generation of the future. Michael Dower, an undergraduate, who is also assistant secretary of the Cambridge Branch of the C.P.R.E., took one look at the over-40 audience and hastily expressed the hope that

young people might be inspired to do something or other. And John Betjeman, who thought that Local Authority Committees should each co-opt one local artist to advise them on matters of proportion in street furniture, expected much from those who are able to "open people's eyes."

How *can* people's eyes be opened to good design? Not only by carefully planning long-term education but also by encouraging people to take a pride in the good things around them. The most encouraging talks given at the Conference were by speakers who told of work done to interest people in preserving the amenities near which they lived and worked. W. L. Giffard talked about the "best kept" village competitions, which are being held annually in fourteen counties, and Sir Geoffrey Hutchinson told some good stories about the heights of diplomacy to which his Hampstead Protection Society had stooped to preserve its interests.

It is a pity there were not more speakers at the Conference who had tales to tell of successful anti-Subtopia campaigns. The horrors of "Outrage" have, by now, been talked about widely and often. And everyone knows that the preacher who dwells too much on the disadvantages of hell fire and says nothing about salvation is a useless bore. It is time we had some personal testimonies from people who have found the narrow gate leading out of Subtopia. The *Architectural Review*—the power behind the current interest in visual horrors—is aware of this, and next month it will devote a whole issue to illustrating the visually pleasing things that manage to get done in a country where most people are aesthetically blind. But what an opportunity the RSA has missed. It should not have allowed its Conference to be made up of a haphazard collection of good, bad and unconsidered theories. It should have given more of the organisations represented the chance of telling what they had done, or what they—as organisations—thought they *could* do, in the battle against Subtopia sprawl. And a more careful vetting of the speakers chosen to address the conference from the floor might have spared us much irrelevance ("They don't have pylons in Holland"), much embarrassment ("Welwyn Garden City is a very beautiful town") and much banality ("If we had all the right city and county clerks, architects and planning officers, more visual beauty would be assured").

If any conclusions can be drawn from the Conference—and not one was drawn by the chairman, Sir Stephen Tallents, in his closing remarks—it is an obvious one: that Government Authority can be influenced to do far more than the Public. The well-known, besetting ailment of the Public, known as apathy, was bandied about by several speakers, but only one speaker suggested a cure for it. "People are interested in themselves," said a Yugoslavian doctor; "And they are particularly interested in their health. So tell them that Subtopia is bad for them. Make this your slogan—'Beauty is Good for Your Blood Pressure'." Cynical, perhaps, but no less practical, and much more refreshing than anything else suggested at this well-meant but ill-considered Conference.



YOUR PRESIDENTS

The presidents of the RIBA, the IAAS and the AA have all been on their feet and talking hard in the last few days, and these, added to talks and discussion during the same period by Denis Clarke Hall, Sir Thomas Bennett, Robert Jordan, Richard Neutra, Whitfield Lewis, Sir Hugh Casson, Lionel Brett and Holger Blom, have caused some of ASTRAGAL's journalist colleagues to look somewhat fine-drawn. Of the presidents, the AA's Gontran Goulden was the best, when he gave his presidential address last Wednesday week. He had obviously been to great pains in preparing what he had to say, and if the result smacked slightly of a senior officer conducting a TEWT* the similarity is rather appropriate bearing in mind that President Goulden is as much a soldier as an architect.

*

He asked for training in leadership for architects, so that they could be worthy leaders of the building team. ASTRAGAL always feels small, dumb and rebellious at the first obvious sign of leadership in someone else, although willing to go along with anyone who is sympathetic and inspiring; but no doubt leadership is necessary for some people. However, he wholeheartedly

* Tactical Exercise Without Troops.

approves Goulden's proposals for a staff college to keep architects up to date and for improvements in architectural education as regards professional practice and business methods. Excerpts of this talk are printed elsewhere . . .

*

. . . as are some from the address of RIBA President Kenneth Cross. He mentioned that plans are being made, and money put aside for him (and Secretary C. D. Spragg, it is believed) to go abroad to visit some of the architectural institutes of the Commonwealth. This seems an admirable idea. But as the money for this kind of trip is not often available, it is to be hoped that every effort will be made for the representatives of the various professional bodies properly to exchange detailed information and experiences first-hand. With so many institutes and societies of greatly varying age and size there must be a good deal of useful information available on how to create an efficient profession which is widely used by the public. It is to be hoped that Mr. Cross will not allow his visits overseas to become merely a sight-seeing circumnavigation of the world, punctuated by speeches and dinners—a sort of commoner's version of a royal tour.

*

The third president to speak recently was Lt.-Col. A. E. Henson, the President of the IAAS, when replying to toasts to the IAAS, and the London branch of it, at a luncheon last week. Henson was full of enthusiasm for his re-awakening professional body. With a new headquarters, a new journal, new bye-laws and a fairly new secretary, the IAAS is, apparently, better equipped than at any time in the past. The LCC has recognized some of its surveying exams, and it is hoping one day soon to be able to hold its own recognized architectural exams, which would put it technically on a par with the RIBA. The IAAS, containing architects and surveyors, should encourage that unity within the building team for which so many are asking. Unfortunately it seems to be true that it is not having the right idea which counts in this world, but the right people having it, as well. Nevertheless the IAAS does a useful job as a faint prick to the RIBA conscience and as a forum for the vociferous whose vocal and organizing energies could not be entirely absorbed by the RIBA.

WHAT NEXT IN HONG KONG?

The unsatisfactory position about the status of Hong Kong University's architectural school continues. What they feel about it at that end may be gathered from the Vice-Chancellor of the University's speech at Congregation, held on October 25.

*

"The infant Faculty of Architecture," he said, "continues to flourish. . . . Although it has not yet gained recognition by the Royal Institute of British Architects, Cornell, Harvard and McGill Universities on the American continent, and the University of Liverpool in Great Britain, have recognized the status of our degree by accepting our graduates for post-graduate studies. . . . This tends to make one wonder whether this question of recognition by the Royal Institute of British Architects is not

bound more intimately with questions of British architectural politics and expediency, rather than with that of academic status; meanwhile the regional recognition of our course designed for tropical territories like Hong Kong and Malaya remains dependent upon regulations designed for British subjects practising in England. It is fervently hoped that we may soon be able to persuade regional governments in this part of the world to remedy this hardship under which our graduates labour."

*

The next move is surely with the RIBA, or a bad impression will be created that neither the Institute nor the Commonwealth can afford. And a similar problem may soon arise in Malaya, where the Technical College of Kuala Lumpur is embarking on a course, approved by the Government, aiming at intermediate level. When



One of the delights of modern Sweden is the use of simple, unprofound sculpture and water to interest and amuse children. The bronze snake (sculptor: Kalle Lodén) spitting water into a pebble-lined pool is in Stockholm. The pool was designed by Holger Blom, the city's chief landscape architect. See frontispiece, page 650.

RIBA approval is sought for this, the difficulty of applying rigid English standards to courses elsewhere in the Commonwealth may come up again.

WATER BOARDS, BASINS AND CLOSETS

ASTRAGAL spent an anxious evening at the Building Centre last week wondering whether Denis Clarke Hall was going to tell a packed and breathless audience exactly in what sense he found the standard w.c. seat uncomfortable. He was telling the Building Centre's Forum on Sanitary Ware exactly what he, as an architect, found wrong with our sanitary equipment, and very well he did it. He was followed by that very distinguished Scots sanitary patriarch, Alan Adams of Adamsez, who illustrated the morphology of the wash basin and the w.c. with drawings from his firm's old catalogues. There is something about this subject which rouses all that is best and most critical in architects and the trade, and this was by far the most eager of the BC's Forums so far.

When he had got the cigarette smoke out of his lungs, ASTRAGAL tried to sort out the major issues clamouring for settlement and was surprised to find that there were so many. We want a wider choice of semi-specialized equipment—sinks in which you can wash up without having to fetch a basin, and washbasins with more generous (and dry) shelving. We want all equipment to fit tile sizes. We want BSI to stop canonizing the designs of common items of equipment for no better reason than that most manufacturers make them that way and to issue performance standards instead. The manufacturers want standard water regulations so that they can be released from having to meet the vagaries of our 2,000 autonomous water boards.

Then there is this business of new materials. Gontran Goulden, speaking from the chair, told an incredulous meeting that he found urinals in Zurich and Geneva which were made from asbestos cement, and, because they were repainted every three months, did not smell. The trouble with our urinals, said Alan Adams sadly, is that they are made to last too long. Edward Mills made the excellent point that we want lighter equipment to fix to our lightweight partitions.

Lastly a man from MOW told of his Ministry's experiments with spray taps for hand-washing in offices: how they saved half the fuel and half the water and how civil servants took to them.

W.w.p.'s that gurgle, rimless w.c. pans that flush on to the floor, chains that bash the plaster and pull off in your hand, washbasin plug chains that catch in your sleeve and let the water out at the critical moment. . . . ASTRAGAL was overwhelmed by this picture of the mad dumb crambo of English sanitary life. But, as John Eastwick-Field pointed out, just imagine what this Forum would have been like in France. . . .

NEUTRA AT THE AA

In the AA school's lecture halls, so indifferently designed as regards sound and lighting, and accompanied by workmen's and students' noises off, Richard Neutra spoke caustic good sense in a leisurely broken-American drawl for two hours or so last Thursday. He criticized the American instalment-plan economy, and the mass of advertising of new technical novelties which fill the architectural monthlies (no reference to the weeklies) from which all young architects are suffering. He advised students not to concentrate on learning mere technics at school, which will inevitably become quickly dated, but to be enormously curious about men's physiological requirements and to be "in love with engineering and structure."

Neutra pointed out that the architect, by placing visual wires in space around a man, caused him to move and appreciate architecture. The architect, he claimed, induced tensions in the onlooker. Neutra derided the bondage of Euclidian geometric form for architecture, which "has no direction and knows no front or back." He advocated a safe and sound profession "which is not a fashion business" and which practises "biological realism." His attitude to modern architecture became more obvious, and logical, when he showed and criticized work by what he admitted were first-rate architects. Mies's flats in Lakeshore Drive he called "not related to nature: it's a crystal, indifferent to natural determinates . . . indifferent to the people inside . . . it is arbitrary regularity." And of Corbusier's Marseilles block: "it is arbitrarily irregular."

ASTRAGAL

NEWS

MANAGEMENT

Course for Architects

The York Institute of Architectural Study is to have a course of lectures on management for architects from January 4 to 8. The subjects will be: Briefing: whose responsibility? What information should it contain?; Work programming; Preliminary designing; Production of working drawings; Cost control; Storage of drawings; Filing of correspondence; Technical information; Co-ordination of consultants and specialists; Relations with Quantity Surveyor; Tenders; Site supervision: issue of A.I.'s, site meetings, site reports; Builders' claims; Architects' and builders' relations.

The lecturers will be: G. W. E. Airey, council member of Institute of Builders; J. M. Austin-Smith, A.R.I.B.A.; G. Grenfell Baines, A.R.I.B.A.; Eric L. Bird, A.R.I.B.A.; S. Jewsbury, consulting engineer; J. Nispet, principal quantity surveyor to the Ministry of Education; G. G. Pace, F.R.I.B.A.; Rex Proctor, A.R.I.B.A.; C. E. D. Wooster, A.R.I.B.A.; a Management Consultant from Urwick, Orr and Partners Ltd.; Filing and Recording Consultants from Roneo Ltd.

Hotel accommodation, at members' own expense, will be arranged by the Institute. The tuition fee is four guineas and applications should be sent to the York Institute of Architectural Study, Micklegate, York, before December 4.

PLUMBING

Mr. Sandys on Ice

Duncan Sandys, Minister of Housing and Local Government, wants to avoid a repetition of last winter's extensive icing-up of pipes in houses. The main suggestions, set out in a circular to water suppliers and housing authorities, are:—(1) All water suppliers should adopt the Ministry's model byelaw requiring that, whenever possible, fittings should be placed in positions where they are unlikely to freeze, or, if this is not feasible, that they should be protected. Compliance with the Code of Practice on frost precautions, recently issued by the British Standards Institution, will meet the requirements of the model. (2) In order to help the public to take suitable frost precautions, water suppliers should make more general use of their powers to supply, install, replace or alter fittings. (3) Wider use could be made of polythene pipes for cold water services in new houses, particularly for outside w.c.s, wash houses and similar buildings. (4) Closer liaison should be arranged between water suppliers and building byelaw authorities in order to tighten up the administration of water byelaws. (5) Housing authorities should consider issuing to tenants a printed card explaining where the stop valve is to be found, how the water system can be drained, and what precautions should be taken with the boiler.

The circular draws attention to the technical advice which is already available on frost precautions for new houses, and says that if official recommendations on thermal insulation are properly applied, they are adequate to meet conditions normally to be expected in this country. Although there is a limit to what can reasonably be done to alter the plumbing of existing houses, there may, says the circular, be opportunities for making improvements, particularly when repairs are being carried out.

RIBA

Mr. Cross Talks at No. 66

In his presidential address this week at the RIBA, 66, Portland Place, W.1, Kenneth Cross spoke of relations between architects at home and those in various parts of the Commonwealth, some of whom he hoped to visit during his term of office.

It was no longer sufficient, he said, for us to be a small learned society with our interests largely confined to London as we were in the time of Lord de Grey our first President. Neither was it sufficient for us to have our activities confined to the British Isles as was the case at the beginning of this century. By working for and getting the Registration Acts of 1931 and 1938 we had taken a different road, one that led to growth, consolidation and recognition at home and to expansion, breadth of view and freshness of vision under the stimulus of contact with our allied members overseas.

It had been said that the position of the RIBA was unique; that not only had we a series of architectural organizations allied to and federated with the RIBA at home, but that we could not go into any part of the Commonwealth, into any Dominion or Crown Colony without finding an organization of architects who were linked by practical as well as sentimental ties with the Royal Institute.

It was essential that we should devise machinery to ensure the fullest consultation with our allied societies wherever they might be situated in the Commonwealth. Mr. Cross hoped it would be possible for him, in company with the RIBA Secretary, to visit some of them in response to the warm invitations they had received. Plans towards this end were at present under consideration.

Mr. Cross spoke not only of the happiness that could be engendered in architects by visits from their colleagues overseas, but also of the happiness they could find in an enlightened public.

"If architects are to design happily," he said, "they must feel that they have the support and appreciation of the public for whom they work. In short not only architects but the public should be cultivated and knowledgeable. In the stress and struggle to keep going it is increasingly difficult for younger men and women to earn their living, run their homes, get their children educated and continue to find sufficient spare time in which to develop their tastes in the arts in general and architecture in particular. Not only is more leisure needed but also money for the purchase of books, pictures or other works of art. We must look to science to improve methods of production to such an extent that shorter hours can be worked and, in addition, we should call for the development of domestic labour-saving devices at low cost to alleviate the soul-destroying tyranny of housework. It might be possible to develop a social economy on these lines in which people can live a full life and enjoy a real appreciation of the arts."

DIARY

Modern Portuguese Architecture. Exhibition at the BC, 26, Store Street, W.C.1. Monday to Friday, 9.30 a.m.-5 p.m.; Saturday, 9.30 a.m.-1 p.m. Admission free.

UNTIL NOVEMBER 30

New Ideas in Old London. Talk by Sir William Holford. At Anglo-Belgian Club, 6, Belgrave Square, S.W.1. Chairman, Kenneth Cross. Tickets: 10s. 6d., 7s. 6d. and 5s. from Miss U. Z. Pompei, 10, Lowndes Square, S.W.1, and Miss Lawrence Jones, 15, Richmond Court, S.W.1. 6.30 p.m.

NOVEMBER 13

Last week Gontran Goulden gave his presidential address at the AA. Extracts from it are published below.

AA

What Gontran Goulden said . . .

. . . of the AA. "In spite of misinformed comment to the contrary, the AA is a dynamic, evolving and changing body which not infrequently leaves sparks and a whiff of sulphur in its wake, as it rushes across the heavens bound nobody knows quite whither."

. . . of the architect and the public. "The profession of architect is not very highly esteemed by the general public, still less by the world of industry and commerce. For this architects themselves are very largely to blame. In dress, language, friends, habits and even in handwriting they are marked as beings apart making few concessions to the usually stuffy conventions of other professional or business people. Bowler hats are not common in the cloakrooms of the AA. This lack of esteem is of graver importance than is usually supposed, it is becoming more so every day. If architects do not quickly learn to talk to the rest of mankind in a language that can be understood (preferably by a child of four) they are doomed."

. . . of the architect as leader. "It has for some time been fashionable to talk of the building team. This manifestation of progress in the industry has taken the lime-light for pre-planning although it in turn is being ousted by the consideration of elemental bills of quantities. It has been very loudly claimed that the architect should be the leader of the building team. In principle this is no doubt right because by his training, his education and his background he should be the person most suitable to lead. But whatever his artistic qualifications, whatever his technical ability he cannot lead the team unless he is a trained leader. Architects can have no right to lead the building team, they must be trained to do so, but I doubt whether the word leadership has ever been heard in the procrustean deliberations of the Board of Architectural Education. Architecture used to be a gentlemanly art, now it is hard business."

. . . of training for leadership. "In the long run architectural education may be expected to cope with leadership training. It will necessarily be in the long run. However something at least could be done at once. Aptitude for leadership could and should be taken into consideration when applicants for places in schools are interviewed. Educational and artistic qualifications are not enough. Competition for the best brains coming from our public and grammar schools is intense and becoming more so. The prospects in industry are well understood by careers masters and are attractive to boys. Knowledge of the prospects in architecture and the work of an architect, on the other hand, appear to be little known with the result that it is rarely that any but the arty boys take an interest in architecture. Headmasters particularly in boarding schools seem to me to live in blinkers. I would like to see them do a course of real life every five years."

"What can be done for the qualified architect interested in leadership and in learning the ways and language of the wicked world of commerce? I suggest a staff college where courses not only in leadership, but in business subjects would

be taught. Such a staff college should include all branches of the building industry and should be an independent organisation financed from the profession and the industry but with the blessing—more or less munificent—of the Ministry of Education.

"I do not suggest that the school of building management which has been so long discussed should be a part of the staff college. I am convinced that the place for the leading school of this kind is here and I am extremely sorry that so far no suitable formula has been discovered for its foundation."

. . . of Professor Sir Albert. "The President of the Royal Academy can fairly be described as an official body. As head art man of the nation he gets the press. He is in his own specialised field a most distinguished architect. It is therefore, in my opinion, a very great pity indeed that during his two years in office he has continuously and violently attacked modern architecture and by implication modern architects regardless of their actual merit and merely for being modern. This has done good architecture great harm among those who do not regard the Professor as a slightly irresponsible figure of fun. I do not mind admitting that I have a very soft spot for Sir Albert, but I think he is entirely wrong-headed in his policy. Surely he should have hidden his personal prejudices and taken the part of good architects and architecture. His chosen course has been nothing but destructive. It can be argued that Sir Albert's diatribes have put architecture in the news and made people talk. This may be perfectly true for readers of the three-penny plus newspapers but the masses always take a cheap jibe at its face value. As Abner, or was it Astragal, put it, 'The Professor not only plays to the gallery but to the bottomless pit as well.'"

. . . of the Royal Fine Art Commission. "This seems to me a purely negative leader. It is so balanced in its membership that anything like a well-defined decision is a practical impossibility. Its terms of reference and its solely advisory capacity make it a toothless organisation unable to exercise initiative. There is a growing and dangerous tendency for it to become an issuing office for architects of respectability for second-rate building projects. I would like to see the Commission reconstructed with a bias towards good modern architecture and with some provision for positive leadership."

. . . of transport design. "No other organization in this country has ever approached the overall design standards of London Transport in Pick's day. This does not mean that they could not have done so, it merely means that no person of Pick's standard of knowledge and leadership was ever placed in command and control. British Railways since nationalization have had a pitiful design record. This is the more lamentable when one remembers the great design traditions of the original railway companies. In fairness it must be said that the trouble was started when the railways were grouped between the wars."

"Very nearly everything that has come from railway designers since they were nationalized has been third or even fourth rate. Remember the odious tavern cars, still in service despite many statements that they would be withdrawn, the double jube-jube sign, the starving lion stretched over the wheel, the latest heraldic horror: the electric rolling stock on the Liverpool Street-Shenfield line, and the spate of simply dreadful posters, the horribly coloured drawings in the compartments and so on endlessly. Main line rolling stock of all kinds is to say the least undistinguished; refreshment rooms, though cleaner and brighter than they were, are so tricked out with bubbling commercially-sponsored, electrically-lit price lists, that any but the most insensitive traveller must wince on entering."

continued on page 661

The first public discussion of this subject was held at the Building Centre on October 24. It was organized by the Ministry of Works and the Brixton School of Building. We print below a shortened verbatim report of the meeting. Speakers: F. G. West, Deputy Architect LCC; James Nisbet, principal quantity surveyor MOE; P. E. Trench, Bovis Ltd. In the chair: Sir Thomas Bennett. On the right are dates of articles on the subject that have appeared in the JOURNAL.

September 16, 1954	Cost Analysis and elemental bills: Clifford Nott.
February 24, 1955	Cost Analysis: The Guest Editors.
July 14, 1955	The Quantity Surveyor's Control of Costs: The Guest Editors.
July 28, 1955	Cost Planning: The Guest Editors.
May 10, 1956	Cost Analysis and Cost Planning: James Nisbet.
May 24, 1956	Architectural Economics: Clifford Nott, Kenneth Norman and Derek Stracey.

COST CONTROL

F. G. WEST (Deputy, Architect, LCC): I regard the general picture as being much more important than any part of it, and the general picture is this absolute need for more adequate and more resolute cost control in the building industry. I feel very strongly that that is so from the architect's point of view.

I have often seen frantic efforts made to adjust and control costs at the tender stage of the job. . . .

I suggest that that is all wrong, and that we have to do something about it.

When a job is mooted, the first thing to be assessed is a general cost limit which must be established for the job.

Within that yardstick the architect and the surveyor have to work together. The surveyor should produce for the architect a breakdown.

Whatever the elements are, they must be elements that an architect manipulates when designing his building . . . roofs, wall cladding, floors, staircases or whatever it may be. He then prepares schemes for various alternatives for these elements, and his quantity surveyor, I suggest, should be with him the whole time, assessing what he is doing in terms of a particular element. It may well be that, as this process proceeds, one element will be made more expensive at the cost of another, which must be adjusted to preserve the overall general balance.

If a job is worked out in this thorough fashion before the preliminary estimate is presented to the client, it will probably take somewhat longer than the old, rather slipshod method.

I feel that the attitude of surveyors in the past has been, particularly at this early stage of the job, to regard themselves as compilers of statistics for the architect, instead of realizing that they have a vital contribution to make to the development of the job. There is need for a reorientation of their outlook.

I regard it as important that every decision should be taken in full consultation with the surveyor, and not from information which can so easily be used out of its context.

If the present very haphazard methods of cost control continue, very severe loss of confidence on the part of the building owner will ensue, and some other arrangement for controlling the building industry may be devised which may not be so agreeable to us or to the general design standard of architecture.

JAMES NISBET (Principal Quantity Surveyor, MOE): Our Chairman, in April, 1946, at a general meeting of quantity surveyors at the RICS, drew attention to the fact that our costing arrangements in the building industry were on a vague and unsatisfactory basis. In ten years atomic energy has been harnessed for industrial use, yet our costing arrangements in the building industry have remained practically unchanged.

The architect is offered, on the one hand, a very simple and crude yardstick, something like a cost per cubic foot, and on the other hand an extremely detailed and complicated document, a bill of quantities. Cost per foot cube, even for buildings of the same type, can be very misleading, and the bill, written as it is by trades, does not give a common basis of comparison.

The total cost per square foot, however, does not give us the information which we need, and must be broken down into smaller and more convenient units, which we call elements. The definition of an element is "a part of a building which more or less always performs the same function or functions." For example, a building must always have a roof. It does not matter what the construction is; the cost of that element can always be examined and compared under

the element "roof construction." This type of unit has a further advantage, because the architect tends to design in terms of function, and the elements should tie up with function.

One advantage of this simple form is that it is very useful for identifying items of excessive or insufficient expenditure. It can save many hours of fruitless discussion and going through bills of quantities and the preparation of reduction bills. An example of this is a simple analysis which has been made covering three primary schools. The total costs for the three are very much the same, being 65s. 11d., 65s. 3d. and 65s. 4d. per square foot. The tenders were all received about the same time. The distribution of that total cost between the different elements, however, is quite different. We can probably learn something else from these analyses. We can, for example, relate the cost of an element to its importance as a necessary part of the building. . . .

In one school, for decorations the figure is 1s. 4d., and many clients and architects will say that that is too little to spend on a school, so that the decorations will be below standard. For the second school the figure for decorations is 4s. 3d., while for drainage the figure is 4s., which architects and clients may feel is far too much to spend on those elements.

This type of information allows the architect to draw up a plan of expenditure. He can see where the money has been spent in his previous jobs and use that information to get a better balance of cost in his next building.

I should like to emphasize that this is not a device to depress costs. To obtain a cost analysis it is necessary to prepare an abstract in reverse. We have to take the items in the bill of quantities and their costs from each trade and reassemble those items in another abstract under element headings. It was this operation which suggested that it might be a good idea to produce a bill which gave us this information straight away, and that is what led to the idea of an elemental bill. But, before anything was done about it, an architect and a builder were approached and the whole matter was discussed with them. In discussing the suggestion, it became apparent that this kind of bill might have a number of advantages.

The discussions also underlined the fact that, while the bill of quantities must remain a basis for tendering, it was now being used for a number of different purposes, and that it was the increasing complexity of the building industry, the diversity of materials and services, the introduction of scientific methods of design and construction and of programming and management, and the virtual absence of the specification, which were making the bill of quantities a very important document, but that this bill was making very few concessions to these new uses.

Elemental bills have been prepared for buildings of different forms of construction and for at least three different types of building—for schools, for houses, and for old people's homes. Where the builders have been consulted beforehand, there has never been any difficulty about tendering.

The elemental bill is a relatively simple thing to describe. Instead of being written by trades, it is simply

written up in a number of sections, each section corresponding to an element. Within each element, the items are billed in the trade order. This may mean that the same item may occur in a number of elements, but experience so far is that this is not a serious difficulty, and it is one which can be partially overcome. The principal advantages of this form of bill are (i) that it provides a simple cost analysis as soon as the tender is in; (ii) the quantities in the bill can be readily referred to the drawings. This has a number of advantages to the architect and to the builder, and we may hear more of them later in the discussion. The quantity surveyor is in a fairly neutral position. The advantages to him are that he can provide a cost analysis for his architect straight away, without additional trouble, and, so far as valuations are concerned, it should assist him in preparing the valuation more quickly, and probably more accurately, and thereby reduce the retention money which is sometimes held. Finally, he may be relieved of the questions which he is often asked by the builder and by the architect, and which can be answered only by reference to the dimensions and the abstract.

PETER TRENCH (Bovis Ltd.): When I was asked to speak I was unaware that no public pronouncement had been made by a builder on this subject. I did not think that such passions could be aroused by such a very dry subject. I myself have been nobbled, rather like a racehorse, by private quantity surveyors, public quantity surveyors, private architects and public architects, and even by builders and builders' estimators; but, despite all that, what I have to say is said without duress. It is my personal opinion.

First, there is the estimating department. This room is packed with estimators! Whereas we ordinary mortals find it difficult to find our way about an ordinary bill of quantities, estimators do not.

With an elemental bill the collating of the items for inquiries to be sent to subcontractors and suppliers means much more work, because of billing in sections and not trades. Secondly, the insertion of rates in the bill by the estimator will take longer not only because of the greater number but also because of the repetitive nature of some of the items. Thirdly, the pricing out of the bill will also take longer, due to the increased numbers of items. The time allowed for tendering anyhow is notoriously short. I am only speaking from the estimator's point of view, so that those who think that I am going to condemn elemental bills had better sit tight!

In theory, the estimator should get a better picture of the building from an elemental bill, and should therefore have a better background for pricing. I think it is debatable whether the elemental bill will produce a more accurate price, and I think that possibly it will not, because the generally accepted method of estimating in this country today is pretty archaic anyhow. The only way to produce more accuracy is to base estimates not on built-up unit prices but on work values established from work measurement and method study.

This brings me to planning. Let us consider what happens in the big builder's office today.

Those who plan a project are not generally estimators, and they do not find it so easy to find their way round a bill of quantities. Many of them find it more difficult than *The Times* crossword. These people would find the elemental bill which I have seen of immense value, if the elements suited the builder's planners, and not necessarily the architect in his cost designing. Those elements may be quite different, and I suspect that they are. I suggest, however, that if we are going in for elemental bills, or are contemplating doing so, it is the builders who can reduce costs by better planning, whereas the architect can only get rid of those nasty shocks at the tendering stage. I suggest that if we are going to have elemental bills the builder should be in on the ground floor in deciding what elements should be used from the planning point of view.

The other departments in a builder's office are bonusing and costing, and contract management. From a bonusing point of view it is possible in the future that an elemental bill will facilitate the introduction of a pre-measured bonus system. On costing, I am afraid that I have a disappointment for the supporters of the elemental bill. I do not think that the elemental bill is likely to facilitate costing. By that I mean measuring work to see the actual cost against the estimated cost. It must be borne in mind that work on many elements is taking place at the same time, and what is required is not a yardstick of cost but a new and simple method of ascertaining the true labour cost of an operation. It is a myth that there is a standard method of costing in the industry and that it will ever be possible to produce a bill of quantities which will fit in with some mythical standard method of costing, which does not exist as yet. Valuation of interim certificates I leave for the discussion!

On the contract management side, which is the side of the builder's business which runs contracts, I think that a good elemental bill could help. It would help the site staff and the contract management, because an elemental bill does give a better view of what you have to build, and heaven knows we start sometimes without knowing what we have to build!

With regard to cost analysis, I do not know how the architect's mind works when he is designing from this point of view. I only know that many of us have been carrying out cost analyses for many years before an elemental bill was ever thought of.

The tender price is very different from the actual cost of the job. It may be that some people would like to use the elemental bill as priced for a cost analysis, but the elemental bill as priced is a theoretical estimate and not an actual cost. To get more accuracy you must at least bring that elemental bill to the final account stage and adjust it. You will never reach the stage of an elemental bill which has in it the actual costs of the elements which have gone into the job to which it relates.

Cost analysis and planning yield the greatest benefits, from our experience, when practised in a particular office or group and are most advantageous when used on buildings of a like nature. We have on many occasions used cost analyses for an approximate estimate. Probably once in ten times we have come a

frightful cropper, but an intelligent use of cost analysis, bearing in mind all the factors of the building, can give quite good answers for an approximate estimate. How architects use it when designing I should not like to say.

It is a pity to let ill-digested thought kill an idea without giving it a fair trial. We have not yet got the answer in £ s. d. to the builder's side of this business, but I think that we may get the answer if we persevere. It would be a great pity to condemn this out of hand, without giving it a chance.

THE CHAIRMAN: The matter is now open to discussion.

N. S. FARROW (Howard Farrow Ltd.): I think that I can reinforce to some extent what Mr. Trench has said, and perhaps vary it to a certain extent, because my company have undertaken a contract using elemental bills.

From the point of view of the builder who has used this tool on jobs, what strikes one immediately is that an elemental bill cannot be produced without complete drawings with details. That is a tremendous advantage that arises from the use of elemental bills, that you know exactly what you are going to build before you start.

From the estimating point of view, I agree with Mr. Trench; the estimating department are more likely to find it a more difficult and a more lengthy process than the normal process to which they are accustomed; but, once they have become used to it, I think they will find that in many respects it will help them to estimate in greater detail. It will cost more money to price elemental bills, and I suggest that, if they are used, competition should be limited to a very great extent, because it is going to cost the industry a lot of money if there is a large list of tenderers tendering on elemental bills.

From the planning stage we have found that elemental bills have been of tremendous advantage on the site. We have derived a great deal of benefit from their use, and everyone on the site has come to that conclusion.

As far as costing is concerned, we feel that elemental bills have been of considerable advantage, and not the disadvantage that Mr. Trench suggested might be the case. Interim and final accounts have been settled much more quickly as a result of elemental bills.

The conclusion to which we have come from the building point of view is that after the initial shock, when people have got over the new presentation of the documents, we feel at the moment that the system is well worth persevering with and that it will probably be of considerable advantage in the long run. We all realize that one of the important things for which we are striving is architect-builder collaboration, and I think that eventually we shall get architect-builder-quantity surveyor collaboration. That is what we want, and I feel that the use of cost analysis and some form of elemental bills may help us to achieve our object, which at the moment is bedevilled by our present tendering system.

I am reminded of a builder who comes to our com-

mittee meetings and says "I come here with a completely open mind, but I think that this is all damned nonsense." I plead with you to regard this with an open mind. It occurs to me that a subject such as this, which is being dealt with by three different organizations, deserves to be approached on the basis of it being a real research problem. I suggest that we should look on it in that way.

CHARLES CUTHILL (Herts CC): We have used elemental bills for about two years, and at the moment we use elemental bills throughout the office, with our chief's backing. Some builders have suggested that pricing is difficult with elemental bills, but always—and I say quite definitely, *always*—once they have got on to the site they were 100 per cent. in favour of them.

We do not really want to talk about elemental bills, however, but about cost planning. . . . If we can apportion the money to heating, plumbing, lighting and work below ground we shall have some idea of whether or not we shall get the building within the limit of cost. I support Mr. Farrow in saying let us try this in the industry and give it a fair chance.

M. H. THACKRAY (Chairman, Quantity Surveyors Committee, RICS): I am most grateful for the opportunity, so early in the discussion, to place before the meeting the position of the Royal Institution of Chartered Surveyors, and in particular of the Quantity Surveyors Committee of that Institution. Some months ago a Cost Research Panel was formed with very wide terms of reference; they involve consultation with all sides of the industry and a considerable amount of research. That Panel has not reached a stage, of course, where it is able to issue a report or any conclusions.

Arising out of that, three or four months ago a Sub-Committee was appointed to consider the narrower field of elemental bills. That sub-committee, through inquiry in the JOURNAL, has received an immense amount of very interesting evidence on this subject, both for and against, and with the passion to which Mr. Trench has referred. The sub-committee also has not reached the stage of presenting a report, but we hope that it will do so before very long.

The Elemental Bills Sub-Committee and the Panel are endeavouring to avoid falling into the age-old trap of saying "What has been good for us in the past is good for us now." At the same time, they are also trying to avoid the attitude "Here is something with a new look; let us grab it."

D. M. NENK (Administrator): It is good of you to allow a down-trodden clerk to speak in a gathering of this expert kind. . . . Cost analysis and cost planning fits into a rational system of administration. The administrator or the client says "There is this amount of money to do such-and-such a building." The architect and the quantity surveyor together, by cost analysis and cost planning, can then make their own decisions, in consultation with the client where necessary, on how that total amount is to be divided among the different elements, and in the end one hopes—and

practice, in my experience, has confirmed it to a large extent already—that the result is less frustration, less wasteful re-doing of work, quicker decisions, quicker approval by councils, Ministries and the Treasury, and a better disposition of the money in terms of value for the user.

D. W. MASSON (Institute of Quantity Surveyors): I have not had any experience in the preparation of elemental bills of quantities. . . . If by the preparation of elemental bills we as quantity surveyors, or contractors, are enabled to make more accurate estimates, well and good. But in this elemental bill we are getting a load of information which, if wrongly used, is going to be far more dangerous than published foot cube or foot super prices.

We have heard from the building side that contractors do think that it will enable them to plan their jobs better, and also to run them better. If that is the case, let us try it.

We in the IQS are ready at any time to co-operate with any other body in the industry in this matter of cost investigation.

F. J. MEEKINGS (Quantity Surveyor): We, in the building industry, have two types of employer: those that spend public money, and those that spend their own.

So far as the people who spend public money are concerned, what they want done should be done. The professions are concerned with giving good service to their clients. I wonder, however, whether Mr. Nisbet and Mr. West appreciate that such schemes will involve a greater expenditure in the payment of fees? Mr. Nisbet touched on an important point affecting our profession when he said that it would not affect the taker-off, but only the worker-up. I do not know any quantity surveyor who is not most anxious about the problem of working up. The profession is suffering not only from a lack of satisfactory working-up staff but from lack of a sufficient number.

In favour of Mr. Nisbet I should like to say this. I imagine that he is primarily concerned with a sequence of buildings of a similar nature, schools. If the architectural side of the schools programme will be consistent with their planning it is clear that the builder and the quantity surveyor can be consistent with the bill which they prepare and the cost which results. That is where the key lies.

Mr. Nisbet showed on the screen an example of what he had in mind, and there was one intriguing point about that which may have been noticed: sometimes the preliminaries were priced, and sometimes they were not. We quantity surveyors know the tussle that we have with builders over that, and I am pleased to see that Mr. Nisbet reflects it in his "cost analysis"—on which term I quarrel with him.

D. L. MEDD (architect, MOE): I have great admiration for and sympathy with quantity surveyors; they seem to me to have to spend so much time frantically measuring drawings—very often inadequate drawings—purely for one limited purpose, namely to get a price, and then it seems to me that quite often they have to spend months, and even years, of negotiation to clear

up the situation. Is this the best use of time and professional fees?

I think, however, that times have changed, and that we should look for new methods from the quantity surveyors to meet the new situations which are now confronting us. Mr. West said that the architect needs to know more about cost. Generally speaking, architects are weak on matters of cost. The normal rôle of the quantity surveyor, in my view, does not help the architect sufficiently in this matter of providing information, apart from countless *ad hoc* approximate estimates and reduction bills, which are no way of accumulating knowledge and experience.

The architect designs in terms of foundations, floors and walls, windows, ceilings and so on—the building elements, in fact—and not in terms of cubic yards of hardcore, foot run of “four by two” or square feet of glass. The grouping of quantities in terms of design elements, therefore, is giving information which is both directly ascertainable from bills and of direct relevance to design. For example, how can the architect know the cost of a heating installation when the builder's work for it is scattered amongst numerous items throughout the bill? It would be hard for any architect to say that he would not gain from such a reshaping of bills.

So much for the design stage. What about the position during the contract? The first thing that comes to mind with regard to the elemental bill at the contract stage is its relevance to programming.

I refer to a programme which breaks the whole contract down into as many different clearly-defined operations as possible and equates them with time and labour. Add annotation to this, thereby removing the need for the separate specification, and we have the means whereby the progress of the work can be checked quickly and accurately during the course of the job.

Again, there is the ease with which variations can be handled. Their value can be assessed very much more quickly, and if it is desired to add a toplight or to subtract a toplight a quick single reference to the bill will show what will be added or saved. It is not necessary to go through the different trades to find out what the sum is. Some quantity surveyors may feel that prices should not be seen by the architect at all, but that is their own prerogative. I cannot agree with this secrecy, for, after all, the architect is supposed to be in charge of the job, and how can he direct the job intelligently if he is in the dark on matters of cost?

I plead with quantity surveyors to examine their century-old techniques and to ask whether they are serving present-day conditions in the most helpful way. Cost analysis, cost planning, and elemental annotated and indexed bills are welcome signs of innovations.

RICHARD WHITTINGTON (Wates Ltd.): From the point of view of a contractor's surveyor, I welcome this idea of elemental bills, certainly not from the estimating point of view, which is the only point of view on which I wish to say a few words. We do not want longer bills of quantities; everything should be done to keep them short, and shorter than we see

them at the moment. If elemental bills will mean longer quantities, I suggest that the opportunity should be seized to find some way of reducing the length of our bills, cutting out some of the items which are covered in our standard method of measurement. The two things should go hand in hand. This is an opportunity to review our system of taking off; let us use it to the full and not confine ourselves to one aspect which will particularly help the architect but which will not be of great assistance, though it may be of some, to the contractor.

E. W. HARVEY (T. R. Roberts Ltd.): I should like to suggest that at the tendering stage the bills should be sent out in the form to which we are accustomed, in bulk quantities, and that tenders should be based on bulk quantities. . . . I suggest that then, having obtained tenders on the basis of bulk quantities, elemental bills should be prepared from those bulk bills or rather from the bulk bill of the successful tenderer, by the successful tenderer working in conjunction with the quantity surveyor. This would get over the objection of the builder's estimator.

D. E. WOODBINE PARRISH: I want to refer to the rather loose use of the word “cost” which is evident even on the invitation card to this meeting. A word which would be more appropriate under economic planning would be “expenditure analysis.” Costs are things which accrue and they are privy to the individual who sees them accruing, and that is the builder. Quantity surveyors and architects very seldom have access to costs, but they have access to prices and to expenditure.

A. T. BRETT JONES (Quantity Surveyor): I agree with a great deal that Mr. West said, especially with regard to the need for cost control at the design stage, and I will go some of the way with Jimmy Nisbet on the need for cost analysis. He showed us on the screen the make-up of various elements. I wonder how true those figures were. As a quantity surveyor, I am very suspicious of figures and statistics. One heading was “doors.” Did that give the real cost of the door, or in other words the cost of the door together with the deduction for the brickwork which would have been there had the door not been put in, or was it simply for the door and the lining?

The elemental bill, moreover, does not seem to answer some of the most difficult problems which a quantity surveyor has to decide. One is what is the most economic level on which to put a building on a sloping site. It is not possible to tell that from an elemental bill. You have to take off approximate quantities and juggle with them until you get the answer.

K. C. EVANS (Architect): The elemental bill did not really emerge, valuable though it is, from an attempt to put current building techniques on a sounder footing. It emerged as an inevitable by-product of an attempt to think more rationally about the whole building process. The minute that one starts to do that,

one stops thinking in terms of trades, because one is thinking possibly in terms of trades as yet unborn. The fundamental difference between the elemental bill approach and the trade approach is that the one is open to the development of new methods, is a tool which can be developed—and the other is a well-tested tool, a good old pickaxe, but related to forms of building which—we may as well face the fact—are going out eventually. The real essence of the different approach lies in the fact that the elemental bill is allied to the future.

The CHAIRMAN asked the three opening speakers to reply briefly to the discussion.

F. G. WEST: I have not much to answer. One point which was raised, and a very serious one, related to the additional costs which, the speaker said, were bound to accrue if really detailed cost or expenditure planning is adopted. There will be additional expenditure of time on the part of professional people. The point is that the amount which indeed would have to be additionally expended in this way would be marginal compared with the enormous economic benefits which would come with a really economically controlled building industry. If we could bring our expenditure control within the limits of firm knowledge based on tenders, we should have gone a very long way, and it would be well worth doing even on that basis.

J. NISBET: Mr. Meekings said that the cost analysis is obtained only after the job is done. He is quite right, but where does the surveyor get his information? Is not it always after the job has been designed and the tenders are in?

Mr. Brett-Jones said the cost analysis is probably not much good to the quantity surveyor who has to decide

certain problems, such as the most economical way of building on a given site. These are problems which we are not able to answer. Whether we can answer them by cost analysis or any other means I do not know, but if we are going to do all sorts of haphazard exercises to try to get the answer it does not seem to me to be an efficient way of going about it.

P. E. TRENCH: I support Mr. Woodbine Parrish in thinking that there has been some woolly thinking on cost. Cost analysis or tender analysis or expenditure planning? I think we have to have some terminology on which we can all agree.

It would take a long time to explain the planning function in a builder's office. In the long term he has to build up a programme on the ascertained amounts of labour, material and plant required and have a good sequence throughout the operation. This is a very skilled job, and a bill of quantities in elemental form would be of considerable use to him.

The point made about bulk quantities is a very big one, but I suggest that it would be very helpful to an estimator to know the location of materials or operations on a job. Even with an elemental bill it is not easy to know in the case of a frame what floor we are talking about.

The CHAIRMAN: What has arisen from the discussion is a clear indication that these essential matters in the industry are actively in the minds of the members of all three sides of the industry. They are all concerned that something better should be produced; they are all determined to see whether better buildings at less cost can be built by the industry, either as it is at present constituted or as it might be altered to become a more efficient machine. That is surely one of the most healthy signs that we could find.

Continued from page 655

In marked contrast to this tale of woe the architecture of British railways is for the most part extremely good. The only trouble is that too little money is available to enable the many excellent schemes to be built. The reason for the contrast between the standards of architecture and industrial design in the same organization is difficult to imagine.

"But all is not lost. Last week a ray of hope pierced the sooty gloom. The British Transport Commission is to have a design committee. It has a distinguished membership with Mr. T. H. Summerson Chairman of the North Eastern Area Board and cousin of our John as chairman and Mr. Christian Barnum as executive member. This committee which also has Sir Gordon Russell as a member will deal with all matters of design excepting architecture and for this reason there is no architect member. This to my mind is a monstrous omission for a design policy must include architecture as an integral part. Mr. Summerson is reported as being a strong personality—he is also said to have read his cousin's books. I hope he will put the matter right and include the commission's admirable chief architect Dr. Curtis on the committee, otherwise a great opportunity may be lost.

... of other nationalized industries. "Of the remaining nationalized industries the Coal Board, having taken over the excellent traditions of the Miners Welfare Society architects' department, is setting a high standard in industrial development but

being in remoter coal fields it is little seen. The Central Electrical Authority has a record of sober improvement not only in the design of its power stations but also in landscaping and planting round them. The Gas Council on the other hand has never even aimed any higher than the pages of the less glossy women's weeklies. Its architecture in general defines description. There is however one exception of its sorry record. The South Wales Gas Board has a design policy and I believe a design committee. I wonder whether the Gas Council knows about it."

... of good design as good business.

"Although the board of a company may appear to the public to be a collective art patron this appearance like advertising is often misleading. Boards do not burst out spontaneously as art lovers or people who care about architecture or design. In a great many instances one man is responsible. When you think of the aesthetic receptiveness of the average company director you will I am sure agree that to make him and his colleagues believe that good design is good business is an undertaking of some magnitude. It has, however, been done in the past, is being done now, and is increasing, but very slowly.

"I am going to pick out two well-known examples of this modern form of patronage. The Orient Steamship Company has, since the completion of the *Orion* in 1935, specialized in ships whose interiors are among the finest examples of modern design in the world. Five ships have been built,

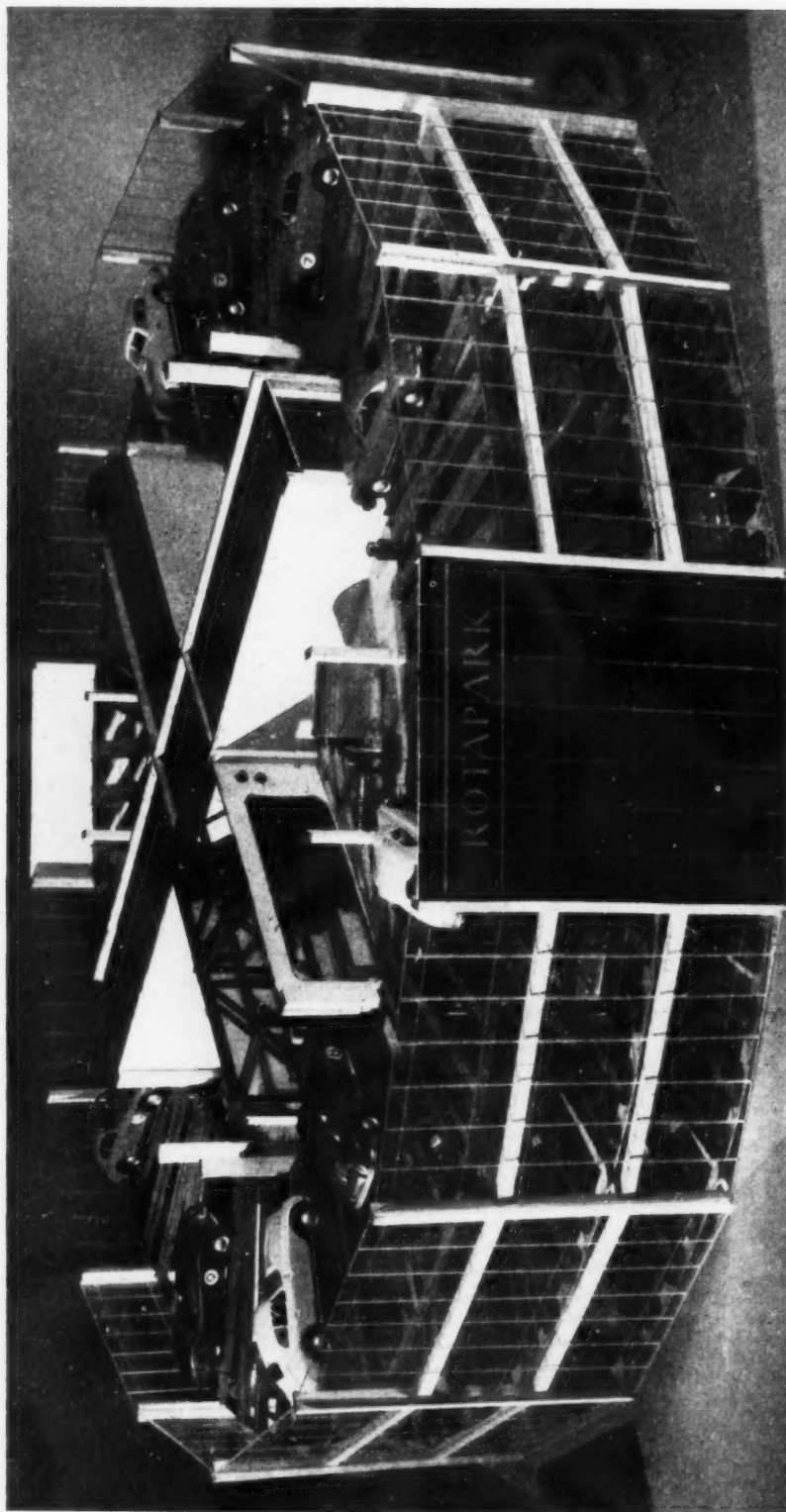
including one lost in the war and one to be named *Oriana* is ordered. These ships, in spite of half-baked but quite bitter controversy about the shape of their funnels, have been a tremendous success. This blow for modern design was struck by one man, Sir Colin Anderson.

"If you are like me you only go into a bank when you must. I suppose that as offices they are no worse than many others but for all their fresh paint and solid mahogany I find them about as depressing as the information which they usually give me. It has been left to a bank outside the big five to break with tradition and to give us the first series of modern branches designed by some of our best architects. No less than three past presidents of the AA are among them and the latest example of their work is within two hundred yards of this building. I am, of course, referring to Martin's Bank. I find the new branches a pleasure to visit and nothing less than revolutionary when considered by normal bank standards. We should very probably never have had this revolution if it had not been for the courage, enthusiasm and persuasive power of the bank's London district general manager, Edward Norman Butler, who acting as patron piloted the schemes through his board.

"Both Sir Colin Anderson and Mr. Norman Butler are by their patronage of architecture and design also leaders. Had Lord Nuffield been as great a patron of the arts as he has of medical science the problem of Oxford could never have arisen."

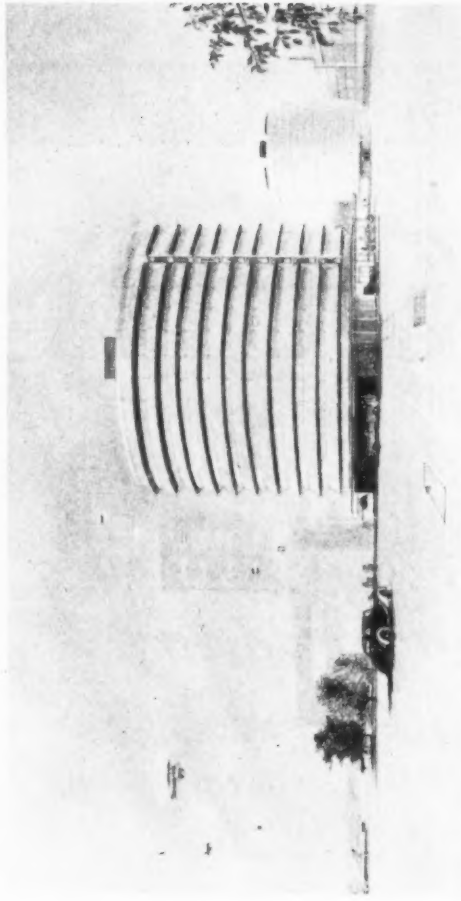
A CAR PARKING SYSTEM FOR THE CITY OF LONDON

Shingler and Risdon are the architects for this garage system, based on an American idea, which is to be used—subject to LCC approval—on two sites in the City of London. (One in Queen Street Place, the other in Aldersgate Street). Each ten-storey "Rotapark" would occupy a site only 100 ft. square, and would accommodate about 350 cars—the number that is normally parked daily between Piccadilly Circus and Hyde Park Corner. Thirty-two cars will be parked on each floor, so that each lift serves eight spaces on each floor, and the rails which support the cars need only rotate through 45°. In case of failure by one or more of the lifts, however, the rails will be able to rotate 360°.

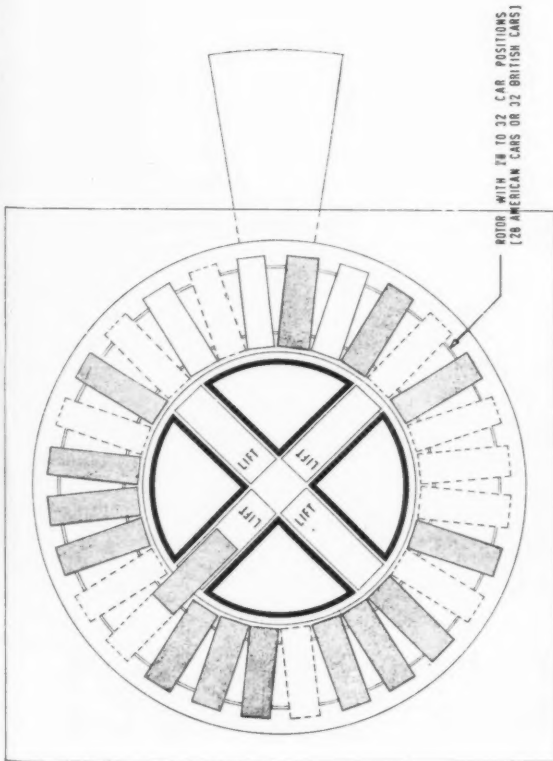


These rails are shown open on each floor in the model, but when the park is con-

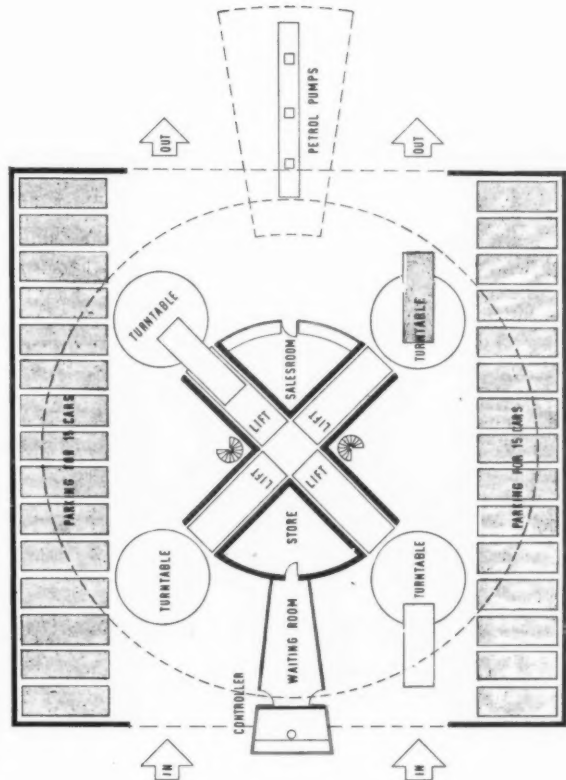
These rails are shown open on each floor in the model, but when the park is constructed there will be solid floors to provide a two-hour fire break. Although any normal type of car will be able to park on the upper floors, the open area on the ground floor will be used for cars of unusual shape, or for three-wheelers, and also for the stacking of cars waiting collection at a specified time. The driver of the car being parked leaves the vehicle on the ground floor, receives a punched card and the parking is then done entirely automatically, so no member of the public or staff needs to go on to the upper floors. The first two sites, one near Cannon Street Station and the other in the Barbican area, have been approved by the City Corpora-



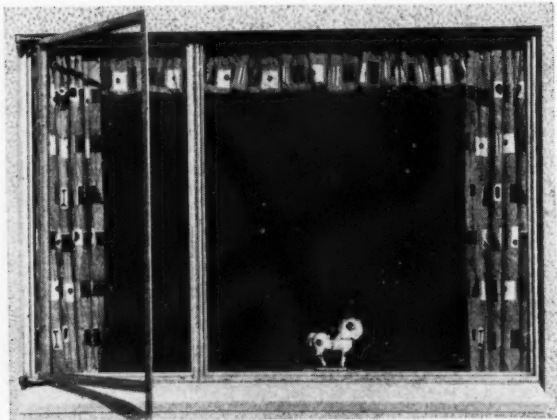

tion. The estimated cost of the first "Rotapark" is £200,000, which is £500 per car space, and includes an estimate of £25,000 for such items as a petrol station, etc. It is expected that the cost of parking will be about 2s. 6d. for the first two hours and 6d. per hour thereafter. The difference in external appearance between the perspective sketch, above, and the model, opposite, is the result of an LCC requirement that part of the cladding must consist of open louvers for fire fighting, instead of continuous patent glazing. The sponsors of the projects are Lex Garages Ltd., and the dollies, which automatically draw cars into the lifts and discharge them on to upper floors, were invented by Griggs and Son Ltd. (who will be the general contractors), in collaboration with G. Kirkland of R. Travers, Morgan & Partners, consulting engineers.



Typical upper floor plan



Ground floor plan

	January		February		March		April								
1 	<h1>HOPE'S</h1> <h2><i>Standard Windows</i></h2> <p><i>for lower cost and quicker delivery</i></p>  <p><i>Delivery ex-stock in standard sizes</i></p> <p><i>See Catalogue 284</i></p> <h3>HENRY HOPE & SONS LTD</h3> <p><i>Smethwick, Birmingham & 17 Berners St., London W.1</i></p> <p>MEMBER OF THE METAL  WINDOW ASSOCIATION</p>							7 							
2 								8 							
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								May		June		July		August	

THE INDUSTRY

This week Brian Grant reviews a continuous ridge roof ventilator, a fire test on clinker blocks, plywood facing material, pitch fibre pipes and a glass sink trap.

ROOF VENTILATION

The photograph on the right shows a new type of continuous ridge ventilator which is intended for use on low-pitched roofs, with Universal troughing units. The ventilator consists of a box-shaped upstand having open sides, which is moulded integrally with the standard 6 ft. troughing crown unit. A cranked roof-piece rests on top of this upstand and can be seen in the foreground of the photograph. Channelled deflectors are fitted on both sides opposite the openings in the upstand and intermediate deflectors link the ventilators in series to give a clean unbroken roof line, as shown in the background of the photograph.

The units are fixed direct at the standard purlin spacings and no additional supporting structure is required; the deflectors and cranked roof-pieces are drilled at the works and all necessary bolts and nuts are provided so that assembly on the site is quite simple. In order that a continuous movement of air can be provided, the manufacturers recommend low-level air intakes which they suggest, should have twice the area of the ventilators. (*The Universal Asbestos Manufacturing Co. Ltd., Tolpits, Watford, Hertfordshire.*)

FIRE TESTS ON CLINKER BLOCKS

A BS 476 fire test was carried out recently at Boreham Wood on a panel of O.B.O. Clinker Blocks which had been built into an 11 in. cavity wall and with a plaster finish $\frac{1}{2}$ in. thick applied to the two outer faces in two coats consisting of a cement-sand mix in proportions of 2:7 by volume. A uniformly designed load of $8\frac{1}{2}$ tons was applied to the wall during the total time of the test, which was 4 hours 10 minutes. No

cracks or other signs of damage were observed on either face of the wall during this period and the only change measured was a deflection towards the furnace which reached a maximum of half an inch after two hours. A slight recovery occurred after three hours and by the end of the test the deflection was $\frac{3}{8}$ in. During the test the temperature of the unexposed face of the wall never rose above 61° C.

Forty-eight hours after the test the standard load of $8\frac{1}{2}$ tons was reapplied and this load was subsequently increased until failure occurred with a load of $45\frac{1}{2}$ tons. (*The O.B.O. Construction Co. Ltd., Ivy Bridge, London Road, Twickenham, Middlesex.*)

PROFILED PLYWOOD

Venesta Ltd. are now distributing in this country a new type of plywood facing material. The material, which is Scandinavian in origin, is known as Plyfa Profil and one face is finished in a variety of longitudinal ridges, the timber used being either mahogany or pine, or a combination of both woods to give a contrasting pattern. The standard width of all patterns is 24 in. and they are produced in lengths of 50 in., 60 in., 72 in. and 80 in., all with a thickness of $7\frac{1}{2}$ mm. The boards can be finished either with polish or by varnishing and owing to the pattern of longitudinal grooves and ridges butt joints are almost invisible. (*Venesta Ltd., Vintry House, Queen Street Place, London, E.C.4.*)

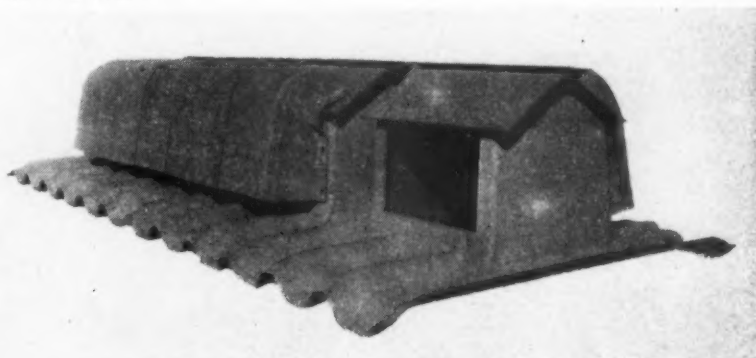
PITCH FIBRE PIPE

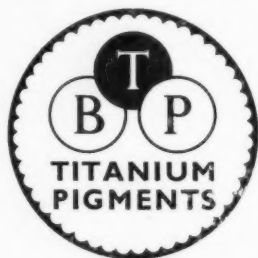
The Universal Asbestos Manufacturing Co.

Ltd. have recently formed a subsidiary company, Union Fibre Pipes (Great Britain) Ltd. for the manufacture of pitch fibre pipes. The pipes are at the moment being produced in three different forms: for drains and sewers, as cable conduit, and also as perforated pipe for sewage disposal and land drains.

The method of construction is comparatively simple, the first step being to make cellulose fibre tubes which when dried, are then pressure-impregnated with hot coal tar pitch. Both ends of all tubes are machined to a 2 deg. taper and joints are made with a sleeve machined internally to the same taper, the sleeve merely being tapped on to the ends of the pipe with a wooden mallet. Standard pipe lengths are 8 ft., but they can easily be cut to the required length with an ordinary woodworking saw and a new taper can be cut with an easily-operated hand tool. Drain pipes are made with internal diameters from 2 in. to 6 in. with the necessary bends and junctions and the composition of all pipes corresponds to BS 2760. For drainage work the advantage of these pipes is that they are slightly flexible and can as a rule be laid on a bed of sand, the usual concrete haunching being generally unnecessary. Since the joints are so easily made the pipe trenches can as a rule be made slightly narrower than with stoneware pipes and it is estimated by a firm of quantity surveyors that for 4 in. pipe a saving of about 6s. 6d. per yard run should be possible over best stoneware pipes on concrete. (*Union Fibre Pipes (Great Britain) Ltd., Tolpits, Watford, Hertfordshire.*)

A continuous ridge roof ventilator, for use on low-pitched roofs, made by the Universal Asbestos Manufacturing Co. Ltd.

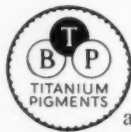




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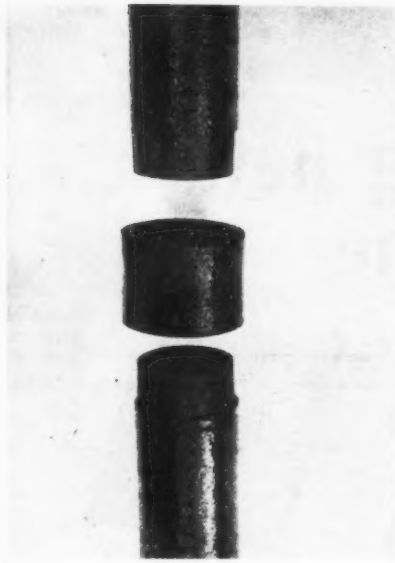


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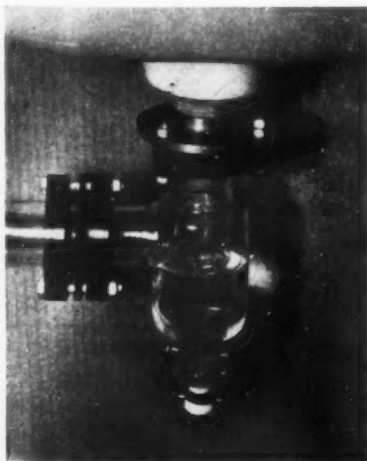


Machined ends of Union pitch fibre pipes and coupling.

GLASS TRAPS

Q. V. F. Ltd. are now producing a sink trap for laboratory use which is made entirely in heat-resisting glass. The trap is designed to fit all standard waste outlets and can also be used with the Q. V. F. standard range of visible flow pipe lines, so that a drainage system can be constructed entirely in glass. The trap has the advantage that glass is resistant to practically all chemicals and, being transparent, the trap can be easily inspected and blockages dealt with at the earliest stage. The cleaning eye consists of a porcelain stopper, toggle controlled, of the kind which one used to find on the old-fashioned lemonade bottle. (Q. V. F. Ltd., Stone, Staffordshire.)

The Q.V.F. glass sink trap.



INFORMATION CENTRE

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

6.53 planning: social and recreational
GARDEN DESIGN

Gardens Are For People. Thomas Church. (Chapman & Hall Ltd. for Reinhold Publishing Corporation, New York. 80s.)

Thomas Church, if not, in the words of the publishers' blurb, "the world's foremost landscape architect," is nevertheless one of the best known of contemporary American designers, with a well deserved reputation for liveliness and originality. This book illustrates examples of his designs (and only his) for private gardens, city, suburban and seaside, mostly in California. Its manner is rather that of the fashionable magazines, from which doubtless much of the material is culled, with its lavishness of illustrations, both plans and photos, interspersed with chatty, though usually apt and informative, snippets of text.

This will have been determined not only by the sources of the material but also by the purpose of the book; for it is specifically aimed at the owners of such gardens, or at least the owners of such as have not yet been transformed or created new in the Thomas Church style. That style, which has helped to mould what has become a distinct and easily recognizable American fashion, may not be to everybody's taste; and, as always, it must be remembered that these designs have been produced for a different climate and a much wealthier clientele than one has to cope with in this country. Nevertheless the text is full of good ideas; and the illustrations show many examples of ingenious detailing, in planting, structures and paving, all of which are well worth studying.

10.146 design: building types
FARM BUILDINGS

Farm Buildings, Conversions and Improvements. W. G. Benoy, A.R.I.B.A. (Crosby Lockwood, 28s.)

This book is written round a substantial core of particular examples selected from a fairly representative number of agricultural counties, most of them being by the author. Each example is described and illustrated before and after improvement work had been carried out and the implications of the improvements are fully recorded in each case. The impression given by this treatment is one of subtle and often extensive

surgery, a course of action well in the tradition of English agriculture.

The book deals with the conversion and adaptation of buildings for livestock, cattle, pigs, and poultry; for deadstock, implements and machinery; and buildings for handling (e.g., grain conditioning plant) and storage. In addition, there is a chapter on materials and constructional methods used in agricultural building which emphasizes the need for robust materials needing little or no maintenance, and for methods of construction which do not require skilled labour but can be carried out by the farm-workers themselves at slack periods during the year. Another chapter is devoted to the conversion and improvement of agricultural dwellings; it provides much useful information and advice but seems to lack sympathy with the particular needs of the country dweller, the need for a sense of enclosure and, more practically, for considerable semi-enclosed yard-cum-shed storage space. The architect reader will find much good sense but will be disappointed by the poor visual quality of the improvements illustrated and will feel the need for a more systematic development of building components.

13.133 materials: timber
STRUCTURAL TIMBER

Glued Laminated Timber Structures. E. Niskanen. Aero Research Technical Notes, Bulletins Nos. 159 and 160, March and April 1956.

This is a translation of an article by Dr. Niskanen of the Wood-Technical Laboratory, The State Institute for Technical Research at Helsinki, first published in the Finnish journal *Paper and Timber*. It combines in readable form a quantity of technical information (bringing together the results of Finnish, Canadian and American research) and a review of the types of structure possible in glued laminated timber.

13.134 materials: timber
STRUCTURAL TIMBER

Working Stresses for Structural Softwoods. FPRL Bulletin No. 37. (HMSO. 1s. 3d.)

This is a report on recent researches carried out by the FPRL. Beginning with an exhaustive explanation of the methods used and assumptions made, it concludes with four pages of matter which will be of real use to the architect: a table of working stresses for two grades of twelve common species of softwood, the rules for these two grades, and formulae for the application of this information to beams, struts, and ties.

There is, however, no mention of BSCP.112. *The Structural Use of Timber in Buildings*, and readers may wonder how the two documents are related. The answer may be that the Code, although revised in 1952, does not yet recognise the grading rules which are at the moment advocated only by the FPRL. It is hoped that the continuation of the FPRL's work in this field will soon

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have three much-needed results—a revision of the Code, the production of a really usable handbook for architects, and a general reform of timber-yard practice.

16.125 materials: miscellaneous

WATER FOR BUILDING PURPOSES

Analysis of water used or encountered in construction. BRS Digest No. 90. (HMSO 3d.)

Sets out to tell the architect what impurities the analyst should look for, but is very confusing.

17.107 construction: general

BUILDING CONSTRUCTION

Baukonstruktionslehre. Edited by Martin Mittag. (C. Bertelsmann Verlag, Gütersloh.) The interest to English architects of this formidable German work of reference (first published 1952: now in its 7th edition) is twofold. First, it is the most ambitious (and the most successful) attempt to cover the whole field of post-war building construction in a single volume. Second, because this is done essentially by means of line drawings (there are 8550 of them) the book is therefore a possible reference even for the non-German reader. Though both text and illustrations are closely linked with the German codes of practice and therefore cover building construction in the widest sense, the chief use of the book is as a vocabulary of fixing. The text is critical in that the drawings commonly show "bad," "possible" and "good" practice, though value judgments are of course limited to strict function and are in no wise concerned with appearance. The authors boldly include proprietary components in their coverage, though it must be admitted that the traditional nature of the German building industry and building technique makes this less difficult to handle than it would be in this country. This—coupled with the fact that there is a larger potential readership for this kind of book in German speaking countries than in Great Britain—makes it doubtful whether a similar venture could be undertaken over here, but it would be certainly worth considering by English publishers.

17.108 construction: general

STRUCTURAL CHOICE FOR ARCHITECTS

Architectural Construction: The Choice of Structural Design. Theodore Crane, (Chapman & Hall Ltd. for John Wiley & Sons Inc., New York. 80s.)

One cannot afford to ignore a book claiming, as this one does, to deal "with the problems of making an appropriate choice for the structural portions of a building, as governed by the geographical location, site conditions, type of occupancy, equipment, and architectural design," and which claims also to present "a procedure for determining the type of building frame, foundation, floor, roof and wall construction most suitable to meet the requirements of any particular

structure." In broad terms the claims are met; but how *usefully* are the problems dealt with, and how valid to an English readership is the procedure suggested?

There need be no doubt about the author's authority: he is a consulting engineer and professor emeritus in architectural engineering of Yale. Professor Crane regards the word "structure" as applying not solely to the load-bearing elements of a building, and the work covers nearly all aspects of construction, including brick bonding and thermal insulation.

The first limitation to the value of the book lies in its attempt to provide "a comprehensive résumé of all the better types of construction on the American market, with recommendations concerning their specific applications." The text confirms what this implies; that the choice of structure depends largely on what the market has to offer. Markets are obliged to offer in the main what is economically attractive; and attractiveness in the USA, despite the wide range of its economic background, is far too intricately compounded to be easily translated into terms useful to non-American designers. And English architects and engineers are far more inclined, one would have thought, to approach problems fundamentally than to take even a careful pick from what was readily available on a plate. To them it would have been more useful if the examples in the résumé had been fewer and the recommendations for their application treated in greater detail. Thus, on page 41 we have the interesting suggestion that (in the USA) cold-rolled steel can compete with timber for certain light frame constructions. But no reasons are given and only three pages, mostly filled with uninformative photographs, are devoted to the subject.

The chief weakness of the book lies, however, in the attempt to reach too wide an audience. This is so common a fault in text-books that one is forced to wonder why authors never pause to doubt whether in fact "students in architecture, architectural engineering, and building construction, and . . . practising architects and architectural engineers" all need the same kind of book. Obviously they focus their attention on a common object but each does so from a different angle. What for example, does the architect-practitioner in particular most require from a text-book? As a supposedly qualified man he should surely have mastered the essentials, and therefore his requirements are quite different from those of the student who is busy mastering them. If he is anxious to keep abreast of the latest developments, periodicals will serve him best. The purpose of a text-book should be to remind him of those matters which he cannot hope to keep always in the forefront of his mind, either because they are too complex, or because they occur too infrequently, and which might be overlooked in the process of design. *Architectural Construction* admittedly includes such matters, but they tend to get lost among items which, though important to the student, are, to the practitioner, platitudinous.

Professor Crane in a section ostensibly

devoted to Typical Applications of Steel and Concrete, switches rapidly from comparative merits of single and multi-storey planning to volumetric changes in roof slabs, and then to Residential Buildings, to Parking Garages and, finally, to Miscellaneous Uses. The thread is difficult to trace.

And where does the structural engineer come in? Does it help him to have to pick the bones out of a book containing *inter alia* detailed descriptions of brick bonding and two pages of Bemis's modular co-ordination, and to be shrugged off at the end of half-a-dozen paragraphs on shell-concrete roofs with the statement that "the choice depends primarily on architectural preference and relative cost?" Perhaps, but what constitutes architectural preference, and how is the relative cost to be assessed? The advice that "sketches should enable any competent builder familiar with the local situation to make a fairly accurate estimate of cost for each system" will sound hollow to any architect or quantity surveyor familiar with present-day techniques of cost analysis and cost control. If due consideration had been given to the parts played by engineer, architect, surveyor and builder in a sensibly phased design process, such banalities might have been avoided.

Nevertheless, *Architectural Construction* covers its chosen field with a thoroughness which could only be bettered by a collection into one volume of Fitzmaurice, the BRS Digests and the BSI codes of building practice. There are some surprising omissions—no reference to the plastic theory of design, no mention of the effect of certain soil or hard-core constituents on concrete; but anyone who had time to read carefully through its 421 pages, and to question every item of dogma, test it and relate it to English practice and a design sequence, would benefit from a most valuable educational experience.

26.124 services and equipment: miscellaneous

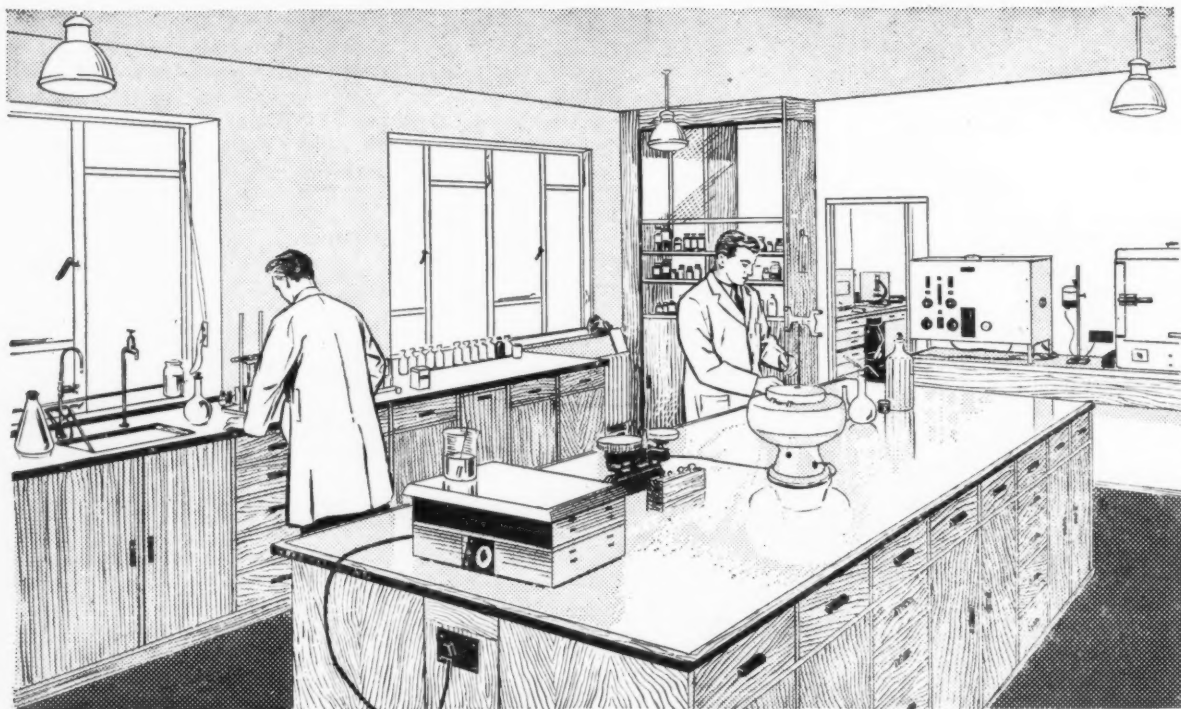
GAS COOKING FOR SCHOOLS

Gas and the School Meals Service. (The Gas Council, 3s. 5d.)

It occasionally happens through some mischance that a concern which usually lays excellent eggs, lays an addled one instead. Such an unhappy occurrence is the Gas Council's recent publication *Gas and the School Meals Service*, a booklet that is well presented but contains material that is ill considered. It compares most unfavourably with the earlier brochures *Cafés, Tea Rooms, and Milk Bars*, and *Planning for Industrial Catering*, by the same body and which set a high standard for this sort of advertising.

The present brochure sets out to describe the size and type of apparatus recommended for use in school kitchens, and to advise on kitchen layout with the aid of diagrammatic plans. It includes photographs of kitchens and schools that have used gas appliances, and the introductory leaflet assures architects and others that it will be of great interest.

Continued on page 669



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BUS GARAGE AT LEAMINGTON SPA, WARWICKSHIRE



Two interesting structural techniques have been used in the new garage for the Birmingham and Midlands Motor Omnibus Co. Ltd. at Leamington Spa, which was built during the summer this year. The roof is one of the first to be built in the "Umbrella" system, made and erected by E. H. Smith (Westhaven) Ltd., and the floor and road foundation consist of stabilised soil slabs, for which the Soil Engineering and Contracting Co Ltd. were consulting engineers. The architect for the project was A. B. Taunt, chief architect to the omnibus company. ROOF CONSTRUCTION: The "Umbrella" system consists of structural roof units of 40-ft. width and normally 75 ft.,

90 ft. or 105 ft. in length. These are each composed of a tubular steel lattice girder spanning the longer dimension between two tubular columns; from each side of the girder secondary trusses cantilever 20 ft. at 15-ft. intervals. These carry tubular purlins and have fish-plates at their ends for connecting to the trusses of the adjacent bay. The structure at Leamington consists of four units 105 ft. by 40 ft. covering the main garage area, and four 45 ft. by 40 ft. covering workshops. Above, an end bay of the "Umbrella" roof, showing the main lattice girder and cantilevered secondary trusses. The smaller "column" on the left is a cladding member and not part of the main



This pine and mahogany reredos was carved and decorated (with the exception of the figures) by Green & Vardy Ltd. under the direction of the architect, Adrian Gilbert Scott, C.B.E., M.C., F.R.I.B.A., for Upholland College, Wigan. The work is a typical example of the craftsmanship for

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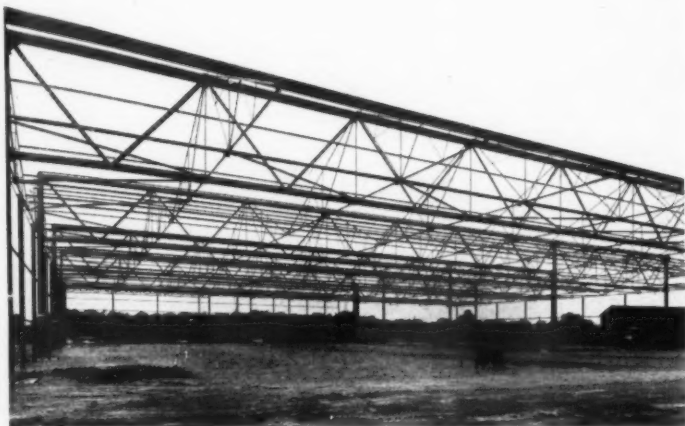
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BUS GARAGE AT LEAMINGTON SPA continued



structure. Above, view under the 105 ft. span before the start of soil stabilisation. The roof is of 6-in. pitch corrugated asbestos sheeting with resin-bonded glass fibre roof-lights. FLOOR CONSTRUCTION: The essentials of soil stabilisation are, firstly, the sub-soil must be suitable for the stabilisation process and, secondly, all top soil must be removed and any organic matter in the sub-soil destroyed. Most soils are suitable for stabilisation; highly

organic soils are not. Chemical analyses of the sub-soil determine whether or not it is suitable, and if so a mix is designed to suit the nature of the soil and the loads proposed to be put on the slab. At Leamington, the soil was found after analysis to be suitable for stabilisation, certain areas only containing organic matter. These were afterwards treated with calcium chloride solution. The water content of the soil was determined and a mix designed to suit all the conditions. A certain proportion of water was added to the mix in this case, but it may be that no additional water is required at all. In some cases of very wet soils it may even be necessary to reduce the water content, and lime is generally used for this purpose. All the top soil was removed and the site reduced to the required level. One area of heavy clay was found and this was removed and replaced by good soil from a "borrow" pit nearby. The structure was then erected and all drains, etc., installed. The whole area of the site was churned up and pulverised by machine to a depth sufficient to allow for a slab of 6-in. thickness after compaction. Inaccessible areas such as those around stanchions and drain connections, etc., were rotovated by a hand-operated machine. Cement was then spread over the area in a ratio in accordance with the designed mix and the same machine again rotovated the whole area, at the same time adding the correct proportion of water. The machine used, one of the few in this country, is of American manufacture and driven by caterpillar tracks. It moves slowly along (left), thoroughly mixing the soil and cement, adding water if required and leaving a level surface behind it. The mixture was then compacted, first by light and then by heavy roller, to produce the finished slab.



continued from page 667

The description of apparatus is sound as far as it goes but it does not go far enough to be of use to architects, and the advice on planning is so scanty that it is useless where it is not actually misleading. The diagrammatic plans are not well thought out and the approximate dimensions shown will not bear examination. A fairly prominent note suggests that for full information reference should be made to M.O.E. Building Bulletin No. 11, *The Design of School Kitchens* (HMSO 3s.), but the irony is that so much of the advice offered by the Gas Council's booklet is contrary to that offered by Bul-

letin 11. It is reasonable to suppose that the purpose of this sort of publication is to encourage the use of gas equipment, and in fact there are several good reasons why its use is generally best, but unfortunately none is mentioned.

A great service that the Gas Council can do for themselves and the public in advertising of this kind would be to educate both user and supplier. Not all equipment that is marketed is good; little of it is as good relatively as that in the domestic field. It would therefore be of the greatest use to potential purchasers to be told what are the points to look out for when selecting appliances, such as whether an oven will

bake evenly on every shelf; whether the appliance will be easy to instal with simple and neat service connections; the points to check to ensure easy cleaning and maintenance; and so on, for in this business of large-scale catering the purchaser is rarely the actual user. There should then be illustrations only of those appliances that reach a high score of these desirable attributes, with explanations of why they do. If there are not many illustrations it will not be serious, for both the purchaser and the supplier would know the standard that was being sought, and soon the poorer appliances, those that give gas a bad name, would drop from the catalogues.

Announcing

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LOAD/SPAN TABLE FOR TROFDEK Mk. II

MAXIMUM UNIFORMLY DISTRIBUTED LOADS IN LBS. PER SQ. FT. (DESIGN LOAD—DEAD—LIVE LOAD)

Type	Depth Approx.	Wt. lbs. per sq. foot	Effective Span in Feet (Centre to Centre supports)																																			
			10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'	25'	26'	27'	28'	29'	30'	31'	32'	33'	34'	35'	36'	37'	38'	39'	40'	41'				
14	7½"	3.0	32	30	28	26	25																															
20	7½"	3.5				74	59	48	40	33	28	26	25																									
24	9½"	3.75					77	68	57	48	40	35	30	27	26	25																						
28	11½"	4.0								76	65	56	49	43	37	33	29	26	25																			
35	15½"	4.75															63	56	50	45	41	37	34	32	28	25												
41	15¾"	5.25																									41	37	34	31	29	27	26	25				

To co-operate with Architects who wish to avoid changing existing plans, production of the present Trofdek range will continue until January 1957.

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13 MATERIALS: TIMBER

Design and practice of joinery, 14

by John Eastwick-Field and John Stillman

THE ARCHITECT AND THE JOINERY INDUSTRY

The authors conclude their series of articles on the design and practice of joinery (which has been going since September 30, 1954*) with a review of the factors which have made for the present decline from earlier standards of joinery practice and by describing the different kinds of joinery firm which comprise the industry and how the architect can make the best use of each.

From time to time readers of this series of articles will have asked themselves the question: is it necessary for the architect to have more than a superficial knowledge of this subject? Joinery is now a specialized industry: can we not rely on the manufacturers for technical knowledge? Many architects in fact do no more than draw the profiles and leave the construction to the trade.

There are at least two good reasons why this is unsatisfactory and why some knowledge on the part of the architect is necessary. First, because without it he will not know whether what is being made for him is well done or badly done; and second, because, since it is not always possible to go to firms whose standing is such that it is in their own interest to produce only the best, he must be able to specify what he requires in sufficient detail to ensure that he obtains work of the standard which he has in mind, and that his specification and drawings contain sufficient information to permit fair tendering.

Apart from these reasons, it is our opinion that much joinery produced today is inferior in quality and design—though the best is as good as ever it was—and that the architect has a duty to help raise the general standard.

The factors which we think have contributed to a deterioration in the quality of joinery are:

1. *Bad timber*: most defective work is blamed on the poor quality of timber available, particularly since the last war, but it is by no means the only factor and it has been much exaggerated. Exploitation and bad afforestation have certainly resulted in the loss of most of the larger trees, particularly in respect of softwood: also many of the sources of supply for both hardwoods and softwoods are now denied us as a result of economic conditions. Best quality timbers from the Baltic ports have not been imported for some

time, and since the last war the principal familiar and well-tried hardwoods, particularly Honduras mahogany, Burma teak and good quality English oak have been either prohibitively expensive or difficult to obtain. Despite the excellent work of the Forest Products Research Laboratory and of the Timber Development Association in publishing reliable information about the behaviour of the unfamiliar species of hardwood now imported in large quantities and varieties, the timbers themselves are not all reliable and the trade has not yet had time to build up a working knowledge of all the varieties it may encounter.

2. *Seasoning*: the old methods of air seasoning have largely been replaced by kiln seasoning and although the latter is in theory no less satisfactory than air seasoning, it requires considerable skill in operation, and in practice this has not always been given. Many practical joiners are doubtful about its efficiency, and from experience claim that it makes their work less reliable. There is, however, no question but that kiln seasoning is necessary if only to obtain dry enough timber for use in centrally heated buildings. Central heating is in fact probably the cause of more trouble in joinery than anything else, because the low moisture content which it demands is so often ignored.

3. *Cheapness and the tendering system*: We now accept a standard of workmanship which would not have been accepted in the 19th century. Because of the demand for cheap standard joinery, techniques have changed and machine production has greatly increased. In a competitive market it is understandable that there is a temptation to employ relatively unskilled labour and allow very rough work to pass. New materials, such as plywood, chipboards and hardboard which, when intelligently used, are of great advantage, are often abused.

The development of competitive tendering has made it more difficult for the architect to work closely with the joiner. He is expected to complete his details before the contractor or joiner is appointed: thus he does not have the opportunity of discussing his proposals in detail with the joiner when he is working out the design.

4. *Labour*: In common with most building crafts, there is a shortage of men who are really highly skilled, and the present wages are based rather on quantity of production than on skill in workmanship. The number of manufacturers, therefore, who are qualified and willing to take the trouble to produce good joinery, is probably less than it was in the past.

5. *Architects' education*: When architects were trained in offices they learnt their joinery by the experience of detailing. Joinery was a very important part of architectural design and if they were lucky they will have benefited from the knowledge of their principals in whose offices there may well have been a strong tradition.

Today, most architects are trained in schools where a multitude of subjects is taught over a relatively short period, and joinery which in any event does not lend itself readily to theoretical teaching, is often given insufficient attention.

* Previous articles in this series appeared September 30, 1954; November 28, 1954; January 13, 1955; March 24, 1955; July 21, 1955; August 25, 1955; September 1, 1955; December 15, 1955; May 3, 1956; May 10, 1956; May 17, 1956; August 16, 1956; August 30, 1956; September 13, 1956.

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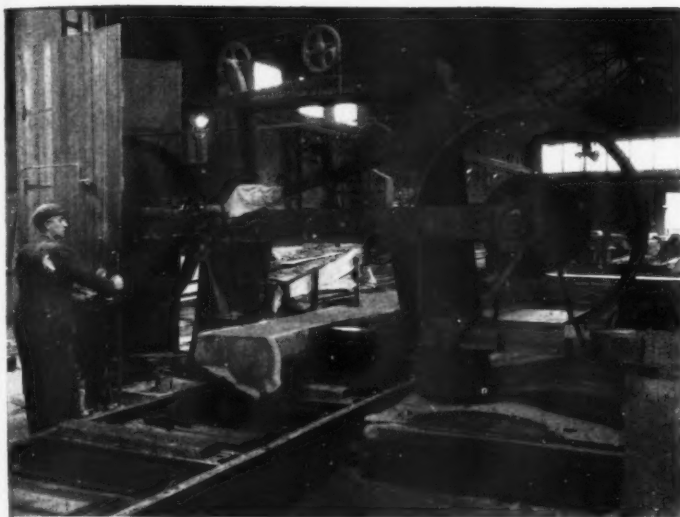


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technical section



Although timber sections are always made by machinery, and joints almost always, the fitting together, glueing, wedging, cramping and finish is almost invariably done by hand.

Above: a band saw converting logs. Below: staircase strings for winders being made by hand.



6. *Departure from established practice*: Formerly there was more timber used in any one building than there is generally today, and fairly elaborate joinery such as folding shutters, cornices, porches, panelling and so on, held an important place even in humble domestic work. To architects, joinery was of importance as a means of aesthetic expression since it contributed greatly to the character of buildings: and to the craftsman it provided a test of skill. The incentive to produce good work was strong, and there was a correspondingly greater need for expert knowledge. Because the components commonly used in the 18th and 19th centuries are both too elaborate and too expensive for general use today and belong to a different aesthetic, it has become more necessary to invent new designs for joinery. The architect will, however, not find books on the subject which do more than repeat the traditional patterns—sash window, battened door, panelled door, etc.—showing sizes and shapes of sections, but giving little guidance on the principles on which they were originally designed.

The industry

At this point we propose to say something about the people who make the joinery and their factories and workshops because we feel that to know something of them will enable the architect to avoid impracticable details and waste of time and material, and will also enable him to take proper advantage of the widely differing kinds of joinery works of which the industry is composed. For example, a particular design for a handrail terminal for a housing estate which the architect might think would be simple to make but which has not only to be put many times through a machine but also to be finished with a spokeshave by hand, would not take advantage of the machine production desirable for this class of work.

When one comes to consider what kind of firm shall undertake any particular work, one finds that, very broadly speaking, there are at present three classes of joinery works, each of which is best fitted to do certain kinds of work: the small builder's shop, the independent joinery works together with shopfitters and joinery works belonging to large firms of building contractors and finally works organized for mass production.

The small builders' joinery shop, traditionally a part of every builder's organization, is mainly used nowadays to carry out small scale work in which there is no great quantity, and to be to hand for repairs. The quality of the work varies and depends on the extent to which the builder has retained a traditional organization, employing skilled craftsmen and having some system for obtaining properly seasoned timber. Within limits of quantity and for the class of work which they are equipped to undertake, it is possible for such shops to turn out work equal in quality to that of large factories with elaborate machinery, and to do so very economically. They have, however, little capacity for working out the construction from a design drawing and are unlikely to produce work satisfactorily which relies on modern techniques. On the other hand,

technical section

although they would possibly not learn much from the architect about traditional forms of joinery such as double hung windows, they would nevertheless welcome and expect from the architect full size details, particularly for anything which departs at all from the conventional. They will normally produce their best work if the architect discusses the job with the actual joiner who undertakes the work and who is, incidentally, probably the same individual as the man who fixes the joinery in the building, and with whom the architect will inevitably come into contact on the site. By no means all builders do, however, nowadays have their own joiners' shops, and it is likely that the number who do will decrease. Builders find it difficult to provide a steady flow of work for their shops, particularly since doors and windows can be purchased more cheaply from factories where they are mass produced to standard designs.

In the second class, there are the independent joinery works, which may vary considerably in size but which are generally bigger and more fully equipped with machinery than the average builder's shop. They now supply the bulk of the joinery for the building industry—acting as sub-contractors, sometimes nominated by the architect but often approached by the builder as a matter of course. Because of the volume of work which they handle they are able to work more efficiently and economically and to take advantage of more elaborate and expensive machinery than the small builder could afford. Sometimes they are able to maintain their own timber stocks and kilns and in our opinion this gives them an obvious advantage. The best and some of the worst joinery is produced in these independent joinery works, and it behoves the architect to find out any particular firm's reputation before entrusting his work to it or allowing his builder to do so. Most of the large contracting firms maintain joinery works, under separate management, which, whilst being a part of the concern, are in no way comparable to the small builders' shops, and do in fact supply joinery on a large scale to the trade in general, as well as to their own firms. They can therefore be considered in the same category as the independent firms and are accustomed to giving estimates in competition with them. Within the general category of "independent" firms there are some which specialize in very high class and complicated joinery both for modern buildings or for restorations, where much of the work may have to be carried out by hand, if not actually carved. It often happens, too, that the work which these firms undertake extends to furniture and cabinet making—and the furniture may range from individual designs by architects to mass produced articles such as wireless cabinets. A number of the larger firms, which are sometimes owned by the principal furnishing stores, have gained reputations for work requiring special knowledge, such as the interior fitting of ships, hotels and board rooms, and are able to call upon associated departments to enable them to carry out the whole of the interior furnishing, including, if necessary, its design. Slightly different in character

are the "shopfitters," since such firms employ craftsmen in many trades in addition to joiners. The different trades work together in the same building to produce the often intricate fittings which are used in shops, and which incorporate glass and metals and plastics, as well as timber. These firms and others similarly organized carry out exhibition stands and often design them themselves. The standard of workmanship is usually high, and for work involving the combination of several materials and the use of new techniques such as might be required in a showcase or counter, it would be appropriate for the architect to ask them to undertake the work, although because of the organization and labour which they have to maintain they may be more expensive than other joiners. Finally, in the third class there are firms who are specially organized for the manufacture of standard articles by methods of mass production. Since the demand for standard joinery components is mainly confined to doors, windows, skirtings, staircases and cupboard fittings made to BS and EJMA specifications and are largely for housing estates, such factories aim at producing the components as cheaply as possible.

Machine production

Having mentioned machines in connection with mass production we must avoid giving the impression that only in works of this kind are machines used extensively. In fact all joinery works and shops—except the smallest of local builders—are equipped with machines which perform a number of basic functions (sawing, planing, moulding, joint making) and, in the main, the large machines for mass production are designed to perform the same functions, but to perform them more quickly.

It can be taken that under today's conditions, timber sections are always prepared by machinery: that is to say, they are cut from the logs, thicknessed, planed, moulded and sanded by machine. Having obtained the required section, the joints are also nearly always cut by machinery. Incidentally, the joints which the machine makes are, with few exceptions, almost identical with those traditionally made by hand, and their design is, broadly speaking, conditioned by the timber and not by the tools.

After the joints have been cut, however, their fitting together, glueing, wedging, cramping and finishing is almost invariably done by hand. Only in certain works where mass production is fully exploited, as in the manufacture of flush doors (and very rarely in casement windows) are there machines which do the whole operation, so that this general pattern of work is departed from.

Lastly with greater mechanization there has come about a distinct division of trades into "woodworking machinist" and "carpenter and joiner" even to the extent of allegiance to different unions. The craftsman joiner, who used to carry out the whole operation, now receives the sections fully prepared with the joints cut by the machinist, and his work is thus restricted to the putting together and finishing.

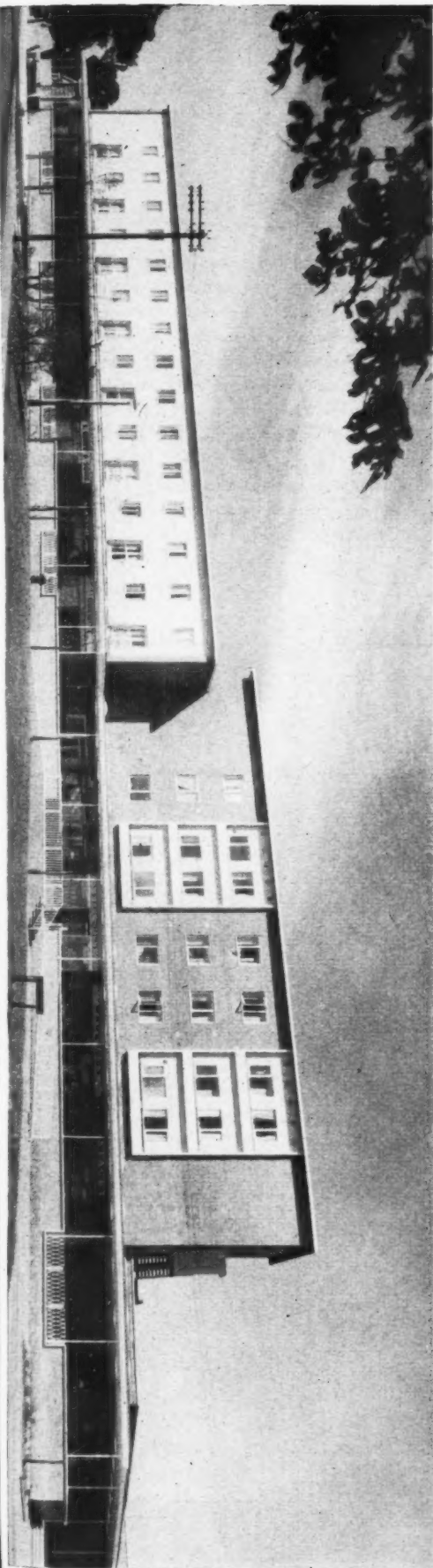
building illustrated

SHOPS and MAISONNETTES

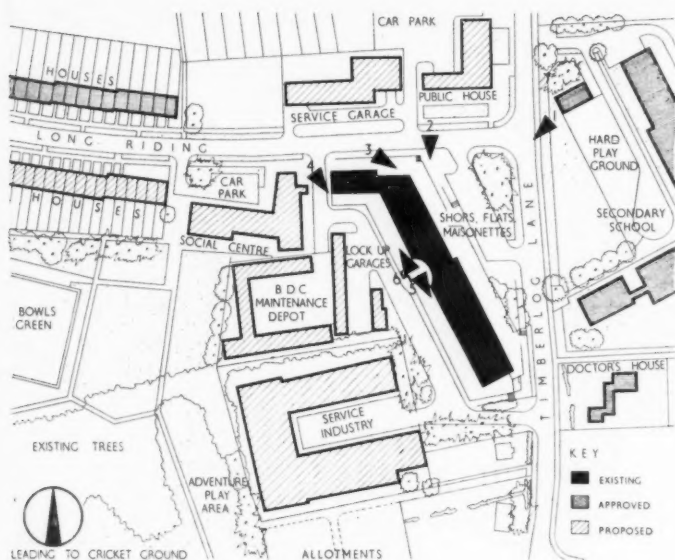
at BARSTABLE NEIGHBOURHOOD, TIMBERLOG LANE, BASILDON NEW TOWN, ESSEX, for the BASILDON DEVELOPMENT CORPORATION designed by NOEL TWEDELL, chief architect; A. B. DAVIES, deputy chief architect; J. FARBER, senior architect; quantity surveyors E. C. HARRIS and PARTNERS

This block of shops, with flats and maisonnettes over, is the first to be analysed in the JOURNAL and it forms the nucleus of the neighbourhood centre as shown by the site plan on page 678. The shops have mainly been in use just over eighteen months, which is long enough to prove they are holding their own against old-established shopping centres of Vange and Piscea, a 3d. bus ride away. The block which has 16 lock-up shops, 2 four-roomed flats, and 12 five-roomed maisonnettes, appears to

Viewpoint 1: the principal shopping frontage. On the right is a single-storey wing without living accommodation.



building illustrated

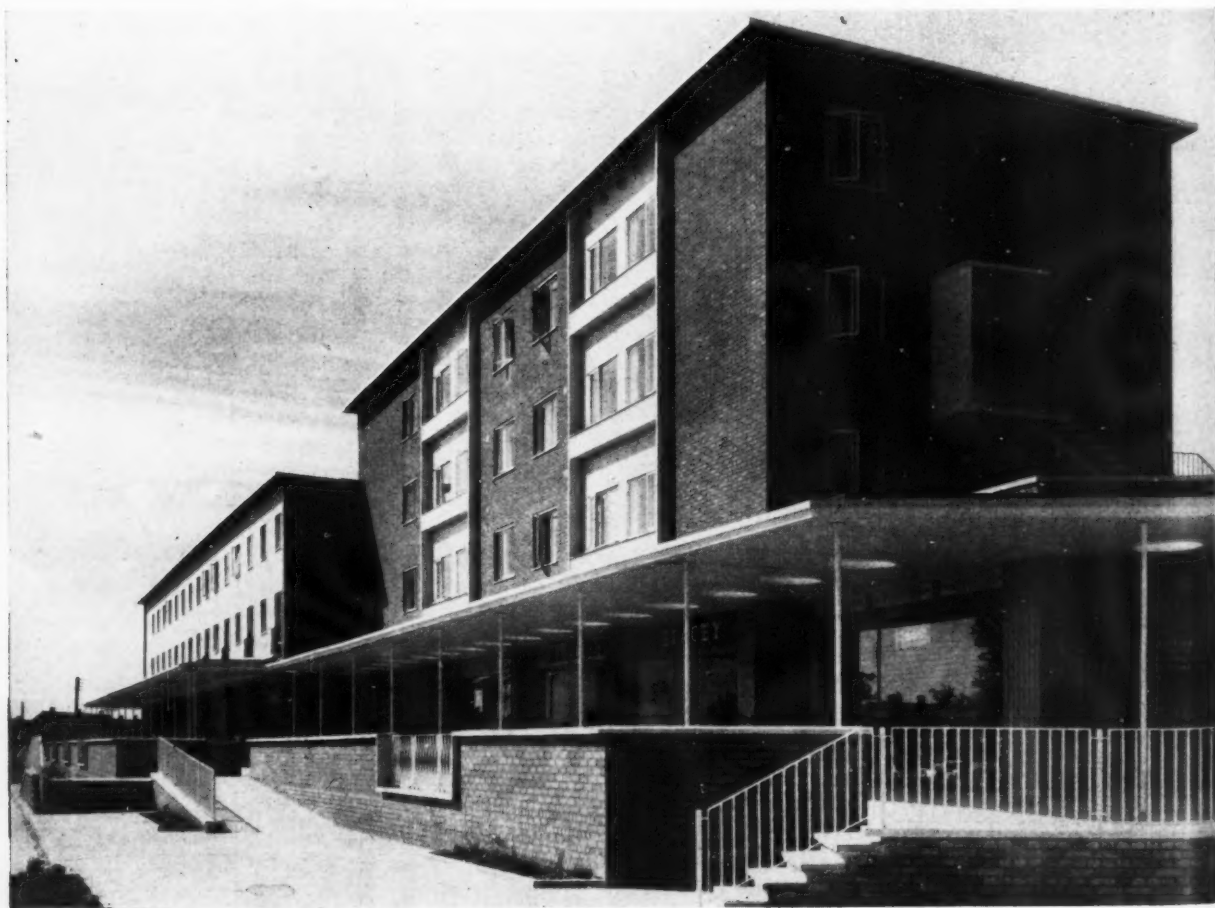


Key plan showing photographic viewpoints

SHOPS and MAISONETTES

at BARSTABLE NEIGHBOURHOOD
BASILDON NEW TOWN
designed by NOEL TWEDDELL

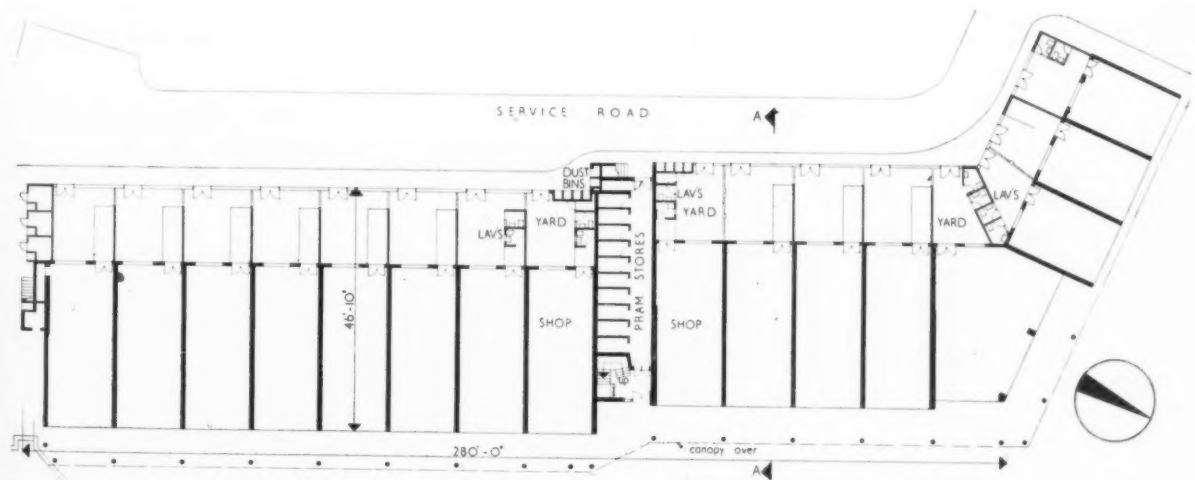
The key plan (left) shows the location of the building within the other proposals for the neighbourhood centre. The shops are now all occupied, but neither the neighbourhood nor the other facilities in the centre are fully developed. Below, viewpoint 2: a closer view of the east and north facades. The upper floors on the left are faced with light coloured rendering and those on the right with red facing bricks. There are blue tiles round some of the windows. The canopy is such a bold feature that it enables different shop front treatments to be used without creating a discordant effect. The architects have not attempted to guide the tenants in the use of standardized fascia lettering.



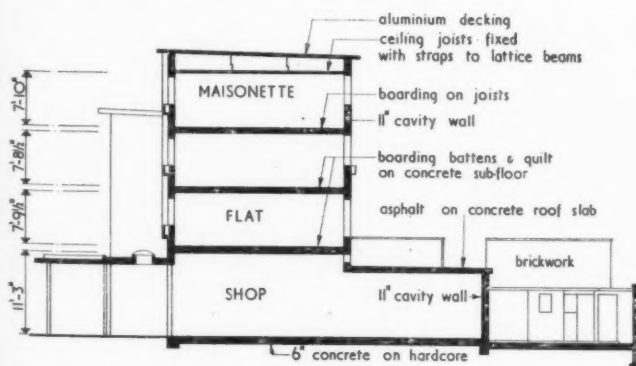
building illustrated



First and typical upper floor plans



Ground floor plan [Scale: $\frac{1}{4}'' = 1' 0''$]



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

The ground floor plan shows the layout of the shops and the approaches to the dwellings above. Note the approach from the front of the parade, the row of stores for the dwellings, and the dust-bin lockers on the service road.

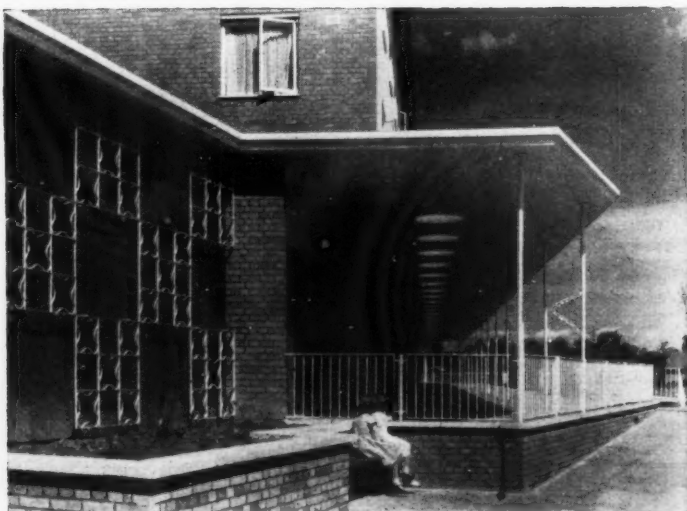
building illustrated



Above, viewpoint 3: a near view of the north-east corner shop. The canopy, which is constructed of timber and carried on tubular steel stanchions, is prevented from looking too heavy by the watch-glass roof lights and inset fluorescent fittings. A successful solution seems to have been reached in this scheme to the problem of attaining visual lightness and the required standard of durability in a building that suffers rather rough usage. Below right, the north-east corner of the block. The wall on the left screens the access to upper floor maisonettes.

SHOPS and MAISONNETTES

at BARSTABLE NEIGHBOURHOOD,
BASILDON NEW TOWN
designed by NOEL TWEDDELL



building illustrated



Below, viewpoint 4: the approach to the maisonettes on the west side of the block. The backs of shops always present a difficult problem; although the upper level approach to the dwellings, viewpoint 5 (above right), is not unpleasant, the view from the high level approach, viewpoint 6 (right), into the shop back yards is less satisfactory. Shop yards, unless covered over, are never likely to provide a very tidy appearance, but a screen along this maisonette approach perimeter would have helped to mask them. The architects point out, however, that a screen would hide the view of the social centre and other future development to the west of the shops.



analysis

CLIENTS' BRIEF: their stated requirements

To provide a block of 16 lock-up shops, two of which are used as a Crown Post Office, with 12 maisonettes and two flats over which will form part of the Barstable Neighbourhood Centre.

SITE: topography, surrounding, access planting

Area, 1.6 acres. The site was partly covered with low density sub-standard dwellings, some of which served as existing shops. The site is fairly level with no marked features. Some of the existing dwellings still remain in this area

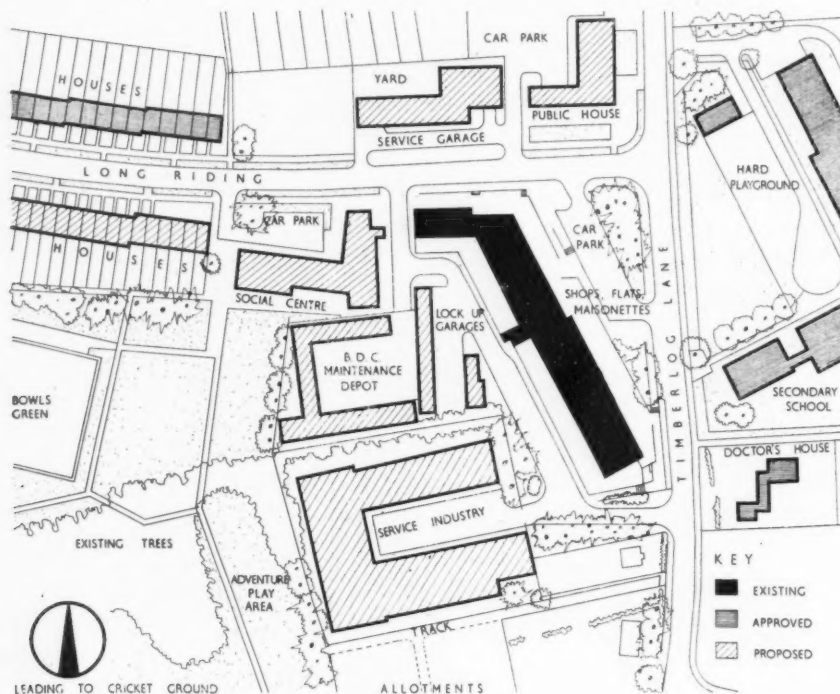
and they will be cleared as the neighbourhood centre is completed. Access is from Timberlog Lane, which links the Barstable and Vange Neighbourhoods, and from the spine road which links Barstable Neighbourhood with the town centre. Planting has been used as an integral part of the forecourt treatment. Many of the sound existing trees are retained.

PLAN: general appreciation and relation of units

The shops have been designed as one side of a square which forms the main part of the neighbourhood centre. The necessity of closing this square has determined the elongated "L" shape of the block. The completed neighbourhood centre will include a public house, filling station, a secondary modern school, a doctor's house and a community centre. The main part of the block is three storeys high, but this changes to four storeys at the northern end, emphasizing the corner of the square which leads to the main spine road of the neighbourhood.

MAIN CONSTRUCTION: general appreciation

Construction generally is of load-bearing brick cross walls with floors spanning between them. Floors between flats and between maisonettes are reinforced concrete. Floors within maisonettes are timber joist and boarded. Roofs are aluminium decking on lattice beams.



Site plan

cost per sq. ft. s d
preliminaries and insurances
contingencies

N.B. based on final figures

STRUCTURAL ELEMENTS

Work below ground floor,
level, foundation type,
basement

Location	Materials	Finish	Reasons and comments
Strip foundations	Throughout under main cross walls and rear walls	Reinforced and mass concrete	All slabs and floors span to cross walls
work below ground floor level			

4 10½

Location	Materials	Finish	Reasons and comments
External walls and facings			
Flank and party walls	Shops and flats	Brickwork	Facing brick
External and party walls	Maisonettes	Brick and clinker block cavity	Special aggregate rendering
Front panels	Flats and maisonettes		Tile facing
external walls and facings			

9 9

Location	Materials	Beam spans	Column grid	Reasons and comments
Frame or load bearing element				
Load-bearing brickwork	Shops, flats and maisonettes			Load-bearing cross walls were found to be economical at these spans and for this type of loading
frame or load bearing element				

— —

Location	Materials	Finish	Reasons and comments
Upper floor construction			
Slab	Shops and flats	Reinforced concrete	Timber on battens
Timber	Maisonettes	Timber joists	Timber boarding
Canopy	North and north-east acades	Timber and steel framing	Wood-wool and felt
upper floor construction			

5 11½

canopy 2 9

analysis

<i>Staircases</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Reinforced concrete	Main entrance and externally		Granolithic internally, asphalt externally	Fire resistant construction for communal staircase		
Height, floor to floor = average 7-9 ft.					staircases	9½
<i>Roof construction</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Monopitch	Throughout	Aluminium decking on lattice beams		This roof construction gives the architectural effect desired and also allows the running of services in the roof space	roof construction	2 7
<i>Roof lights</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Dome lights	In canopy	42 in. diameter clear glass	Plywood lining	To increase daylight on shop fronts and to release the monotony of a long length of canopy	roof lights	— —
<i>Windows</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
	All floors	Timber	Oil paint			
	Main stairs	Metal	Oil paint	Timber windows generally of E.J.M.A. sections	windows	11½
<i>External doors</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
	Throughout	Plywood faced flush	Oil paint	Economy and ease of maintenance	external doors	9
<i>Glazing</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Windows and doors	Throughout			Generally clear glazing in 24 and 32 oz. Obscured glass to balconies and sidelight to main entrance doors		
	Main staircase	Patent glazing			glazing	2½

PARTITIONING

<i>Internal partitions</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Clinker block	Throughout		Plastered and distemper	4-in. blocks in load-bearing walls, 2½-in. blocks in non-load-bearing walls	internal partitions	1 1
<i>Internal doors</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Flush	Throughout	Timber	Oil paint	Economy and easy maintenance	internal doors	8½
<i>Ironmongery to internal doors</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Knob and lever furniture	Flats and maisonettes		SAA	Standardised ironmongery whenever possible		
Metal balustrades	Main stairs and external stairs	Wrought iron	Oil paint		ironmongery to internal doors	3
					metal balustrades	1 3½

analysis

FINISHINGS

<i>Floor finishes</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>	
	Shops	Concrete	Finish by lessee	Concrete floors between flats have insulating quilt with timber floor on battens laid on top	
	Maisonettes and flats	Timber on fillets			
floor finishes					9½
<i>Sound insulation</i>	<i>Location</i>	<i>Insulation standard</i>	<i>Reasons and comments</i>		
Glass fibre blanket	1st and 2nd floors over flats		To reduce sound travel between flats		
sound insulation					2½
<i>Wall finishes</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>	
Plaster	Generally		Distemper and emulsion paint	Hard wall plaster generally	
Vermiculite plaster	Main stairs		Oil paint	Vermiculite plaster on stairs to reduce noise echoes	
wall finishes					1 2½
<i>Ceiling finishes</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>	
Concrete soffit	Shops and flats		Plaster and distemper	Natural domestic construction	
Timber floors	Maisonettes		Plaster-board and distemper		
ceiling finishes					11½
<i>Decorations</i>	<i>Location</i>	<i>Paint types</i>	<i>Munsell or other ref.</i>	<i>Reasons and comments</i>	
Walls and ceilings	Throughout	Distemper and emulsion paint			
Woodwork	Woodwork generally	Oil		All wood work generally painted white with contrasting colours on doors	
decorations					1 3½

FITTINGS

<i>Office fittings</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>	
Special fittings, decorations and heating	Post office				
<i>Other fittings</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>	
Cupboards and shelving	Maisonettes and flats	Timber	Oil paint		
Post Office and other fittings,					2 11½
<i>Kitchen equipment</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>	
EJMA units	Maisonettes and flats		Oil paint	Normal domestic standards	
kitchen equipment					1½

SERVICES

<i>Rainwater disposal</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>	
External pipes		Cast iron and steel	Oil paint		
rain water disposal					8
<i>Plumbing internal: waste disposal</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>	
Single stack		Cast iron		Special pre-fabricated units to take waste connections	
<i>Hot water storage</i>	<i>Location</i>	<i>Materials</i>	<i>Capacity</i>	<i>Reasons and comments</i>	
Cylinders	Linen cupboard	Copper		Standard domestic specifications	
<i>Cold water storage</i>	<i>Location</i>	<i>Materials</i>	<i>Capacity</i>	<i>Reasons and comments</i>	
High level tanks	Indoor flats and maisonettes	Asbestos cement	40 gall.	Asbestos cement c.w. tanks are used generally to avoid electrolysis	

analysis

					s	d
<i>Plumbing: sanitary fittings</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Glazed earthenware			White	Standard domestic specifications		
plumbing internal: waste disposal, hot and cold water storage, plumbing: sanitary fittings					2	0½
<i>Heating installation: heat exchanger type</i>	<i>Location</i>	<i>Criteria temp.</i>	<i>Air change rate</i>	<i>Reasons and comments</i>		
Approved appliance open fire	Living room of flats and maisonettes			Standard domestic specification		
<i>Boiler type and capacity</i>	<i>Location</i>	<i>Heat load and fuel type</i>	<i>Stoking method</i>	<i>Reasons and comments</i>		
Back boiler	Living room of flats and maisonettes	Solid fuel		Standard domestic specification		
heating installation, boiler type and capacity					8	
<i>Drainage: type of system</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Soil and rainwater to separate main sewers		Glazed stoneware				
drainage					1	6¼
<i>Kitchen ventilation</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Larders		2/9 in. × 6 in. air bricks	Plaster louvres internally			
kitchen ventilation					—	—
<i>Gas installation</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Domestic				Cooker, refrigerator, jig fitting for heater and wash boiler point, gas ignition to fires		
gas installation					4	
<i>Power supply type</i>	<i>Location</i>	<i>How distributed</i>	<i>Reasons and comments</i>			
Ring main to flats and maisonettes						
electrical installation					1	3
<i>Paved areas</i>	<i>Location</i>	<i>Materials</i>	<i>Reasons and comments</i>			
Forecourt	Front elevation		Car parking planting and hard paving provided			
paved areas					2	3½
total net cost per sq. ft. of floor					48	4

THERMAL INSULATION

Type	Location	U-value	Reasons and comments
Vermiculite screed	Rear access terrace at first floor		To prevent condensation at rear of shops
Insulation board	Main roof decking		To give necessary heat insulation to roof

FIRE

Planning precautions	Access for fighting	Means of escape	Reasons and comments
		Main access terrace at 1st floor served by 3 staircases	

REFUSE DISPOSAL

Method	Type of refuse	Waste recovery	Materials and installation	Reasons and comments
Individual bins	Domestic, trade	Weekly collection		Refuse collection is made only from ground floor level

analysis

TIME SCHEDULE

<i>Tender date</i>	<i>Contract signed</i>	<i>Work commenced</i>	<i>Work completed</i>	<i>Type of contract</i>
April 1, 1953	October 12, 1953	September 3, 1953	Taken over January 17, 1955	Lump sum

RATIOS

Area of enclosing walls	= 0.696	Area of windows (incl. ext. doors)	= 0.099
Total floor area	= 1	Total floor area	= 1
Area of solid wall	= 0.598	Total roof area	= 0.348
Total floor area	= 1	Total floor area	= 1

COST ANALYSIS

<i>Total floor area (excluding basement)</i>	<i>Tender date</i>	<i>Tender cost of superstructure</i>	<i>Installations and finishings</i>
27,597 sq. ft.	April, 1953	£45,838 6s. 6d.	£8,864 4s. 10d.
<i>Tender cost of foundations and basement</i>	<i>Tender cost of ancillary buildings and external work</i>	<i>Gross total cost</i>	<i>Cost per ft. super of floor</i>
£6,703 2s. 5d.	£5,216 2s. 8d.	£66,621 16s. 5d.	£2 8s. 4d.

COST COMMENT

It must be appreciated that in assessing the values of this cost analysis for making comparisons of any kind with other analyses, there are three distinct building types concentrated in this neighbourhood block, i.e., flats and maisonettes, shops and a post office. Each one of these types contain its own individual problems of design but the analysis shown gives the overall and all-embracing picture of the cost level for each of the various elements. Further investigation and analysis would be necessary before these costs could be used, especially if taken out of context, in planning for other and similar forms of building projects. The quantity surveyors state that, in this instance, separate bills of quantities were not prepared for the shops and living accommodation above.

SITE ORGANIZATION

Site, labour and equipment: labour was organized on the site by a general foreman. Two hoists—8 months, three mixers—10 months and one R.B.10—3 months. *Sub-letting:* plastering. *Job management:* incentive bonuses to all trades other than plasterers. Visiting contracts manager twice each week.

CONTRACTORS

Clerk of Works: J. W. Reid. *General contractors:* J. & J. Dean Ltd. *Sub-contractors:* *Special roofings, roofing felt:* William Briggs & Sons Ltd. *Glass:* Mustill Wallis & Co. Ltd. *Patent glazing:* Williams & Williams Ltd. *Structural steel and balcony railings:* Clark Hunt & Co. Ltd. *Stoves, window furniture, sanitary fittings:* B. Finch & Co. *Metal door frames:* Henry Hope & Sons Ltd. *Patent flooring:* Frazzi Ltd. *Gas fixtures and gas fittings:* North Thames Gas Board. *Plumbing:* A. J. Thomas & Co. Ltd. *Casements:* Duncan Tucker (Tottenham) Ltd. *Joinery and shop fittings (post office):* J. & J. Dean Ltd. *Wallpaper and paint:* Imperial Chemical Industries Ltd. *Reinforced concrete:* Richard Costain Ltd. *Ventilation:* Greenwood & Airvac Ventilating Co. Ltd. *Plaster:* Alfred Charldwood & Son Ltd. *Asphalt:* Webbs Asphalt Roofing & Flooring Co. *Concrete blocks:* Churchill Johnson Ltd. *Bricks:* Brick & Tile Co. Ltd. and London Brick Company. *Electric wiring:* Westons (Westcliff) Ltd. *Tiling:* B. Finch & Co. Ltd. and R. Passmore & Co. Ltd. *Artificial stone:* Costain Concrete Co Ltd.

BALCONY: OFFICES IN LONDON, S.E.1

Frederick Gibberd, architect



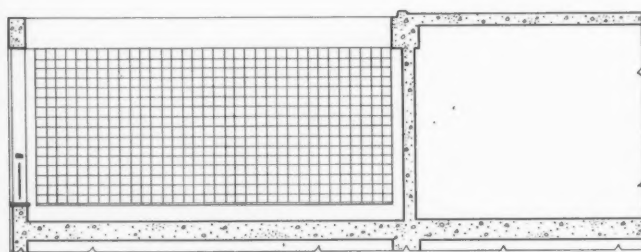
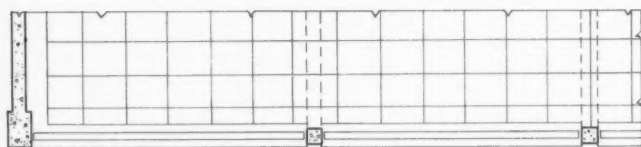
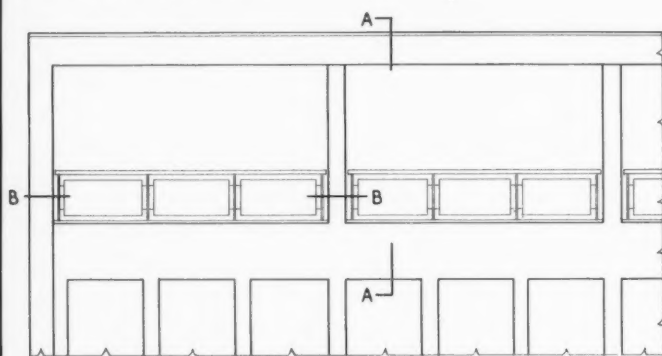
All beams and columns are encased in polished precast terrazzo slabs in which Portland stone aggregate was used. Wires cast in these slabs were attached to the main reinforcement and the joints between slabs were pointed in cement. Conduit serving the lamps was cast inside the beams.

working detail

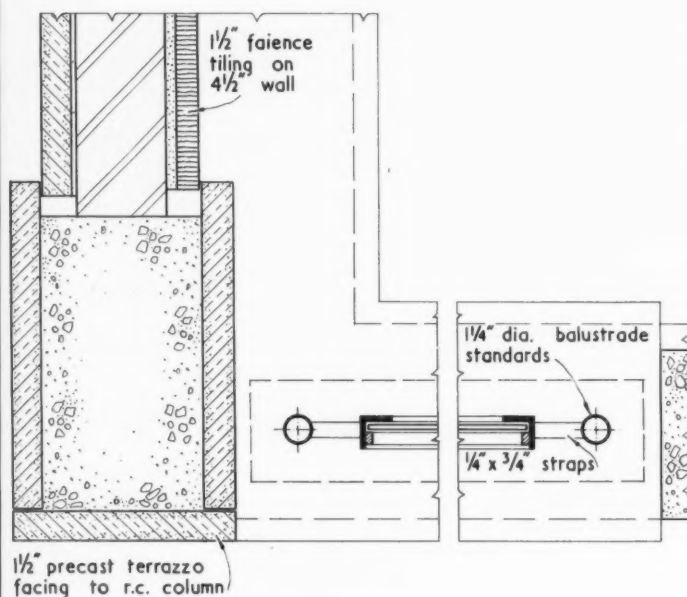
BALCONIES: 19

BALCONY: OFFICES IN LONDON, S.E.1

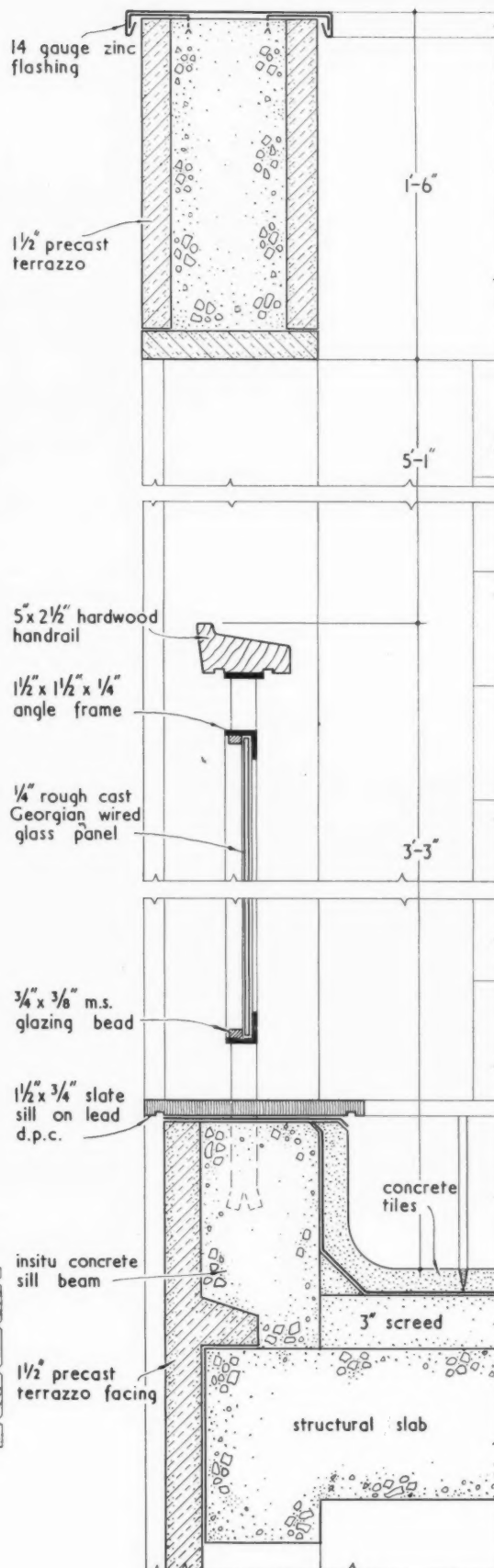
Frederick Gibberd, architect



PLAN, ELEVATION AND SECTION. scale $\frac{1}{8}'' = 1'-0''$



PLAN AT B-B. scale $\frac{1}{2}'' = 1'-0''$



SECTION A-A. scale $\frac{1}{2}'' = 1'-0''$

WALL PANELS: POLICE HEADQUARTERS AT WELLINGTON, SALOP

C. H. Simmons, architect to the Salop County Council

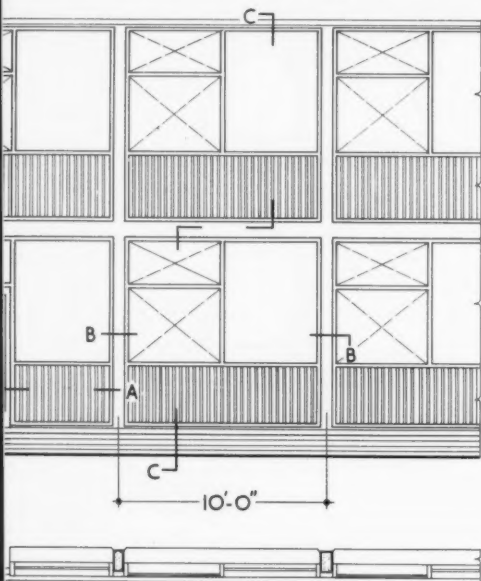
The softwood frames enclosing these inset panels are fixed proud of the supporting beams and columns and are painted white so that they and not the in-situ concrete structure determine the character of the facade. A deep upstand beam is concealed behind the panel at first floor level.

working detail

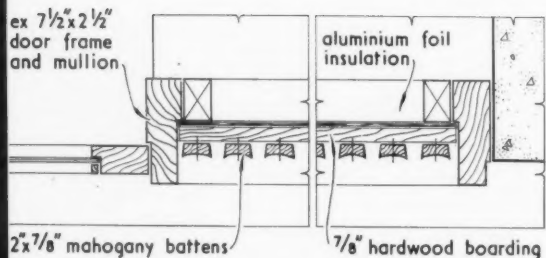
WALLS AND PARTITIONS: 39

WALL PANELS: POLICE HEADQUARTERS AT WELLINGTON, SALOP

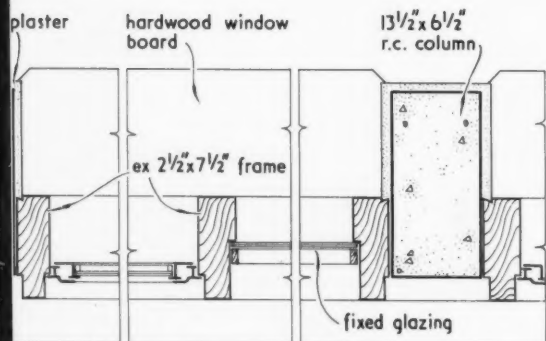
C. H. Simmons, architect to the Salop County Council



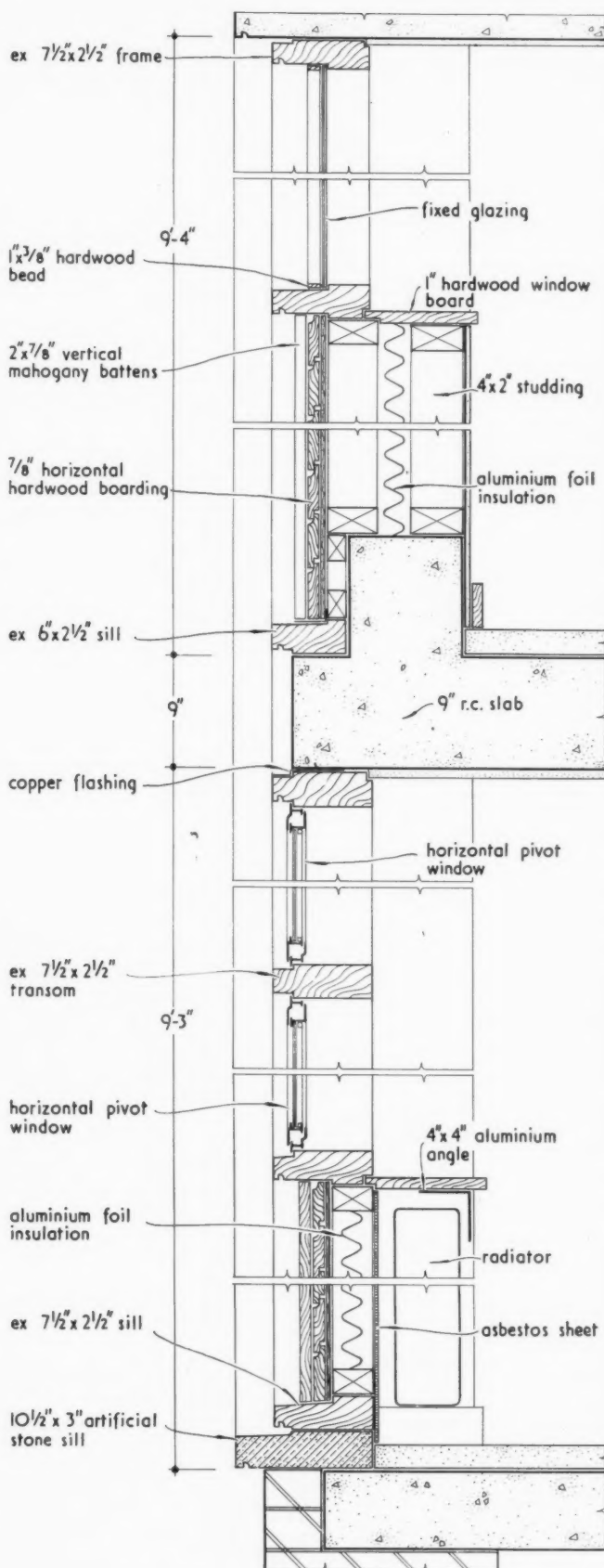
KEY ELEVATION AND PLAN. scale $\frac{1}{8}'' = 1'-0''$



SECTION A - A.



SECTION B - B.



SECTION C - C. scale $1'' = 1'-0''$

DRAFTSELE LIMITED **INSULATION DIVISION**

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SUSPENDED CEILINGS, THERMAL & STRUCTURAL INSULATION.
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Contractors to ...

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The Air Ministry.
The Ministry of Supply.
The Ministry of Works.
The National Coal Board.
The Territorial & Auxiliary Forces Association.
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The City Engineer, The City of Carlisle.
The County Architect, Cumberland
County Council.
The Borough Architect, The County Borough of
Darlington.
The County Architect, Durham County Council.
The County Architect, Glamorgan County Council.
The City Architect, The City and County of
Newcastle upon Tyne.
The County Architect, Northumberland
County Council.
The County Architect, Northamptonshire
County Council.
The Borough Architect, The Borough of
Stockton-on-Tees.
The Engineer and General Manager,
Tees Valley Water Board.
The Borough Engineer, The Borough of
Thornaby-on-Tees.
The Borough Architect, The County Borough of
West Hartlepool.
The County Architect, Westmorland County
Council.
★ ★ ★ ★
J. Gerrard & Sons Ltd.
Holland & Hannen and Cubitts (Scotland) Ltd.
John Laing & Son Ltd.
Leslie & Co., Ltd.
Sir Alfred McAlpine & Son Ltd.

Sir Robert McAlpine & Sons Ltd.
A. Monk & Co., Ltd.
Sir Lindsay Parkinson & Co., Ltd.
Taylor Woodrow (Building Exports) Ltd.
George Wimpey & Co., Ltd.
★ ★ ★ ★
Beecham Foods Ltd.
Bristol Aeroplane Co., Ltd.
Clarke, Chapman & Co., Ltd.
Cowans, Sheldon & Co., Ltd.
Fodens Ltd.
Hawker Aircraft (Blackpool) Ltd.
John Haig & Co., Ltd.
Thomas Hedley & Co., Ltd.
High Duty Alloys Ltd.
Sir James Laing & Sons Ltd.
Jackson The Tailor.
John Mackintosh & Sons Ltd.
Handley Page Ltd.
A. Reyrolle & Co., Ltd.
Rowntree and Co., Ltd.
Ruston & Hornsby Ltd.
Rylands Bros., Ltd.
The Birmingham & Midland Motor
Omnibus Co., Ltd.
The Metal Box Co., Ltd.
The Sunderland Forge & Engineering Co., Ltd.
Johnny Walker & Co., Ltd.
Whitbread & Co., Ltd.
Wright Anderson & Co., Ltd.
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(Specified Sub-Contractors)



BISON *multi-unit slabs are complete floor units needing only 3 in situ operations:*

1. HOIST 2. LAY ON BEARINGS 3. GROUT JOINTS



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THE LARGEST PRECAST CONCRETE MANUFACTURERS IN THE WORLD

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LEEDS: Stourton, Leeds 10. Leeds 75421

LICHFIELD: Dovehouse Fields, Lichfield, Staffs. Lichfield 2404

FALKIRK: Etna Road, Falkirk. Falkirk 1930

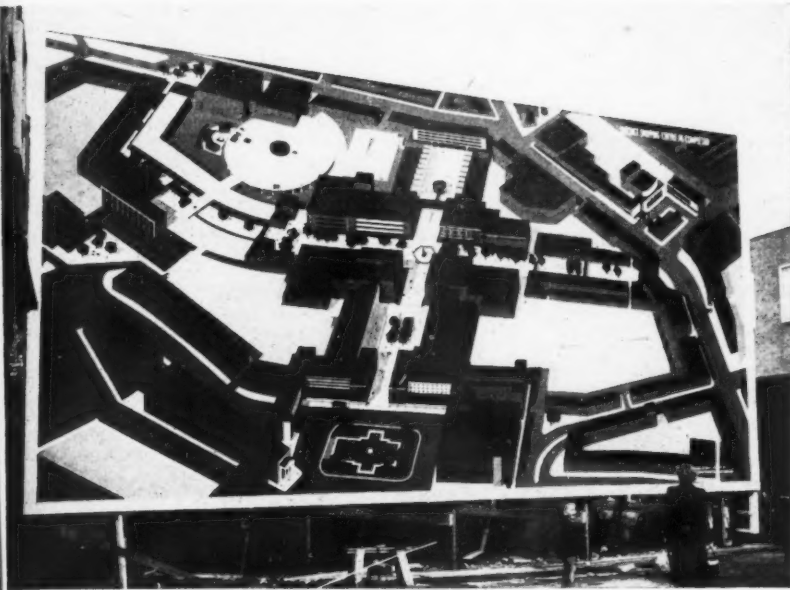
or

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COVENTRY LOOKS AT ITS FUTURE



In a section of Coventry's precinct some rather ramshackle buildings have to remain for a time and in order to hide these, and also (and this is more important) to give the people of Coventry an idea of what their new shopping centre will eventually look like, a large poster has been erected. This was designed by the Architectural and Planning Department, and was carried out by Mills and Rockley, the advertising agents. (Photograph by Coventry Evening Telegraph.)

Announcements

TRADE

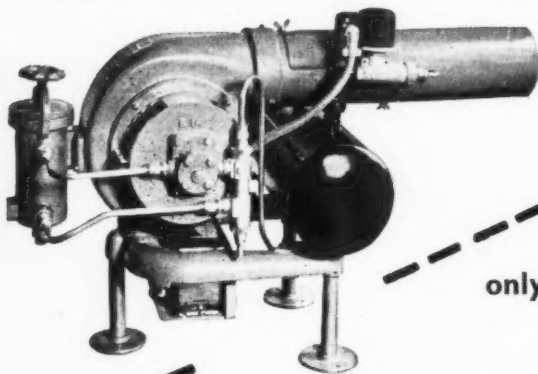
Mancuna Engineering Ltd. have recently moved their London Sales and Design Office from Oxford Street, W.1, to 59, Victoria Road, Surbiton, Surrey, telephone: Elmbridge 9793. This office covers the southern half of England, including South Wales and is under the management of R. A. LePage. N. S. Stedman, B.Sc., A.C.G.I., A.M.I.MECH.E., who has recently joined the Company, will be responsible for the design work of the London office. He has spent a lifetime on air handling work and in particular, has specialized for many years on de-dusting problems.

British Insulated Callender's Cables Ltd. announce the appointment of K. Collinson, A.M.I.E.E., as Branch Manager, Leeds, in succession to J. R. Tommis, whose death was recently announced.

Colt Ventilation Ltd. have recently carried out extensive market research in America and following this they are opening a new branch of the Company in Los Angeles; the address is: Colt Ventilation of America Incorporated, P.O. Box 27101, 4652, Hollywood Boulevard, Los Angeles, 27 (telephone Normandy 1-0261). H. M. McLean, who was previously Area Manager for Scotland, has recently left for Los Angeles and will manage the company's affairs there.

Correction

In the Cost Analysis on page 573, AJ October 18, the lift speed was given as 200 ft. per second. This should, of course, be 200 ft. per minute.

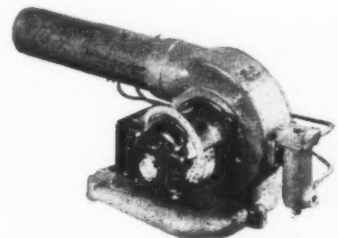


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only CTC oil burners have these advantages

- **HIGH PRESSURE**, adjustable up to 300 lbs. p.s.i., ensures complete atomisation and better combustion without blockages.
- **NEVER VARY**. Pressure once set by Heating Engineer gives constant flame. Jets **GUARANTEED** for capacity ± 5 per cent. with spray angles accurate within 5° .
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- **MODELS FOR 40,000 up to 3,000,000 B.T.U.s. per hr.** **INSTALLATION AND MAINTENANCE SERVICE. OVER 10,000 IN USE.**

Complete range for Domestic or Industrial use, burning Gas oil (35 secs.) or heavier oil (200 secs.). These quality burners are available at the right price and are backed by 25 years' experience and a complete service organisation. To save time, just write "Oil Burners" on your letterheading for full details for your files.



HEAT LTD. 17 SLOANE STREET, LONDON, S.W.1
BELgrave 3478

continued from page 655

ADVERTISING

Memo to Minister

The Outdoor Advertising Industry Advisory Committee has told the Minister of Housing and Local Government that in its view the problem of "clutter," that is, the multiplicity of advertisements on shop exteriors, cafés and garages, could best be solved by educating shop-keepers and advertisers throughout the country to a sense of awareness that there is a right way and a wrong way of displaying advertisements. The Committee says it is prepared to co-operate in any steps that can be taken with this object in view.

It also advocates the encouragement of planning authorities to negotiate with the shop-keeper, and with the advertising contractors where they are involved, to bring about an improvement in the arrangement of the advertising.

The matter has arisen out of the statement made by Duncan Sandys, Minister of Housing and Local Government, last June, in the House of Commons. Mr. Sandys told the House of Commons that he had been considering whether sufficient action was being taken to protect the beauties and amenities of our countryside and towns from being spoiled by outdoor advertisements. Thanks to the co-operation of all concerned, he added, an appreciable improvement had been evident in recent years, but much more could and should be done to secure the removal of incongruous hoardings and signs. He added that at the same time there might be a case for relaxing the present detailed control in certain localities where a concentrated display of advertisements is unobjec-

tionable. He intended, as soon as possible, to issue further guidance to planning authorities on this whole problem, after consulting the local authorities and representatives of the advertising trade and other interests.

Mr. Sandys later circulated a memorandum in which he suggested that wherever an area of the countryside was brought under "special control" (that is an area requiring special protection on the ground of amenity) it might be appropriate to include the villages, and even some of the small country towns.

The Outdoor Advertising Industry Advisory Committee, in its memorandum to the Minister, has expressed its disappointment in the working of the Control of Advertisements Regulations, particularly in the long delays in dealing with applications and appeals, the work and costs involved, and the complete unpredictability of decisions.

The Committee agrees that the open countryside is suitable for inclusion in areas of "special control," and says it has not objected to the inclusion of some villages in areas of special control. But it says that the application of special control to urban areas is a difficult matter, and that generally the Committee takes the view that it is wrong in principle to deprive an advertiser of the right to make an application where it ought to be granted. Similarly, says the Committee, it is wrong to deprive a local planning authority of the right to consent to such displays.

The Committee points out "The illogicality of the Regulations." It calls attention to the fact that although the practice of many public houses in the country areas of displaying their signs on posts outside the public houses is prohibited in areas of special control, the display of the same sign on the premises is permitted.

The Committee submits that the proper remedies for the multiplicity of advertisements on business premises are:

(a) to educate shop-keepers and advertisers throughout the country to a sense of awareness that there is a right and a wrong way of displaying advertisements; (b) to encourage planning authorities to negotiate with shop-keepers, and with advertising contractors where the latter are involved.

COLUMN GROUP

Lectures at Attingham Park

The Column Group, Attingham Park, which was formed in 1952 with the object of stimulating an interest in architecture and the allied arts in Shropshire has arranged the following programme for 1956-57.

November 21 "Town Planning in Chains"—An appraisal of the failures of Planning as an integrated policy for this Country, by Lewis Keeble, Director of Studies of the Department of Town and Country Planning, University College, London.

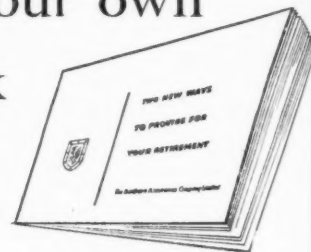
January 23, 1957 "Opera at Covent Garden," an informal talk by David Webster, Administrator of the Royal Opera House.

February 27, 1957 "Houses of Tomorrow," a talk by Mr. Eric L. Bird, A.R.I.B.A., of The Building Centre, late Editor of the R.I.B.A. Journal.

March 27, 1957 "Sculpture for Architecture," a talk by Mitzi Cunliffe, sculptress.

The meetings will be held at Attingham Park and will commence at 7.15 p.m. Membership of the group is open to anyone interested in its object.

If you have to provide for your own retirement—here's a book that will help you.



The last Budget brought good news of tax concessions for those who have to make their own retirement arrangements. 'The Northern' have devised two new plans to make the most of these important new tax reliefs.

Before you make your own plans, you should in your own interest consult 'The Northern'. Their informative and very helpful booklet "Two New Ways to Provide for Your Retirement" will answer *all* your questions. Get

your copy from the nearest Northern Office, or from your Insurance Broker, or simply fill in this coupon.

You'll be on good terms with

THE
NORTHERN

To The Northern Assurance Co. Ltd.,
1 Moorgate, London, E.C.2.

Please send me, without obligation, a copy of your booklet "Two New Ways to Provide for Your Retirement."

Name

Address

AJ1

Modern cold water, Matthew! . . .



Water services as efficient and logical as the buildings themselves! *Flexible* piping, in fact, in De La Rue Polythene . . . that's the modern way of conducting cold water, as architects will tell you. Builders and engineers, too. Farmers likewise.

Look at it from your own point of view. De La Rue Polythene pipe has these big advantages over metal of any kind:—

- Doesn't corrode, inside or out ; needs no maintenance at all, indoors or out. Lasts indefinitely.
- Needs few joints (you simply bend it round corners).
- Cheaper in labour, no dearer in first cost.
- Doesn't collect scale.
- Far lighter — which means easier handling, longer lengths.
- DOESN'T BURST, not in the coldest weather.

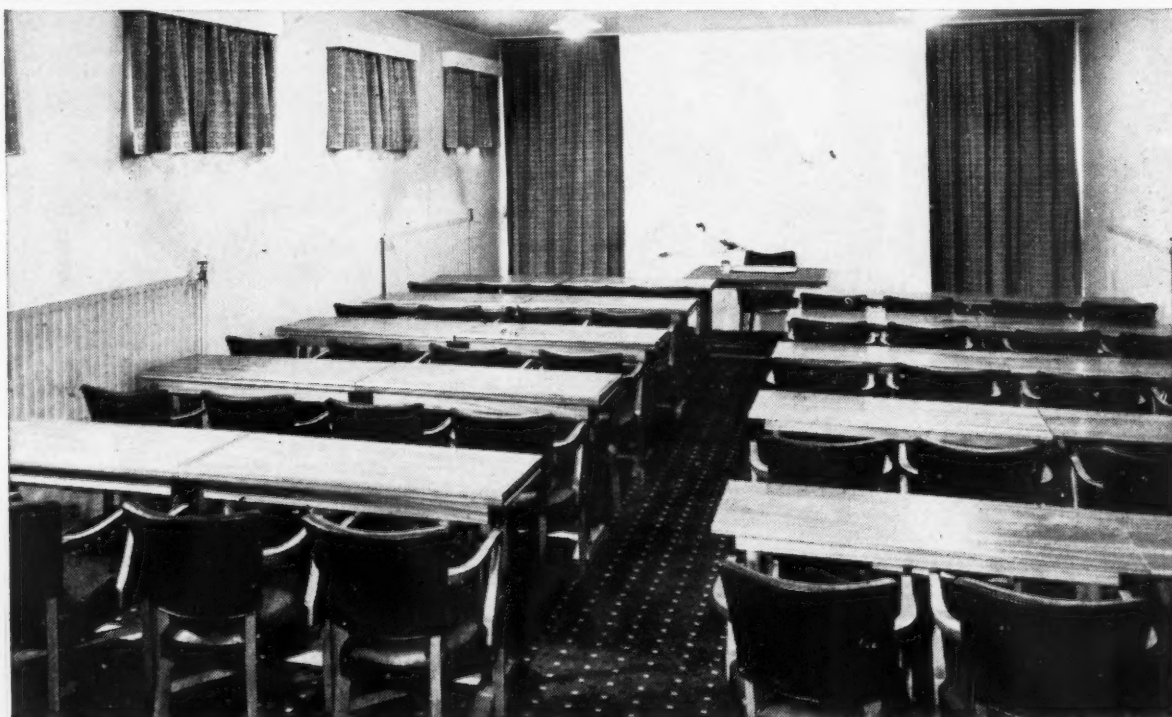
Yes, it's O.K. for drinking water. The best builders' merchants stock it. No cold water trouble *at all* . . .

. . . when the pipes are

DE LA RUE

POLYTHENE

Extrusions Dept. P5C, Thomas De La Rue & Co. Ltd., Buckhold Road, Wandsworth, London, S.W.18



Architects : Easton & Robertson, Chartered Architects

Combined operation

This dual-purpose room at the British Postgraduate Medical Federation, (University of London) was executed by Catesbys Contracts. The special tables enable full use to be made of the room without giving a makeshift appearance for one or other purpose. When in use as a lecture room, the top surfaces of the desks are wood. For conferences, the tables with the fold-back tops open out on their partners to reveal leather surfaces. Catesbys Contracts made the tables and supplied harmonizing curtains and carpets. If you are faced with making a lot out of a little space, or planning that calls for co-ordination with furnishing you will find that Catesbys co-operate . . . with most satisfying results.

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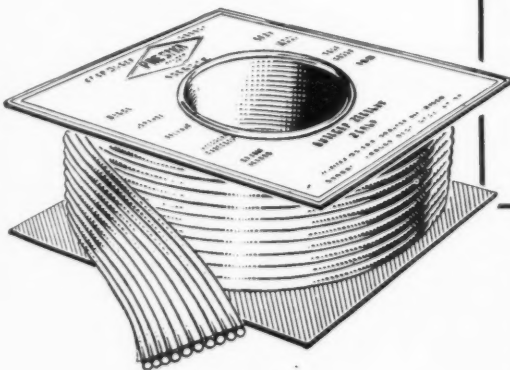
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SEE THE EASE AND SPEED OF THIS JOINTING AND SEALING!

Use PRESTIK Builders' White Sealing Strip once, and you will never be content with any other method of jointing, sealing or bedding.

For PRESTIK offers altogether new ease and speed of operation . . . gives you a far more efficient, longer-lasting job . . . can be used inside or outside . . . needs no special tools . . . is completely clean to handle . . . is permanent and weather-proof.

PRESTIK is supplied in handy boxed reels from which you unwind the ready-made strip as you want it. Ask your usual Builders' Merchant for it. Or write to the address below for a sample.



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PRESTIK makes quick work of:

MASONRY—Jointing gutter sections and coping stones. Bedding and jointing concrete blocks and panels.

PRE-FABRICATION—Bedding and Jointing roof sections. Sealing joints in sectional buildings.

FLOORS—Sealing cable duct covers. Sealing skirting board joints.

WALLS and CEILINGS—Sealing wall-board joints (with cover strips). Sealing glass bricks to door and window frames.

DOORS and WINDOWS—Sealing door and window frames to brickwork. Bedding window frames and window boards.

SANITARY WARE—Sealing baths, washbasins, etc., to walls.

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PRESTIK
Builders' Sealing Strip

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CELMAC moulded plastic toilet seats are in greater demand than ever before. Superb quality and meticulous finish offered at keen, competitive prices have made them supreme in their field. CELMAC toilet seats undoubtedly give the best value — be sure to specify CELMAC next time you buy.



MOULDED PLASTIC
TOILET SEATS
*at attractive
prices!*

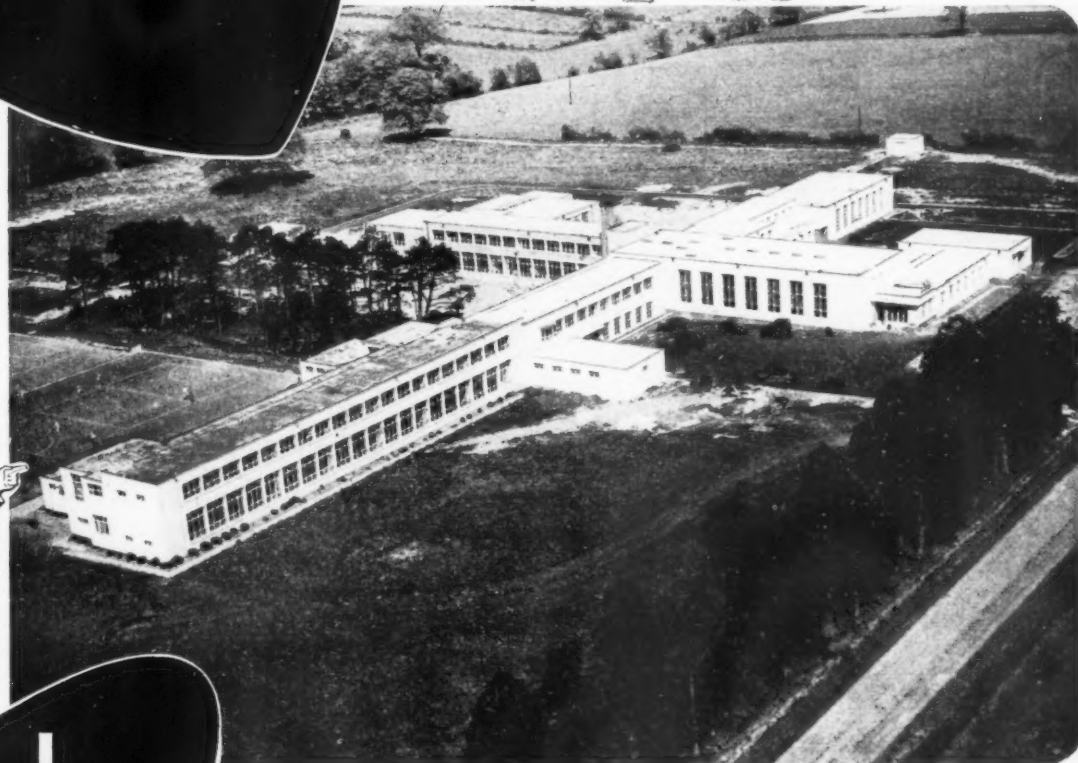
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Write for illustrated brochure describing our complete range
Available free on request

Specified for the following Cumberland County Council Schools:

Wigton Secondary Modern School
Maryport Primary School
Brampton Secondary Modern School
Belah Junior School



Wigton Secondary Modern School. Architect: John H. Haughan, F.R.I.B.A.

Emalux carries the day in Cumberland

Cumberland County Council recognise the merits of glass-hard Emalux for school decoration. This permanent interior wall finish is not expensive—and first cost is the last, for the walls are likely to crumble before Emalux shows sign of wear. It is attractive—glowing colours that never fade, a non-dazzle light-reflecting glaze that is quickly cleaned with soap and hot water. It can be applied by skilled Emalux craftsmen on almost any wall.

Write for the Emalux brochure

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21 New Walk, Leicester. Telephone: Leicester 56682

London Office 29 Dorset Square, N.W.1. Telephone: AMBassador 1141 and 1142

Birmingham Office 46 Exchange Buildings Stephenson Place Birmingham 2.

Telephone: Midland 1757



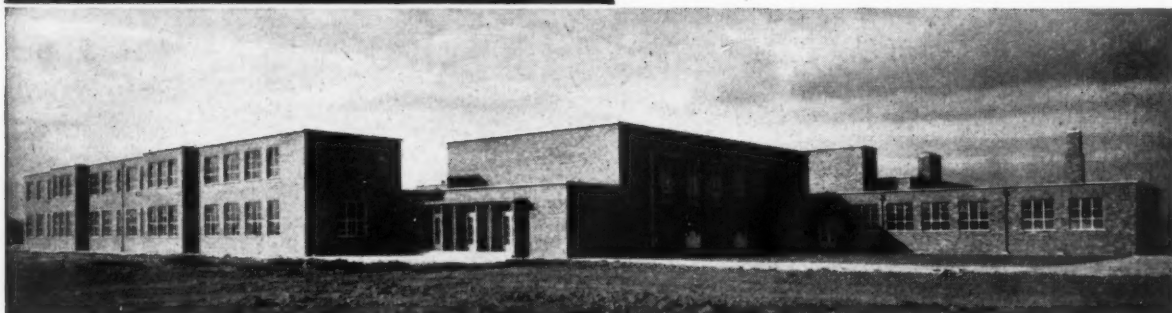
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Granite Concrete Ellispun Pipes.
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Utilux Glazed Cement Wall Finish.
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Decolux Superior Textured Finish.
Ellicem Cement Paint.
Exposed Aggregate Cladding Slabs.

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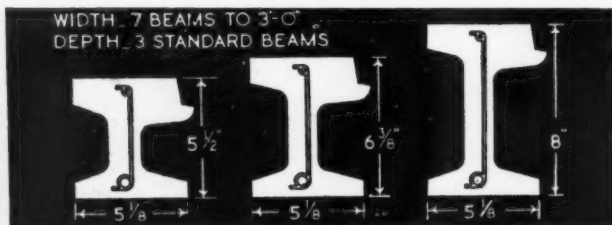
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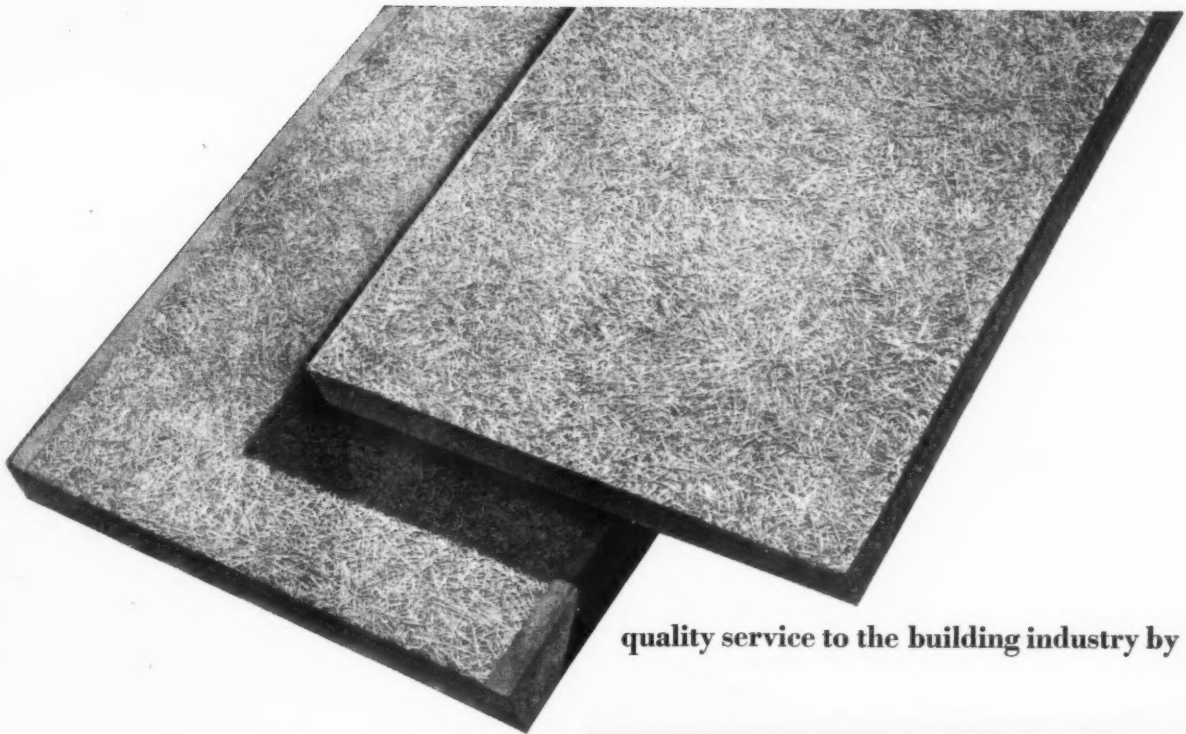
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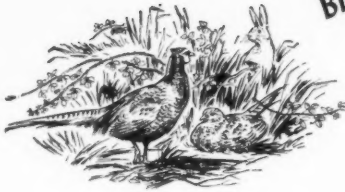
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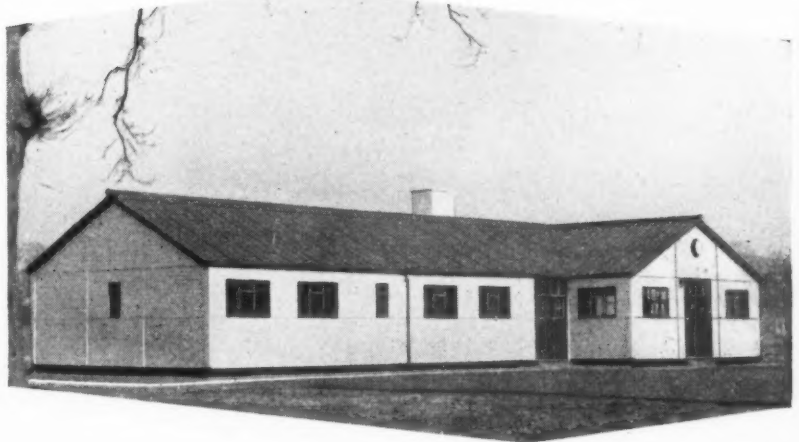


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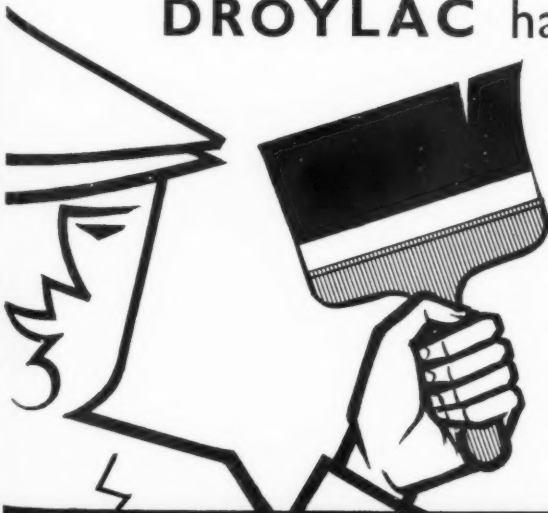
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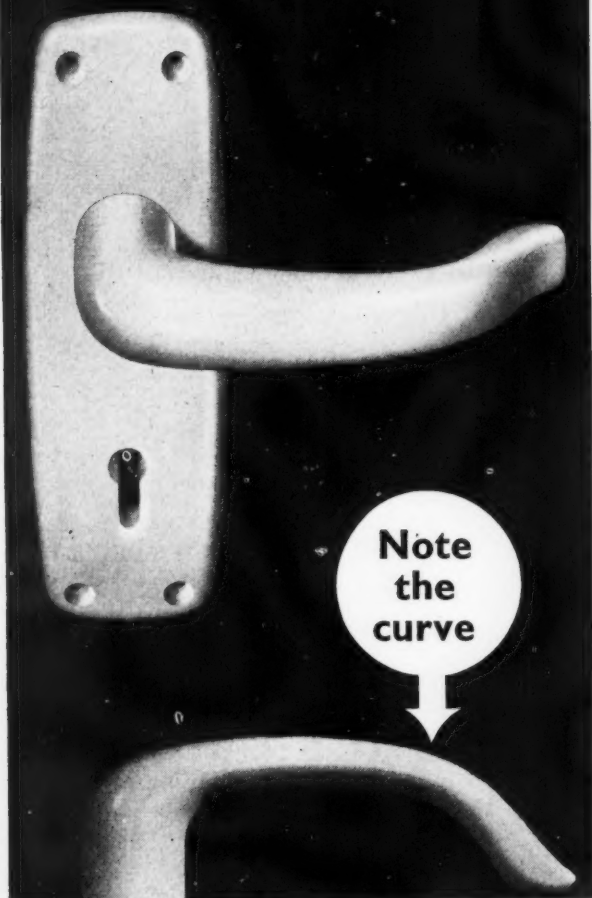
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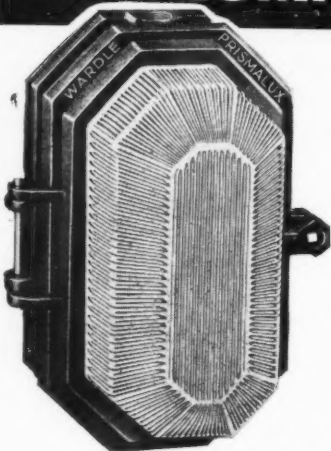
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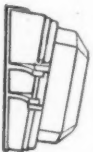


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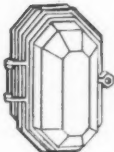


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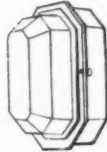
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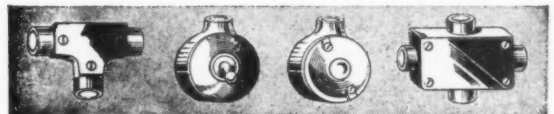
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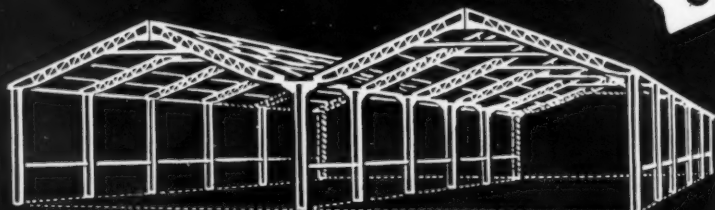
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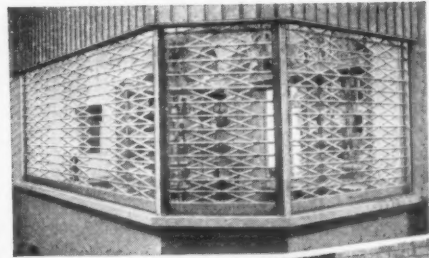
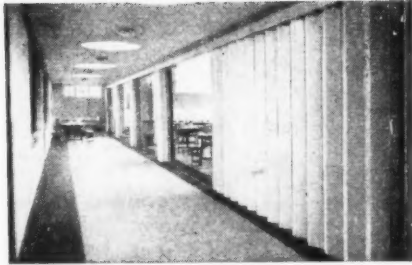
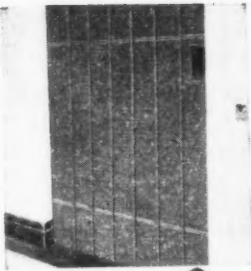
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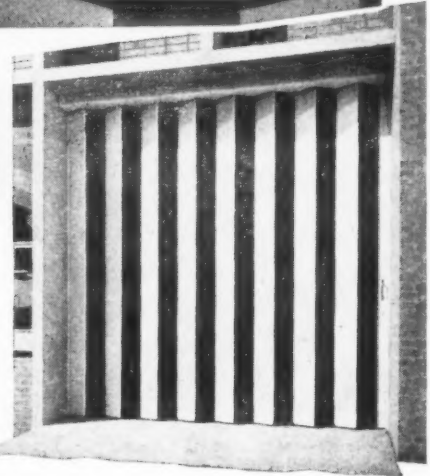
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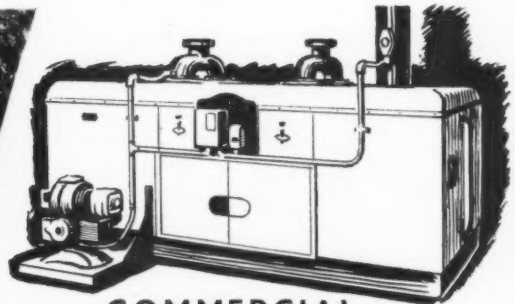
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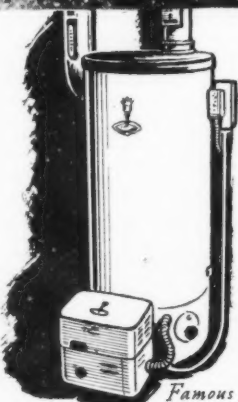
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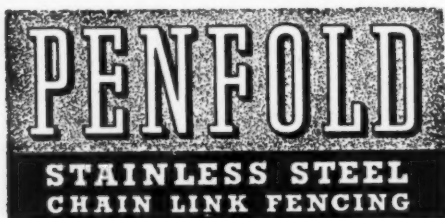


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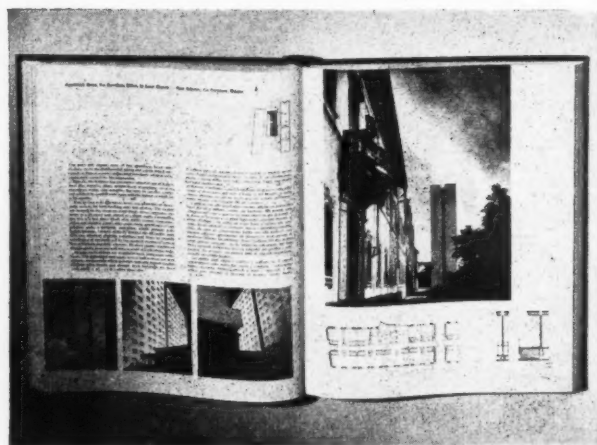


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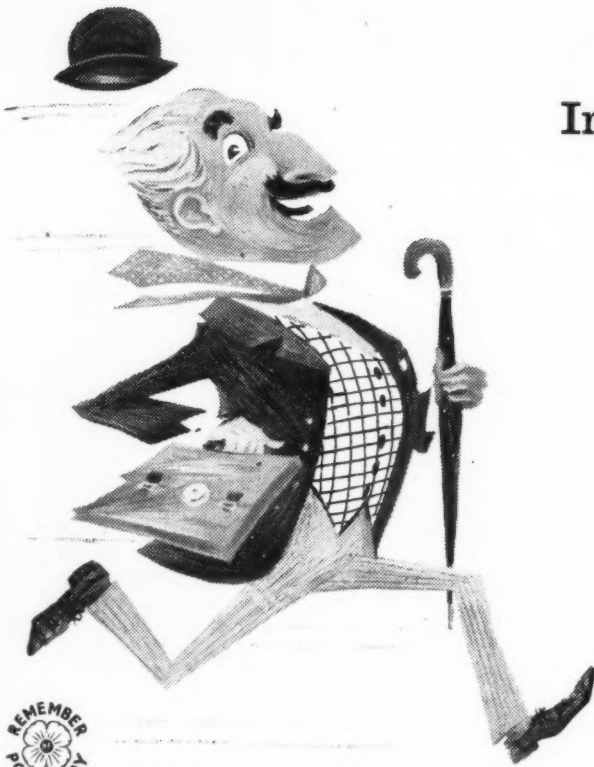
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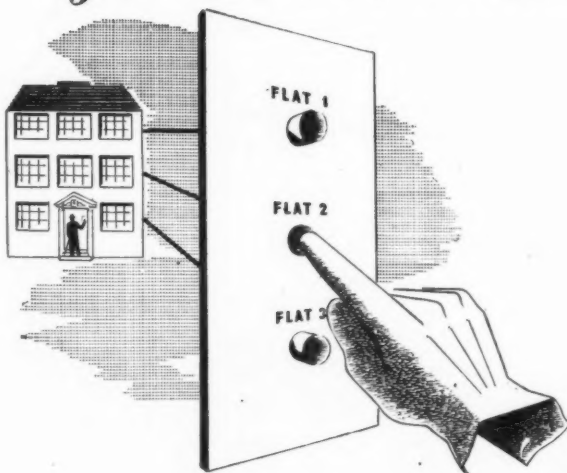
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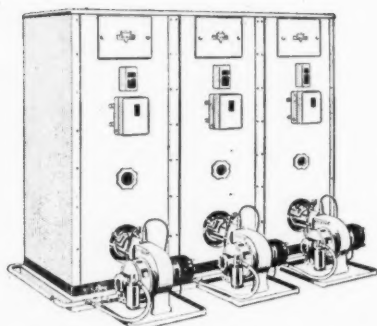
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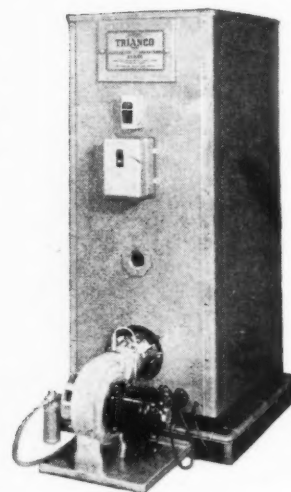
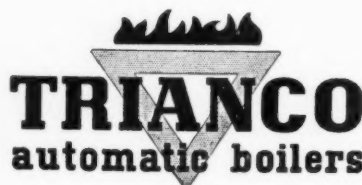
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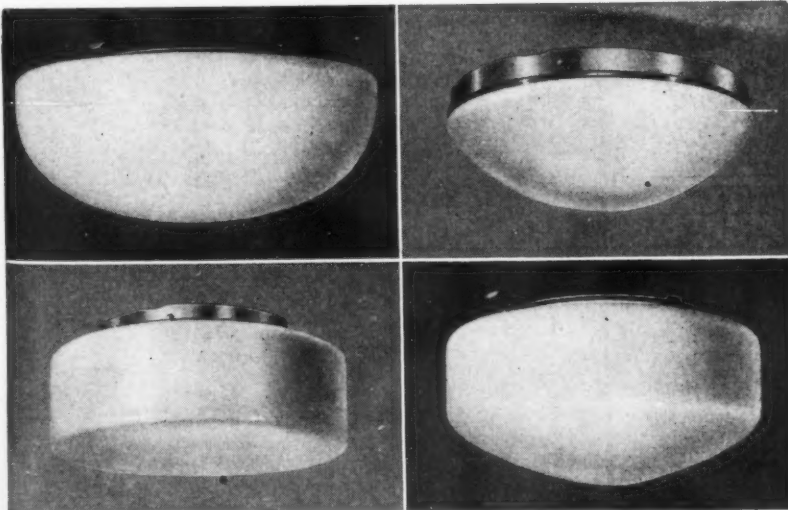
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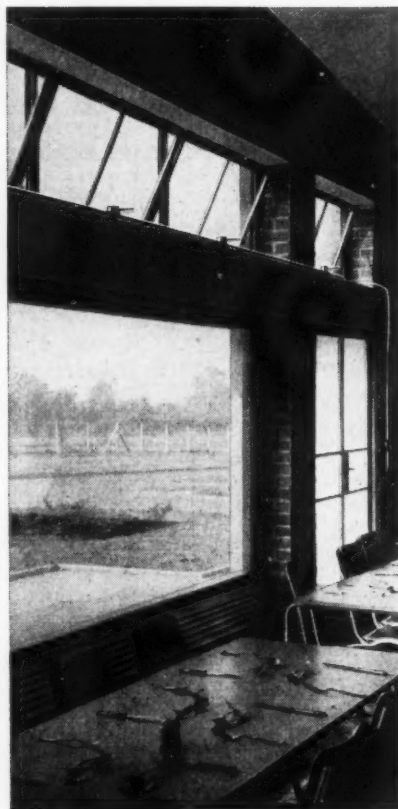


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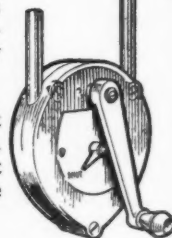
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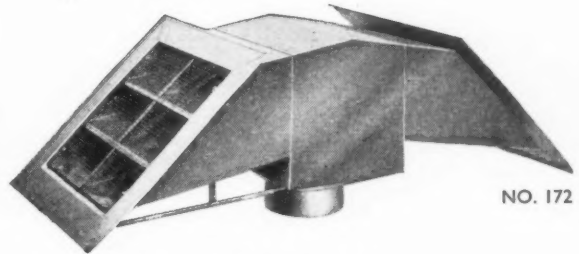
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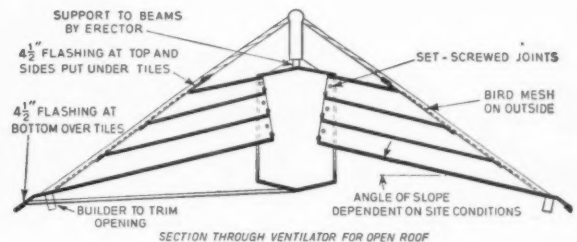


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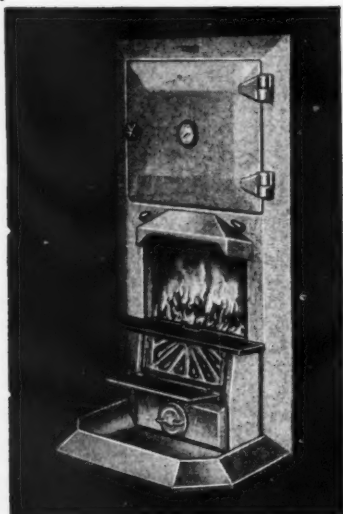
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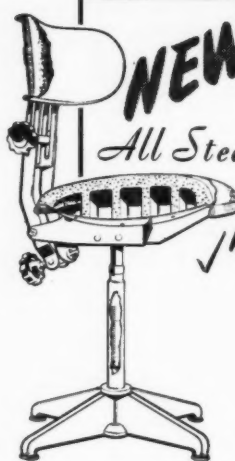
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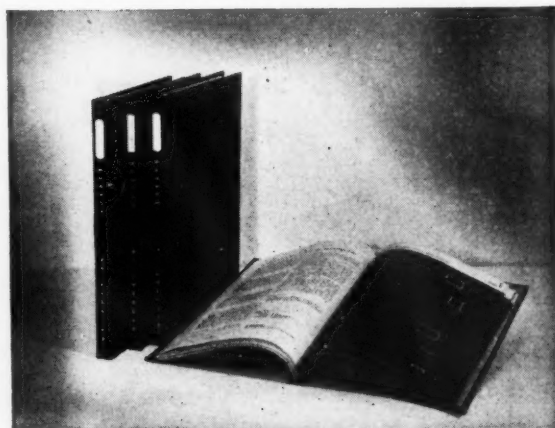
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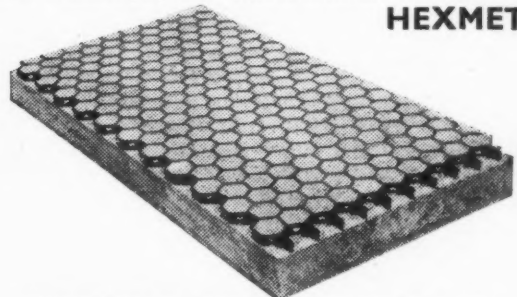
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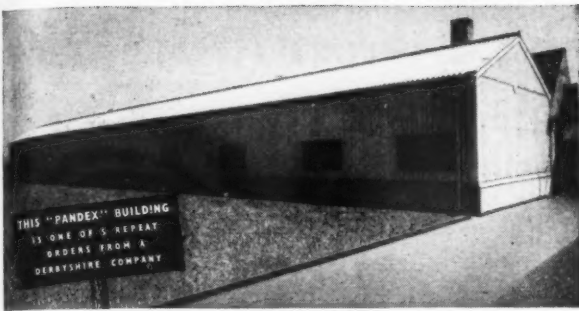
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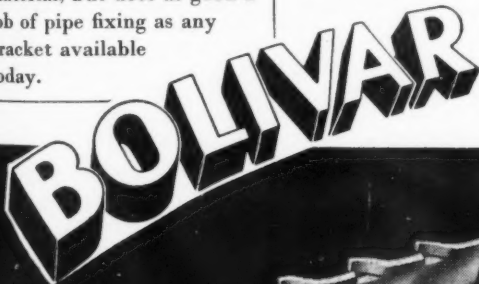
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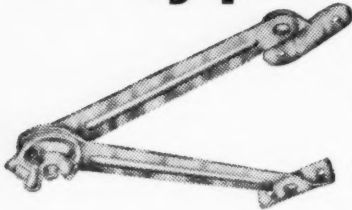
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Replies to Box Numbers should be addressed care of "The Architects' Journal," at the address given above.

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METROPOLITAN BOROUGH OF LEWISHAM

SENIOR ASSISTANT ARCHITECT
Salary scale, £795-£970 p.a. (A.P.T. V), plus London "weighting," age 26 and over £30 p.a. Applicants must possess an approved University degree in Architecture or be Associates of the R.I.B.A. Particulars and form of application from the Town Clerk, Lewisham Town Hall, Catford, S.E.6. Closing date: 24th November, 1956. 4402

HUNTINGDONSHIRE

COUNTY ARCHITECT'S DEPARTMENT
Applications are invited for the following appointments:—

- (a) **SENIOR ARCHITECTURAL ASSISTANT**, A.P.T. IV-V (£710-£970)
- (b) **SENIOR ARCHITECTURAL ASSISTANT**, A.P.T. IV (£710-£885)
- (c) **ARCHITECTURAL ASSISTANT**, A.P.T. II-III (£595-£765)

Appointments could be made within these grades subject to qualifications and experience.

Further details and application forms may be obtained from the County Architect, County Buildings, Huntingdon. Completed application forms should be returned to the undersigned by Friday, 23rd November, 1956.

A. C. AYLWARD,

Clerk of the County Council.

County Buildings, Huntingdon. 4403

BOROUGH OF NUNEATON

APPOINTMENT OF ARCHITECTURAL ASSISTANT A.P.T. Grade IV (£710-£885)
Applications are invited for this post which offers an excellent opportunity for general experience in a large building programme which includes multi-storey flats in redevelopment areas and on housing estates, schools, shops, and civic buildings in addition to a large number of council houses.

Housing accommodation is available. Further particulars can be obtained from the Town Clerk, Council House, Nuneaton to whom applications should be submitted not later than 19th November, 1956. 4294

CITY OF PETERBOROUGH

APPOINTMENT OF ARCHITECTURAL ASSISTANT, Grade A.P.T. II
Applications are invited for the above appointment in the City Engineer's Department. Applicants must possess a sound knowledge of building construction and be capable of preparing working and detail drawings under supervision. Previous experience on school buildings will be an advantage.

Applications stating age, experience, details of qualifications, together with copies of three recent testimonials should be sent in envelopes endorsed "Architectural Assistant" to Mr. L. H. Robjohn, M.B.E., A.M.I.C.E., City Engineer and Surveyor, Town Hall, Peterborough, to reach him not later than 14th November, 1956.

Consideration will be given to the provision of Council housing accommodation.

Canvassing, directly or indirectly, will disqualify. Candidates must disclose whether they are related to any member or senior officer of the Council.

C. PETER CLARKE,

Town Clerk.

Town Hall, Peterborough. 4311
October, 1956.

BEDFORDSHIRE COUNTY COUNCIL

QUANTITY SURVEYORS:
Grade V (£795-£970).
Grade IV (£710-£885).

Applications invited for above appointments. Commencing salary will be at point within Scales dependent upon candidates' qualifications and experience; preference given to Members of R.I.C.S. Candidates must have experience in taking off quantities for all types of buildings, measurement of work on site, valuations for interim certificates, etc. Application forms from County Architect, Shire Hall, Bedford, to be returned by 16th November. 4337

BOROUGH OF ROWLEY REGIS

APPOINTMENT OF QUANTITY SURVEYOR
Applications are invited for the above appointment in the Building Department at a salary in accordance with Grade A.P.T. IV-V (£727-£994), according to qualifications and experience.

Applicants must be experienced in preparing estimates, Bills of Quantities, checking Interim and Final Accounts.

The provision of housing accommodation will be considered.

Applications, stating age, qualifications and experience, together with two recent testimonials, should be sent to the undersigned not later than Monday, the 19th November, 1956.

J. HILTON,

Town Clerk.

Municipal Buildings, Old Hill, Staffs. 4410
30th October, 1956.

ARCHITECTURAL DRAUGHTSMAN required by Aden Government P.W.D. on contract for four of 18 to 24 months in first instance. Salary according to experience in scale (including pay differential), £330, rising to £1,452 a year. Gratuity at rate £100/£150 a year. Outfit allowance £60. Free passages for officer and wife. Free passages for four children under age 18. Education allowance in lieu of passages for children between 11 and 18 years undergoing full time education in U.K. Liberal leave on full salary. Candidates must have sound knowledge of architectural drawing, building construction and measurement of existing buildings. Candidates who have passed R.I.B.A. Inter. Exam. or recognised equivalent given preference. Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience, and quote M2B/4174/AG. 4397

COUNTY BOROUGH OF OLDHAM

APPOINTMENT OF ARCHITECTURAL ASSISTANT
Applications are invited for the above appointment within the range of Scales of Special Classes, Grade A.P.T. IV (£707 5s.-£907 2s. 6d.), the point of commencement to depend on qualifications and experience.

The National Conditions and Local Government Superannuation Acts apply. Housing accommodation available if required.

Applications, suitably endorsed, together with the names and addresses of two referees, should reach me not later than Wednesday, 21st November, 1956.

A. L. HOBSON,

Borough Engineer and Surveyor.

75, Union Street, Oldham. 4395

CORBY DEVELOPMENT CORPORATION

ARCHITECTS
Applications are invited for the following appointments on the staff of the Chief Architect:—

A SENIOR ASSISTANT ARCHITECT. Salary within the Grade £975-£1,452.

TWO ASSISTANT ARCHITECTS. Salary within the Grade £710-£970.

The work of building the New Town of Corby is now reaching its most intensive phase, and during the next seven to ten years will offer exceptional variety of experience in the design and construction of houses, flats, shops, and factories.

Appointments are subject to superannuation under the Local Government scheme, for which medical examination will be required.

Housing is available. Applications, stating age, education, training, qualifications, experience, present and past appointments and salaries, together with the names of two referees, must reach the undersigned by 12th November, 1956.

R. F. BROOKS GRUNDY,

General Manager.

Spencer House, Corby, Northants. 4386

OXFORD REGIONAL HOSPITAL BOARD
Applications are invited for the following posts in the Regional Architect's Department:—

(A) **ARCHITECTURAL ASSISTANT:**—Applicants should have passed the Intermediate Examination of the Royal Institute of British Architects or an examination recognised by the Institute as equivalent.

Salary scale £510 p.a. (at age 21 or over) × £20(5) × £30(1) × £20(1) × £25(2) — £710 p.a. Further particulars regarding the post can be obtained from the Regional Architect.

(B) **SURVEYOR'S CLERK:**—Applicants should have had experience in a builder's or quantity surveyor's office. Duties in the first instance will consist of working up bills of quantities. An opportunity available to widen experience.

Salary scale £425 p.a. (at age 24 or over: £20 deducted for each year below that age) × £15(3) × £20(5) × £25(1) — £595 p.a.

Compulsory Superannuation and Whitley Council conditions apply to both posts.

Applications stating age, training, qualifications and/or experience and present salary, with the names of two referees, should be submitted to the Secretary, Oxford Regional Hospital Board, 43, Banbury Road, Oxford, by not later than 21st November, 1956. 4417

EAST KILBRIDE DEVELOPMENT CORPORATION

Applications are invited for the following post:—

MODEL MAKER. Salary Scale £640 × £25 to £765 per annum inclusive. Placing according to experience, etc. Candidates should have experience in the preparation of architectural models and photographs of models made by applicants should, if possible, accompany completed application forms.

The appointment is subject to the Corporation's Conditions of Service and Superannuation Agreement. The selected candidate will require to pass a medical examination. A house or flat will be made available as required.

Application forms may be obtained from the General Manager, Torrance House, East Kilbride, Lanarkshire, to whom they should be returned not later than two weeks from the date of publication of this notice.

Canvassing, directly or indirectly, of Members of the Corporation will constitute an absolute disqualification. 4416

BOROUGH OF EDMONTON

QUANTITY SURVEYING ASSISTANT (Temporary) required for Borough Architect's Department, Grade A.P.T. III, £640 × £25-£765, plus London weighting £10-£30, according to age. Minimum qualification Intermediate R.I.C.S. or equivalent and studying for Final. Financial assistance and time off for study. Alternate Saturdays free.

Applications on forms from Town Clerk, Town Hall, Edmonton, must be delivered by 16th November. 4383

GOVERNMENT OF NORTHERN NIGERIA

ARCHITECT, PUBLIC WORKS DEPARTMENT
To prepare sketch plans, working drawings and detailed specifications for various types of buildings, and carry out the general work of a busy Architectural Office.

Contract appointment with possibility of transfer to permanent establishment. Salary range £1,170-£1,824 p.a. Gratuity £37 10s. for each completed three months' resident service.

Free passages for officer and cost of passages for wife and children up to maximum of two adult passages. Allowances of £120 to £288 p.a. payable for maximum of three children under 18 years. Government quarters, if available, at low rent. Generous leave. Low income tax.

Candidates must be A.R.I.B.A. with wide general experience.

Write Director of Recruitment, Colonial Office, London, S.W.1, giving age, qualifications and experience, quoting BCD.112/408/07. 4381

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EASTERN DIVISION
Applications are invited for the following Superannuable post in the Great Yarmouth, Norfolk, district:—

ASSISTANT SITE ENGINEER

Salary range in accordance with N.J.B. Agreement, £810-£1,155 per annum. The commencing salary depending upon experience and qualifications.

The successful applicant will be required to supervise Civil Engineering and Building Works in connection with a new Generating Station and must have had experience in this class of work.

Apply by 17th November 1956, giving age, details of experience, qualifications and present position to the Controller, Central Electricity Authority, Eastern Division, Northmet House, Southgate, N.14.

W. N. C. CLINCH,

Controller. 4426

AIR MINISTRY Works Designs Branch requires in London and Provinces **ARCHITECTURAL ASSISTANTS**, experienced in planning/preparation of working drawings and details for permanent and semi-permanent buildings.

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BOROUGH OF MAIDENHEAD

BOROUGH ENGINEER AND SURVEYOR'S

DEPARTMENT

ARCHITECTURAL ASSISTANT
Applications are invited for the appointment of an Architectural Assistant on Special Grade (£690 × £30-£840), plus the recent 2½ per cent. award.

The appointment will be subject to:—

- (a) The National Scheme of Conditions of Service.
- (b) The Local Government Superannuation Acts.
- (c) The satisfactory passing of a medical examination.
- (d) Termination by one month's notice on either side.

HOUSING ACCOMMODATION WILL BE PROVIDED.

Applications, stating age, experience, qualifications and previous appointments, accompanied by copies of two recent testimonials, must be sent in an envelope endorsed "Architectural Assistant," to the Borough Engineer and Surveyor, 14, Craufurd Rise, Maidenhead, not later than the 14th November, 1956.

Canvassing will be a disqualification, and candidates must disclose whether to their knowledge they are related to any member or senior officer of the Council.

STANLEY PLATT,

Town Clerk.

Guildhall, Maidenhead. 4409
October, 1956.

THE CORPORATION OF GLASGOW

ARCHITECTURAL AND PLANNING

DEPARTMENT

ASSISTANT ARCHITECTS

PLANNING ASSISTANTS

ASSISTANT QUANTITY SURVEYORS

Vacancies exist for a number of assistants. Minimum qualification, Intermediate Examination of the appropriate professional body. Salary scale £590-£1,100 per annum, with placing according to age, experience and qualifications.

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

A. G. JURY,

City Architect and Planning Officer. 4164

**BASILDON DEVELOPMENT CORPORATION
DEPARTMENT OF ARCHITECTURE AND
PLANNING**

Applications are invited for the following posts:—

- (a) ASSISTANT ARCHITECT, Grade A.P.T. VI (£680—£1,080).
- (b) ASSISTANT ARCHITECT, Grade A.P.T. V (£795—£970).
- (c) ASSISTANT ARCHITECT, Grade A.P.T. III (£640—£765).

The Architects may work on Town Centre, Housing, or a large Factory, and must have ability in contemporary design and the preparation of working drawings. Candidates for appointment (a) must also have experience in contract supervision and management.

Applicants for posts (a) and (b) must be A.R.I.B.A., and for post (c) must have passed Intermediate R.I.B.A.

Posts are superannuable and subject to satisfactory medical examination.

Housing available for renting.

Applications on the Special form (obtainable from the Chief Architect) to the General Manager, Basildon Development Corporation, Gifford House, Basildon, Essex, endorsed with the relevant appointment, by Monday, 26th November, 1956. 4406

**METROPOLITAN BOROUGH OF
WANDSWORTH
ARCHITECTURAL STAFF**

Applications invited for posts of:—

- (a) TWO SENIOR ASSISTANT ARCHITECTS (A.P.T. V, £825—£1,000 p.a.).
- (b) TWO ARCHITECTURAL ASSISTANTS (Grade III (A), £720—£870 p.a.).

Applicants for (a) must be Assoc. of R.I.B.A. and/or the R.I.C.S. (Building), with architectural experience. Practical knowledge required in preparation of working drawings and in details for multi-storey blocks of flats and/or other framed buildings, and supervision of their erection. Applicants for (b) must have passed Parts I and II of the R.I.B.A. Final or Special Final Examination or their equivalent at one of the recognised schools of architecture, and had at least five years' experience, including training.

Application forms from Borough Engineer, Surveyor and Architect must reach me by 19th November.

R. H. JERMAN,
Town Clerk.

Municipal Buildings, Wandsworth, S.W.18. 4404

DENBIGHSHIRE COUNTY COUNCIL

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

- (a) ARCHITECTURAL ASSISTANT, A.P.T. Grade III (£656—£784).
- (b) FOUR ARCHITECTURAL ASSISTANTS, A.P.T. Grade II (£609—£691).
- (c) TWO ARCHITECTURAL ASSISTANTS, A.P.T. Grade I (£543—£625).
- (d) QUANTITY SURVEYING ASSISTANT, A.P.T. Grade IV (£727—£907).
- (e) QUANTITY SURVEYING ASSISTANT, A.P.T. Grade III (£656—£784).
- (f) HEATING ENGINEERING ASSISTANT, A.P.T. Grade III/IV (£656—£907).
- (g) ELECTRICAL ENGINEERING ASSISTANT, A.P.T. Grades III/IV (£656—£907).

Further details and application forms may be obtained from me. Completed application forms are to be received by me not later than 24th November, 1956.

W. E. BUFTON,

Clerk of the County Council. 4415
County Offices, Ruthin.

BOROUGH OF BUXTON

Appointment of:—

- (a) SENIOR ENGINEERING ASSISTANTS (Two). Special Grade (£690×£30=£840).
- (b) JUNIOR ENGINEERING ASSISTANT, Grade A.P.T.I. (£530×£20=£610).
- (c) ARCHITECTURAL ASSISTANT, Special Grade (£690×£30=£840).

Applications are invited for the above appointments.

(a) Applicants must have passed the Final Examination of the Institution of Civil Engineers or the Institution of Municipal Engineers, and have had experience in Main Drainage, Sewage Disposal Design, Reinforced Concrete Design, Water Supply, Road Construction and Town Planning and Byelaw Administration. Housing accommodation available for one only of these appointments.

(b) Applicants to have completed professional training such as that envisaged in the scheme for training of Municipal Engineers.

(c) Applicants must be Registered Architects and have had experience in Housing and Estate Development.

The above appointments are subject to the National Scheme of Conditions of Service and the provisions of the Local Government Superannuation Act, 1937.

Applications, together with the names of two Referees, to be received by the undersigned not later than 20th November, 1956.

Canvassing will be deemed a disqualification.

A. C. W. RYLAND, A.M.I.C.E., M.I.Mun.E.
Borough Engineer.

Town Hall,
Buxton.
31st October, 1956. 4422

**CORPORATION OF GREENOCK
BURGH SURVEYOR AND MASTER OF
WORKS DEPARTMENT**

Applications are invited for appointment to the post of JUNIOR DEPUTE (Architectural) to the Master of Works.

The salary offered is on the scale of £1,050, rising to £1,200 by annual increments of £50, with placing according to experience.

The appointment is subject to one month's notice on either side, is superannuable and subject to N.J.C. conditions.

The post is a newly created one and, while the Depute will have responsibility for all architectural work, the immediate task will be to take over design of all new structures, including shops, offices and dwellings in Comprehensive Development Areas.

Candidates must be A.R.I.B.A., and experience of redevelopment will be considered an advantage.

Applications, giving all particulars and quoting names of two referees, should be submitted to the undersigned not later than Monday, 26th November, 1956.

JOHN LIDDELL,
Town Clerk.

Municipal Buildings, Greenock. 4414
29th October, 1956.

GOLD COAST HOUSING CORPORATION.—
TWO ARCHITECTS required on contract appointment to design and supervise construction of houses and other types of buildings for two tours each of 15-18 months' duration. Consolidated salary in the range of £1,130—£2,020 a year, according to age and experience. Gratuity of £37 10s. for each completed three months of resident service. Free first-class passages. Generous home leave. Outfit allowance of £50 on first appointment. Taxation at low local rates.

Candidates not less than 30 years of age must be A.R.I.B.A., and one is required to have in addition the qualification of A.M.T.P.I. with minimum of three years' experience.

Apply, stating age, qualifications and experience, for further particulars and application form from the Secretary for Recruitment, Gold Coast Office, 13, Belgrave Square, London, S.W.1. Closing date for receipt of initial enquiries: 23rd November. 4408

**EASTERN REGIONAL HOSPITAL BOARD,
SCOTLAND**

Applications are invited for the following appointments:—

- (a) ARCHITECTURAL ASSISTANT. Salary £510—£710.
- (b) ASSISTANT QUANTITY SURVEYOR. Salary £680—£985.

Applicants for post (a) must have passed the Intermediate Examination of the R.I.B.A., and for post (b) must be Corporate Members of the R.I.C.S., with experience of the Scottish Mode of Measurement.

The starting salary for both posts may be above the minimum of the scale, according to age and experience.

Applications, stating age, qualifications, experience, and the names and addresses of three referees, should be sent to the Secretary, Eastern Regional Hospital Board, "Braeknowe," 430, Blackness Road, Dundee, within 14 days from the date of this advertisement. 4431

CITY OF BELFAST

APPOINTMENT OF SENIOR ARCHITECT

The person appointed to this position should be capable of carrying through projects from sketch plans to working drawings and specifications; also giving a lead on incidental services and supervising the erection of the buildings and have experience in, or be capable of, leading a group of junior assistants on large size projects if required to do so.

Candidates should be registered by examination and have not less than 8 years' post-qualification experience.

The work carried out by the Architectural Staff includes public baths, libraries, sports pavilions and welfare homes in the form of new structures and alterations to existing buildings.

Salary: £1,100×£37 10s.—£1,250; commencing remuneration will be fixed according to qualifications, ability and experience. Superannuation contributions of approximately 6 per cent. of remuneration will be payable.

Reciprocal pension arrangements exist between the Corporation and other public authorities.

Canvassing will disqualify.

Application forms, etc., are obtainable from Room 39, City Hall, Belfast. Completed applications must reach the undersigned by 19th November.

JOHN DUNLOP,
Town Clerk.

City Hall, Belfast, P.O. Box 234. 4433
30th October, 1956.

LONDON COUNTY COUNCIL

ARCHITECTS' DEPARTMENT

Vacancies for ARCHITECTURAL and SURVEYING ASSISTANTS in the THEATRES SECTION. Salaries up to £218, with starting rates according to qualifications and experience. Work involves survey of existing premises and the consideration of proposals for alterations and new construction.

Particulars and application form, returnable by 23rd November, 1956, from The Architect (AR/EK/TH/2), County Hall, S.E.1. (2083) 4372

**EAST RIDING OF YORKSHIRE COUNTY
COUNCIL**

Applications are invited for the following appointments on the permanent staff of the County Architect:—

CHIEF ASSISTANT QUANTITY SURVEYOR, N.J.C. Scales, Grade VII (£999 7s. 6d.—£1,230).

ASSISTANT ARCHITECTS, N.J.C. Scales, Grades IV and Special (£727 15s.—£907 2s. 6d.) and (£707 5s.—£861) respectively.

Applications for the post of Chief Assistant Quantity Surveyor should be Members of the Royal Institution of Chartered Surveyors and have had wide experience in the preparation of estimates, specifications, bills of quantities, schedules, adjustment of final accounts and other work incidental to such an appointment, including the control of staff.

Applications, giving particulars of age, past and present appointments with salaries, details of experience, together with the names of three referees, should be sent to the County Architect, County Hall, Beverley, not later than Friday, 23rd November, 1956.

THOMAS STEPHENSON,
Clerk of the Council.

County Hall, Beverley. 4432
November, 1956.

SURREY COUNTY COUNCIL

Applications invited for following appointments:—

(1) ASSISTANT ARCHITECT, Grade IV-VI, minimum £710, maximum £1,080, plus £30 London allowance p.a.

(2) ARCHITECTURAL ASSISTANT, Grade I-III, minimum £530, maximum £765, p.a., plus L.A.

(3) SENIOR ASSISTANT QUANTITY SURVEYOR, Grade VI, £880×£40 to £1,080 p.a., plus £30 L.A. Must be Chartered Quantity Surveyor, with experience on major contracts, including adjustment of final accounts and directing staff.

(4) ASSISTANT QUANTITY SURVEYOR, Grade III, £640×£25 to £765 p.a., plus L.A. Preference given applicants who have passed Inter. R.I.C.S.

(5) MAINTENANCE SURVEYING ASSISTANT, Grade II, £595×£20 to £675 p.a., plus L.A. Preference given applicants who have passed Inter. R.I.C.S. (Building Sub-Division). Experienced preparing specifications, schedules of dilapidations, and detailed estimates for general maintenance works.

For (1) and (2) salary range of appointment and commencing salary will depend on experience and qualifications.

Full details, present salary and 3-copy testimonials, to County Architect, County Hall, Kingston, as soon as possible. 4434

CORPORATION OF DUNDEE

CITY ARCHITECTS' DEPARTMENT

Applications are invited for several appointments as ARCHITECTS in the City Architect's Department in A.P.T. Grades II to Va, £580 to £905, and in A.P.T. Grades VI to VIII, £805 to £990 per annum.

The posts are superannuable, and applicants should be under 45 years of age. The successful applicants will require to pass satisfactorily a medical examination for entry into the Superannuation Scheme.

Salaries will be in accordance with experience and qualifications of the applicants.

Applications, giving full information as to training, experience and qualifications, along with the names of two professional referees, to be lodged with the Town Clerk, City Chambers, Dundee, on or before Monday, 26th November, 1956. 4435

METROPOLITAN BOROUGH OF WOOLWICH

BOROUGH ENGINEER'S DEPARTMENT

SENIOR ASSISTANT ARCHITECT required, Grade V (£795—£970), plus London weighting.

A.R.I.B.A. or equivalent essential. Superannuation Scheme. Medical examination.

Application forms from Borough Engineer, Town Hall, Woolwich, S.E.18, to be returned to Town Clerk by 19th November, 1956.

Canvassing disqualifies. 4378

LONDON COUNTY COUNCIL

ARCHITECTS' DEPARTMENT

Applications are invited to fill newly created positions in the BUILDING REGULATION DIVISION for inspection of buildings to improve MEANS OF ESCAPE in Areas of high fire risk. Grade III (salary up to £987) and ASSISTANTS (up to £810), with starting rates according to qualifications and experience.

Particulars and application form obtainable from the Architect (AR/EK/BR/3), County Hall, S.E.1. (2091) 4394

CITY OF WORCESTER

APPOINTMENT OF SENIOR QUANTITY

SURVEYOR

Applications are invited from qualified Quantity Surveyors for this appointment within A.P.T. Grade V (salary £814 17s. 6d.—£994 5s.). Housing accommodation will be offered if required, and a casual users' car allowance will also be available.

Applications, with the names of two referees, are to be sent to the City Engineer and Surveyor, 22, Bridge Street, Worcester, by 13th November, 1956.

BERTRAM WEBSTER,
Town Clerk. 4393

Guildhall, Worcester.

CORPORATION OF LONDON
invites applications
for permanent appointment of
SECOND PRINCIPAL ARCHITECTURAL ASSISTANT.
in the Architectural and Housing Section of the
CITY ENGINEER'S OFFICE.
Salary scale £1,000 to £1,220, according to
experience.
Candidates should be Associates of the Royal
Institute of British Architects, and have had
varied experience in Local Authority work, particularly on maintenance and improvement works for Housing and Public Buildings.
Medical examination, local Act Superannuation Fund.
Applications, stating age, experience, present and previous appointments, with names of two referees, to the City Engineer, 55/61, Moorgate, London, E.C.2, by 26th November. 4437

Architectural Appointments Vacant

4 lines or under, 7s. 6d.; each additional line, 2s.
POST-INTERMEDIATE ASSISTANT requires, in large London Office with widely varied practice. **Lewis Solomon, Son & Joseph, 21, Bloomsbury Way, London, W.C.1. Telephone HO 67062.** 3182

CO-OPERATIVE WHOLESALE SOCIETY LTD. ARCHITECT'S DEPARTMENT, MANCHESTER SHOPFITTING DRAUGHTSMAN required, experienced in shop equipment and modernisation of interiors.
The position calls for the preparation of layouts and perspectives with a modern approach to store fitting problems.
The post is pensionable, subject to medical examination and there is a five-day week in operation.
Applications giving age, details of previous experience and salary required to **G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester 4.** 3056

ASSISTANTS required in medium-sized busy West End office. Applicants should be of R.I.B.A. Finals standard, capable of taking complete charge of contracts under general supervision. General Practice, including Housing Schemes, Office Blocks, Factories, etc.—Apply in writing only, stating age, qualifications, experience and salary required, to **Thomas Sibthorp, F.R.I.B.A., A.R.I.C.S., A.M.T.P.I., 10, Manchester Square, W.1** 4376

RONALD WARD & PARTNERS require an **ARCHITECTURAL ASSISTANT**, with contemporary outlook and willing to use own initiative. Salary range £500 to £800. Interesting and varied work, home and abroad. Congenial working conditions.—Apply 29, Chesham Place, Belgrave Square, S.W.1. Tel. Belgravia 3361. 4032

WEST END Architects require **ASSISTANT** for preparation of working drawings. Some office experience essential, together with a sound knowledge of building construction. State salary required.—Box 4049.

F. W. WOOLWORTH & CO. LTD. Architect's Department, Kensington District Office. Applications are invited for the following appointment:

ARCHITECTURAL ASSISTANT of Intermediate R.I.B.A. standard, capable of carrying out surveys, preparing sketch schemes, working drawings and details.
The appointment is permanent and pensionable. 5-day week. Dining room facilities. Application stating age, experience, qualifications and salary to District Architect, **F. W. Woolworth & Co., Ltd., 26/40, Kensington High Street, London, W.8.** 4272

ARCHITECTURAL ASSISTANT required with good general training and experience. Interesting work including schools, light industrial work, and housing. **R.I.A.S. Pension Scheme.** Apply with full particulars and salary required to **Fairbrother, Hall & Hedges, A/R.I.B.A., 27, Rutland Square, Edinburgh, 1. Fountainbridge: 1251/2.** 4256

ARCHITECTURAL ASSISTANTS required. State salary, age, experience, etc. **Harvey & Scott, 2, Lynedoch Place, Glasgow, C.3.** 4278

MAJOR Petroleum Company requires, for its London Office, an **ARCHITECTURAL DRAUGHTSMAN** for work on various commercial projects. Applicants should be quick and accurate draughtsmen and should have a sound knowledge of building construction. Salary according to experience. Position will be permanent and pensionable. Excellent working conditions, staff restaurant, sports club, etc. Apply in writing giving full details of age, qualifications and experience to Box 4255. Replies can only be sent to those selected for interview.

ARCHITECTURAL ASSISTANT required: qualified or Intermediate stage. Must have good experience, and considerable capacity for work.—Write, stating salary required, to **David Carr & Stuart Matthew, 14, Lynedoch Place, Edinburgh.** 4343

OLIVER LAW & PARTNERS (Chartered Architects), 36, Ebury Street, Westminster, require two or three additional **ARCHITECTURAL ASSISTANTS (Draughtsmen)**. Architectural School or Office experience essential. Salaries £600 to £800 per annum, according to experience. Box 4253.

ARCHITECTURAL ASSISTANT, Intermediate standard, required immediately for busy general practice. Write stating age, experience and salary required to **Deacon & Laing, 9, St. Paul's Square, Bedford.** 4221

ARCHITECTURAL ASSISTANT required in New Year, in small office, for work in Metropolitan Essex. Opportunity for wide experience with varied types of building. 5-day week. Salary by arrangement.—**Tingey Associates, 29a, Longbridge Road, Barking, Essex. Rippleway 1513.** 4352

RAMSEY, MURRAY, WHITE & WARD require an **ASSISTANT ARCHITECT**, with minimum two years' experience after qualifying.—Apply 32, Wigmore Street, London, W.1. 4356

PATRICK GWYNNE requires an **ASSISTANT** to work with him personally at his home near Esher, on detailing of new houses, interiors and furniture. Previous office experience essential. The Homewood, Esher, Surrey. Esher 3310. 4277

SOUTH-WEST Office requires **ARCHITECTURAL ASSISTANT**, Junior/Intermediate grade. Progressive position; medium size, varied practice, with scope for initiative and taking of responsibility; pleasant working conditions; small flat available; car allowance; pension scheme. Salary up to £600 p.a., according to experience.—Apply Box 4339.

W. H. SMITH & SON require **ASSISTANT ARCHITECTS** and also **JUNIOR ASSISTANTS** in the Drawing Office of their Estate Department. Assistant Architects should be qualified, and preference will be given to those applicants with knowledge of shop fitting work, although not essential. Juniors should be up to Intermediate standard. Positions will be progressive and work is interesting and varied. Salary paid commensurate to age, experience, and qualifications in both cases. 5-day week. Superannuation scheme.—Apply to Chief Architect, **W. H. Smith & Son, Ltd., Strand House, W.C.2.** 4348

ARCHITECTURAL ASSISTANTS required. Intermediate R.I.B.A. standard. Salaries according to ability. Superannuation scheme in operation.—Box 4349.

CUMBERNAULD NEW TOWN

THE FIRST OF THE MARK II NEW TOWNS

★ The New Town, to be built on a hilly site between Glasgow and Stirling, will provide accommodation for 50,000 people. Housing densities will be considerably higher than in the other New Towns.

The Chief Architect and Planning Officer will be responsible for the preparation of the Master Plan and for building projects carried out by the Development Corporation.

The Department will be organised on a group basis, with full scope for staff to make essential contributions to the creation of an urban setting.

Applications are now invited for the first posts as listed. Salary scales are those of the Whitley Council for New Towns Staff, but appointments may be made above the minimum of the scale. The Corporation are aware of the difficulties of the housing situation and, where necessary, every effort will be made to provide accommodation as soon as possible.

Write to **Hugh Wilson, O.B.E., A.R.I.B.A., Dist.T.P., A.M.T.P.I., Chief Architect and Planning Officer, Cumbernauld House, Cumbernauld, Dunbartonshire**, for application form (quoting reference number of post) to be returned not later than 28th November, 1956.

● PLANNING SECTION

SENIOR PLANNING OFFICER. (Ref. P.1)
Scale £1,295—£1,515.

To lead. A.R.I.B.A., A.M.T.P.I. required.

ASSISTANT PLANNING OFFICERS, GRADE B. (Ref. P.2)

Scale £880—£1,080. A.R.I.B.A., A.M.T.P.I. required.

ASSISTANT PLANNING OFFICERS, GRADE C. (Ref. P.3)

Scale £710—£885. A.R.I.B.A. required.

SENIOR LANDSCAPE ARCHITECT. (Ref. P.4)

Scale £880—£1,080. To be responsible for landscape design under the general guidance of the Landscape Consultant. A.I.L.A. required.

ASSISTANT LANDSCAPE ARCHITECT. (Ref. P.5)

Scale £640—£765.

MODEL MAKER. (Ref. P.6)

Scale £640—£765. To take charge of Modelling Section.

● ARCHITECTURAL SECTION

GROUP ARCHITECT. (Ref. A.1)
Scale £1,185—£1,405. To be responsible for leading a group. A.R.I.B.A. required.

ASSISTANT ARCHITECTS, GRADE B. (Ref. A.2)

Scale £795—£1,080. To take charge of a project to completion. A.R.I.B.A. required.

ASSISTANT ARCHITECTS, GRADE C. (Ref. A.3)

Scale £710—£885. To work on large projects in a group or have charge of a smaller project. A.R.I.B.A. required.

ARCHITECTURAL ASSISTANT, GRADE D. (Ref. A.4)

Scale £595—£765. Inter R.I.B.A. required.

● ENGINEERING SECTION

SENIOR ENGINEER. (Ref. E.1)
Scale £1,295—£1,515. To lead engineering section and to be responsible for liaison with other authorities. Also to work in planning team. A.M.I.C.E. required.

ASSISTANT ENGINEER. (Ref. E.2)
Scale £880—£1,080. A.M.I.C.E. required.

ENGINEERING ASSISTANT. (Ref. E.3)
Scale £640—£765. Parts I and II of the Associate Membership I.C.E. examination or equivalent required.

ARCHITECTURAL ASSISTANT required by Spicers, Ltd. Intermediate standard R.I.B.A. essential. A.R.I.B.A. desirable. Permanent position. Pension Scheme.—Write, stating salary required, to Personnel Adviser, 19, New Bridge Street, E.C.4. 4336

EXPERIENCED ARCHITECTURAL ASSISTANT required for varied practice.—Write or telephone for appointment to Gerald Shenstone & Partners, 34, Bloomsbury Way, W.C.1. Telephone Chancery 3444. 4302

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 Architect. Accommodation is available in Kensington if successful candidate is a woman. 4086

LOUIS DE SOISSONS, Peacock, Hodges & Robertson, have vacancies in their London and Welwyn Garden City offices for **SENIOR AND JUNIOR ARCHITECTURAL** staff. A large amount of varied interesting work on hand.—Write, stating age, salary and experience, to Louis de Soissons, Peacock, Hodges & Robertson, 3, Park Square Mews, Upper Harley Street, London, N.W.1. 4296

ARCHITECT'S EXPERIENCED ASSISTANT required in Brewery Architect's Office, Newcastle upon Tyne. Superannuation scheme operative after probationary period. State age, experience, salary expected and full details to Box 4424. 4296

ARCHITECTURAL ASSISTANTS with imagination and initiative, required by Brighton office to London practice. Applicants should have progressive ideas and at least two years' office experience after completion of training. Congenial working conditions; 5-day week; staff pension scheme. Salary by arrangement.—Apply Box 4319. 4296

YOUNG, Intermediate standard, **ARCHITECTURAL DRAUGHTSMEN**, with contemporary outlook, required immediately for Surveys, Working Drawings and Details. Good salary and prospects offered.—Dawe, Carter & Partners, Clarendon Road, Watford. WAT. 7296. 4300

ARCHITECTS require **ASSISTANT**; passed R.I.B.A. Intermediate. Large scale commercial work. Good salary to keen assistant.—Watson, Johnson & Stokes, 5, Victoria Square, Birmingham, 2. 4318

QUALIFIED ARCHITECT for Design in London office on interesting West African projects. Prospects of overseas tours. Salary by arrangement.—Apply Box 4314. 4318

TREHEARNE & NORMAN, PRESTON & PARTNERS have vacancies for **SENIOR AND JUNIOR ASSISTANTS**. Salaries according to experience and qualifications.—Apply: 83, Kingsway, W.C.2 (HOL. 4071). 3028

ENTHUSIASTIC ASSISTANT wanted for small modern office.—Write or 'phone N. H. Godsmark, Chartered Architect, 37A, Tubwell Row, Darlington. Tel. Darlington 4932. 4327

ARCHITECTURAL ASSISTANT, Intermediate standard, required for West End Architects' office. 5-day week. Luncheon vouchers. Salary by arrangement.—Scherrer & Hicks, 19, Cavendish Square, W.1. 4307

EXPANDING Architectural practice on South Coast requires **ARCHITECTS** for work on large projects.—Apply, giving particulars and salary required, to Box 4328. 4328

SENIOR EXPERIENCED ASSISTANT required. Interesting work with opportunity for individual responsibility. Apply in writing, stating age, experience and salary required to Devereux and Davies, 3, Gower Street, London, W.C.1. 4427

W. H. WATKINS, GRAY & PARTNERS require **ASSISTANTS** for interesting hospital work, pension scheme in operation. Write or phone, 57, Catherine Place, S.W.1. Victoria 7761. 4399

FREDERICK GIBBERD requires **ARCHITECTURAL ASSISTANTS** with office experience for interesting work. Salary £600-£750 according to experience. Apply, giving full particulars, to 8, Percy Street, London, W.1. 4420

INTER. R.I.B.A. standard ASSISTANT required with office experience for varied practice in Gray's Inn. Chance to see job through from start to finish.—William G. Ingram, Son & Archer. Telephone Chancery 8036. 4290

MESSRS. EASTON & ROBERTSON require **ASSISTANTS** in Junior and Intermediate grades.—Apply 53, Bedford Square, W.C.1. 4153

JOHN LAING AND SON LIMITED INVITE applications for the following grades of **ARCHITECTURAL STAFF** for vacancies in the Architects Departments (Chief Architect: Sydney Greenwood, A.R.I.B.A.).

DEVELOPMENT ARCHITECTS & ASSISTANTS for the study and development of new forms of construction at the Research and Development Centre, Boreham Wood, Herts. All grades are required including qualified men and those seeking qualifications.

The following vacancies exist in the Architects Department at Head Office, Mill Hill, N.W.7:—

ARCHITECTURAL ASSISTANTS of Final or Intermediate R.I.B.A. standard, and some experience in one or more of the following:—office and industrial schemes, multi-storey flats and maisonettes, private and municipal housing.

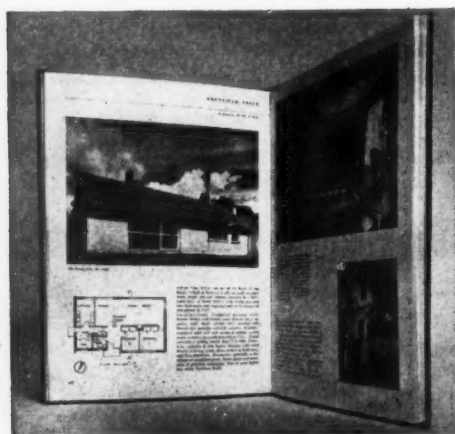
JUNIOR ARCHITECTURAL ASSISTANTS who are studying for a recognised qualification and requiring practical experience.

ARCHITECTURAL DRAUGHTSMEN with adequate drawing office experience.

These positions offer excellent opportunities for advancement and a wide variety of work in a busy office. Pension Scheme. Five-day week. Canteen. Sports and Social Club facilities. Applications should be made in writing stating age, qualifications and experience to:—Personnel Manager (D.A.I.) John Laing and Son, Ltd., Page Street, London, N.W.7. 4421

ARCHITECTURAL ASSISTANT required, age 22-26 years, for London office. Should have completed National Service and be R.I.B.A. Probationer working for Intermediate examination, with experience in an Architect's office. Commencing salary £468-£558 according to age. Good prospects. Apply Box 4430. 4421

ARCHITECT required in Walvis Bay, South West Africa. Write for details quoting OSS 83/3 to O.T.S., 5, Welton Crescent, Harrow, Middlesex. 4380

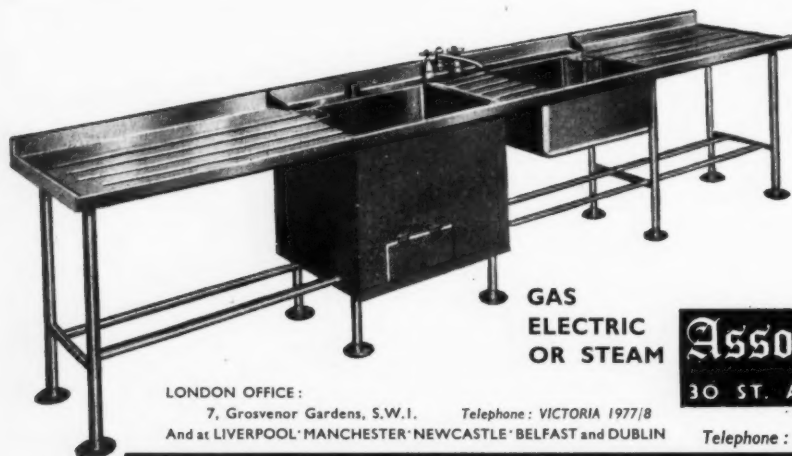


50 modern bungalows

EDITED BY FELIX WALTER, F.R.I.B.A.

THIS BOOK ILLUSTRATES AND DESCRIBES in detail a selection of examples of the most successful and interesting recently-built single-storey houses, all of them examples which show the latest developments in small house planning and design. It is edited by a practising architect with considerable experience of small house design. In his introduction and descriptive notes he pays special attention to new heating methods and to the latest ideas in planning, kitchen arrangements and so on which these facilitate. Costs are stated for each house illustrated. Size 10 ins. by 7½ ins. 112 pages, over 200 illustrations in halftone and line. Price 18s. 6d. net postage 1s.

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INTERMEDIATE STANDARD ASSISTANT required urgently for small City practice. Temporary or part-time considered. Ring CENTRAL 8464. 4419

SENIOR ARCHITECTURAL ASSISTANTS required for work in N.W. England, salary £1,000 p.a. Apply Box 4379. 4419

SENIOR ASSISTANT wanted in busy office in Birmingham. Salary £750-£950 according to experience. Box 4382. 4419

ASSISTANT required. Salary £800-£900 per annum. Write stating qualifications and experience to Richard Brown, Architects, 123, Victoria Road, Darlington. 4384

ARCHITECT'S ASSISTANT required in West Riding private practice. Intermediate standard. Write C. F. L. Horsfall & Son, Lord Street Chambers, Halifax, Yorkshire, giving details of experience. Salary to be agreed on basis of ability. 4385

ARCHITECT. Young qualified Architect required by a large Iron and Steel Works in the Midlands for work in connection with new buildings and extensions. Housing prospects favourable. Applicants should give details of experience and salary required. Box 4387. 4419

ARCHITECTURAL ASSISTANT required for interesting work in the City and Provinces. Write giving experience and salary required to Westmore & Partners, 121, Cheapside, E.C.2. 4389. 4419

EXPERIENCED ARCHITECTURAL ASSISTANT. TANTS required for varied contemporary work. Sound knowledge of construction essential, able to take responsibility. 5-day week. Apply, giving details of age, experience, salary required and when available to Edward D. Mills & Partners, 15, Carlisle Street, Soho Square, W.1. 4390. 4421

SHOPFITTING DRAUGHTSMAN. Selfridges Limited have a vacancy for a senior shopfitting draughtsman in their architect's office. The work is varied and interesting. Permanent pensionable position for man under forty-five years of age. Staff restaurant. Five-day week. Apply in the first instance in writing stating age, experience and salary required to the Staff Manager, 403, Oxford Street, W.1. 4392. 4421

SOUTHAMPTON. ARCHITECTURAL ASSISTANT required in busy office for work on a varied programme of commercial and industrial building. Permanent and progressive post for man with initiative. Applications giving full particulars and salary required to W. H. Saunders & Son, 1, Carlton Crescent, Southampton. 4377. 4421

ARCHITECT'S ASSISTANTS required, London. Salaries £500-£750. Box 4401. 4421

RILEY & GLANFIELD require male ASSISTANT, maximum salary £650. Work: church, industrial, housing and public house. Telephone CHA 7328. 4398

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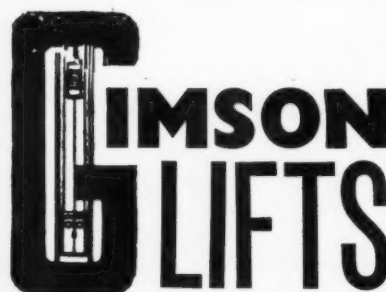
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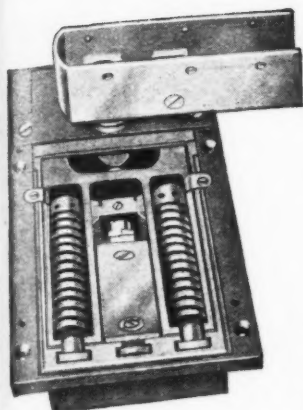
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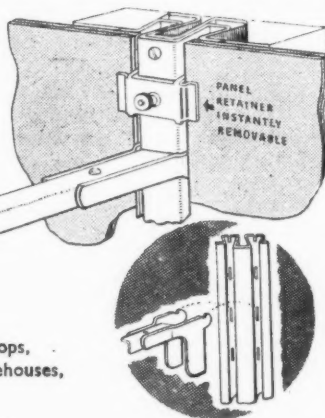
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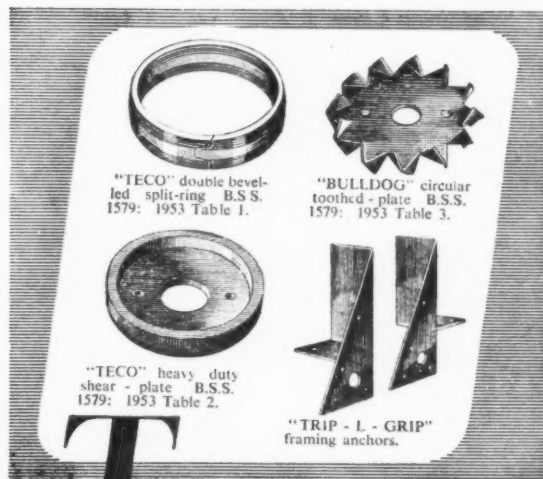
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