

The Architects' JOURNAL for August 20, 1959

# THE ARCHITECTS' JOURNAL



## standard contents

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

## NEWS and COMMENT

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## CURRENT BUILDING

Major Buildings described:

Details of Planning, Construction,

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Wanted and Vacant

No. 3357]

[Vol. 130

THE ARCHITECTURAL PRESS

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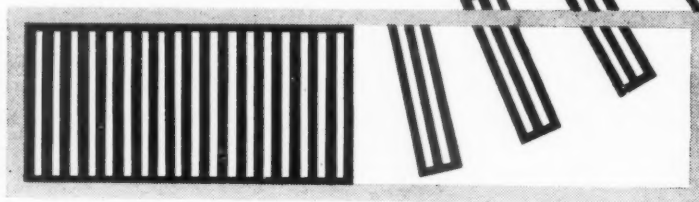
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to F one week, I to Z the next. In all cases where the town is not mentioned the word LONDON is implicit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

ILA	Institute of Landscape Architects. 1, Park Crescent, Portland Place, W.1. Museum 3473
I of Arb	Institute of Arbitrators. Hastings House, 10, Norfolk Street, Strand, W.C.2. Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1. Museum 7197
IQS	Institute of Quantity Surveyors. 98, Gloucester Place, W.1. Welbeck 1859
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3. Avenue 6851
IRA	Institute of Registered Architects. 68, Gloucester Place, W.1. Welbeck 9966
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1. Sloane 7128
JFRO	Joint Fire Research Organisation (DSIR & Fire Offices' Committee). Fire Research Station, Boreham Wood, Herts. Elstree 1341/1797
LDA	Lead Development Association. 18, Adam Street, W.C.2. Whitehall 4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1. Museum 3891
MAFF	Ministry of Agriculture, Fisheries and Food. Whitehall Place, S.W.1. Trafalgar 7711
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1. Hyde Park 7070
MOH	Ministry of Health. 23, Savile Row, W.1. Regent 8411
MOHLG	Ministry of Housing and Local Government. Whitehall, S.W.1. Whitehall 4300
MOLNS	Ministry of Labour and National Service, 8, St. James's Square, S.W.1. Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, W.C.2. Gerrard 6933
MOT	Ministry of Transport, Berkeley Square House, Berkeley Square, W.1. Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1. Reliance 7611
NAMMC	Natural Asphalte Mine Owners and Manufacturers Council. 94/98, Petty France, S.W.1. Abbey 1010
NAS	National Association of Shopfitters. 2 Caxton 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 Asphalte Industry. 21, John Adam Street, Adelphi, W.C.2. Trafalgar 3927
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1. Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives. Federal house, Cedars Road, Clapham, S.W.4. Macaulay 4451
NFHS	National Federation of Housing Societies. 12, Suffolk St., S.W.1. Whitehall 1693
NHBRC	National House Builders Registration Council. 58, Portland Place, W.1. Langham 0064/5
NPL	National Physical Laboratory. Head Office, Teddington. Molesey 1380
NRDB	Natural Rubber Development Board. Market Buildings, Mark Lane, E.C.3. Mansion House 9383
NSAS	National Smoke Abatement Society. Palace Chambers, Bridge Street, S.W.1. Trafalgar 6838
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1. Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1. Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1. Abbey 4504
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh. Fountainbridge 7631
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1. Langham 5533
RICS	Royal Institution of Chartered Surveyors. 12, Great George Street, S.W.1. Whitehall 5322/9245
RFAC	Royal Fine 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, E.C.3. Mansion House 3921
SIA	Society of Industrial Artists. 7, Woburn Square, W.C.1. Langham 1984/5
SIA	Structural Insulation Association. 32, Queen Anne Street, W.1. Langham 7616
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1. Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2. Temple Bar 5006
TDA	Timber Development Association. 21, College Hill, E.C.4. City 4771
TPI	Town Planning Institute. 18, Ashley Place, S.W.1. Victoria 8815
TTF	Timber Trades Federation. 75, Cannon Street, E.C.4. City 5040
WDC	War Damage Commission. 6, Carlton House Terrace, S.W.1. Whitehall 4341
ZDA	Zinc Development Association. 34, Berkeley Square, W.1. Grosvenor 6636

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layer construction board  
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Roderic Hill Building,  
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Architects and Consulting Engineers: Norman & Dawbarn.  
Consultant Architect: Sir Hubert Worthington, R.A.

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bility by the fact of increased resistance to repeated cycles of freezing and thawing. That's what Febmix Admix Mortar Plasticiser does and those are the advantages obtained from its use on bricklaying work, for which purpose Febmix Admix was used on this contract.

**FOR BETTER DURABILITY—  
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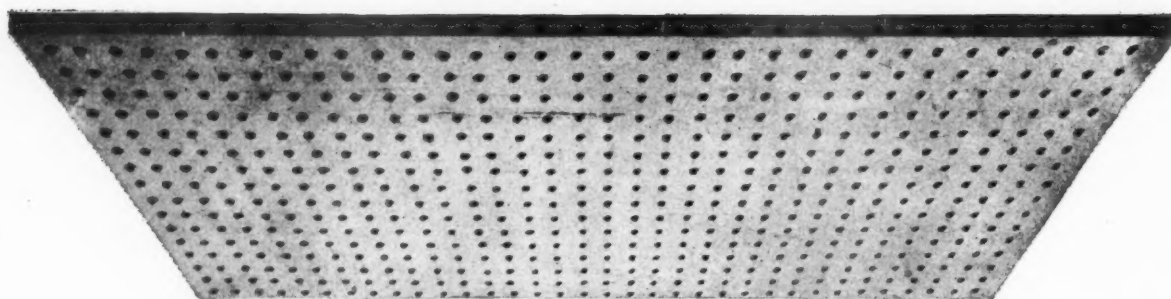
**(GREAT BRITAIN) LIMITED**

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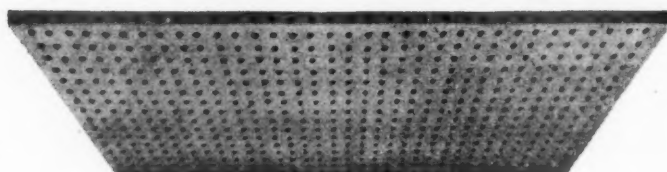
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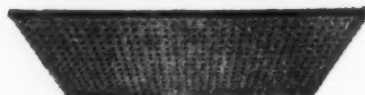
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**level**



Newalls (Reg'd Brand) PAXBOARD presents the architect with a first-class medium for large-area acoustic insulation.

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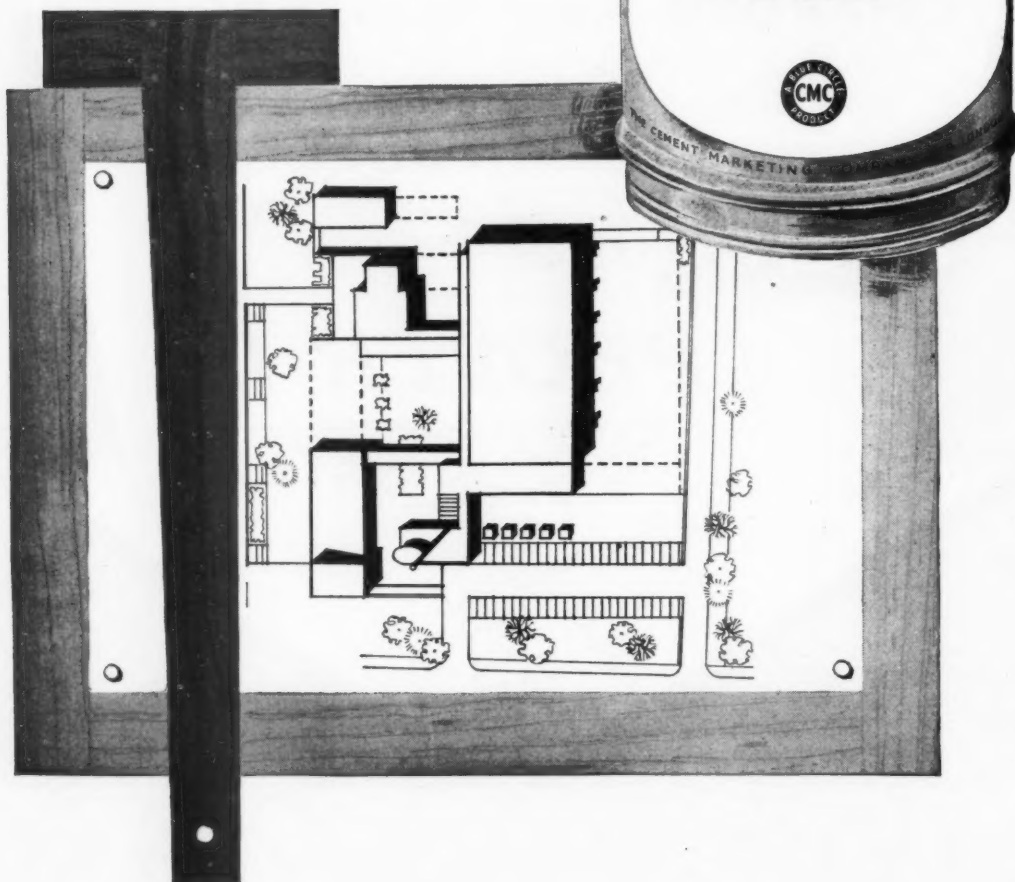
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M.W. 133

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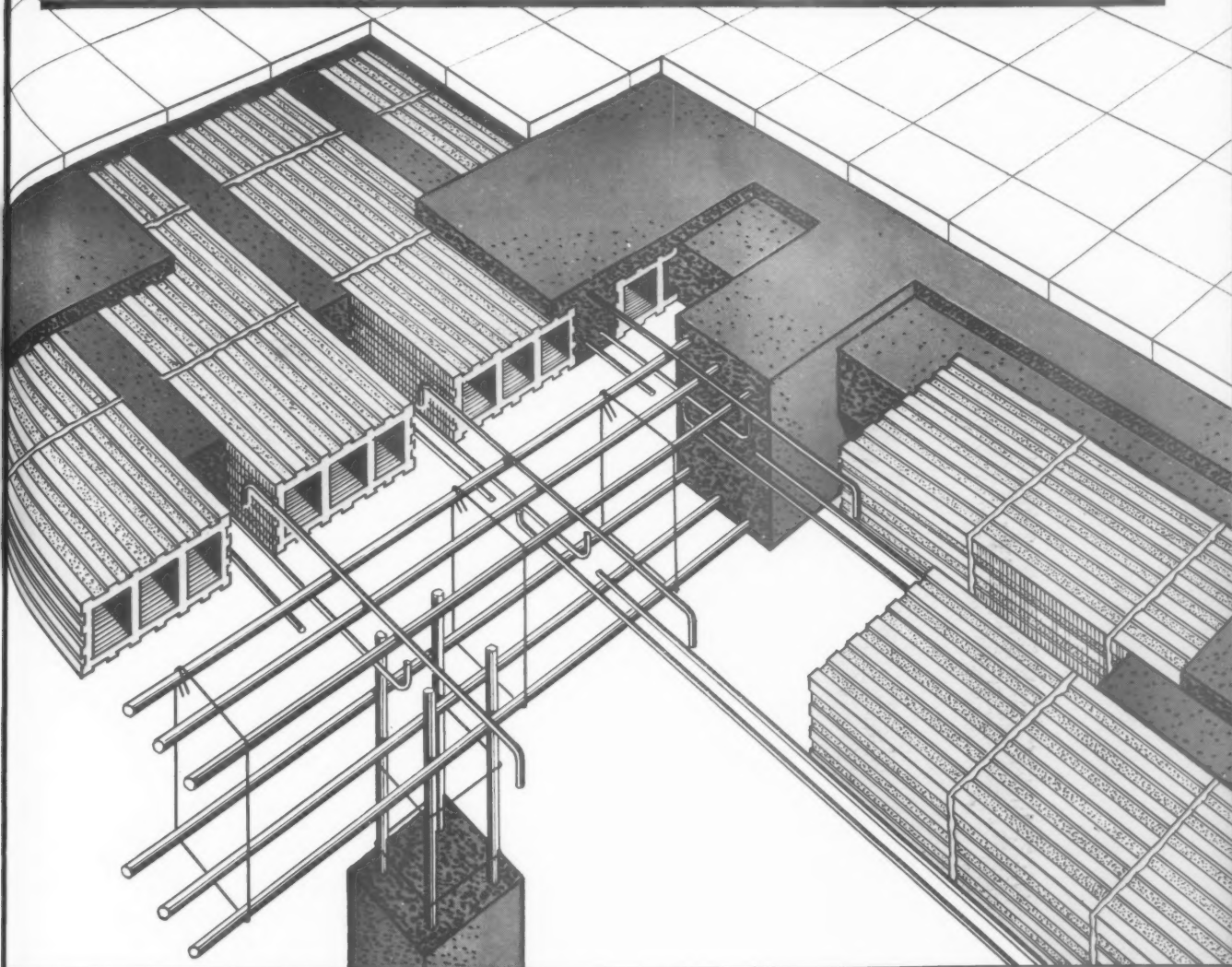
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T1598



# 'PHORPRES' HOLLOW CLAY FLOOR BLOCKS and the IN SITU HOLLOW TILE FLOOR



We wish to thank the Kline Company, Ltd., for their co-operation in compilation of this advertisement.

**EVANS**

**THE PRODUCT** The depth of a Hollow Clay Block Floor, the thickness of the topping or screed of concrete above the blocks, the width of the beams or ribs between rows of blocks and the size, the number and location of the reinforcing steel placed in the ribs, are all governed by the span of the floor and the loading it has to carry. 'Phorpres' Hollow Clay Floor Blocks are specially made for *in situ* floor construction; they are all 12" long by 12" wide, but they are available in eight different thicknesses ranging from 3" to 10" in multiples of one inch, so that any normal span and loading can be accommodated. All the blocks are grooved to give a good dovetail key, both for the ceiling plaster and for the cast *in situ* concrete.

Filler Tiles, which are also grooved, are available to provide a burnt clay soffit to the ribs, so that the floor can be given a completely all-clay soffit with its attendant advantages. These Filler Tiles (which can also be used as panel heating tiles), are made in three sizes: 12" x 3" x 1/2", 12" x 4" x 3/4", 10" x 5" x 1/2".

**METHOD OF CONSTRUCTION** To build an *in situ* Hollow Tile Floor, 'Phorpres' Floor Blocks of a suitable depth are laid end to end in rows on temporary shuttering of steel or timber. The rows of blocks are so spaced that the gaps between rows correspond to the designed width of the reinforced ribs. If an all-clay soffit is required, Filler Tiles are laid at the bottom of the rib spaces. When the reinforcing steel has been accurately placed in the designed position, good quality concrete is carefully placed around the reinforcement, in the rib space, and over the top of the blocks (to the thickness of topping

required by design), all in one operation. After the necessary time needed for the concrete to gain adequate strength, the temporary shuttering is removed, leaving an all-clay soffit ready to receive the plaster.

**THE ADVANTAGES** *Strength* Properly designed *in situ* Hollow Tile Floors possess great strength combined with light self-weight. The good bonding between the concrete and the grooved blocks ensures that the stresses from concentrated loads are well spread over the structure, and the monolithic character of the floor makes it particularly suitable where vibrations from mechanical sources are to be expected.

*Adaptability* The *in situ* Hollow Tile Floor can be designed for wide spans without intermediate supports. Moreover, bays need not necessarily be rectangular on plan and can be constructed to almost any plan shape without undue extra cost. Cross-reinforced floors, needing no secondary beams, may be built with uninterrupted soffits. The Hollow Tile Floor, with its strength and weight-saving properties, is also particularly suited to the construction of cantilevered balconies, etc.

*Heating* Panel heating, heating coils, air-conditioning ducts and mains services may be incorporated in the floor during the construction stage.

*Fire Resistance* Protection to the concrete and reinforcing steel, provided by the fired Clay Blocks and Filler Tiles, gives the *in situ* Hollow Tile Floor excellent resistance against fire.

A hollow tile floor is a quality floor



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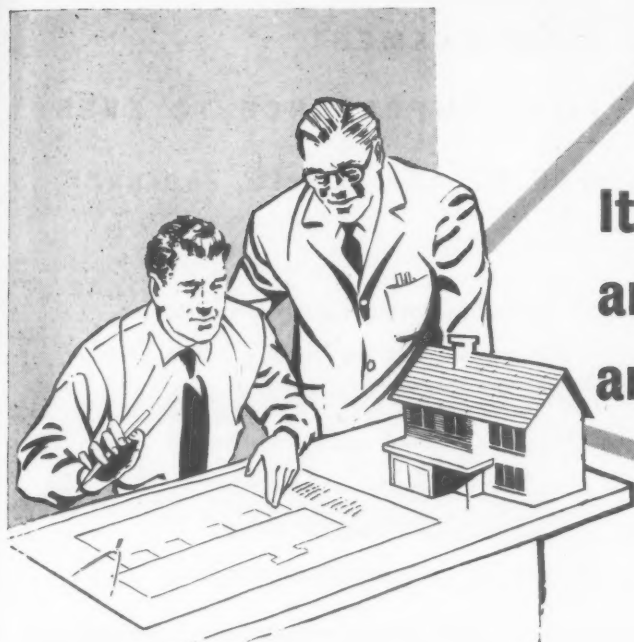
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*The connections as well as the cylinder are copper and brazed with zinc-free silver alloy brazing metal.*

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- **BOTTOM**

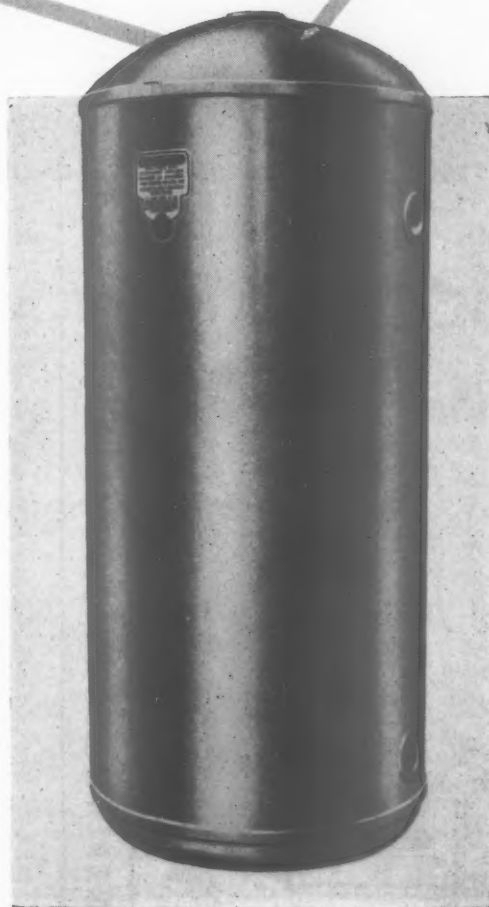
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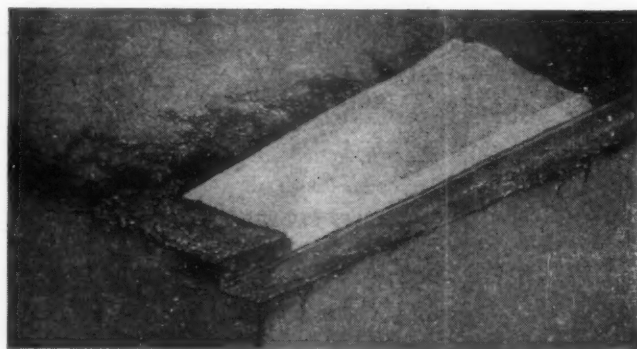
Grams: Cylinders, Stalybridge.

**Fungi-Chek**  
★ by the DENTOLITE PROCESS

**PERMANENT, NON-POISONOUS—HARMLESS, FUNGICIDAL AND BACTERICIDAL PAINTS**

## AN ANNOUNCEMENT OF VITAL IMPORTANCE TO EVERY READER OF "Architects' Journal"

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**PROOF!** Photograph of a ceiling partly painted with Fungi-Chek. Test shows heavy mould growth, but the Fungi-Chek is completely free of growth.

Fungi-Chek (Gloss, Matt & Emulsion) Paints serve two purposes:

- (1) they provide a decorative finish par excellence, with first class durability and resistance to steam, abrasion, acids and alkalis, etc.
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Gypstone Board Finishing Plaster  
Creststone Concrete Bonding Plaster  
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### ACOUSTIC PRODUCTS

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Acoustic Gyproc  
Gyproc Slotted Acoustic Tiles  
Gyptone Acoustic Tiles  
Acoustele Suspended Ceilings  
Dekoosto Acoustic Plaster

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Literature is readily available on any or all of these products.

'GYPROC' IS THE REGISTERED TRADE MARK OF GYPROC PRODUCTS LIMITED

... a fissured tile with high  
sound absorption ... so light that  
it can be adhered to any  
background ... and it won't burn

Gyptone Acoustic Tiles have a pleasant white fissured surface which can be easily decorated. Made in one standard size, 12" square, 3/8" thick, with square or bevelled edges, each tile weighs only 1 1/2 lb. and can be stuck direct to backgrounds with Gyproc Adhesive. The following figures show the high sound absorption of the tiles.

Sound Absorption Coefficients at frequencies (c.p.s.)					
125	250	500	1000	2000	4000
0.15	0.35	0.75	0.80	0.85	0.85
0.10	0.20	0.50	0.85	0.85	0.85

Gyptone Acoustic Tiles to 2" x 1" battens at 12" centres .....

Gyptone Acoustic Tiles stuck to concrete .....

For full information write for leaflet P.364.

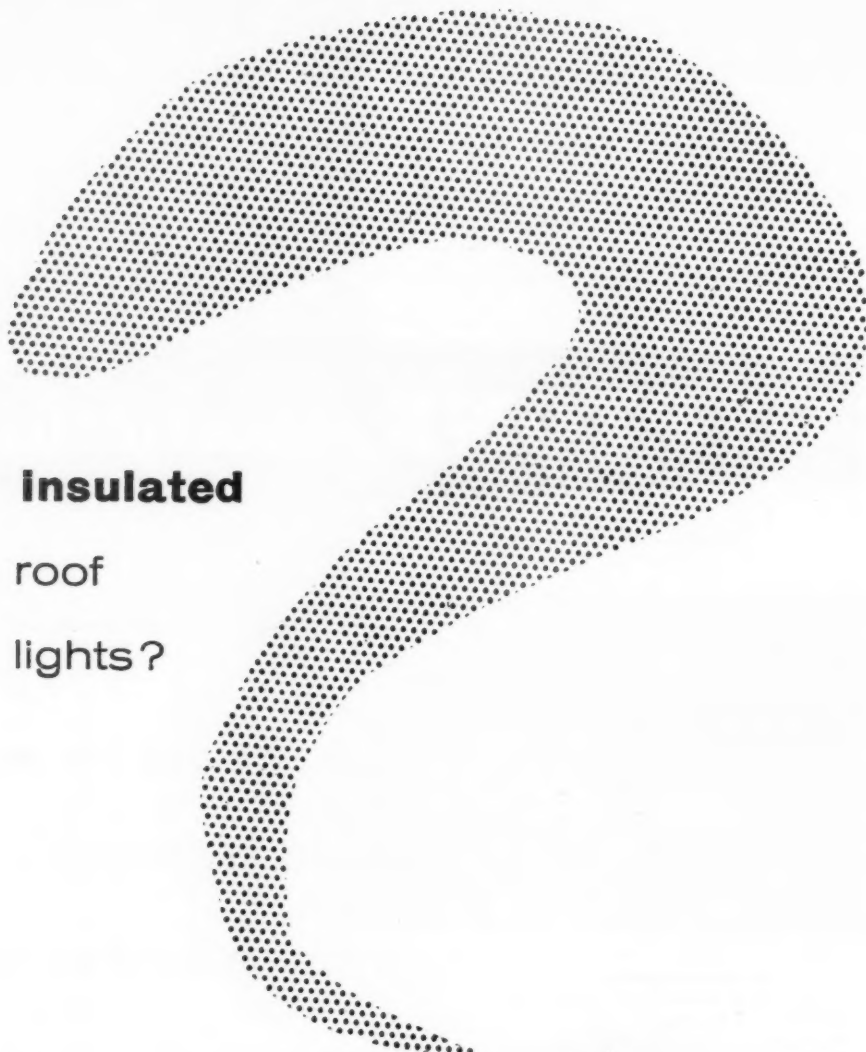
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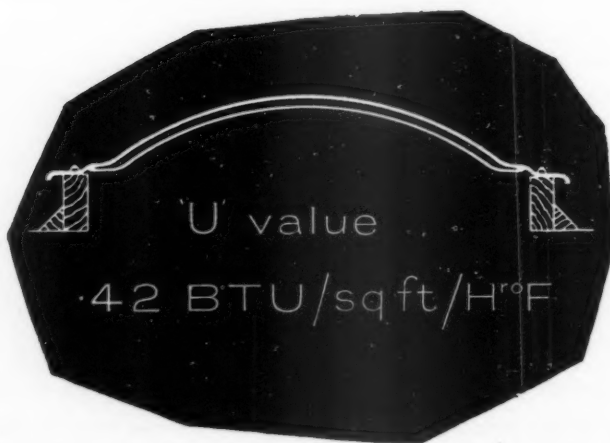
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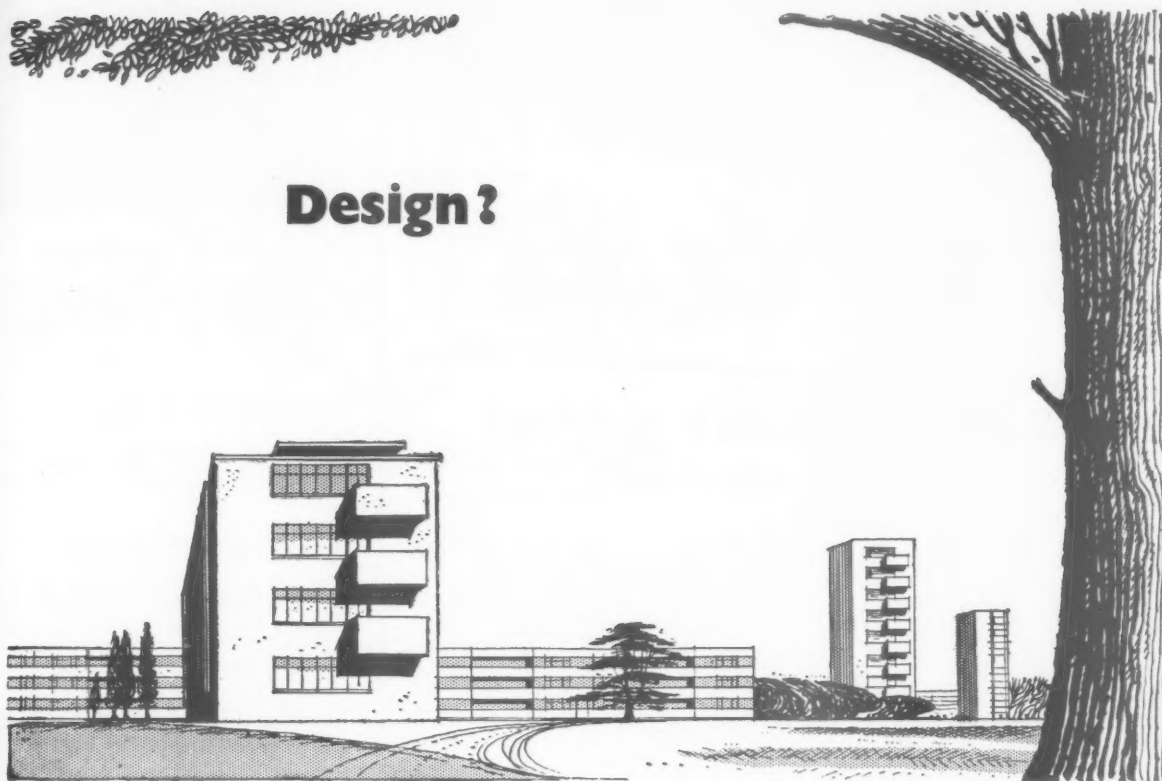
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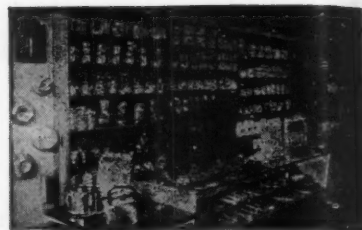
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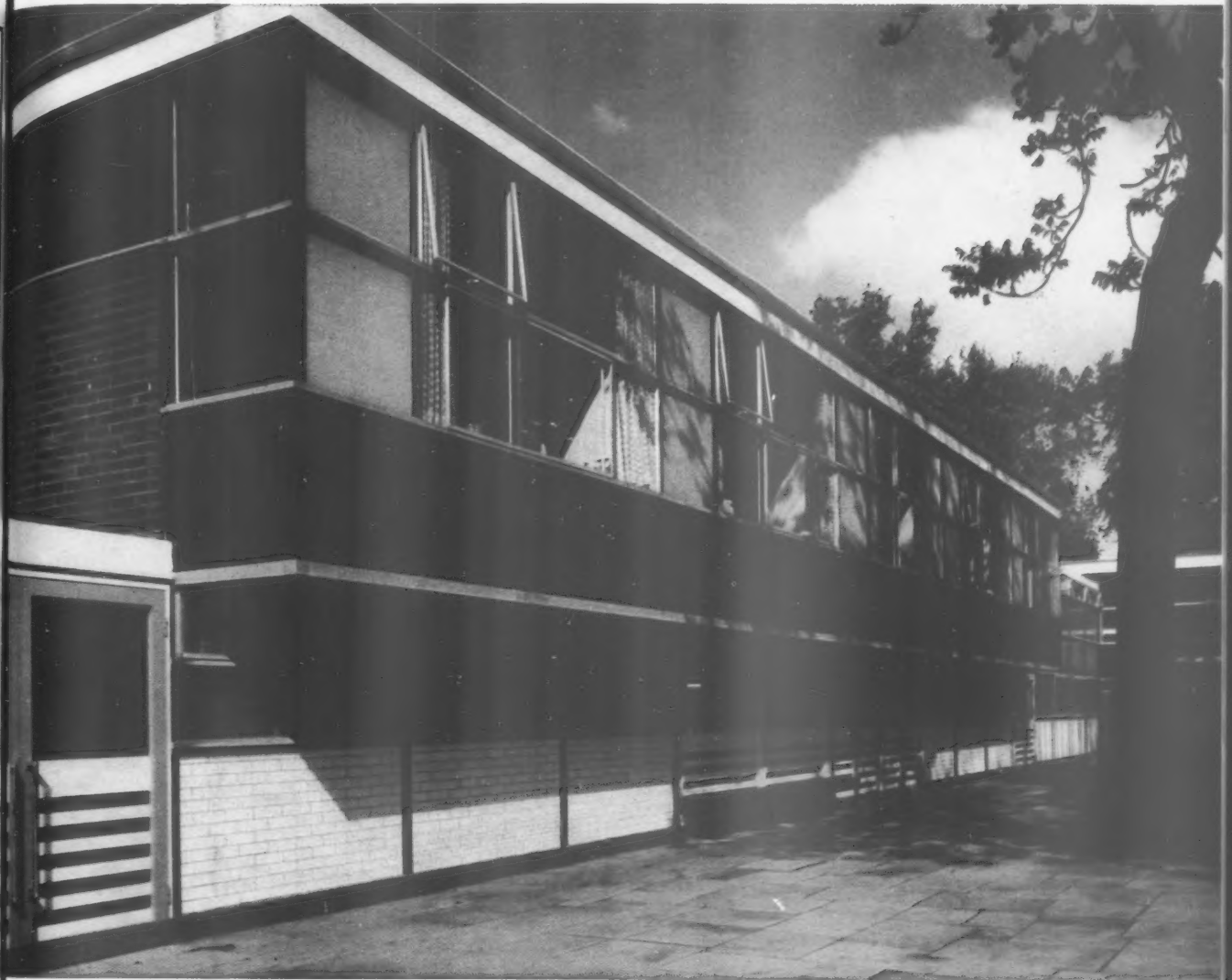


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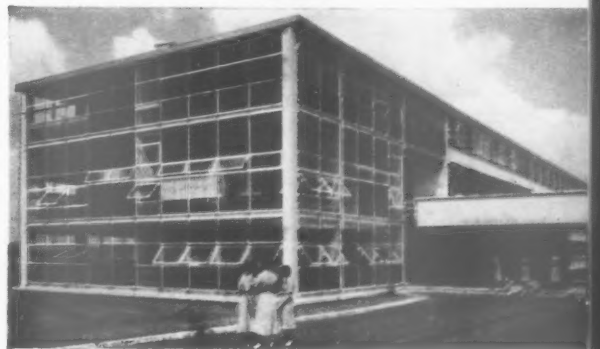


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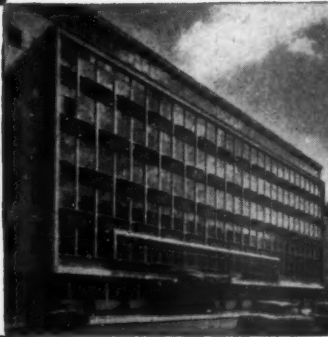
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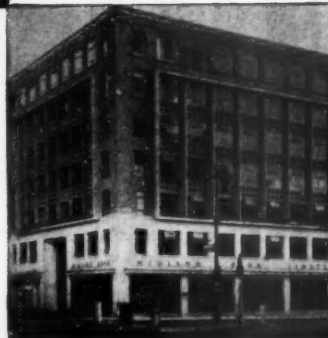
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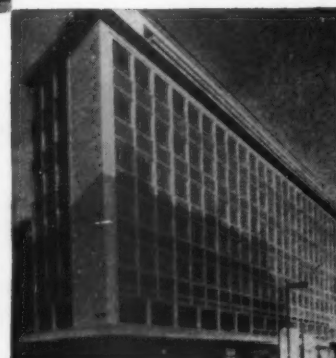
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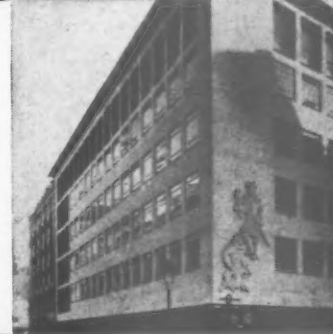
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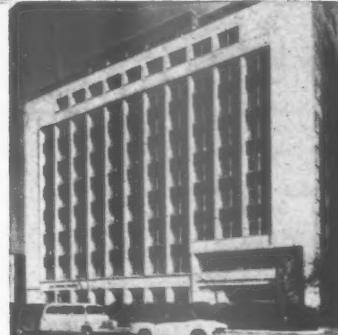
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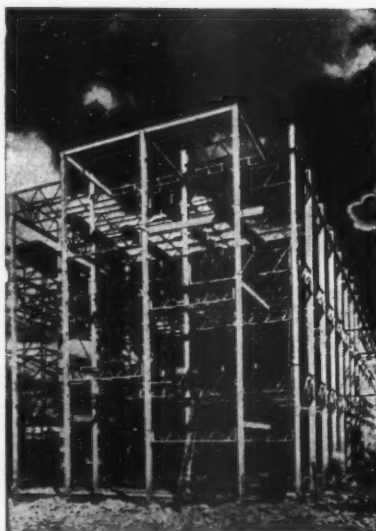


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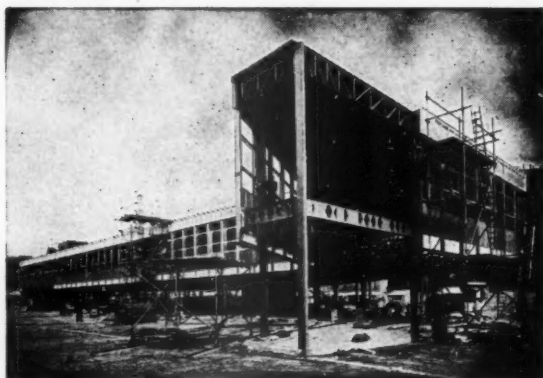


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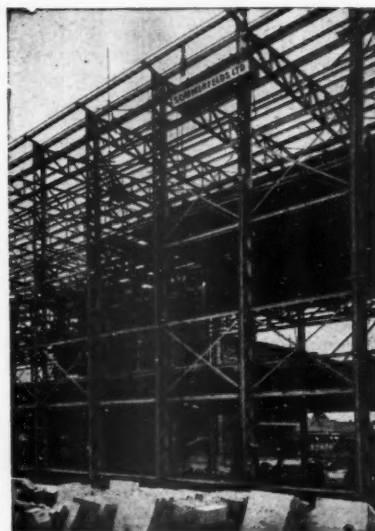
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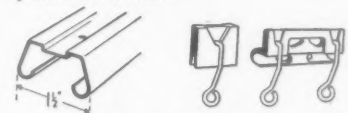
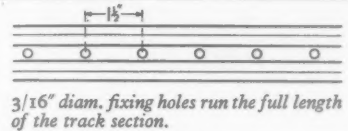
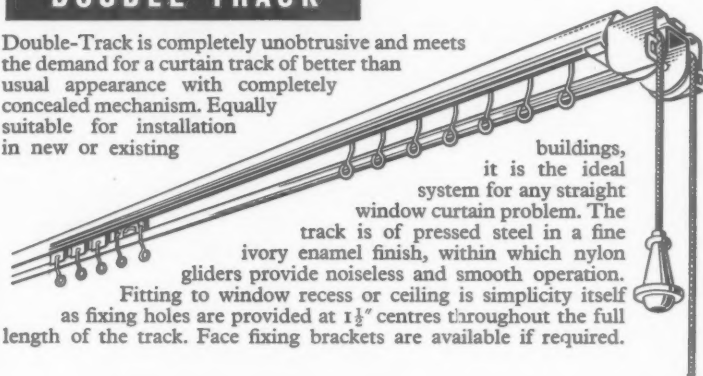
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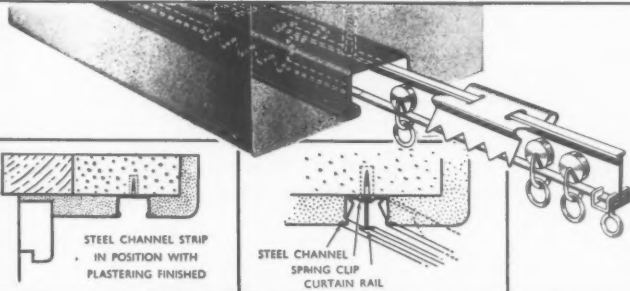
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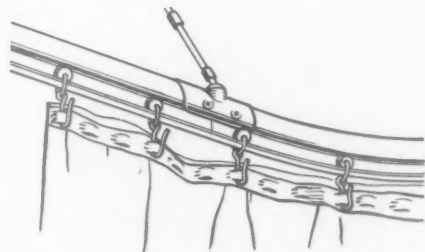


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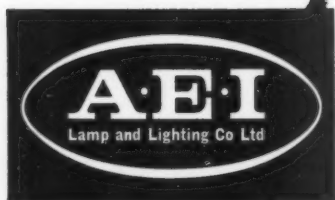
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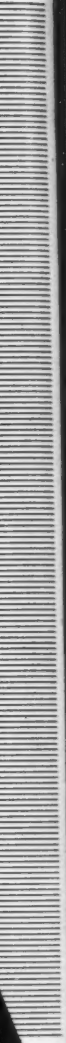
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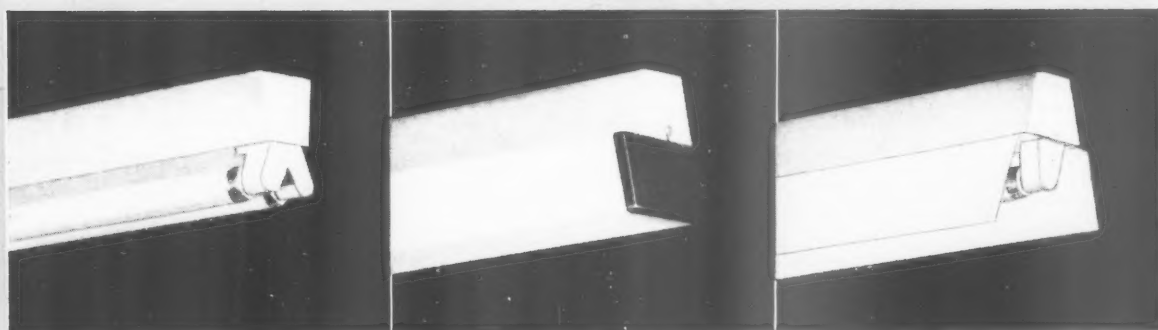


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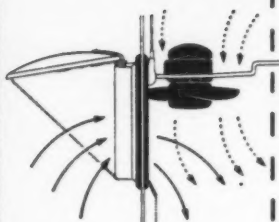


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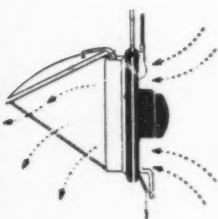
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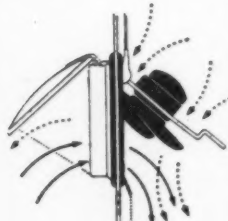
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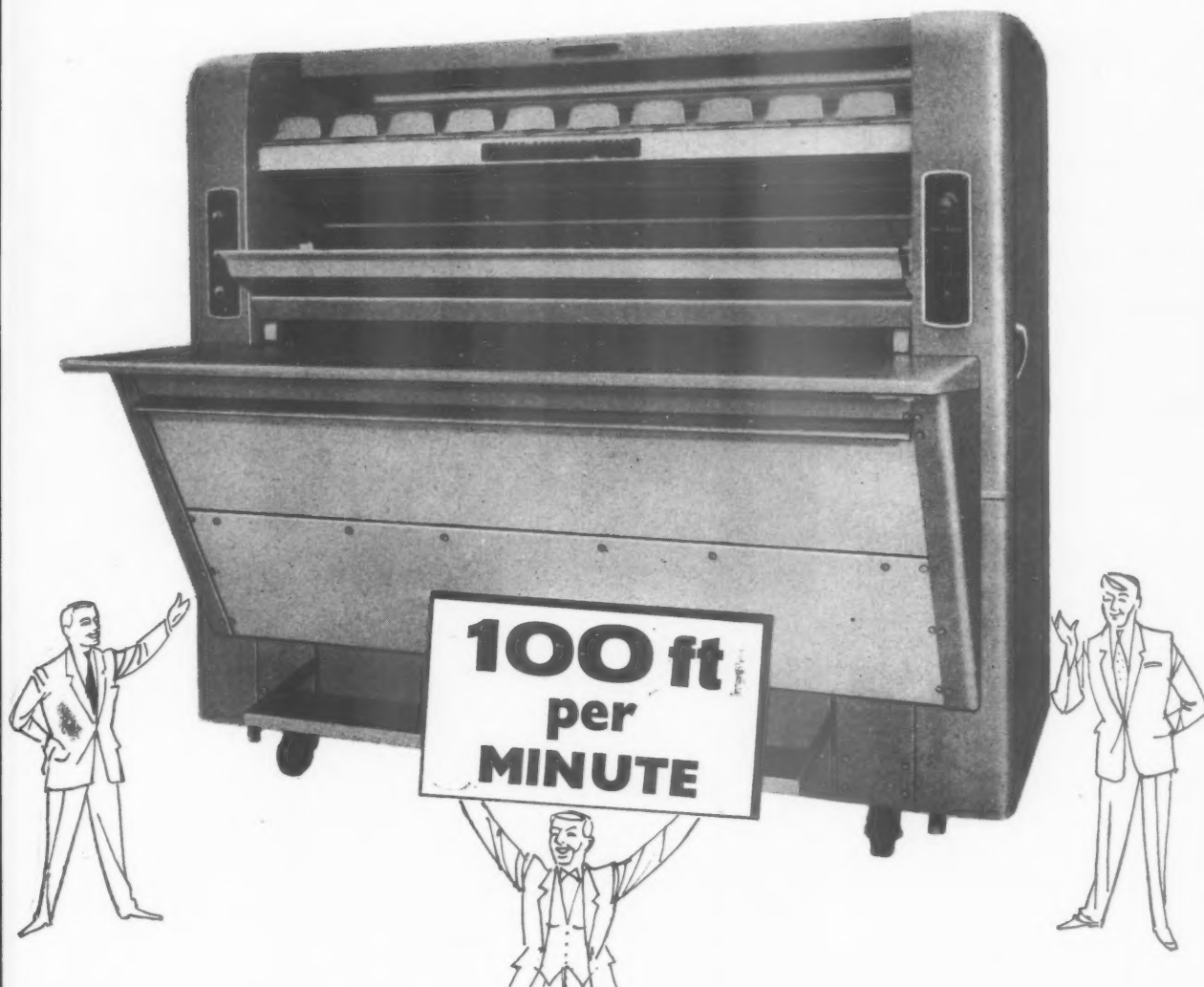
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OZALID COMPANY LIMITED  
Langston Road, Loughton, Essex.  
Telephone: Loughton 5544.

# A Flintkote Floor

REGD.

**Flintkote** Industrial flooring is:

Simple to apply

Cold laid · Tough and durable

Dustless · Non-slip · Self-healing

Resilient · Economical

Sound-deadening · Damp-proof

Heat-resistant

Hygienic and odourless

Obtainable throughout the world

Backed by world-wide service



Flintkote floor, occupying 4,000 square metres, in works of Printing Machine manufacturers in Turin, Italy (Stabilimento Officine Meccaniche Nebiolo)  
Traffic conditions are very severe and heavy loads are the rule

*Details on application to:*

**THE FLINTKOTE COMPANY LIMITED**  
**Adam House, One Fitzroy Square, London, W.1**

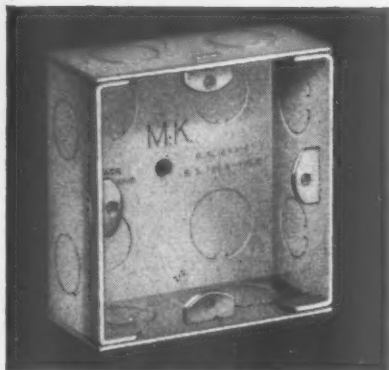
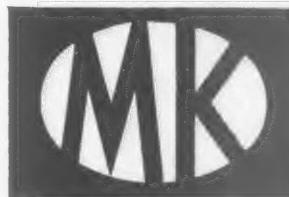
Telephone: EUSon 7224

Telegrams: Flintkote, Wesdo, London

Cables: Flintkote, London



# NEWS from



The BS 1363 box accepts a complete range of MK flush accessories.

## Standardisation to cut costs

Uniform plate dimensions and fixing centres are provided on all possible MK flush accessories enabling a complete range of ratings, types and finishes to be selected for one standard box. These accessories fit the standard box:— 2, 5, 13 and 15 amp socket-outlets, switchsocket-outlets and pilot-lamp switchsocket-outlets: fused spur-boxes with and without switches or pilot-lamps: fused connector-boxes: 5 and 15 amp switches both one and two gang patterns and of all types: 20 amp switches.



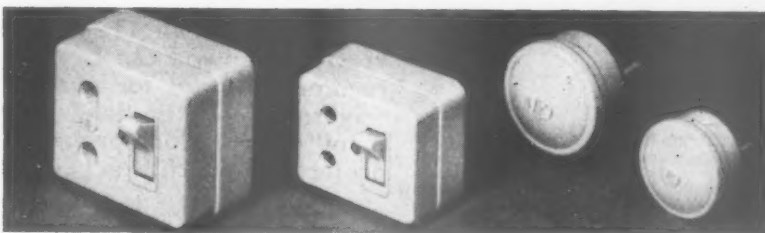
## MOULDED MOUNTING BLOCKS AND BACKPLATES

These are designed to give a neat and simple solution to the requirements of the IEE Wiring Regulations where surface mounting accessories are to be mounted on combustible materials such as soft wood, lath and plaster etc. The MK range of mounting blocks and back-plates is fully described in leaflet 251 just published.



**NOW IN IVORY**

These 2-pin surface mounting switch-socket-outlets and plugs are now available moulded in ivory as well as brown: List Nos. 302, 550, 2141 and 2143.



## ACCESSORY ADVICE

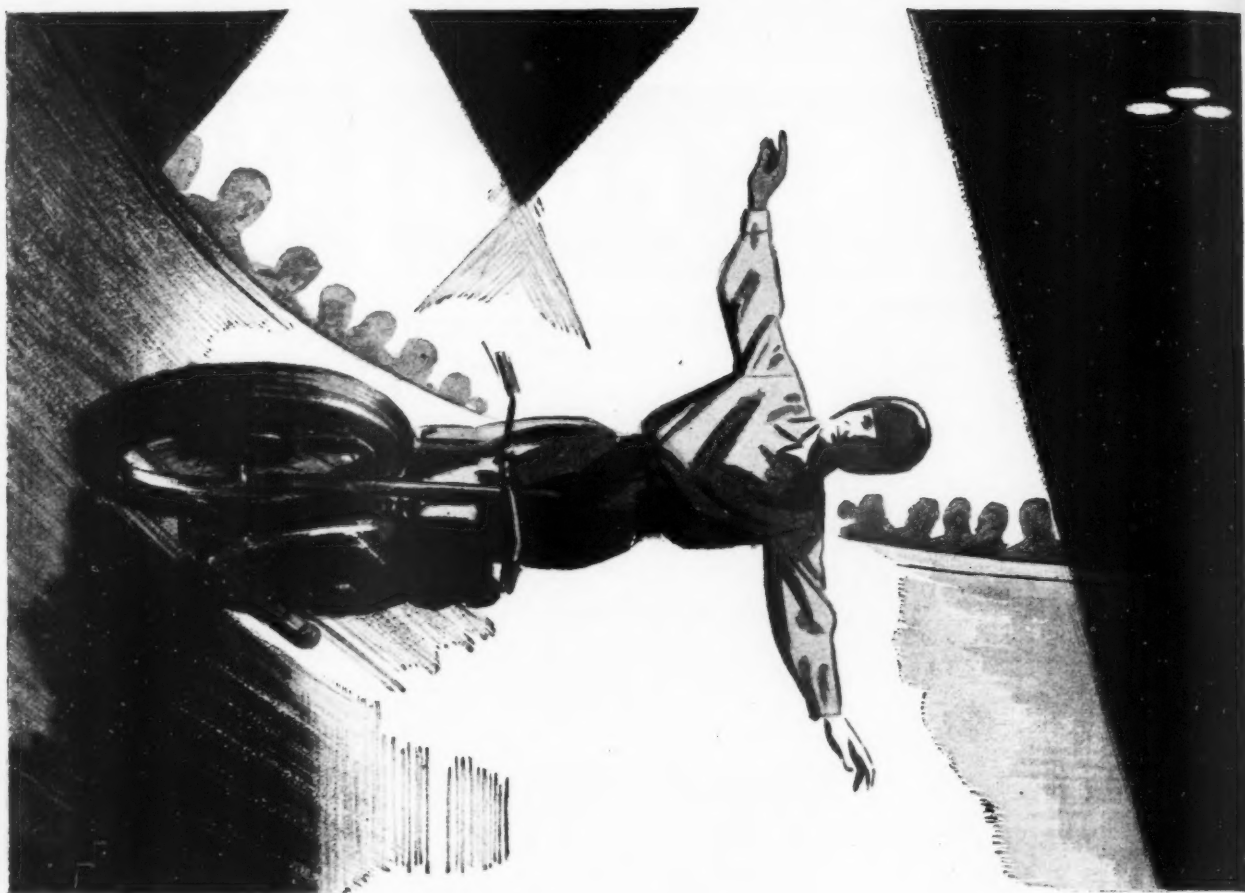
Our advice is always freely available to architects on matters connected with wiring accessories. May we arrange to include you on our mailing list for regular information on our products?



**M. K. ELECTRIC LIMITED, EDMONTON, LONDON, EDMONTON 5151**

MK 167DHB





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the basis of the artists superb performance . . . the essential when you are specifying materials or **PAINT** for that new important assignment.

If it's **PAINT**, and if it's produced by **montgomerie stobo**—then you can have all the confidence in the world in recommending it for quality, durability, colour fastness and 'rightness for the job'—nothing is left to chance in its manufacture, which probably accounts for the number of new projects on which it is being used to-day!

★ Technical Advisory Ser-  
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★ All shades to B.S.S. 2660.  
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*Also at Slough*



*Designed by James W. Leonard, F.S.I.A.*

New  
**EXECUTIVE  
DESK**  
in oak by

**ESAVIAN**

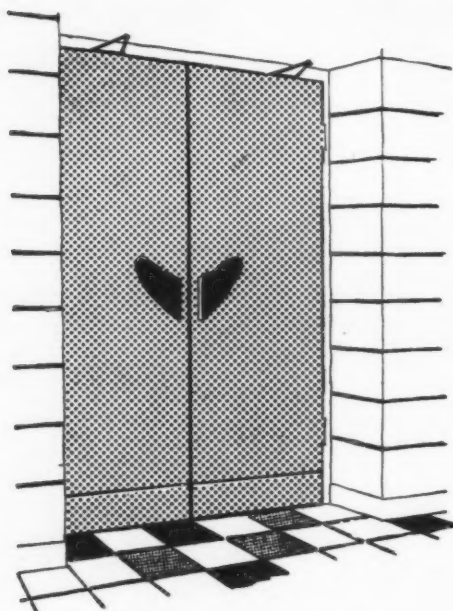
Nothing frivolous or "arty crafty" here! This handsome new desk employs rich natural oak veneers—strong and serviceable. At the same time, it gives you handsome proportions and clean lines without affectation.

A substantial desk, firmly based and soundly made. The drawers run lightly and smoothly and are sensibly arranged; three on your right (the lowest designed to take your personal filing) and four on your left. Another shallow drawer is housed above the fully-panelled knee-hole. All top drawers lock and automatic locking of all drawers can be fitted. The working top is a spacious 5' x 2' 9" with a fine-grained leathercloth panel and an oak surround. Both drawer pedestals have dictation slides and drawers are fitted with simple but strong satin-brass handles.

If you're seeking a functional desk, a desk that's built to work, see this Esavian before you decide. See it soon together with others in the oak range.

*Please write for illustrated leaflet to:*

**Esavian Limited, Esavian Works, Stevenage, Herts. Tel: Stevenage 500**  
**185 Tottenham Court Road, London, W.1. Tel: MUSEum 9772**  
**101 Wellington Street, Glasgow, C.2. Tel: Central 2369**



## Only the SLIM arms can be seen

The "No. 500" is a new door closer designed for use when the appearance of the door and surroundings are of first consideration. With nothing visible except the slim arms, which are styled to be as streamlined and unobtrusive as possible, it achieves complete concealment without loss of power or door control. The "No. 500" is suitable for internal single-action doors not exceeding 7ft. by 3ft. in size, and 70 lb. in weight.

- ★ Smooth and silky check-action.
- ★ Bounce completely eliminated.
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- ★ Stand open device put in and out of action as desired.
- ★ Body only 1 1/2 in. wide, overall length 13 in.
- ★ Opens to 90° or 180° according to fixing position.
- ★ No oil leakage.



# N°500

PATENTS PENDING

*Concealed Overhead Door Closer*

**William Newman & Sons Ltd.**

HOSPITAL STREET, BIRMINGHAM, 19.

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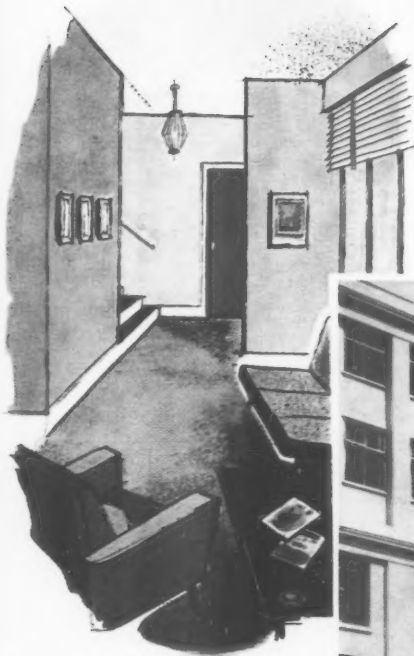


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Though surfaces vary . . .

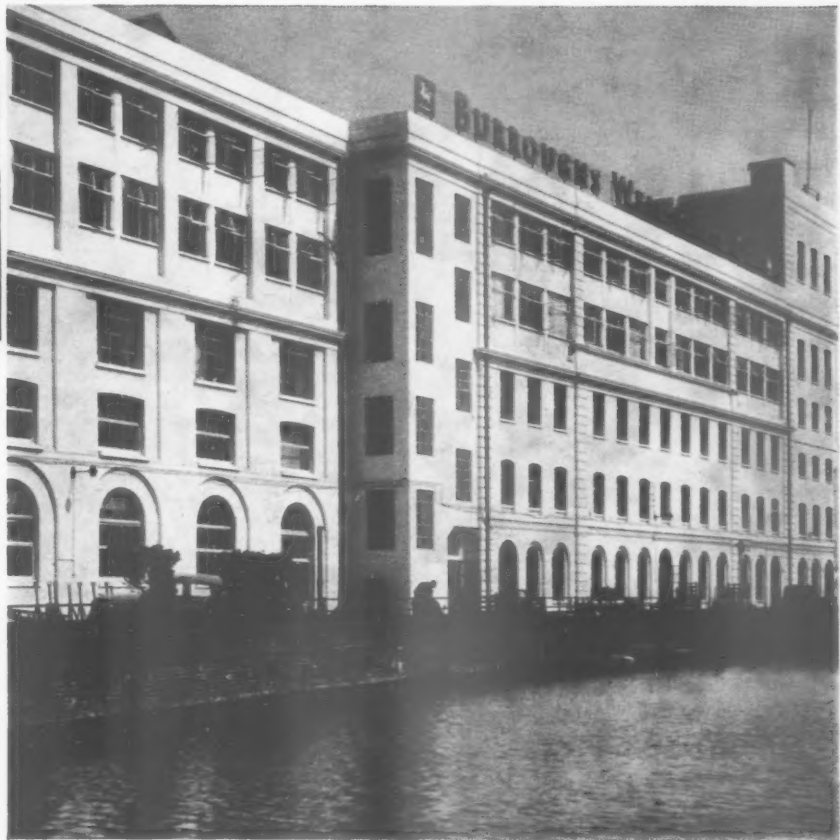
the specification

remains the same



(Artist's impression)

The "beauty" of Number Seven decorative finishes is two-fold—their lasting "eye" appeal and their unique variety of applications both interior and exterior. With the suitable primer you can now specify Number Seven Exterior Flat Finish for nearly every standard surface—wood, metal, brick, plaster, concrete—and thus eliminate estimating and ordering complications as well as time wasted in mixing and matching colours. An impressive list of recent contracts is proof of Number Seven's outstanding success in all types of contracts.



Specified by the Chief Engineer, Burroughs Wellcome & Co. Ltd. Dartford.

Contractors: L. H. Mildwater and Sons, Woolwich



## NUMBER SEVEN

### NUMBER NINE

Where a textured finish is desired, Cementone No. 9 Waterproof Stoneface Composition is exclusively prepared for brick, cement rendering, reinforced concrete, asbestos-cement, plaster, and compo-board surfaces. Alkali-resistant, No. 9 matures to a natural stone finish and is available in ten colours.

Number Seven is available in a range of fifty-four matching colours as a gloss, satin or interior and exterior flat finish. Write for colour card and standard specifications.

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Flooring design by  
"Harefield" for  
Goddard Watts  
Limited, Advertising  
Agents

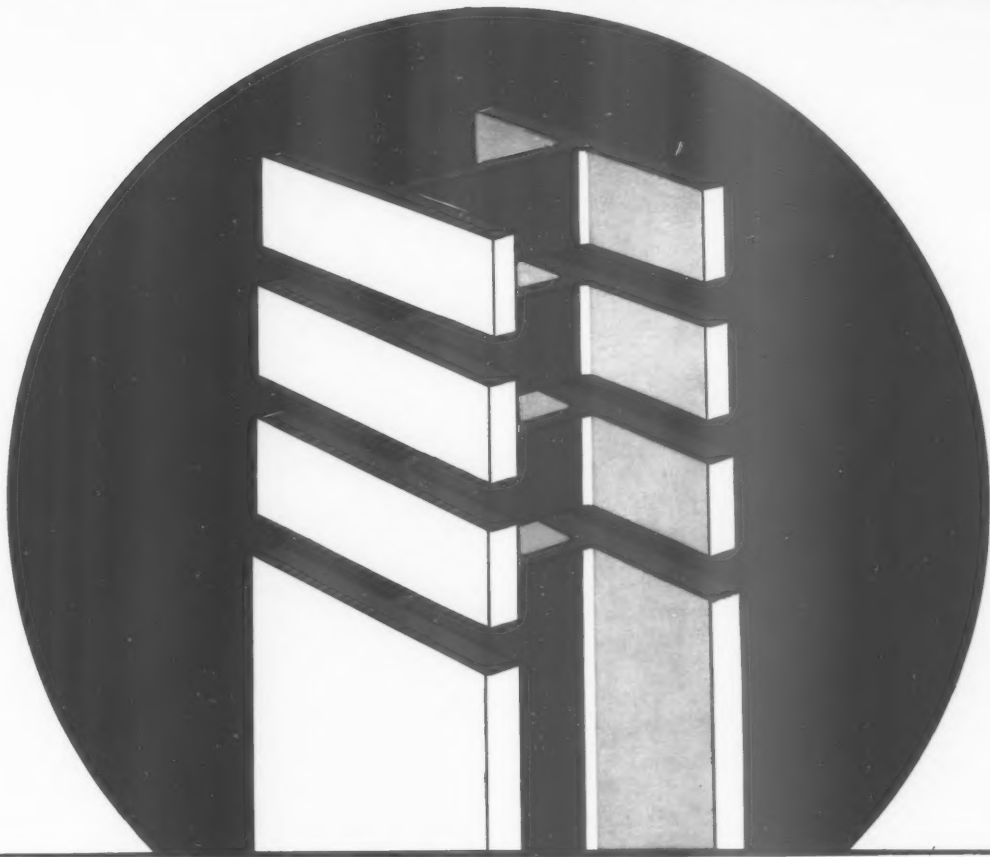
**handsome is as handsome does!**

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**RUBBER FLOORING**

There's nothing like rubber flooring — Harefield rubber flooring — for hard wear and good looks. There is an exceptional range of colours to help you with interior design, which can be made so much more inviting. "Harefield" rubber flooring not only looks attractive, but lasts a lifetime, is quiet and easy to maintain.

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## 'UNIVERSAL' COLUMNS

*their many advantages*

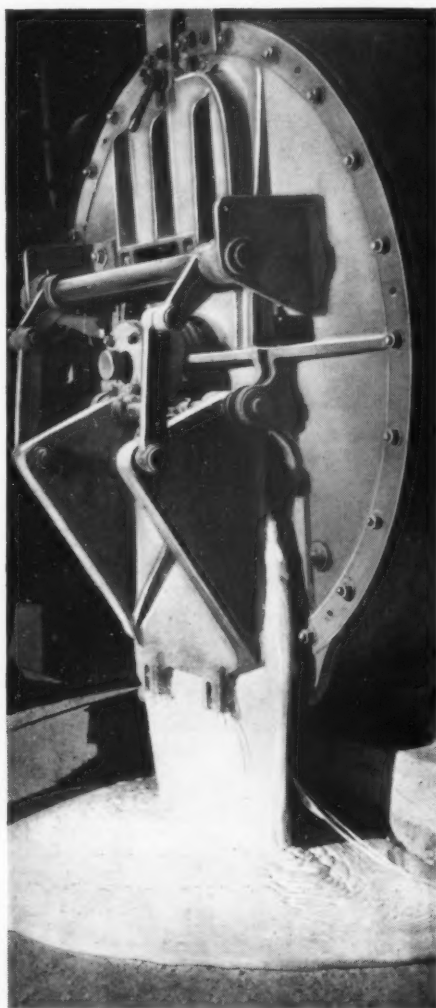
Universal columns are made in a wide range of sizes and weights, thereby greatly simplifying design and construction. The basic sections include the 14 in. and 16 in. (rolled in four weights), a column core, columns 14 in. by 14½ in. (4 weights), 12 in. by 12 in. (7 weights), 10 in. by 10 in. (5 weights), 8 in. by 8 in. (4 weights) and 6 in. by 6 in. (3 weights). Each group of different weights of the same basic section is rolled from the same set of rolls. Generally, in a tall column the lower length will be of the heaviest weight, with intermediate and top lengths of successively lighter weights, but all of the same basic size. This enables all lengths of a column to be obtained from the same rolling and eliminates delays; in most cases the need for plating is also eliminated.

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EARLY DELIVERY OF THE FULL RANGE OF SECTIONS

# DORMAN LONG



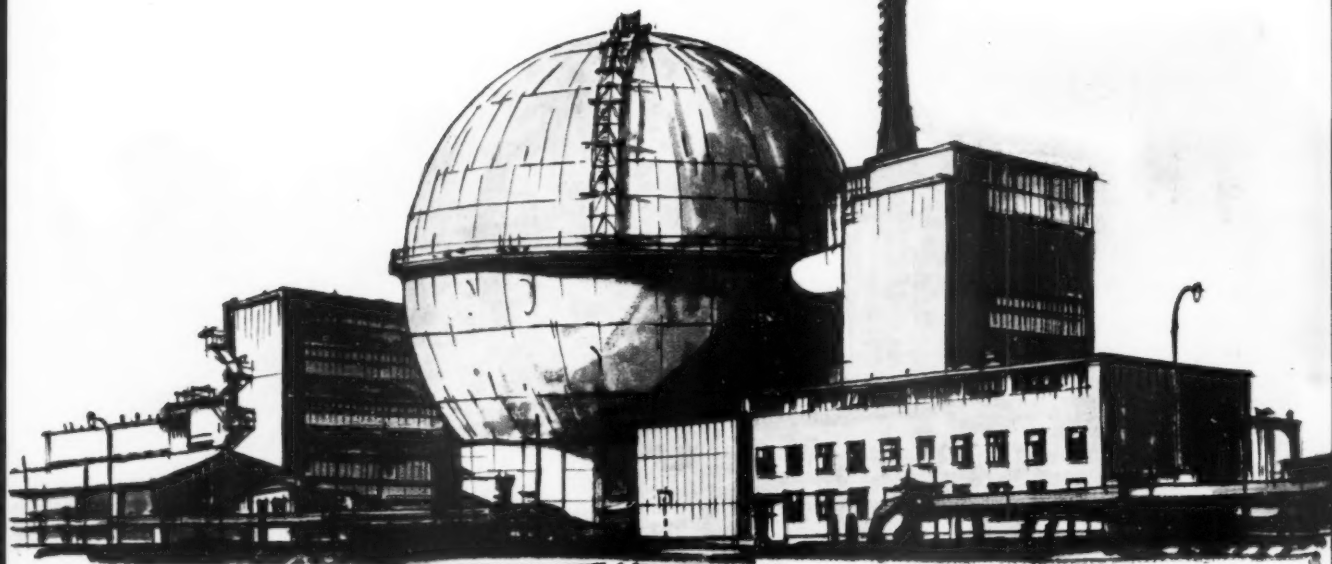


*Oxidised linseed oil entering cooling bay.*

## MODERN LINOLEUM FOR MODERN INSTALLATIONS

Capital cost, laying, life or maintenance, judge how you will—linoleum is unequalled by any other floor covering. In addition, modern colours contemporary patterns and ease of working offer today's designer in linoleum a freedom of colour, form and design to answer every industrial and commercial flooring requirement. Williamson's "know-how" in the techniques of oxidising and polymerising Linseed Oil has made them leaders in the industry . . . and given Williamson's heavy gauge linoleum in 6.7 mm. and 4.5 mm. its outstanding qualities of flexibility, resilience and long life.

*The Williamson Technical Advisory Service is always at your disposal—please contact us for further information.*



*Williamson Linoleum Floor Treatment fulfils the specification for the U.K. A.E.A. Station at Dounreay. Contractors : Messrs. Korkoid*

# WILLIAMSON LINOLEUM

JAS. WILLIAMSON & SON LIMITED • LANCASTER • FOUNDED 1844

## Shower Song

*Bending and turning and gaily carolling  
Loving the feel of the tropical rain  
Leaving to Leonard the job of controlling  
Once she gets in she just wants to remain.*

*Gone are the quirks of the old fashioned mixer  
Everything else but never just warm,  
Thermostat Leonard is fitted to fix her  
And keep the temp. fast at divinity's norm.*

"Keeping the temp. fast" is just what Leonard control by thermostat does. It turns stone-cold and stinging-hot into steady warm—immovable until the bather moves it. It makes the shower, the Leonard shower, the best bath in the world. That's why the Leonard valve has come to be specified by architects everywhere not just for showers in hospitals and schools, but also in factories and mines and ships.

Please let us tell you more about Leonard thermostatic valves. We have composed literature to cover all applications in detail. Write for engrossing publication SC.2 to: Walker Crosweller, Cheltenham. The impetuous should 'phone us at Cheltenham 56317 or, in London, at Holborn 2986.

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# REVOLUTIONARY!

FIRST  
CLOSE-  
COUPLED  
SUITE  
WITH  
PLASTIC  
CISTERN  
AND  
POTTERY  
WASH-DOWN  
PAN



S61

## Shires **UNI-LYNX**

The Shires UNI-LYNX is the first close-coupled suite to combine plastic cistern and pottery wash-down pan. It's years ahead in design—scientifically and aesthetically. That's why it was chosen by the Council of Industrial Design for inclusion in a display of sanitary and plumbing equipment that was awarded a Gold Medal at the 1958 Brussels International Exhibition.

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- Neat, compact—low height—short projection.
- Wash-down pan with trap to BSS 1213 dimension to eliminate risk of blockage.
- Chromium-plated, all-brass supply fittings—incorporating Shires registered design volume control valve.
- So easy to install! No flush pipes or brackets required. Replaces high level suites at minimum cost.
- Fitted with Shires 'Continental' seat—beautifully designed, flexible, immensely strong—and no buffers!
- Virtually unbreakable Duranite cistern and seat in black. Seat cover in choice of ten colours. Also available with Ceramic cistern and matching pan in choice of seven colours.

**SHIRES ARE THE LARGEST MANUFACTURERS OF FLUSHING CISTERNS IN THE WORLD**

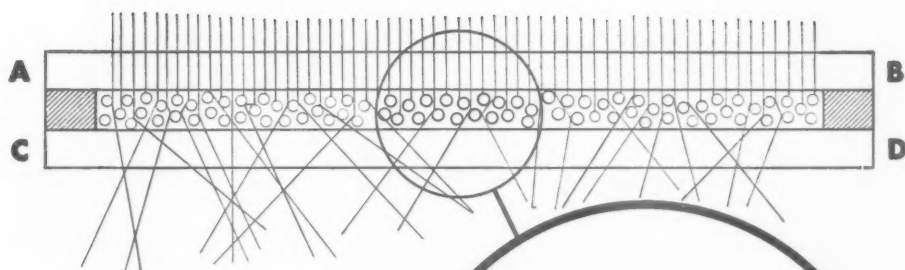
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**DIVISION A4, SHIRES & CO. (LONDON) LTD, GREENBOTTOM WORKS, GUISELEY, YORKS**  
and at LONDON, BIRMINGHAM & GLASGOW

Also supplied by W. & J. LAWLEY LTD, WEST BROMWICH

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for your convenience

Theorems of **PLY**thagoras No. 4



**That Diffusing  
Plyglass so  
disperses light  
that it  
eliminates glare**

Let AB and CD be two parallel planes of glass. Interpolate between AB and CD a third plane comprising a large number of minute light-reflecting rods at varying angles to each other and to AB, CD. Sunlight falls upon AB in parallel rays. Passing through AB, the rays strike the innumerable glass

rods, represented by very fine, continuous glass fibres. The rays are reflected from fibre to fibre, and between 55% and 65% emerge through CD as an almost uniform hemispherical radiation of light, irrespective of the position of the sun.

**COMPLETE DIFFUSION OF LIGHT IS ACHIEVED  
BY THIS METHOD, GLARE IS ELIMINATED AND  
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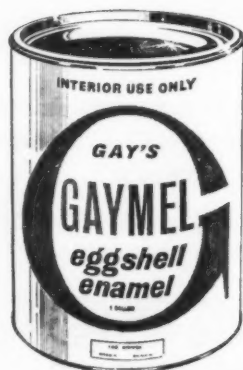
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Factory roof for Jaguar Cars Ltd. Architects: W. S. Hattrell & Partners.





## GAYMEL EGGSHELL ENAMEL

First came Gaymel Enamel, then the new Gaymel Flat Enamel and now GAY's introduce a further addition to their superb range of finishes – GAYMEL EGGSHELL ENAMEL.

This is an exceptionally high quality enamel for interior use. It gives a true 'eggshell' sheen with a toughness and durability that withstands frequent washing. Gaymel Eggshell Enamel has a semi-paste consistency and can be applied coat on coat – without a separate undercoat – by brush, roller or spray. It is available from stock in 36 intermixable colours selected from Gay's Architect's Range. For really top class results, with less time and labour, specify GAYMEL EGGSHELL ENAMEL, another sound paint by Gay's.



Write for full information and shade cards to:—

**R. GAY & CO.** 93/97 New Cavendish Street, London, W1



## Mr FRIB says here's DOUBLE PROTECTION!

**THE FLAME  
RESISTANCE OF ASBESTOS  
PLUS...**

**THE 'YEAR-ROUND'  
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What a wonderful combination! Asbestos for flame resistance and cane fibre for perfect insulation.

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STONEBRIDGE PARK, LONDON, N.W.10. ELGAR 5717  
Please send me technical details and a sample of your  
Celotex Flame Resistant Insulating Board.

NAME .....

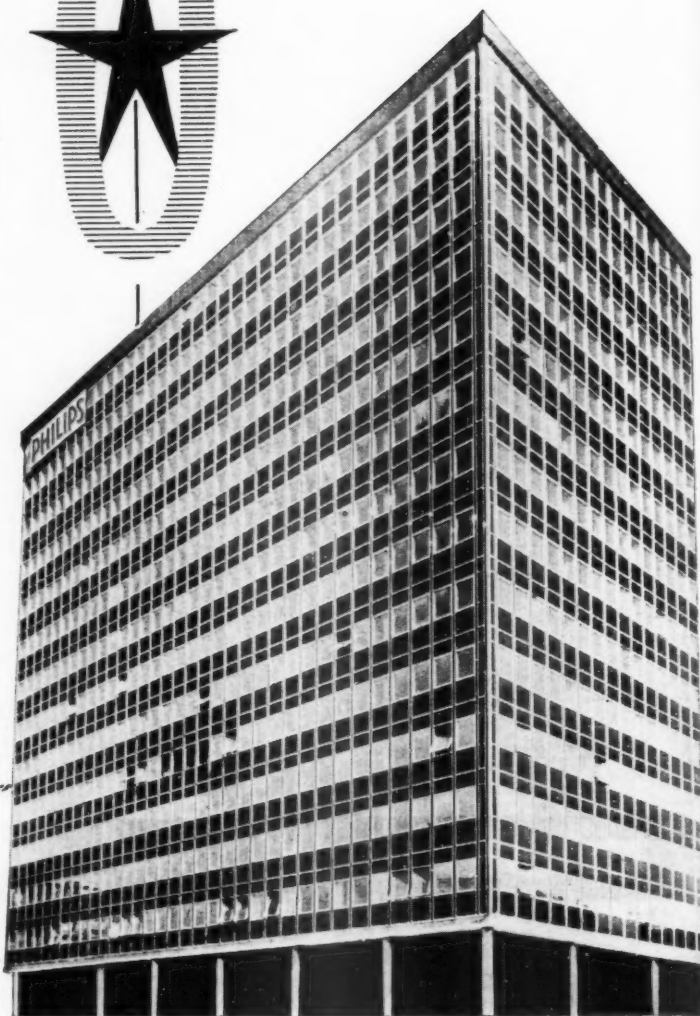
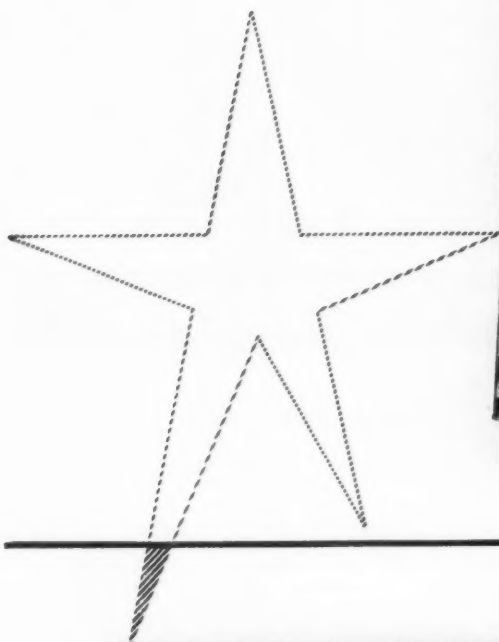
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1360

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LIGHTS



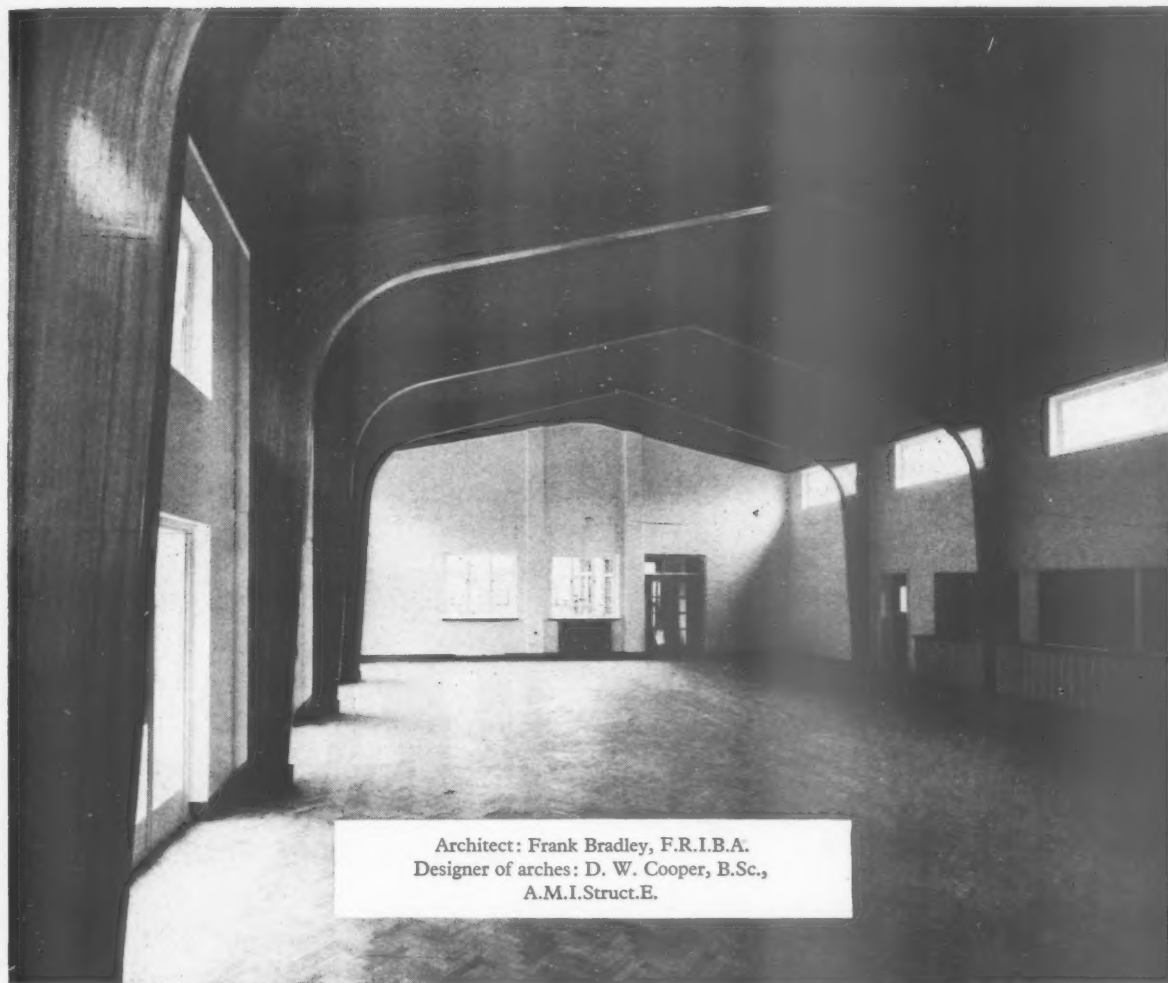
Architect: F. S. Platou

**Birmetals**

The new Philips office block in Oslo has 1360 windows, framed in aluminium alloy extruded section specially designed for double glazing. A long and trouble-free life for these windows is assured by the inherent stability of the alloy, which will neither warp, shrink nor swell, and which needs only the minimum of maintenance. Decorative enamelled panelling on the façade of the building demonstrates another of the diverse uses of our aluminium alloys. Would you like to know more about them? We shall be very happy to send you detailed information.

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BM217



Architect: Frank Bradley, F.R.I.B.A.  
Designer of arches: D. W. Cooper, B.Sc.,  
A.M.I.Struct.E.

*Contractor: J. Gerrard & Sons Ltd., Swinton, Manchester*

## LIGHT OVERHEADS

These four arches of 35 ft span each weigh only 16 cwt, and carry the entire roof of the new canteen of Walpamur Ltd. at Darwen. They are constructed of laminated timber measuring 6" x 1/2" in section, a form of structure which is both versatile and economical. The laminations are bonded with Aerolite 311, a new form of the well-known Aerolite glue, and one which is specially suitable for making large laminated structures. Used with a suitable hardener, Aerolite 311 gives ample time for assembly and making up the structure before finally clamping the laminations for setting. When hard, it has all the characteristics of the Aerolite range—remarkable gap filling properties, high strength, long life, and freedom from deterioration. Our brochure "Synthetic resins for the building industry", giving further information, will be sent gladly on request.

# Aerolite

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AP 496



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**FOLLOW THE  
MAGNET  
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PROTECTION**



**PAINT**

**MUST DO MORE THAN DECORATE**

The Magnet Maintenance Plan provides the maximum protection for 5, 8 and 10 year periods, for the outside of property in town, suburb and country. Adherence to the Plan builds up a protective film of Lead Paint which prevents serious deterioration if later re-painting is delayed.

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# Lightweight ventilation



Typical Pitched Roof  
Unit to suit Corrugated  
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## MOULDED GLASS-FIBRE FAN-POWERED VENTILATION UNITS

POLYESTER RESIN BONDED • FIRE RESISTANT • NON - CORROSIVE

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  - DECKINGS — ASBESTOS — METAL — WOODWOOL SLAB • GLAZING MOUNTING
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*also*

- CHEMICAL FUME UNITS WITH POLYTHENE COATED FANS

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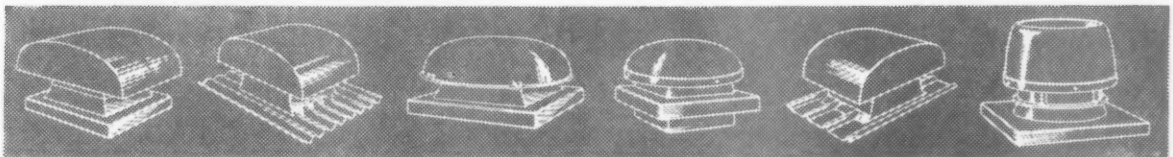
- SMALL CAPACITY LOW PRICED GENERAL PURPOSE UNITS  
THE NELSON (400 cfm) — THE TRAFALGAR (750 cfm)

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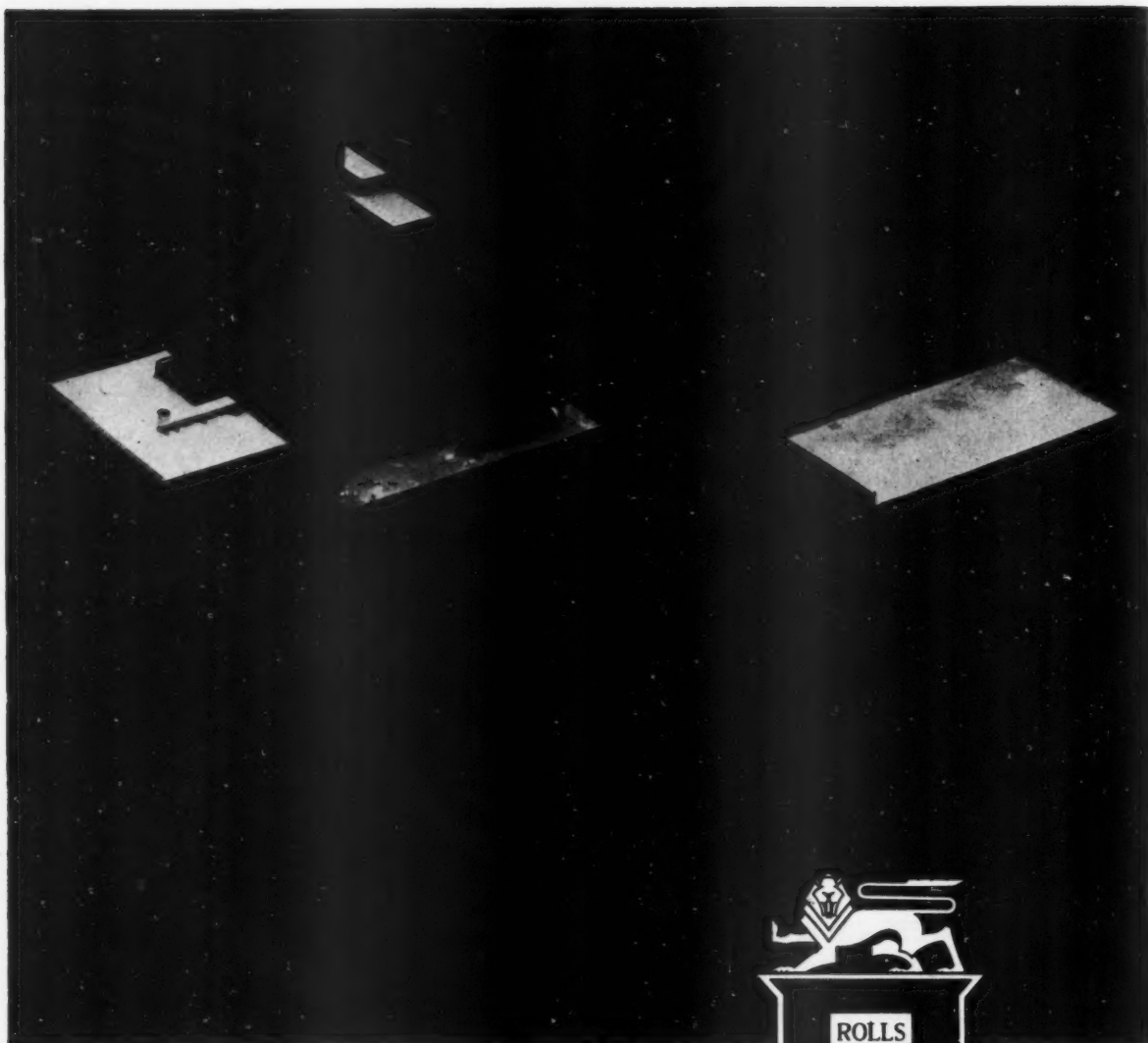
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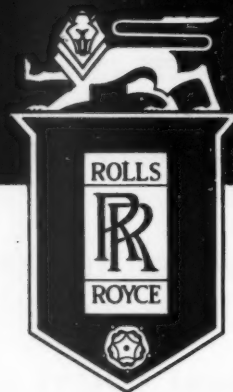


## New aero-engine altitude test plant for ROLLS-ROYCE

*This important new plant at Derby, the only one of its kind under private ownership in the Commonwealth and Europe, was recently built for Rolls-Royce by Gee, Walker & Slater Ltd. Here jet and prop-jet engines will be tested at simulated heights up to 70,000 feet and at forward speeds up to two-and-a-half times the speed of sound.*

*The roofs which are coloured white in this photograph were entrusted to Siegwart.*

Gee, Walker & Slater Ltd., carried out this contract under the direction of McLellan and Partners, Consulting Engineers, in association with Merz and McLellan. The Consulting Civil Engineers were R.T. James and Partners, and the Consulting Architects were Messrs. Ramsey, Murray, White and Ward.



### SIEGWART

PRECAST FLOORS AND ROOFS

SIEGWART FLOOR CO. LTD., Gable House, Rickmansworth, Herts.

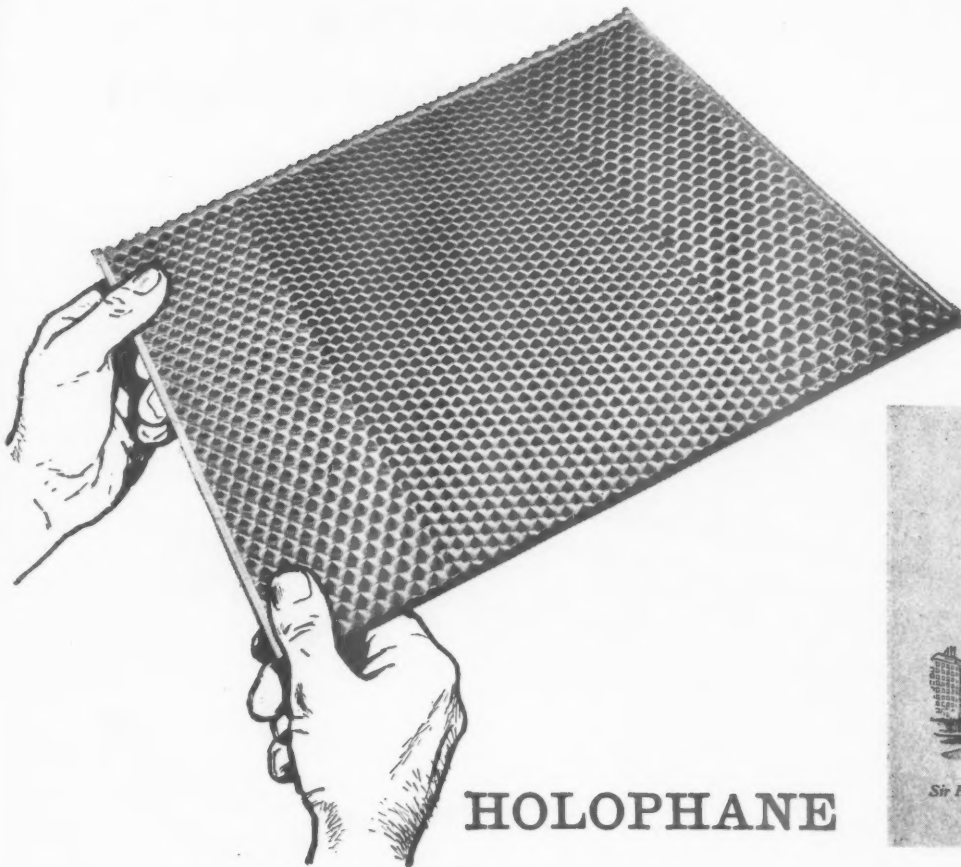
Telephone Rickmansworth 2268

Berkeley House, Hagley Road, Birmingham 16.

Telephone Edgbaston 3960

Carlton House, Blythswood Square, Glasgow, C.2.

Telephone City 5156.



**HOLOPHANE**

**CONICAL PRISM GLASS LENS PLATES**

**FOR THE NEW SHELL BUILDING**

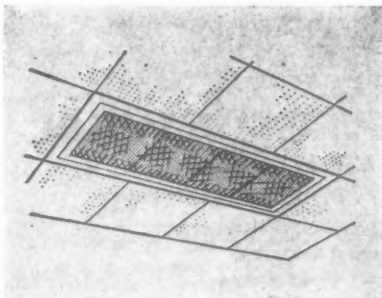
Over 50,000 individual glasses are being supplied for the fluorescent lighting installations in the new Shell project on the South Bank. These plates have been specially designed by Holophane for use in flush mounting \*fittings at relatively low mounting heights, to give a brightness control and semi cut-off angles above 50 degrees from the vertical.

Once again Holophane has provided a scientific answer to a lighting problem that only long experience can overcome. Ask for latest catalogues on Holophane fluorescent, industrial and commercial lighting systems.

\* (Fittings will be supplied by A.E.I., Philips and Courtney Pope).



*Architect:  
Sir Howard Robertson, A.R.A.  
Consulting Engineers:  
Eusbank and Partners*



**HOLOPHANE**  
**THE PERMANENCE OF THE PRISM**

HOLOPHANE LIMITED, ELVERTON STREET, WESTMINSTER, LONDON, S.W.1. Telephone: VICTORIA 8062

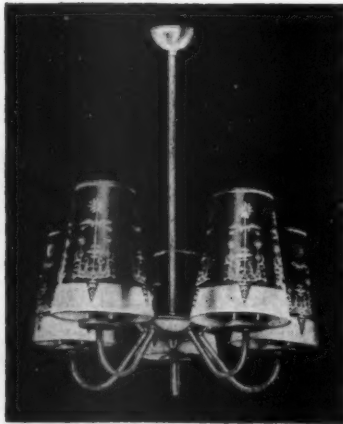


## Join the Brighter Light Brigade



These Siemens Ediswan lighting fittings  
are designed to fit the mood of the moment  
and go on looking attractive through  
years of constant use with no more than  
a token amount of maintenance.

We've selected them from our Contemporary  
Lighting Fittings catalogue which illustrates  
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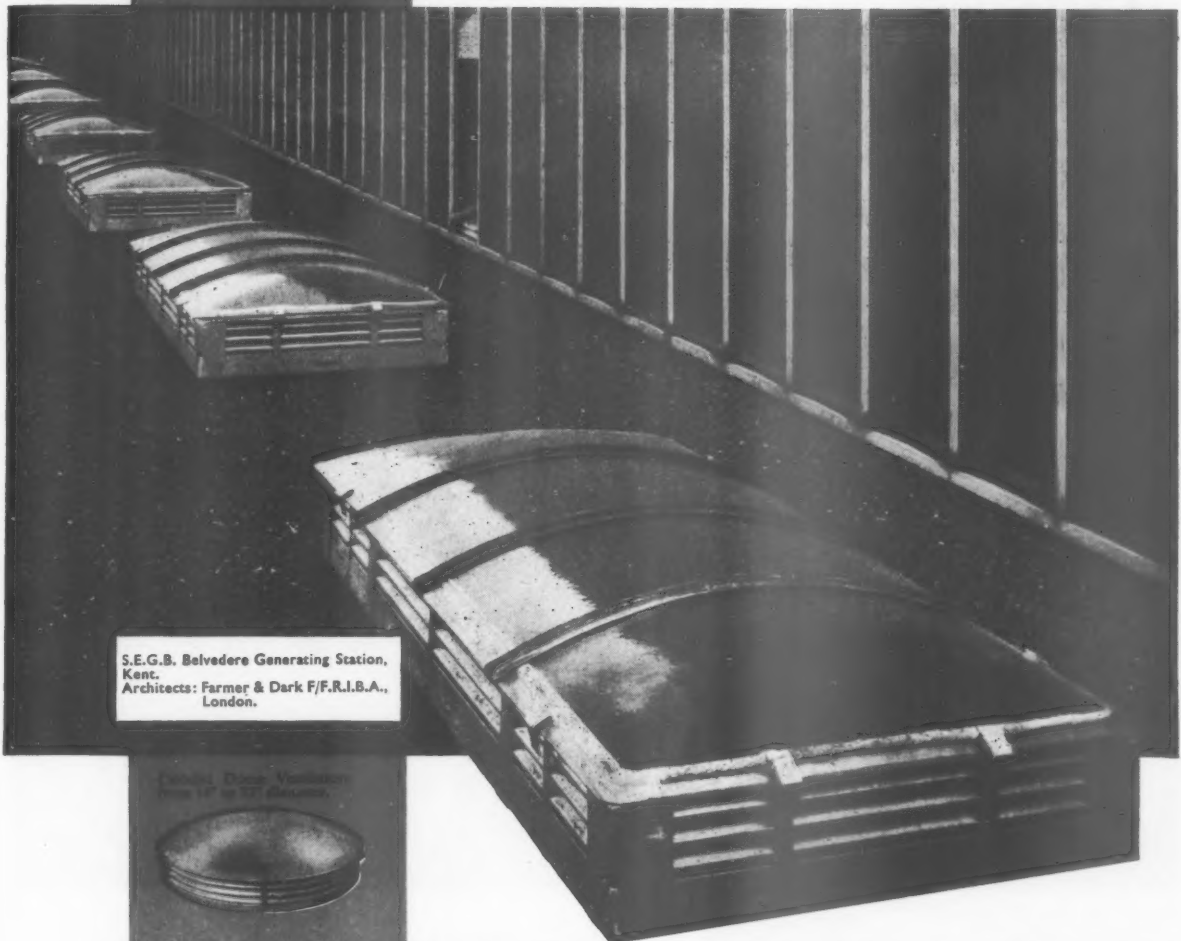
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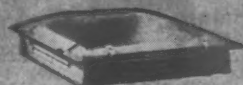
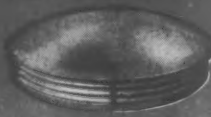
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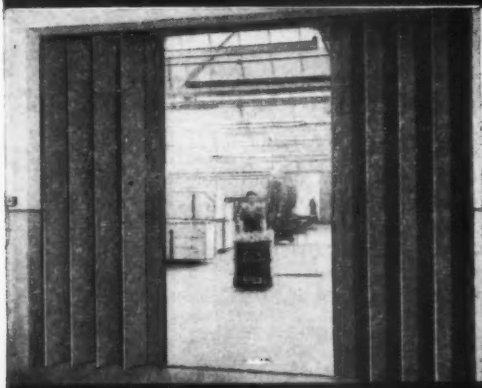
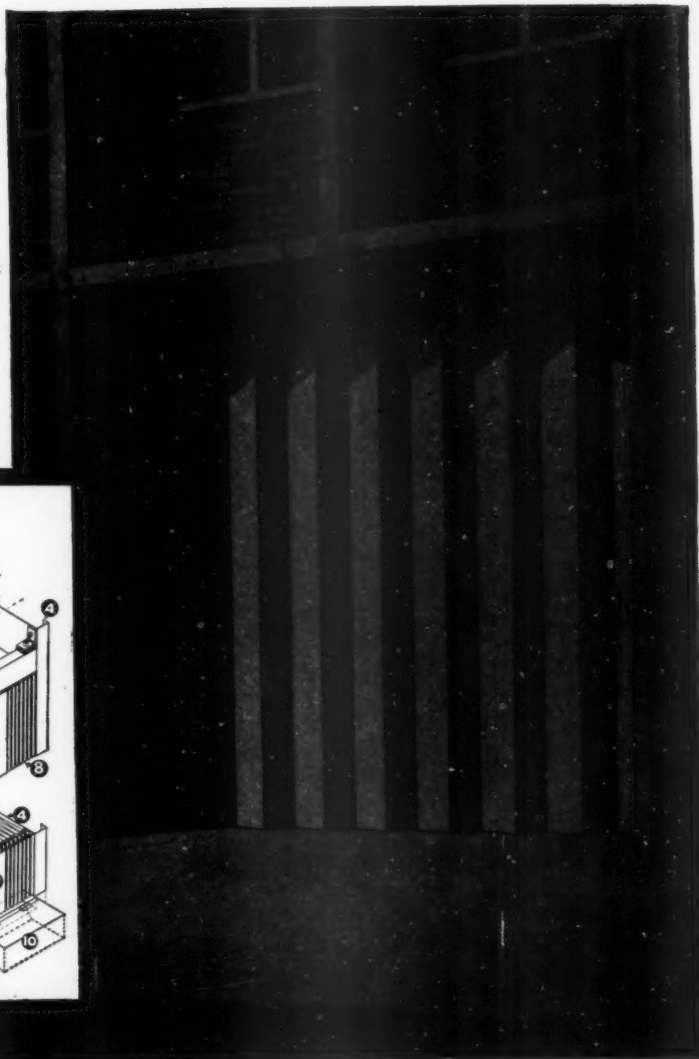
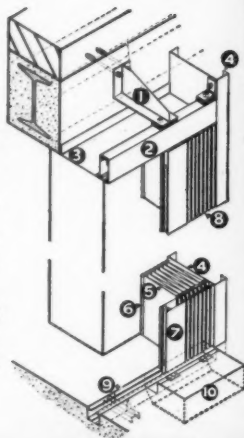
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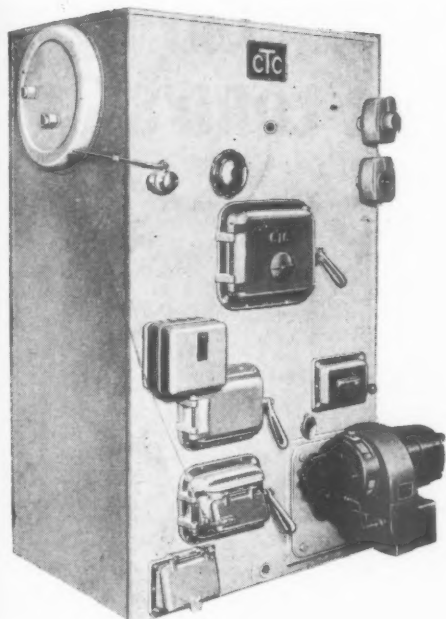
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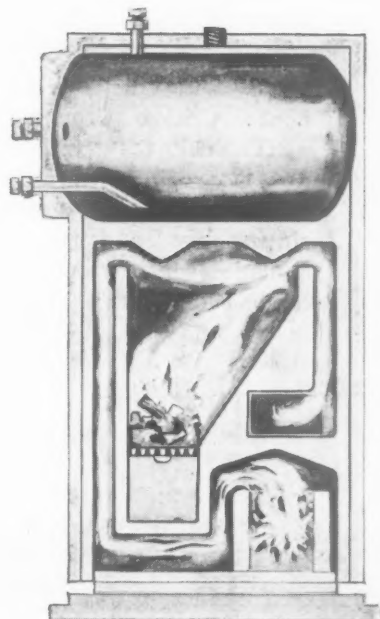
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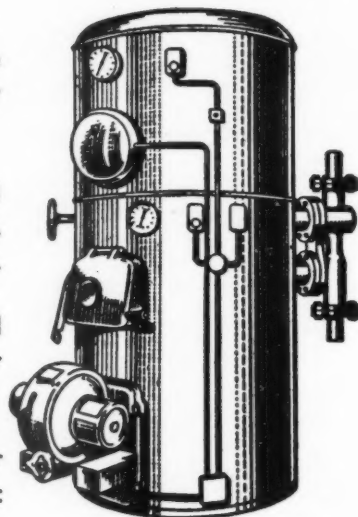
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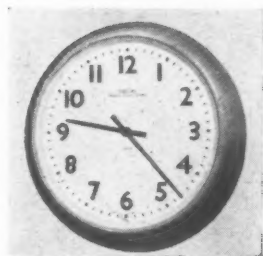
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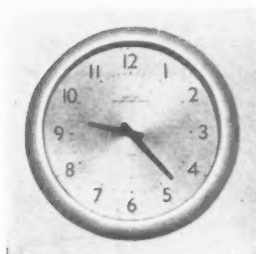
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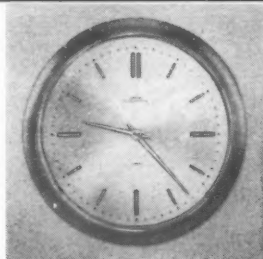


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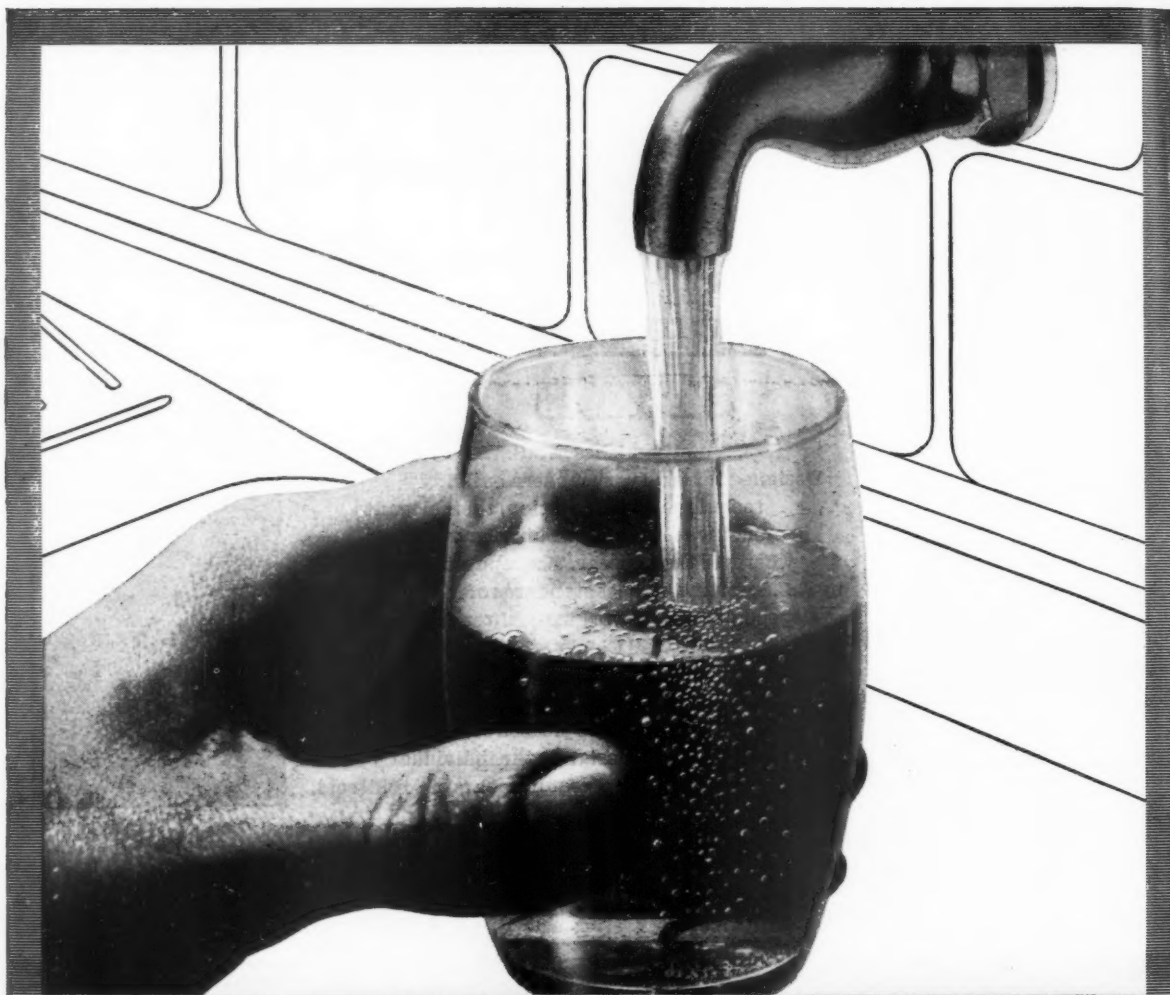


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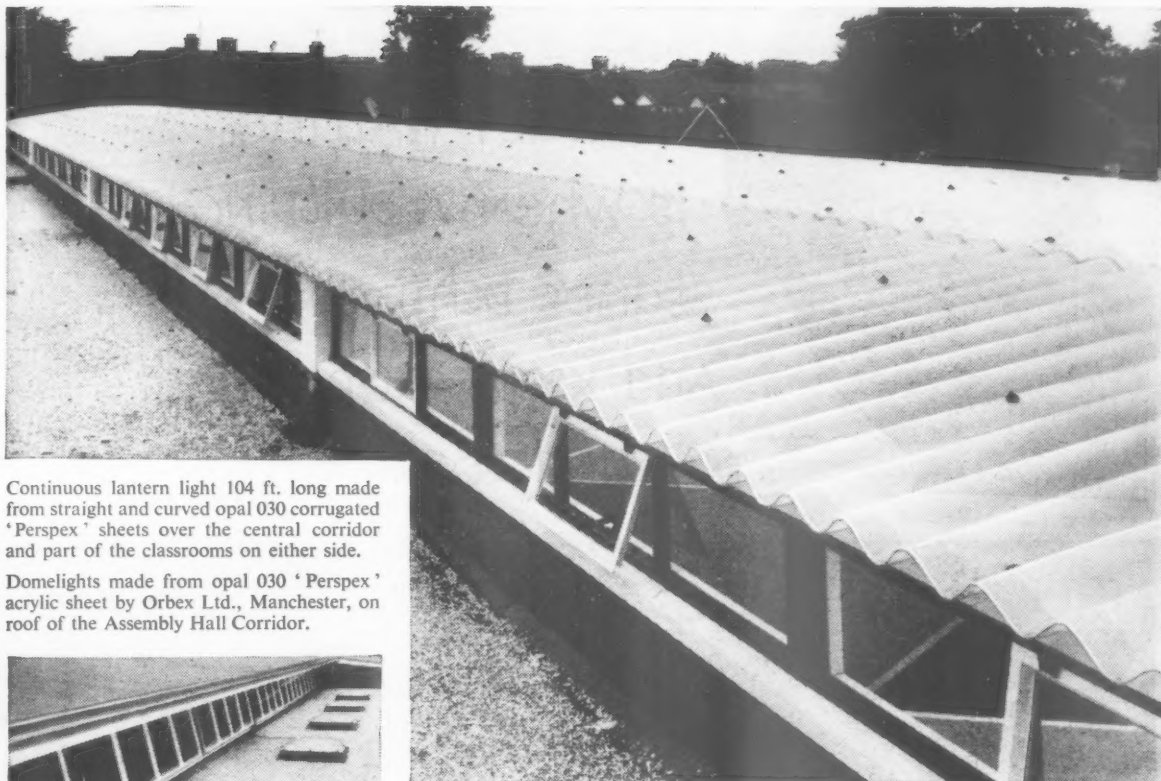
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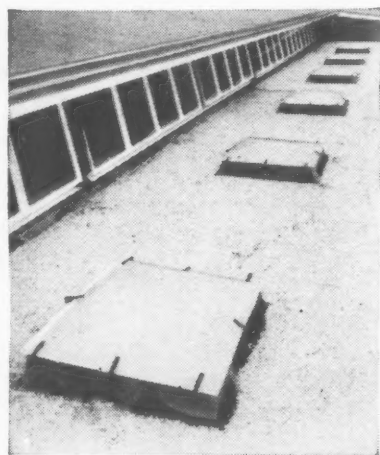
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Continuous lantern light 104 ft. long made from straight and curved opal 030 corrugated 'Perspex' sheets over the central corridor and part of the classrooms on either side.

Domelights made from opal 030 'Perspex' acrylic sheet by Orbex Ltd., Manchester, on roof of the Assembly Hall Corridor.



Both these photographs are of The Eastwood High School for Girls, Southend-on-Sea; P. F. Burridge, F.R.I.B.A. Borough Architect, County Borough of Southend-on-Sea.

**'Perspex' Opal 030 in flat and corrugated form on the roof of this school makes the most use of daylight.**

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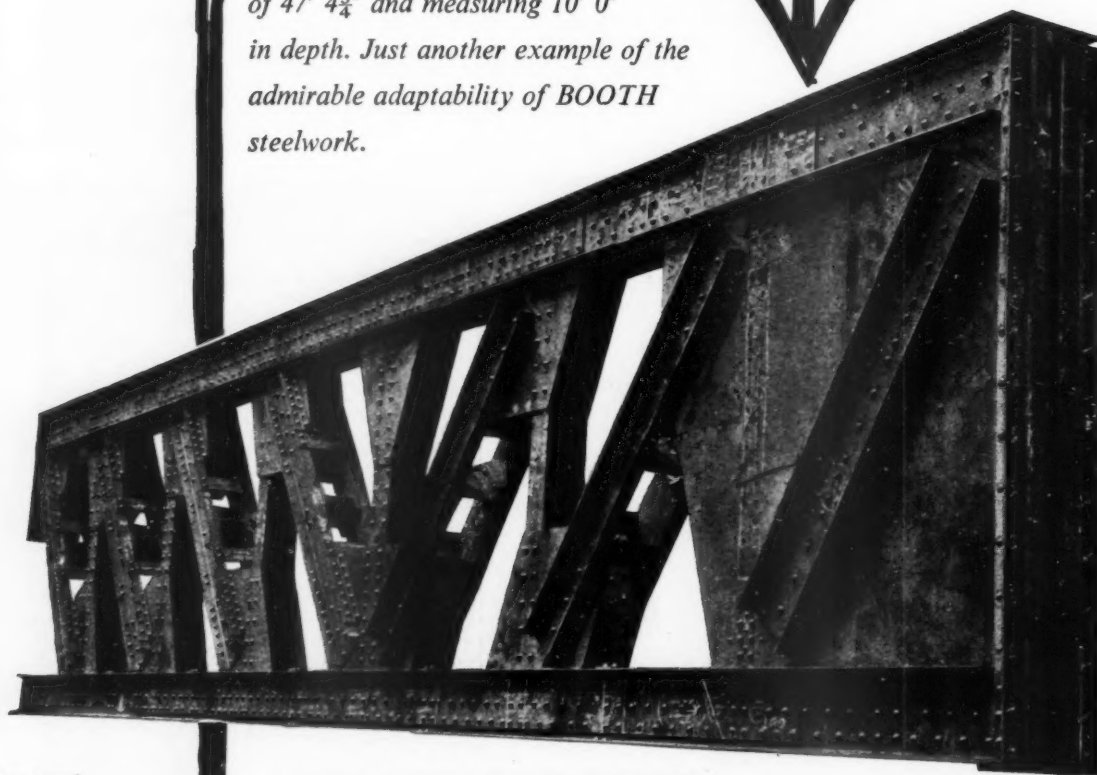
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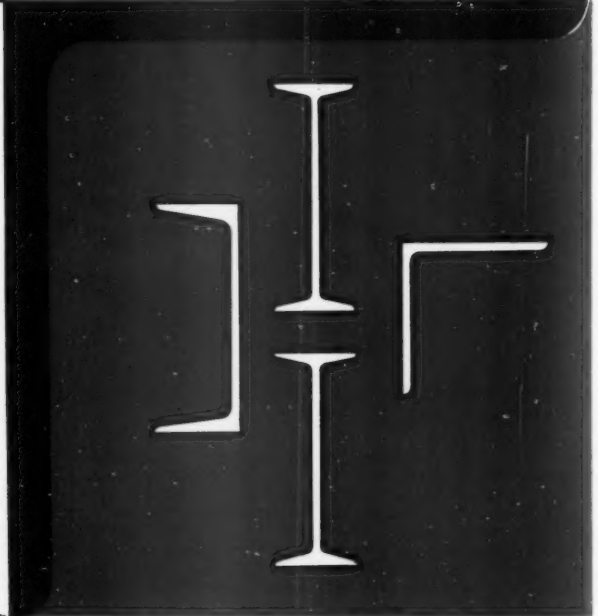
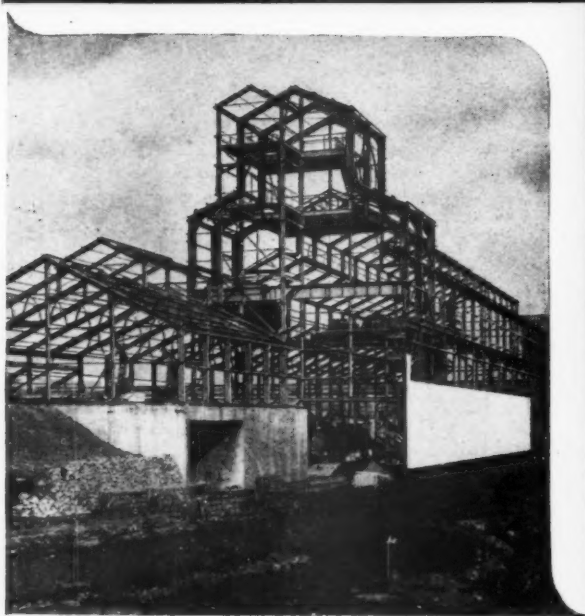
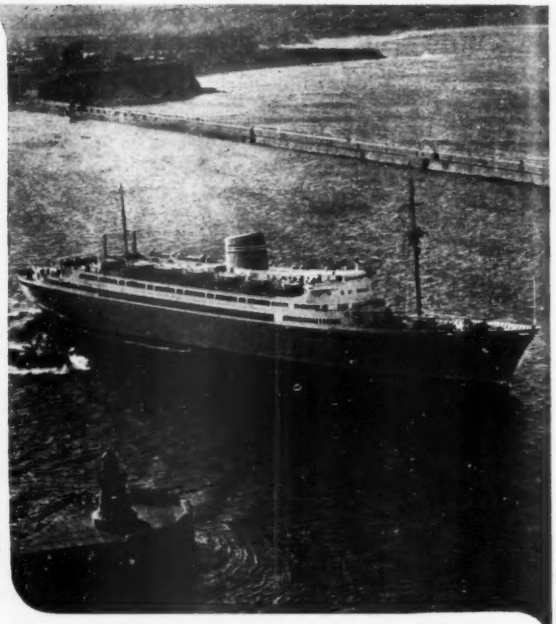
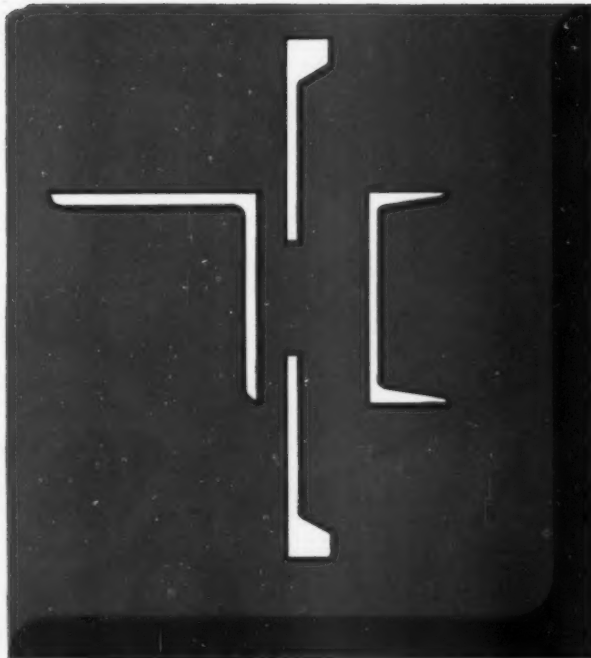
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**It is illogical to ignore the local brickworks when there is a glut of cheap bricks and expect to find them still ready to execute orders when the supply position gets difficult.**

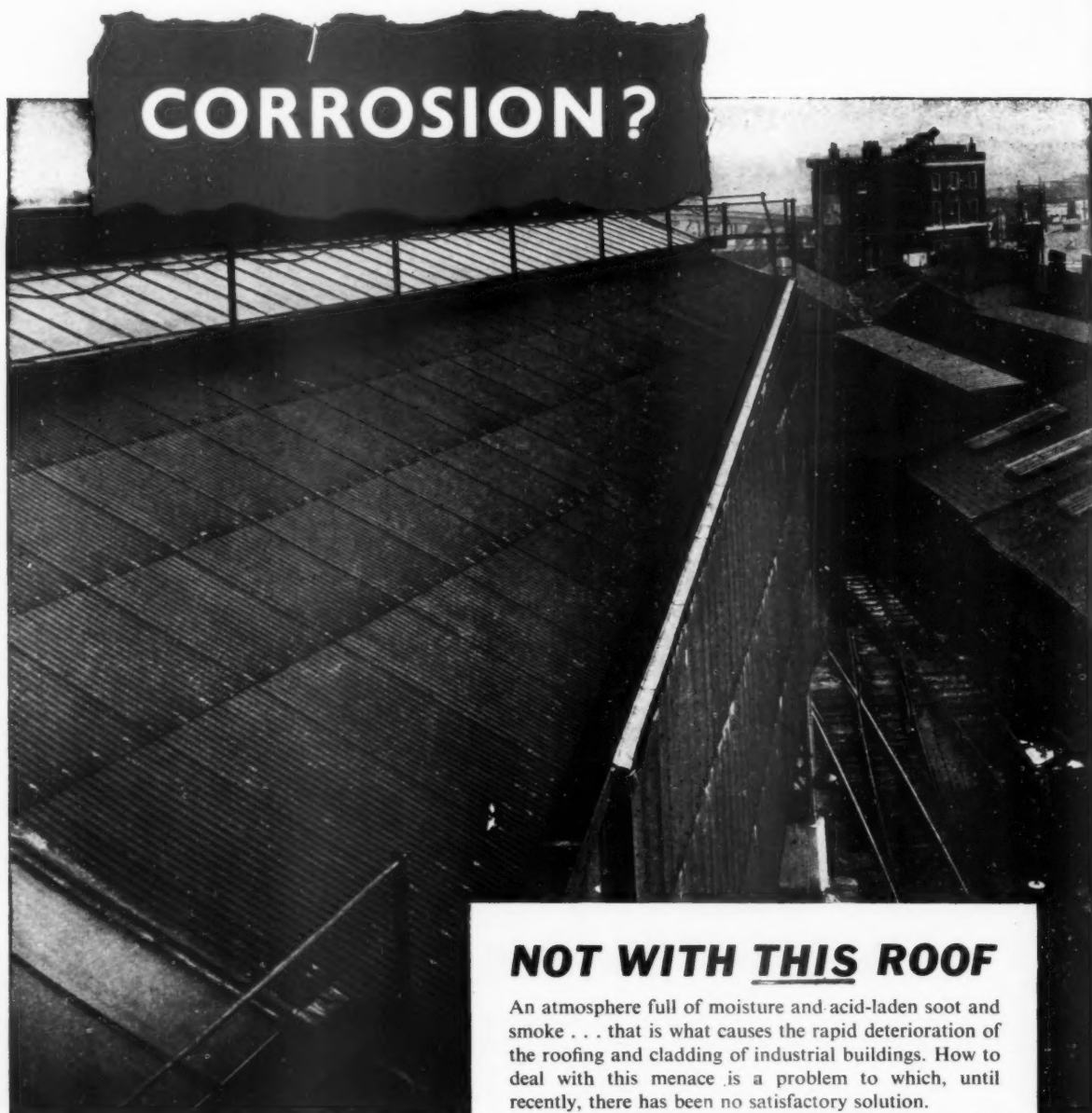
The brick industry is one of the first to suffer when building is curtailed. It takes time to step-up production, and "the eggs" are now in fewer "baskets".

**Give preference to your local brickworks when they need your orders, and they will be there to serve you when you really need them.**



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





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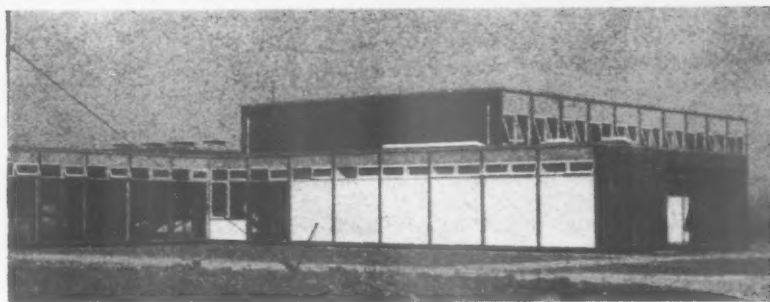
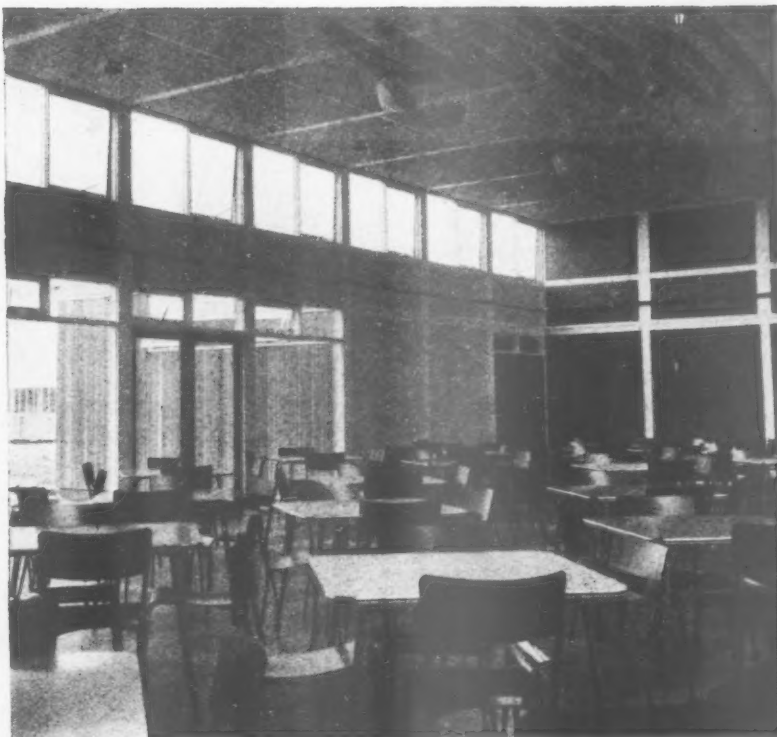


... the method at work

The Bowater-Eburite Canteen, adjacent to the Mersey Mills of the Bowater organisation at Ellesmere Port, constructed in A.75. It includes a Factory Canteen to seat 180 and a Staff Canteen to seat 52: the interior photograph shows part of the factory canteen.

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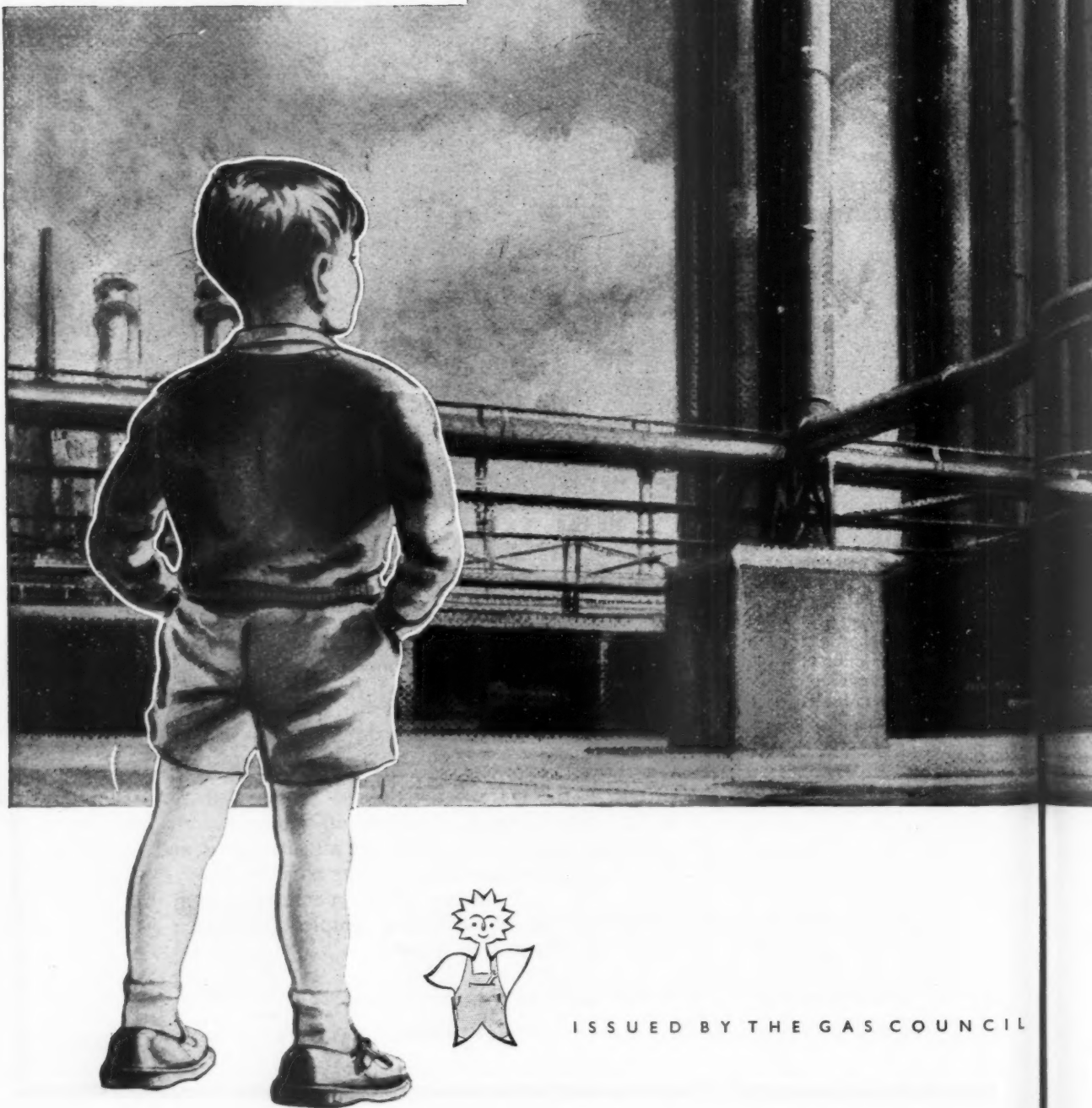


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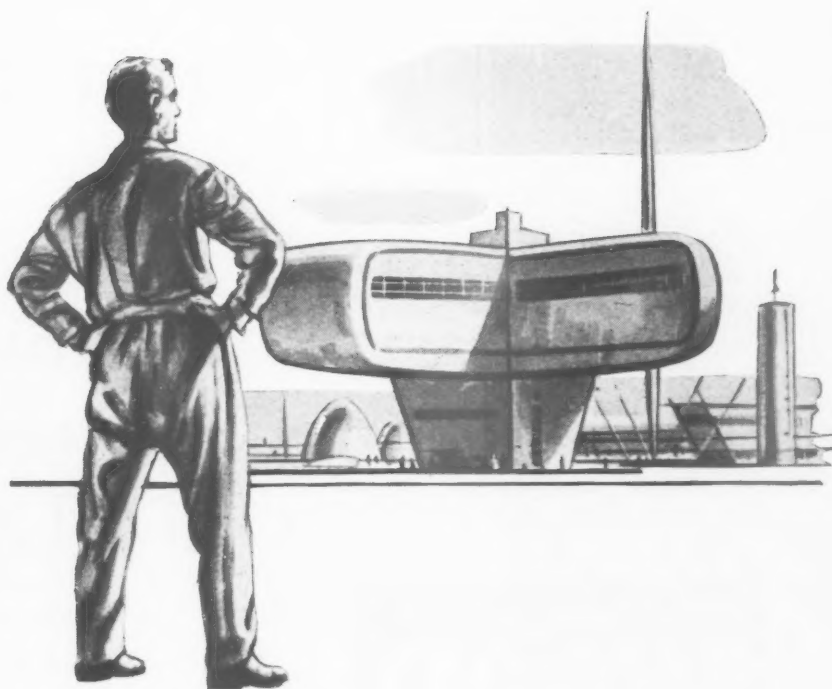
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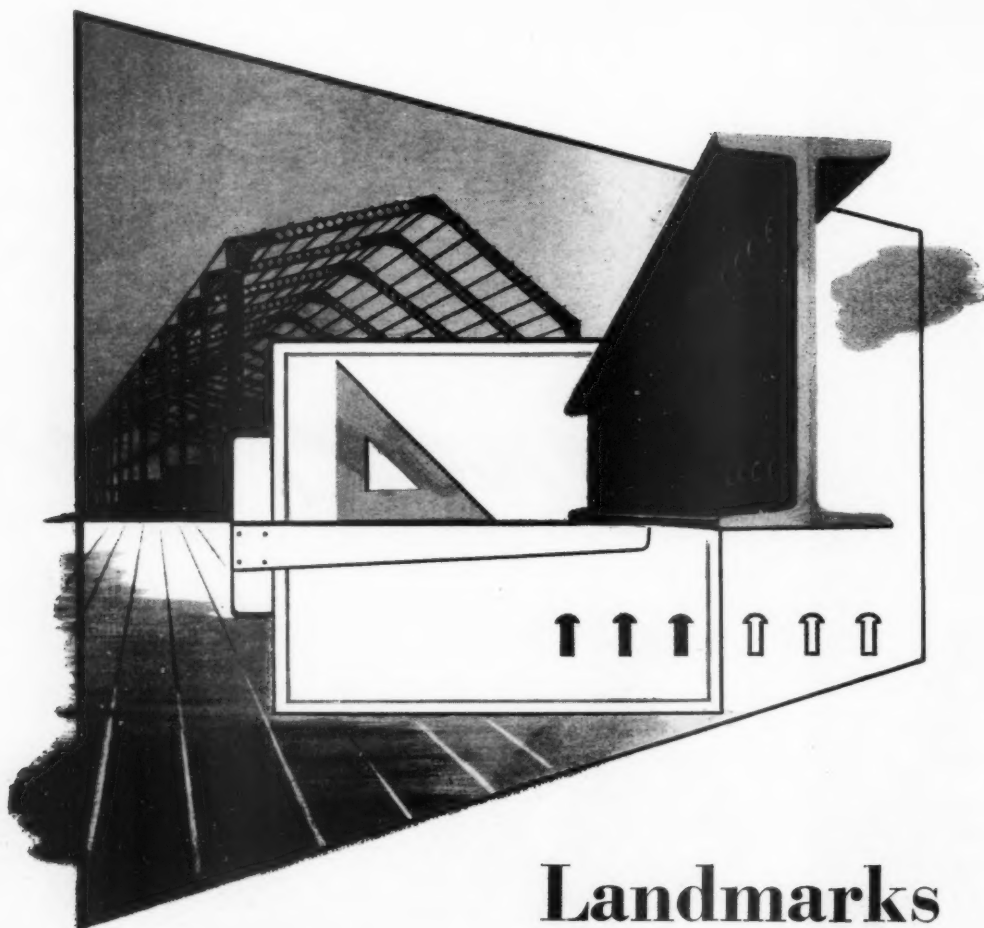
# Tomorrow



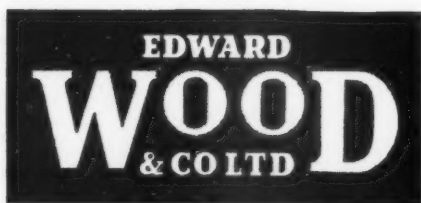
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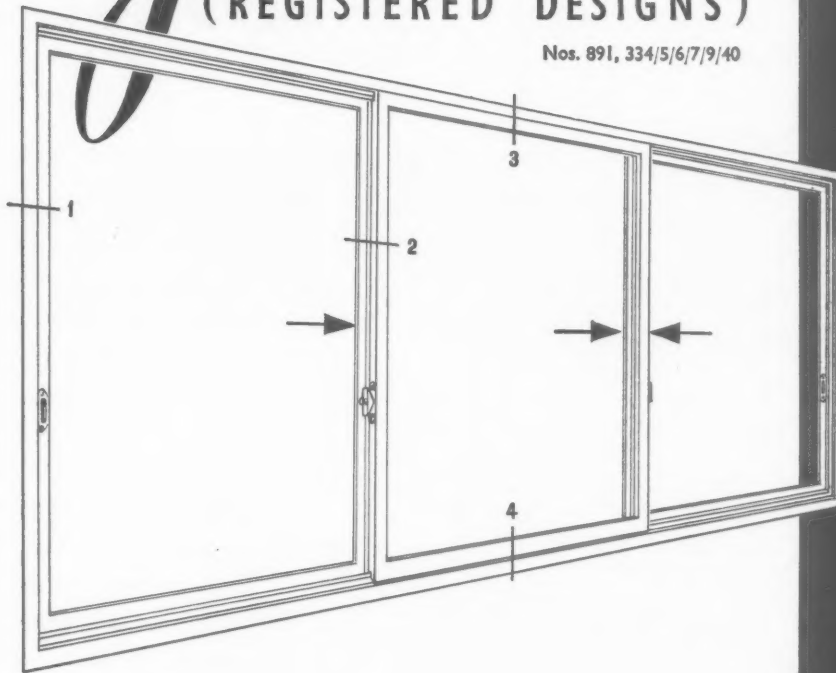
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Glide windows slide smoothly on nylon rollers with stainless steel axles.

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Latch is released as handle is pulled for opening.

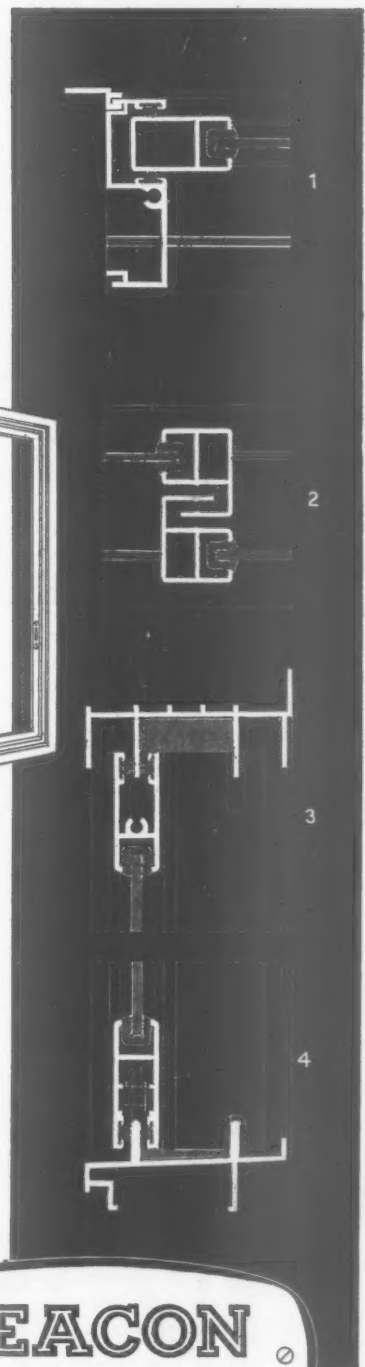
#### FULLY ADAPTABLE

Affording greatest architectural freedom, Glide units may be used to form continuous fenestration.

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## CURTAIN WALLING

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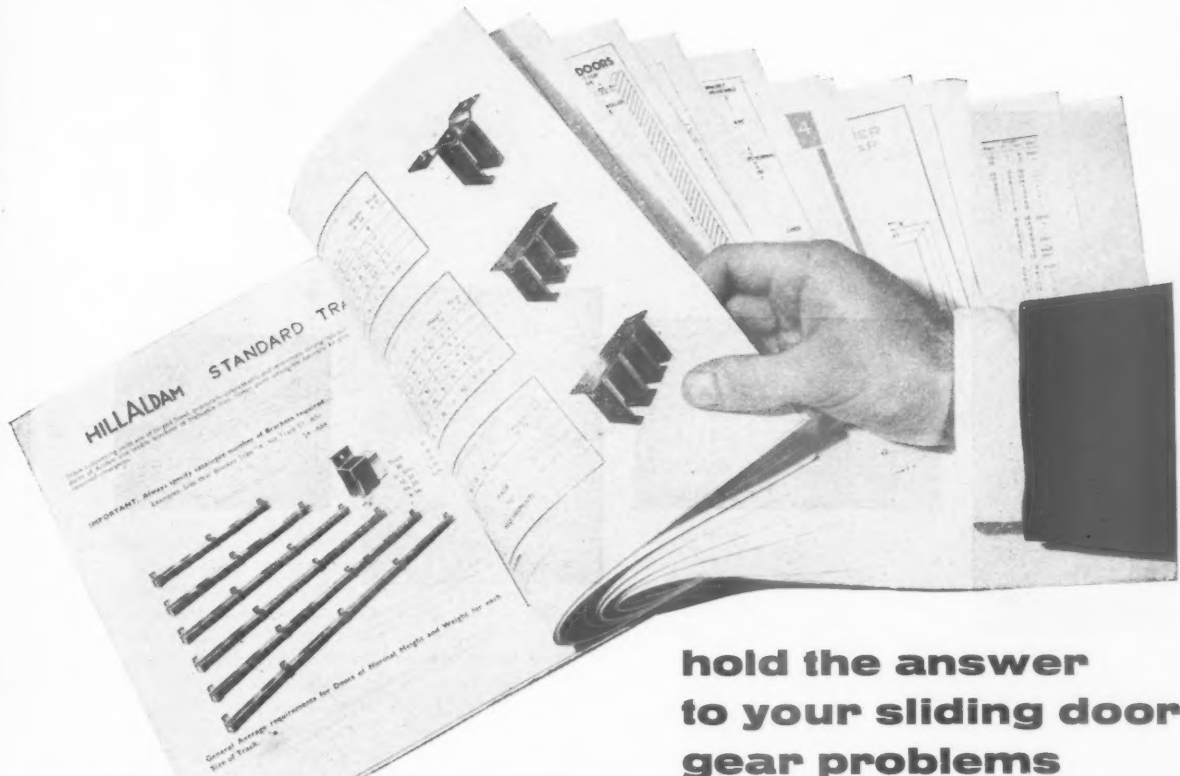
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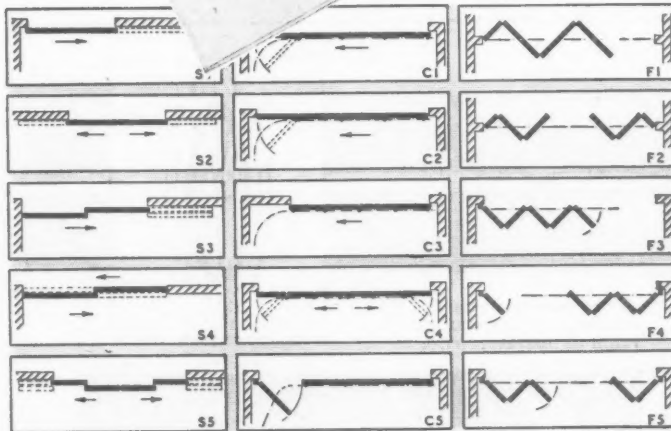
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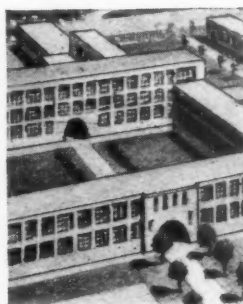
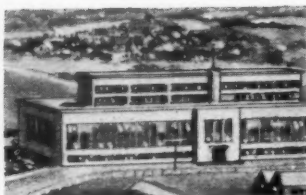
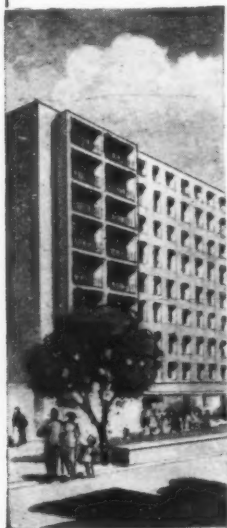
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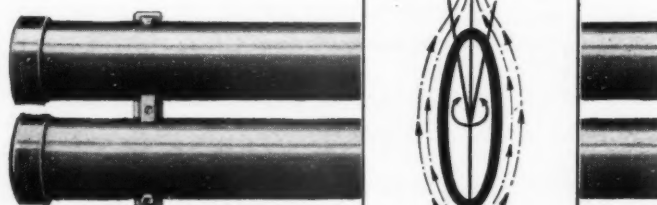


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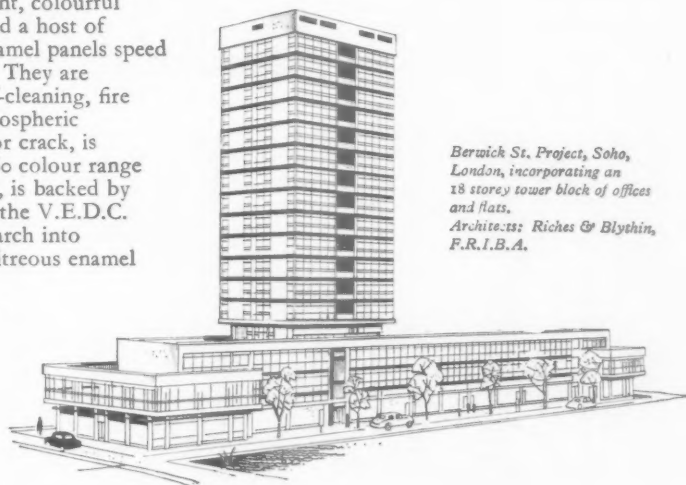


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and flats.  
Architects: Riches & Blythin,  
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*In contrast to the two projects illustrated above, the vitreous enamel panels used to clad this Sub. Post Office at Oakworth, Nr. Keighley, were installed over 20 years ago.*

**vitreous enamel development  
council,**

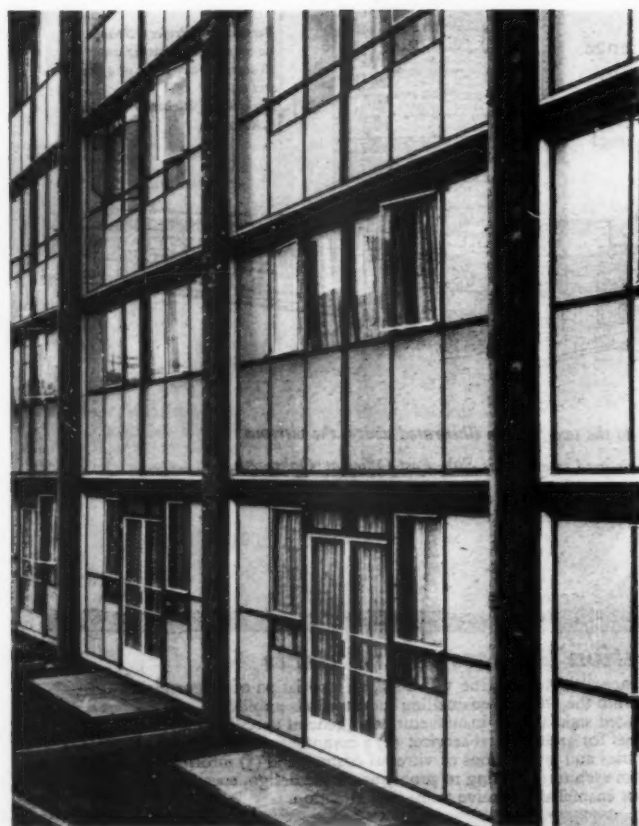
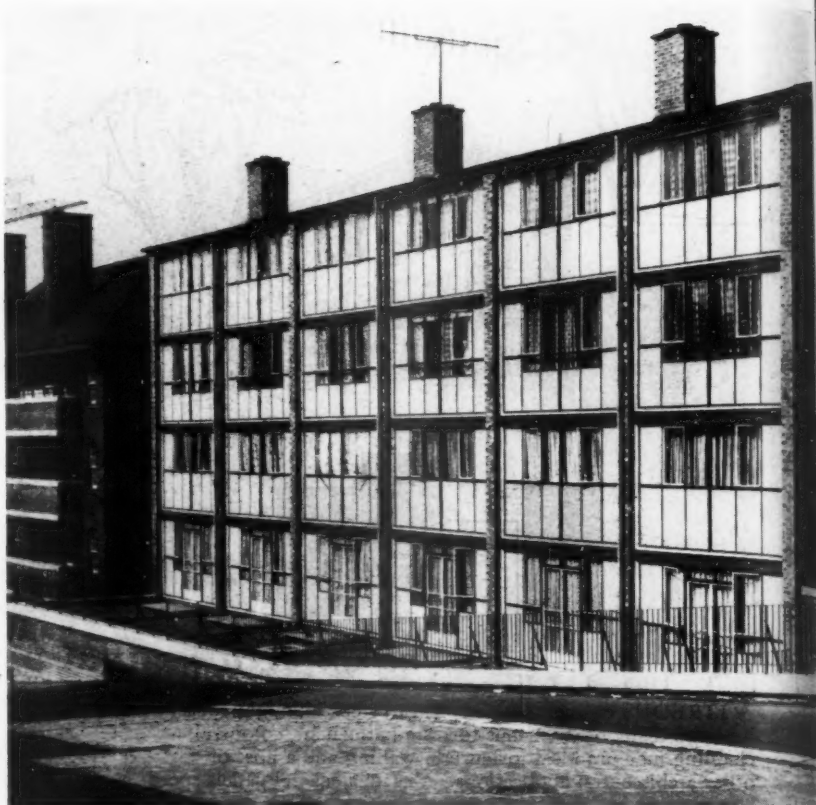
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sq. ft.



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*Metal windows by Williams & Williams Ltd.*

*Illustrated on this page:  
the smaller of the two blocks, six bays,  
having a total superficial panel area of  
2,681 sq. ft.*

*Colour: B.S.S. 2660 Blue 8-088,  
self-colour, stippled texture.*



*The larger block, facing on to Duke Street, Sheffield. Ten bays: total superficial panel area of 4,215 sq. ft. Colour: green self-colour stippled texture.*



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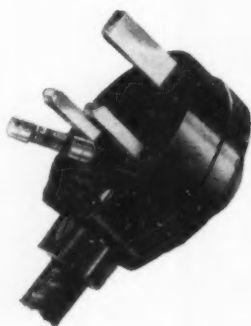
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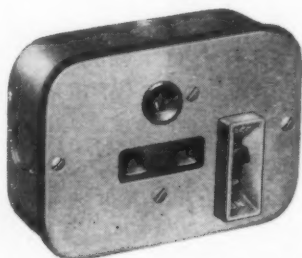
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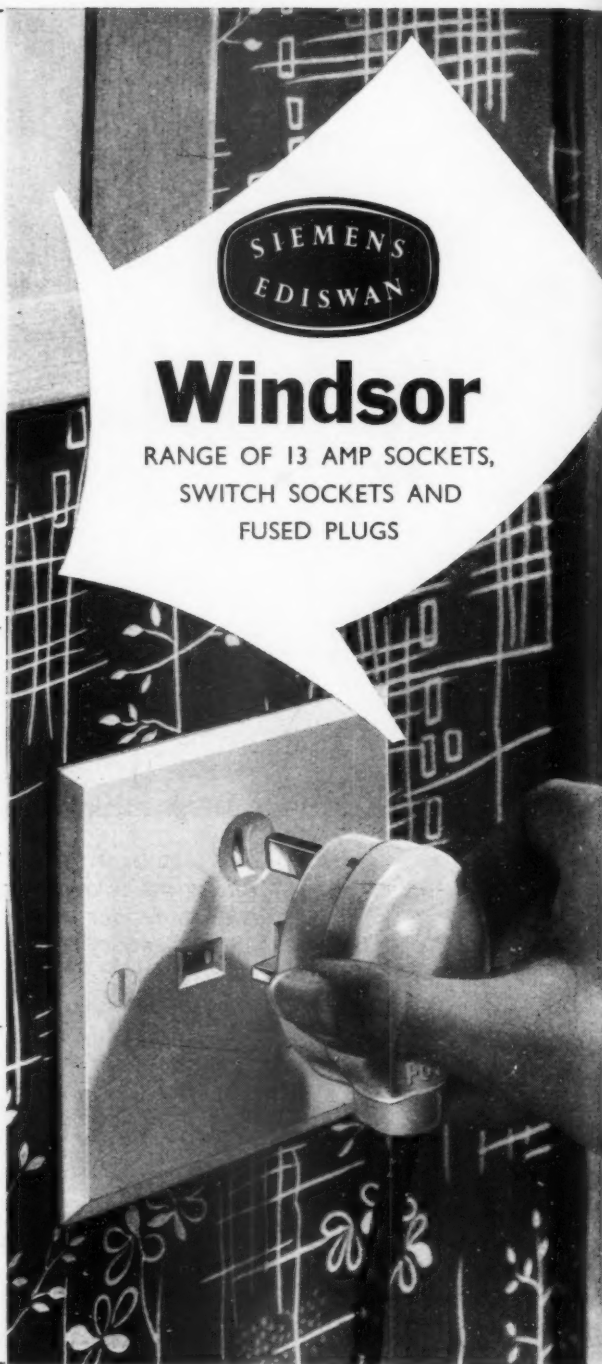
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# ESCOL

PROJECT FOR: Evershed & Vignoles Ltd.

ARCHITECTS: S. T. Walker & Partners in association with  
Stanley Peach & Partners

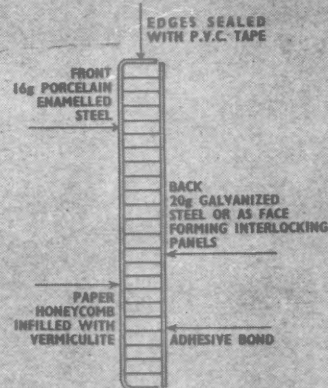
CONTRACTOR: Wm. Moss & Sons Ltd.

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**PANEL SECTION TYPE**  
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honeycomb and 20 gauge  
galvanized steel back. The  
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vermiculite. The paper  
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resistant. The galvanised  
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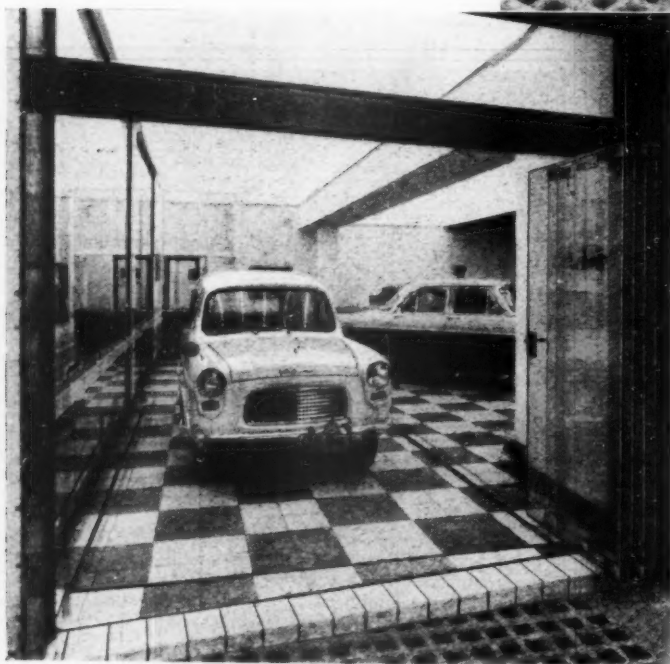


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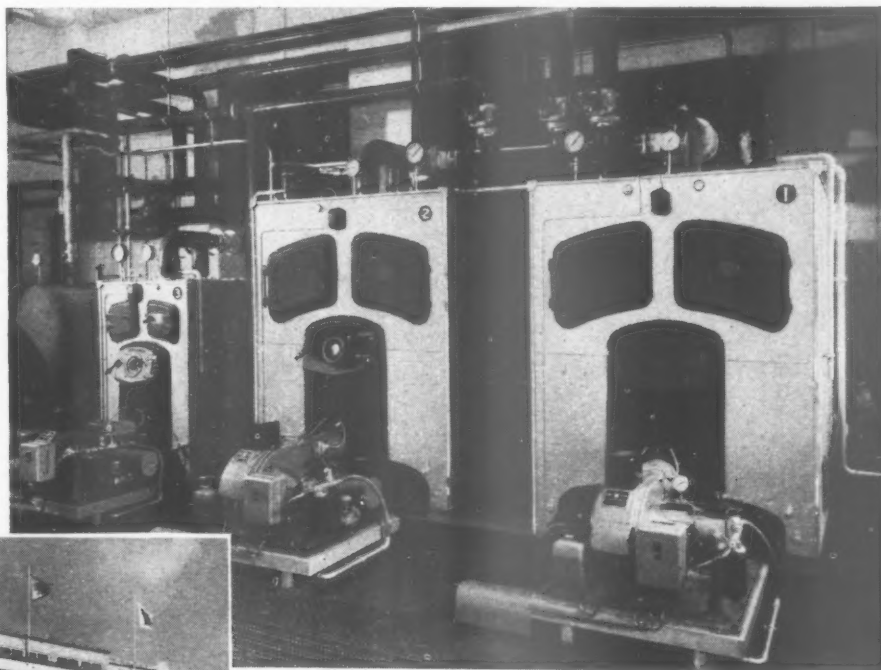


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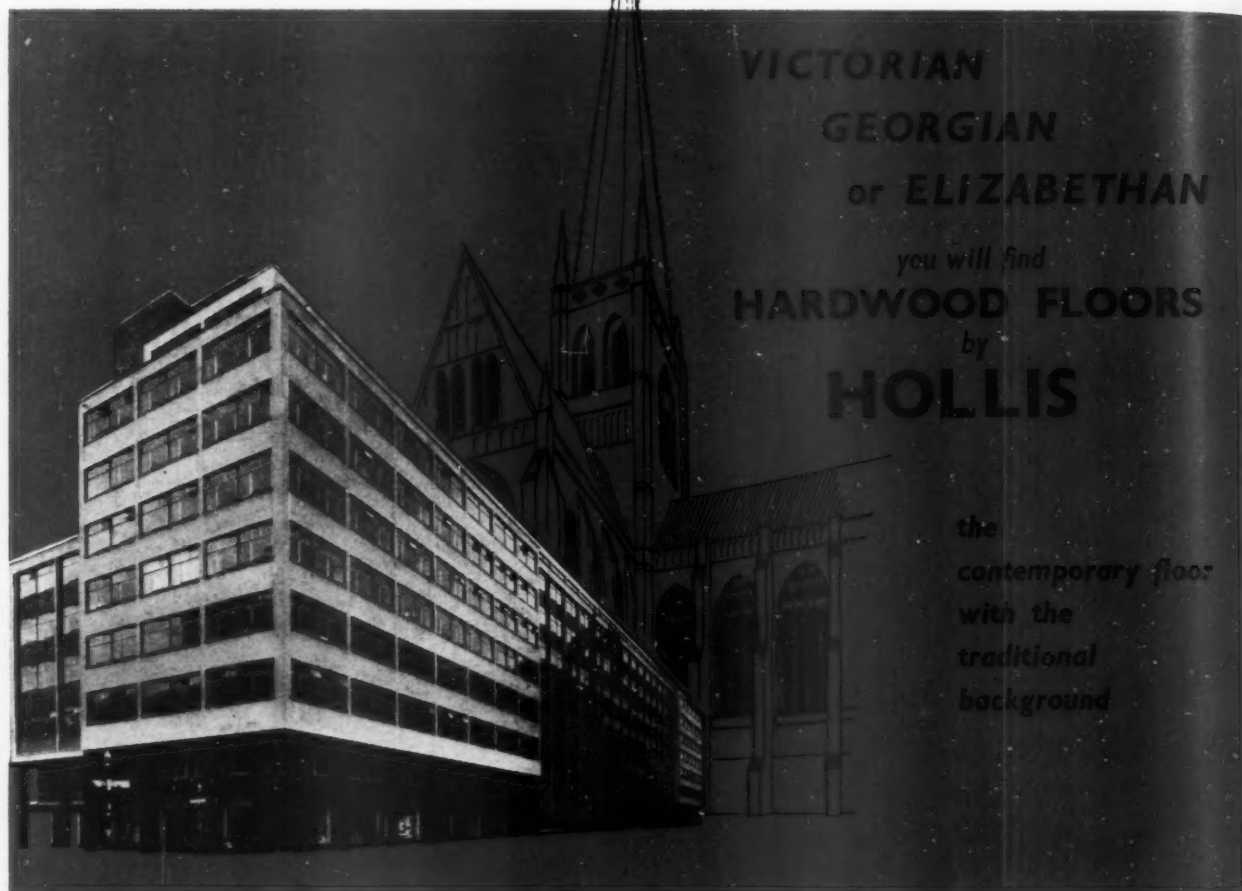
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contemporary floor  
with the  
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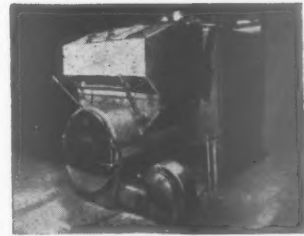
# Hard

# coke

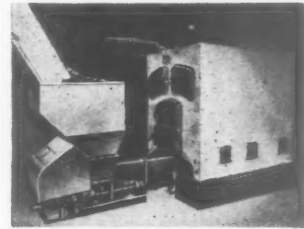
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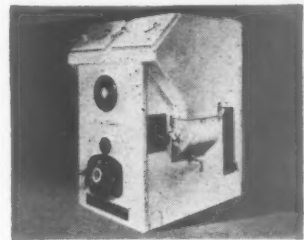
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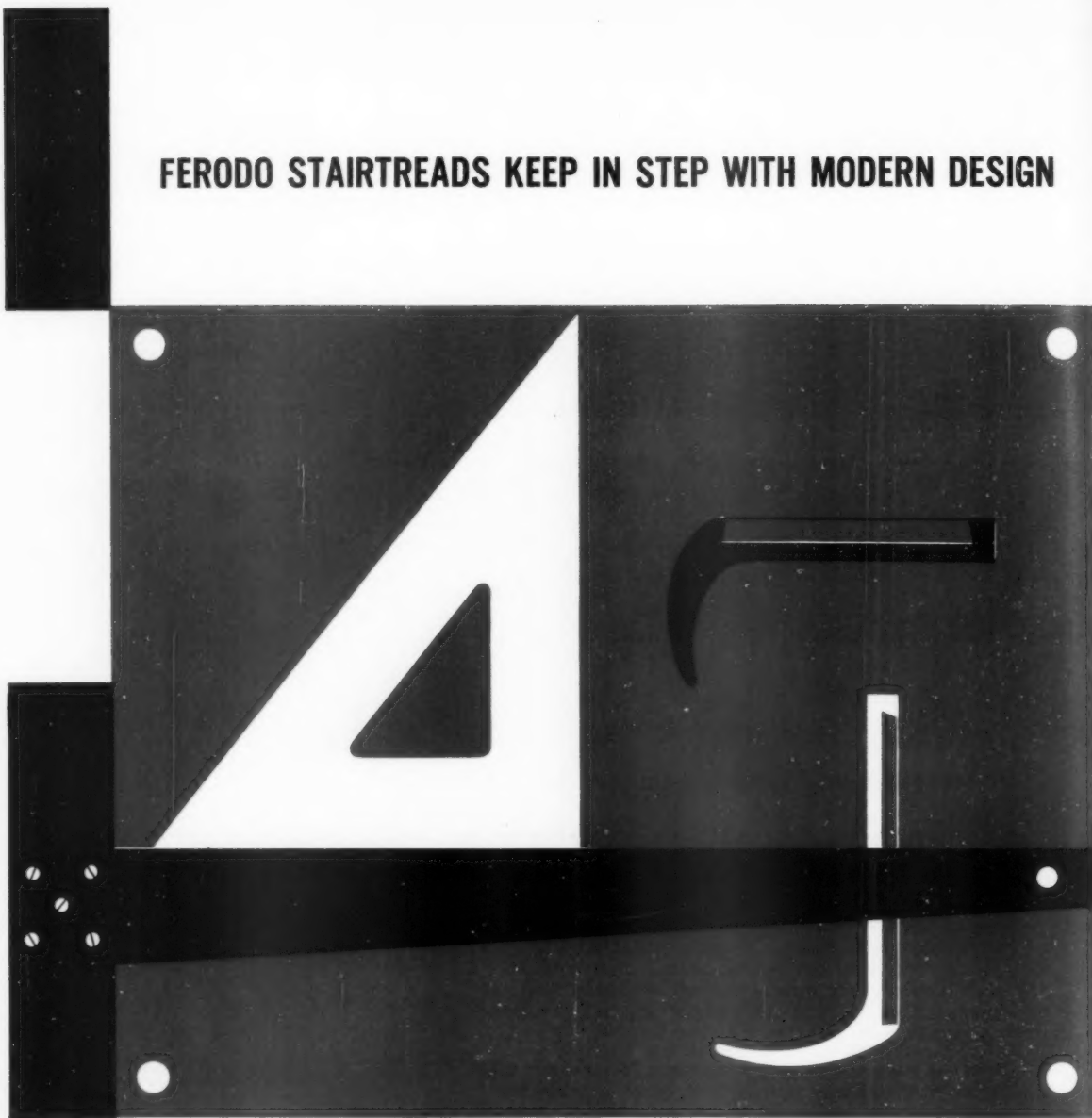
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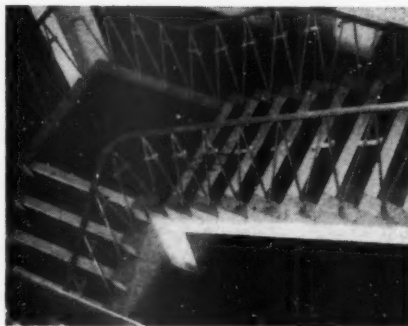
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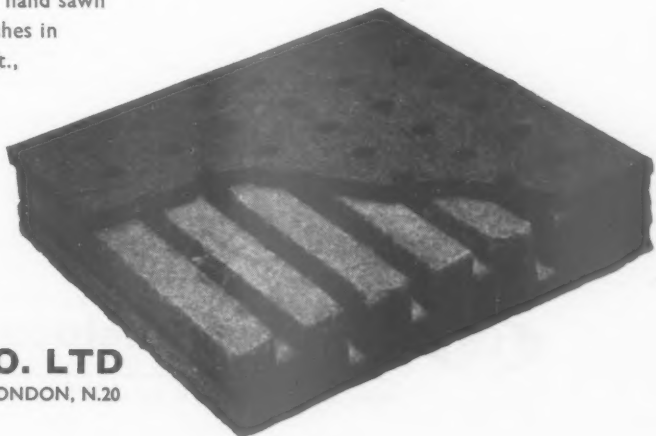
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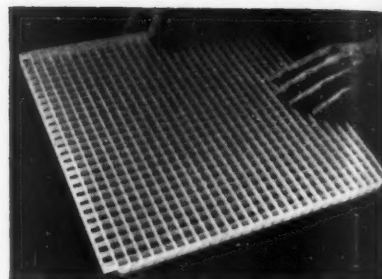
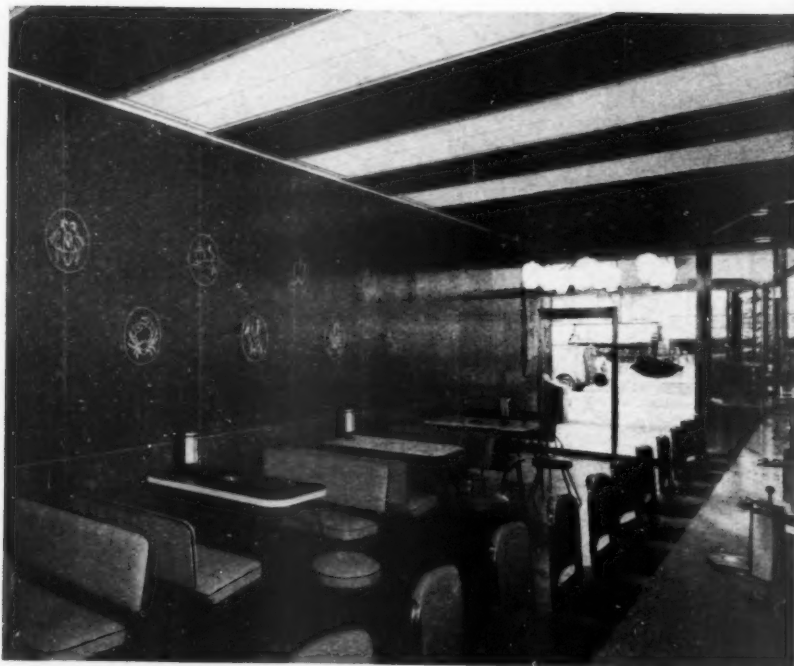
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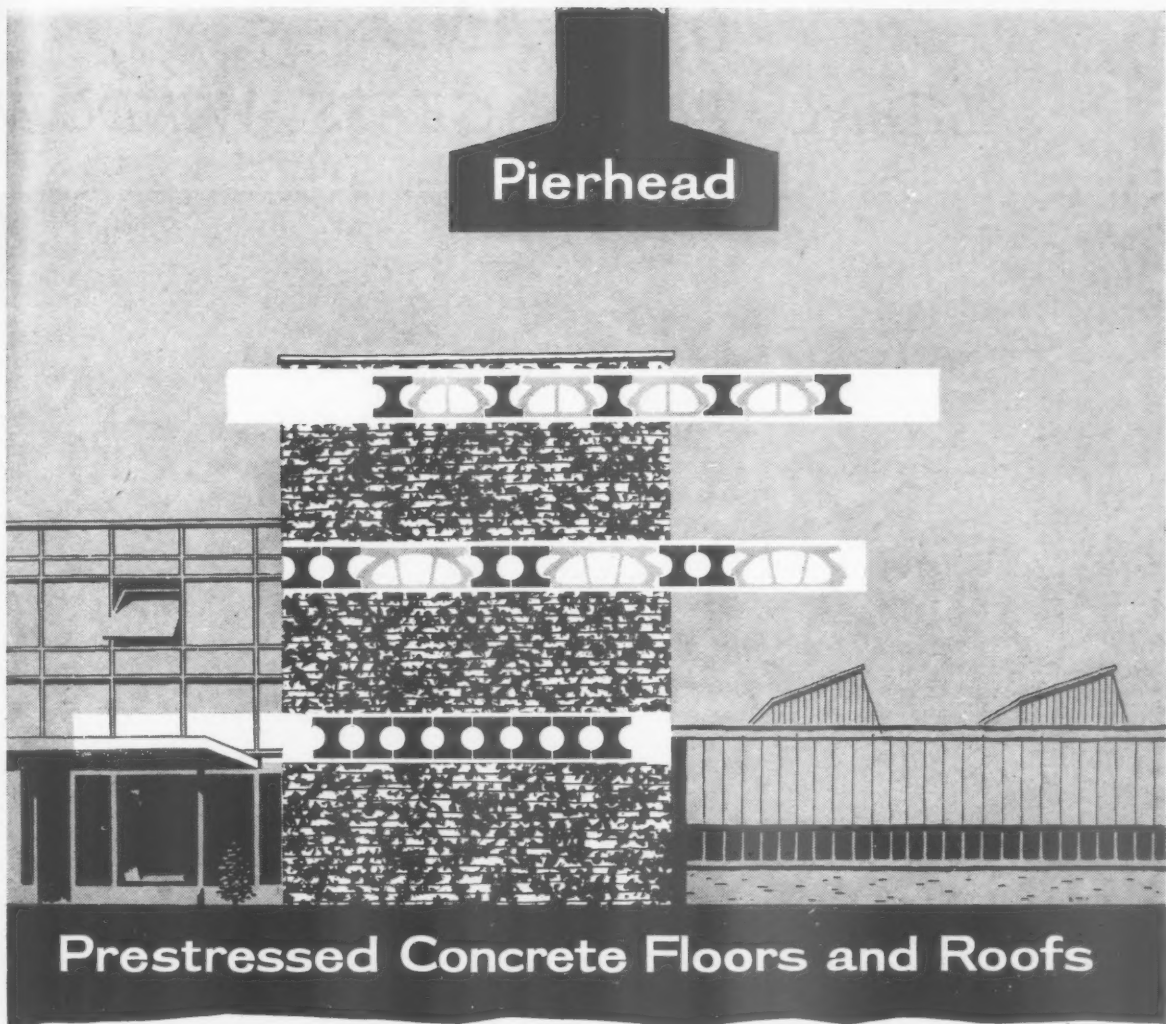
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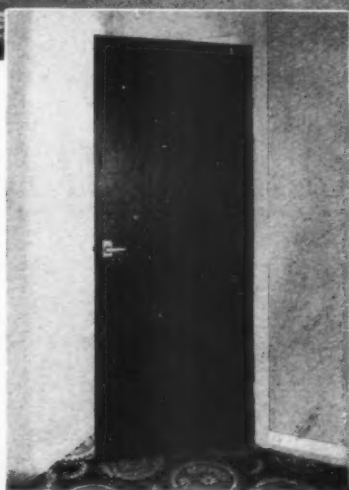
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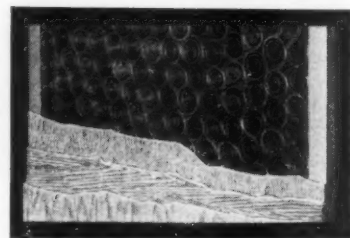
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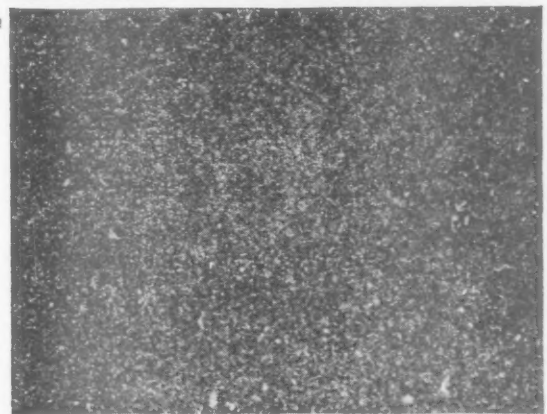
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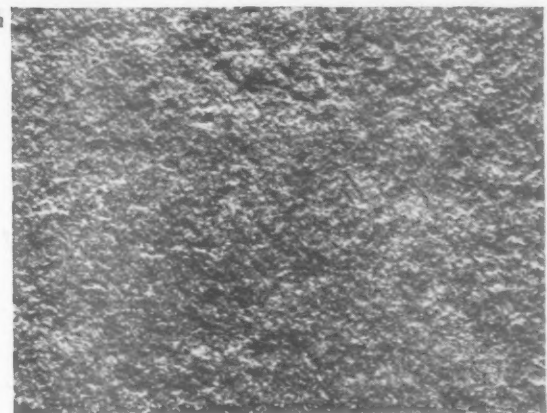
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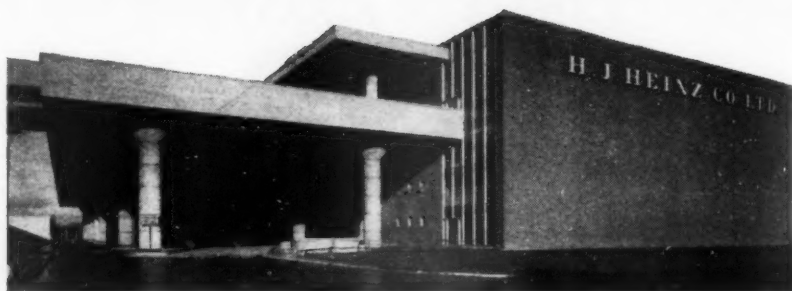
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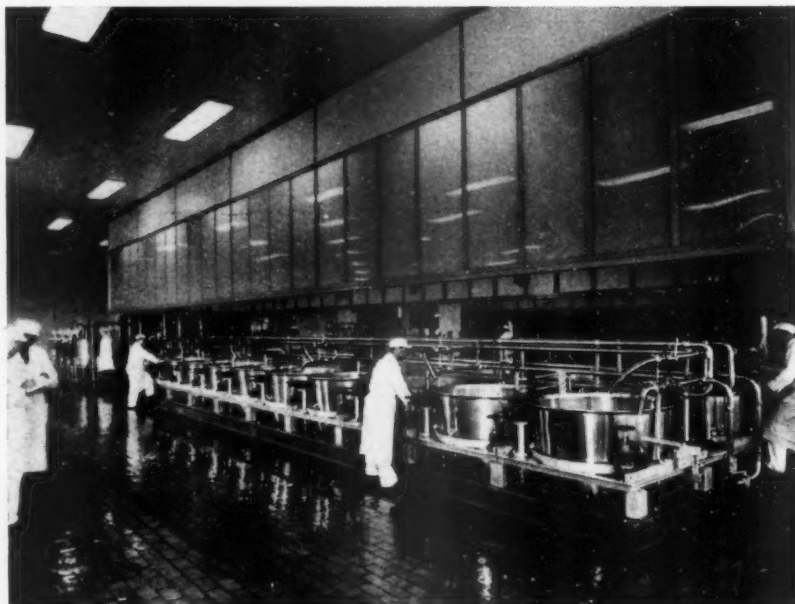
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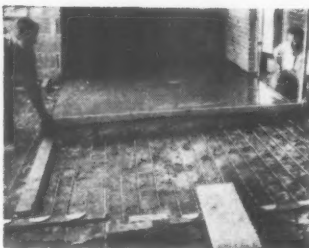


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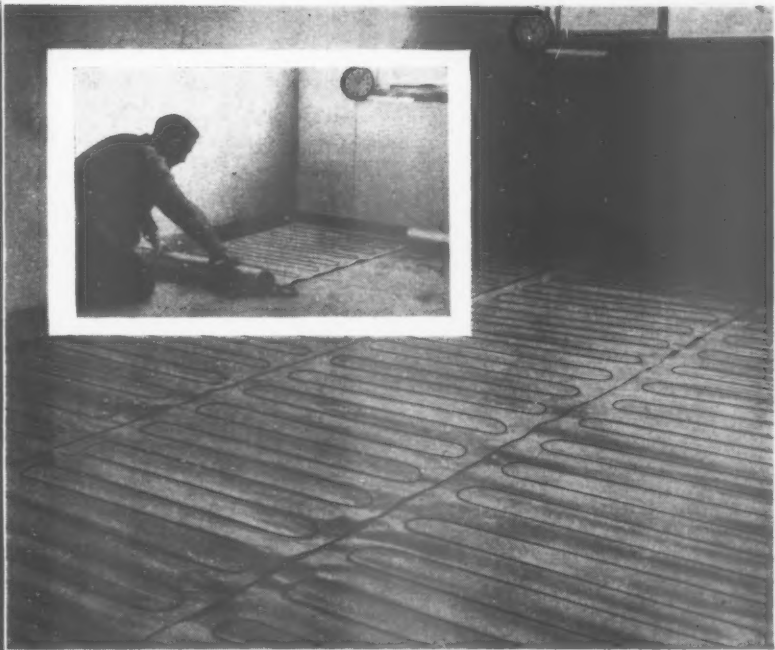
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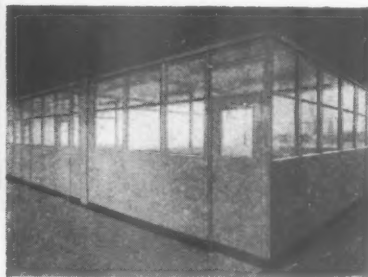
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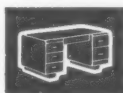


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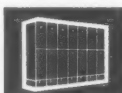
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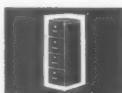
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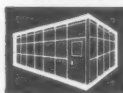
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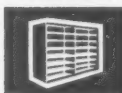
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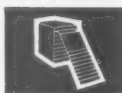
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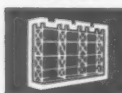
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The Architects' Journal

No. 3357 Vol. 130. August 20, 1959

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NOT QUITE ARCHITECTURE

## DOES ANYBODY CARE WHO'S WHO?

*continued*

The groping, bewildered Client in search of an Architect is still looking in vain for some reliable guide, and at last he obtains from the Public Library a copy of *Jane's Fighting Fellows*, Volume 2, a series of literary profiles with portraits by Tony Armstrong Jones. He opens it quietly, as soon as the Sunday night radio play comes on. . . .

"CRAWFORD MANNING, F.R.I.B.A.: I clearly remember one foggy November day about 25 years ago when I visited a Northern school of Architecture in the dubious guise of an External Examiner, for although I held the privilege in high esteem I found my resources painfully inadequate for the frightening task of determining what, by their very nature, were essentially unknown quantities. The examination over, I embarked on a short, aimless sort of a stroll, in order to relax my mental faculties and let some clean air freshen my sense of values; however, the weather was so depressing that I returned to the school, which was in the midst of lunchtime desertion and stillness. I entered the first year studio, and was wandering at random among the silence of temporarily suspended labour when I noticed a slight, dark-haired figure huddled over a drawing-board in one corner of the room. "Do you always spend your lunch-hour thus?" I asked.

"Yes, Sir," he replied, and I thought his face seemed a little pale, though this may have been a trick of the light or my romantic imagination.

"I assume you eat?" I said.

"I have my sandwiches," he remarked, indicating a small, brown-paper parcel.

"I commend your enthusiasm," I observed, "but surely a good meal, or a glance at an intelligent newspaper would freshen your approach on returning to your board."

"I like architecture," he said slowly, and I could not fail to notice the precision of the Classical Study sheet on which he was labouring with such dedication.

I was beginning to feel the necessity for some good and substantial food and I tried in vain to persuade my young friend to





## *Opportunity to Try Again*

Architects whose wounds, received after losing recent competitions, have healed and whose energies are restored, may care to enter the latest competition: for new county offices at Taunton, costing approximately £400,000. Once again, as with the Churchill competition, the assessors are an eminent group of contemporary-minded architects to whom competitors will feel no need to play down, or adjust their design capabilities, and whose personal failings will only be discovered when the results are made known. The assessors are: Lionel Brett, Geoffrey Jellicoe and J. M. Richards. The premiums are £1,500, £1,000 and £500. The last day for submitting designs is February 15, 1960, and the last day for questions is September 22, 1959.

Conditions (deposit: £2 2s. 0d.) may be obtained from the Clerk of the County Council, County Hall, Taunton, Somerset. The competition is open to registered architects resident in Great Britain and Northern Ireland, and they must state their registration number when applying for conditions. The site for the offices is the triangle of land shown in the photograph (by Aerofilms) above. In the centre are Vincent Harris's county offices, symmetrically disposed on a non-existent axis, with the Shire Hall on the left, and a nondescript cluster of small buildings on the right, only one or two of which might be worth preserving. It will be an exacting but fascinating task to add to the existing offices and create an orderly, urban, civic nucleus on this attractive site.

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have lunch with me; he thanked me briefly but sincerely, and made it quite clear that all he wanted was my departure so that he could continue with his work. I wished him *au revoir*, and *bon chance* and retired to indulge my taste for good food as well as local conditions would permit, with a strange, inner conviction regarding the lonely young man in the studio.  
I was right; that young man was Crawford Manning. . . .

This goes on for some time, and old Everyman is able to choose his architect, providing that Time is not too important a factor. Where time is important the *New Architectural Mayhew* is the ideal solution, providing a concise analysis of the various elements which make up the profession. Supposing, for example, that Old Everyman has a friend whose son has recently completed Fifth Year, he merely has to consult the Good Book, under the heading, Almost A. "ALMOST A: Hairier than his elder brother, A. of A./A.R.I.B.A., Almost A. drifted into Architecture with the necessary fragments of the GCE at the age of 18, because it represented Self-Expression (which he liked) and semi-detached, suburban respectability (which his parents liked). He worked hard, rattled festival collecting tins, painted scenery for Dram. Soc. and repeated Third Year. Later on he shared a flat with a colleague, Alas-not-yet-to-be-Almost-A, and had parties at which guests drank home-made beverages and were ill; Almost A. thought oh Bohemia and laughed. Then came Madness, incorporating a Design Thesis, black coffee, tablets, the wee small hours, the American Forces Network and a main plan sheet with a North Point which took two hours to design. He passed and supposed it had all been worth it.

So to the present picture, which is the trailer to the big one still to come. Almost A., scorned for his inexperience by older A.'s, ridiculed by elderly L.'s for his fancy notions, patronized by influential F.'s for his promise. In a way, they are right, but Almost A. need not worry. He and his kind are the salt of the profession, and he should realize it. It is sad that he has yet to taste the vinegar."

Looking back at the results of this survey of Potential-Client bewilderment, one fact is clear as gin-and-tonic. Nothing much is likely to happen. This is unfortunate, because even if the results were not made available for public consumption at all, the benefit to be derived from 15 rounds of more or less middleweight self-analysis would be considerable.

It is really a practical version of an old Utopian ideal, which is to tether every practising architect in front of one of his old buildings, and leave him there for a day; he would then be moved to another former site, until he had spent a day looking at each of his complete works. Anyone retaining a vestige of sanity would be allowed to resume his practice.

Until such a time, the *New Architectural Mayhew*, or something akin, seems the next best thing.

ALAN PLATER

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

## The Editors

### WHAT PRICE INSULATION?

IN the last debate held in the House of Commons before the summer recess W. F. Deedes, M.P., who has more than once shown himself a vigilant defender of the beauty of town and country, attempted to probe the reasons given by the Ministry of Fuel and Power for rejecting nearly every proposal to run electricity transmission lines underground. He asked, in particular, whether the Ministry had submitted to independent scrutiny the assertion always tossed into the arena at public enquiries to blast all objections out of the way—that overhead lines cost £25,000, underground lines £300,000 a mile.

On this occasion the Parliamentary Secretary, Sir Ian Horobin, while evading the demand for an independent scrutiny, did at least provide an intelligible explanation. The overhead line, he said, has only to be insulated at four points in every mile, but the underground line has to be insulated all the way, with successive layers of paper, lead, steel wire and bitumen. He put the cost of the cable at £200,000, and the trenching and filling at £100,000—an astonishing figure.

Despite this apparently convincing explanation one cannot resist the feeling that if it became policy to run considerable lengths of cable underground the cost would be greatly reduced. Sir Ian did not say how much money is being spent on research, or what results have been obtained by the use of new insulating materials, or new methods of boring. The proliferation of overhead wires is so fast and extensive that nobody who is seriously concerned about the beauty of our country can accept bald assertions on cost without a great deal more evidence than has yet been presented.

### IS YOUR BACK-UP WALL REALLY NECESSARY?

DSIR and the Fire Officers' Committee have just issued their Annual Report\* which describes among other matters their work on a mock-up four-storey tower designed to test flame spread across the face of multi-storey buildings. The results showed "that a reduction in the fire resistance of the under window panels from  $\frac{1}{2}$  h(our) to nil did not significantly increase the hazard of flames from the ground floor room igniting the contents of the room above it, even with the

\* Fire research 1958 HMSO 5s.

maximum fire load of 80,000 Btu/ft<sup>2</sup>". Results also showed that a projecting balcony is of no use as a firestop and that the curtains in the flat above will ignite whether you have a 3-ft. back-up wall or whether you don't. What seemingly tells in favour of large areas of window is that the larger the window the shorter the duration of the fire and duration is necessary if the fire is to pass from burning the curtains to burning the woodwork. There is a doubt here, for it is thought that the shallowness of the test rooms—they were 10 ft. deep only—may have influenced the duration of the fire and that a deeper room would burn less fiercely, perhaps, but longer.

These facts are of great importance and raise the question "Why weren't they found out long ago?" The matter is still *sub judice*, but it seems at least likely that the back-up wall is not necessary. If this is finally proved to be so, it would be interesting to tot up the cost of all the back-up walls erected since, say, 1945, and to estimate from this the cost of delaying this research work for 15 years.



#### BUILDING PROBLEMS AIRED

From the end of September you will all be rushing home on Tuesday evenings to hear what the BBC has to tell you about architecture, planning and building. At least, I hope you'll be rushing home. Now that the Corporation has its Network Three and can give us something we ought to have had 25 years ago, let's hope it will do the job well. The programme is in what are known as capable hands and has an experimental three months in which to prove itself. The producer, Bob

Gunnell—a man who knows his building industry—has told a colleague that his consultants are Keith Alsop (BRS), Gontran Goulden (Building Centre) and Edward Mills. The news reader will be William Bryant, once assistant editor of the *Builder* and now in charge of public relations at the NFBTE, and the programmes will be introduced by an ex-actor-architect-builder-journalist, Charles Crichton, a director of Holliday and Greenwood.

About nine minutes of the programme will be kept open until the last moment for topical items, so if you are not at an RIBA meeting and have so little work to do that you can get home by seven-o'clock, you may sometimes get a preview of a subject that will be hot news in the JOURNAL of the following week. I look forward to hearing these programmes, particularly the "controversial" items we are promised, which will include such subjects as motorways and the "all-in" policy. But it is a pity that the television doesn't have the equivalent of a Network Three to deal with a subject that needs visual aids.

#### CLINICAL ARCHITECTURE

More than 70 per cent of the food served in hospitals reaches pig bins because patients can't touch it. What has this to do with architecture? Simply that the architect's department of the Ministry of Health is to consider how kitchen-ward planning can improve the quality of food. William

Tatton-Brown's development team will also be experimenting to see if an out-patients department can be planned to deal with people who usually have to spend two or three days in hospital. And they are hoping to find ways of saving space in medical consultants' suites and in waiting rooms.

\*

This development team, which is staffed with quantity surveyors and engineering assistants, is in need of more architects. There are fascinating jobs here for the right, bright people who would like the chance of doing, in a public office, the sort of work that has been done so well by the Architect's Division of the Nuffield Foundation. They will work not only with doctors and nurses, but also with the Ministry's O and M and Statistical sections and its catering, laundering and service experts. In addition to working on projects the team will be responsible for publishing bulletins and clearing ideas from the regional hospital boards.

#### THEY CAN'T TAKE IT WITH THEM

Three thousand warnings have been issued in the Royal Parks. No dear, don't lower your eyes and skip this bit—I'm talking about the crimes of the litter louts, one thousand of whom have been prosecuted since higher penalties were imposed. Only 3 people had the maximum fine of £10, and only three of the thousand were in Westminster. (Incidentally, a sticker in St. James's Park still lets you have your litter orgy for only £5.) I haven't got any more statistics, but I understand that Marylebone's citizens have improved after warnings and that Box Hill had less litter than usual after Bank Holiday, which coincided with the beginning of "Keep Britain Tidy" week. But did you see *The Times* pictures of the piles of rubbish on Epsom racecourse? We're nowhere near to solving the problem yet, and I'm glad to hear that a national litter bin competition is being prepared.

\*

More than litter bins are needed, however, to protect country areas. You can't cover the Scottish Highlands with bins. But something must be done to clean up such areas, where campers and picnickers are continually leaving bottles, tins and wrappings as souvenirs of their visits. Could the motoring



organizations organize a campaign? (Sir William Holford is on the Automobile Association Council.) Could local authorities organise regular cleaning of roadside encampments? And could coach drivers and conductors be made responsible for their passengers' tidiness?

#### HATS OFF TWICE

ASTRAGAL, who is recovering from his enforced holiday from this sprightly sixty-year-old journal, is envious to hear that the *Irish Builder and Engineer* has had one hundred years of continuous publication. Hats off to the Irish printers, who must be a happy body of men—and to the paper itself, of course.

Hats off again to the editor of the *Devon and Cornwall Society Journal* for being the first editor of an allied society journal (as far as I know) to publish criticism of a building. The building is a Plymouth garage, designed by William Roseveare, and it is certainly good enough to be given such attention. Let us hope nothing will deter this publication from introducing criticism as a regular feature.

#### NATIONAL TRUST GOES UNDERGROUND

The National Trust is increasing its membership by 20 a day as a result of a smart little exhibition it is presenting, in collaboration with London Transport, at Charing Cross Underground Station. Dennis Lennon has created a delightful sequence of rooms to show off photo enlargements of classic door cases and cornices, and some huge pictures of buildings that come within the London Transport area. If you can't look at the exhibition before it ends on September 5, have a look at your conscience and see if your subscription has lapsed. I am naturally assuming that as you are an architect you did have one once. I hope I'm right.

#### CAN YOU GET A SQUARE MEAL?

When I first saw a picture of Coventry's cantilevered concrete café I thought someone had been very bold indeed. Most caterers find they can't attract first-floor custom at all easily. But although this circular café (see picture) is sited on the axis of the lower pedestrian precinct, it is reached by a bridge from the upper level. The central drum, 14 ft. in diameter contains a basement store, a ground-floor kiosk, wash-up and cloakroom and



The circular café in Coventry's pedestrian shopping area. It has concrete walls 6 in. thick. Fascia, spandrel and part of the drum are faced with mosaic. The soffit of the cantilever is of plywood panels. See note, "Can You Get a Square Meal?"

a first-floor kitchen and servery. The cantilevered restaurant, which seats 70 and is 37 ft. in diameter, was designed in the Coventry Architectural and Planning Department under Arthur Ling. Incidentally, if you ever worked in this department you'll find an invitation, on page 48, to a party which will celebrate its move to permanent offices.

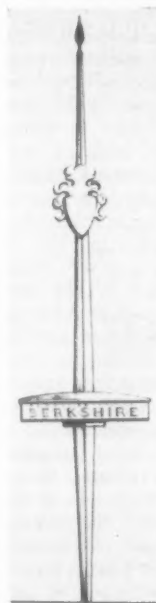
#### BERKS UP THE WRONG TREE

At a time when efforts are being made to reduce the number of signs in streets it is a pity to hear of a county that has thought up a new one. The county is Berkshire and it has decided to put up 42 boundary notices now it has had the Queen's approval for its practice of describing itself as a Royal County. The sign is the left-hand one in the picture on this page. It won first prize for N. G. Williams in a competition assessed by E. A. Ferriby, chief architect of Bracknell Development Corporation and chairman-elect of the Berkshire Society of Architects. It is fairly inoffensive, but its 12-ft. column is aggressively unpleasant. No doubt the wretched thing will be described as worthy civic pride. What we need is a bit more civic humility.

Talking of which, I understand that the Civic Trust is getting a lot of requests from towns that would like to have a Norwich-style face lift. No

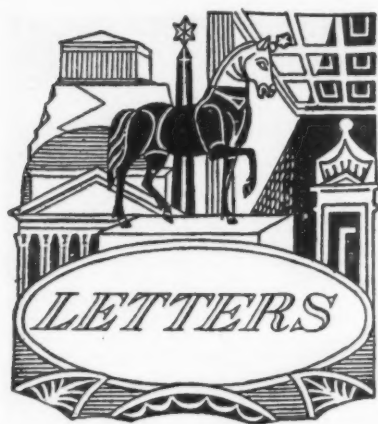
details are available yet, but I'm sure we shall have some encouraging news within a few weeks. This awakening of civic conscience is quite remarkable—potentially the biggest thing that has happened in the fight against Subtopia.

ASTRAGAL



Designs placed first (left) and second in a competition for a new boundary sign for Berkshire County Council. See note, "Berks Up The Wrong Tree."





*C. S. K. Benham,*

*Benham & Sons Ltd.*

*Donald McMorran, A.R.A.,  
F.R.I.B.A.*

*Stanley Milburn, F.R.I.B.A.*

*Arthur Ling, F.R.I.B.A., M.T.P.I.,  
Coventry City Architect and Planning Officer.*

## Training Heating and Ventilating Engineers

SIR: Quite a large number of architects attended the Yerbury Foundation lecture by J. Varming last May. I feel that these people and many others who read reports of this lecture will have got a misleading impression of the qualifications of heating and ventilating engineers in this country, and I hope that you will publish a few sentences of mine on this subject, with which I have been intimately connected for about 20 years.

First of all, it needs to be known that the educational advance in this industry during these 20 years has been sensational. We—the industry—are practically unique in the country during this period of time, in having petitioned for, secured and managed ourselves a most successful National College—so successful that the Ministry of Education is now financing the building of a very fine new headquarters for it. For the last 10 years, an ever-increasing number (from 50-100 per annum) qualified heating and ventilating engineers have been produced in this way, and the number envisaged is about 150 per annum. It is interesting to note that many students from abroad are attending the College, chiefly, of course, from the Commonwealth and the Colonies.

This College has been conceived, managed and (partly) paid for by the concerted efforts of nearly all the leading contractors of the country in conjunction with the leading manufacturers of fans and refrigerating machinery. It has also been greatly helped by the Governors and Principal of the

Borough Polytechnic, and by one prominent consulting engineer, L. Copeland Watts.

During the last five years, the industry has also started an extremely promising co-operative Research Association, supported by a rather wider group of companies, which include most of the best-known British consulting engineers—again a most creditable concerted effort.

Mr. Varming made the point that the heating and ventilating engineer's work is based on physics and that he is by implication not a true engineer, or not in the sense understood by mechanical, civil and electrical engineers. I think that we should answer that all engineering is based on physics, that we need (more or less) pure physicists in our research work but nowhere else, and that we are firmly convinced that our staffs should be trained engineers, and good ones at that, for they have a wide range of engineering responsibility, from combustion engineering, and boiler-house practice, to automatic controls and air-conditioning. Mr. Varming also suggested that the industry suffered from a lack of graduates and that it would get more if the Institution had a Royal Charter. Actually the industry has many more graduates than formerly, possibly 10 times as many as in 1939, and the granting of a Royal Charter would be most unlikely to affect this.

We, the heating and ventilating engineers of this country, are in touch with Continental practice, and we know, or are beginning to know, our weaknesses. Technical education is not one of them. The home-grown brand can stand up to any comparison.

C. S. K. BENHAM  
*Benham & Sons Ltd.*

## Churchill College

SIR: Your leading article of August 13 says that "the competition system . . . does not work well when architecture as a social art is required." This is a statement, harmful to architects and architecture, that needs refutation. Fortunately, in another column, you supply the answer by claiming the Golden Lane housing scheme of the Corporation of London as a leading example of public architecture. It cannot, I think, be denied that Golden Lane is an example of "social art," but it was produced by a competition.

In that instance the promoters followed the established procedure best calculated to ensure success. They appointed a single assessor to conduct an open and anonymous one-stage competition. They issued absolutely precise information about their requirements, they allowed sufficient time for the preparation of designs, and they called for only the simplest drawings. They accepted the assessor's decision without question (although the winner was young and little known), and they assisted the subsequent development and improvement of the design.

Please use your great influence, not to

denigrate the competition system, but to encourage its proper use.

DONALD MCMORRAN

London.

The Editor writes: Mr. McMorran was the assessor in the Golden Lane competition.

SIR: I read with much interest your leader upon the result of the Churchill College competition, but completely disagree with your opinion as to the result. British architects can indeed take pride in the magnificent monument to a very great man Richard Sheppard and Partners have produced. The placing of the main group of buildings with the central gathering space for undergraduates underneath is one of the touches of genius in creative design that would win, in my opinion, any competition, national or international. It is, I consider comparable with Utzon's elevated concourse at Sydney Harbour, and the Government Building Plateau at Brazzaville, two outstanding examples of recent International competitions.

STANLEY MILBURN

Sunderland.

## Come to Coventry

SIR: In September the City of Coventry Architectural and Planning Department moves into its permanent home in the new Coventry, after many years in various temporary premises in the vicinity of Bull Yard. To mark the event the Department is arranging a staff social gathering on the evening of Friday September 18 to which all former members of the Department and partners are cordially invited.

It is hoped that, on this occasion, many old friendships may be renewed and perhaps a few new ones formed. Interested former colleagues should write to me as soon as possible, when full details will be forwarded.

ARTHUR LING,  
*Coventry City Architectural and Planning Officer.*

## Omission

In a letter from Nigel C. Mould, published in the JOURNAL of June 4, describing RIBA Examination conditions, we regret that the following paragraph was omitted at the end of the letter:

I am sure that all interested parties will agree with me that although these welcome improvements are literally years overdue, at least the present Officers of the Board recognize the fact by doing something about it and deserve our heartfelt thanks for what is a good step forward.



HC

## The Radburn System

"Child's Eye View," a recent exhibition at the Housing Centre designed by Paul Ritter was an extremely modest, but significant one-man show in which the various British and Swedish schemes built on the Radburn principle since 1950 were examined from the sociological and architectural aspects. It was originally part of a larger exhibition sponsored by the Nottingham Co-operative Society. The designer's basic thesis is that "making unsafe roads and footpaths should be a recognized crime," and that the planner must come to terms with the motor-car first and foremost in the design of residential areas. It should be possible for a child to walk to school, and a housewife to go to the shops and other local facilities, along a system of garden areas and planted pedestrian ways with underpasses provided so that it is never necessary to cross a road or to face the danger of traffic hazards. Instead of having to play on the roadway, children should have play spaces and safety, as a natural right.

This is an approach to design which is complementary to the careful integration of motorways into our cities and assumes that with the complete physical separation and segregation of the systems of vehicular and pedestrian circulation, there is still a possibility of a satisfactory town life in the motor age.

Sociological analyses of each Radburn housing scheme built so far were included in the exhibition, and it was suggested that the two most successful British schemes—in Sheffield and in Coventry—resulted from the personal conviction of J. M. Womersley and Arthur Ling, the City Architects responsible. The Wrexham experiment in which the Radburn idea was belatedly brought to this country in 1950 was stated to be a success from the economic and architectural points of view but a social failure. Two high density Swedish schemes (in Gothenburg and Orebro) were shown in addition to Vällingby—a whole town developed on the safe housing layout principle. The Swedish examples show the skilful use of continuous four storey dwellings in the superblocks, and made the two-storey

English examples look even more dull, shapeless and sprawling than usual. It is particularly tragic that in none of the British new towns do we appear to have attempted any fully-fledged Radburn experiments, or any other large-scale experiments in their residential layouts.

The study gave evidence that on sociological grounds and from the points of view of safety from traffic danger, convenience, beauty, economy and ease of social intercourse, the Radburn layout technique is unquestionably superior, and left one wondering why it is so rarely used by British architects and planners. Two useful suggestions were offered in the exhibition. The first is the possibility of renovating areas of substantial Victorian housing where existing pedestrian ways may easily be linked to form a safe system by converting only a small number of existing streets into pedestrian ways. This offers great possibilities for planners in towns such as Nottingham and Manchester. It is also shown that many of the inter-war council housing estates (which we tend to write off as failures) could be converted into modified Radburn layouts at little cost, thereby bringing safety and a desirable precinctual quality to areas which are now dull, monotonous and grossly over-loaded.

A. S. TRAVIS

## RIBA

### Swiss Industrial Architecture

As part of the Swiss Fortnight in London—Switzerland on Show—the Royal Institute of British Architects will present an Exhibition of Industrial Architecture in Switzerland from October 6 to 17, 1959 (Monday—Friday 10-7; Saturdays 10-5; admission free). The exhibition has been prepared by the Federation of Swiss Architects, and will contain photographs, plans, models and it is hoped sculpture. After the showing at the RIBA the Swiss Embassy are hoping to tour the exhibition to about six centres in different parts of the country.

## OLD POST OFFICES

### Modernization Plans

As a step towards the improvement of some of the older Post Offices, three Post Offices in London and three in the North of England are to be modernized, each having a different treatment. Ernest Marples, M.P., Postmaster General, has called into consultation Sir Hugh Casson, Mischa Black of the Design Research Unit, W. Stevenson, Principal of the Liverpool College of Art, and F. J. M. Ormrod of the Liverpool firm of architects and planning consultants.

## JCC

### Interim Valuation

The Joint Consultative Committee of Architects, Quantity Surveyors and Builders are of the opinion that the following details should be included in a Form of Interim Valuation: (a) Site or contract. (b) Name

of contractor. (c) Date and serial number of valuation. (d) Estimated total value of work executed. (e) Estimated value of materials on site. (f) Adjustments for fluctuations, if any. (g) Retention. (h) Amount of previous certificates. (i) Amount recommended for certification. (j) The gross amounts included under (d) above in respect of each nominated sub-contractor should be given in an attached statement or endorsement. (k) Signature of quantity surveyor.

## NEWS IN BRIEF

The organizers of the manufacturers' trade and technical literature competition 1959 have decided, in view of the delays caused by the printing dispute, that the last day for receiving entries will be December 31, 1959.

The York Institute of Advanced Architectural Studies has announced its autumn courses. These include "Trees Preservation in Town and Country" (September 17 to 21) which covers all aspects of the subject and is intended for landscape architects and town planners, and "Recent Developments in Quantity Surveying" (November 6 to 10), which is believed to be the first time that such a course has been attempted. Other courses include the use of timber in modern building (September 25 to 29), architectural project management (October 2-6).

The Institute of Landscape Architects propose to set up a Landscape Design Centre for the criticism of students' work and for the promotion of good landscape design. It is intended that there will be criticism by senior members of the Institute at least one evening every two weeks. A meeting of potential students and the staff will be held at the Institute of Landscape Architects, 1, Park Crescent, London, W.1, at 6.30 p.m. on the evening of September 1, in order to discuss the programme and essential arrangements.

## CORRECTIONS

We regret that in the JOURNAL for June 18 the name of Ralph Hobday, Senior Architect to the Imperial War Graves Commission, who received an O.B.E. was incorrectly spelt.

The photograph of Sir Ninian Comper which appeared in the JOURNAL of June 18 was taken by Allan Chappelow, M.A., F.R.S.A.

## DIARY

Churchill College Competition: Exhibition of plans and drawings. At the R.I.B.A., 66, Portland Place, W.1. Monday to Friday 10 a.m. to 5.30 p.m. Saturday 10 a.m. to 1 p.m. UNTIL SEPTEMBER 12

Beauty in Trust. Exhibition organised by the National Trust and London Transport at Charing Cross Underground Station.

UNTIL SEPTEMBER 5

## CAMBRIDGE

### *Corbusier Honoured*

M. Le Corbusier visited Cambridge on June 10 and 11 to receive the Honorary Degree of Doctor of Laws. Those receiving degrees included Henry Moore, Benjamin Britten, Sir Vivian Fuchs and the Indian scientist and painter H. J. Bhabha. The Public Orator presenting Le Corbusier said in his Latin oration:

"At the time when, worn out by the First World War, men were commonly content with restoring old fashions and imitating obsolete styles there arose a small band of architects who did not despair of their own age and of the future. Above all it was this man who, from Paris the fountain-head of the arts, spread abroad the 'Esprit Nouveau,' as they called it; and for more than 30 years since he has been the leader and standard-bearer of the young. He holds philosophic views on his art: he believes with Pythagoras that number, and with Plato that geometry, underlies the harmony of the universe and the beauty of objects, and with Cicero that utility is the mother of dignity. He is also akin to Leonardo, in that he observes the principles of the engineer while applying to them the eye of a painter and sculptor, and to those who are seeking (or indeed not seeking) the famous 'Divine Proportion' he has proposed the standard he calls 'Modulor,' based on the stature of a man, or to be exact, a six-foot Englishman.

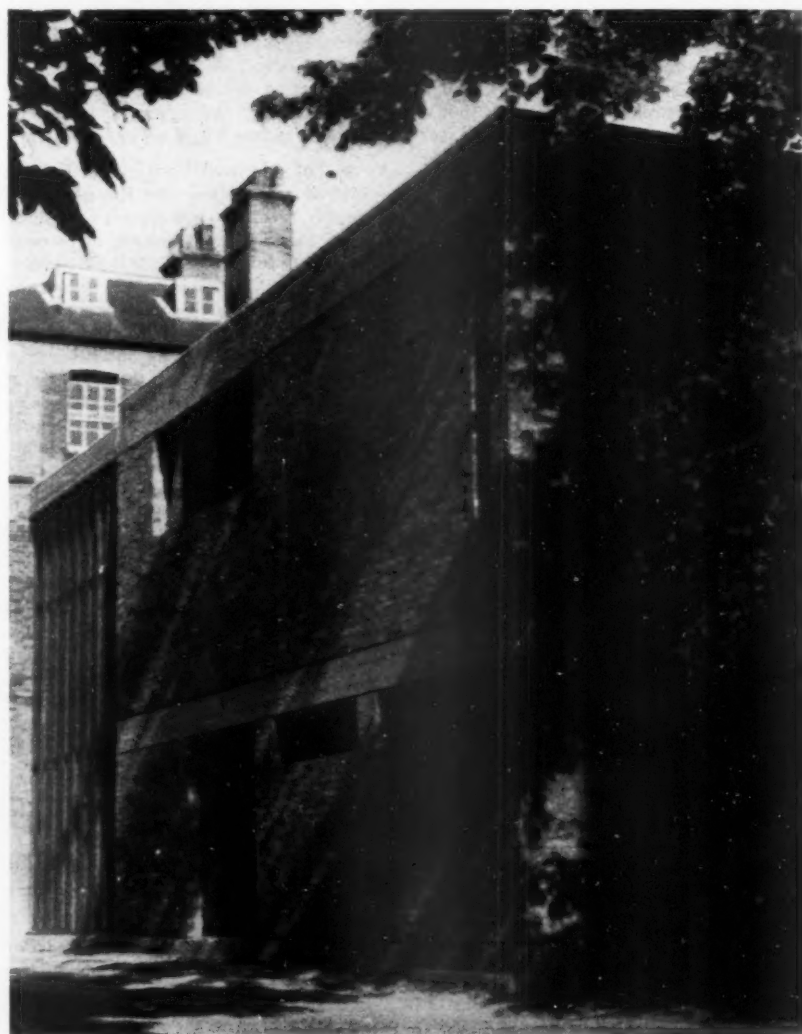
"In planning cities he manages, by dispersing high blocks, to leave most of the site free for green grass and trees. In designing buildings he is always inventing new and apt devices, and giving evidence of an original and most fertile mind.

"He has seen a number of monuments to his genius completed. And moreover, if his daring schemes have often been frustrated by ill luck and sometimes by the timidity or unreliability of men, yet the wide publication of his plans even for works never carried out has spread his fame and influence. Not only his native France, but India, Moscow and both North and South America can bear him witness; so that one may well ask in a line of Vergil slightly altered,

"What region on earth is not full of this man's works?"

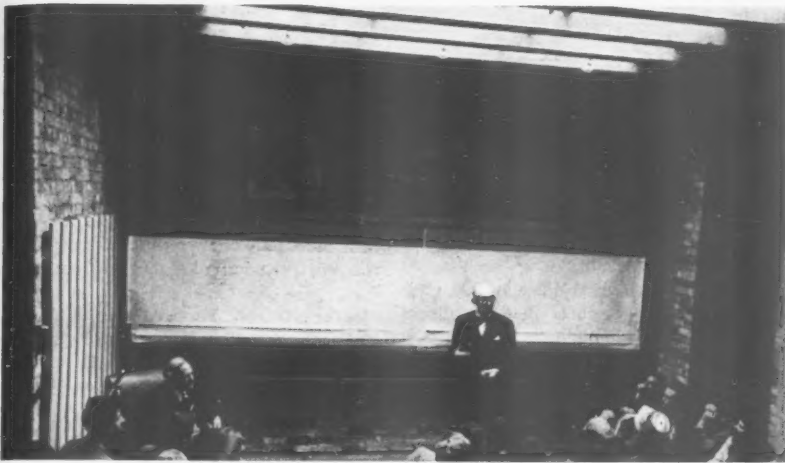
"I present to you one already honoured with the Gold Medal of the Royal Institute of British Architects: Charles-Edouard le Corbusier."

After the ceremony and the Honorary Degree Lunch in Hall at Trinity College le Corbusier and Henry Moore visited the School of Architecture and Le Corbusier made the first speech in the new lecture room building.

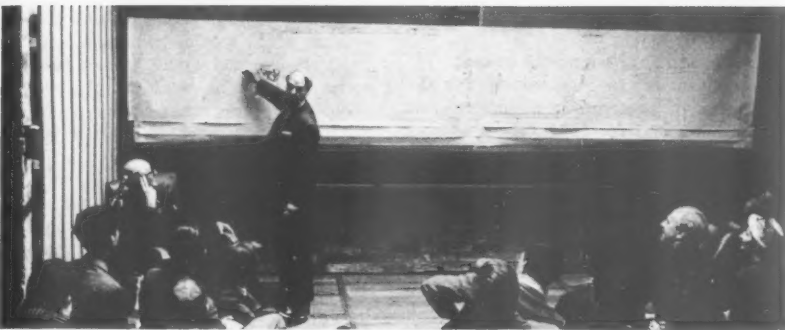


*Above right: the Honorary Graduates in procession. Le Corbusier is in front, followed by Henry Moore. Right: north elevation of the new extension to the Cambridge University School of Architecture.*

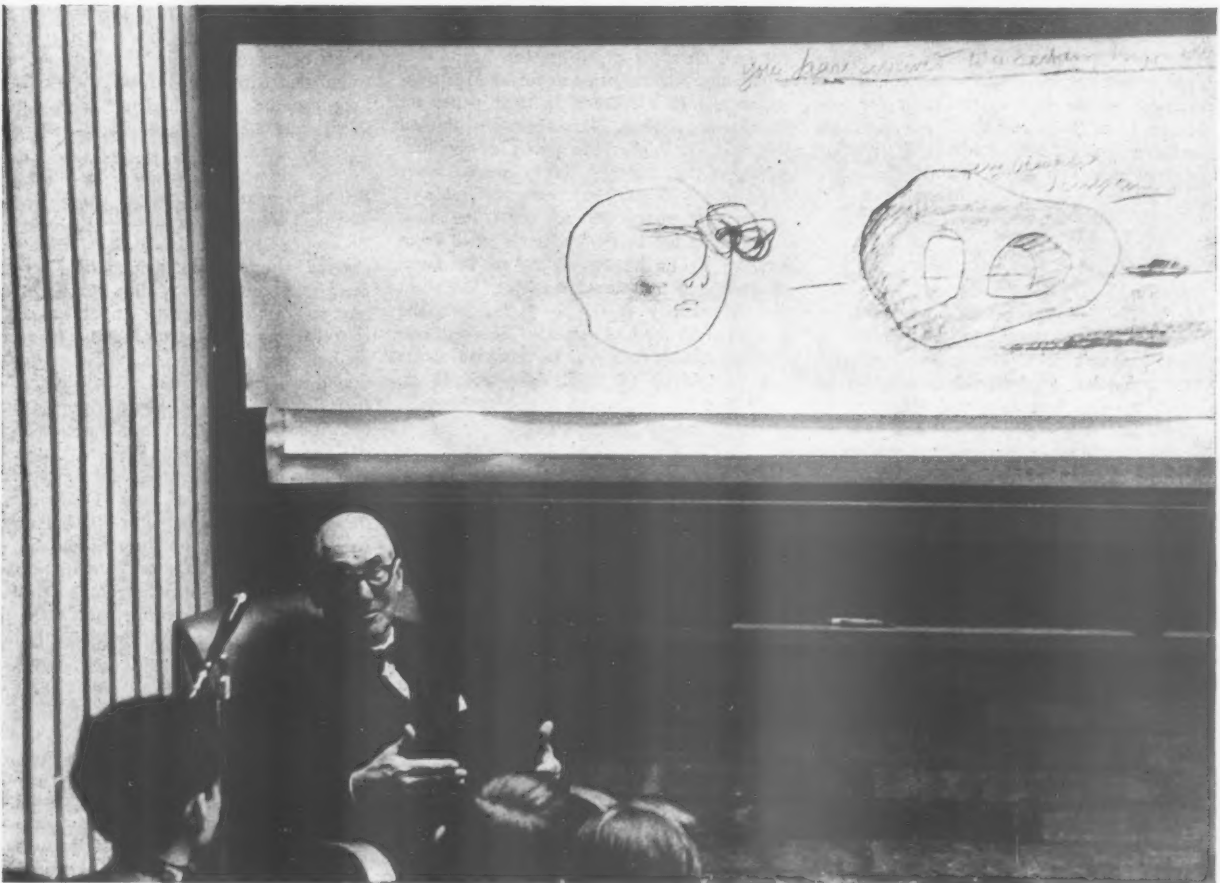




*Left: Le Corbusier, in the new lecture room, describes and illustrates an autobiographical fable.*



*Left: Henry Moore draws a portrait of Le Corbusier without looking at the paper—or the sitter.*



*Below: the end of the discourse. In the background, Le Corbusier by Henry Moore and Henry Moore by Le Corbusier.*



## ALUMINIUM IN BUILDING

*Symposium at the RIBA*

On July 9 and 10 the ADA held a Symposium at the RIBA on Aluminium in Building. The Symposium was divided into three sessions. The first was entitled "Aluminium as a Building Material" and comprised three papers: on the case for aluminium, on Standards and Codes of Practices, and on Finishes. The second session was devoted to "Aluminium Curtain Walling" and comprised four papers: one giving a review of proprietary systems now available in this country, one discussing design and two reviewing practice in America and Europe. The last session was concerned with the other building applications: with roofing, with windows, with thermal insulation, with furniture and with prefabricated and transportable buildings. The papers were pre-printed and those comprising each session were presented by a single rapporteur at the beginning of the session. They were then commented on by those attending and the authors replied to comments at the end. As so often happens at Symposia, the comments raised from the floor did not relate exclusively to the papers under discussion, but ranged freely over the whole field. For this reason it seems best to gather them under their headings and, so far as possible, in the order in which the subjects were raised in the first paper. This, on "The Case for Aluminium," was by Mark Hartland Thomas. This procedure gives an undue prominence to one contributor, but this is excused by the fact that (except for Mr. Mulen from Switzerland) he was the only architect taking part and it was his function to draw attention to the points which are of most interest to the profession.

**Corrosion**

Mark Hartland Thomas first discussed the prejudice which attaches to aluminium in many people's minds because it corrodes. This prejudice, as he pointed out, is not offset by the fact that the corrosion of aluminium is self-stifled. To get over it, he suggested that manufacturers should make it clear that in normal atmospheres (*i.e.*, those where sulphur and salt do not combine) aluminium can safely be left untended, but that, if appearance matters, it must be washed—frequently if mill finish is used, less frequently if the surface is anodised. Mark Hartland Thomas rejected the word "patina" for the corrosion effect of aluminium. A speaker from the floor in great seriousness suggested "sweetening" on the ground that it gives a sugary appearance and this phrase was taken up by every subsequent speaker on this subject. F. C. Porter who gave the paper on "Finishes" pointed out that there must be a run-off from aluminium, for pitting will occur if water is left standing on it, but that as the corrosion products of aluminium alloys are colourless the run-off from aluminium surfaces will not stain.

**Damp courses**

Mark Hartland Thomas next discussed damp courses and suggested that the fact that aluminium reacts with mortar should be an advantage, in that the chemical bond thus produced should qualify it to be the one metal d.p.c. which does not slip. This was questioned by an engineer in the audience who reported that aluminium spray on starter bars in concrete inhibits bond. Another damp proofing application suggested by the author was for a vertical d.p.c. at the end of a cavity wall where a bond was needed to the brickwork behind: an aluminium sheet with straps projecting from either side would serve this purpose well.

**Flashings and fully supported roofing**

The next subject to be discussed was that of the use of super purity aluminium both for flashings and for fully supported roofing. Mark Hartland Thomas pointed out that "super purity" is nearly as easy to work as lead, but does not creep, going back again after expansion like copper. The limiting length in which it can be laid without risk of cracking is 16 ft. which is twice that of lead. For this reason it will often serve as a replacement for lead without remaking the boarding when the distance between drips is too great. Again, its non-creeping quality makes it a good replacement for lead on roofs which are too steep. This application was taken up again by M. Bridgewater and H. G. Dunn in their paper on aluminium roofing. These writers pointed out that the higher the purity of the aluminium, the easier it is to work, super purity (*i.e.* 99.9 per cent) being preferable to commercial purity (99 per cent), the most common in use being grades classified from SIC to S1 in BS1470 in 22 to 20 s.w.g. sheet. Using traditional detailing, the sheet size is usually 6 ft. x 2 ft., but the "economy" method can also be used employing sliding clips and in this case sheets can be laid up to 30 ft. long and 18 in. wide (*i.e.* 15½ in. centre to centre between standing seams).

**Fixings**

Mark Hartland Thomas next asked for more aluminium fixings: for pegs for fixing plain tiles instead of oak (short life), copper (expensive), and galvanized steel (not good enough); for aluminium screws and nails and for special screws for fixing loose slates. A Mr. Corney in the audience pointed out that aluminium nails and screws are made, but that stockists do not hold them as there is no demand. Several speakers agreed that there was a need for these products, so it is evidently for ADA to make them available.

**Corrugated roofing**

The question of fixings arose again in connection with corrugated sheet. On the fixing of these sheets Mark Hartland Thomas had two points to make: first he could not see

why the concealed fixing was so much more expensive than fixing with the pierced sheet, second he asked why, if you must use pierced sheet, it should be so difficult to obtain aluminium bolts. In practice we are obliged to use cadmium-plated or zinc-coated nuts and bolts which cause bimetallic corrosion. G. Weston in his paper on Standards and Codes of Practice drew attention to BS2465 on aluminium fixing accessories, but the complaint was not that such things do not exist but that they are so hard to get.

Mark Hartland Thomas next pointed out the incompleteness of the ranges of roofing, commenting on "the failing of very large companies to spend a great deal of money upon the development of some new product and then to stop abruptly with the job half done. . . ." He also questioned the cross-sectional form of most sections, based as it is on that of galvanized iron, and asked for a form which would be both mechanically more efficient and would provide for simple secret fixing. The question of corrugated profiles was also taken up by Bridgewater and Dunn in their paper on roofing. These authors pointed out that aluminium did not seriously enter the roofing and siding market till 1946, when it was essential that profiles should match those existing so that aluminium could find an immediate place in current practice. Since then the troughed sheeting has been evolved to make a better use of the particular section modulus of aluminium and these are shortly to be covered by a British Standard. Another development has been the manufacture of sheets of up to 35 ft. in length. It has been found that expansion in sheets up to 25 ft. long can be accommodated with normal fixing, but that above 25 ft. sliding joints must be used.

**British Standard sections**

The next subject to be discussed was that of BS sections for aluminium. These, like corrugated sheeting, owe their original form to their steel counterparts. But parallel flange sections can now be got and the industry is still trying to agree on a series of deeper sections to take into account the smaller modulus of elasticity and of bulbed sections to resist torsion. J. B. Dwight, the engineer contributor of the paper on Design Aspects of Aluminium Curtain Walling, suggested that our present-day treatment of the roof edge was "prehistoric," involving as it does three separate members for the gutter, for the support of the top sheeting and for the support of the siding: why could not one single aluminium member be designed to cope with all three requirements? On this point of the possibility of multiple function, a contributor pointed out that aluminium is the only metal which can serve both for structural members and for flashing.

**Windows**

On the subject of windows Mark Hartland Thomas confined himself to welcoming the changeover to thin walled hollow sections, to remarking on the finer tolerances in aluminium extrusions obtainable on the Continent and to suggesting that one way of overcoming the difficulty at angles where a

profile might be on wind who beg the aluminium glazing. aluminium glazing the decision section from 25 the same use in thin, wh in favour of the sections He suggest might be designed Captain if aluminium expensive not so Muller In that cal with extra m over this plate. It being u ness an Fox Wi aluminium making earlier f always, factory prohibi

Curtain No less curtain Johnson systems second, nering Birming and fo Muller, America Dwight three p tain w movem and th On join problem between between panels. "Thio which without second fill par "Neop scribed ment o that th sion a conven ning ir beyond noise a washer

profile must be returned three dimensionally might be to use castings. The main speaker on windows was Captain J. Fox Williams who began by describing the triumph of the aluminium glazing bar for puttyless glazing. In his view the fortunes of the aluminium window—as distinct from the glazing bar—have depended too much on the decision of the extruders to price hollow sections too high. Hollow sections are priced from 25-30 per cent above solid sections of the same size, it appears. This has led to the use in America of sections which are too thin, which in turn has caused a reaction in favour of steel. J. B. Dwight complained of the comparative clumsiness of window sections when contrasted with curtain walls. He suggested that this effect of clumsiness might be reduced if the fixed frames were designed as part of the grid extrusions. Captain Fox Williams said in discussion that, if aluminium windows were usually more expensive in first cost than others, this was not so of horizontal sliding windows. Mr. Muller spoke of experience in Switzerland. In that country double glazing is uneconomical with aluminium windows owing to the extra metal required on the frame. To get over this difficulty they use insulating glass plate. Increasingly, flash welded joints are being used to give an absolute watertightness and rigidity at the corners. Captain Fox Williams spoke of the flash welding of aluminium as a major advance in window-making technique. This supersedes the earlier fluxed welding technique which was always difficult to handle and gave unsatisfactory results. He would like to see the prohibition of flux welding in specifications.

#### Curtain walls

No less than four papers were devoted to curtain walls. Of these the first by H. W. Johnson was a straight presentation of the systems now on the market over here. The second, by J. B. Dwight, of the Civil Engineering Department of the University of Birmingham, discussed design and the third and fourth, by Edward Tangredi and E. Muller, described curtain walling in North America and the Continent, respectively. J. B. Dwight's paper opened the debate on the three problems which are exclusive to curtain walling: jointing to resist thermal movement, the defect of the "heat bridge," and the fire requirements. On jointing, he drew attention to the dual problem of accommodating movement between the framing members themselves and between the framing members and infill panels. For the first he favoured the "Thiokol" type sealer, a two part mastic which can undergo a stretch of 300 per cent without cracking or breaking loose. For the second (*i.e.*, for sealing the joint between infill panels and the grid) he favoured the "Neoprene" gasket. Mr. Mack of BRS described recent research at BRS on the movement of jointed structures which established that the stresses set up by differential expansion are greater than expected, since the conventional sliding joints (*i.e.*, bolts running in slots) stick and then, when stressed beyond endurance, move with a bang. The noise at least can be avoided by using plastic washers of p.t.f.e. or polythene. Mr. Mack

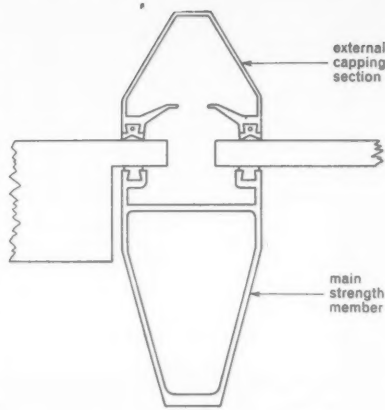


Fig. 1. Mullion with thermal break. Direct metal-to-metal contact between the two parts, by way of the bolts joining them, is prevented by using nylon nuts and distance pieces.

was less hopeful about Thiokol than Mr. Dwight. Experience has shown that it does not adhere satisfactorily to glass, particularly on facades facing towards the south. To get over this he suggested restricting Thiokol to the bottom of joints, away from the light and covering them with some other mastic. This reverses the more usual practice of using Thiokol on the top of a joint and some other mastic underneath. Mr. Lambert of Minnesota Mining confirmed Mr. Mack's findings on Thiokol and spoke of the anxieties of his firm (the suppliers of the raw material) on the lack of control which

they can exercise on its use on the site.

Mr. Dwight next spoke on the heat loss experienced through window bars which have no thermal break, stating that more heat can be transmitted through bars, even though these may be no more than 0.1 in. wide, than through the remainder of the wall. It was noticeable that only two out of the 16 panel systems on show at the Symposium took this into account. But Mr. Muller in his paper instanced a new Swiss Aluminium window named the "Alsec" which provided a central web of insulant between the inner and outer sections of the frame.

The third point raised by Mr. Dwight was the fire requirement of a back-up wall which has been so damaging to the economy both of steel and of aluminium curtain walls. He suggested the use of a sprinkler system which would drench the walls as soon as a significant temperature rise was recorded. This led to a considerable debate. Mr. Langdon Thomas of JFRO spoke of full scale tests being carried out by his department to determine hazard to occupants and to adjoining buildings with different percentage window openings. The percentage window opening is important as it controls the heat of the fire. Up to 5 per cent of opening, the fire is severely limited. The highest temperatures are reached with 15-20 per cent window openings, but above this the heat build-up is less as it gets away. Mr. Langdon Thomas doubted the ability of spandrel panels alone to offer any protection to adjacent buildings and did not think that a sprinkler system would offer a satisfactory safeguard. Several speakers spoke of experience with fires abroad and on Continental legislation which

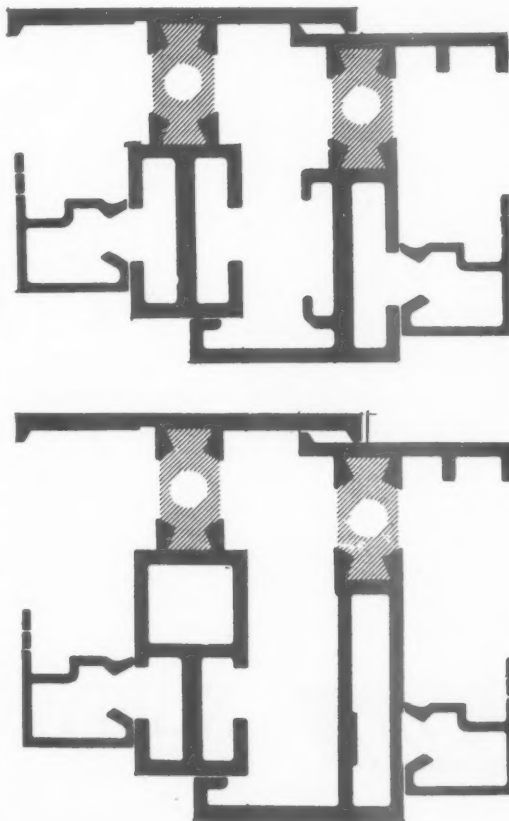
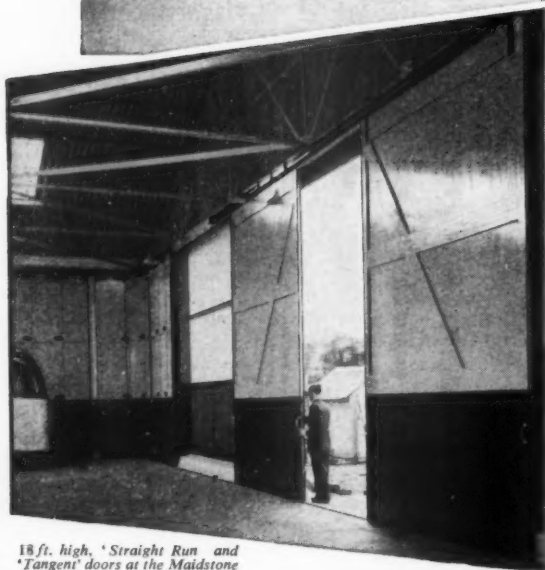
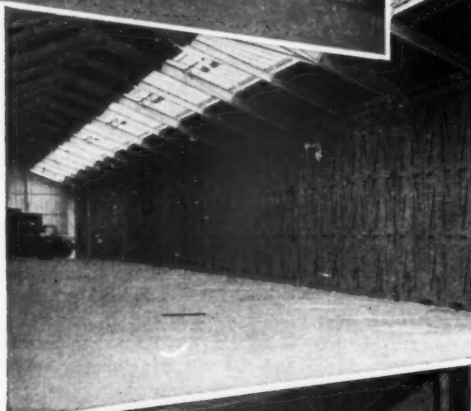


Fig. 2. Diagram showing use of patented light alloy section "Alsec" having central web of insulating material.

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does not require the back-up wall and the suggestion was made that waivers might be attached to requirements relating to the internal furnishing and use of the building and designed to reduce the fire load.

Mr. Dwight regretted that in this country we have not used the storey height panel type of construction for curtain walls in which the panels are formed of large pressings with cut-outs for the windows. This is a form which is common in America, and Mr. Tangredi discussed the economics of it as compared with what he called the "Stick" system (*i.e.*, separate mullions and spandrels). Generally speaking storey height panels are more expensive, but much of the extra cost in fabrication is offset by savings in erection.

### Finishes

The question of finishes was first raised in a paper by F. C. Porter specifically on this subject, but it was repeatedly taken up by other speakers. Anodising (and particularly colour anodising) was a subject of much controversy. J. B. Dwight speaking of curtain walls said:

"Anodising of the grid is an expensive luxury that is attractive initially, but only has real merit if the wall is going to be left uncleaned. It normally adds about 2s. per sq. ft. to the cost of the wall—money that could often be more sensibly spent on a better sealer. Good colour anodising costs twice as much, black anodising still more." Several speakers challenged this including the rapporteur for the session who gave 1s. per sq. ft. as the extra cost for anodising with an increase of 25 per cent. for colour anodising—50 per cent. if black is specified. F. C. Porter, discussing anodising in his paper pointed out that anodising accentuates any flaws or variations in the base material and that different forms and different base alloys produce slight colour variations. Anodising for exterior work should normally be Grade A as given in BS1615:1958, *i.e.* 0.001 in. minimum thickness, but for some applications (he specified shop fronts) Grade B (0.0006 in.) may be used. Captain Fox Williams disagreed with the specification of Grade B, pointing out that in North America no architect would specify less than 0.001 in. and that a forthcoming BS will give a minimum thickness of 0.0015 in. Mr. Porter based his acceptance of Grade B partly on the likelihood of frequent cleaning: a surface anodised to Grade B should be cleaned once every six months, but Grade A only once every two years. Plain mill finish needs cleaning three or four times a year if it is to keep its original brightness.

It seemed generally agreed that colour anodising was fraught with a certain amount of hazard: that the base material must be carefully chosen and the colours limited to those which are recommended. Difficulty was experienced due to the fact that in this country the fabricators and the anodisers are two different people and that when things go wrong it is difficult to apportion the blame between them. Mr. Muller said that anodising for all external aluminium except roofing is the rule in Switzerland,

that the ordinary silver is much preferred to colour anodising and that large manufacturers in Switzerland usually do their own anodising.

Closely linked with anodising is the question of the temporary protection of aluminium surface while building work is going on. There appeared to be agreement that the best method is the use of a lacquer which will wear away of its own accord. Captain Fox Williams gave a warning against the use of strippable plastic protective coatings in the summer which get baked by the sun and can be very expensive to remove.

The same speaker said that when anodising is required he preferred continental type "lift-off" hinges to the three- and five-knuckle hinges usual over here, since these eliminated all attachments other than welding attachments and all crevices where cleaning liquids could penetrate. For the architect the correct specification clause is "cleansing liquor or welding flux must be completely removed before fabrication is completed."

The second class of finish discussed by Mr. Porter was vitreous enamelling. This is available in a greater range of colours than anodising owing both to the more stable nature of enamel pigments and to the greater thickness (0.005 instead of 0.001) of the coating. In vitreous enamelling aluminium has the advantage of steel in that surfaces can be drilled and cut without fear of chipping or rusting and that whereas steel needs two coats, aluminium only needs one. Mr. Porter also discussed chemical conversion coverings (*e.g.* sulphates and chromates) and painting, but these were not the subject of discussion and nothing new was brought to light.

### Thermal insulation

An interesting paper was given by D. C. Christie and W. H. Wrigley of the Physics Division of Aluminium Laboratories Limited, though it unfortunately led to no discussion. They were concerned with the insulation by reflectivity of aluminium sur-

faces—particularly of aluminium foil. Buildings lose about 25 per cent. of their heat by radiation. Ordinary materials have an emissivity of 0.9. A bright aluminium surface will have an emissivity of 0.1 and its use, therefore, almost eliminates the proportion of heat lost by radiation. The question is, to what extent does it lose this property as the surface dulls off? The writers of the paper agree that there is a loss, but that provided the surface is not covered with soot it is unlikely to rise above 0.5. Thermal resistance by radiation differs from that by conduction in that the direction of the heat flow makes a difference (*i.e.* because of the flow of air in adjoining spaces). Thus, a horizontal cavity will be more effective against heat flow downwards than against heat flow upwards. This point was made in a graph showing the thermal resistance of cavities when unlined and when lined with aluminium ("reflective insulation"). This established that with a vertical cavity as a heat barrier a cavity thickness of 1 in. is more effective than one of 2 in.

This question was also discussed by J. J. Parsons and E. Elliott who were concerned with applications of thermal insulation. These authors pointed out that if a sheet of aluminium were placed so as to form a vertical division in the middle of a vertical cavity it would provide an insulation four times that of the undivided air space. The edges of the foil must, however, be carefully sealed. These authors referred to the difficulty of handling foils on the site and drew attention to the many new types of foil laminates, including one in which a flat sheet is laminated to a corrugated sheet to provide a still air space between the two.

The two concluding papers on furniture and on prefabricated and transportable buildings were impressive for the extent and variety of the applications shown, but did not elicit points of great interest. The full papers and the text of the discussion are to be published when—it is to be hoped—the many loose ends inevitable in any Symposium will be neatly tied up.

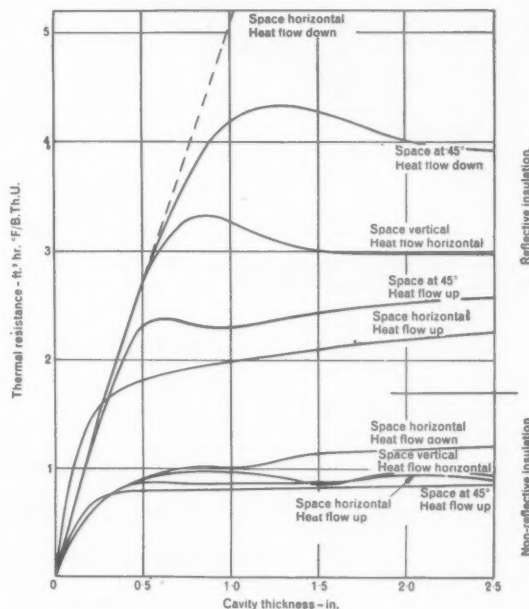


Fig. 3. Graph showing thermal insulation of cavities.



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## 26 SERVICES AND EQUIPMENT

### small electrical installations, 10 conclusion: the choice of wiring systems

Peter Jay and Clive Wooster end their series of articles by classifying wiring systems according to the degree of security they offer and by considering which is suitable for each main type of building.

The British Standard Code of Practice, CP.321.101 (1949) contains recommendations on this subject, but it is drafted in such broad terms that it is unlikely to be of use to architects. The subject is very difficult to deal with except for the simplest cases, and very few attempts have been made to do so, at any rate, for the non-specialist.

First, we shall classify the commoner wiring systems, and, later in the article, describe the sort of wiring that should be recommended for various kinds of building.

#### Classification of wiring systems

In previous articles we have described t.r.s. and screwed conduit installations in some detail; we have also examined the use of plastic as an alternative to rubber as an insulating material and have given some account of m.i.c.c. cables.

We shall now proceed to draw up a simple table classifying these systems. The first heading we shall call, for want of a better word, *security*. This, in general terms, means the length of life (under given conditions), mechanical strength and freedom from fire and shock risk of various kinds of wiring. The systems we have dealt with fall into three grades of security. Grade 1 corresponds to t.r.s., Grade 2 to screwed steel conduit and Grade 3 to systems that might be required where conditions of use are very severe, or the risk of fire very high.

Table showing choice of wiring systems

Grade of security	Rewireable system	Non-rewireable system
Grade 1	T.r.s. cables in thermoplastic conduit	T.r.s. P.v.c. insulated and sheathed
Grade 1a	Ditto	Farm wiring cables Various patented systems
Grade 2	Screwed steel conduit	M.i.c.c. cables used with grip boxes or earthing screw glands
Grade 2a	Galvanized steel conduit	M.i.c.c. cables possibly with a p.v.c. sheath. Used with universal ring type glands
Grade 3	Solid drawn conduit Copper conduit Thermoplastic conduit Various other systems	M.i.c.c. cables possibly with a p.v.c. sheath. Used with universal ring type glands. Various other systems

There are also two sub-categories, 1a, and 2a. Grade 1a includes those systems generally similar to t.r.s. but with some additional protection included in the sheath. Grade 2a includes systems suitable for use in damp conditions.

Systems may also be classified as *rewireable* or *non-rewireable*. Rewireable systems consist of cables drawn into a metal or other enclosure, so that they can be withdrawn and replaced by others without disturbing the enclosure. Non-rewireable systems are those in which the conductors are integral with the outer covering.

#### Notes to the table

(i) *Sheathed wiring systems*. It is convenient to have one term to cover both t.r.s. and p.v.c. insulated and sheathed cables, and "sheathed wiring" will be used in this sense throughout the rest of these articles.

(ii) *Thermoplastic conduits*. These appear, surprisingly enough, under both Grades 1 and 3. This is because, although their primary use is in industrial processes where steel conduits corrode rapidly, there has been a tendency to propose their use as an enclosure for t.r.s. in cheaper work, since they offer the possibility of rewiring. We think that this can be decided only on a basis of value for money. If a rewireable system is required under these conditions it is probably better to use steel conduit, and we have not, in fact, listed any cases later in the article where we would recommend the use of thermoplastic conduit in this way.

(iii) *M.i.c.c. cables*. It will be seen from the number of appearances this type of cable makes in the list, that it has a wide, and increasing, range of uses. For an explanation of the various types of gland and termination, see Article Nine in this series.

(iv) *Grade 3 systems*. Apart from listing them in the table, we shall have no more to say about these systems. Where they should be necessary—in industry, petrol filling stations, power stations, etc.—the architect should always be assisted by a specialist.

#### Relative costs

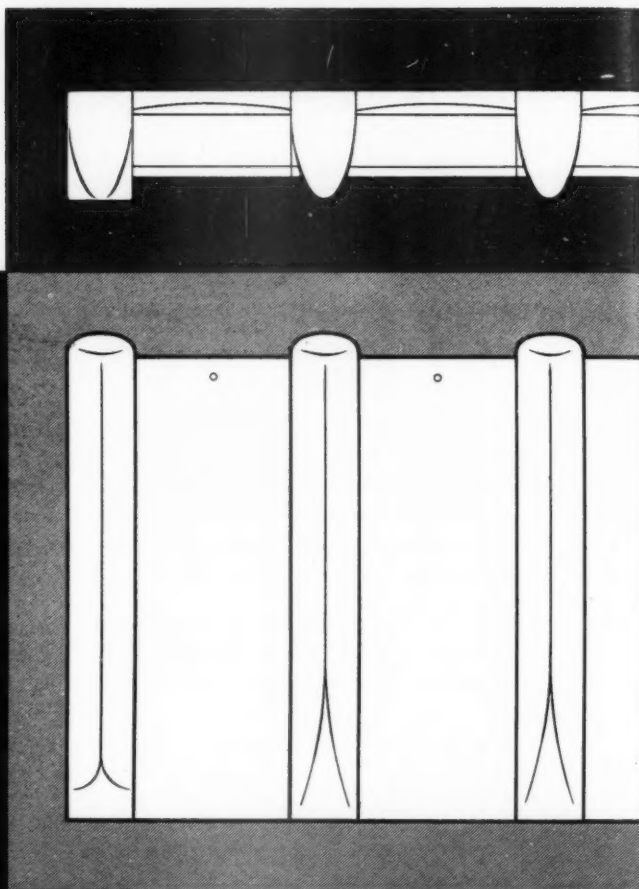
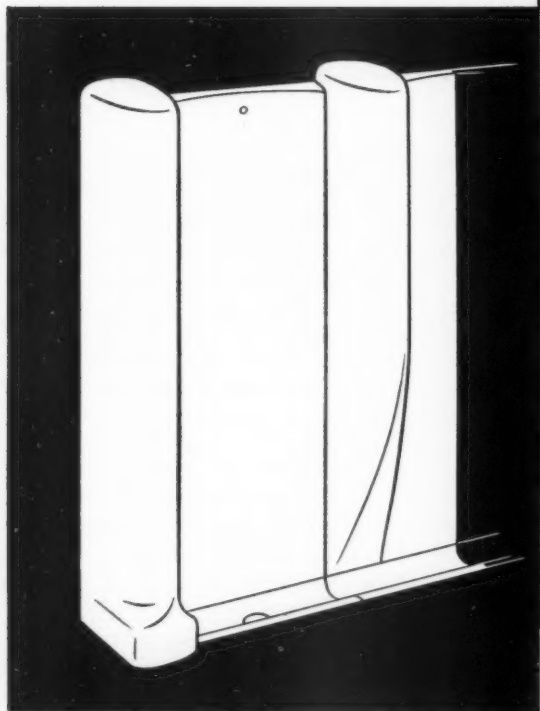
While we can give an indication of the general cost levels of various systems, no precise figures would be reliable as costs are governed by so many variable factors. Each case must therefore be considered on its merits after selecting the most promising system on general grounds.

The order of increasing costs will be Grade 1, 1a, 2, 2a and 3.

For comparing rewireable systems with non-rewireable, the comparison is complicated by m.i.c.c. cables.

Most people are under the impression that m.i.c.c. cables are considerably more expensive than conduit, but this is no longer necessarily so. We go into this matter in some detail under appropriate headings later in the article, and it may be assumed that in those cases in which we recommend the use of m.i.c.c. cables they will be comparable in cost with the other feasible systems.

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## technical section

### The value of security

We cannot be dogmatic about the grade of security necessary in any building, and this must ultimately be the decision of the architect and building owner. We must, however, point out that if a system of too low a grade is chosen in an attempt to save capital costs, the risks of fire and shock are materially increased, and the sufferers will be the occupiers and not necessarily the owners.

Where doubt is felt about the advisability of employing a more secure system on grounds of cost, the best thing to do is to seek tenders for more than one system. In such a case discretion should be exercised in the choice of contractor. A contractor, 95 per cent. of whose business consists in wiring small houses in t.r.s., is likely to quote high prices for m.i.c.c. work, and even for steel conduit, because his men will be unaccustomed to these systems, and he may even lack the plant necessary to instal them. Generally speaking, the better the contractor, the more likely it is that he will quote an economic price for a system of high security grade.

We should like here to draw attention once again to the National Inspection Council for Electrical Installation Contracting, which issues a list of approved contractors who have satisfied the Council as to their competence.

While NIC approval is an assurance of the competence of a contractor, it does not follow that all approved contractors are equipped to undertake the larger jobs.

### Selection of system

We shall now deal with various kinds of building, and indicate the sort of considerations which are likely to affect the choice between a Grade 1 and a Grade 2a system, and between rewirable and non-rewirable. If these classifications are kept firmly in mind, the architect should be able to build up a picture of the sort of situations for which each kind of wiring is suitable, and so be able to apply this knowledge when faced with a problem with which we have not specifically dealt. In this connection, the possibility of using different systems for different situations in the same building should always be kept in mind.

Before going on, we must emphasize again that the object of these articles is not to enable the architect to dispense with specialist advice, but to enable him to converse more fruitfully with the specialist, and, perhaps, to gain a clearer idea of the sort of situations in which specialist advice is necessary.

### Private houses

For nearly all private building, sheathed wiring is quite good enough. This is because a system of this type will last for at least 15 years, and the majority of private householders would envisage complete re-decoration after this period, when the additional expense and inconvenience of rewiring at the same time would not be thought important. At any rate, this is likely to be their attitude when the house is built, and

they will not be prepared to pay the extra cost of a conduit system.

### Local authority housing

Most local authorities have their own policy here, and the choice between sheathed wiring and conduit is not an easy one. In most cases it will be made purely on a first cost basis, in which case sheathed wiring will be chosen.

However, we ourselves think that the greater life of a conduit system will eventually be justified if maintenance and depreciation are taken into account, although some people may wish to compromise at sheathed wiring enclosed in thermoplastic conduit. We do not think that this is a very good idea, as it is only a little cheaper than steel conduit, and offers a reduced security grade.

For "tied housing," that is, groups of houses built by institutions such as schools, hospitals, and so on, for the benefit of their staff, we would always recommend steel conduit, galvanized where applicable.

### Large private houses

Those who build houses with eight rooms or more should certainly be able to afford conduit. The expense and complexity of rewiring increases greatly with the size of the building, and whereas it is quite a simple matter to rewire an ordinary 1,200 sq. ft. house, it is a very different matter to rewire a large one.

### Flats

The electricity boards normally take a hand here and insist that all rising mains from the intake position to the meter in each flat shall be at least a Grade 2 system, either conduit or m.i.c.c. as may be convenient. For wiring inside the individual flats, the choice depends mainly on the nature of the building. It is essential that it should be possible to rewire any flat without disturbing those above and below, and this will normally entail the use of a conduit system. Here again, thermoplastic conduit may seem superficially attractive, but the saving is small in relation to the reduction in security.

In two-storey buildings it may be considered desirable to take a chance and instal a sheathed wiring system, on the grounds that rewiring the upper flat will not inconvenience the lower very much, but rewiring the ground floor is almost bound to disturb the upper one since floors must be lifted to get at the lighting points below, so that we should always be inclined to choose a conduit system.

In large blocks where very light partition walls are so often used, it may well be an advantage to instal m.i.c.c. cables. They cannot, of course, be rewired without chasing out the plaster, but we know of no reason why cable of this kind should ever wear out, if properly installed to start with, so this does not matter. As explained in the preceding article, m.i.c.c. cables can be buried in a very small depth of plaster, although recesses about 1 in. deep will need to be cast





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## technical section

into the undersides of the floor slabs in order to accommodate the outlet boxes of the lighting points below, and the walls will have to be chased to accommodate the switchboxes, but overall, the amount of chasing should be greatly reduced.

One manufacturer, at least, now offers "preassembled" cable units. These are lengths of cable with sealing pots and glands already fitted, and are sold at so much per foot (less, as it happens, than the cable bought by the coil) plus so much per pot and gland. They may be bought in minimum quantities of one dozen of each length specified, and they are at present available for use in flats and schools only.

The cable is cheaper because the offcuts from longer coils are used for this purpose, and as the seals are made in the factory, they are likely to be cheaper than if made individually on site by an electrician. Use of these preassembled units brings the cost of m.i.c.c. wiring down to or below that of screwed conduit, and it offers many advantages in certain kinds of building.

### Flats with embedded floor heating

Buildings of this kind may be considered to be almost in the Grade 3 category. Steel conduit systems are normally used, often with plastic insulated cable, but the precautions necessary are severe. Conduits cannot, of course, cross the floor, and should be kept at a height of at least 6 in. above finished floor level. Wiring in walls will be relatively unaffected, but wiring to ceiling points on all but the top floor may be affected by the heat in the slab above.

We should be inclined to recommend that the advantages offered by m.i.c.c. cables, using the preassembled units described above, are in such cases overwhelming. As no special precautions against overheating need be taken, the cost is likely to be well below that of steel conduit.

### Houses with floor heating

These do not form a special category, since embedded heating is normally confined to the ground floor only, and there will be no trouble with the ceiling points. Socket outlets should be kept as high as possible on the ground floor, and wiring to these outlets should be routed with care. No other precautions or special wiring are likely to be necessary.

### Farms and horticultural buildings

Farmhouses, of course, can be treated in the same way as other houses, and in most cases a Grade 1 non-rewireable system will be quite adequate. For very old buildings, especially if they have thatched roofs, a rather greater security is desirable, and a steel conduit or m.i.c.c. system should be installed.

However, farm outbuildings are in rather a different category, since they are liable to be damp, and barns, stables and cow byres may at times contain quite a high proportion of chemical fumes, and especially ammonia. In these buildings special farm wiring cables should therefore be employed, which are classified

under Grade 1a. Their construction is generally similar to t.r.s., but the outer sheath is made not of rubber but of Polychloroprene, p.c.p. This has excellent fire resisting properties, and is relatively less affected than rubber by the mild corrosive agents found in farm buildings. In very damp conditions, the outlet and junction boxes should be filled with a special compound to prevent the ingress of moisture.

Before the advent of p.c.p., t.r.s. cables with a fabric braid vulcanized into the sheath were often used for farm wiring. They were quite effective, but are now being displaced by p.c.p. which is appreciably cheaper.

### Store sheds

In large store sheds associated with factories, ordnance depots, etc., the electrical installation will normally consist only of a rather sparse lighting system, which in any case will be rarely used. However, when material is being brought into, or taken out of the shed, particularly if by mechanical means, an unprotected t.r.s. system might be liable to damage. It is therefore customary to employ rubber insulated cables covered overall by various layers of serving, and an outer sheath either of metal braid or of fairly tough fabric. Alternatively, all switchdrops and other low level wiring can be protected by means of lengths of conduit.

For lighting installations in large sheds a patented catenary system of wiring is available. This consists essentially of a rubber insulated cable with a braided outer sheath, and, running through the centre, a steel tension line.

A special box is used to make connection to lighting fittings, which ensures that the tension is continued through the steel line and is not transmitted to the fitting or the conductors.

By these means a cable spanning the whole width of the shed, with lighting fittings at appropriate intervals, can be laid on the floor, and then hoisted into position and strained from two walls only, without any need to erect a scaffolding at intermediate positions. The utility and economy of this system for use in sheds with dimensions in both directions of more than, say, 70 ft. will be obvious.

### Offices

In offices the need is usually for maximum flexibility, which implies a conduit system throughout. In some cases the building owner provides no lighting or small power wiring in the office areas at all, but brings the wiring only as far as one or more main distribution points on each floor. The tenants are then left to instal wiring as and where they require it.

Where the offices are leased simply as bare shells, without any suspended ceilings or partitioning, this is all that can be done. An intermediate case is probably more common, in which basic partitioning between office space and corridors is provided, and suspended ceilings throughout. In buildings of this kind it will be necessary to instal at least the basic electrical installation before the suspended ceiling is erected, and con-



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### technical section

duits are frequently installed leading to outlet boxes on a grid of 4 or 5 ft., but no wiring.

The results are likely to be adequate if the grid has been carefully planned in relation to the layout of the windows and internal columns, and the conduits to switchdrops have been laid out properly, but the results can never lead to a really good lighting installation, any more than they can give a properly integrated interior.

The rising mains and extensive trunking systems for the internal telephone services which are usually required in office buildings will be dealt with in the next article.

### Schools

In the present climate of opinion, when capital costs are frequently considered to be of greater importance than maintenance costs, arguments similar to those we have noted for small private houses are often applied to schools, and the installation is carried out using a sheathed wiring system.

When, in due course, rewiring becomes necessary, either owing to age, or to changes in requirement, the costs will be heavier than if conduit had been used in the first place.

### Churches

These are difficult cases to deal with. When an existing church comes to be rewired there is scarcely likely to be very much money available, and the need for the work will have come as an unpleasant shock to those concerned.

The tendency is often to put in the cheapest system available, that is, t.r.s., and to hope for the best. Nevertheless, the majority of churches represent quite a severe fire risk, the more so as they are left unattended for long periods, and if the wiring starts to fail, this may not be noticed for many months.

For these reasons, we think that a system of Grade 2 security at least should always be installed, and preferably m.i.c.c. cables with p.v.c. sheathing, and Universal Glands. This cable is effectively everlasting, so that the financial effort of rewiring should not have to be repeated. Further, m.i.c.c. cables can be tucked neatly round the most complex stonework, whereas conduit must in these conditions be very unsightly.

As explained in the article on m.i.c.c. cables, p.v.c. sheathing should preferably be employed where the cable has to be fixed to stonework, to prevent slight surface corrosion of the sheath, which will not damage the cable to any significant extent, but which will be unsightly.

The above remarks are generally in accordance with the recommendations of the pamphlet *The Installation of Electricity in Churches*, issued by the Central Council for the Care of Churches.

1. Sociology. 2 Planning: General. 3 Planning: Regional & National. 4 Planning: Urban & Rural. 5 Planning: Public Utilities. 6 Planning: Social & Recreational. 7 Practice. 8 Surveying & Specification. 9 Design: General. 10 Design: Building Types. 11 Materials: General. 12 Materials: Metal. 13 Materials: Timber. 14 Materials: Concrete. 15 Materials: Applied Finishes & Treatments. 16 Materials: Miscellaneous. 17 Construction: General. 18 Construction: Theory. 19 Construction: Details. 20 Construction: Complete Structures. 21 Construction: Miscellaneous. 22 Sound Insulation & Acoustics. 23 Heating & Ventilation. 24 Lighting. 25 Water Supply & Sanitation. 26 Services & Equipment: Miscellaneous. 27 Furniture & Fittings. 29 Miscellaneous.

## 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.*

10.181 design: building types

### SHOPPING CENTRES

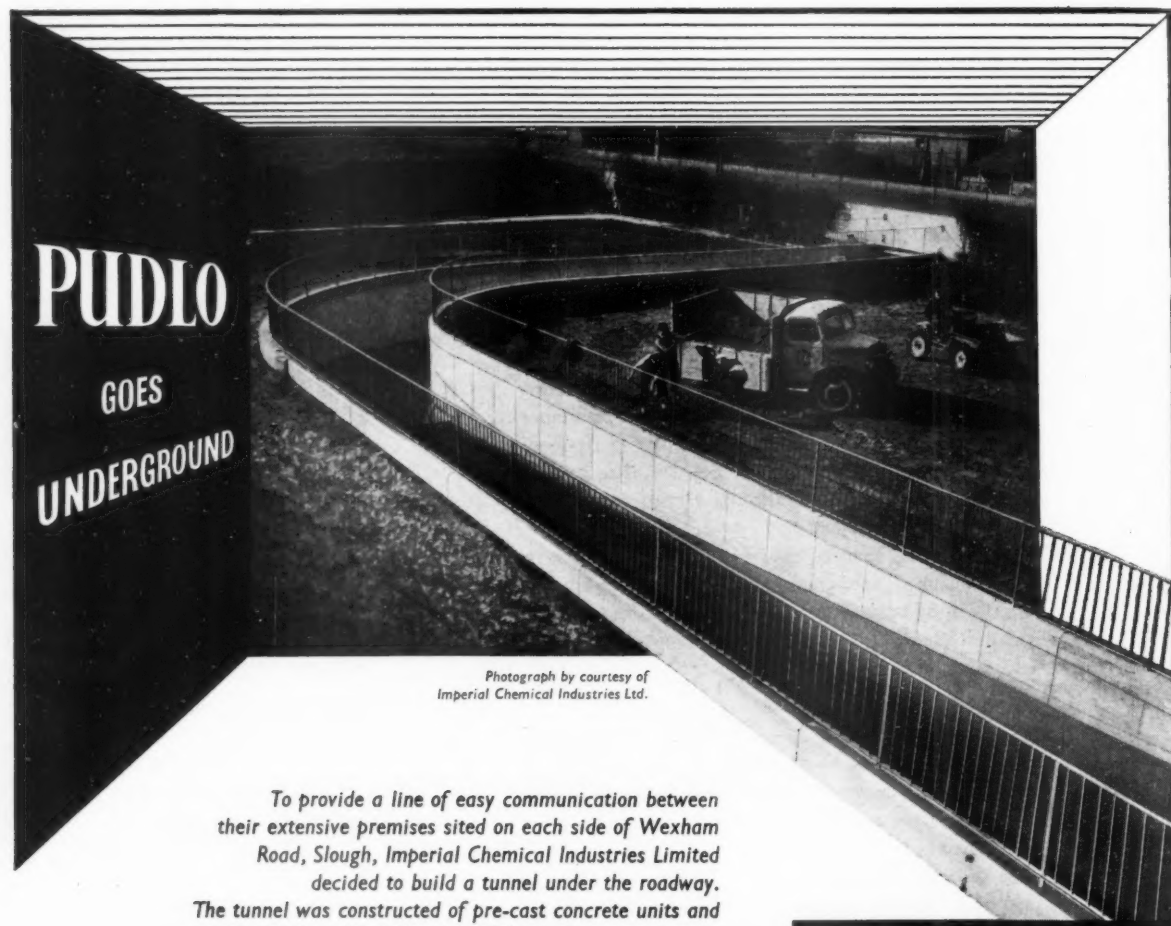
*British Shopping Centres.* By Wilfred Burns. Published by Leonard Hill. 45s.

It is hard to rid oneself of the conviction when reading this book that, although published in 1959, it arrives at conclusions based upon facts relating to a much earlier period. Statistics show, for example, that self-service is a movement affecting the food retail trade to the extent of twenty conversions per week, and nearly 20 per cent. of the total turnover—this achieved in a decade! But the author speaks of this form of retailing as "unlikely to be popular enough seriously to affect suburban shopping." One is given no inkling in fact, of the revolutionary innovations in retail distribution currently taking place, and fully comparable in importance with the inter-war advent of the self-selection variety chain store; and the vast expansion of multiple store trading in the last fifty years.

Mr. Burns offers a convincing theory on the advantages to be derived from a three-tier shopping system compared with the four-tier system implied in the neighbourhood unit theory; but, in general, town planners find the imposition of innovation upon the trade an uphill job. Current enthusiasm in town planning circles for the pedestrian-only precinct and two-storey shopping, is still treated with considerable reserve even by enlightened retailers.

For the architect there is little information of practical value. The line drawings (admittedly not specific designs) are too super-





Photograph by courtesy of  
Imperial Chemical Industries Ltd.

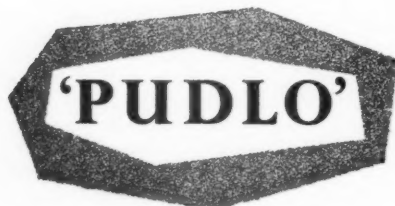
To provide a line of easy communication between their extensive premises sited on each side of Wexham Road, Slough, Imperial Chemical Industries Limited decided to build a tunnel under the roadway.

The tunnel was constructed of pre-cast concrete units and protected from the infiltration of dampness by a two-coat rendering of three parts sand to one part of cement, mixed with 5% of 'PUDLO' Brand Waterproofing Powder. A two-coat rendering, similarly composed, was applied also to the concrete walls of the tunnel approaches, the approach to one side of the tunnel is shewn in the photograph. The waterproofed rendering ensures freedom from the sodden, dingy appearance that mars ordinary, non-waterproofed work so quickly, when it is saturated by dirt laden rain.

The work was carried out by Holland & Hannen and Cubitts Ltd., and designed by the Civil Engineering staff of I.C.I. Ltd.

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## technical section

ficial to be of value and many of the large number of photographs, which, incidentally vary widely in quality, are pervaded with that curious subtopian quality associated with much of Britain's shopping environment.

### 10.182 design: building types VIBRATIONS IN LABORATORIES

*Reducing Laboratory Vibrations.* Part of BRS. Digest 118. HMSO. 3d.

This is a rather general treatment of this specialized subject, giving principles and ideas, but no data. Little advance on Digest 78.

### 10.183 design: building types SCHOOL FURNITURE

*School Furniture.* Parts 1-4 of BS 3030. BSI. (Part 1. Materials, Workmanship and Finish. 4s. 6d. Part 2. Performance Tests. 15s. 0d. Part 3. Pupils' Classroom Chairs and Tables. 7s. 6d. Part 4. Chalkboards. 4s. 0d.)

These standards (or to be exact, parts of a standard) replace the standards on desks, tables and chairs (BS/MOE 11) and chalkboards and easels (BS/MOE 12) published jointly by MOE and BSI back in 1950. They are, in fact, interesting documents in the history of standardization of building components. The standards they replace were, inevitably, *design* standards. Lacking sufficient testing data, the framers of them felt obliged to state in some detail what forms of construction they considered satisfactory. But now sufficient tests have been devised (described in Part 2) for it to be possible to specify instead the functional requirements manufacturers must meet and to leave it to the manufacturers to decide how exactly they will meet them. In addition to this, two major pieces of functional research have altered the actual content of these standards. The first of these are the exhaustive anthropometric studies which have taken place on the size of children and how they ought to sit. The findings of these are clearly set out in Part 3. The second are the studies in colour (culminating in BS 2660) and visual acuity. These concern Part 4, chalkboards, and enable the chroma limits of the chalkboard surface to be specified. It is interesting to notice that the blackboard, which was still countenanced in 1950, is now definitely *out*, owing to the too-great contrast which it causes with white chalk and light coloured walls. The long paragraph in this Part describing the chalkboard's function in holding the child's attention is a model of clarity.

### 17.116 construction: general

#### CONSTRUCTION TEXT BOOK

*Applied Building Construction: A Second Year Course.* By A. Medlycott. Chapman & Hall. £1 5s.

The freehand scale drawings of brick bonding, plaster cornices, balustrades and double

hung sash windows proclaim this a work of nostalgia. It is intended for second year students, who have used the author's first volume in the first year, leaning rather towards alteration and restoration work and makes very few concessions to modern technology. For example, the chapter on foundations does not mention any but the well-known strip; in the chapter on finishes there is nothing but plaster. A hint of the present day occurs in the chapter on plumbing and drainage with sketchy illustrations of single stack systems—but vital design criteria of this system are missing.

### 19.217 construction: details CURTAIN WALLS

*The Contemporary Curtain Wall.* W. D. Hunt. F. W. Dodge Corporation, New York. \$12.75.

This monster 450-page book betrays the American love of diligent knowledge for its own sake. Although it will not be particularly useful to the British architect faced with the problem of designing, or rather choosing, a curtain wall, it may well give him diverse facts that are not to be found elsewhere.

The author's preface (he is an architect turned journalist) refers to an *Architectural Record* article of 1919 which foresaw the coming of the curtain wall, and then remarks on the extreme rapidity with which the industry has since grown. After an opening chapter which attempts some definitions and comparisons we turn to "The Functions" ("... the wall is called upon to filter—Precipitation, wind, fire, temperature, condensation, view, light..."). The interdependence of the various functions is emphasized, then follows paragraphed consideration of them, but separately. Much of what is said is, to English ways, obvious ("Unless properly designed... the joint... will remain potentially weak for the life of the building..."), so we turn to the next long chapter, "The Elements," which attempts a classification by aesthetic type, by frame type, by facing method, and discusses insulation, permeability, fenestration and so forth. This section of the book is more informative, although I could find no mention of thermal fracture of glass, the "cold bridge" and other such problems that have exercised English ingenuity. The author has a fondness for ending his chapters with lists of criteria. Gaskets, for example, should: have a long life, allow for building tolerances, be non-staining, simple to apply, easy to replace, etc., etc.

There are four concluding chapters on "The Materials" which give, for example, the chemical composition of porcelain enamel, temperature limits of various plastics and mechanical properties of aluminium sheet, followed by "The Methods," which illustrates fastenings and joints and a few complete assemblies. The back of the book is thick with glossaries, lists of buildings, references and an index.

It may be that this is the kind of book

Americans are used to and prefer—discursive, overflowing, characteristic of the state of development of its subject. When technical and economic criteria have had time to stem the flow, we may get fewer, but better understood methods of curtain wall. To anyone attempting a similar book for the English market, I suggest it be confined to a very thorough description of just a few of the methods that so bewilder us.

### 23.232 heating and ventilation SOLAR HEATING

*The Use of Solar Energy in the UK.* By H. Heywood. *Journal of the Institute of Fuel*, March, 1959.

This is the text of an address given to the Fuel Luncheon Club by the leader of the sole research team engaged on this class of work in this country. After discussing the history of solar heating research, he states that in the UK, owing to the restrained amount of sun that we get, solar heating is only likely to be usable in the domestic hot water heating field and then only as an economizer, not as the sole source. With this limitation, he considers that its use is both practicable and economically advantageous—particularly when used with electric water heating. Basing his calculations on actual experimental work, he states that by using a plate type heat collector which could be made by mass production for about £1 per sq. ft., it should be possible to trap enough heat to pay off the cost of the equipment in four years and to give a saving of about £12 a year per house, assuming a life of 10 years. His experiments show that heat collection averaged 600-800 B.t.u. per sq. ft. per day in the summer, 300-400 in the spring.

### 25.135 water supply and sanitation W.C. CISTERNS

*W.C. Flushing Cisterns (Including Flush Pipes).* BS 1125:1959. Published by BSI 4s. 6d.

The latest issue of this Standard has three principal revisions. Firstly the maximum projection of the lever operating the flushing mechanism has been increased from 13 to 14 inches. Secondly the minimum allowable dead load which a chain pull mechanism must withstand has been increased from 84 to 112 lb., to ensure that only solid link chains strong enough to resist misuse will satisfy BS requirements.

The third and most important revision is that which provides for one basic type of flushing cistern which can be modified easily by the manufacturer for high- or low-level operation and can be used with side or bottom entry with the minimum of alteration to the body of the cistern. This revision is the result of the rapidly increasing use of plastics in the industry. Production techniques strongly favour cutting down the number of types of any one article and, since there appears to be no sound reason why the dimensions of a high-level cistern should differ from those of a low-level one, the BS has been brought into line.

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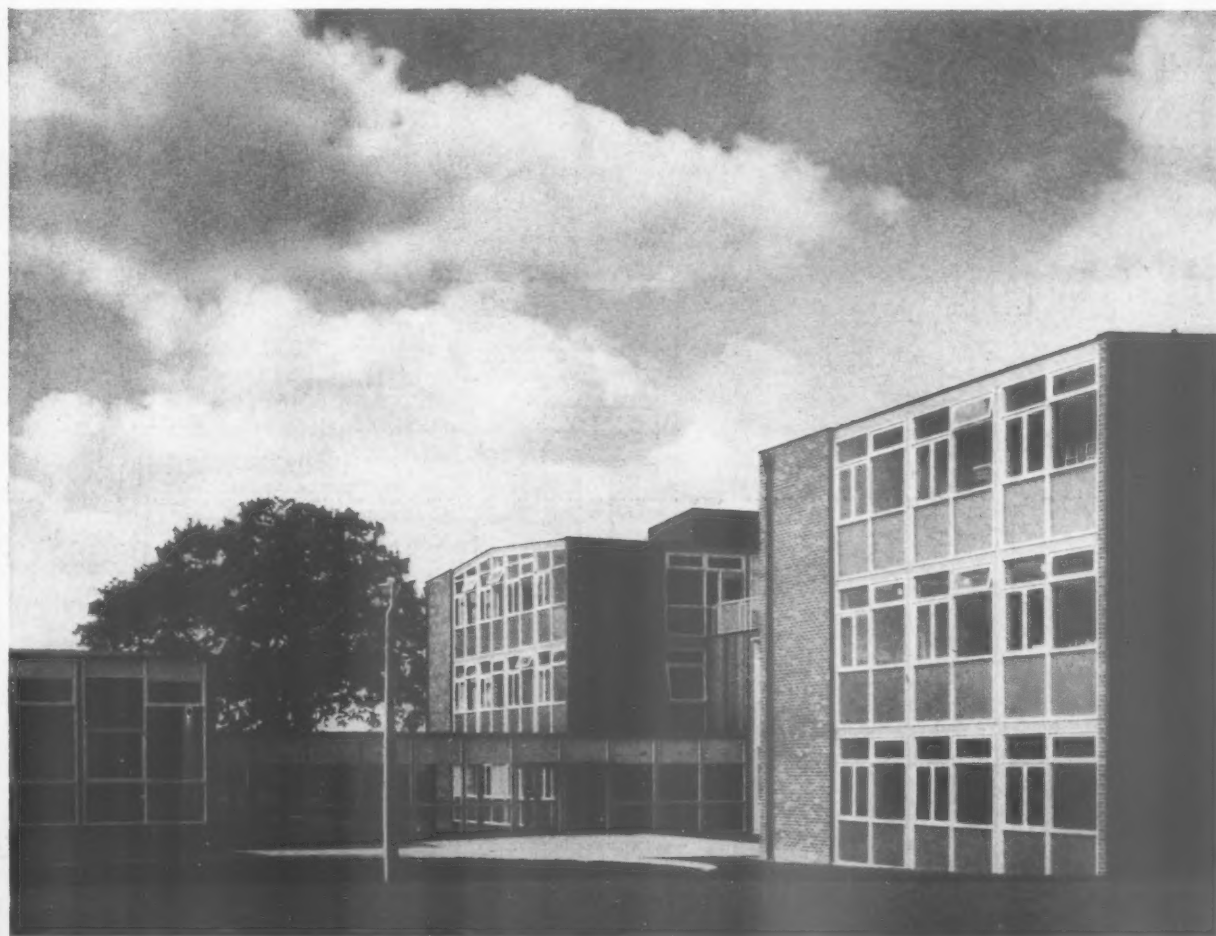
*A list of members and technical literature can be obtained from the Secretary.*

## SECONDARY MODERN SCHOOL

at POOL HILL, DAWLEY, SALOP; designed by F. R. S. YORKE, E. ROSENBERG and C. S. MARDALL in collaboration with C. H. SIMMONS, county architect; associate-in-charge I. B. WILSON; assistant-in-charge K. E. BOX; quantity surveyors MERCER and MILLER; consultants (structural) OVE ARUP and PARTNERS; (mechanical and electrical) J. STINTON JONES and PARTNERS

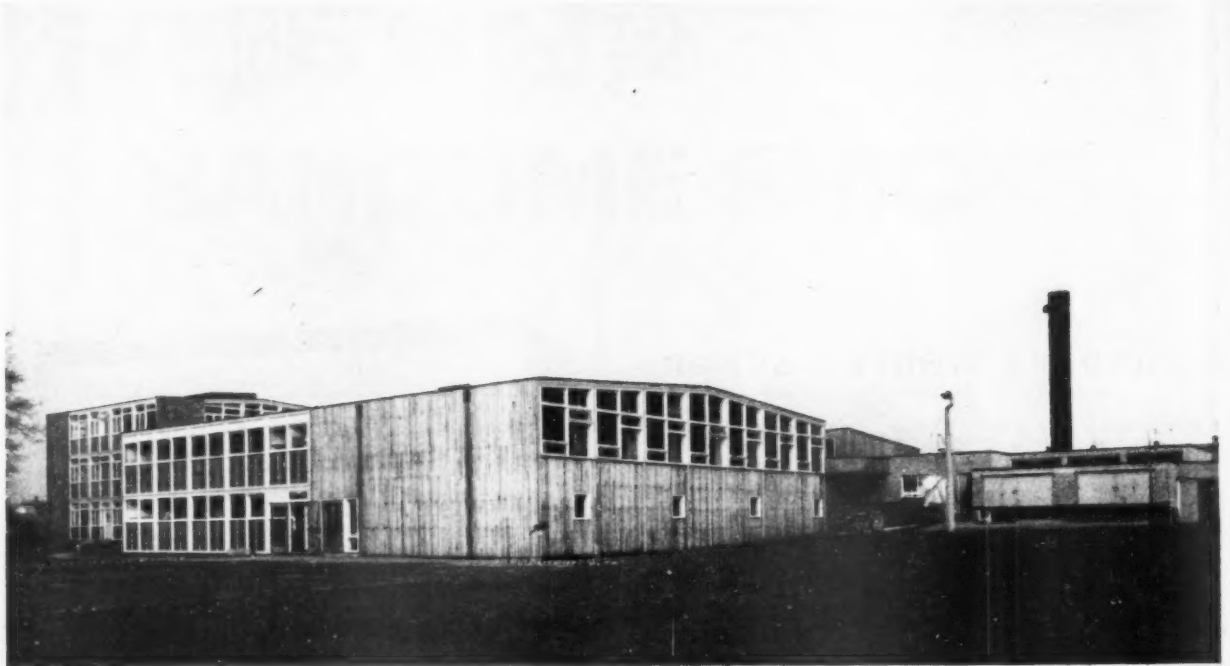
The planning of this school was started about the same time as work commenced on anti-subsidence structures at Nottingham, too early therefore to benefit from the new techniques. It contains two different kinds of "orthodox" anti-subsidence structure.

*Viewpoint 1: from the north-east with the practical and class blocks and the glazed link connecting them to the assembly hall.*



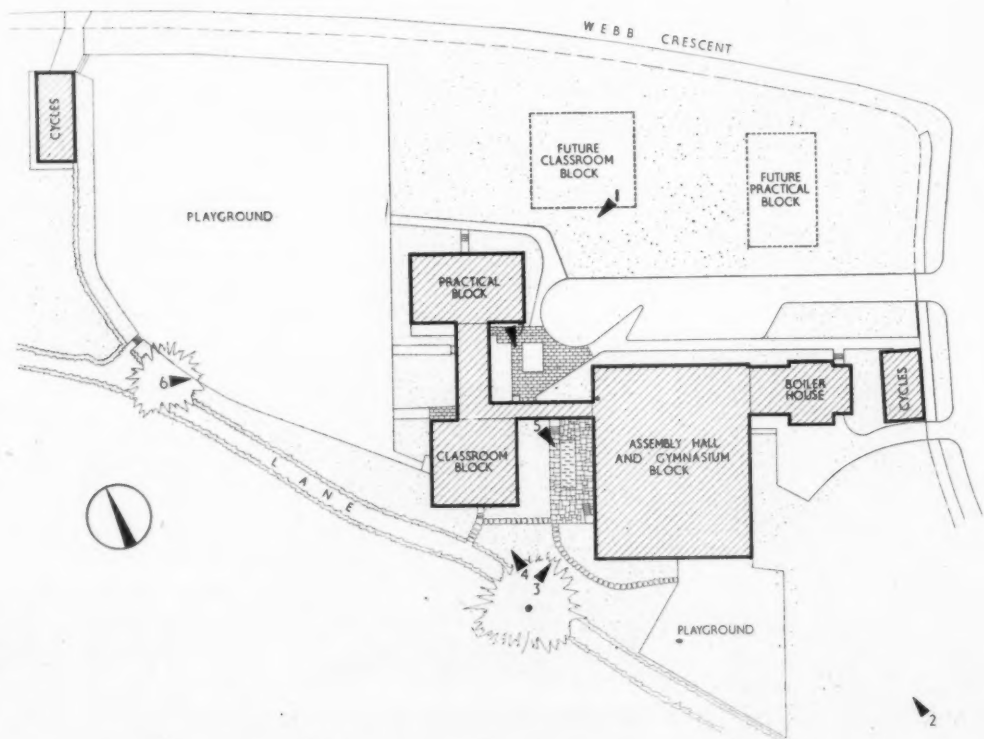


building illustrated

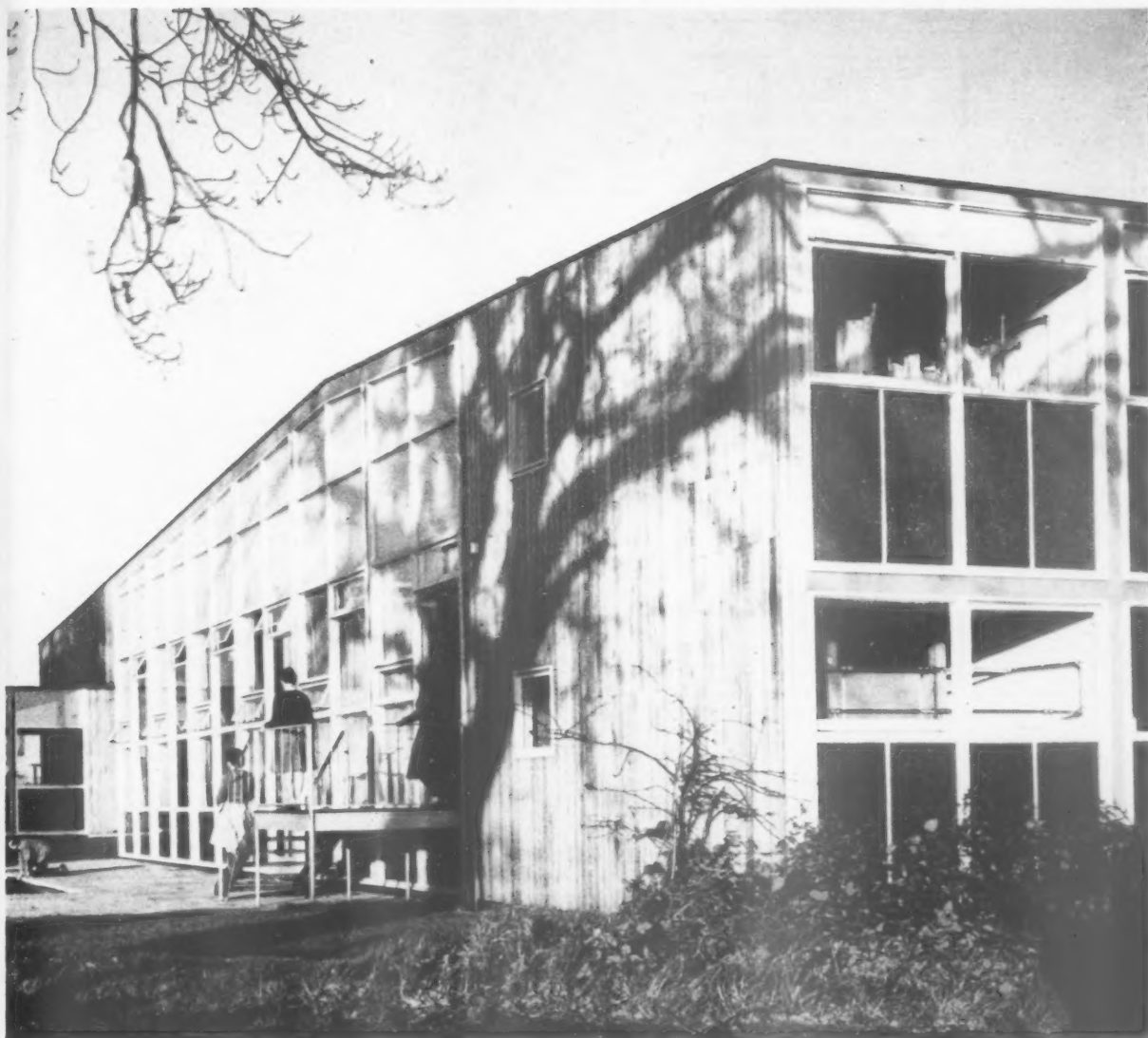


*Viewpoint 2: the gymnasium and assembly hall block from the south-east. To the right is the kitchen entrance and the boiler house with 2 pairs of sliding folding doors to the coke stores.*

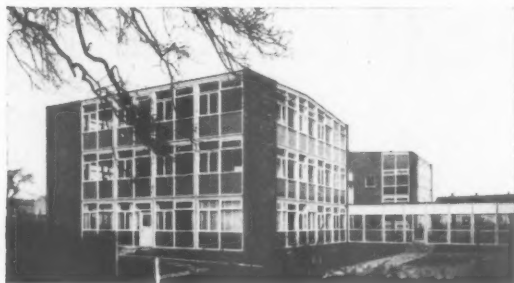
*This photograph does not do justice to the cedar boarding which is weathering very pleasantly now that the original varnish has almost disappeared.*



Site plan with photographic viewpoints

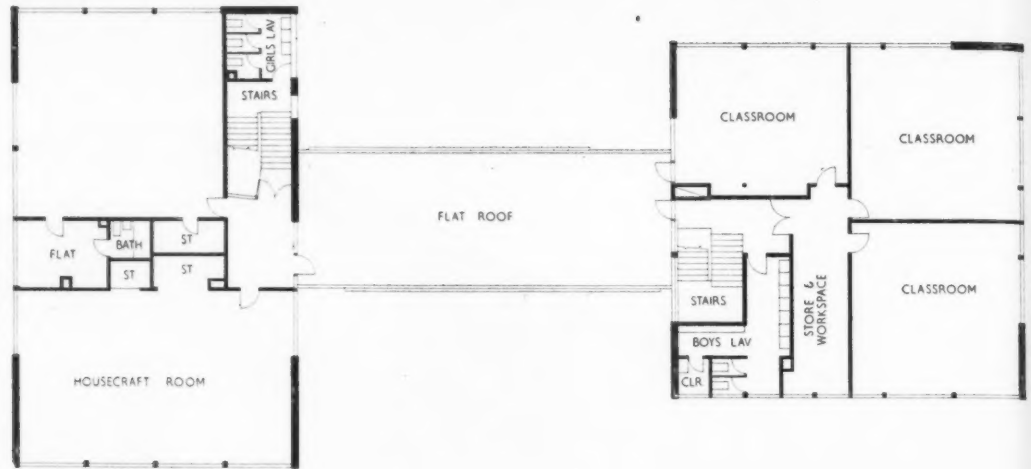


*Viewpoint 3 (above): the children are using steps which lead off the assembly hall stage. Behind the stage the space is used in two storeys to contain boys' and girls' showers. The assembly hall/gym block has a different structural logic from the craft/class blocks. Here the structure is designed to move, and yet at this end of the block the two-storey portion is constructed with a rigid steel frame, with point loaded bases, and a reinforced concrete first floor. The same framed timber cladding panels are used on the south elevation but because of the steel frame, the brick "bookends" of the other blocks are here replaced by vertical cedar boarding.*



*Viewpoint 4 (left): the timber cladding to the class and craft blocks is a system of framed panels which fit between the steel components and project slightly in front of them, the steel then being covered by horizontal and vertical timber painted light grey; all the other timber, white. This cladding is neat and simple. The undersill panel is one of the usual types of sandwich construction, coloured light blue.*

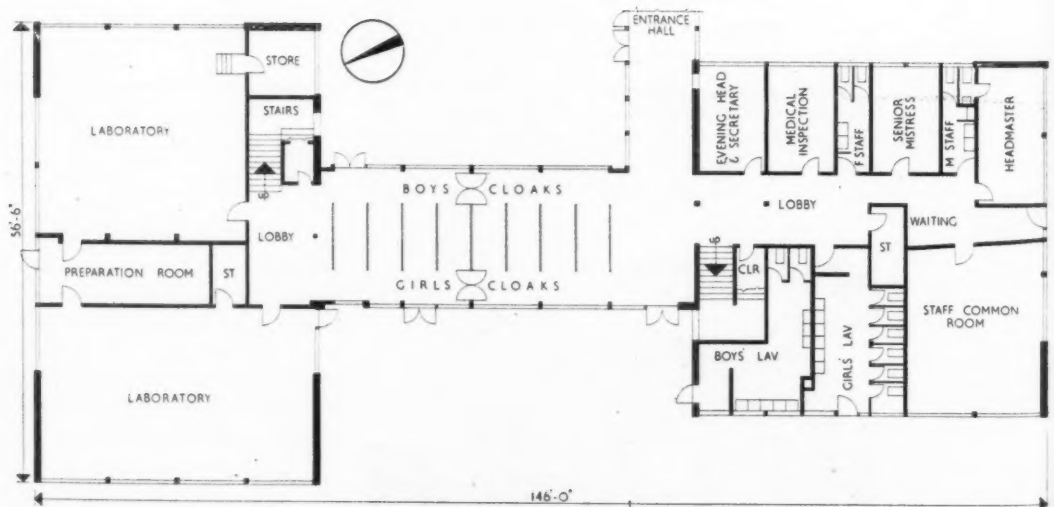
building illustrated



Second floor plan



First floor plan



Ground floor plan, classroom and practical blocks [Scale:  $\frac{1}{8}$ " = 1' 0"]

View of  
teaching  
greatly  
is of  
metal

LIBRARY  
LINK

Ground

## analysis

## CLIENTS REQUIREMENTS AND PLANNING AIMS

1. Accommodation was required for a three form entry secondary school, less six classrooms and two practical rooms, as some existing prefabricated classrooms and practical rooms nearby would temporarily remain in use until a future extension is built which will convert the school into a four form entry. The school was designed to allow for this future extension in the shape of a complete new classroom and practical block.
2. The architects were asked to provide a low pitched roof and copper was the material chosen.
3. The school is built in a mining subsidence area, and therefore special attention has to be given to the design of the foundations. The construction of the buildings themselves was also affected and led to the separation of the blocks and to the adoption of a timber frame for the large area of the assembly hall and gymnasium.
4. A fixed sum was agreed with the contractor prior to starting work, to cover increases in cost of labour and materials.

## SUMMARY

Ground floor area: 19,180 sq. ft.

(Classroom and practical block 7,529 sq. ft.; assembly

hall 9,833 sq. ft.; boiler house 1,818 sq. ft.)

Total floor area: 30,387 sq. ft.

(Classroom and practical block 18,004 sq. ft.; assembly hall, 10,565 sq. ft.; boiler house 1,818 sq. ft.)

Type of contract: RIBA lump sum.

Work began: October, 1955

Work finished: classroom block September, 1956;

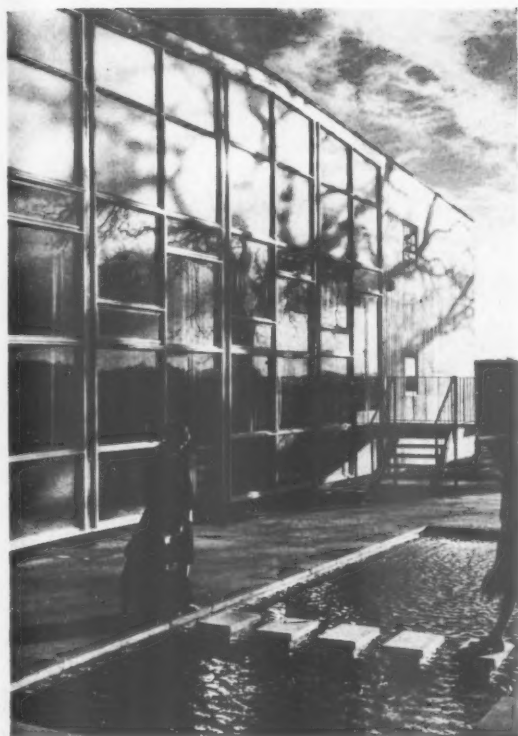
practical block, January, 1957; whole school, April, 1957.

(It was a contract requirement that the classroom block be completed ready for occupation by September, 1956.)

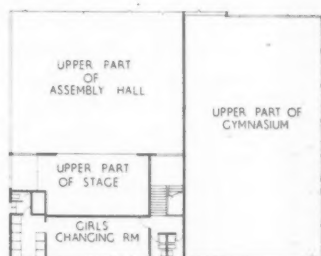
Tender price of foundations, structure, installations and finishes: £123,756 3s 6d.

Tender price for external works and drainage outside the buildings: £20,558 16s 6d.

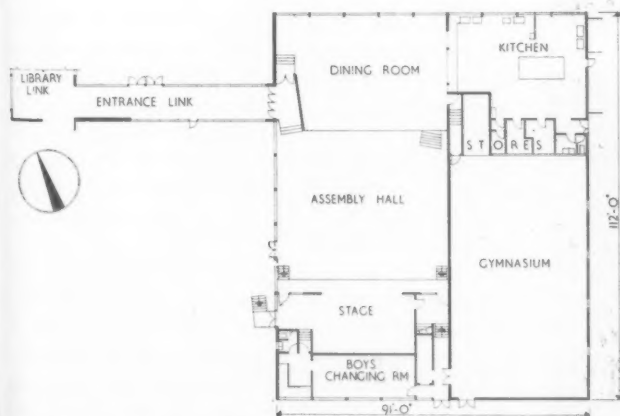
Total price: £144,315.



Viewpoint 5: This pleasant little courtyard is enclosed by the teaching block, the assembly hall and entrance link, and is greatly enhanced by the pool. The cladding to the assembly hall is of the same timber framed panelling as elsewhere, but with metal opening lights.



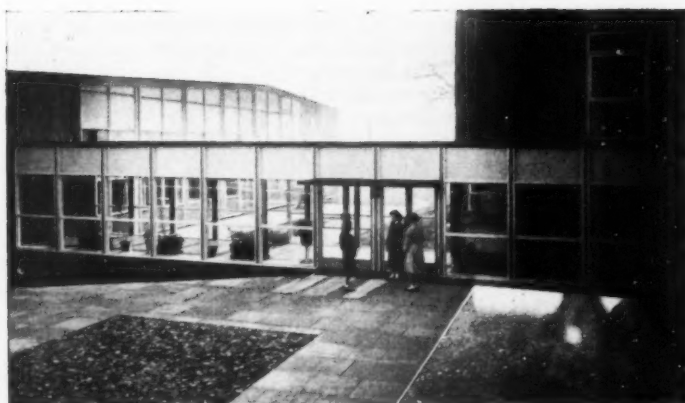
First floor plan



Ground floor plan, assembly hall and gymnasium block [Scale:  $\frac{1}{16}'' = 110'$ ]



building illustrated



Viewpoint 6 (above): the practical and class blocks are connected by the 2-storey flat-roofed library link. It is difficult to understand the reason for the change in direction of the pitched roofs. Admittedly the blocks are a different shape; the class block on the right is square, the craft block on the left is rectangular, with its shortest side facing the playground, which means that the pitch for this block falls in the wrong direction, conventionally speaking. One looks for a reason in the plan form or in the structure, but there is no apparent structural cause. Internally there is no change of emphasis or visual direction; windows in both blocks look the same way. The small single-storey building with the lean-to roof is a greenhouse-cum-potting shed.

Viewpoint 7 (left): this glazed link joins the assembly hall to the other blocks and also serves as the main entrance to the school. From the link there is a fine view of hill country across the courtyard and the pool. One of the difficulties of a school broken up into small parts or pavilions is the question of the main entrance. At the moment, with half the teaching accommodation of the school built, this entrance is well balanced at the nodal point, but it is doubtful whether it will remain so when the two additional blocks are completed. The architects intend that when these blocks are built to the north they will help to form a large enclosed central area.

Left: the entrance link is a simple steel frame with timber framed cladding panels, a 9-in.  $\times$  4½-in. quarry tile floor and asbestos insulation board ceiling. The receptacles for planting in the entrance link were added by the school, not by the architects. The main disadvantage in using a corridor link as a main entrance is that there can be no strong indication which of the two possible directions is the one to take.

## analysis

	Classroom and practical		Assembly hall		Boiler house		Total
cost per sq. ft.	s	d	s	d	s	d	s d
Preliminaries and insurances							10 11½
Work below ground floor level	4	4½	6	6	8	8½	5 4½
Reinforced concrete raft to classroom and practical blocks.							
Assembly hall and gymnasium: Individual concrete column bases with strip footings in between.							

## STRUCTURAL ELEMENTS

Frame or load-bearing element	6	8½	2	10	4	7½	5 2½
Classroom and practical blocks, library and entrance links: steel frame r.s.j. sections.							
Assembly hall and gymnasium: soft-wood timber frame including 5 ft. deep built up roof trusses.							
Boiler house: load-bearing brick with steel stack.							
External walls	10½		2	11	5	10½	1 10½
Brick. Spandrels under windows of asbestos insulation boarding faced with ¼-in. rough cast glass.							
Western red cedar boarding.							
Ratio: $\frac{\text{external walls}}{\text{floor area}}$ classroom and practical blocks = $\frac{0.179}{1}$							
assembly block = $\frac{0.388}{1}$ ; boiler house = $\frac{0.787}{1}$							
Windows	6	1	3	0½	1	3½	4 9
Timber throughout classroom practical block and boiler house.							
Metal opening lights with timber surrounds in assembly hall and gymnasium.							
Ratio: $\frac{\text{windows}}{\text{floor area}}$ classroom and practical block = $\frac{0.315}{1}$							
assembly block = $\frac{0.239}{1}$ ; boiler house = $\frac{0.040}{1}$							
External doors	1		2		1	7	2½
Various types, including flush wood, cedar faced wood and metal.							
Upper floors	2	3½	2½				1 5½
Reinforced concrete slabs.							
Staircases	1	3½	11½				1 1½
Solid <i>in-situ</i> concrete finished terrazzo. Two short flights to platform in assembly hall with open timber treads.							
Roof construction	1	3½	2	7½	4	2½	1 11½
2-in. strawslabs on timber joists except for over library and boiler houses which are r.c. slabs.							
Rooflights			11½		4½		4½
Aluminium lean-to lights with solid cheeks, roofed with patent glazing to assembly hall and gymnasium.							
Circular dome lights over kitchen stores and boilerhouse.							
Glazing	1	6½	11		1½		1 2½
26-oz., 32-oz. and ¼-in. polished plate and some sand blasted glass to windows.							
¼-in. toughened plate and ¼-in. toughened roughcast to glazed doors.							
¼-in. Georgian wired plate to internal screens.							
Total of structural elements:	20	3	14	8½	18	1½	18 2½

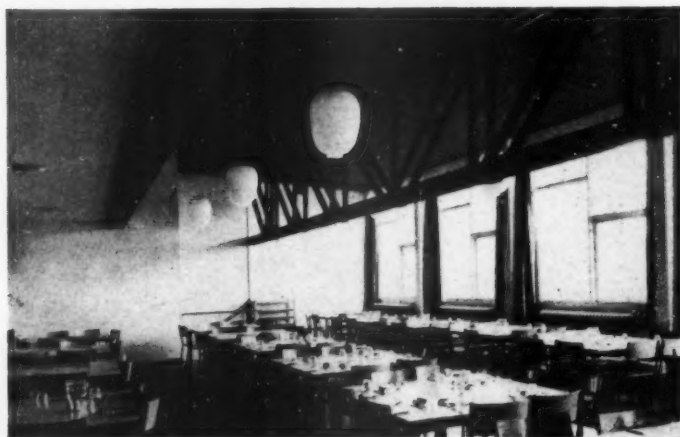
## PARTITIONS AND FITTINGS

Internal partitions	2	0½	1	7½			1 9½
4½-in. brickwork and 3-in. and 4-in. foamed slag, all plastered.							
Screens	2½						1½
Sapele mahogany frames, fully glazed and metal, fully glazed.							

building illustrated



Tough large-scale timber trusses, cedar slatted ceiling, rough white plaster walls and the hardwood strip floor make the assembly hall (left) without doubt the pleasantest space in the school. The crinkly ceiling (seen in detail below) is simply made of 3-in.  $\times$  1-in. cedar boards nailed to bearers which span between the trusses. These bearers and all other timber behind the slats are painted black so that they disappear. The ceiling above the trusses is woodwool painted dark blue.



Left: the dining room is at one end of the assembly hall and at a higher level. The two spaces can be separated by means of a sliding-folding partition. The black-stained sawn wood timber truss is certainly a beautiful structural component but it dominates this smaller space and tends to upset the sense of scale of the room. The ceiling is again of woodwool painted dark blue.



## analysis

## Internal doors

Generally flush with some fully glazed sapele doors and aluminium fully glazed.

## Ironmongery

Anodised aluminium throughout.

## Fittings

Benches in practical rooms have Columbian pine framing with iroko tops.

## Total of partitions and fittings:

Classroom and practical	Assembly hall	Boiler house	Total
s d	s d	s d	s d
7½	1 4½	3	10½
8½	9	5½	8½
6 5	3 3½	1 0½	5 0
10 0	7 0½	1 9	8 5½

## FINISHES

## Floor finishes

Sapele woodblock throughout teaching rooms.

Sapele wood strip in assembly hall.

Guarea wood strip in gymnasium.

Terrazzo on staircases.

Quarry tiles in entrance hall, kitchen and lavatories.

Location	Type of finish	Area of each type in sq. ft.	Cost per sq. yd. s d
Classroom and practical block:	Sapele wood block	11,934	34 6
	Granolithic	846	9 0
	Quarry tile	3,960	37 6
	Terrazzo paving	468	40 0
Assembly hall:	Sapele wood strip	4,734	36 7
	Guarea wood strip	2,889	36 7
	Granolithic	459	9 0
	Quarry tiles	2,070	37 6
	Buff stud tile	216	51 0
Boiler house:	Granolithic	1,350	9 0
	Cement and sand	378	7 5

## Wall finishes

Plastered throughout but glazed wall tiling in lavatories.

## Ceiling finishes

Bevel edged plasterboard tiles in teaching rooms.

Acoustic plaster in library.

Asbestos insulation boarding in entrance hall.

Woodwool in assembly hall and gymnasium.

## Roof finishes

24 swg copper on pitched roofs.

3-ply felt with chippings on flat roofs.

Lightweight concrete screed on r.c. slab roofs.

Location	Type of roof finish	Area in sq. ft.	Cost per sq. yd. s d
Classroom and practical blocks:	Copper roofing	6,224	55 6
	Felt roofing and asbestos tile paving	972	31 10
	Copper roofing	11,282	55 6
Assembly block:	Roofing felt	738	10 10
	Roofing felt	1,638	10 10
Decorations			
Flat oil paint in teaching rooms.			
Emulsion paint in circulation areas.			
Total of finishes:			
			15 0 22 2½ 7 7½ 17 1½

## SERVICES

## External plumbing

Exposed copper r.w.p.s.

7½	6½	1 6½	8
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## building illustrated



The same type of splendid timber truss used behind the slatted ceiling in the assembly hall is exposed in the gymnasium (left), but whereas in the former room the materials were balanced in such a way as to produce a distinct quality here they tend to confuse. The really strong element in this room is the structure; other embellishments, such as plywood veneered facings, and different coloured wall surfaces, appear largely unnecessary. The external door opening in a dark wall without sufficient internal compensation produces a strong glare.



Geography room in the classroom block (above) and general science laboratory in the craft block (below). All teaching rooms have bevel-edged plasterboard ceilings suspended on the ground and first floors and fixed direct to the timber roof joists on the top floor. Steel beams are fibrous plaster cased and the floors are wood block. Both rooms show a tendency towards indecisive designing, which results in the untidy relationships between the chalkboards and the pin-up.



Left: detail of a sink unit and cupboards in the corner of a classroom. This is a further example of unresolved and untidy thinking. No part of the unit really seems to fit together. Odd cover mouldings and bits of hardwood are tacked on to cover gaps, an extra plinth is added to take care of the heating pipe (of which there are rather more exposed at Pool Hill than is usual), the metal legs supporting the sink are wobbly and the relationship of the sink to the large cupboards dubious.

## analysis

## Sanitary fittings

All fireclay.

(Cost includes builders' work in connection.)

Location	Type of fitting	No. of each type
Classroom block:	W.c.s	20
	Urinals	9
	Lavatory basins	29
Assembly block:	W.c.s	2
	Urinals	1
	Lavatory basins	3
Kitchen and boiler room:	W.c.s.	2
	Lavatory basins	3

Classroom and practical	Assembly hall	Boiler house	Total
s d	s d	s d	s
2 6½	1 1½	6½	1

## Heating system, hot and cold water installation

11 1½

Two coal-fired cast-iron sectional boilers with hopper type underfeed automatic stokers have valved flow and return mains. Valved connections are taken from the flow main to the suction and delivery of one centrifugal pump. Water storage tanks are installed in the roof of the classroom block. Generally, heating is by means of cast-iron "hospital" radiators connected in series into 1½-in. low level heating loops in the classroom block. Elsewhere radiators are provided with valved flow and return connections.

Fan operated convector heaters are installed in the Special rooms in the classroom block and the assembly block each being thermostatically controlled. Embedded floor coils are provided in the entrance link.

## Gas installation

Cost included under heating, above.

From a gas meter room, north-east of the boiler room, supplies are taken to the kitchen for cooking equipment and two rinsing sinks and to various points in the Special rooms in the classroom block.

## Electrical installation

5 0½

Tungsten lighting is used throughout internally. Wiring generally is carried in screwed metal conduit concealed in the structure and main sub-cables are run in ceiling voids. The electric mains intake room is at the north-east corner of the kitchen.

Accessories are flush mounted and 5 or 15 amp. wall socket outlets are provided in most rooms.

A low voltage installation is included in the laboratories and on the ground floor of the practical block.

Fire alarm, class changing bell, clock systems and radio installation were included in the contract for the electrical installation and also a secondary system of stage lighting in the assembly hall.

## Total of services:

18 9½

## Water mains

Within the curtilage of the building only.

0½

## Drainage

Within the buildings.

2 7½

## External works

Drainage (outside the buildings)

9½

Cycle shelters

1 6

Playgrounds

3 3½

Playing fields

4 0

Works to site, site layout, paths, roads, terraces, fencing.

4 0

Cost per sq. ft. of floor area

Classroom and practical:  $\frac{£47,516 \text{ } 19\text{s } 2\text{d}}{18,004 \text{ sq. ft.}} =$

52 9½

Assembly hall:  $\frac{£27,541 \text{ } 13\text{s } 1\text{d}}{10,565 \text{ sq. ft.}} =$

52 1½

Boiler house:  $\frac{£3,485 \text{ } 2\text{s } 6\text{d}}{1,818 \text{ sq. ft.}} =$

38 4

Total per sq. ft. of floor area:  $\frac{£123,756 \text{ } 3\text{s } 6\text{d} \text{ (net cost excluding external works)}}{30,387 \text{ sq. ft. (floor area measured inside external walls)}} =$

81 5½

building illustrated

**COST COMMENTS**

With a building cost of 81s. 5½d. f.s. and a Ministry of Education net cost (including playpitches) of 84s. 8½d. f.s., Pool Hill looks an expensive secondary modern school. There are three reasons for this: (a) the fact that the school is built in a mining subsidence area, (b) the client's requirements for possession, (c) tight planning.

(a) The possibility of subsidence has not only meant more money spent on foundations, but has limited the plan shape of class and practical blocks, with consequent emphasis on vertical circulation.

(b) Building in instalments is always expensive, though often inevitable. It means two lots of builders' overheads and often a relatively expensive first phase, which must carry main access, drainage, service mains initially of an uneconomic size together with their connections, capital cost of boilers, etc. This comes out in the services group of elements, where approximately 23 per cent of the total cost of the school has been spent. Tuxford SM School (A), April 30) spent approximately 18 per cent of its total cost on the services.

(c) By good planning, *i.e.*, reducing circulation and other unproductive areas to a minimum, a higher cost per f.s. may result. This can be spotted either by reference to the drawings or to a recognised area per unit. The converse of this is also true.

Elements at Pool Hill calling for comment:

**Preliminaries:** The extraordinarily high preliminaries are due to the inclusion of contingencies and to the fact that in this instance measured rates are net and the whole of the contractor's profit and overheads are collected together in this element.

**Work below floor level:** It is not easy to pick out the heavy foundations of the class and practical blocks, but the 4s. 4½d. represents the average over three storeys, so that the cost per f.s. ground floor area is twice that of the hall and gym block. **Finishes:** Over 20 per cent has been spent on finishes, mainly on floors and roofing. Tuxford analysis shows an expenditure of 15 per cent but the roof finish was included as part of the structural costs.

Direct comparison with Tuxford is not possible as these two SM schools are built for differing requirements. It is interesting, however, to compare the percentage of total outlay spent on the element groups affected by subsidence. After making allowances for Pool Hill's preliminaries, approximately 8 per cent was spent on foundations and 25 per cent on structure; and at Tuxford 4 per cent on foundations and 39 per cent on structure. But in order to compare like with like, the analyses must be taken down to unit costs and re-grouped, and all other factors, such as planning limitations, taken into account.

**CONTRACTORS**

*General contractor:* George Wimpey and Co. Ltd. *Sub-contractors:* *Structural steelwork:* Measures Bros. (1911) Ltd. *Timber windows:* T. W. Edwards and Sons (Audnam) Ltd. *Copper roofing:* Holloway Metal Roofing. *Felt roofing:* Wm. Briggs and Sons Ltd. *Mechanical services:* J. H. Heath and Sons Ltd. *Electrical services:* N. C. Bailey (N.W.) Ltd. *Site layout, planting and playing fields:* Midland Gardens Ltd. *Wood block and strip floors:* Hollis Bros. Ltd. *Terrazzo:* Roman Mosaic Ltd. *Ironmongery:* A. G. Roberts Ltd. *Metal windows:* Williams and Williams Ltd. *Metal balustrades:* Clark, Hunt and Co. Ltd. *Sanitary fittings:* A. D. Foulkes Ltd. *Fibrous plaster:* F. Dejong and Co. Ltd. *Steel chimney:* P. E. Beaumont Ltd. *Tarmacadam paving:* C. J. Pearce and Co. Ltd. *Flush doors:* John Sadd and Sons Ltd. *Glazed wall tiling:* Carter and Co. (London) Ltd. *Sliding door gear:* P. C. Henderson Ltd. *Glass dome lights:* T. W. Ide Ltd. *Metal gates and guard rails:* James Gibbons Ltd. *Metal kit lockers:* R. W. Whittle Ltd. *Roller shutters:* Roller Shutters Ltd. *Paint:* Screeton (Paintmaker) Ltd. ICI Ltd. *Facing bricks:* Blockley's Ltd.

building illustrated

Houses at Fallowfield, Stanmore, Middlesex

## HOUSES

at FALLOWFIELD, STANMORE, MIDDLESEX; designed by H. J. MONTAGUE

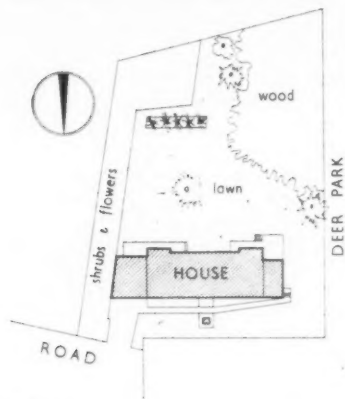
These two houses with common entrance hall were designed by the architect for himself and his parents. The houses were used as prototypes for a new constructional system invented by the architect, involving the use of clinker blocks as permanent shuttering for concrete walls.

*The north side of the houses, from the road.*





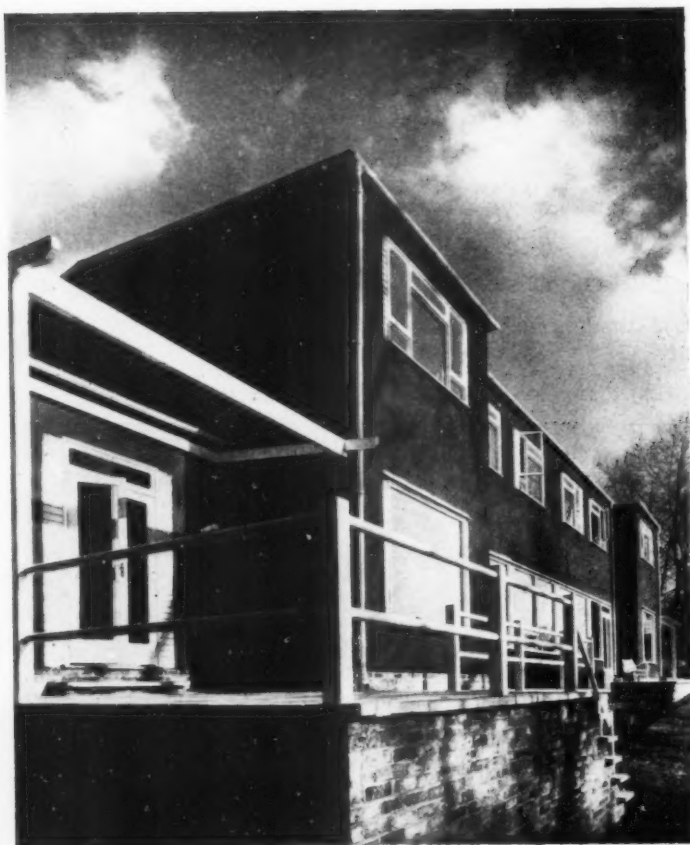
building illustrated



Site plan



Above, the houses from the south. The greater part of the external walls is in fact non-load-bearing, since the design is based on structural cross-walls. Brickwork has been used for closing the permanent shuttering at the sides of window openings.



Left, the south-west corner. The reason given for the choice of materials for the structural system is low cost. Although it must be conceded that the houses as prototypes are likely to have cost more than the system when perfected, it must still be asked whether the choice of these particular materials is likely to give value for money. The main impression is one of low-quality materials and detailing, and the cost will have eventually to break out considerably lower if this can begin to be justified.

Below left, view from the living room towards the study in the architect's own house; below right, another view looking in the opposite direction. The choice of cross-wall construction is strange considering the intentions behind the plan; the continuous study-living-dining space has necessitated dissolving the cross-walls, and as a result both the aesthetic possibilities of the structure and the spatial quality of the interior have been compromised.



## analysis

## CLIENT'S REQUIREMENTS

A twin house for himself and his parents, with joint entrance hall and heating system but separate living and cooking accommodation, to be built with a permanent concrete shuttering system as a prototype to test a new system of construction.

## PLANNING AIMS

The building, though actually providing two dwellings, had to be designed to look like one house, owing to the wishes of the estate architect.

The aim of the system of construction chosen was speed of erection, cheapness and good heat insulation so that running costs would be low. These aims were only partially achieved owing to the fact that this was a prototype, and a number of errors were made both by the architect and the builder which raised the cost and slowed down the speed of building. However, on the basis of the experience gained, a Mk. 2 of the system has now been evolved which after field trials will probably be marketed this year.

Concrete was chosen as the material because, apart from the cost of shuttering it is the cheapest material available in this country, and the problem to be solved was therefore how to use concrete without the usual type of shuttering. Method of construction was as follows: precast clinker blocks, 2 ft. 6 in.  $\times$  10 in.  $\times$  3 in., were bolted together with galvanized angles, leaving a 3-in. cavity between them. Three pairs of blocks were placed on top of each other and tied together with metal angles and bolts and then clinker aggregate, 10 : 1, was poured into the cavity. The concrete poured *in-situ* bonds with the precast panels, owing to their rough surface, and a homogeneous structure is therefore formed. Other advantages besides dispensing with shuttering were that as the blocks are laid dry there is no settlement in the walls and no shrinkage, and this

in turn means that plastering can take place at once without any cracking.

Snags arose, however, in fixing the angles, which took more time than was estimated, and because the blocks were not quite "true," sometimes varying in length by as much as a quarter of an inch, which involved a good deal of making good, for which scaffolding had to be erected, whereas it had been intended that a crane on caterpillar tracks should do all the work. The speed of erection was estimated at 4 minutes per yard, but it actually took 20 minutes, taking the making good into account. As a result, the cost of walling worked out at £3 per yard, whereas the estimated cost was £2 9s. od. Modifications now introduced, however, are expected to bring down the cost to between £1 10s. od. and £2 2s. od. per yard, depending on the finishes.

## SUMMARY

Ground floor area: 2,300 sq. ft.  
Total floor area: 4,470 sq. ft.  
Type of contract: Cost plus.  
Work began: April, 1957.  
Work finished: November, 1957.  
Final contract price of foundations, superstructure, installations, and finishes: £14,336 13s. 1½d.  
Final contract price of external works (including drainage): £300.

cost per sq. ft. s d

Preliminaries and insurances 3½  
Builder's overheads (8·4 per cent.) 5 0

Work below ground floor level 6 6  
Piling, cellar excavation, d.p.c. of polythene.  
Brick plinth, sand, cement ballast, plant, hardcore and reinforcement. Also main drains, 2 manholes, 6 gulleys. Materials, £1,144. Labour, £311.

## STRUCTURAL ELEMENTS

Frame or load-bearing element 9 6

Load-bearing crosswalls.

Precast clinker blocks, 2 ft. 6 in.  $\times$  10 in.  $\times$  3 in. bolted together with galvanized angles, leaving 3-in. cavity between, filled with concrete poured *in-situ*. Materials, £1,100. Labour, £898.

External walls:

As above.

Ratio:  $\frac{\text{solid wall}}{\text{floor area}} = \frac{0.810}{1}$

Windows 1 2

Standard timber.

Large, purpose-made fixed lights, of painted softwood.

Ratio:  $\frac{\text{windows}}{\text{floor area}} = \frac{0.822}{1}$

External doors 4

Glazed doors. Front door veneered. Elsewhere, painted softwood.

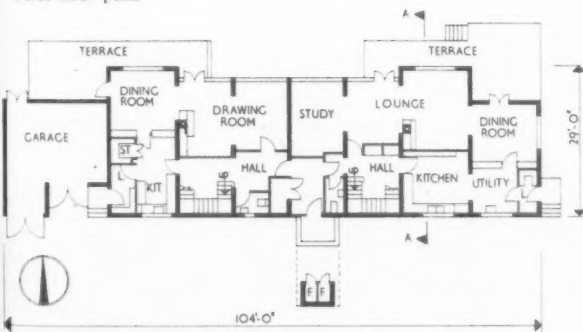
Ratio:  $\frac{\text{doors}}{\text{floor area}} = \frac{0.057}{1}$

Upper floors 2 0

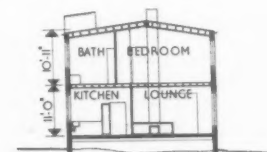
Joists of 10-ft. and 12-ft. 6-in. span, at 18-in. centres.



First floor plan



Ground floor plan (Scale: 1/8" = 1' 0")



Section A-A

## analysis

## Staircases

2 staircases of hardwood. Closed string, 10½-in. treads.  
Width, 3 ft. Total rise, 10 ft.

## Roof construction

6 deg. pitch joisted, with wood wool slabs.

## Glazing

Large windows of sealed laminated glass, ¼-in. plate.  
Elsewhere, 32 oz.

## Builders' plant

Total of structural elements: 19s 5½d

## PARTITIONS AND FITTINGS

## Internal partitions

2-in. clinker, except in bathrooms, which have stud partitions.

## Insulating material

Glass fibre in roof.  
Vermiculite in heating ducts.

## Internal doors

24 single, 2 double, all flush plywood.

## Ironmongery

British aluminium door and window furniture.  
Patent curtain rails.

## Fittings

Skirtings, picture rails, external canopies.  
Built-in cupboards and through-fittings.  
Bookshelves, gascookers.

Total of partitions and fittings: 12s 0½d

## FINISHES

## Floor finishes

Type of finish	Area in sq. ft.	Cost per sq. yd.
Sapele wood block	110	35s.
Gurgun woodstrip	125	42s.
Linoleum	2,925	17s 6d.

## Wall and ceiling finishes

¾-in. plaster on walls.  
½-in. plasterboard and skimcoat.

## Roof finishes

Aluminium sheeting on house, 2,261 sq. ft.  
Bituminous felt on garage, 483 sq. ft.

## Decorations

Paint and wallpaper.

Total of finishes: 9s 5½d

## SERVICES

External plumbing, hot and cold water installation and heating

Cast iron r.w.p.s and connections to main drains

s d

5½

A double duty oil-fired boiler (with hot water cylinder in the top) provides hot water and central heating. Radiators in all rooms and garage. Internal temperature, 68 deg. F. U of walls, 0.16. U of roof, 0.13.

1 8

## Sanitary fittings

1 4

Type of fitting	No. of each type
Baths	4
Hand basins	7
W.c.s	6
Sinks	3
Showers	2

3 0

## Gas installation

8 points: for 2 cookers, 2 gas poker. 4 to spare.

## Electrical installation

Type of point	No. of each type
13-amp.	34
Ceiling points	43
Wall brackets	18
Clock points	4
Bell points	5
TV and radio aerial conduits	5

9

## Total of services:

9s 4½d

5½

## Drainage

## External works

2 terraces and canopies, front path, paved walk, concrete drive.

Total per sq. ft. of floor area:

8 1

£14,336 13s. 1½d. (including external works)

9

4,470 sq. ft. (measured inside external walls)

64 1½

## COST COMMENTS

Points to consider in the cost analysis of this unusual house are:

1. The cost plus type of contract is difficult to cost-control as the ultimate cost is unknown and errors or delays on either side are always borne by the client. Although in this instance the walling is experimental and therefore could justifiably be subject to cost plus, the remainder of the work is straightforward and might with advantage have been measured or specified for a lump sum quotation.

2. The form of contract may have resulted in the relatively high overall cost of 64s. 1½d. as nowhere is there any lavish detailing, although certain isolated items may offer explanation: (a) four baths with necessary services; (b) radiators in every room including garage; (c) a lot of fixed furniture and fittings.

3. The stated final cost of the completed prototype walling amounted to 60s. per yard super, which is as costly as faced brickwork but may possess certain disadvantages in weathering properties and inflexibility. One of the aims was to effect cheapness by using concrete as a main building medium but the actual quantity of concrete used is only ¼ of the total wall volume, the greatest cost being attributable to the remaining ¾ for blocks and an expensive system of bolts and angles.

## CONTRACTORS

General contractors: Callow and Wright. Sub-contractors: Plumbing and heating: J. C. Spooner and Son. Electrical work: Leonard J. Ive. Woodblock floors: Stevens and Adams. Linoleum: Cellulin. Fural roof: Whittakers. Piling: Cementation.

## FOAMED POLYSTYRENE INSULATION: GENERAL DATA

This Sheet deals with boards and slabs of foamed polystyrene manufactured from raw material marketed under the name Montopore. It describes their architectural application for all forms of thermal and sound insulation.

## Materials

The raw material is supplied to the manufacturer in the form of beads,  $\frac{1}{32}$  in. in diameter, of foamable polystyrene (Montopore). To make the finished product the beads are heated by steam until they expand to 50-60 times their original size and these larger beads ("pre-foam") are placed in moulds, in the correct quantity, for the final heating by steam or water. This process causes the beads to fuse together and fill the mould so giving a rigid, solid block. The moulds can be shaped (e.g. curved for pipe insulation, etc.) or flat for boards and slabs. Special shapes can be cut from blocks of the material. Foamed polystyrene is described technically as a closed-cell microcellular material. Though rigid, it is exceptionally light. It is rotproof, non-toxic and offers no sustenance to vermin. It does not absorb water and is dimensionally stable below 75°C. It is resistant to water, including sea water, acids, except concentrated nitric, alkalis, alcohols and animal and vegetable oils. It is attacked by ketones, esters, chlorinated hydrocarbons, benzene, benzole fuel mixtures, turpentine, and ether. It must be protected from sunshine as ultra-violet light renders the surface brittle.

## Sizes and Types

Boards and slabs are available in sizes up to 9 ft. 0 in. by 4 ft. 0 in. and in thicknesses from  $\frac{1}{4}$  in. upwards. Thin sheets are produced by cutting the thick moulded blocks. The cut can be made in either of two ways: by bandsaw which gives a rough textured surface by exposing the cellular interior, or by electrically-heated wire, which melts the material as it goes through it so that the cut surface is glossy but still slightly rough. The material with the rougher saw-cut surface is sometimes preferred where it is to be stuck with adhesives or applied to wet cement, concrete, etc., but both types of cut material have been used successfully for most applications. Some manufacturers produce specially slotted surfaces on the sheets and boards which act as keys for cement and concrete.

## Density

The density of the material can be varied for different applications, but for normal insulation in building work it is 1 lb./cu. ft. For incorporation in concrete floors, etc., a higher density is preferable ( $1\frac{1}{2}$  to 2 lb./cu. ft.), especially where high local loadings may occur.

## Thermal Insulation

The thermal conductivity (k) varies very slightly with the density of the material and is about 0.22 for most insulating applications. The U value of a

cavity wall consisting of two  $4\frac{1}{2}$ -in. brick skins and a 2-in. cavity rendered with  $\frac{1}{2}$ -in. cement mortar externally and plastered  $\frac{3}{8}$  in. internally is reduced by over 50 per cent when insulated with  $\frac{3}{4}$ -in. foamed polystyrene.

## Sound Insulation

Absorption of reflected sound by foamed polystyrene is at least as good as any other conventional rigid material and specially-designed tiles are available which have an improved performance. It can be successfully applied to walls and partitions where it provides good thermal insulation and, under the right circumstances, may assist sound absorption. Where it is incorporated in floors it appreciably reduces impact sound.

## Fire Resistance

Foamed polystyrene is available in fire-retardant grades which have been subjected to special tests by the J.F.R.O. and found equivalent to a Class I material tested according to B.S.476: application has been made by J.F.R.O. to have these tests included in B.S.476.

## Fixing

The material can be cut, sawn and drilled with normal woodworking tools. The standard material can be fixed direct to suitable grounds by any large-headed nails. One grade of fire-retardant foamed polystyrene can cause corrosion with ferrous metals, aluminium and brass when the relative humidity exceeds 70 per cent and wooden battens must be used for fixing. There is, however, a fire-retardant grade which does not cause corrosion and can be held by metal fixing. It can also be bonded to itself and most other materials using any adhesive which does not contain excessive quantities of liquids which dissolve polystyrene. Bitumen-based and resin-based adhesives designed specially for use with foamed polystyrene are available from the principal adhesive manufacturers.

## Roofs

**Roofs:** On concrete roofs, the foamed polystyrene insulation can be placed over or under the roof slab. Bonded to the concrete with bitumen, it forms a complete seal against water penetration. On slate or tile roofs the insulation can be placed over the rafters and under the tiling battens. It can be bonded to any flat surface with adhesive, but a mechanical method of fixing is recommended for corrugated sheeting. For the latter, any of the proprietary fixing systems for insulating board can be employed and some of the manufacturers of foamed polystyrene board have developed their own methods. One of these consists of clips which snap into the corrugation and have a pin protruding downwards on to which the foamed polystyrene board can be



#### 14.K4 FOAMED POLYSTYRENE INSULATION: GENERAL DATA

spiked. One manufacturer of fixing components has designed a system for foamed polystyrene board. It consists of tee-sections, which are suspended from the structural supports, and have a beaded end to the web on to which very light clips are sprung to hold the foamed polystyrene in position. If desired, the clips can be concealed by a p.v.c. cover strip which in turn clips over them.

**Floors:** On concrete floors, foamed polystyrene should be placed above the slab and screeded over. As a measure against impact sound, the insulation should also be carried up the walls at the sides so that the floor is completely isolated in a tray of insulation. To prevent heat losses through the floor, perimeter insulation can be provided at the walls to the full depth of the floor slab and finishes.

**Walls:** Foamed polystyrene can be used for the insulation of walls in precisely the same ways as any other type of insulating board provided that, in industrial applications, for example, it is not exposed to any of the substances which have a deleterious effect upon it, or to excessive heat or sunshine. (See *Material*.) It is common practice on the Continent to place the foamed polystyrene board inside the shuttering before pouring the concrete. It then becomes bonded to the outer surface of the wall and is rendered over. For wall cladding, prefabricated sandwich panels are now being produced, consisting of a layer of foamed polystyrene between two layers of concrete.

##### **Finish**

Foamed polystyrene can be dyed by dipping or spraying, or it can be painted. The safest paints to use are water-based, e.g. plastic emulsion: oil-based paints should be tested before being used as they may contain solvents which are harmful to polystyrene.

##### **Applications**

In addition to its uses for building insulation, foamed polystyrene is widely used in refrigeration, pipe-lagging and packaging.

##### **Trade Name**

The word 'Montopore' is a registered trade mark.

##### **Board Manufacturers**

Foamed polystyrene made from Montopore is marketed under the following trade names by the five manufacturers listed:

Corblanit—The Cork Growers Trading Company (1931) Limited, Vulcan Street, Bootle, Liverpool, Lancashire.

Isocolor—Veedip Limited, St. Helen's Works, Slough, Buckinghamshire.

Poron—Commerce Factors (G.B.) Limited, Tregelly Antony, Torpoint, Cornwall.

Spandoplast—The Baxenden Chemical Company Limited, Paragon Works, Baxenden, Nr. Accrington, Lancashire.

Wolaboard—Wola Engineering Company Limited, Tangmere Road, Tangmere, Sussex.

*Compiled from information supplied by:*

**Monsanto Chemicals Limited (Plastics Division)**

Address: Monsanto House, 10-18 Victoria Street, London, S.W.1.

Telephone: Abbey 5678.

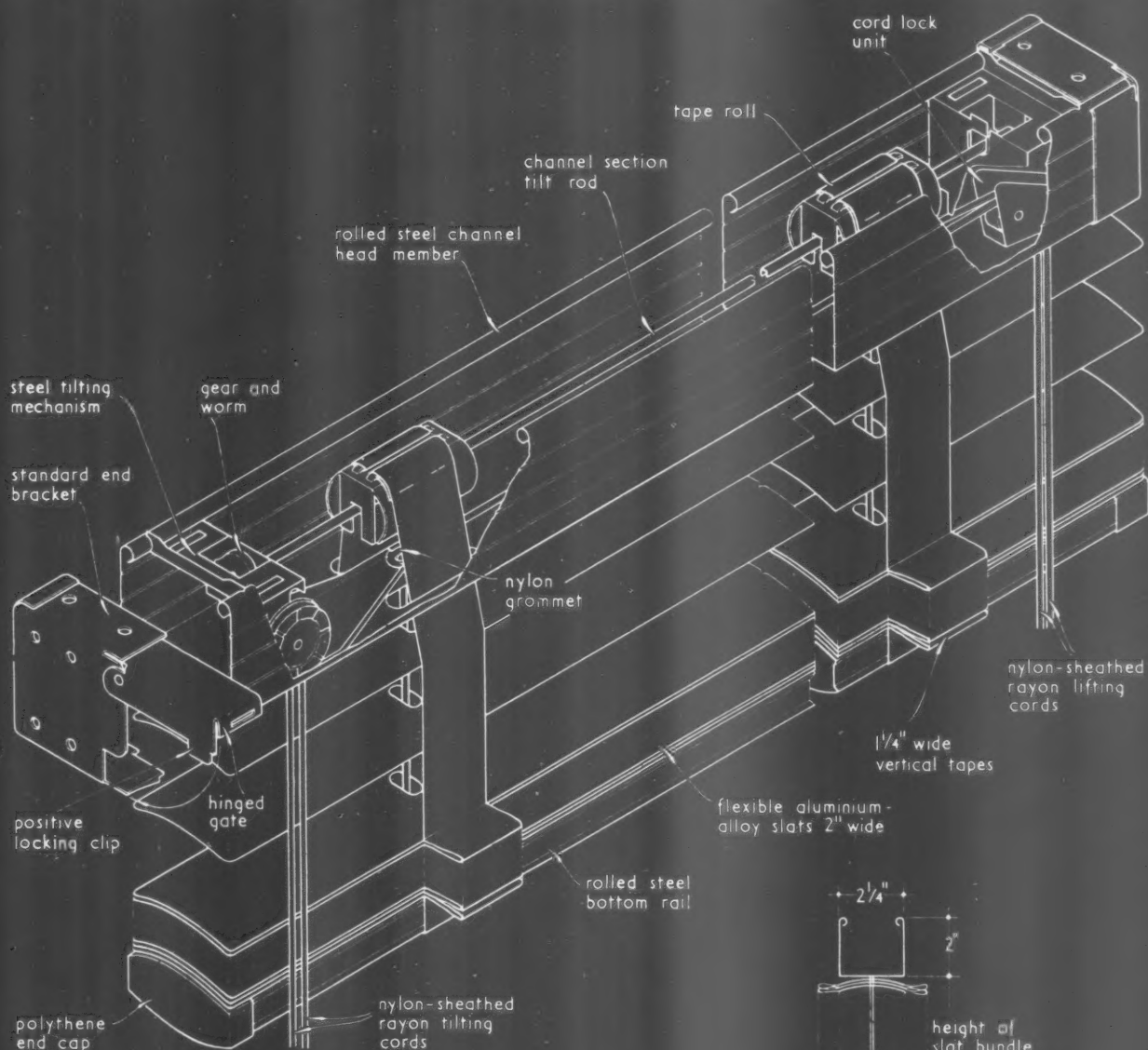




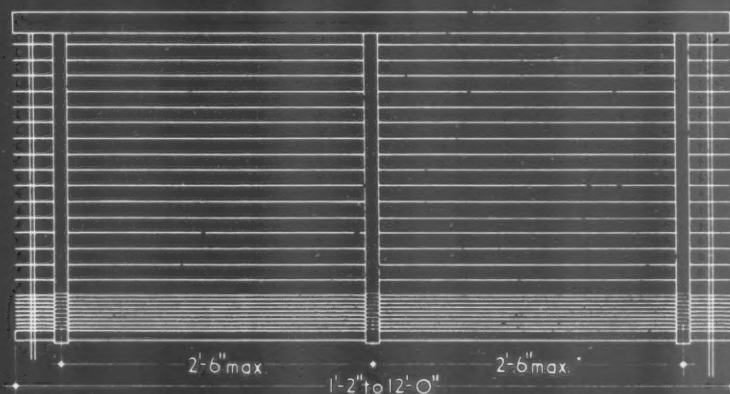
# FURNITURE GENERAL | VENETIAN BLINDS

42.K3

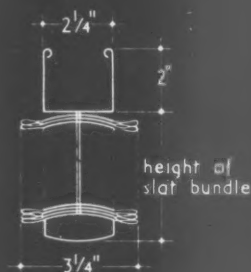
The Architects' Journal Library of Information Sheets 727. Editor: Cotterell Butler, A.R.I.B.A.



ISOMETRIC SKETCH OF TYPICAL BLIND.



DIAGRAMS SHOWING MAIN DIMENSIONS.



total drop of blind (ft. and in.)	height of slat bundle (in.)
3-6	2 5/8
5-0	3 3/8
6-0	4
8-0	5 1/8
9-0	5 5/8
10-0	6 1/4
11-0	6 7/8



## 42.K3 ·SEAWRIGHT· FLEXIBLE ALUMINIUM VENETIAN BLIND

**This Sheet** describes Seawright flexible aluminium Venetian blinds. The isometric drawing on the face shows a typical blind and the lower diagrams give the planning dimensions.

### Construction

**Slats:** These are of cold-rolled aluminium alloy, spring-tempered, each slat being in one piece with rounded corners to the ends.

**Tapes:** Tapes are available in 1½-in. wide cotton, 1-in. Terylene or "invisible".

**Head:** The head member consists of a rolled steel U channel, 2 in. by 2½ in., which contains and conceals the operating mechanism. The front and back faces of the channel are stiffened by reinforcing ridges and beaded edges.

**Bottom rail:** The tubular bottom rail is of rolled steel with a welded seam. It is approximately 2 in. by ¾ in. in section with recessed edges for strengthening and it is shaped to follow the camber of the slats. Applied holders on the bottom of the rail keep the tapes in position. Polythene protective end caps fit over the ends of the bottom rail.

**Cords:** The cords have a rayon core sheathed in nylon and run through nylon grommets at the head.

**Cord lock unit:** This is of steel with a moulded nylon pulley. It has a double-locking dog, for smooth raising, locking and lowering of the blind, which also prevents its being dropped accidentally. The unit is mounted on a bracket which engages with the beads in the head member and keeps it square and rigid. A nylon grommet is provided for the lift cord, to line up with corresponding holes in the head channel.

**Tilting mechanism:** The tilter is of pressed steel and is operated by a nylon or brass worm and pinion gear which allows fine adjustment in securing the slats in any required position. The tilter is self-adjusting to compensate for slipping of the cords. There is a nylon grommet for the lift cord.

The tilt rod is a ¼-in. square channel section of steel

with smooth, rounded corners. Steel supports for the rod, with nylon grommets, are fitted at each tape roll where lift cords are situated and intermediate supports, at tape rolls where there are no lift cords.

**Mounting brackets:** Standard end brackets have safety locking caps to hold the head member in position: it can easily be removed if required. For blinds over 7 ft. 0 in. wide or 75 sq. ft. in area, intermediate supports are available (6 ft. 0 in. maximum centres); L-shaped brackets are also available for face fixing where the use of the standard end bracket is impracticable and also special brackets for fixing the blind head in a recess in the window reveal.

### Sizes

Blinds are available up to 12 ft. 0 in. in width and up to 20 ft. 0 in. in length.

### Finish

All slats, head members and bottom rails are rust-proofed and finished with alkyd-base stove enamel; all interior metal parts are electro-plated to resist corrosion.

### Colours

**Slats:** Available colours are white, eggshell, ivory, yellow, blue, pastel blue, light green, pastel green, beige, terra cotta, grey, natural, pink, red and black.

**Tapes:** These are available in duck, white, green, mulberry, apple green, Alice blue, blue, light grey, red, yellow, pink, black, mingled and chocolate.

*Compiled from information supplied by:*

**Venetian Blind Specialists (Seawright) Limited**

Address: Station Approach, Waltham Cross, Herts.  
Telephone: Waltham Cross 23582.

s.

cts.



working detail

WALLS AND PARTITIONS: 82

GLAZED WALL: OFFICES IN BASLE

*F. Rickenbacher and W. Baumann, architects (material supplied by Hans Haenlein)*



*The interest of this detail lies in the unconventional uses of materials. These (which can be seen in the drawing overleaf) include the covering of asbestos-sprayed steelwork with plaster on metal lathing; plastic, in the form of hollow "snap-on" sections to provide insulation and prevent a heat "bridge" in the aluminium frame and in the form of stops for the pivoting members; asphalt, between the structural floor and cement screed.*

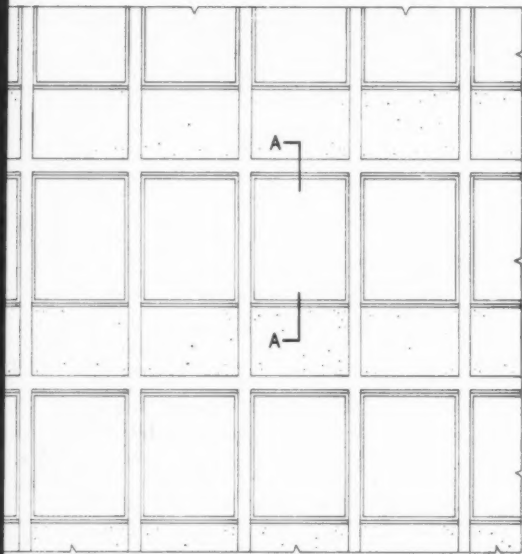
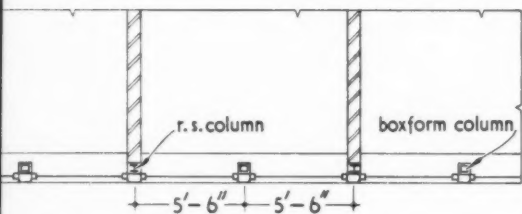
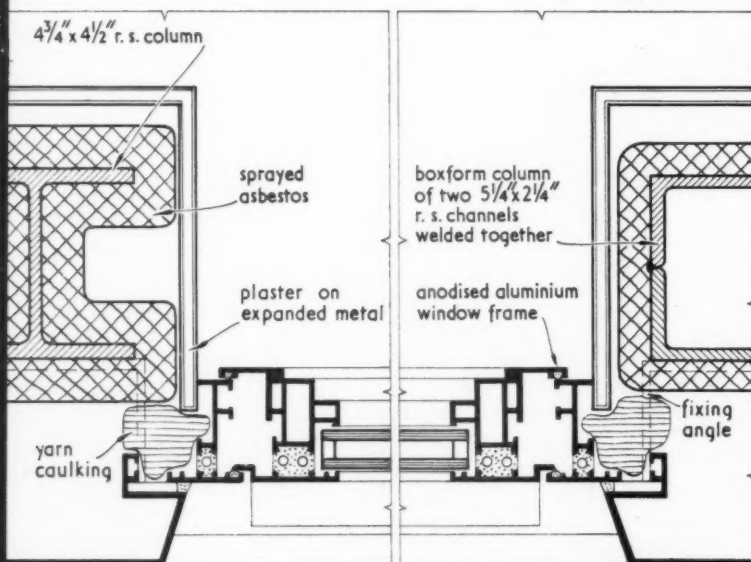
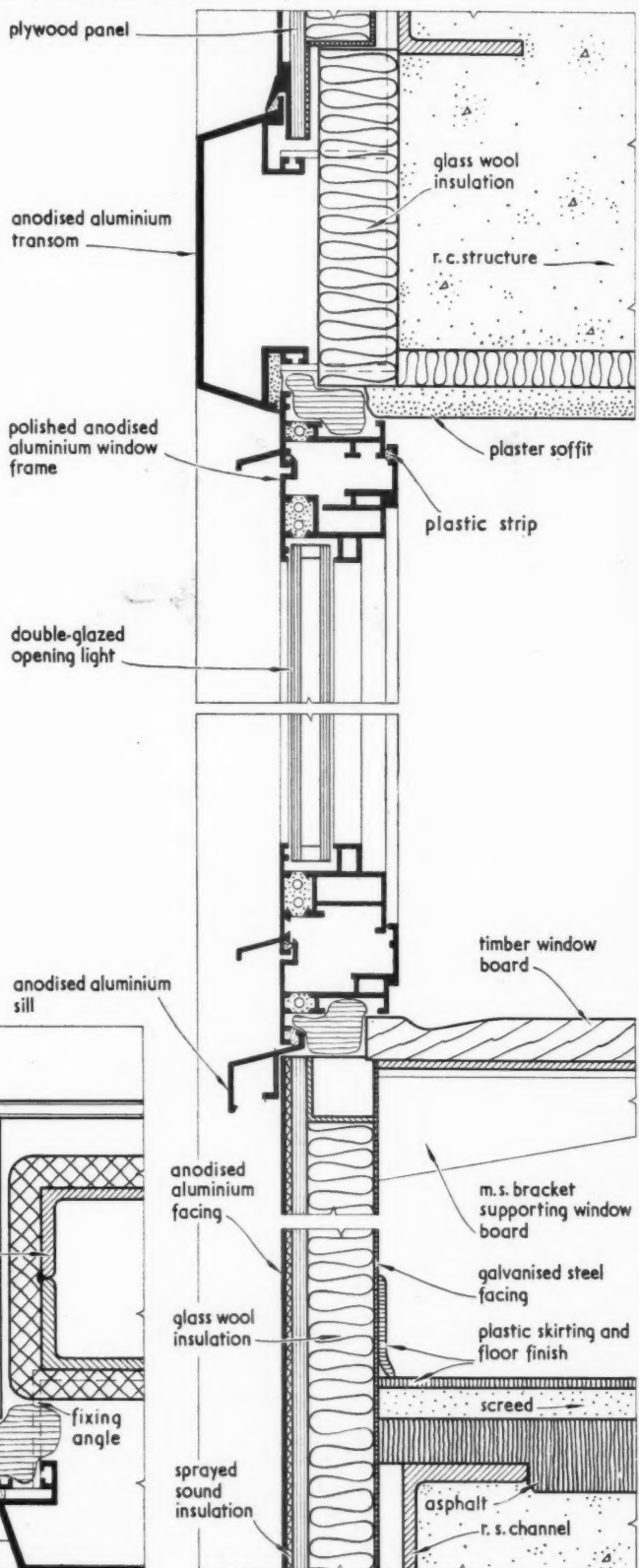


## working detail

## WALLS AND PARTITIONS: 82

## GLAZED WALL: OFFICES IN BASLE

F. Rickenbacher and W. Baumann, architects (material supplied by Hans Haenlein)

ELEVATION. scale  $\frac{1}{8}'' = 1' - 0''$ PLAN. scale  $\frac{1}{8}'' = 1' - 0''$ PLAN. scale  $\frac{1}{2}'' = 1' - 0''$ SECTION A-A. scale  $\frac{1}{2}'' = 1' - 0''$ 

note: figured dimensions in feet and inches are approximate





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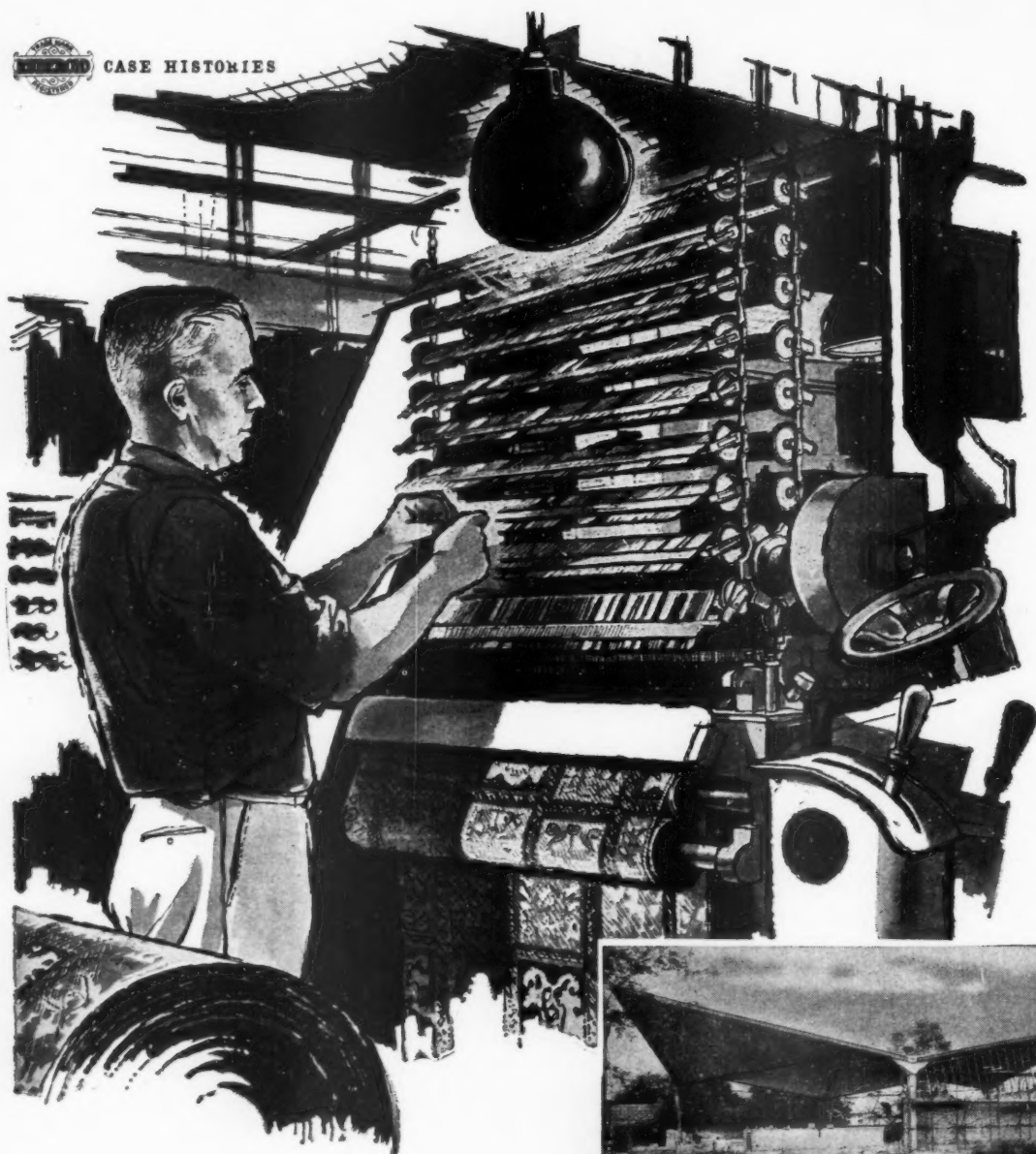
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CASE HISTORIES



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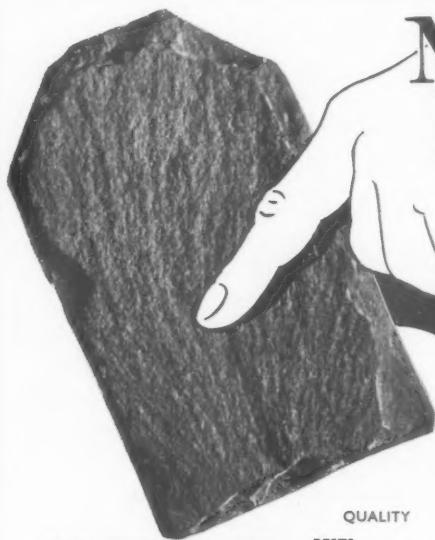
*The roof consists of four panels of hyperbolic paraboloid shells, each 57 ft. 5 in. square, supported independently by a concrete column at the mid-point of each side and weatherproofed with Ruberoid Built-Up Roofing.*

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BESTS	from 18" to 9"	24	9
SECONDS	from 18" to 9"	20	10½
THIRDS	from 18" to 12"	18	12
SPECIAL PEGGIES	from 15" to 7"	22	9½
SECOND PEGGIES	from 10" to 7"	20	11

Samples and prices gladly sent

**SPECIFICATION** The roof to be covered with Broughton Moor Light Sea Green Best Quality (coarse grained) Westmorland Slates, to be obtained from the Broughton Moor Green Slate Quarries, Ltd., Coniston, The Lake District, Lancs., in random sizes about 18" to 9" long, proportionate and random widths, laid to a 3" lap in regularly diminishing courses from eaves to ridge. Each slate to be securely fixed by two stout copper nails and wide slates are to be used on the hips and verges.

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## Announcements

### PROFESSIONAL

H. A. Halpern, A.R.I.B.A., will in future practice under the style of H. A. Halpern and Associates, Chartered Architects and Town Planning Consultants. A London office has been opened at Cumberland Chambers, 7, Edgware Road, Marble Arch, London, W.2 (telephone Ambassador 2471-3). The office at 26, High Street, Chatham will continue to practice and be in the charge of S. Grahame Budd, A.R.I.B.A., and the office at 60, Wodland Lane, Leeds, 7, in the charge of J. Cybulski, Ing. Arch., A.M.P.T.I. Trade catalogues will be welcomed at the new London office.

Brian Drury, A.R.I.B.A., has commenced practice at 35, Woodside Road, Purley, Surrey, and would be pleased to receive trade catalogues.

G. A. Jellicoe & Partners, Chartered Architects, are now practising under the style of Jellicoe, Ballantyne & Coleridge, F./A.R.I.B.A.

H. Eaton, A.I.A.S., announces that following his partnership with G. G. Edwards, A.R.I.C.S., chartered quantity surveyor, the style of his firm has been changed to Eaton & Edwards. Mr. Eaton and Mr. Edwards are continuing to practice as quantity surveyors under the new style from 134, Deansgate, Manchester 3.

The new address of W. B. Starr, Hall & Clifford (partners: L. Clifford, L.R.I.B.A., and J. R. W. Carman, A.R.I.B.A.) is Beedham House, 204, Derby Road, Nottingham (telephone 43192 and 43828). The title of the firm has been changed to W. B. Starr, Clifford & Carman. W. F. Kemp, A.R.I.B.A., has also been appointed a partner.

The name of the firm Pite Son & Fairweather has now been changed to George, Trew and Dunn, A./A./A.R.I.B.A. A. Beckles Willson and C. W. Nel have been made Associates of the firm.

R. Jelinek-Karl, F.R.I.B.A., has now moved from 22, Chancery Lane, W.C.2, to 6, Buckingham Street, Strand, W.C.2 (telephone Trafalgar 3020).

Hugh G. Bell, M.Sc. (tech), M.I.E.E., has joined the firm of R. W. Gregory & Partners, consulting engineers.

W. E. J. Budgen has commenced practice as a consulting civil and structural engineer under the style of W. E. J. Budgen & Partners, at 54, Queen Anne Street, W.1 (telephone Welbeck 2642).

Richard S. Nickson, M.A., F.R.I.B.A., A.A.Dip., F.R.S.A., has transferred his practice from 60, Queen Anne Street, W.1, to 12, Grosvenor Street, W.1 (telephone Mayfair 3875).

R. G. Chapman, A.R.I.B.A., and J. S. Taylor, A.R.I.B.A., have terminated their partnership in the firm of Guy Morgan and Partners, and are now in practice with Miss Jane Durham, A.R.I.B.A., under the style of Chapman, Taylor, Partners, at Grand Buildings, Trafalgar Square, W.C.2 (telephone Trafalgar 1830).

### TRADE

H. V. Smith & Co. Ltd., has amalgamated its London and Tottenham offices and has taken new premises at Walkden House, Melton Street, N.W.1 (telephone Euston 9292).

Concrete (Southern) Ltd. have opened a new works at Chadwell St. Mary, near Tilbury. Administration will continue to be from Hounslow.

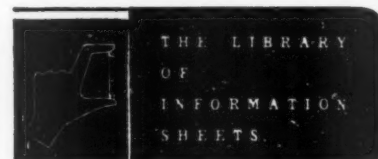
H. A. Parrott has taken up an appointment for special duties with the Cables Division of Siemens Edison Swan Ltd. He will be at the company's offices, 155, Charing Cross Road, London, W.C.2.

Bartrev Board Company, Limited, have appointed C. M. Bussy a director of the company. Mr. Bussy, who was formerly General Manager, will continue in that capacity.

Expandite Ltd. have acquired the whole of the share capital of Sealanco (St. Helens) Ltd.

A. W. Cheyne, A.M.I.C.E., has been appointed a director of Taylor Woodrow (West Africa) Ltd.

Richard Baxendale & Sons, Ltd., have appointed R. M. Findlay as representative for the Midlands and Wales.



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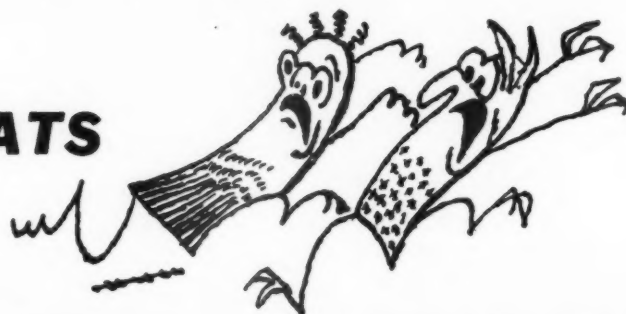
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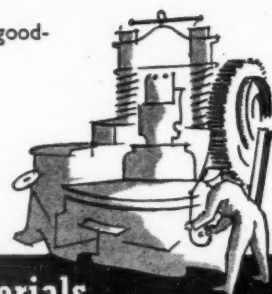
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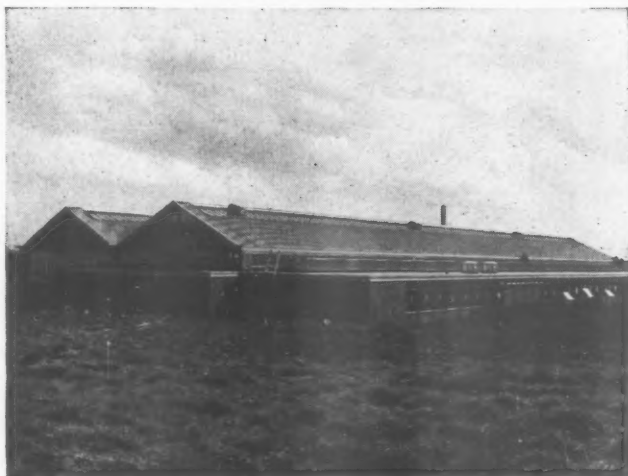
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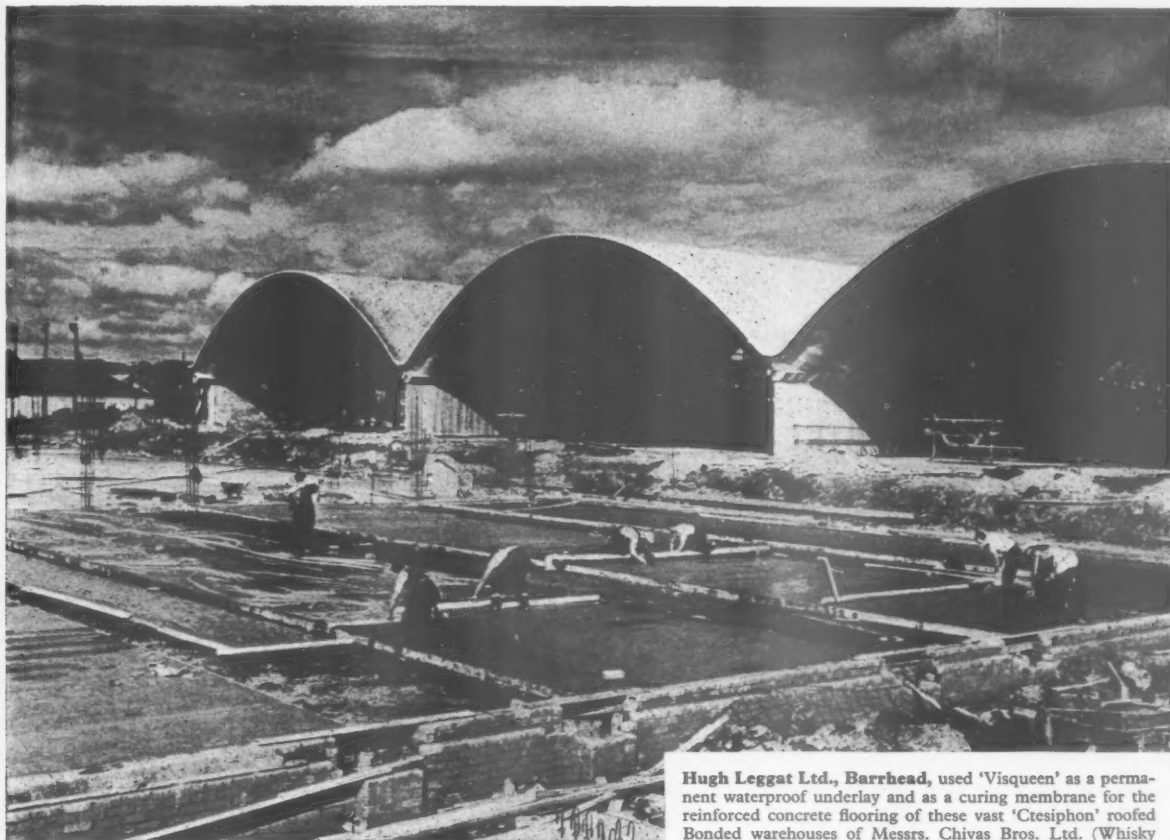
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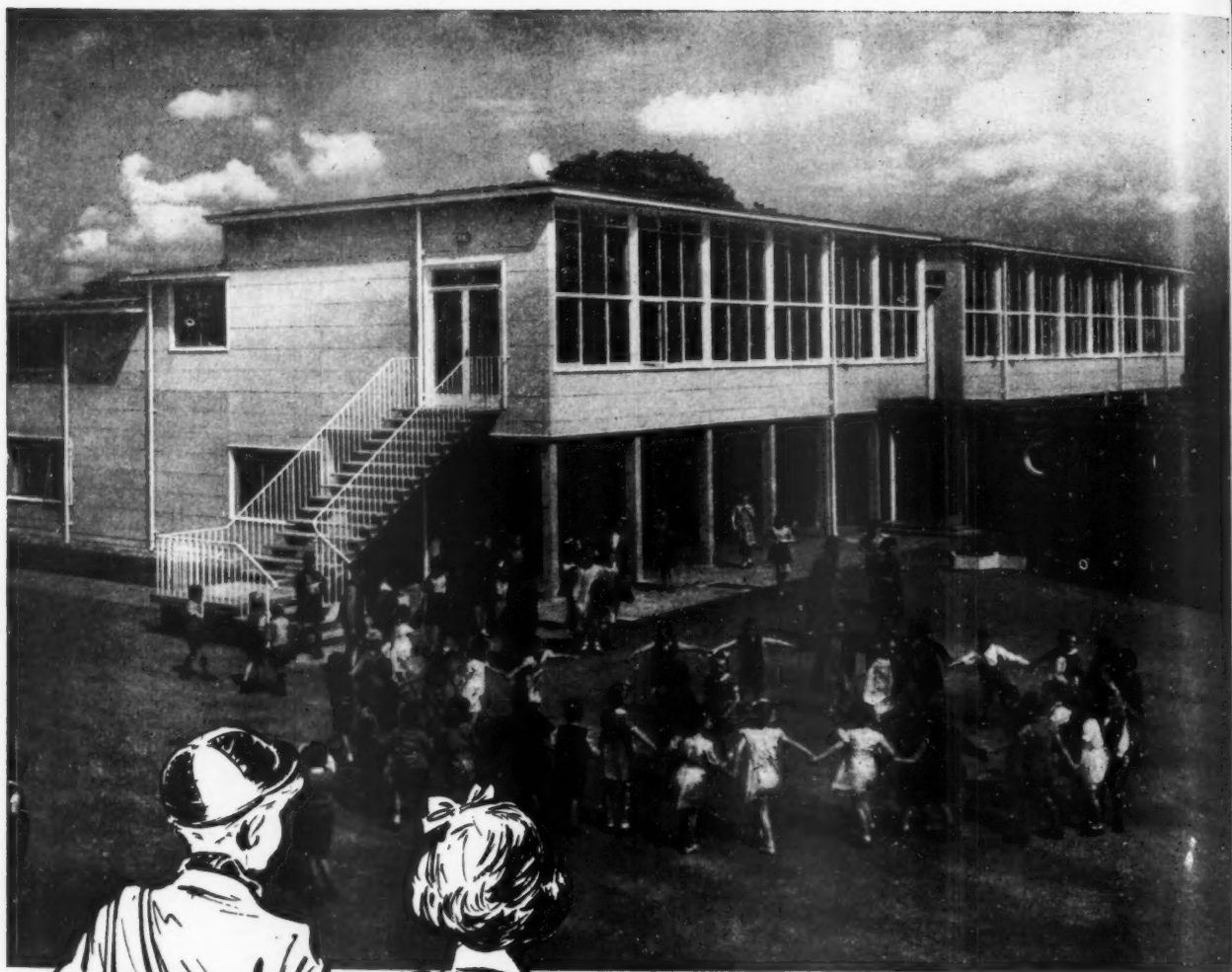
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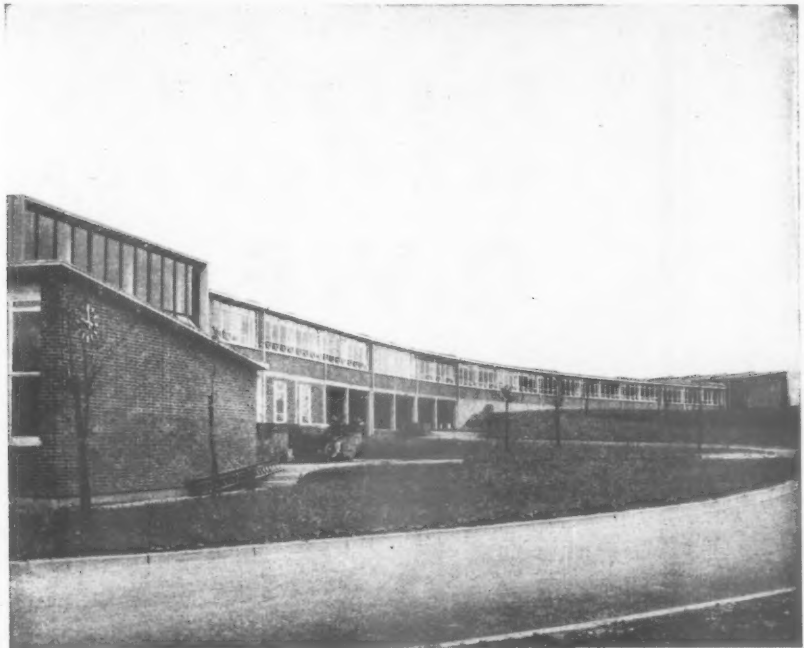


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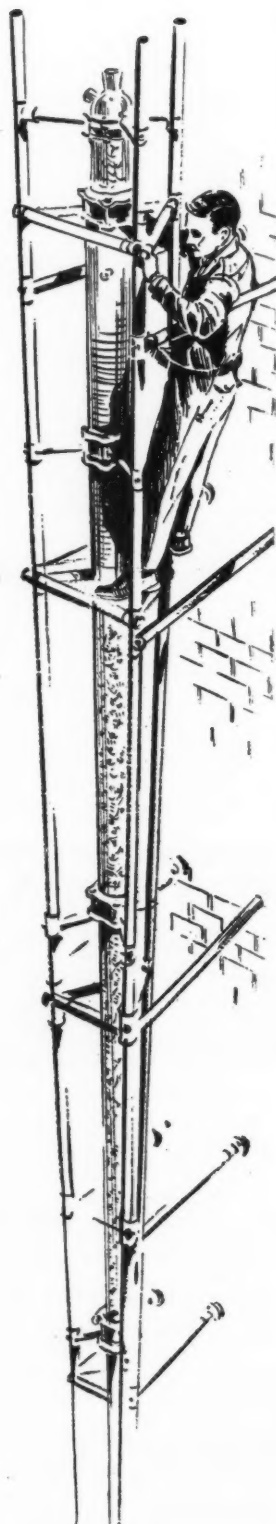


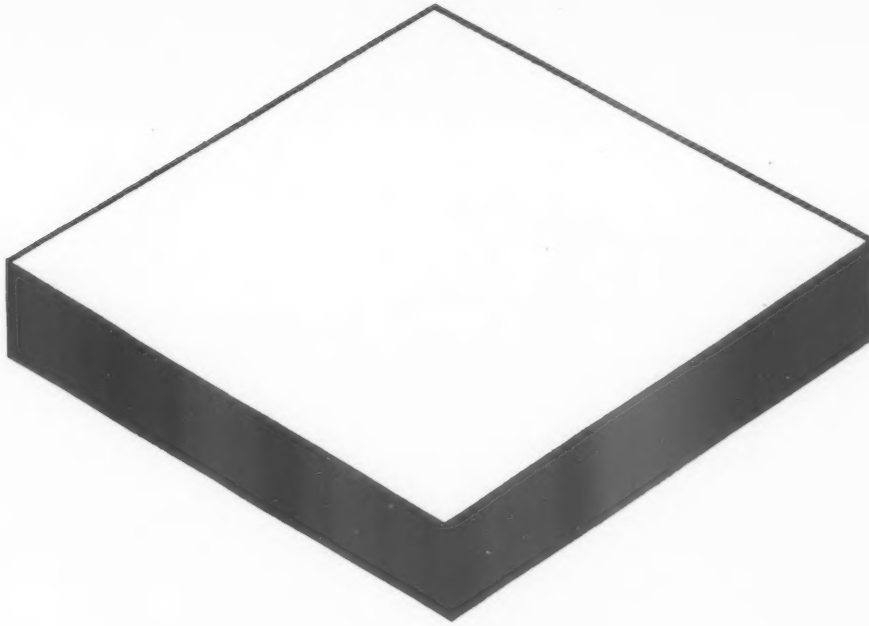
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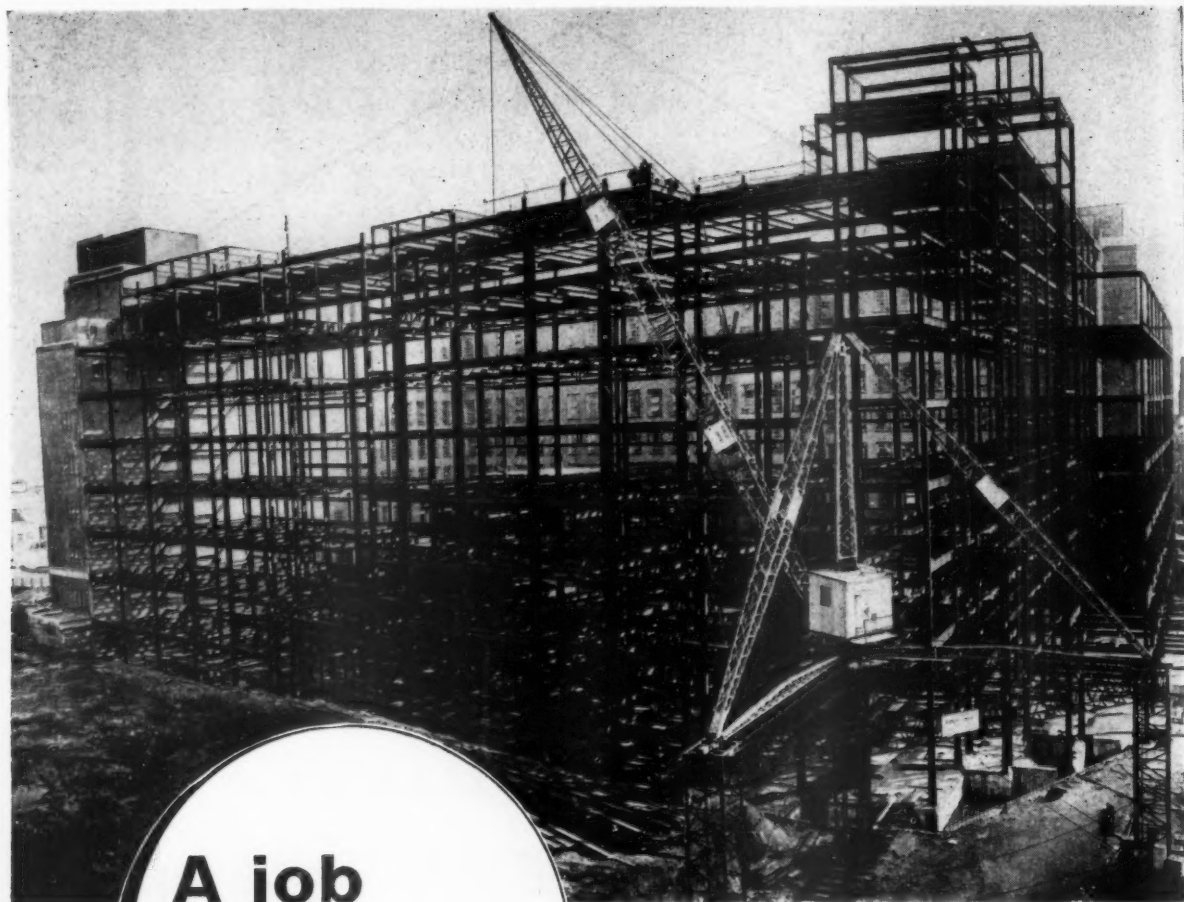
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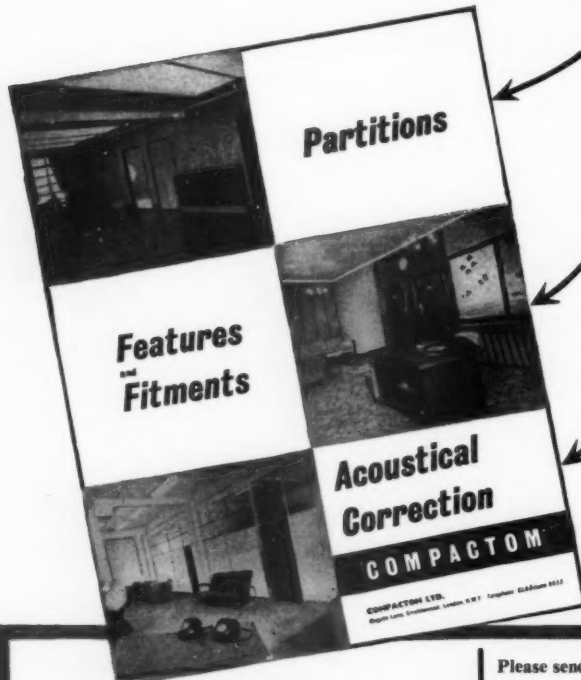
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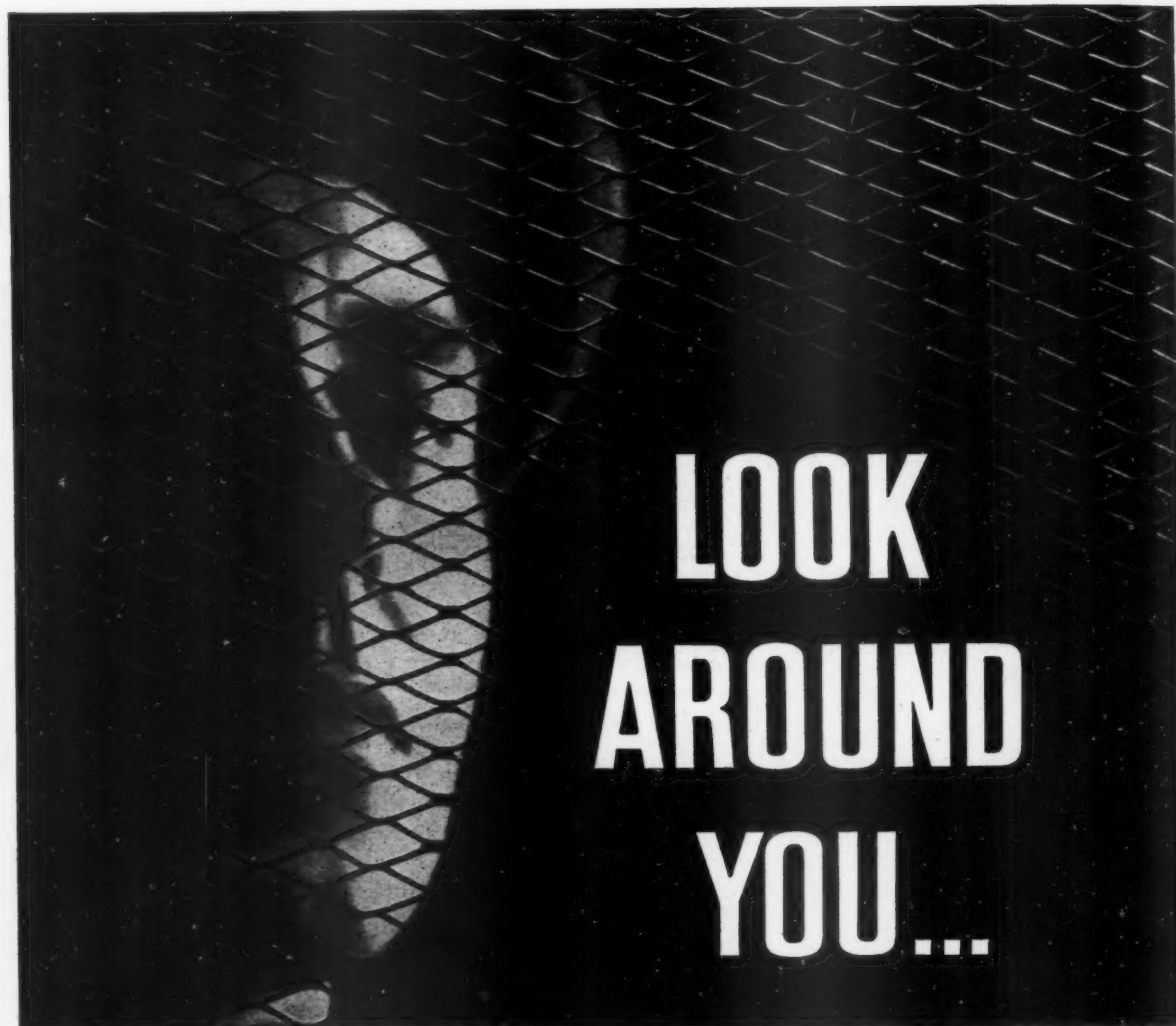
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## Modern throughout— Rose Hall, Dunbartonshire has oil fired heating

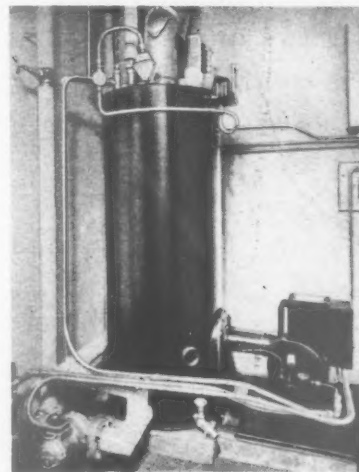
'ROSE HALL' gives its owner, Mr. W. B. Gardner Henderson, a glorious view of the Firth of Clyde. And plate glass windows have been fitted to ensure that there is no distortion of this magnificent view. The house owes its name to one of Mr. Gardner Henderson's main hobbies, the cultivation of roses. Modern in every possible way, 'Rose Hall' is kept warm and clean by the most modern of all heating systems. It has *oil fired* heating.

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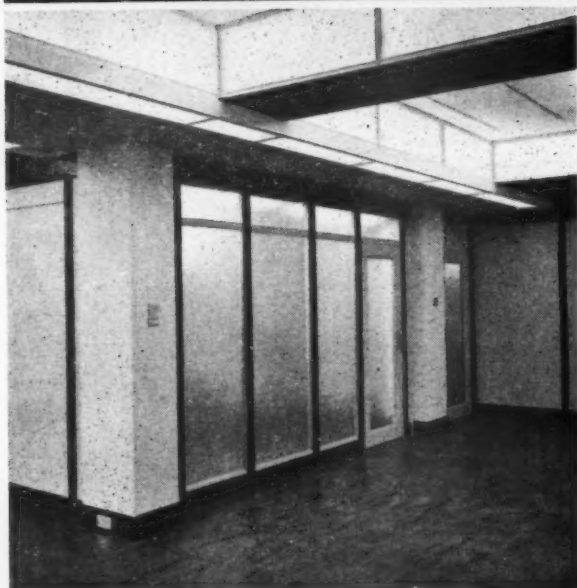
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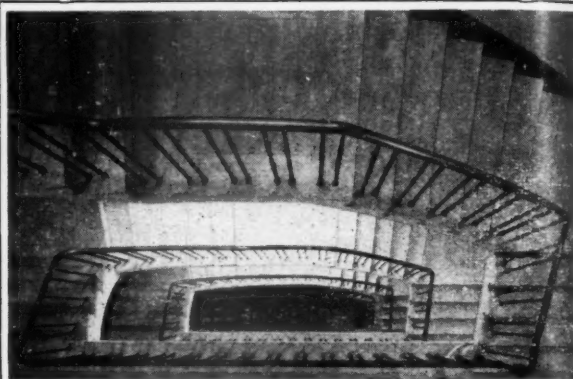
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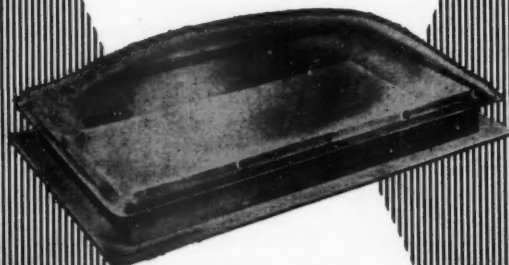
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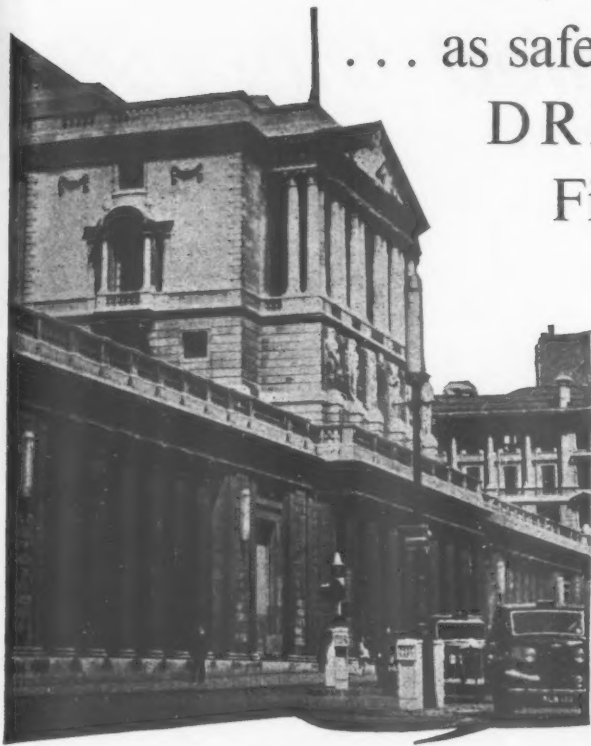
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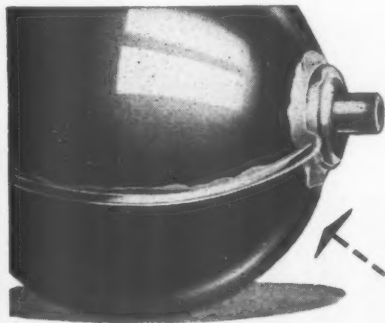
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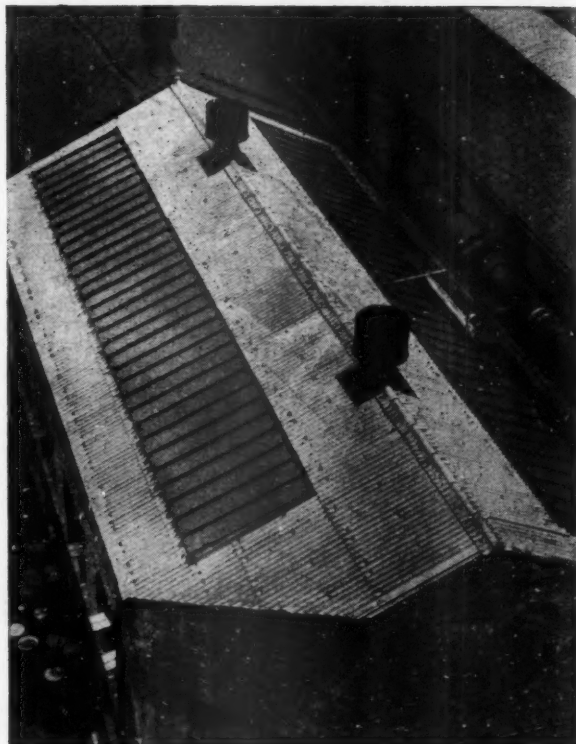
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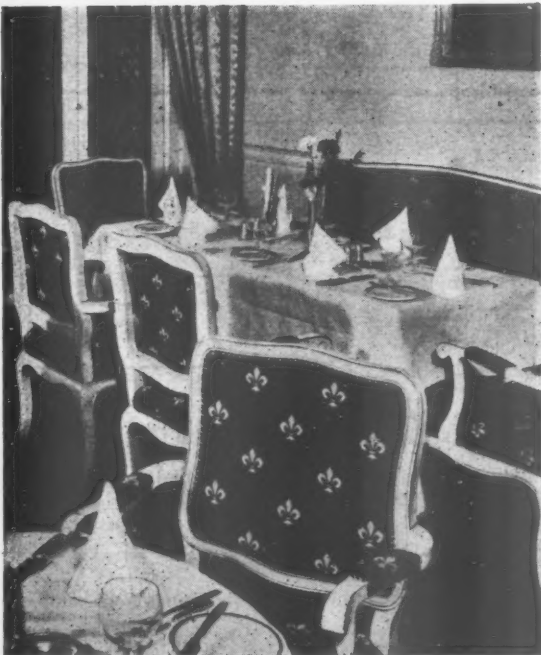
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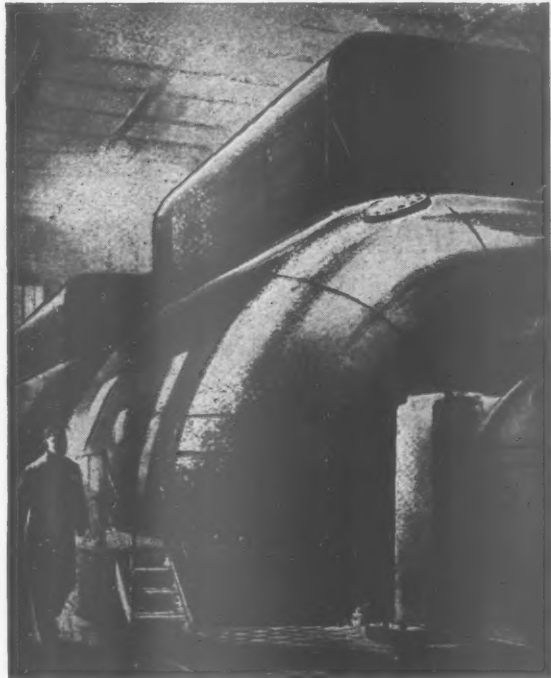
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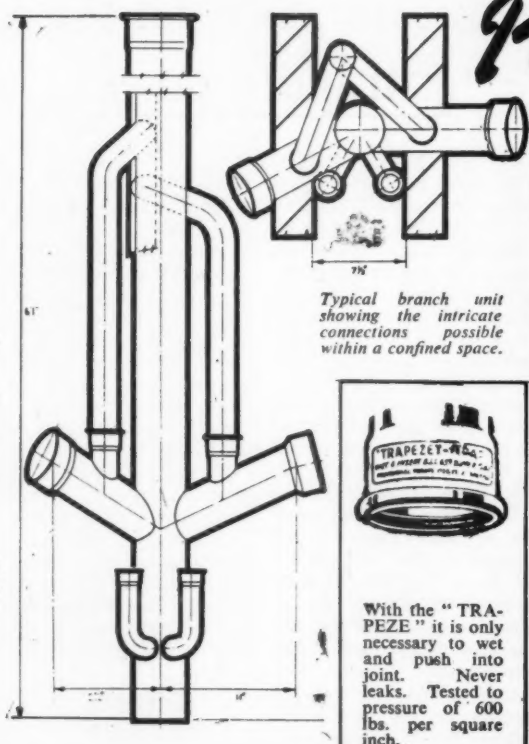
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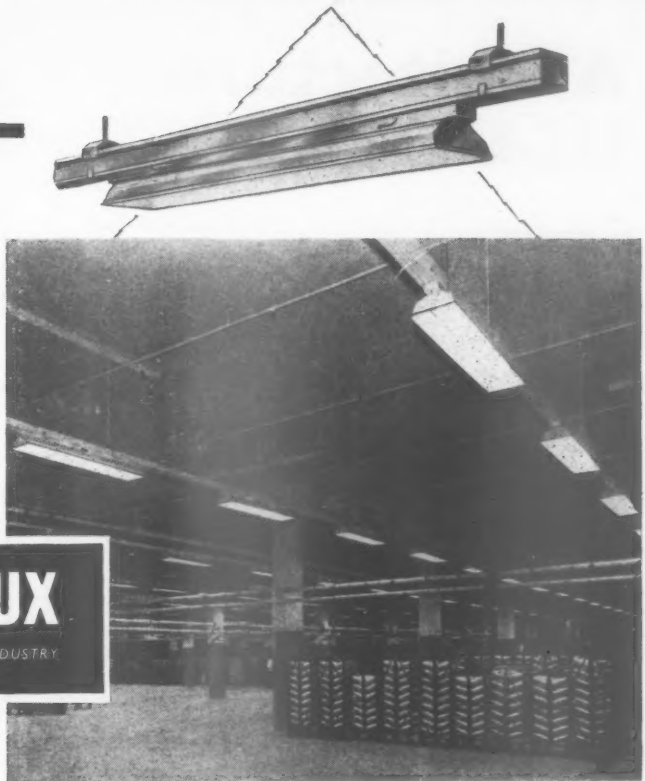
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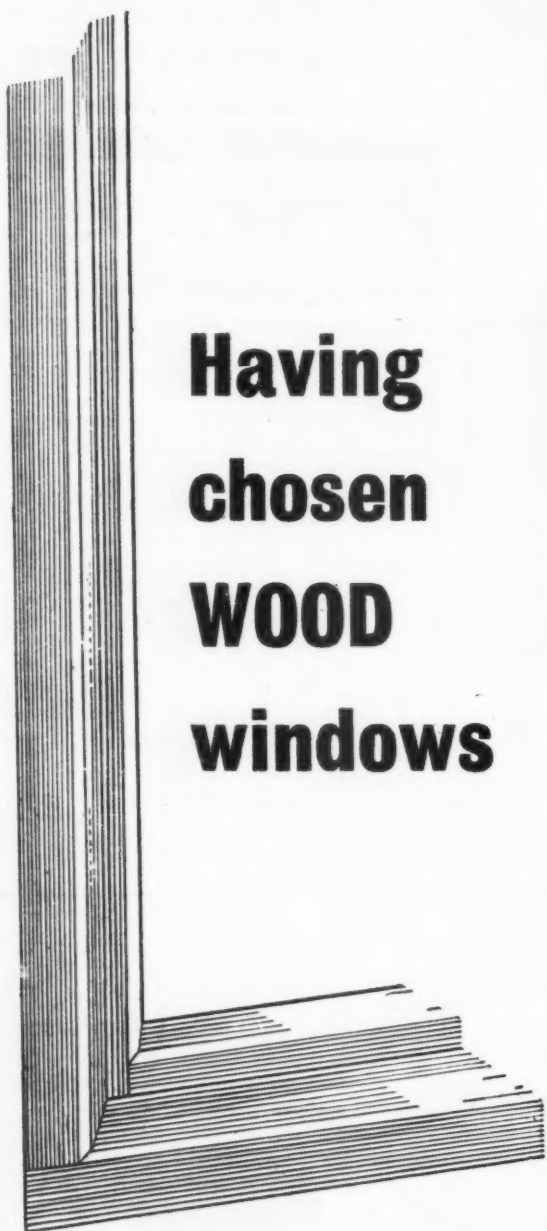


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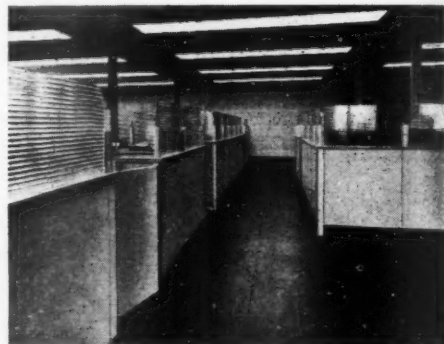
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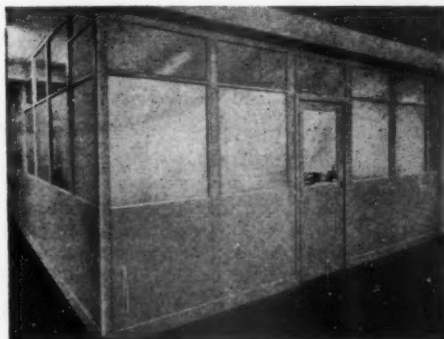


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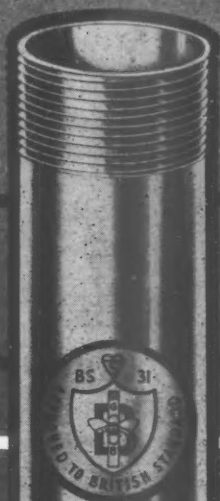
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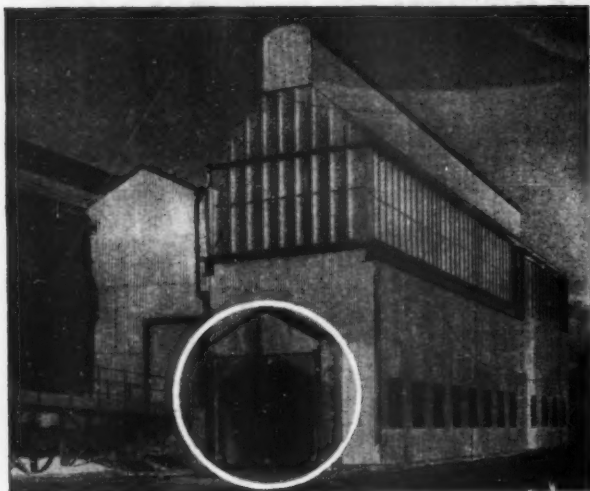
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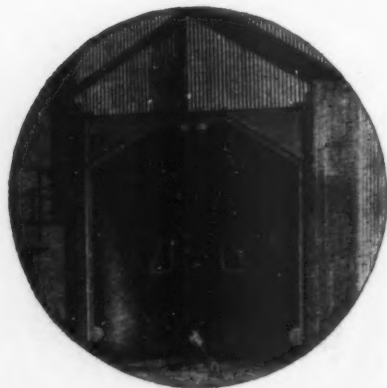
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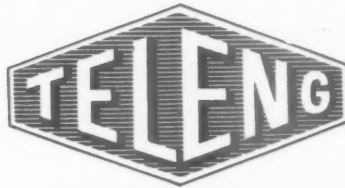
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66, Portland Place,  
London, W.1.  
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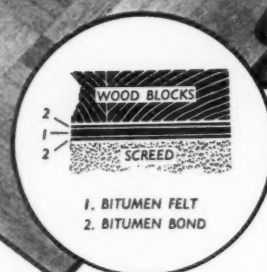
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Standard Panel  
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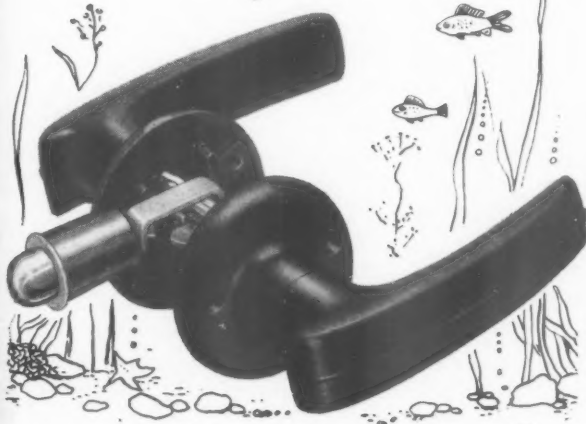
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## CLASSIFIED ADVERTISEMENTS

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

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

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

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**ARCHITECTURAL DRAUGHTSMEN / WOMEN** for interesting and varied work in connection with **POLICE HOUSING AND NON-HOUSING BUILDING PROGRAMMES.** £570 p.a. at age 21 rising by annual increments to a maximum of £900 p.a. Starting pay according to age.

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Room 578,  
Receiver's Office,  
New Scotland Yard,  
S.W.1.

4812

## BURGH OF KILMARNOCK

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

(a) **SENIOR ASSISTANT ARCHITECT**, qualified and experienced. Salary Scale for Professional Assistants, £760-£1,040 per annum, with placing up to the maximum according to experience. Council house available for letting if necessary.  
(b) **ARCHITECTURAL ASSISTANT**, experienced, A. & P. Grade V, £770 x £220-£830 per annum.

(c) **JUNIOR ARCHITECTURAL ASSISTANT**, A. & P. Grade I, £595 x £220-£655 per annum. The posts are subject to N.J.C. Conditions, Local Government Superannuation Acts and the passing of a medical examination.

Applications, giving full details of training and experience, along with copies of testimonials, should be lodged with the Burgh Architect, 64a, Bank Street, Kilmarnock, within ten days of the date of this advertisement.

W. L. WALKER,

Town Clerk.

Council Chambers,  
Kilmarnock,  
June, 1959.

4884

ASSISTANT ARCHITECTS  
REQUIRED BY  
MINISTRY OF WORKS

For employment in Birmingham, Bristol, Leeds, Manchester, Reading and London.

**General Conditions.** Salary range between £205 (at age 25) and £1,260 per annum, on the National Scale, slightly more in London. Starting point according to age, qualifications and experience. Five-day week, four weeks and two days annual leave initially. Prospects of promotion and opportunities for permanent and pensionable posts.

**Qualifications.** Candidates must be Registered Architects by examination, or Registered Architects who, since registration, have passed a professional examination in Architecture recognised by the Architects Registration Council of the United Kingdom. They must also possess good professional experience in private practice, or in the service of a Local Authority or Government Department.

**Applications.** State age and full details of training and experience to Chief Architect, Ministry of Works, (B) Room 435, Abell House, John Islip Street, London, S.W.1. Interview in London.

4802

## COUNTY BOROUGH OF READING

Applications invited for the appointment of **ASSISTANT ARCHITECTS** who have passed Parts I and II, R.I.B.A. Final or Special Final Examination or their equivalent and have had at least five years' experience. Salary range £785 x £40 (3) x £245 (1) x £40 (3)—£1,070 according to experience. Posts permanent and appointment subject to N.J.C. Conditions. Housing accommodation will be considered. Applications, stating age, qualifications and experience, together with names and addresses of two referees, to Borough Architect, P.O. Box 17, Town Hall, Reading, not later than two weeks after date of this advertisement.

5028

**QUANTITY SURVEYING ASSISTANTS, GRADE III**, required by AIR MINISTRY in the PROVINCES. Duties include abstracting and billing, site measurement and preparation of estimates. Commencing salary according to age, qualifications and experience. Salary ranges from £680 at age 26 rising to £850. Candidates must hold O.N.C. (Building or Builders' Quantities) or equivalent and have good experience under Quantity Surveyor or Building Contractor. Knowledge W.D. Schedule an advantage. Promotion and pension prospects. Five-day week, three weeks three days leave a year initially. Appointments carry liability for service anywhere U.K. or overseas. Applicants normally should be natural born British subjects. Write stating age, qualifications and previous appointments, including type of work done, to Manager, P.E. 105, Professional and Executive Register, Ministry of Labour and National Service, Atlantic House, Farringdon Street, E.C.4. No original testimonials should be sent. Only applicants selected for interview will be advised.

4871

BOROUGH OF CROSBY  
CAPITAL WORKS PROGRAMME

Applications are invited for the appointment of a **PRINCIPAL ARCHITECTURAL ASSISTANT** at a Salary in accordance with APT IV of the Conditions of Service (£1,065 to £1,220). The successful applicant will be required to take charge under the Chief Assistant of Architectural Works other than housing and in particular the construction of the new **SWIMMING BATH**.

It is the Council's policy to assist in the provision of **HOUSING ACCOMMODATION** on satisfactory proof of need.

Applications on forms obtainable from the Borough Engineer at the address below must be received, suitably endorsed, not later than 31st August, 1959.

Canvassing directly or indirectly will disqualify.

HAROLD O. ROBERTS,

Town Clerk.

Town Hall,  
Waterloo,  
Liverpool, 22.

5041

## BOROUGH OF HARROW

**ARCHITECTURAL AND PLANNING STAFF**  
Applications are invited for the following vacancies in the Department of the Borough Engineer and Surveyor within the Special Grade for qualified Assistants (£785-£1,070 per annum, plus London "weighting"):

(a) **SENIOR PLANNING ASSISTANT**—This Assistant will deputise for the Head of the Planning Section, who is frequently engaged on enquiries and outside negotiations. Applicants must be appropriately qualified and should have extensive experience of development control.  
(b) **ARCHITECTURAL ASSISTANT**—Preference will be given to applicants who are Registered Architects.

Both appointments will be subject to the Local Government Superannuation Acts and the National Joint Council's Scheme of Conditions of Service. Housing accommodation is not offered. Contributions towards removal expenses will be considered.

Application forms, obtainable from me, must be returned not later than 31st August, 1959.

D. H. PRITCHARD,

Town Clerk.

Town Clerk's Office,

Harrow Weald Lodge,  
92, Uxbridge Road,  
Harrow, Middlesex.

5079

## GOVERNMENT OF TANGANYIKA

**EDUCATION OFFICERS (Technical Training)**, preferably between 25 and 40, required to test: (a) Civil Engineering and allied subjects, (b) Building Construction and Drawing and elementary Quantity Surveying and allied subjects. Qualifications for (a) Degree in Engineering or A.M.I.C.E., (b) Corporate Membership of (1) Royal Institute of British Architects or (2) Incorporated Association of Architects and Surveyors or (3) Associate of Institute of Builders. Either a teacher's certificate or minimum of two years' teaching experience essential for both posts.

Posts on contract/resettlement grant terms. Home pension rights can be preserved. Salary at appropriate points in scales £379-£1,617 or £399-£1,863 inclusive. Quarters at low rental. Free passages and medical attendance. Outfit and education allowances. Tour of service 30-36 months. Low Income Tax. Generous home leave. Further particulars and application forms from the Director of Recruitment, Colonial Office, London, S.W.1, quoting BCD 114/8 (05)(b).

5012

## BOROUGH OF ROWLEY REGIS

**APPOINTMENT OF ASSISTANT QUANTITY SURVEYOR**

Applications are invited for the above appointment in the Building Department at a salary in accordance with Grade A.P.T. II (£765-£880 in four increments) according to qualifications and experience.

Applicants must be experienced in preparing estimates, bills of quantities, checking interim and final accounts.

Applications, stating age, qualifications and experience, together with two recent testimonials, should be sent to the undersigned not later than Friday, the 28th August, 1959.

JOHN HILTON,

Town Clerk.

Municipal Buildings,  
Old Hill,  
Staffs.  
August, 1959.

5224

**JUNIOR ARCHITECTURAL DRAUGHTSMAN** required by HAYES & HARRINGTON U.D.C. Salary within Grade A.P.T. I, i.e., £610-£765 per annum, plus appropriate London weighting, up to 20 years £10 per annum, 21-25 years £20 per annum, 26 years and over £30 per annum. Preference will be given to Probationers of the Royal Institute of British Architects. The Council is unable to assist with the provision of housing accommodation. Five-day week. Further particulars of duties, conditions of service and form of application obtainable from the undersigned when completed must be returned by 7th September, 1959.

GEORGE HOOPER,  
Clerk and Solicitor.

Town Hall,  
Hayes, Middlesex.

5213

## COUNTY BOROUGH OF DUDLEY

## BOROUGH ARCHITECT'S DEPARTMENT

(a) **CHIEF QUANTITY SURVEYOR, A.P.T.**

Grade V, £1,220-£1,375.

(b) **ASSISTANT QUANTITY SURVEYOR, A.P.T.**

Grade I, £610-£765.

(c) **JUNIOR ARCHITECTURAL ASSISTANT,**

Higher General Division.

Applicants for (a) must be Associates of the Royal Institution of Chartered Surveyors, Quantities Section, and the successful candidate will be responsible for the preparation of Bills of Quantities, interim measurements, certificates and the settlement of Final accounts for schools, houses, public buildings, etc. Housing accommodation will be offered, if required.

Applicants for (b) should have passed the Intermediate examination of the R.I.C.S. and should have a thorough knowledge of taking off, preparing Bills of Quantities and site measurement.

Applicants for (c) should be probationers of the R.I.B.A. and should have a knowledge of basic building construction.

Applications stating age, qualifications, and experience, with the names and addresses of two referees must be received by me by the 7th September, 1959.

P. D. WADSWORTH,

Town Clerk.

The Council House,  
Dudley,  
6th August, 1959.

5214

## BOROUGH OF SWINDON

## ASSISTANT QUANTITY SURVEYOR

## ARCHITECTURAL ASSISTANTS

Applications are invited for the undermentioned appointments in the Borough Architect's Department. The Department is engaged in a large and varied development programme, including housing schemes and industrial buildings.

Housing accommodation may be offered.

(a) **ASSISTANT ARCHITECT, A.P.T. Special**

Scale (£785-£1,070). Applicants should have the Final R.I.B.A. or equivalent qualification.

(b) **JUNIOR ARCHITECTURAL ASSISTANT, A.P.T. II** (£765-£880). Applicants should have the Intermediate R.I.B.A. or equivalent qualification.

(c) **ASSISTANT QUANTITY SURVEYOR, A.P.T. Special** Scale (£785-£1,070). Applicants should have the Final R.I.C.S. or equivalent qualification.

Applications, on forms to be obtained from the Town Clerk, Civic Offices, Swindon, must be returned within 14 days of the appearance of this advertisement.

5215

## CITY OF PORTSMOUTH

## CITY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

(a) **ASSISTANT ARCHITECTS, Special Grade** (£785-£1,070), commencing salary according to experience. Work in the Department includes New Civic Offices, Technical College, Schools, Swimming Baths, Multi-storey Flats, Old People's Homes, etc.

(b) **ASSISTANT QUANTITY SURVEYOR, Special Grade** (£785-£1,070), commencing salary according to experience.

For (a) and (b) the Council will consider the provision of housing accommodation at an economic rent in suitable cases.

(c) **ARCHITECTURAL ASSISTANT, A.P.T. Grade I** (£610-£765), commencing salary according to experience.

Applicants for (a) must be Associate Members of the R.I.B.A., for (b) must be Associate Members of the R.I.C.S., and for (c) must be Student Members of the R.I.B.A.

Applications, with full details and names of two referees, must be delivered to the City Architect, 1, Western Parade, Portsmouth, not later than Monday 7th September, 1959.

Canvassing will disqualify.

V. BLANCHARD,

Town Clerk.

5216

## GLAMORGAN COUNTY COUNCIL

Require in the Highways and Planning Department at Area Planning Office, Neath, an **ASSISTANT AREA PLANNING OFFICER, Special Grade**, salary £785 to £1,070 per annum.

Minimum qualification. Final examination of appropriate professional body. A motor car must be provided for which an allowance will be paid.

Applications stating age, training, qualifications, experience and present salary with names and addresses of two referees, to the County Surveyor and Planning Officer, County Hall, Cardiff. Closing date 25th August, 1959.

RICHARD JOHN,

Clerk of the County Council.

5220



## LONDON COUNTY COUNCIL

**ARCHITECTURAL ASSISTANTS** required up to £895. Full and interesting programme of houses, flats, schools and general buildings. Application form and particulars from Hubert Bennett, F.R.I.B.A., Architect, to Council, AR/EK/43/59, County Hall, S.E.1. (923.) 5052

## WARWICKSHIRE COUNTY COUNCIL

**COUNTY PLANNING DEPARTMENT**  
Applications are invited for the following appointments:—  
**TWO PLANNING ASSISTANTS**, Grade A.P.T. I/II (£610-£890 per annum).

The posts are in the Development Plan Section and the appointments are subject to the provisions of the Local Government Superannuation Act and to the National Scheme of Conditions of Service. Successful candidates will be required to pass a medical examination. Consideration will be given to the granting of financial assistance towards removal expenses.

Applicants must have passed the Intermediate Examination of a professional body, preferably that of the Town Planning Institute. Commencing salary will be according to experience.  
Applications, together with the names of two referees, should be sent to J. J. BROOKS, County Planning Officer, Northgate, Warwick, not later than Saturday, 29th August, 1959.  
Canvassing will be a disqualification.

L. EDGAR STEPHENS,  
Clerk of the Council.

Shire Hall,  
Warwick. 5217

## BOROUGH OF WESTON-SUPER-MARE

**APPOINTMENT OF ASSISTANT ARCHITECT**  
Applications are invited for the above appointment from architectural assistants who possess the Intermediate Examination of the R.I.B.A., and have worked for a minimum of one year in an Architect's office.

The salary will be in accordance with the A.P.T. Grade I £610 to £765.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, the terms of the National Scheme of Conditions of Service, and to termination by one month's notice on either side.

A Medical Examination will be necessary.  
Applications stating age, qualifications, present and previous appointments with Salaries, together with details of experience and the names of two persons to whom reference can be made, should reach the Borough Engineer and Surveyor, Town Hall, Weston-super-Mare, not later than Friday, 28th August, 1959. 5098

## WILLENHALL URBAN DISTRICT COUNCIL

**APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT**  
**ARCHITECT'S DEPARTMENT**  
(Architect: E. E. BANNINGTON, R.I.B.A.)

Applications are invited for the post of Senior Architectural Assistant at a salary in accordance with the Special Grade for Architectural Assistants (£785-£1,070 per annum). The appointment will be subject to the Local Government Superannuation Acts, the National Scheme of Conditions of Service and to termination by one month's notice on either side. Two-thirds of any removal expenses incurred will be paid by the Council to the successful applicant, if married.

Applications, giving details of age, experience and qualifications, together with the names and addresses of two referees, should reach the undersigned not later than Friday, 11th September, 1959.

JOHN R. RIDING,  
Clerk of the Council.

Town Hall,  
Willenhall. 5229

**ASSISTANT ARCHITECT** required by POP-  
LAR BOROUGH COUNCIL. Salary £1,100 per annum, including London weighting. Applicants should have had experience in design and construction of multi-storey flats, houses, and public buildings. Application forms from Borough Engineer and Surveyor, Poplar Town Hall, Bow Road, E.3. Closing date 7th September, 1959. 5233

## LONDON ELECTRICITY BOARD

**ARCHITECTURAL DRAUGHTSMAN**  
Applications are invited for the above position in the Architect's Section of the Construction Branch of the Chief Engineer's Department in Central London.

Applicants should be neat draughtsmen and preferably have had several years' experience in an architect's office.

The conditions of service are in accordance with the National Joint Board agreement and the salary will be within Grade 6 of Schedule "D" (£660-£790 per annum, inclusive of London Allowance).

Application forms obtainable from Personnel Officer, 46, New Broad Street, London, E.C.2, to be returned completed within 14 days of the publication date of this advertisement. Please quote ref. PER/2721/A. 5235

## STEVENAGE DEVELOPMENT CORPORATION

**CHIEF ARCHITECT'S DEPARTMENT**  
Applications are invited for the appointment as **PLANNING ASSISTANT** in the Chief Architect's Department on New Town Salary Grade A.P.T. III £880-1,965 according to experience and qualifications.

The work consists of general and neighbourhood planning in the new town and dealing with statutory planning applications.

Applications giving full details and names of two referees to Chief Administrative Officer, Aston House, Stevenage, Herts, not later than the 8th September, 1959. 5263

## COUNTY BOROUGH OF HALIFAX

**BOROUGH ENGINEER'S DEPARTMENT**  
**GENERAL ARCHITECTURAL SECTION**  
**ONE CHIEF ASSISTANT ARCHITECT**, Grade IV (£1,065-£1,220).

**TWO ASSISTANT ARCHITECTS**, Special Grade (£785-£1,070).

**ONE ASSISTANT ARCHITECT**, Grade I (£610-£765).

**SCHOOLS SECTION**  
**ONE ASSISTANT ARCHITECT**, Grade I (£610-£765).

Applications are invited for the above appointments.

Applications stating age, education, training, qualifications, present and past appointments (with dates and salaries) and experience, together with the names and addresses of two referees are to be sent to the Town Clerk, Town Hall, Halifax, by 29th August, 1959. 5218

## RADNORSHIRE COUNTY COUNCIL

**COUNTY ARCHITECT'S DEPARTMENT**  
Applications are invited for the undermentioned permanent appointments in the County Architect's Department:—

(a) **QUALIFIED QUANTITY SURVEYOR** (must be A.R.I.C.S.), Special Grade, £785 to £1,070 per annum. Required for preparation of Bills of Quantities, Estimates and Schemes, and Direct Labour Costing.

(b) **ARCHITECTURAL DRAUGHTSMAN**, Salary A.P.T. Grade II (£765 to £880). Good drawing board experience essential and candidate should have a knowledge of school and house design and construction. Preference will be given to those holding the Intermediate R.I.B.A.

The appointments will be terminable by one month's notice in writing on either side and will be subject to the provisions of the Local Government Superannuation Acts and to the passing of a medical examination.

The Conditions of Service will be those of the National Joint Council for Local Authorities' Administrative, etc., Services. Travelling allowance on County Scale.

Applications, stating age, qualifications and experience, with the names of two referees, must be received by the undersigned not later than 31st August, 1959.

D. C. S. LANE,  
Clerk of the Council.

County Hall,  
Llandrindod Wells,  
Radnorshire. 5071

## COUNTY BOROUGH OF PRESTON

**APPOINTMENT OF ASSISTANT ARCHITECTS**  
(A.P.T. Grade IV. £1,065-£1,220)  
(Special Grade, £785-£1,070)

Applications are invited for the above-mentioned appointments in the Borough Surveyor's Department.

Candidates must be Registered Architects and Corporate members of the R.I.B.A. The programme of work is large and varied and appointments afford opportunities for good experience.

The National Scheme of Conditions of Service and Local Superannuation Acts apply, and the successful applicants will be required to pass a medical examination.

Forms of application can be obtained from the undersigned to whom they must be returned, completed, not later than 14th September, 1959.

W. E. E. LOCKLEY,  
Town Clerk.

Municipal Building,  
Preston. 5255

## BOROUGH OF NEWCASTLE-UNDER-LYME

**APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT**  
Special Grade (£785-£1,070 p.a.)

Applications are invited for the above post. The commencing salary will be fixed in accordance with qualifications and experience.

Applicants should have passed parts 1 and 2 of the R.I.B.A. examination and have had at least five years' experience including theoretical training.

The provision of housing accommodation will apply in suitable cases.

Application forms and conditions of service are obtainable from the Borough Engineer & Surveyor, Lancaster Building, High Street, Newcastle, Staffs., and must be returned to him within ten days of the publication of this advertisement.

C. J. MORTON,  
Town Clerk. 5252

## BOROUGH OF WESTON-SUPER-MARE

**APPOINTMENT OF ASSISTANT ARCHITECT**  
Applications are invited for the above appointment from architectural assistants who possess the Intermediate Examination of the R.I.B.A., and have worked for a minimum of one year in an Architect's office.

The salary will be in accordance with A.P.T. Grade I, £610 to £765.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, the terms of the National Scheme of Conditions of Service, and to termination by one month's notice on either side.

A Medical Examination will be necessary.  
Applications stating age, qualifications, present and previous appointments with salaries, together with details of experience and the names of two persons to whom reference can be made, should reach the Borough Engineer and Surveyor, Town Hall, Weston-super-Mare, not later than 28th August, 1959. 5016

## CITY OF WINCHESTER

Applications are invited for the post of **ARCHITECTURAL ASSISTANT** in the City Engineer's office (C. C. Steptoe, A.R.I.B.A., Chief Assistant Architect). It is essential that the applicant should be a neat and accurate draughtsman and have had previous experience in an architect's office and have passed the Intermediate examination of the R.I.B.A. Salary, according to experience, will be within Grade I of the National Scales, and the appointment is subject to the Local Government Superannuation Act.

Applications, stating age and details of experience, together with the names and addresses of two referees, should be addressed to the City Engineer, Guildhall, Winchester, and should reach his office not later than Monday, 7th September, 1959.

Canvassing, either directly or indirectly, will disqualify.

R. H. McALL,  
Town Clerk.

Guildhall,  
Winchester. 5250  
11th August, 1959.

## NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD

**PRINCIPAL ASSISTANT ARCHITECT**  
(Scale II)

Applications invited from qualified Architects with contemporary experience of hospital design. The appointed officer will be responsible to the Regional Architect, Mr. F. A. C. Maunders, F.R.I.B.A., in the first instance for the development of designs for a major new general hospital in Middlesex.

Present salary scale £1,245 x 45 (2) x 15 (1) x 45 (2) x 30 (1) = £1,470. Superannuable, Whitley Council conditions.

Apply, stating age, qualifications and experience, together with names of two referees to Secretary, North West Metropolitan Regional Hospital Board, 40, Eastbourne Terrace, W.2, by 28th August, quoting reference 755. 5172

**LONDON TRANSPORT** require **ARCHITECTURAL ASSISTANTS**. Candidates must be qualified to R.I.B.A. Intermediate standard and have previous office experience.

Salary range £814 p.a.-£979 p.a.  
Free Travel; medical examination; 38-hour week; no Saturdays; good dining club, and sports facilities.

Please apply within 7 days to Staff and Welfare Officer, (F/EV 749/2), London Transport Executive, 55, Broadway, London, S.W.1. 5245

## COUNTY BOROUGH OF SOUTHAMPTON

**BOROUGH ARCHITECT'S DEPARTMENT**  
Applications are invited for the permanent post of:—

(a) **ARCHITECTURAL ASSISTANT**, A.P.T. Grade I (£610-£765).

Candidates should have passed the Intermediate examination of the R.I.B.A.

(b) **TECHNICAL ASSISTANT**, Miscellaneous Grade V (£650-£715).

Architectural Draughtsman experienced in alterations and repairs.

(c) **JUNIOR ARCHITECTURAL ASSISTANT**, General Division (£210-£395).

Application forms from the Borough Architect, Civic Centre, Southampton.  
Closing date 31st August, 1959. 5246

## METROPOLITAN BOROUGH OF HAMPSTEAD

**Require ARCHITECTURAL ASSISTANT** on the permanent staff of The Housing Architect's Department for appointing in September, salary within A.P.T. Grades III/IV (£890-£1,220 per annum), plus London weighting allowance. No housing provided. Applications giving experience, previous appointments, etc., and names of three referees, to the Town Clerk, (T), Town Hall, Hampstead, N.W.3, by 28th August, 1959. 5162

## HAMPSHIRE COUNTY COUNCIL

**PLANNING ASSISTANT** required for pensionable post in the Area Planning Office at BASINGSTOKE, A.P.T. I (£610-£765). Commencing salary according to qualifications and experience.

Candidates should preferably have passed the Intermediate examination of the Town Planning Institute or of a related professional body and have had experience in the Planning Department of a Local Planning Authority. In approved cases the County Council assist with removal and other expenses.

Applications, stating age, education, qualifications, and experience, together with a copy of one testimonial and the names of two referees, should reach the Clerk of the County Council, The Castle, Winchester, by 28th August. 5171

## COUNTY BOROUGH OF TYNEMOUTH

**BOROUGH SURVEYOR'S DEPARTMENT**  
Applications are invited for the undermentioned posts in the above department:

1. **TWO ASSISTANT ARCHITECTS**, Special Grade, £785-£1,070.

Point of entry to be according to qualifications and experience.

2. **JUNIOR ASSISTANT ARCHITECT**, Grade I, £610-£765.

Application forms together with Conditions of Appointment, can be obtained from D. M. O'Hanley Esq., O.B.E., B.Sc. (Eng.), M.I.C.E., 16, Northumberland Square, North Shields, to whom they should be returned by the 22nd August, 1959.

In the case of appointment No. 1, the Corporation may be prepared to assist in the provision of housing accommodation.

F. G. EGNER,  
Town Clerk. 5165



**COUNTY BOROUGH OF BOOTLE**  
Applications are invited for the appointment of an **ARCHITECTURAL ASSISTANT**, Grade III, £280 to £1,065 per annum.

Preference will be given to those having experience in the design and planning of schools. Application forms, from the Borough Surveyor, Town Hall, Bootle, 20, Lancs, are returnable by Friday, 28th August, 1959.

By Order,

**HAROLD PARTINGTON,**  
Town Clerk.  
5163

**SURREY COUNTY COUNCIL  
KNIGHTS SCHOOL OF ART**

Applications are invited for the post of part-time **LECTURER** in the Department of Architecture, to commence with the new session 1959/60. The person appointed will be required to instruct in the basic principles of general design and to assist with the supervision of the general architectural studies of the pre-Intermediate students.

Applicants must be qualified professionally, have had varied practical experience and be actively engaged in their profession. Previous teaching experience will be an additional advantage.

The vacancy is for three full days per week. The salary is in accordance with the Surrey Education Committee's rates of pay.

Applications should be forwarded to the Registrar, Kingston School of Art.  
5251

**READING**

**ARCHITECTURAL ASSISTANTS** required by Ministry of Works (Home Counties Region). Should be of Intermediate R.I.B.A. standard with keen, modern outlook for work of widely varying and interesting nature. Salary range £530 (age 21) to £850 per annum. Starting pay according to age and qualifications. Prospects of promotion and permanency. 5-day week. Applications stating age, training and experience to R. P. Mills, A.R.I.B.A., Superintending Architect, Ministry of Works, Whiteknights, Reading (reference RD1/AJ2/AA).  
5180

**THE SOUTH-EAST METROPOLITAN REGIONAL HOSPITAL BOARD** desire it to be known among practising Architects that they are considering the appointment of an **ARCHITECT** to be responsible for the conversion of the Royal Naval Hospital, Chatham, into a general hospital by extensive modifications and additions.

Architects who wish to be considered for appointment are invited to inform the Secretary of the Board at 40 Eastbourne Terrace, W.2, by 31st August, 1959, and to give details of their qualifications and ability to undertake a commission of this nature.  
5184

**BIRMINGHAM REGIONAL HOSPITAL BOARD  
ARCHITECTS' DEPARTMENT**

(a) **ASSISTANT ARCHITECTS**, £730 x 25 (2) x 30 (2) x 35 (5) x 40 (1)—£1,065—according to age and experience. Applicants must be registered architects having passed requisite examinations. Experience of hospital planning and construction an advantage. Sound knowledge of architectural design, working drawings, surveying and specifications essential.  
(b) **ARCHITECTURAL ASSISTANTS**, Salary scale £545 (at age 21 years or over) x 20 (3) x 25 (4) x 30 (2)—£765. Point of entry according to experience. Intermediate R.I.B.A. essential. All appointments superannuable. 5-day week. Apply stating age and experience to Secretary, 10, Augustus Road, Birmingham 15, by 14th September.  
5247

**CITY AND COUNTY OF NORWICH  
CITY ARCHITECT'S DEPARTMENT**

Permanent staff wanted on programme of urban renewal.

(a) **ASSISTANT ARCHITECT**, salary within Special Grade (£785 to £1,070).  
(b) **ARCHITECTURAL ASSISTANT**, salary within A.P.T. I (£610 to £765).  
Application forms, obtainable from the City Architect, City Hall, Norwich, must be returned by 5 p.m., September 3rd.  
5181

**COUNTY BOROUGH OF WEST HARTLEPOOL  
BOROUGH ARCHITECT'S DEPARTMENT**

Applications are invited for the following appointments on the Staff of the Borough Architect:—

(a) **ASSISTANT ARCHITECT**, A.P.T. Grade 2, £765 to £880.  
(b) **ASSISTANT ARCHITECT**, A.P.T. Special Scale, £785 to £1,070.

The level of salary in both cases is to be fixed in accordance with experience.

The appointment is subject to the Schemes of Conditions of Service of the National Joint Council for Local Authorities Administrative Professional and Technical and Clerical Services and to the provision of the Local Government Superannuation Act. The appointment is subject to one month's notice on either side, and the successful applicant will be required to pass a medical examination.

Applications stating age, experience and qualifications together with the names of two referees should be addressed to the Borough Architect, Municipal Buildings, West Hartlepool, and received by him not later than Monday, 7th September, 1959.

Municipal Buildings,  
West Hartlepool.  
5th August, 1959.  
5182

**ERIC J. WAGGOTT,**

**GOVERNMENT OF GAMBIA  
ARCHITECT, PUBLIC WORKS DEPARTMENT**

To take charge of the Architectural Branch and to carry out the planning and design of all Government Architecture under the general supervision of the Director of Public Works. Contract appointment. Salary range £1,085 to £1,680. Gratuities (25 per cent. of emoluments). Free passages. Rented Quarters. Candidates aged 35-45 must be A.R.I.B.A. with at least ten years post qualification experience. Not required to take up duties before next March. Write Director of Recruitment, Colonial Office, London, S.W.1, giving full names, age, qualifications and experience, quoting BCD.112/12/01/E2.  
5186

**HUNTINGDONSHIRE  
COUNTY ARCHITECT'S DEPARTMENT  
APPOINTMENT OF A SENIOR  
ARCHITECTURAL ASSISTANT**

Grade A.P.T. IV

Applications are invited for the above appointment at a salary in accordance with Grade A.P.T. IV, £1,065—£1,220 per annum.

Candidates should be Associate Members of the Royal Institute of British Architects or hold equivalent qualifications, and have had considerable experience in the design of Schools, Police and other County Buildings.

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 4th September, 1959.

**A. C. AYLWARD,**  
Clerk of the County Council.

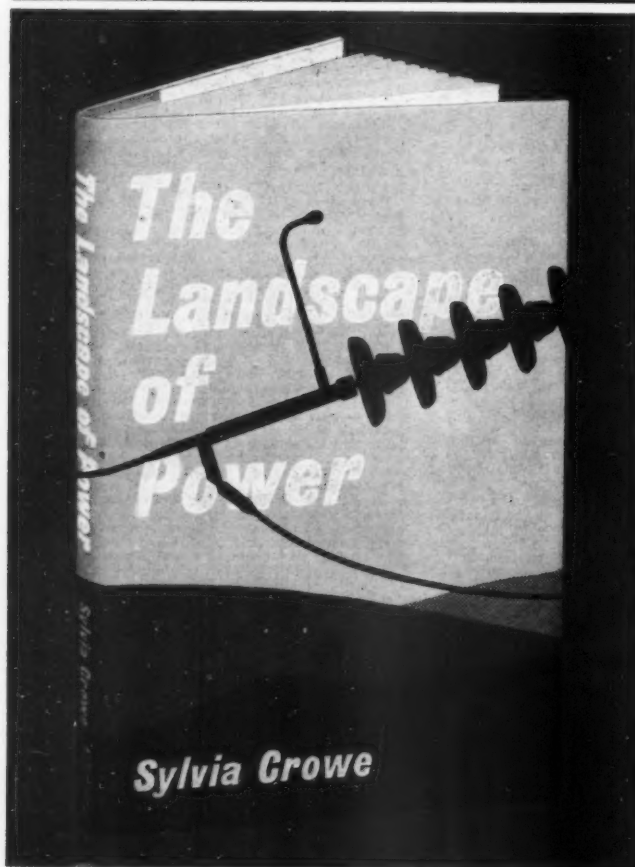
County Buildings,  
Huntingdon.  
5187

**CITY AND COUNTY OF KINGSTON UPON HULL**

**CITY ARCHITECT'S DEPARTMENT**

Applications are invited for **ASSISTANT ARCHITECTS** and **ASSISTANT QUANTITY SURVEYORS**, Grade S.C.O. (£785—£1,070). There is an interesting and varied programme of work in the department. Housing accommodation may be provided for the successful married applicants if they are not already resident in the city. The point of entry to the scale will be determined by experience. Application forms may be obtained from Andrew Rankine, O.B.E., A.R.I.B.A., City Architect, Guildhall, Kingston upon Hull, and should be returned completed on or before Friday, 28th August, 1959.  
5147

**ARCHITECTURAL ASSISTANTS** required in Architect's Office, N.E. Region, British Railways, York. Salary up to £750 p.a. according to age, experience and ability. Applications to Chief Civil Engineer, British Railways, N.E. Region, York.  
5248



**The Landscape of Power**  
by Sylvia Crowe P.I.L.A.

*THIS BOOK is addressed to everyone who cares about Britain's landscape. Sylvia Crowe, the eminent landscape architect, is not a preservationist. She accepts the fact that you cannot put the clock back; she accepts the essential need for the construction of immense oil refineries, nuclear reactors, power stations, and the network of the electricity grid. 'This network of power' she says, 'opens up a prospect of future wealth for the country, of clean industry and more efficient agriculture.' What she will not accept is that the introduction of these vast new structures into the landscape need necessarily ruin it, and in this practical, lucidly written handbook she calls for more thoughtfulness among those who are responsible for their construction. She shows, with text, photographs and diagrams, that giant buildings and their accessories can be incorporated in the landscape without destroying it—indeed, that given skilful design and sensitive siting they can in some circumstances enhance the natural scene.*

*There are nine chapters in the book and they deal with The New Industrial Age; Power and National Parks; Nuclear Power Stations; Hydro-Electric Power; Electric Transmission; Oil; Airfields; New Industries in Old Areas; Conclusion. Size 8½ in. x 5½ in. 116 pages including over 70 diagrams and half-tone illustrations. 16s. net, postage 10d.*

The Architectural Press 9 Queen Anne's Gate, SW1

## CITY OF STOKE-ON-TRENT

## CITY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

- (a) ASSISTANT ARCHITECTS (Final R.I.B.A.), Special Scale, £785—£1,070.  
 (b) ARCHITECTURAL ASSISTANT (Intermediate R.I.B.A.), A.P.T. I, £610—£765.  
 (c) ASSISTANT QUANTITY SURVEYOR (Final R.I.C.S. or I.Q.S.), A.P.T. III, £880—£1,065.
- Applications, stating date of birth and giving full particulars of education, training and past and present posts held, should be forwarded to J. B. Piggott, T.D., F.R.I.B.A., City Architect, Kingsway, Stoke-on-Trent, within fourteen days of the publication of this advertisement.

HARRY TAYLOR,  
Town Clerk.  
5186

CWMBRAN DEVELOPMENT CORPORATION  
APPOINTMENT OF ASSISTANT ARCHITECT A.P.T. III/IV

Applications are invited for the above superannuable post in my department in the Salary Range £880—£1,220 with a commencing salary according to qualifications and experience.

Candidates should be Associates of the R.I.B.A. with suitable office experience and should have had good experience in shop design construction and layout and Town Centre development.

Housing accommodation will be made available to the successful applicant if needed.

Applications stating age, experience, details of present and former employment (together with applicable salaries) and the names and addresses of two referees must reach the undersigned by first post on Monday, 7th September, 1959.

J. C. P. WEST, A.R.I.B.A., M.T.P.I.,  
Chief Architect.

Victoria Street,  
Cwmbran, Mon. 5188

CORPORATION OF LONDON  
CITY PLANNING OFFICE

## CIVIC DESIGN SECTION

PLANNING ASSISTANT (£635 by eight increments to £1,025); primarily for design, detailing and modelling redevelopment proposals in Barbican and other areas of City of London. Should be an architect with good educational background and progressive interest in large-scale three-dimensional planning; preferably an Associate Member of the Town Planning Institute, or taking a course leading to this qualification.

TEMPORARY PLANNING ASSISTANT (£595 by eight increments to £915). Duties include assistance with redevelopment proposals, general draughting, and architectural aspects of development and advertisement control. Should have a sound architectural background and preferably be a qualified architect.

Local Authority experience not essential. Point of entry on salary scales subject to age and experience. Medical examination; local act superannuation.

Applications, with details of training, age, experience, present salary, and copies of two recent testimonials, to CITY PLANNING OFFICER, GUILDHALL, E.C.2, as soon as possible. 5191

SOMERSET COUNTY COUNCIL  
ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments on the established staff:—

- (a) SENIOR ASSISTANT ARCHITECTS, A.P.T. Grade IV (£1,065—£1,220).

Applicants for posts in this grade must be Associate Members of The Royal Institute of British Architects with a good standard of design ability and a sound knowledge of modern methods of construction and be capable of handling projects from sketch plans to completion.

- (b) ASSISTANT ARCHITECT, Special Grade (£785—£1,070).

Applicants must have passed Parts I and II of the R.I.B.A. Final or Special examination, or the equivalent at one of the recognised schools of architecture. Commencing salary will be within the grade, dependent upon the candidate's qualifications and experience.

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

Applicants must have passed the Intermediate Examination of The Royal Institute of British Architects.

- (d) JUNIOR QUANTITY SURVEYOR, A.P.T. I, £510—£765 (subject to adoption by County Council).

Applicants must have passed the Intermediate Examination of The Royal Institution of Chartered Surveyors and have had several years experience in an approved office.

All appointments are subject to the usual conditions of Local Government Service. Applications, accompanied by the names of two persons to whom reference can be made, should reach the undersigned not later than Monday, 31st August, 1959.

R. O. HARRIS, F.R.I.B.A.,  
County Architect.

Perk Street,  
Taunton.  
6th August, 1959. 5193

DERBYSHIRE COUNTY COUNCIL  
COUNTY ARCHITECT'S DEPARTMENT

Vacancy exists for SENIOR ARCHITECT. Salary A.P.T. Grade V, £1,220 + £55 (1) and £50 (2) to £1,375 per annum. Applicants must be fully qualified. National Joint Council Conditions of Service. Pensionable post. Canvassing disqualifies. Application Forms From The County Architect, County Offices, Matlock, to be returned as soon as possible. 5195

LEEDS REGIONAL HOSPITAL BOARD  
PROPOSED NEW GENERAL HOSPITAL AT HUDDERSFIELD  
CLERK OF WORKS (BUILDING AND STRUCTURAL)

Applications are invited for the appointment of a Temporary Clerk of Works (Building and Structural), in connection with the construction of a new (600 bed; approximate contract value £3,500,000) General Hospital at Huddersfield. Salary £1,000 per annum.

This project will be carried out in consecutive phases under the direction of the Regional Architect, P. B. Nash, A.R.I.B.A., and Messrs. Eite, Son and Fairweather. Preliminary contracts for the formation of the perimeter road and services ring mains and for the work of bulk excavation have been completed. The main building contract is scheduled to start in July/August 1959 and to continue thereafter for a period of approximately six years.

Applicants must possess a thorough knowledge of all aspects of the building trade and must have had extensive experience as Clerks of Works on multi-storey reinforced concrete framed buildings. Membership of the Institute of Clerks of Works or the possession of the Clerk of Works Diploma of the Association of Building Technicians an advantage.

Applications, stating age, qualifications, previous experience, together with the names of two Architects to whom reference may be made, to the Secretary, Park Parade, Harrogate, not later than 31st August, 1959. 5194

SCOTTISH SPECIAL HOUSING ASSOCIATION  
LIMITED  
ARCHITECT (RESEARCH AND DEVELOPMENT)

The Department of Health for Scotland and the Scottish Special Housing Association Ltd. have decided to set up a Joint Development Group to carry out a comprehensive programme of research and development in the design and construction of multi-storey housing. The work will involve carrying through a continuing programme of building schemes incorporating multi-storey flats.

The Association have a vacancy for one Architect in the Group (to complete a team of five) at a salary scale of £780—£1,135 with placing for age and experience. The post will call for enthusiasm and initiative and will offer scope for an Architect with experience and an interest in contemporary building.

The post is subject to superannuation under the Local Government Acts; a house may be available, if required.

Application forms, with particulars, may be obtained from The Secretary, Scottish Special Housing Association Ltd., 19, Palmerston Place, Edinburgh, 12. 5199

COUNTY COUNCIL OF THE WEST RIDING  
OF YORKSHIRE

## OFFICE OF THE COUNTY ARCHITECT

The Council require SENIOR ARCHITECTS in salary grades A.P.T. IV (£1,065—£1,220) and Special Grade (£785—£1,070) for their extensive and interesting building programme which includes schools, colleges, old people's and children's homes, clinics, ambulance, fire and police stations, and other public buildings. Architects appointed will be employed at the Central Office in Wakefield solely upon capital works and will be expected to handle building projects from sketch plans to completion.

Applications are also invited for the under-mentioned posts at the Central Office:—

- (a) JUNIOR ARCHITECTURAL ASSISTANTS, Grade A.P.T. II, £765—£880.

- (b) JUNIOR ARCHITECTURAL ASSISTANTS, Grade A.P.T. I, £610—£765.

Applications to be submitted by the 8th September, 1959, on forms to be obtained from and returned to the undersigned.

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

"Bishopgarth,"  
Westfield Road,  
Wakefield. 5205

BRITISH RAILWAYS. Applications are invited for the following positions in the office of the Architect, Eastern Region, King's Cross Station.  
 (1) ASSISTANT ARCHITECT. Starting salary £943 per annum. Applicants should be qualified architects with some years' practical experience.

(2) ASSISTANT ARCHITECT. Starting salary £833 per annum. Applicants should be qualified or should have passed the Intermediate R.I.B.A. examination with some years practical experience.

(3) ARCHITECTURAL ASSISTANT. Starting salary according to qualifications and experience. The office is engaged on work of a varied and interesting character and a progressive approach to design and building techniques is essential. The successful applicants will be given responsibility appropriate to their ability. Five-day week and concessionary rail travel. Apply in writing stating post applied for and giving particulars of age, experience and qualifications to the Chief Civil Engineer, British Railways, Eastern Region, King's Cross Station, London, N.1. 5212

PRISON COMMISSIONERS require ARCHITECT (unestablished post) in Prison and Borstal Service, based on London. Candidates must be qualified architects with good professional experience. Duties, mainly design, for all types of buildings. Salary scale £806—£1,250 p.a. Forms from M.L.N.S. Technical and Scientific Register (K). 26, King Street, London, S.W.1, quoting J.153/9A. 5203

CAMBORNE-REDRUTH URBAN DISTRICT  
COUNCIL

## APPOINTMENT OF SENIOR ASSISTANT ARCHITECT/SURVEYOR (A.P.T. IV)

Applications are invited for the above appointment in the Engineer & Surveyor's Department at a salary in accordance with Grade A.P.T. IV (£1,065—£1,220).

Applicants must be Registered Architects or Chartered Surveyors, and have had considerable experience in housing and general building works, including supervising erection, both by contract and direct labour.

The appointment is subject to the provisions of the Local Government Superannuation Acts, 1937-53, to the National Joint Council's Scheme of Conditions of Service, and is terminable upon the expiration of one month's notice in writing by either side.

Consideration will be given to the provision of housing accommodation, if required.

Applications, on forms to be obtained from the Engineer & Surveyor, should be received by the undersigned not later than 12th September, 1959.

The successful applicant will be required to pass a medical examination to be carried out by this Council's Medical Officer of Health. Canvassing, either directly or indirectly, will be a disqualification, and applicants must disclose their relationship to any member or senior officer of the Council.

S. C. WILSON,  
Clerk of the Council.

Council Offices,  
Camborne,  
Cornwall.  
10th August, 1959. 5239

EBBW VALE URBAN DISTRICT COUNCIL  
APPOINTMENT OF TEMPORARY ASSISTANT ARCHITECT

Applications are invited from Registered Architects, preferably Corporate Members of the R.I.B.A., for the above appointment in the Architects Department.

The salary will be in accordance with the Special Grade, £785—£1,070 commencing at a point within the grade in accordance with the experience of the successful applicant.

The person appointed will be engaged mainly upon duties in connection with the scheme for the development of the new Civic Centre for a minimum period of three years.

The appointment will be subject to three months' notice in writing on either side and to the successful candidate passing a medical examination.

The Council will provide housing accommodation if required.

Further details and forms of application may be obtained from the undersigned, and forms of application must be returned so as to reach him not later than the 27th August, 1959.

HOWARD J. WILLIAMS,  
Clerk of the Council.

Council Offices,  
Ebbw Vale,  
Mon.  
11th August, 1959. 5240

## BOROUGH OF SLOUGH

TWO ASSISTANT ARCHITECTS required for housing and redevelopment and general building works. Applicants should have good experience in design and supervision. Knowledge of multi-storey flat construction an advantage. Salary in accordance with the "Special Classes" Grade (£785—£1,070). Must be A.R.I.B.A. Housing provided for married candidates.

Applications, giving names of two referees, age, qualifications and experience to Borough Engineer, Town Hall, Slough, Bucks, by Tuesday, 15th September, 1959. 5242

COUNTY BOROUGH OF NORTHAMPTON  
SENIOR ASSISTANT ARCHITECTS  
A.P.T. IV (£1,065—£1,220)

Applications are invited for two responsible appointments in (a) Education & General Section which has an interesting programme of new schools and municipal buildings and (b) Housing Section; the Council's current programme includes multi-storey flats in redevelopment schemes.

Full particulars and application forms, returnable by 4th September, from Borough Architect, Guildhall, Northampton.

C. E. VIVIAN ROWE,  
Town Clerk.  
5243

## BOROUGH OF ROYAL TUNBRIDGE WELLS

Applications are invited for the post of ARCHITECTURAL ASSISTANT (A.P.T. II, £765—£880) in the Borough Surveyor and Waterworks Engineer's Department.

Candidates for the appointment should have had training and experience preferably in a Municipal Architect's office and have passed the Intermediate Examination of the R.I.B.A. or a recognised equivalent.

The post will be superannuated and will be subject to the National Scheme of Conditions of Service and the successful applicant will be required to undergo a medical examination.

Housing accommodation will be offered if required.

Applications, giving details of experience and qualifications together with the names and addresses of two referees must be submitted to the Borough Surveyor and Waterworks Engineer not later than noon on 7th September, 1959.

M. J. H. GIBLING,  
Town Clerk.

Town Hall,  
Tunbridge Wells. 5244

**ARCHITECTURAL ASSISTANT** required by **GOVERNMENT OF ANTIGUA** for service in the **LEEWARD ISLANDS** on contract for three years. Salary £1,100 a year. Gratuity at rate of 12½ per cent. Free passages. Liberal leave on full salary. Candidates, single, must possess Intermediate R.I.B.A. and have had at least three, but preferably five years' experience. Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience and quote M2B/50595/AG. 5200

**KENT COUNTY COUNCIL** invites applications for superannuable appointments in the **PLANNING DEPARTMENT** as follows:—

(a) **ARCHITECTURAL ASSISTANT** in the Headquarters at Maidstone. Salary within Grade A.P.T. IV (£1,065—£1,220). Candidates must be Associates of the Royal Institute of British Architects or hold an equivalent qualification. The work will be connected with architectural control and the re-development of central areas.

(b) **PLANNING ASSISTANT**. Salary within Grade A.P.T. I (£610—£765) or A.P.T. II (£765—£880). Applicants must hold an appropriate University degree or diploma or have passed a recognised Intermediate professional examination.

The commencing point on the salary scales in each case will be fixed in relation to qualifications and experience. The National Scheme of Conditions of Service applies and registered disabled persons will be considered.

Applications with names of two referees to County Planning Officer, County Hall, Maidstone, by 7th September, 1959. 5133

#### CITY OF SHEFFIELD

Applications are invited for the following post on the staff of the Estates Surveyor, Mr. W. H. Rothwell, B.Sc., F.R.I.C.S.:—

**PROPERTY ASSISTANT**, Grade A.P.T. II (£765—£880). Qualification R.I.C.S. (Intermediate) or equivalent. Applicants should be experienced in the maintenance of urban properties of all classes, particularly of repairs, conversions and demolitions.

The post is superannuable subject to N.J.C. conditions of service and to medical examination. Applications stating name, address, age, qualifications, experience, previous and present positions with dates and salaries and the names and addresses of two referees should reach the undersigned not later than the 2nd September, 1959.

**JOHN HEYS,**  
Town Clerk.

Town Hall,  
Sheffield, 1. 5140

**BOROUGH OF BEXLEY**  
**ARCHITECTURAL APPOINTMENTS**  
Applications are invited for the following posts in the Borough Engineer and Surveyor's Department.

(a) **ARCHITECTURAL ASSISTANT**.  
(b) **ARCHITECTURAL DRAUGHTSMAN**.  
The salary for each of these posts is within Grade A.P.T. I (£610—£765 per annum) plus London weighting. Preference will be given to candidates with experience of housing and school projects.

Forms of application and conditions of appointment are obtainable from the Borough Engineer, West Lodge, Broadway, Bexleyheath, Kent, to whom completed applications must be returned by the 7th September, 1959.

The Council may be prepared to assist in the provision of housing accommodation. Canvassing will disqualify.

**ARTHUR GOLDFINCH,**  
Town Clerk.  
5137

**BOROUGH OF SOUTHGATE**  
**BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT**

**ARCHITECTURAL ASSISTANT**  
Applications are invited for the following appointment in the Department of the Borough Engineer and Surveyor:—

A.P.T. Special Grade, £785—£1,070 plus London weighting.

The post is permanent and superannuated and the starting salary will be fixed in accordance with qualifications and experience. Applicants must be Associates of the Royal Institute of British Architects.

Forms of application may be obtained from the Borough Engineer and Surveyor and should be returned to the undersigned not later than 12 noon on Monday, 31st August, 1959.

Canvassing directly or indirectly, will be a disqualification.

**GORDON H. TAYLOR,**  
Town Clerk.  
5138

Town Hall,  
Palmer's Green, N.13.  
August, 1959.

**AUSTRALIA**  
**GOVERNMENT OF QUEENSLAND**  
**VACANCY FOR QUANTITY SURVEYOR**

Applications are invited for appointment to the position of **QUANTITY SURVEYOR**, Division I, in the Department of Public Works in Queensland. Age limit 45 years. The salary range is A£1,746 to A£1,921.

Application form and further details may be obtained from the Agent-General for Queensland, 409/410, Strand, London, W.C.2. 5120

**COUNTY OF ANGUS**  
**ASSISTANT ARCHITECTS**  
Applications are invited from Qualified Architects for the appointment of Assistant Architects (2) in the Department of the County Architect and Planning Officer. Duties will include work on new schools and other Council projects.

Salary Scale—Special Grade, £760—£1,040. Housing accommodation will be available in due course, in appropriate cases. Application forms may be had from the undersigned.

**IAN A. MACKNIGHT,**  
County Clerk.

County Buildings,  
Forfar.  
6th August, 1959. 5146

**COUNTY BOROUGH OF SOUTHPORT**  
Applications are invited for the undermentioned appointments in the Borough Architect and Town Planning Officer's Department.

(a) **ASSISTANT ARCHITECT** (Special Grade £785—£1,070 per annum).  
(b) **CLERK OF WORKS** (Grade A.P.T. II, £765—£880 per annum).

Applicants for Post (a) should have passed the Final Examination of the R.I.B.A. and for Post (b) should be suitably qualified trained tradesmen and have had wide experience in the supervision of important works.

Forms of application may be obtained from the Borough Architect and Town Planning Officer, 99/105, Lord Street. Closing date for the receipt of applications is 29th August. 5087

**COUNTY BOROUGH OF GLOUCESTER**  
**CITY ARCHITECT'S DEPARTMENT**  
Applications are invited for the following appointments:—

(a) **ASSISTANT ARCHITECTS**. Special Grade within £785—£1,070 per annum. (Parts I and II R.I.B.A. Final or equivalent.)

(b) **ARCHITECTURAL ASSISTANTS**. A.P.T. III within £880—£1,065 per annum. (Parts of Final R.I.B.A.)

(c) **ARCHITECTURAL ASSISTANTS**. A.P.T. II within £765—£880 per annum. (Intermediate R.I.B.A., with progress towards Final.)

(d) **ARCHITECTURAL ASSISTANTS**. A.P.T. I within £610—£765 per annum. (Intermediate R.I.B.A.)

Salaries above the minimum of the grades will be considered in certain circumstances.

Interesting contemporary work. Superannuable posts. Medical examination. Municipal experience not essential.

Full particulars to City Architect, Suffolk House, Greyfriars, Gloucester, within 14 days. 5181

recommended for students: two books by **SIR HOWARD ROBERTSON A.R.A., PP.R. .B.A., S.A.D.G.**

#### The Principles of Architectural Composition

Size 8½ × 5½ ins.  
180 pages, over  
160 line drawings  
by the author.  
8th Impression.  
Price 15s. net.  
(Postage 1s.)

This book fills a very real gap in the literature on the theory of architectural design and has been adopted as a standard textbook in many of the leading architectural schools. Architectural composition is an extremely difficult subject to write about; but in his text and in his numerous drawings Sir Howard (who used to lecture on design when he was the Principal of the Architectural Association School of Architecture) has succeeded in explaining his points with the utmost clarity.

#### Modern Architectural Design

Size 9 × 6 ins.  
228 pages thoroughly  
illustrated in  
half-tone and line.  
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of 2nd Edition.  
Price 25s. net.  
(Postage 1s. 3d.)

This new edition of the companion volume to *Principles of Architectural Composition* has been very largely re-written, entirely reset and newly illustrated. It is a penetrating and constructive analysis of the design problems now confronting architects and students. The author combines theory and practical experience in a lively and stimulating discussion of contemporary problems of planning, structure, materials, lighting and decoration and shows successful architectural design, good building, to be the outcome of logical method supported by certain acknowledged principles.

The Architectural Press 9-13 Queen Anne's Gate Westminster S.W.1.



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**COUNTY BOROUGH OF BIRKENHEAD  
BOROUGH ARCHITECT'S DEPARTMENT**

Applications are invited from suitably qualified persons for a number of posts as **ASSISTANT ARCHITECTS**, Grade A.P.T. IV (£1,065-£1,220). Salaries commensurate on qualifications and experience. An extensive programme includes Schools, Housing, Multi-storey Flats, Municipal Baths and many major projects about to commence or under construction. The appointments are superannuable and subject to one month's notice on either side. Form of application and further particulars from Borough Architect's Department, 3, Conway Street, Birkenhead. Closing date for applications 26th August, 1959. Relationship to Members or Senior Officers of the Council must be disclosed. 5136

**COUNTY BOROUGH OF DEWSBURY  
BOROUGH ARCHITECT AND BUILDINGS  
SURVEYOR'S DEPARTMENT**

Applications are invited for the following appointments:—

- ASSISTANT QUANTITY SURVEYOR**, A.P.T. Grade IV.
- ASSISTANT ARCHITECT** (Education Section), Special Grade.
- TOWN PLANNING ASSISTANT**, Special Grade.
- MAINTENANCE ASSISTANT** (to assist with the maintenance of all corporate properties particularly with the issuing and recording of orders under supervision and with checking and filing records of accounts). Miscellaneous Grade III.

The commencing salaries will be fixed within the scope of the grades stated according to qualifications and experience, i.e. A.P.T. Grade IV £1,065-£1,220, Special Grade £785-£1,070, Miscellaneous Grade III £525-£590. Applicants for (a) must have passed the Final examination of the R.I.C.S., for (b) the Final examination of the R.I.B.A., for (c) the Final examination of the T.P.I., and for (d) a general knowledge of building would be an advantage.

Housing accommodation may be made available if required. The appointments will be subject to one month's notice on either side and to the provisions of the Local Government Superannuation Acts. Applications stating age, education, qualifications, full particulars of training and experience, together with copies of two recent testimonials, should be sent to the undersigned not later than Tuesday, 1st September, 1959, in envelopes endorsed "Appointment of ———".

A. NORMAN JAMES,  
Town Clerk.

Town Hall, Dewsbury.  
4th August, 1959.

5119

**MINISTRY OF HOUSING AND LOCAL  
GOVERNMENT****HOUSING AND PLANNING INSPECTORS**

Pensionable posts for men and women, at least 35 or 1.5.59, who are, or have been, Registered Architects or Corporate Members of an appropriate professional institution. Practical experience in housing design and development or town and country planning an advantage. Duties include conducting local public inquiries under Housing and Town and Country Planning Acts. Men's starting salary (London): £1,325 (age 35-37) to £1,480 (40 or over), but exceptionally higher starting salary may be recommended. Scale maximum £1,780. Promotion prospects. Write Civil Service Commission, 6, Burlington Gardens, London, W.1, for application form, quoting S4945/59. Closing date 4th September, 1959. 5102

**THE DIRECTORATE OF WORKS, WAR OFFICE** (Director General: Mr. Donald E. Gibson, C.B.E., D.C.L., F.R.I.B.A., M.T.P.I.) requires **SENIOR ARCHITECTS** at Chessington, Surrey. Directorate is responsible for design and execution of extensive programme of rebuilding and development of accommodation for Army barracks, housing, hospitals, educational and other types of buildings, together with overall planning of garrison areas. Senior Architects are in charge of Design Teams working in close collaboration with Engineers and Quantity Surveyors on sections of Programme and responsible for design and supervision of work. Also required to assist in briefing of nominated external Architects. Applicants must be Registered Architects and have progressive outlook on all professional matters. Experience of methods of Cost Control and Contract and Site Supervision necessary, together with sound understanding of modern methods of construction. Salaries £1,790-£2,070 plus £50 in London area. Opportunities for establishment, promotion and service overseas with good allowances. Forms from M.L.N.S., Technical and Scientific Register (K), 26, King Street, London, S.W.1, quoting J.253/9A. 5103

**COUNTY BOROUGH OF GREAT YARMOUTH  
SCHOOLS ARCHITECT'S DEPARTMENT  
APPOINTMENT OF JUNIOR ASSISTANT  
ARCHITECT**

Applications are invited to fill the vacancy for a Junior Assistant within A.P.T. Grade II (£765-£980).

Candidates should have had experience in School construction. Applications, stating age, qualifications, experience, details of past and present appointments together with the names of two referees should reach the Schools Architect, 22, Euston Road, Great Yarmouth, by 1st September.

D. G. FARROW,  
Chief Education Officer.

22, Euston Road,  
Great Yarmouth.

5105

**CIVIL SERVICE. QUANTITY SURVEYORS AND ASSISTANT QUANTITY SURVEYORS** required by Admiralty War Office, Air Ministry, Ministry of Works, Ministry of Education and Department of Scientific and Industrial Research, in most parts of United Kingdom and occasionally overseas. Although unestablished, these posts have long term possibilities. London salaries for those suitably qualified and experienced over 25 years of age, range from £830 to £1,300 per annum. Vacancies also exist for Quantity Surveying Assistants and others having some experience in Quantity Surveying at salaries ranging from £350 per annum upwards. Write quoting reference J.Q.S. to Room 403, M.L.N.S., Technical and Scientific Register (J), 26, King Street, London, S.W.1. 5104

**METROPOLITAN BOROUGH OF  
CAMBERWELL  
ASSISTANT ARCHITECTS**

(Borough Architect's Department)  
Vacancies for Assistant Architects within a salary range of £795 to £1,405. Grade and commencing salary according to qualifications and experience. The work of the Department includes design and construction of public buildings, housing estates, including multi-storey construction.

One appointment is the head of a section responsible for the design and erection of public buildings. The salary for this post is at present £1,170 by four increments of £55 to £1,390 (lettered Grade "A" of the Chief Officers' Scales) but consideration will be given to its regrading to lettered Grade "B" (£1,265-£1,485).

Application form from Town Clerk, Town Hall, S.E.5. Closing date 14th September, 1959. 5265

**COUNTY BOROUGH OF BLACKPOOL**

Applications (to be received by 9th September) are invited for the following posts in the Borough Surveyor's Department:—

- CHIEF ASSISTANT QUANTITY SURVEYOR**, A.P.T. V (£1,220-£1,375).
- PRINCIPAL ASSISTANT ARCHITECTS**, A.P.T. IV (£1,065-£1,220).
- ASSISTANT ARCHITECTS**, A.P.T. Special (£785-£1,070).
- ARCHITECTURAL ASSISTANTS**, A.P.T. I (£610-£765) or II (£765-£980).
- QUANTITY SURVEYING ASSISTANT**, A.P.T. II (£765-£880).
- DRAUGHTSMAN**, Miscellaneous III (£525-£590).

Application forms and particulars from Arthur Hamilton, B.Sc., A.R.I.B.A. (Borough Surveyor), P.O. Box 17, Municipal Buildings, Blackpool, 5266

**CITY OF SHEFFIELD  
CITY ARCHITECT'S DEPARTMENT**

Following a revision of the establishment of the Education and General Section applications are invited for the undermentioned vacancies on the permanent staff of the City Architect, Mr. J. L. Womersley, F.R.I.B.A., Dist. T.P., M.T.P.I., for work on an expanding and interesting programme comprising large and important civic buildings included in the re-building of large areas in the city centre: colleges, schools, libraries, art gallery, old peoples' and children's homes, bus garages, fire and police stations, health centres and clinics.

- GROUP LEADER ARCHITECTS**, Grade A.P.T. V (Education and General) (£1,220-£1,375).
- SENIOR ASSISTANT ARCHITECTS**, Grade A.P.T. IV (Education and General) (£1,065-£1,220).
- ASSISTANT ARCHITECTS**, Grade S.C. (£785-£1,070).

Commencing salaries within the above grades according to qualifications and experience.

Applications stating post applied for, age, education and training, qualifications, present and past appointments (with dates and salaries), experience and the names of two persons to whom reference may be made, should reach me not later than Thursday, 3rd September, 1959.

JOHN HEYS,  
Town Clerk.

13th August, 1959.

5269

**MIDLOTHIAN COUNTY COUNCIL  
COUNTY ARCHITECT**

Applications for appointment as Colleague and, subject to satisfactory service, successor within 2 years to the County Architect, are invited from qualified Architects who have had experience of organising and controlling the work of a large Architectural department, preferably of a local or other public authority, and who will not have attained the age of 50 years on 1st December, 1959. The salary applicable to the post is £1,804 per annum.

Canvassing direct or indirect disqualifies. Application form and further particulars may be obtained from the County Clerk, County Buildings, George IV Bridge, Edinburgh, with whom applications should be lodged by Monday, 7th September, 1959. 5086

**BOROUGH OF MACCLESFIELD**

Applications are invited for the appointment of **SENIOR ASSISTANT ARCHITECT** in the Borough Architect's Department at a salary in accordance with the A.P.T. Special Scale (£785-£1,070).

Housing accommodation may be made available if required. Applications stating age, qualifications, experience, present and previous appointments, together with the names of two referees should reach the undersigned by Tuesday the 1st September, 1959.

WALTER ISAAC,  
Town Clerk.

Town Hall,  
Macclesfield.

5160

**COUNTY BOROUGH OF SOUTHEAST-ON-SEA  
BOROUGH ARCHITECT'S DEPARTMENT**

Applications are invited for the following posts:—

- ASSISTANT ARCHITECT**, Grade A.P.T. IV (£1,065 × 55 × 50 (2) — £1,220).
- TECHNICAL ASSISTANT** (Architectural), Grade A.P.T. I (£610 × 30 (4) × 35 — £765).
- SENIOR ASSISTANT QUANTITY SURVEYOR**, Grade A.P.T. V (£1,220 × 55 × 50 (2) — £1,375).
- ASSISTANT QUANTITY SURVEYOR**, Grade A.P.T. IV (£1,065 × 55 × 50 (2) — £1,220).
- ASSISTANT QUANTITY SURVEYOR**, Special Classes Scale (£785 × 40 (6) × 45 — £1,070).

Candidates must be suitably qualified and experienced. The appointments will be subject to the provisions of the Local Government Superannuation Acts and the National Joint Council's Scheme of Conditions of Service so far as adopted by the Council. Medical examination.

Applications, stating age, qualifications and experience, with the names of two referees, should be submitted to the Borough Architect, 30, Alexandra Street, Southend-on-Sea, by 7th September, 1959.

Canvassing will disqualify. Any candidate who is related to member or officer of the Council is required to disclose the fact.

ARCHIBALD GLEN,  
Town Clerk.

5154

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

Vacancies on permanent staff as follows:

- CHIEF ASSISTANT PLANNING OFFICER**, JNC Scale B (Max. £1,485).
- SENIOR ASSISTANT PLANNING OFFICER**, £1,220-£1,375.
- ASSISTANT PLANNING OFFICER**, £785-£1,070.
- PLANNING ASSISTANT**, £785-£1,070.
- PLANNING GROUP ARCHITECT**, £785-£1,070.
- ARCHITECTURAL ASSISTANT** (2 posts), £765-£1,070.

Plus London allowance, except post (a). Commencing salary according to qualifications and experience.

Applications, giving full details, to Thomas E. North, 70, West Ham Lane, E.15. 5153

**BOROUGH OF OLDBURY  
BOROUGH SURVEYOR'S DEPARTMENT  
ARCHITECT'S SECTION**

Applications are invited for the following appointment in the Architects' Section of the Borough Surveyor's Department.

- ARCHITECTURAL ASSISTANT**, A.P.T. Grade II (£765-£980 per annum).

Candidates should preferably have passed the Intermediate Examination of the R.I.B.A. and be capable of preparing working and detailed drawings and specifications.

The appointment offers to a suitable applicant an excellent opportunity of being engaged on a wide range of architectural projects including housing, education and other works.

The appointment will be superannuable, subject to the National Scheme of Conditions of Service, and to the selected candidate passing a medical examination.

Applications, giving particulars of age, qualifications, experience, and the names of two referees, should be delivered to the undersigned not later than Friday, 28th August, 1959.

Housing accommodation will be made available to married applicants if required.

KENNETH PEARCE,  
Town Clerk.

Municipal Buildings,  
Oldbury,  
Nr. Birmingham.  
August 1959.

5155

**NORTH WEST METROPOLITAN REGIONAL  
HOSPITAL BOARD****PANEL OF CONSULTING ARCHITECTS**

The Board propose to establish a limited Panel of Private Architects, which will be operative for the period 1959-62. The selected Architects will be expected to work in consultation with the Regional Architect to the Board as and when they may be commissioned for complete or partial professional services.

The commissions may be (a) major hospital or departmental projects upwards of £125,000 in value, or (b) lesser hospital extensions or associated works. Architects who wish to be considered for selection should apply giving appropriate particulars of experience to the Secretary, 40, Eastbourne Terrace, London, W.2, by the 15th September, 1959. 5190

**COUNTY BOROUGH OF HALIFAX  
BOROUGH ENGINEER'S DEPARTMENT  
SENIOR BUILDING INSPECTOR**

Grade A.P.T. I (£510-£765).

**TOWN PLANNING ASSISTANT**

Special Grade (£785-£1,070).

Applications are invited for the above appointments. Applications stating age, education, training, qualifications, present and past appointments (with dates and salaries) and experience, together with the names and addresses of two referees to whom reference can be made, are to be forwarded to the undersigned on or before the 29th August, 1959.

RICHARD de Z. HALL,  
Town Clerk.

Town Hall,  
Halifax.

5280



**ASHFORD (KENT) URBAN DISTRICT COUNCIL**  
**APPOINTMENT OF AN ARCHITECTURAL ASSISTANT**

Applications are invited for the above post in the Surveyor's Department, from an energetic and imaginative young Architect.

The Council have embarked upon a Town Expansion project and the successful candidate will become a member of a team concerned with this varied and exciting work.

Candidates must have had good general experience and preference will be given to fully qualified members of the R.I.B.A.

The salary will be A.P.T. Grade III (£880-£1,065 per annum) and the appointment will be subject to N.J.C. Conditions of Service.

Housing accommodation available if required. Applications stating age, training, qualifications and experience and names of two referees to the undersigned, by 5th September, 1959. Envelopes endorsed "Architectural Assistant."

G. H. REDFERN,  
Clerk of the Council.

Council Offices,  
Church Road,  
Ashford, Kent.  
8th August, 1959. 5157

**CORPORATION OF THE CITY OF ABERDEEN**  
**TOWN PLANNING DEPARTMENT**  
**SENIOR ASSISTANT (DEVELOPMENT CONTROL)**

Salary Grade £1,050-£1,200 per Annum. Applications are invited for the above post. Further particulars are obtainable from the Director of Town Planning, 5 Bon-Accord Crescent, Aberdeen, with whom applications should be lodged on or before Monday, 7th September, 1959.

J. C. RENNIE,  
Town Clerk.

Town House, Aberdeen.  
August, 1959. 5282

**COUNTY BOROUGH OF GATESHEAD**

Applications invited for the following posts in the Borough Surveyor's Department to work under the Chief Architect upon an interesting programme of educational, housing and multi-storey flats and public buildings—

- (a) SENIOR ASSISTANT ARCHITECTS—A.P.T. IV-V (£1,065-£1,375).
- (b) ASSISTANT ARCHITECTS—Special-A.P.T. IV (£785-£1,220).
- (c) ARCHITECTURAL ASSISTANTS—A.P.T. I-III (£615-£1,065).
- (d) SENIOR QUANTITY SURVEYOR—A.P.T. IV-V (£1,065-£1,375).
- (e) SENIOR ASSISTANT QUANTITY SURVEYOR—Special-A.P.T. IV (£785-£1,220).
- (f) ASSISTANT QUANTITY SURVEYORS—Special Grade (£785-£1,070).
- (g) JUNIOR QUANTITY SURVEYOR—A.P.T. II (£765-£980).

Housing accommodation may be available for posts a, b, d, e and f.

Salaries within the above scales, according to qualifications and experience. Local Government experience not essential. Posts pensionable, subject to medical examination, and one month's notice.

Details and application forms (returnable by 7th September) from the Borough Surveyor, Swinburne Street, Gateshead.

C. D. JACKSON,  
Town Clerk.

Town Hall,  
Gateshead.  
13.6.59. 5270

**BRACKNELL DEVELOPMENT CORPORATION**

Applications are invited for the post of ASSISTANT ARCHITECT, salary range £1,065-£1,220. Applicants must be Corporate Members of the R.I.B.A. Superannuation schemes, medical examination. Housing available. Apply by 2nd September, 1959, giving age, education and qualifications, experience and appointments held (with dates and salaries), and names of two referees, to General Manager (A), Bracknell Development Corporation, Farley Hall, Bracknell, Berks. 5277

**BOROUGH OF SWINDON**  
**SENIOR PLANNING ASSISTANT.**  
A.P.T. Special Grade £785-£1,070

Applications are invited for the above appointment in the Department of the Borough Surveyor and Planning Officer.

Candidates must have a wide experience in the work of a planning department and have passed the final examination of the Town Planning Institute. The possession of another recognised qualification would be an additional advantage.

The commencing salary will be in accordance with qualifications and experience.

Consideration may be given to an allocation of housing accommodation.

Applications, on forms to be obtained from the Town Clerk, Civic Offices, Swindon, must be received by 8th September, 1959. 5279

**ST. GERMAN'S RURAL DISTRICT COUNCIL**  
**APPOINTMENT OF ARCHITECTURAL ASSISTANT**

Applications are invited for the appointment of an Architectural Assistant at a salary in accordance with A.P.T. II of the National Scales of Salaries, viz. £765 rising to £880 per annum. Applicants should be qualified in accordance with the Scheme of Conditions of Service. The appointment is supernumerary and subject to one month's notice on either side.

Applications together with a copy of one testimonial and the names of two referees should reach the Clerk of the Council, Lower Port View, Saltash, Cornwall, by the 1st September, 1959. 5156

DEVON COUNTY COUNCIL require SENIOR ARCHITECT on A.P.T. IV (£1,065-£1,220), SENIOR ARCHITECT on N.J.C. Special Scale (£785-£1,070) and JUNIOR ASSISTANT on A.P.T. I (£610-£765). Full and interesting programmes of Schools and other County Buildings.

In approved cases, loans for house purchase and removal expenses are available—also lodging allowance for married officers while seeking accommodation.

Particulars and Application Form, returnable by 11th September, 1959, from County Architect, 97, Heavitree Road, Exeter. 5278

**MANCHESTER CORPORATION**  
**CITY ARCHITECT'S OFFICE**

DEPUTY CHIEF STRUCTURAL ENGINEER

Vacancy for Deputy Chief Structural Engineer in the APT Scale IV £1,065 to £1,220. Candidates must be an A.M.I.Struct.E., or A.M.I.C.E., and have had at least five years' design experience since becoming an associate member. Should also have a sound knowledge of design in reinforced concrete, steelwork and structural timber work, together with an adequate knowledge of current byelaws and codes of practice. Housing accommodation may be provided for a limited period. Removal expenses. Application forms from City Architect, Town Hall, Manchester 2, returnable by 4th September, 1959. 5271

**COUNTY BOROUGH OF SWANSEA**

**BOROUGH ARCHITECT'S DEPARTMENT**  
APPLICATIONS are invited for the following established posts:—

TWO JUNIOR ASSISTANT ARCHITECTS. GRADE APT.I (£610 to £765).

Applicants must have passed the Intermediate Examination of the R.I.B.A.

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

The appointment will be subject to the provisions of the Local Government Superannuation Acts and may be terminated by one month's notice on either side.

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

Forms of Application may be obtained from the Borough Architect, The Guildhall, Swansea, to whom they must be returned not later than 18th SEPTEMBER, 1959.

Canvassing disqualifies.

T. B. BOWEN,  
Town Clerk.

The Guildhall,  
Swansea.  
13th August, 1959. 5276

**KIRKBY URBAN DISTRICT COUNCIL**  
**ENGINEER AND SURVEYOR'S DEPARTMENT**

Applications are invited for the appointment of ARCHITECTURAL DRAUGHTSMAN. Salary in accordance with the General Division, i.e., £210 to £295 per annum or A.P.T. Grade I, i.e., £210 to £265 per annum. In the event of an applicant being appointed who has passed the Intermediate R.I.B.A. examination or its equivalent at one of the recognised schools of architecture, the salary will be in accordance with A.P.T. I.

Applications for the above post, giving details of age, education, experience, qualifications, etc., together with the names of two referees should be forwarded to the undersigned not later than the 21st August, 1959.

Canvassing disqualifies. Relationship to be disclosed.

W. BYRON,  
Clerk of the Council.

Kirkby Hall,  
Hall Lane,  
Kirkby,  
Nr. Liverpool. 5161

**Architectural Appointments Vacant**

4 lines or under, 9s. 6d.; each additional line, 6s. 6d. Box Number, including forwarding replies, 2s. extra

TWO ARCHITECTURAL ASSISTANTS, Intermediate standard, required for very large scheme. West End Office. Excellent salary, bonus and luncheon vouchers. Box 4523.

CROYDON.—ASSISTANT of Intermediate standard required in Architect's office. Varied work and good prospects. Apply in writing, giving all particulars to George Lowe & Partners, 4, High Street, Croydon. 4527

ARCHITECTURAL ASSISTANTS of Final and Intermediate standard, with good industrial experience, required for work on Atomic Power Stations. Excellent opportunities in an expanding London office. Apply, stating age, experience and salary range, to The Chief Architect, Nuclear Civil Constructors, 52/55, Carnaby Street, London, W.1. 4719

LEWELLYN SMITH AND WATERS require Senior and Junior ASSISTANTS for a widely varied programme of work. Salary according to experience. Please write stating qualifications, experience and age to 103, Old Brompton Road, S.W.7. 4628

SSISTANT of Intermediate/Final standard required in Croydon office. Varied and interesting work. Five-day week, holiday this year. Apply by letter to Hugh Macintosh & Partners, 33/35, High Street, Croydon. 4792

TWO experienced ARCHITECTURAL ASSISTANTS required, one Senior and one of Intermediate standard, for newly formed Branch Office in Nottingham. The positions offer prospects of advancement and are pensionable. Applications, giving full particulars, to G. E. Hay, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 1, Balloon Street, Manchester, 4. 4732

ARCHITECTURAL STAFF, all grades, required. Ronald Ward & Partners, 29, Chesham Place, S.W.1. Belgraveia 3361. 4905

ARCHITECTURAL ASSISTANTS required, Intermediate standard, for large practice in London. Full details of experience, etc., to Box 4760.

ASSISTANTS required within the salary range of £600-£1,000 to work in pleasant cheerful office on full and varied programme. Must be capable of good contemporary design. Good holidays and working conditions. Holiday commitments honoured. Deacon & Laing, 66, Goldington Road, Bedford. 4790

ANYONE between the ages of 25-33 years with strictly Gothic outlook willing to work for practically no salary in ill lit, unheated, rat infested attic, 50 miles North of London, with bad tempered principal on deadly dull work, should apply, giving full details of their experience and salary required (if any), to Box 4791.

ARCHITECTURAL ASSISTANTS for University and Hospital work. Good salary, dependent on experience. Non-contributory Pension Scheme in being after probationary period. Three weeks holiday a year and five-day week. Reply, stating age, experience, etc., to: Thomas Worthington & Sons, 178, Oxford Road, Manchester. 13. 4794

ARCHITECTURAL ASSISTANT required in Wembley. Experience in design and construction of industrial buildings and office blocks. Write stating age, experience and salary required to Box 5002.

ARCHITECT with small but rapidly growing practice in London W.1. requires FIRST ASSISTANT. Must be neat, quick draughtsman and enjoy his work. Remuneration commensurate with experience and work to be carried out. Please reply to Box 4937.

ASSISTANTS required by Architectural department of a large building concern in the South, to assist in interesting and large development schemes. Experience essential in design of multi-storey premises, shops and estate layout. Holidays respected. Apply in first instance to Box 4940 stating age, experience and salary required.

**The Directors of the**  
**Artizans' & General Properties Company Limited**

are pleased to announce that they have acquired by agreement the old-established building business of

**William Brown & Sons (Builders) Limited**  
of 3, Keith Grove, London, W.12

The business of William Brown & Sons will be merged with that of the Artizans' Group Subsidiary, Artagen Construction Limited and will trade as

**William Brown & Sons (Builders), Limited at 3 Keith Grove, W.12**

(Telephone: SHEpherts Bush 2205) under the management of Mr. Frank W. Brown

**ARCHITECTS** wanted for large and interesting contemporary developments. Holidays respected. State salary and experience. Box 4789.

**ARCHITECTS** with interesting department stores under construction and in the design stages, require two **ARCHITECTURAL ASSISTANTS**. Salary £200-£1,100. Apply Box 4868.

**QUALIFIED SENIOR ASSISTANT** required by City Firm of Building Surveyors for Staff Architects Department. Industrial and Commercial Buildings. Salary £200-£1,100. Suitable applicant could be engaged at once or start in September, depending on holiday commitments. Apply to: Chamberlain & Willows, 23, Moorgate, London, E.C.2. 4870

**RONALD FIELDING, A.R.I.B.A.**, requires immediately a **SENIOR ASSISTANT** to take charge of a large contract in central London. Write or telephone Aldwych House, W.C.2. CHANCERY 8201. 4875

**KATZ AND VAUGHAN** have vacancies for one Senior and one Junior **ASSISTANT**. Regent 5401. 208a, Regent Street, W.1. 4877

**TRIPE & WAKEHAM**, Chartered Architects, require **ASSISTANTS** with three to five years' office experience. Telephone WELBECK 7744 or write 16, Fitzhardinge Street, W.1. for an appointment. 4885

**DAMS, HOLDEN & PEARSON** require a **SENIOR ARCHITECTURAL ASSISTANT**, and **ASSISTANTS** not less than R.I.B.A. Intermediate standard. The work includes Hospitals, Commercial Buildings and Laboratories. Apply giving age, qualifications, experience and salary required to 38, Gordon Square, W.C.1. 4886

**PROGRESSIVE ARCHITECT** or **ARCHITECTURAL ASSISTANT** required by Developers, for London Office. Must be experienced in housing estate work and able to produce attractive and economic designs for houses in the lower price range. Please state age, experience and salary required to Box 4890, quoting Ref. WXY/1.

**WATKINS & PARK** require **ASSISTANT ARCHITECT** at Basildon. Salary £600 to £800 by agreement. Variety of contracts. Good experience and plenty of scope for advance for a man interested and willing to take opportunity. Write 27 Rockleigh Avenue, Leigh on Sea, Essex. 4901

**MANCHESTER**. Intermediate standard **ASSISTANT** required for congenial office, wide variety of work. Must have contemporary outlook and good presentation. Alternate Saturdays. Salary by arrangement. Box 4905.

**CLIFFORD CULPIN, O.B.E., F.R.I.B.A., M.T.P.I.**, of 39, Doughty Street, London, W.C.1, requires immediately keen **ASSISTANTS** of about sixth year (Post Intermediate) Evening School standard. They are required to assist Associate Partners in the development of projects from sketch designs onwards. Starting salaries £200 to £900 and opportunities for advancement for men with ability and real interest. Phone or write for appointment. Chancery 5395. 4908

**SENIOR ASSISTANT** urgently required, must be experienced in Industrial schemes and particularly in site supervision. Salary according to ability. Phone SOUTHALL 3491. 4902

**QUALIFIED ASSISTANT ARCHITECTS** required, minimum three years' office experience, preferably in London. Salary according to ability and experience. Theo. H. Birks, 38, Portland Place, W.1. LAN 7235. 4917

**INTERMEDIATE standard ASSISTANTS** required, minimum two years' office experience. Salary according to ability. Theo. H. Birks, 38, Portland Place, W.1. LAN 7235. 4918

**ARCHITECTURAL ASSISTANT**, Intermediate standard, required in Architect's Department of London Brewery Company. Must be good draughtsman. Write stating age, experience, salary required. Box 4923.

**ARCHITECTURAL ASSISTANT** of Intermediate standard required for general practice in Oldham. Apply stating age, experience and salary required to Box 4927.

**SENIOR AND JUNIOR ASSISTANTS** required for interesting design and development work on Departmental Stores. Experience preferred but not essential. Salary according to ability. George Baines & Syborn, A.R.I.B.A., 121, Victoria Street, Westminster, S.W.1. 4978

**ARCHITECTURAL ASSISTANT** (Final standard) required at once for Birmingham office specialising in hospital and school design. Salary by arrangement. Alternate Saturdays free. Write for appointment, giving particulars of experience. Martin & Martin & W. H. Ward, 166, Colmore Row, Birmingham 3. 4983

**ARCHITECT'S DEPARTMENT** of Schweppes Ltd. needs **ASSISTANTS**. Applicants must have a sound knowledge of building construction and an aptitude for organisation and administration. Salary by arrangement. Please write, stating age, etc., to the Personnel Manager, Schweppes House, Connaught Place, London, W.2. 5084

**SENIOR ARCHITECTURAL ASSISTANT** required. Capable of taking full control of interesting proposals. Write with full particulars including salary to: R. H. Gallannaugh, L.R.I.B.A., 54 Queen Anne Street, London, W.1. 5077

**YOUNG ARCHITECTS** of real ability still wanted to complete architecture/design group. Write, stating present salary and enclosing photograph/drawing of recent work to: Tom Hancock, Morton and Lupton, 1 Church Lane, Wallingford, Berks. 5073

**ASSISTANT of Intermediate standard** required for newly formed Architect's Department. The successful applicant will work directly with the Company Architect, both on design and constructional stages. Good salary and opportunity for advancement. Apply to the Architect, Brixton Development Co. Ltd., 23-24, Ely Place, E.C.1, telephone CHANCERY 5141. 5045

**KEEN young ASSISTANT** required, West End office. Must be good draughtsman and have sound knowledge of building construction. Salary £750 to £850. Apply William Ryder, 21, Bruton Street, Berkeley Square, W.1. 5068

**MICHAEL MOSS** requires **ASSISTANTS** of Intermediate R.I.B.A. standard for Nottingham office. Tel. Nottn. 47122. 5070

**ASSISTANT** required, Maidstone. Capable of preparing working drawings and details. Write stating experience, qualifications, age, and when available. Box 5059.

**ARCHITECTS**. Two qualified capable energetic **ASSISTANTS** required. Good salary and excellent prospects in progressive West End Office. Full particulars to Box 4966.

**EXPERIENCED ARCHITECTURAL ASSISTANT** required in Estate Department of Midlands Brewery. Applicants should have good design ability, a sound knowledge of building construction and be approaching R.I.B.A. Final standard. Salary by arrangement according to age and experience. Apply with full details to Box 5010.

**ASSISTANT of R.I.B.A. Intermediate or Final standard**. Write stating age, experience, and salary required to Gunton & Gunton, F./R.I.B.A., F.R.I.C.S., Empire House, St. Martin's le Grand, E.C.1. 5013

**LEICESTER** progressive office requires keen **ARCHITECTURAL ASSISTANTS**, all grades, permanent. Apply in writing to C. Edmund Wilford & Son, 2 Hastings Street, Leicester. 5014

**KEEN ARCHITECTURAL ASSISTANTS**, Final and Intermediate standards with desire for responsibility wanted immediately. Only good draughtsmen welcome. Site experience available, as well as drawing office. Five-day week, bonus on some jobs, holidays this year by arrangement. L.V.s. available. Details to Felix Walter, F.R.I.B.A., 4 Raymond Buildings, Gray's Inn, W.C.1, or phone HOLBORN 0535/6. 5017

**ARCHITECTURAL ASSISTANT** required by a progressive and expanding Building and Development Company. Excellent opportunity for man up to Intermediate standard. Commencing salary according to experience and potential, £600 to £750 p.a. Permanent and pensionable position. Apply in writing, giving age and full details to Chief Architect, Croudice Limited, Caterham, Surrey. 5022

**SENIOR AND INTERMEDIATE grade ASSISTANTS** required in busy office in the Midlands. Group system of organisation calling for initiative and responsibility. Interesting range of work. Holiday arrangements respected. Write giving experience and salary required to Box 5037.

**J. M. AUSTIN-SMITH & PARTNERS**, 29, Sackville Street, London, W.1, have vacancies for qualified **ARCHITECTURAL ASSISTANTS** with office experience. Opportunities for designing and taking responsibility in running and supervising contracts. Salary according to age and experience, but in range of £200-£1,000. Please apply in own handwriting. 4834

**ARCHITECTURAL ASSISTANTS** of Final and Intermediate standard required immediately in Leigh Office engaged on varied and interesting programme of Municipal Buildings, Schools, Churches, Housing, etc. Applications giving full particulars and salary required to J. C. Prestwich and Sons, M.A., F./A.R.I.B.A., Bradshawgate Chambers, Leigh, Lancs. 4835

**THE Architect's Department** of a Major Building Company based upon Liverpool requires **TWO ARCHITECTURAL ASSISTANTS**. The successful applicants will join the group responsible for the design and development of Multi-storey Offices and Flats, Housing, Shops and Industrial Buildings and should be school trained with up to two years' experience or be of Final R.I.B.A. standard. Applications with full particulars and salary desired to Box 4840.

**INTERMEDIATE and JUNIOR ARCHITECTURAL ASSISTANTS** required for busy private practice in wide variety of work. Salary according to experience and ability. Please write stating experience, age, etc., to George E. Clay & Partners, A.A.R.I.B.A., 198, Parrock Street, Gravesend. Tel. Gravesend 1401. 4841

**CONTEMPORARY** Sheffield Office requires **ARCHITECTURAL ASSISTANTS** with some office experience. Salary £750 to £1,000 according to experience. Full particulars to Hadfield Cawkwell & Davidson, 17 Broomgrove Road, Sheffield, 10. 4848

**BRIGHTON & HOVE**. Experienced **SENIOR and JUNIOR ASSISTANTS** required for small office. Salaries up to £800 per annum. 4964

**MOIR & BATEMAN, F.A.R.I.B.A.**, require young **ARCHITECTURAL ASSISTANTS** in their Rochdale Office for interesting contemporary work on hospital, industrial and commercial projects. Apply in writing stating experience, age and salary required to Moir & Bateman, Prudential Buildings, Rochdale. 4946

**ASSISTANTS** of Intermediate and Final standard are required in the office of Architects practising in the West End, London. Excellent opportunities occur for those wishing to improve their positions. Applicants should be capable of preparing working drawings and details largely on their own initiative. Five-day week, salary with bonus according to capabilities. Write Box 4947.

**ARCHITECTURAL ASSISTANT** required for busy and progressive city office; Intermediate standard or over; five-day week and bonus scheme. Apply in writing to A. H. Brotherton & Partners, 39 Oxford Road, Manchester, 1. 4953

**TWO ARCHITECTURAL ASSISTANTS** required for industrial and commercial practice in Liverpool. One with considerable office experience and one Intermediate or similar standard. 4956

**SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS** required immediately for office in the West Riding of Yorkshire. Work varied, Civic Buildings, large Office Blocks, Schools, Hospitals, Housing and Industrial. Non-contributory pension scheme in operation. Holiday arrangements honoured. Excellent prospects for all grades. Apply giving age, qualifications, education and experience to Box 4954.

**BIRMINGHAM**. Clifford Tee & Gale, F./R.I.B.A., require an experienced **SENIOR ASSISTANT** and an experienced **INTERMEDIATE ASSISTANT** for interesting industrial and commercial work in a congenial atmosphere. Five-day week. Holiday commitments will be met. Bonus additional to salary. Please apply to Mr. R. G. Cox, F.R.I.B.A., 43, Frederick Road, Birmingham, 15. Tel. Edgbaston 3676. 4957

**ARCHITECTS'** well established office, Charing Cross, require qualified **SENIOR ASSISTANTS** and **INTERMEDIATE ASSISTANTS**. Varied type of work. Good salaries commensurate with experience. Five-day week. Write Box 4958.

**ARCHITECTS' OFFICE**, Nr. Strand, require **JUNIOR ASSISTANTS** or beginners. Varied type of work. Good salaries commensurate with experience. Five-day week. Write Box 4959.

**NEW CITY CENTRE**. **ASSISTANT** wanted with wide office experience to partake on design for entire new development. Clyde Young & Bernard Engle. Tel. Holborn 1772. 4960

**ASSISTANT ARCHITECT** required. Apply: Richard Brown, A.A.R.I.B.A., A.A.M.T.P.I., 123 Victoria Road, Darlington (Members of the Grenfell Baines Group). 4961

**ARCHITECTURAL ASSISTANT** required for busy West End Office. Salary according to age and experience. Summer holiday will be granted. Apply in writing to Maurice Sanders, F.R.I.B.A., 24, Harley Street, W.1. 4855

**REQUIRED** urgently by Architects in South Kensington. Intermediate or recently qualified **ASSISTANT** with some office experience, to work on various modern schemes. Special interest in interior design would be of advantage. Apply to R. Mountford Pigott & Partners, Kensington 1242. 4969

**JUNIOR ASSISTANT** required, Intermediate standard. A small private office, West Central London. Interesting and varied work. Write Box 4970.

**GOLLINS, MELVIN, WARD & PARTNERS** have vacancies for staff experienced and interested in supervision. Five-day week, quarterly bonuses, pension scheme. Ring Welbeck 9991 for appointment. 4976

**GOLLINS, MELVIN, WARD & PARTNERS** are looking for staff to work on the design of hospital, University and Office projects. Age and experience are less important than enthusiasm and interest in architecture. Five-day week, quarterly bonuses, pension scheme. Ring Welbeck 9991 for appointment. 4975

**ARCHITECTURAL DRAUGHTSMAN** required for work on large scale housing development. Work will include the preparation of detailed drawings and preference will be given to applicants who have had previous experience in this type of work. Holiday commitments recognised. Good salary. Pension scheme. Can'teen. Apply Personnel Manager, Taylor Woodrow Homes Ltd., Ruislip Road, Southall, Middlesex. 5275

**ARCHITECTS** (Qualified) required immediately by progressive company in Tunbridge Wells dealing with varying industrial projects. Applicants must be keen, have had industrial experience and be aged around 30. Please give full particulars of training, experience and salary required to Box No. 5261.

**WILLIAM NEWMAN, F.R.I.B.A.**, requires competent **PERSONAL ASSISTANT** with at least five years experience. Small office carrying out chiefly interesting domestic work. Salary according to ability. Apply 139, High Street, Lewes. 5262



**QUALIFIED** and Intermediate ARCHITECTS' ASSISTANTS required for work on a large office development in Morden and on Flats. Five-day week. Salary according to experience and capability. Ring MUSEUM 0298 for appointment, or write to A. Green, A.R.I.B.A., 23, Fitzroy Street, W.1. 5259

**ARCHITECT** with enthusiasm for new and progressive design ideas, required by prominent Edinburgh building and property company. Starting salary will be commensurate with qualifications and previous experience. Applications, which will be treated in confidence, should state age, training, experience and availability to Box 5281.

**COVENTRY, LONDON, MANCHESTER.** IF you enjoy preparing attractive accurate working drawings and Schedules; if you would like to work on buildings of all types; then we think that Intermediate to Final Standard men with up to 4 years office experience could fill our vacancies. Working conditions are good. House available. Pension Scheme. We offer £700 per annum plus if you are better. Replies to W. S. Hattrell & Partners, 1, Queens Road, Coventry. 5040

**ARCHITECTS** required for evening and weekend work. Skilled and accurate draughtsmanship essential. Survey experience an advantage. Box No. 5274.

**QUALIFIED ARCHITECT** required by leading commercial company with go ahead ideas. The work is exciting, stimulating, and offers opportunities to a reasonably experienced man who has carried responsibility. Applications in writing giving qualifications, age, experience, salary required to Box No. 5273.

**ARCHITECTURAL ASSISTANT** required. Age 25-35. Full qualifications not essential as experience in an architect's office and ability to produce working drawings. Apply in writing, stating qualifications, to Oliver Law & Partners, F.F.R.I.B.A., 36, Ebury Street, S.W.1. 5236

**ARCHITECTURAL ASSISTANT.** Intermediate, required by progressive firm of Birmingham Architects. Work involves preparation of designs, working drawings, site supervision, etc., on numerous types of work. Salary by arrangement. Box 5150.

**ARCHITECTURAL ASSISTANT** with Office experience required for busy City Practice, offering excellent opportunities. Salary £1,100-£1,200 per annum. Apply Messrs. Morgan & Branch, A.R.I.B.A., 8-16, Great New Street, London, E.C.4. FLEET Street 2771/2. 5152

**SENIOR ARCHITECTURAL ASSISTANT** required soon as possible, qualified, with practical experience, good draughtsmanship; excellent prospects for anyone keen, efficient and quick. Salary £1,000 upwards according to age and ability, with annual bonus. Domestic and commercial work. London offices, light and spacious with own pleasant office. Write full details of experience, age and when available to Box 5169.

**ASSISTANT** of Intermediate standard required in London Architect's office; must be good draughtsman and have reasonable knowledge of construction. Starting salary £650 upwards and ability recognised by advancement. Write age and experience to Box 5170.

**ARCHITECTURAL ASSISTANTS** of Intermediate standard required in N.E. England branch office of progressive company carrying out interesting and varied work. Must be accurate, quick draughtsmen with all round ability, receptive to new ideas and preferably with some industrial experience. State age, training, experience and present salary. Box 5158.

**ARCHITECTURAL ASSISTANT,** Intermediate stage, for assisting in the developing and detailing of educational and other types of contracts; must be good draughtsman. Apply: A. R. DANNATT & SON, F./R.I.B.A., 65A, Duke Street, Chelmsford. Telephone 3857. 5159

**ARCHITECT'S ASSISTANT** required to work on a varied programme of development. Write, giving details of experience, salary required, to Walker (Tooting), Ltd., Hackbridge Road, Hackbridge, Wallington, Surrey. 5164

**ARCHITECTURAL ASSISTANT,** Intermediate standard, with contemporary outlook, required for busy Architect's Office, West End. Apply Huckle & Durkin, 30, Queen Anne Street, London, W.1. LANGHAM 4091. 5192

**SENIOR ASSISTANT** required for Quantity Surveying section of Midlands firm of Chartered Architects and Civil Engineers. Applicants, preferably A.R.I.C.S., must have experience and initiative to execute schemes from probable cost to final account stages. The work is varied and interesting. The salary offered is commensurate with experience and, if desired, assistance will be given with housing. 5132

**GOOD** unfurnished flat available for ASSISTANT with previous office experience. Salary about £700. Apply Taylor, Knight & Co., A.R.I.B.A., Brooksmoor House, Grove Road, Rotherham. 5167

**ARCHITECTURAL ASSISTANT** required to manage smaller contracts in busy country practice. Must be car driver. Write G. C. Beech & Partners, Deane Office, Wells, Somerset. 5168

#### COLLABORATION IN HOSPITAL COMPETITION

**GROUP** engaged seeks two more London ARCHITECTS' SENIOR STUDENTS to complete team. Analytical mind and enthusiasm essential. Apply Box 5283.

**SIR ALFRED McALPINE & SON LIMITED** require additional ARCHITECTURAL ASSISTANTS in their DESIGN DEPARTMENT at Hooton.

Applicants should be of Intermediate R.I.B.A. standard and be capable of rapidly producing accurate working drawings and details, and also be able to prepare presentation drawings for projects. Contributory Pensions Scheme in operation. Apply in writing to Head Office, Hooton, Wirral, Cheshire. 5258

**ARCHITECTURAL ASSISTANT** required by Brighton firm of private Architects. State age, experience and salary required to Box 5267.

**ARCHITECT'S SENIOR ASSISTANT** required, preferably qualified but must be experienced and capable of taking charge of projects to completion. Good prospects and salary. Office in Dartford. Reply in detail to Box 5264.

**ERIC FIRMIN & PARTNERS** require ASSISTANTS for interesting work on industrial and commercial projects. Five-day week. Lunch vouchers. Salary according to experience. Please apply 5, Holborn Circus, CITY 8811. 5260

**A LARGE** firm of Architects in Wellington, New Zealand, specialising in hospital work, has vacancies for ARCHITECTS with R.I.B.A. and a minimum of two years' post graduate experience. Salary £1,200 to £1,800, depending on experience. Fare paid under bond of two years' engagement. Reply in first instance to Mr. S. I. Townsend, c/o 38, Gordon Square, London, W.C.1. 5249

**VACANCIES NOW** for keen ARCHITECTURAL ASSISTANTS of or about Intermediate standard, with good general knowledge and interest in design. Excellent opportunity in expanding general practice. Full details to: W. H. McAlister, John Mather and Partners, "Walton Lodge," Walton, nr. Warrington, Lancashire. 5111

**ASSISTANTS** required immediately. Write stating experience and salary required to Philip Cranswick, A.R.I.B.A., A.M.T.P.I., 36, Sackville Street, London, W.1. 5113

**ARCHITECTURAL ASSISTANT,** Intermediate standard. Apply stating age and experience. Salary by arrangement. Harry Banister & Partners, 67, Rodney Street, Liverpool, 1. ROYAL 4147. 5135

**SENIOR ASSISTANT** required, preferably qualified, interested in contemporary design, wide variety of work. Alternate Saturdays, salary by arrangement. Mather & Nutter, A.R.I.B.A., 3, Chepstow Street, Manchester, 1. 5115

**ARCHITECTURAL SENIOR ASSISTANT** required immediately for small but long-established London firm. Early prospect of Junior Partnership or position as Associate Architect. Age 28-45. Must be qualified, good draughtsman, and have had reasonable experience in private practice. Varied and interesting work now and for future. Good salary, light offices and excellent working conditions. Full details to Box 5123.

**ARCHITECTURAL ASSISTANT** required for interesting work in Brewery Architect's Department. Final or Intermediate standard. Write, stating age, qualifications and experience, to: Chief Architect, Benskin's Watford Brewery Ltd., P.O. Box 105, Watford, Herts. 5124

**FRY, DREW, DRAKE & LARDUN** require ARCHITECTURAL ASSISTANT, Ghana; supervision experience required. Eighteen months' tour. Reply, giving qualifications, experience, etc., to 3, Albany Terrace, N.W.1. 5125

**WILLIAM HOLFORD & PARTNERS** require ARCHITECTURAL ASSISTANT of Intermediate/Final standard to work on University buildings. Apply, giving age, qualifications, experience and salary required, to 2, Angel Court, E.C.2. 5128

**LONDON** Bank Architect's Office has vacancies for TWO ASSISTANTS experienced in preparation of working drawings and specifications. Commencing salary £750/£850 with good prospects of advancement. Reply in writing, stating age, experience and salary required. Box 5121.

**BASIL SPENCE & PARTNERS** require qualified men with at least two years' office experience and Final standard ASSISTANTS with about five years' experience. Write to 48, Queen Anne Street, W.1, stating experience and salary required. 5122

**ARCHITECT'S ASSISTANT** required for varied and interesting work. Apply Burgess, Holden & Watson, Beaconsfield, Bucks. Tel.: 1366. 5130

**ROBERT MATTHEW & JOHNSON, MARSHALL** have vacancies in their Edinburgh and Dundee Offices for experienced ASSISTANTS; wide variety of University, Hospital and Housing projects. Applications should be marked "Confidential," and addressed to 31, Regent Terrace, Edinburgh, 7. 5131

**TREHEARNE & NORMAN, PRESTON & PARTNERS** have vacancies for ARCHITECTS and ASSISTANTS with imagination and designing ability to assist with important new developments in the London area. Apply in confidence to 83, Kingsway, W.C.2. (HOL. 4071). 5134

**INTERMEDIATE** standard ASSISTANT required with interest in contemporary design and construction. Wide variety of work and opportunities to obtain site experience on minor schemes. Alternate Saturdays, salary by arrangement. Mather & Nutter, A/R.I.B.A., 3, Chepstow Street, Manchester, 1. 5114

**ARCHITECT'S** Office with varied, interesting work, requires JUNIOR and SENIOR ASSISTANTS. Must have progressive outlook. Apply, stating age, experience and salary required, to F. Potter, F.R.I.B.A., 3, Vicarage Road, Edgbaston, Birmingham, 15. 5139

**ARCHITECTURAL ASSISTANTS,** Junior and Senior, required for interesting work in London and the Provinces. Apply, in writing, stating experience, age and salary required, to Westmore & Partners, 121, Cheapside, E.C.2. 5141

**ARCHITECTS' CO-PARTNERSHIP** requires an ARCHITECTURAL ASSISTANT for interior design and detail work for West End store. Please write to 44, Charlotte Street, W.1, or phone Langham 5791. 5143

**FARMER AND DARK** have a vacancy in their Poole Office for a qualified ASSISTANT, preferably school trained, with 2-3 years' experience. Apply to 14, High Street, Poole, Dorset. 5146

**COVELL & MATTHEWS** require ARCHITECTURAL ASSISTANTS for work on central area projects. Salary range £550-£850. Five-day week. Telephone REGENT 2291 for appointment. 5148

**ARCHITECT'S ASSISTANT,** Intermediate to Final standard, required; good knowledge of building construction and site supervision. Good draughtsmanship essential. Salary £600 + L.V. G. Gordon Stanham, Adamson Gray & Partners, 9/10, Fenchurch Street, London, E.C.3. 5149

**ASSISTANT ARCHITECT** (Associate) required by Leonard J. Multon & Partners, of 6, Greenfield Crescent, Edgbaston, Birmingham. The position offers scope for advancement in an expanding office engaged on multi-storey housing, industrial, commercial and hospital projects. Working conditions are exceptionally good, in a recently built Studio Office. Please apply in writing, stating experience and salary required. 5173

**SENIOR ARCHITECTURAL ASSISTANT** required urgently—must have good standard of design ability and at least five years' sound experience in Architect's Office. Intermediate ARCHITECTURAL ASSISTANT also required. Good training and office experience. Please apply Leach, Rhodes & Walker, 90, Deansgate, Manchester, 3, giving all details and salary required. 5175

**ARCHITECTURAL ASSISTANTS,** qualified or unqualified, required for varied work in busy and congenial City office. Good opportunities for working on own initiative. Salary by arrangement. Seely and Paget, 41, Cloth Fair, E.C.1. MET. 8511. 5176

**ASSISTANT ARCHITECT,** capable of taking responsibility from preliminary stages to contract completion required. Must be competent draughtsman. Write, stating age, experience and salary required, to Robert Sharp & Son, 13, Lower Belgrave Street, S.W.1. 5177

**ARCHITECTS.**—Vacancies exist for Architects with at least two years' office experience. Applications should be sent to Eric W. Hall & Partners, Rock House, Calton Hill, Edinburgh. 5178

**ARCHITECTURAL JUNIOR DRAUGHTSMAN** required for housing and estate development, by Sir Lindsay Parkinson & Co., Ltd., 6, Lambeth Road, London, S.E.1. Must be well trained. Write stating age and salary required. 5189

**ROBERT POTTER AND RICHARD HARE, F.A.R.I.B.A.,** have a vacancy for a recently qualified ASSISTANT ARCHITECT to work on interesting University and Civic projects. Five-day week. Existing holiday arrangements will be honoured. Write, giving details of qualifications, experience and salary required, to De Vaux House, Salisbury. 5238

**DEPUTY STAFF ARCHITECT** required by City firm. Responsible duties delegated particularly for design of industrial, commercial and office buildings. Good salary will be paid. Start September. Box 5202.

**SHELL-MEX AND B.P. LIMITED** require for their 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. Excellent working conditions. Staff restaurant, sports club, etc. Apply in writing, giving full details of age, qualifications and experience, to the Staff Manager (Ref. 29179), Shell-Mex and B.P. Ltd., Shell-Mex House, Strand, London, W.C.2. Second applications cannot be considered. 5206

**SENIOR ASSISTANT** required in the Architectural Department of a company manufacturing and erecting prefabricated modular buildings. The work covers a wide field of design in timber and steel.

Successful applicants must have an enthusiastic and sound approach to new ideas and be willing to accept responsibility for projects throughout all stages.

Write or telephone: Mod-X Structures Ltd., 20, Lowndes Street, S.W.1. BELGRAVIA 3266-8. 5207

**ARCHITECTURAL ASSISTANTS**, Intermediate/Final standard, with office experience, required. Five-day week, L.V.s, pension scheme. Full particulars to Box 5210.

**A.75 ARCHITECT** required to work in Design Group. Applications in writing, please, to Staff Architect, A. H. Anderson Limited, 66, Victoria Street, S.W.1. 5211

**ARCHITECTURAL ASSISTANTS** (age 28-38), with good training and experience and a keen interest in progressive design and construction, are invited to apply for a position in our Design Office in York, which is engaged in a variety of interesting and substantial projects.

The successful applicant would enjoy all the advantages of working with a well-organised and progressive firm employing over 2,000 people.

This permanent position in a growing department offers plenty of scope, a good salary, bonus, excellent working conditions, non-contributory pension scheme and assistance with housing.

Applications in confidence, stating age, experience, qualifications, availability and an indication of commencing salary required, should be addressed to: Donald W. Shepherd, F.I.O.B., Technical Director, F. Shepherd & Son Ltd., Building and Civil Engineering Contractors, Blue Bridge Lane, York. 5219

**ARCHITECTURAL ASSISTANTS** required for industrial practice in Victoria, S.W.1. area. Intermediate R.I.B.A. standard. Salary £600-£900 according to qualifications and experience. Reply, giving details of age, experience and salary required, to Box 5222.

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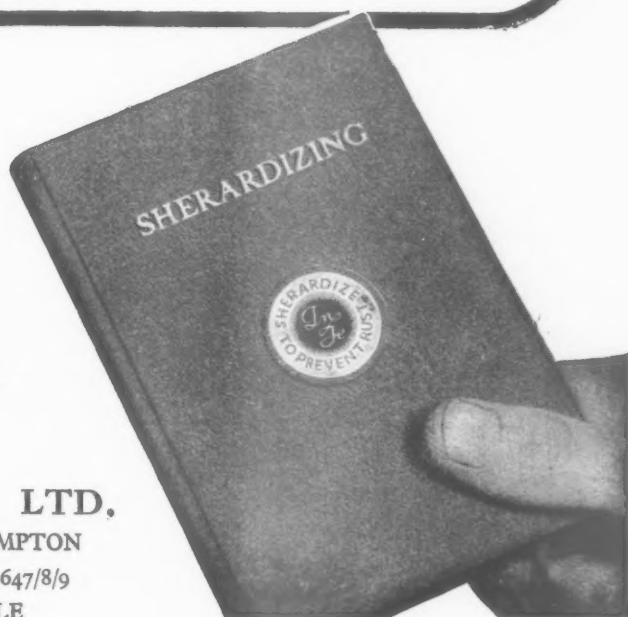
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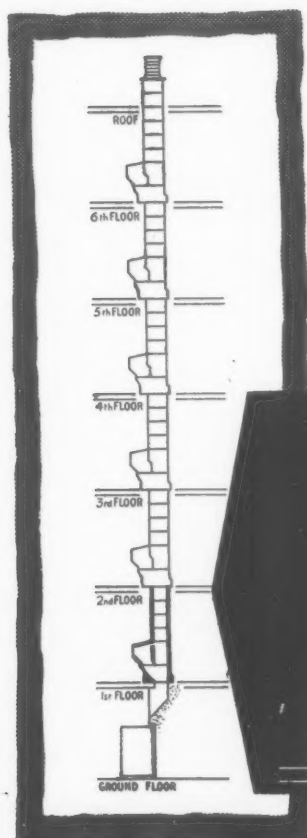
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