E ARTS DEPT.
BLACK

APR 24 1951

THE ARCHITECTS' JOURNAL

tandard contents

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

No. 2928] [VOL. 113
THE ARCHITECTURAL PRESS
9, 11 *and* 13, *Queen Anne's Gate, Westminster, S.W.*1. *'Phone: Whitehall* 0611

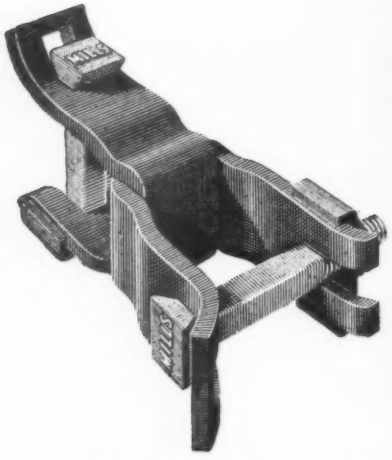
Price 1s. 0d.
Registered as a Newspaper.

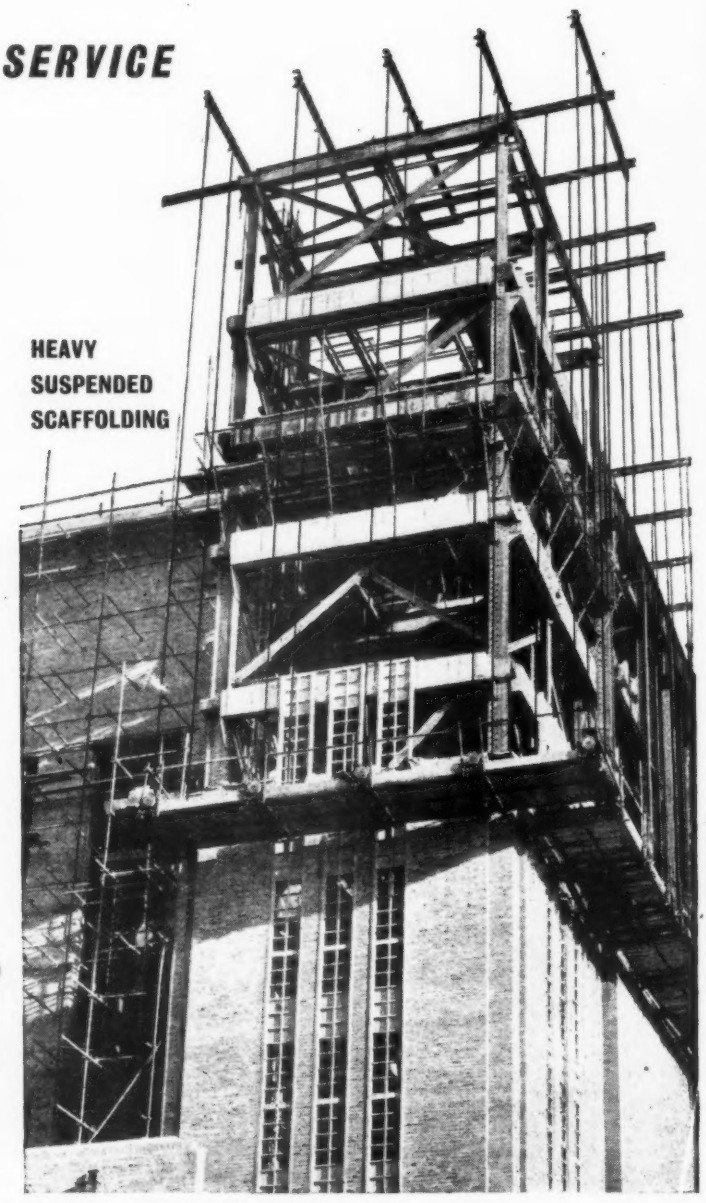
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ie one week, Ig to Z the next. In all cases where the town is not mentioned the word LONDON is implicit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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AA1	Association of Art Institutions. Secy.: W. Marlborough Whitehead, " Dyneley," Castle Hill Avenue, Berkhampstead, Herts.	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 5, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
APRR	Association for Planning and Regional Reconstruction. 34, Gordon Square, W.C.1.	Euston 2158-9
ArchSA	Architectural Students' Association. Department of Architecture, School of Building, Ferndale Road, Brixton, S.W.4.	Brixton 7048
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Welbeck 9738
ASB	Architectural Science Board of the Royal Institute of British Architects, 66, Portland Place, W.1.	Langham 5721
AScW	Association of Scientific Workers. 15, Half Moon Street, Piccadilly, W.1.	Grosvenor 4761
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre. 9, Conduit Street, W.1.	Mayfair 8641/6
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 17, Amherst Road, Ealing, W.13.	Perivale 6869
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Flaxman 7766
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BGF	British Gas Federation. 1, Grosvenor Place, S.W.1.	Sloane 8266
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BIAE	British Institute of Adult Education. 29, Tavistock Square, W.C.1.	Euston 5385
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Millbank, S.W.1.	Whitehall 5140
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 2246
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. 28, Victoria Street, S.W.1.	Abbey 3333
BTE	Building Trades Exhibition. 4, Vernon Place, W.C.1.	Holborn 8146/7
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Borough Architect, Town Hall, Newport, Mon.	Newport 3111
CAS	County Architects Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Chichester 3001
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611
CDA	Copper Development Association. Kendals Hall, Radlett, Herts.	Radlett 5616
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7. Zurich, Switzerland.	
CID	Council of Industrial Design. Tilbury House, Petty France, S.W.1.	Whitehall 6322
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.	Sloane 4280
CUJC	Coal Utilization Joint Council. 13, Grosvenor Gardens, London, S.W.1.	Victoria 1534
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DOT	Department of Overseas Trade. 35, Old Queen Street, S.W.1.	Victoria 9040
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 8, Buckingham Palace Gdns., S.W.1.	Sloane 2837
FASSC	Federation of Association of Specialists and Sub-Contractors. 21, Tothill Street, S.W.1.	Whitehall 9696
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FOB 1951	Festival of Britain 1951. 2, Savoy Court, Strand, W.C.2.	Waterloo 1951
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4041
FS (Eng.)	Faculty of Surveyors of England. Buckingham Palace Gdns., S.W.1.	Sloane 2837
GG	Georgian Group. 27, Grosvenor Place, S.W.1.	Sloane 2844
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1.	Sloane 5615
ICA	Institute of Contemporary Arts, 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215

FOR SCAFFOLD *SERVICE*

right on time





HEAVY SUSPENDED SCAFFOLDING

SIMPLY CALL UP

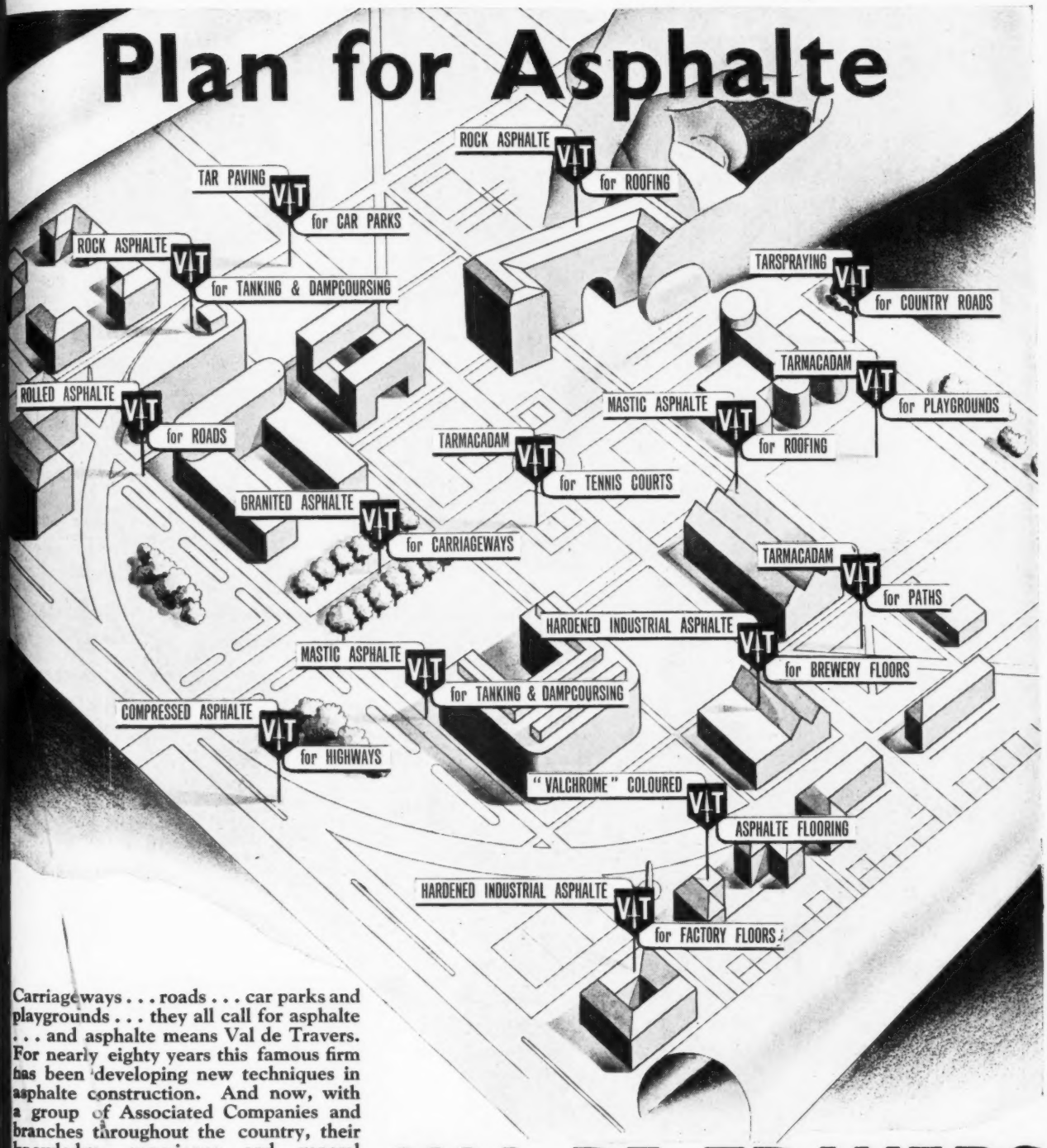
MILLS

TELEPHONE YOUR NEAREST DEPOT

BELFAST • BIRMINGHAM • BOURNEMOUTH • BRIGHTON
BRISTOL • CANTERBURY • CARDIFF • COVENTRY
DUBLIN • EXETER • GLASGOW • HULL • ILFORD
LIVERPOOL • LOWESTOFT • MANCHESTER • NEWCASTLE • NORWICH
PORTSMOUTH • PLYMOUTH • SOUTHAMPTON • SWANSEA • YARMOUTH

Steel and Aluminium Scaffolding for sale, contract, or hire. Every requirement met also for ancillary equipment, including: Shuttering • Steel Props • Trench Struts • Splitheads • Hoists • Concrete Mixers • Cradles • Builders' Hand Carts • Barrows • Trestles, etc.

MILLS SCAFFOLD CO. LTD., *Head Office and Depot:* TRUSSLEY WORKS, HAMMERSMITH GROVE, LONDON, W.6 • Tel.: RIVerside 5026/9.



Carriageways . . . roads . . . car parks and playgrounds . . . they all call for asphalte . . . and asphalte means Val de Travers. For nearly eighty years this famous firm has been developing new techniques in asphalte construction. And now, with a group of Associated Companies and branches throughout the country, their knowledge, experience, and general resources make them pre-eminent in this field.

ACTIVITIES
of the Company and its Associates

• ASPHALTE MINE OWNERS in Germany and Sicily • QUARRY OWNERS • ASPHALTE CONTRACTORS • TAR PAVIORS • TARMACADAM MANUFACTURERS • ASPHALTE GROUT MAKERS • TAR SPRAYERS • ROAD LINE PAINT SPECIALISTS • HARD TENNIS COURT and PLAYGROUND CONSTRUCTORS • VALCOTHERM TILE MANUFACTURERS.

VAL DE TRAVERS V&T & ASSOCIATED COMPANIES

VAL DE TRAVERS

The name that stands supreme for product and service

THE VAL DE TRAVERS ASPHALTE PAVING COMPANY LIMITED
VAL DE TRAVERS HOUSE, 21 - 22 OLD BAILEY, LONDON, E.C.4

Telephone: City 7001 (10 lines) · Telegrams: Traversable, Telex, London

ASSOCIATED COMPANIES

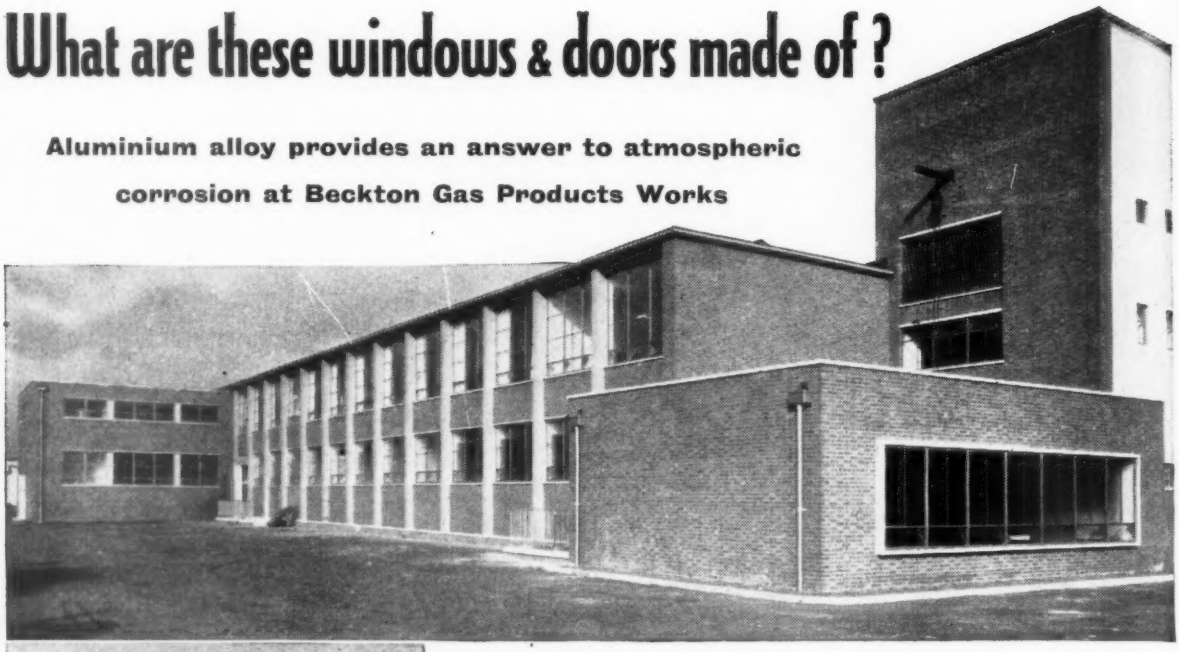
A. C. W. HOBMAN & CO. LTD. TAROADS LTD. THE DIAMOND TREAD (1938) LTD. THE LONDON ASPHALTE CO. LTD. SICILIAN ROCK ASPHALTE CO. LTD. UNITED LIMMER & VORWOHLE ROCK ASPHALTE CO. LTD. W. G. WALKER (GLASGOW) LTD.

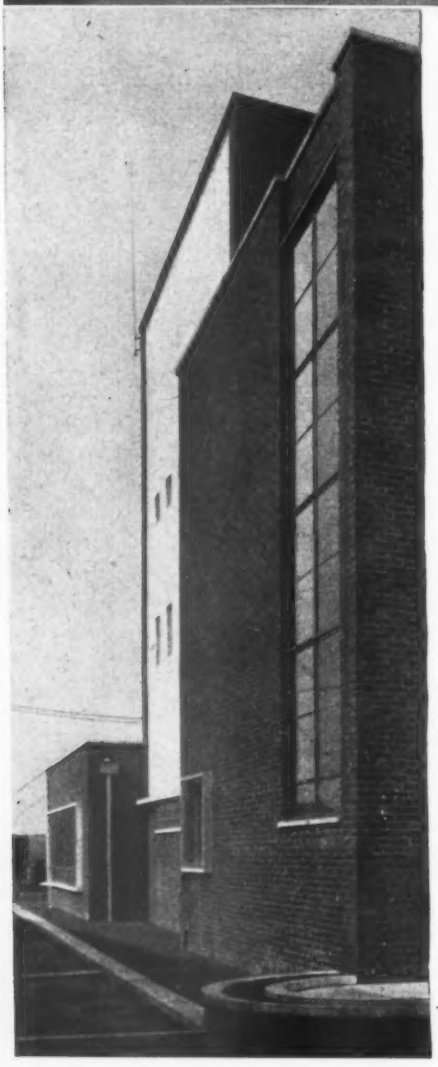
BRANCHES

BIRMINGHAM · CANTERBURY · EXETER · GLASGOW · LINCOLN
LIVERPOOL · MANCHESTER · NEWCASTLE-ON-TYNE

What are these windows & doors made of ?

Aluminium alloy provides an answer to atmospheric corrosion at Beckton Gas Products Works





ATMOSPHERIC CORROSION at Beckton Gas Products Works set the Consulting Engineers of the new buildings many problems. Not least of these concerned the doors and windows. These had to be highly resistant to corrosion and at the same time strong enough to withstand the high winds blowing over the Thames marshes to which the Beckton buildings are exposed.

Aluminium alloy and intelligent workmanship were combined to supply the answer. All the windows in the Welfare and Canteen Block at Beckton are purpose - made aluminium windows constructed of specially extruded sections which are *electrically mitre-welded.*

To resist corrosion

Had these windows and doors been made in steel they would have been remarkable only as an example of an excellent architectural design correctly interpreted by the window manufacturer. But by specifying aluminium alloy, the Consulting Engineers obtained not only a faithful interpretation of his design, together with adequate strength and durability, but also a special resistance to the highly corrosive atmosphere associated with these works. In addition, the extruded sections give an air of sleekness and precision very much in keeping with the general character of the building.

The windows and doors were treated at Works by the Alocrome process to give good paint adhesion, and then primed and stoved. The finish, which was in pale blue cellulose, was applied at site. The effect of this high finish on the slim, precise aluminium alloy sections is most pleasing.

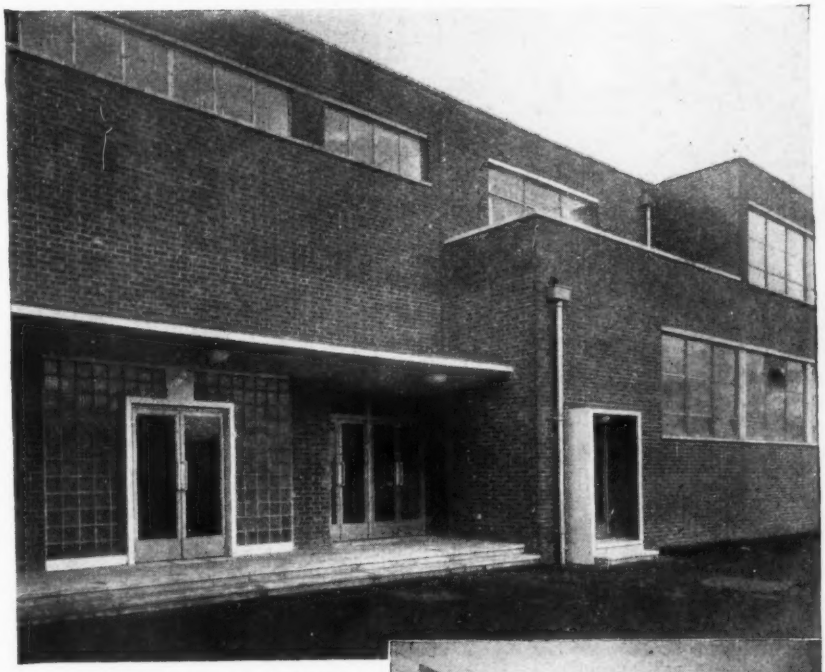
Additional ventilation

An impression of the window layout in this building is quickly gained from the photograph of the west elevation (above). Here, the windows are fitted with hopper ventilators and are glazed internally by means of aluminium beading. The building is air conditioned and the hopper ventilators are provided for extra ventilation in the hottest weather. The staircase window, 28 ft. high (left), is entirely free

CONSULTING ENGINEERS: *Brian Colquhoun & Partners.* CHIEF ARCHITECT: *A. H. Shearing, A.R.I.B.A.*
CONTRACTORS: *Taylor Woodrow Construction Ltd.* WINDOWS AND DOORS: *Williams and Williams, Ltd.*

standing and its appearance is enhanced by the clear razor-edged lines of the extruded aluminium sections.

The Aluminium Alloy double action swing doors in the main entrances to the building (above right) and the entrance lobbies (centre right) were specially designed by Williams and Williams to fulfil the Consulting Engineers' requirements. The leaves were constructed from hollow extrusions produced expressly for this particular job.

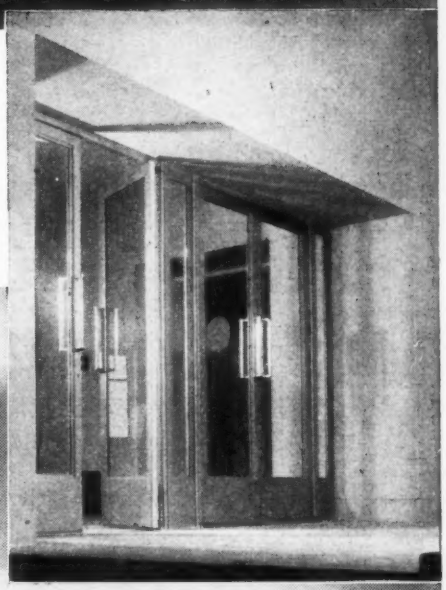


Extrusion gives freedom of design

This is an excellent example of the freedom of design which the use of aluminium gives to the architect, as special extrusions can be made available without undue delay and at reasonable cost.

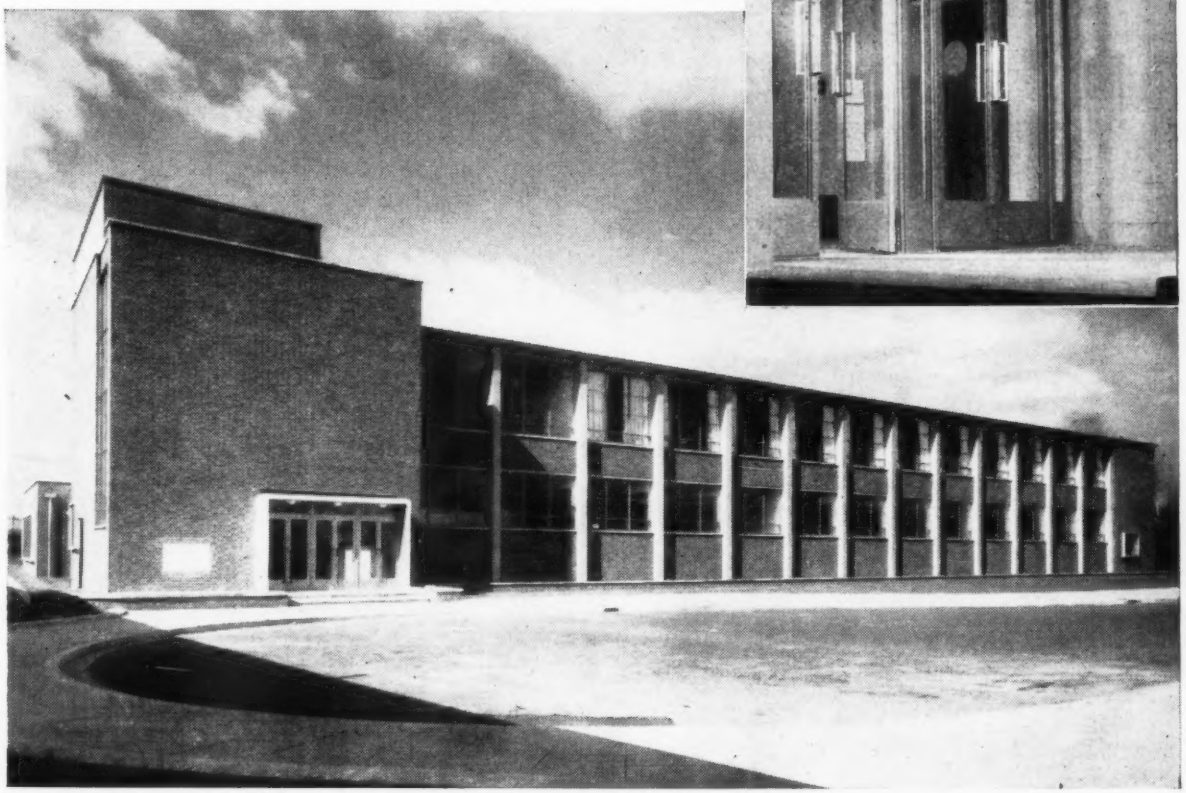
The canteen is well lighted by its series of sidewall windows, and there are also anodised aluminium lay lights made by Williams and Williams Limited.

Below is a view of the east elevation, showing the canteen and locker room windows, and swing doors. These windows and doors are in conformity with good modern practice, and in order to resist the special corrosive conditions which occur at the Beckton Gas Products Works, they are in extruded aluminium sections by



Williams & Williams Ltd.

Reliance Works · Chester



WELDED TUBULAR CONSTRUCTION

-by the originators of tubular scaffolding!

MESSRS. TRUVOX ENGINEERING CO., LTD., FACTORY, WEMBLEY.
Architect: H. S. Jaretzki. L.R.I.B.A., M. Inst.R.A.
Consultant Engineer: F. J. Samuely, B.Sc., (Eng.) Lond. A.M.I.C.E., M.I. Struct. E., F.I.A.S., M.I.W.

Welded tubular construction does the job with less steel, skilful design saving up to 60%. Its clean modern appearance pleases the eye of the architect. The simple shapes which arise from the method of construction are easy to protect against corrosion.

SCAFFOLDING (GREAT BRITAIN) LTD.

WELDED STRUCTURES DIVISION

MITCHAM SURREY

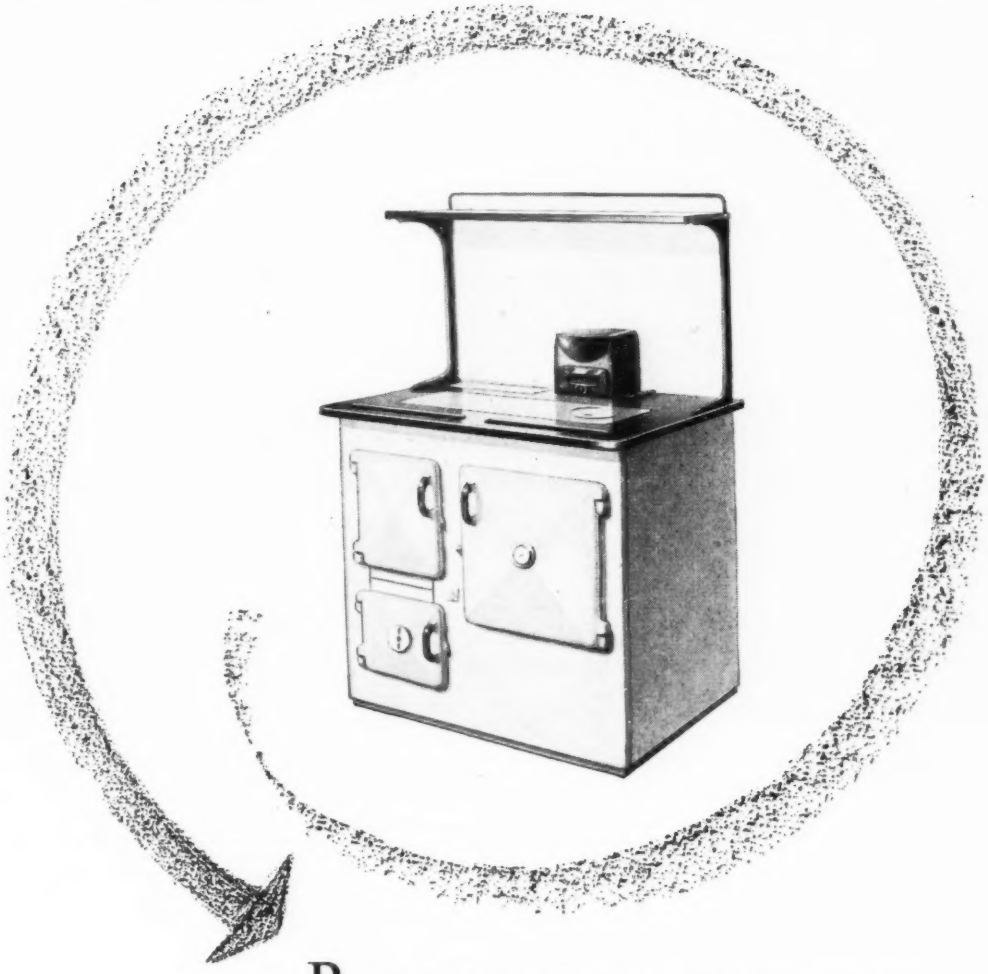
Telephone : MITCHAM 3400 (18 lines)

Telegrams : SCAFCO, MITCHAM

Branches at: ABERDEEN · BIRMINGHAM · BOURNEMOUTH BRIGHTON · BRISTOL CAMBRIDGE · CARDIFF · DOVER · DUBLIN DUNDEE · EDINBURGH EXETER GLASGOW · HULL · LEEDS · LIVERPOOL · MANCHESTER · NEWCASTLE · NOTTINGHAM OXFORD · PLYMOUTH · PORTSMOUTH · SOUTHAMPTON STOKE-ON-TRENT · SWANSEA

Constructed by S.G.B.

On Stand B.308, B.I.F. 1951



PEOPLE will talk about this CROMFORD—latest from Glow-worm Boilers—now ready after exhaustive practical tests.

Look for the elegant finish, ask about its performance in relation to your own needs and you will see how the new CROMFORD is yet another leader in its class.

CROMFORD

GLOW-WORM BOILERS LTD · MILFORD · NR. DERBY

London Showrooms 22-24 Buckingham Palace Rd., London, S.W.I.

John Barnes Ltd., Hampstead, *chose Tygan for the upholstery of the chairs in the restaurant of this well-known store.*

In restaurants, bars and cafés where smart appearance counts for so much in attracting custom, and durability is essential to keep down maintenance costs, Tygan woven fabric is a natural choice for the upholstery. It wears wonderfully, is washable and is available in a wide range of pleasing colours and designs.

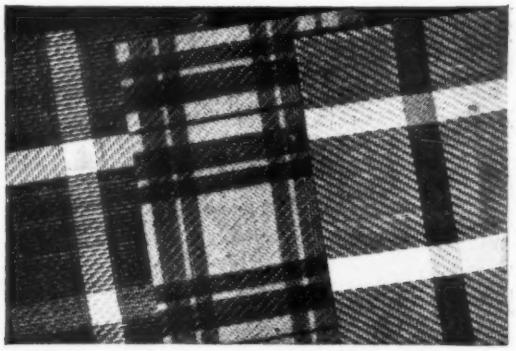
FREE FOLDER Send today to the address below for this free folder giving fuller details and patterns of Tygan, quoting Ref. H.12.

Tygan REGD **WOVEN FABRIC**

SMART LOOKING · EASILY CLEANED · LONG LASTING

MANUFACTURED BY
Fothergill & Harvey Ltd., Harvester House, Peter St., Manchester 2.

It's washable. *Tygan can be wiped clean with a damp cloth as easily as a glass-top table. Being non-absorbent it is never damp.*

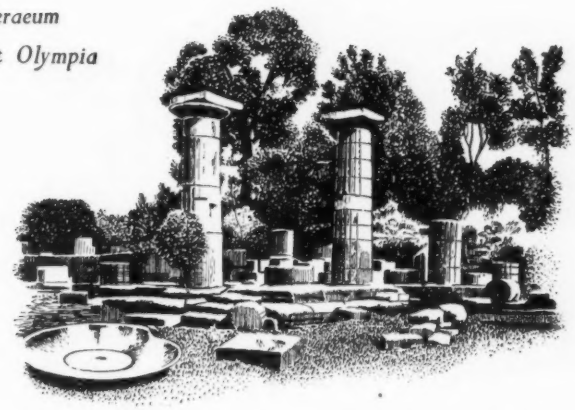


Attractive colours and designs. *The lovely clear colours and smart designs in which Tygan is available afford every opportunity for the achievement of successful decorative effects.*

P7

CLAY YESTERDAY . . . CLAY TODAY . . . CLAY TOMORROW

The Temple of Heraeum at Olympia



Clay LASTS

Many instances of the use of Clay by the early Greeks have been found. A notable example is the Heraeum at Olympia, a building of great antiquity where Clay Bricks were used extensively and the roof was entirely of Terra-Cotta.

The Greeks used Clay Roofing Tiles . . so did the Romans and today the Clay Tile is still unsurpassed as a roofing medium.
Fired to high temperatures, weatherproof, and available in a wide range of styles and in a variety of permanent colours, Acme Clay Roofing Tiles are made from the famous Etruria Marls of North Staffordshire. Whatever the Building project there is an Acme Tile to suit the most exacting requirements. Acme Tiles enable the uniformity of housing schemes to be maintained yet provide for the exact taste of the individual.
The Acme Catalogue, giving full information of the complete range of Acme Clay Roofing Tiles is available on request.

For enduring beauty . . . specify

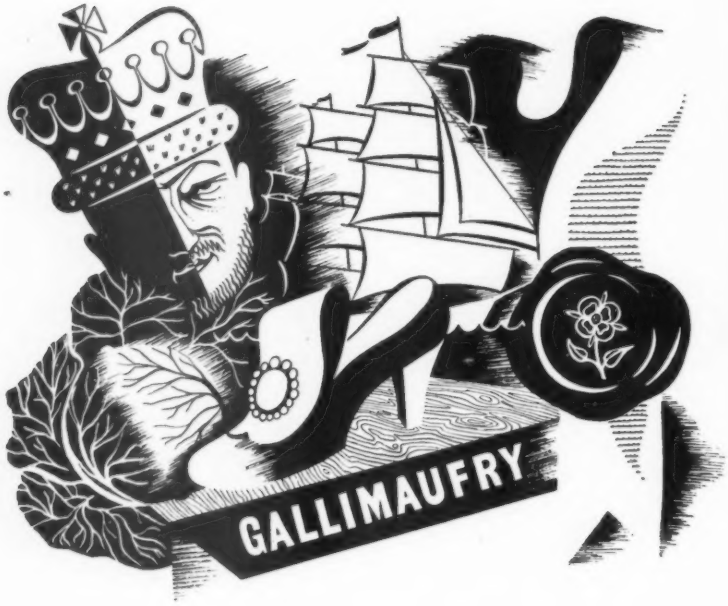
ACME CLAY ROOFING TILES

The ACME *Range of Roofing Tiles includes*

ACME M. M ROOFING TILES
ACME SANDSTORM ROOFING TILES
ACME CENTURY HANDMADE SANDFACED
also
ACME RED FLOOR QUARRIES

G. H. DOWNING & CO. LTD., BRAMPTON HILL, NEWCASTLE-UNDER-LYME, STAFFS.
Telephone : Newcastle-Under-Lyme 65381

L.G.B.



"The time has come . . . to talk of many things! of shoes — and ships — and sealing wax — of cabbages — and kings:"
As soon as we touch upon the diverse uses of Expanded Metal we, like Lewis Carroll's Walrus, cannot help but 'talk of many things' because . . . .

The Keynote of Expanded Metal is

Adaptability

It is universally used as reinforcement for concrete or lathing for plasterwork and yet it is equally successful as a decorative ceiling of colour-anodised Expanded Aluminium. From walkways to letter trays; reinforcement to decor; open-work partitions to loudspeaker grilles; bedlamps to guards for machinery — such diversity of use provides evidence of the hundred and one ways in which men take advantage of the remarkable *adaptability* of Expanded Metal.

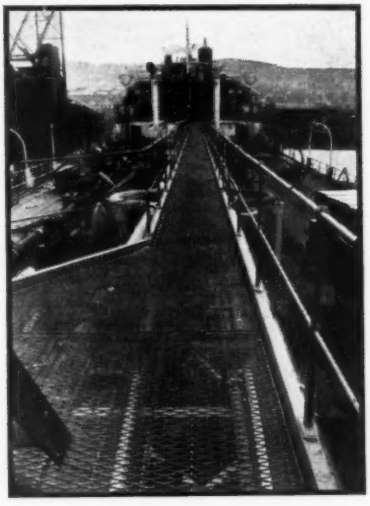
TATE GALLERY, LONDON

(*Above*): Expanded Metal lathing and plaster ceilings at the Duveen Sculpture Galleries. Architects: Messrs. Romaine-Walker & Jenkins, A/F.R.I.B.A., London, in collaboration with the late Mr. John Russell Pope. Consulting Engineers: Messrs. Reade, Jackson & Parry, London.

•

(*Below*): Expanded Metal fore and aft gangways on M.T. "Waziristan", built by Lithgows Ltd., Port Glasgow.

THE M.T. "WAZIRISTAN"



Expanded Metal Products

'EXPAMET'

The Expanded Metal Company, Limited

Burwood House, Caxton Street, S.W.1 WHItehall 1736.

STRANTON WORKS, WEST HARTLEPOOL, HARTLEPOOLS 2194.

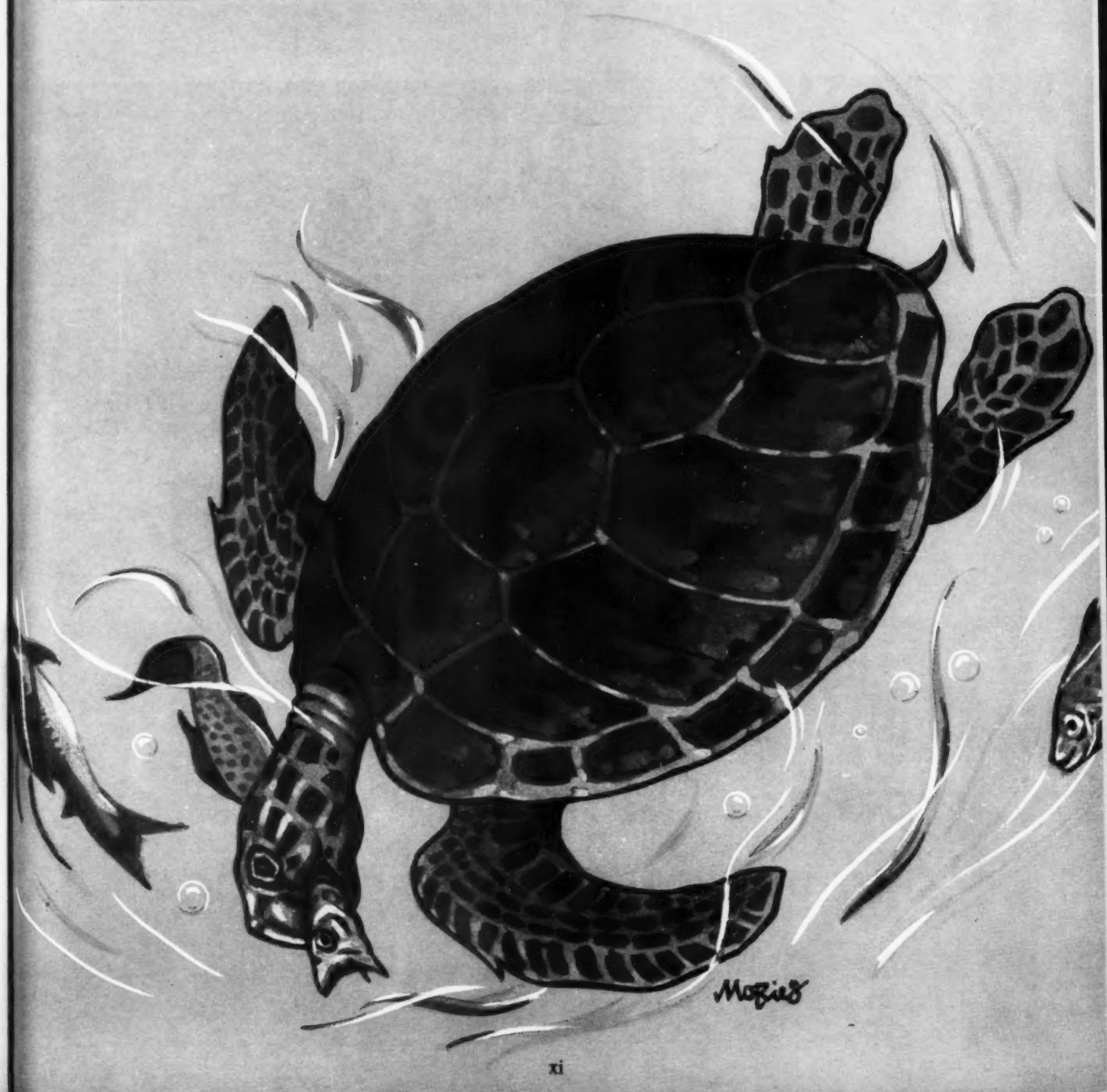
ALSO AT: ABERDEEN, BELFAST, BIRMINGHAM, CAMBRIDGE, CARDIFF, EXETER, GLASGOW, LEEDS, MANCHESTER

55

PERMANENT COLOUR is now a feature of Marley Tiles, due to the fixed-coloured granules with which they are surfaced. They can be tested by washing to prove there is no free colour. When these qualities are desired, the Specification should call for "Approved fixed-colour granule-faced concrete tiles."

MARLEY

The Marley Tile Co. Ltd., London Road, Riverhead, Kent.
Sevenoaks 2251/6

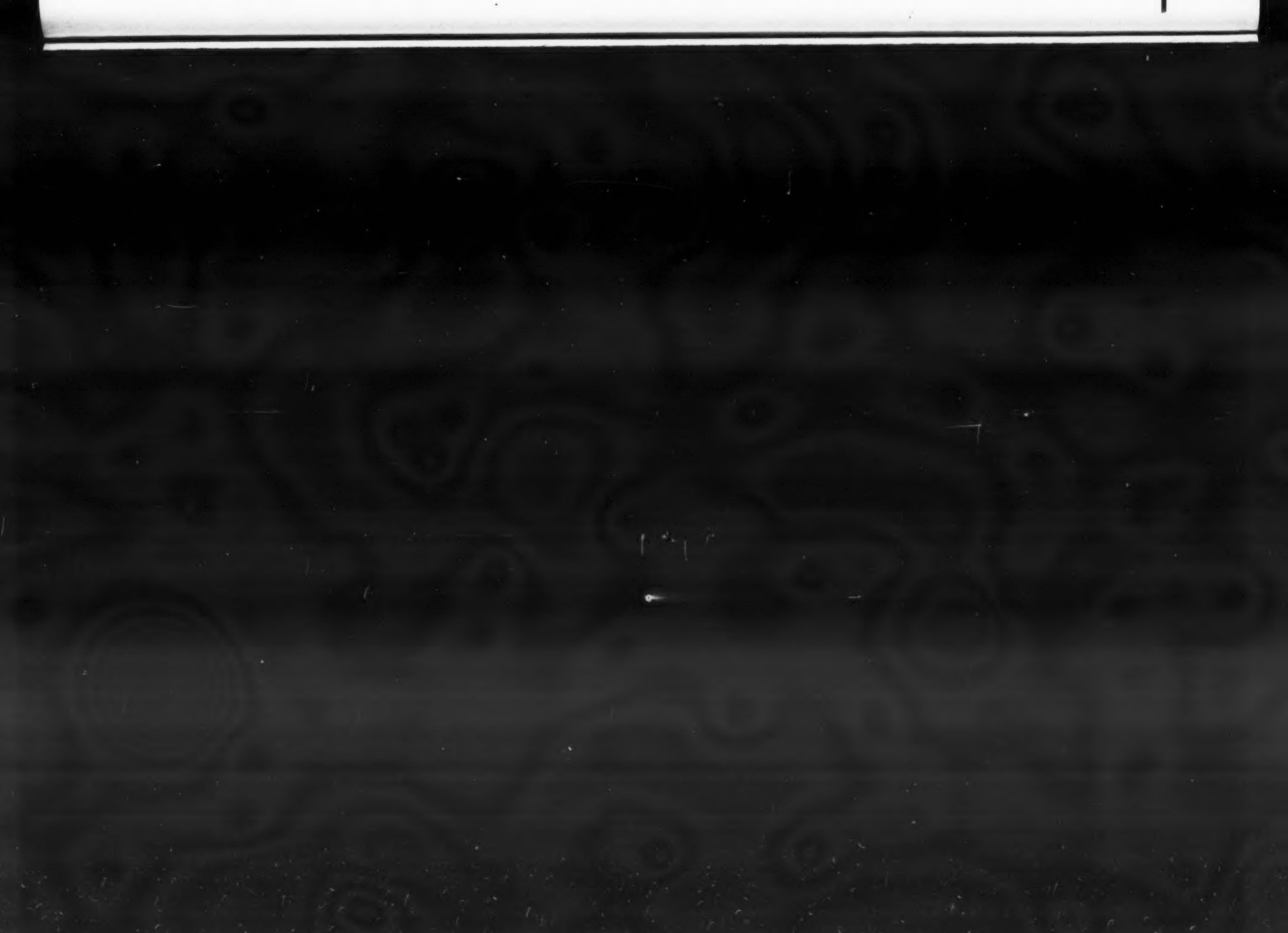


HEATING · SANITATION

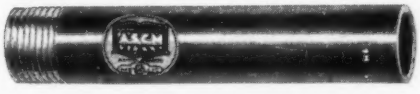
ARTHUR SCULL & SON LTD.

BRISTOL LONDON CARDIFF

TRINIDAD MALTA EAST AFRICA

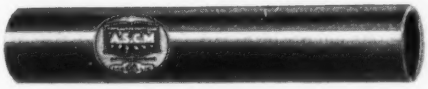


"It's no trouble at all!"



Screwed and Socketed Gas Threaa

Screwed and Socketed Conduit Thread



Light Gauge Tube

How often one hears that remark but how *true* it is when you are working with Metallic Conduit Tube and Fittings.

For quality and consistent accuracy :—

SPECIFY METALLIC

CONDUIT TUBE and FITTINGS

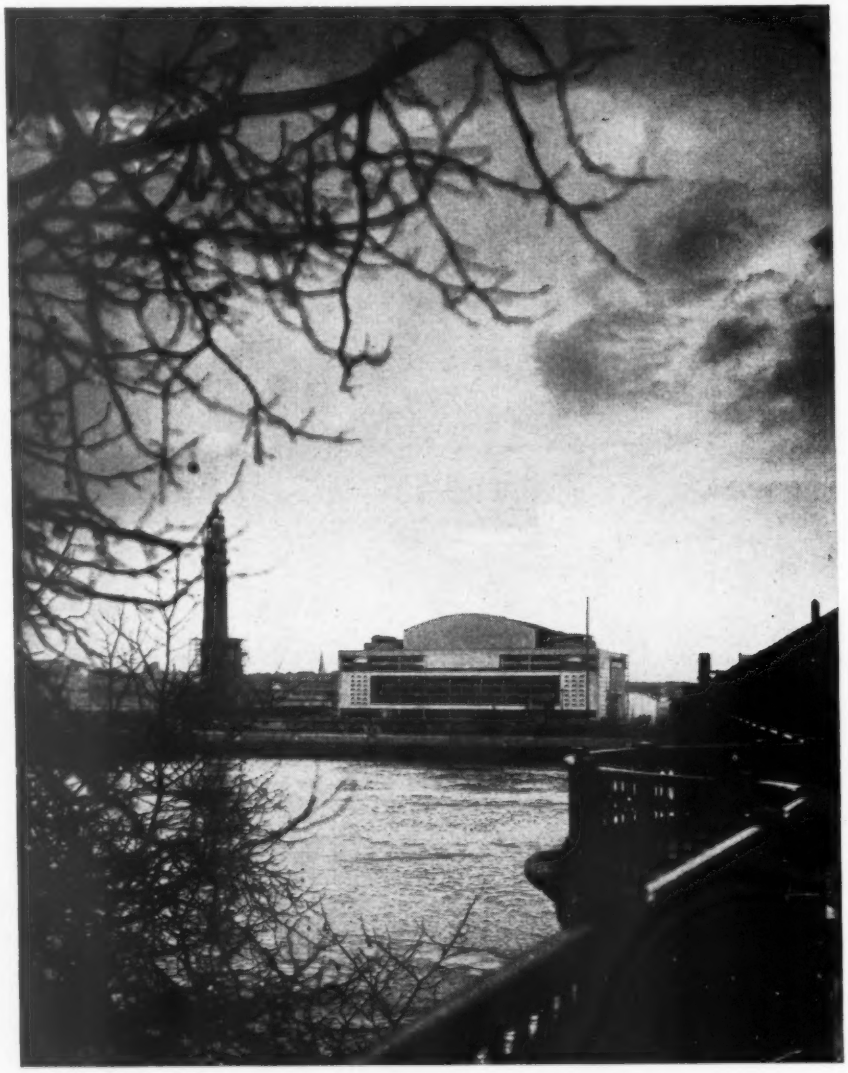
A TI COMPANY

The Metallic Seamless Tube Co., Ltd., Ludgate Hill, Birmingham 3 Tel. Cen. 7167

Also at London, Newcastle-on-Tyne, Leeds, Swansea and Glasgow

CRITTALL WINDOWS

ROYAL FESTIVAL HALL

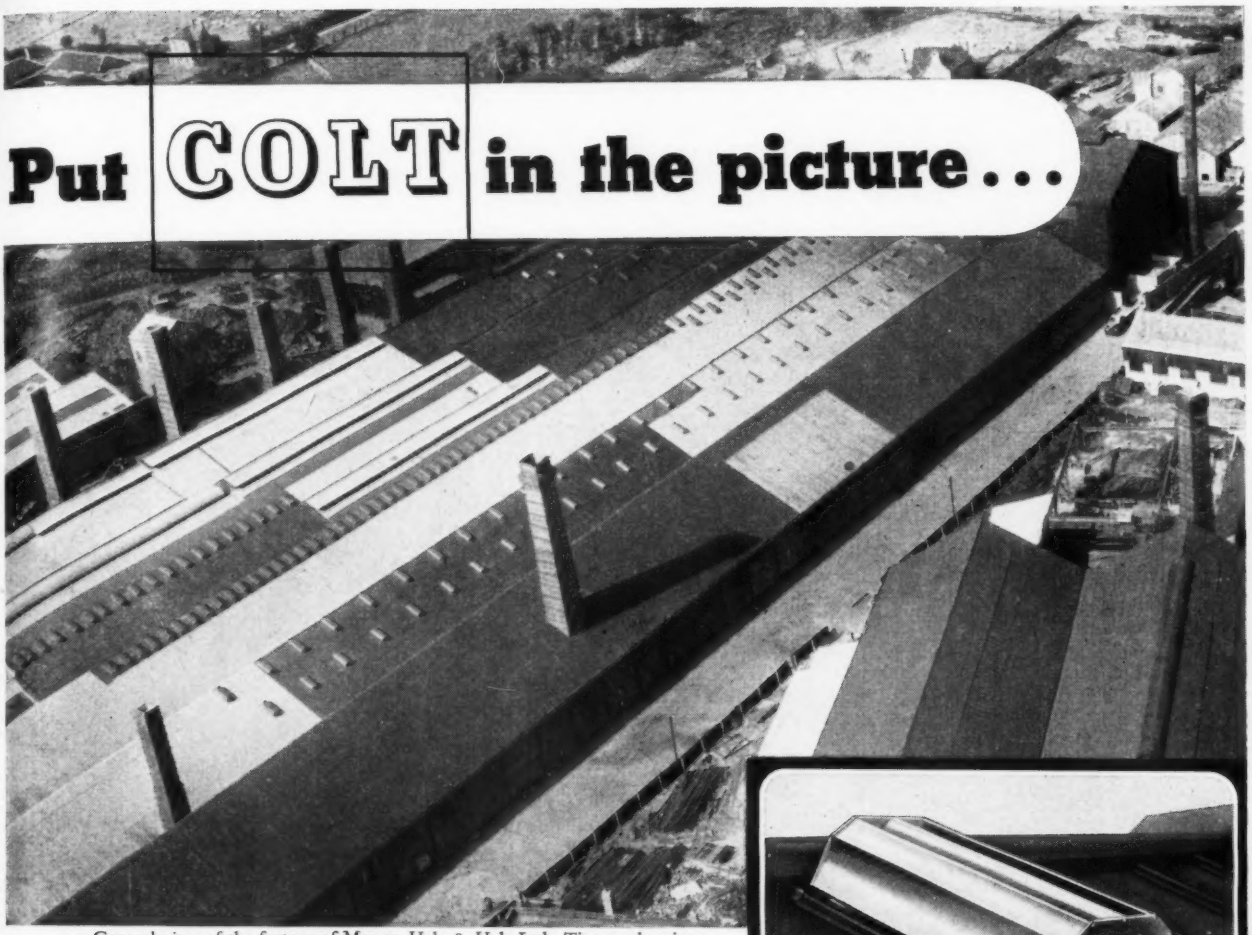


ERECTED FOR THE LONDON COUNTY COUNCIL

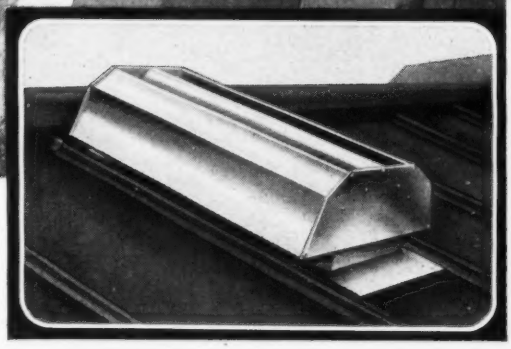
ARCHITECT: ROBERT H. MATTHEW, IN ASSOCIATION WITH MESSRS. SCOTT & WILSON, CIVIL ENGINEERS
MAIN CONTRACTORS: HOLLAND & HANNEN AND CUBITTS LTD.

THE CRITTALL MANUFACTURING CO. LTD.
BRAINTREE · ENGLAND

Put COLT in the picture...



General view of the factory of Messrs. Hale & Hale Ltd., Tipton, showing the installation of COLT S.R. Ventilators in the roof.



... *from the start*

Very many years' experience of all types of ventilation problems enables us to bring a supremely practical approach to the science of air induction and extraction. If you have any problems of this sort, or if you want any advice while you are at the drawing board stage, we shall be more than glad to assist you. Our experts are always enthusiastic to tackle new problems or advise on more familiar ones.

A FREE MANUAL *with full specifications of the types of standard Colt Ventilators is available on request from Dept. V. 158.*

THE COLT S.R. VENTILATOR, illustrated above, is designed on aerodynamic principles embodying aero-foil curves to assist the process of convection by harnessing the free power of the wind and roof eddies, no matter from which direction they come, creating a suction which can produce a power of extraction equal to that of mechanical means without the drawbacks of noise, wearing parts or operating and maintenance costs.

These aero-foil curves prevent the elements from interfering with the escape of the hot vitiated air which rises through the ventilator in accordance with the Laws of Convection.

They have been so designed as to give a flat curve of extraction to prevent extraction from becoming excessive with the high winds of winter.

Just one example of the many types of ventilation that COLT have planned or carried out for over 4,000 prominent firms throught the country.

COLT VENTILATION

INDUSTRIAL AND DOMESTIC

Colt Ventilation Ltd., Surbiton, Surrey, ELMbridge 6511-5

Also at Birmingham, Bradford, Bristol, Kilmarnock, Manchester, Newcastle, Newport (Mon.) and Sheffield

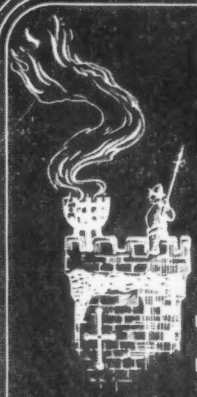
SEE COLT ABOUT VENTILATION—WHATEVER YOU DO

TEMCO Switches

ARE SUITABLE FOR ALL PARTS OF ALL AREAS

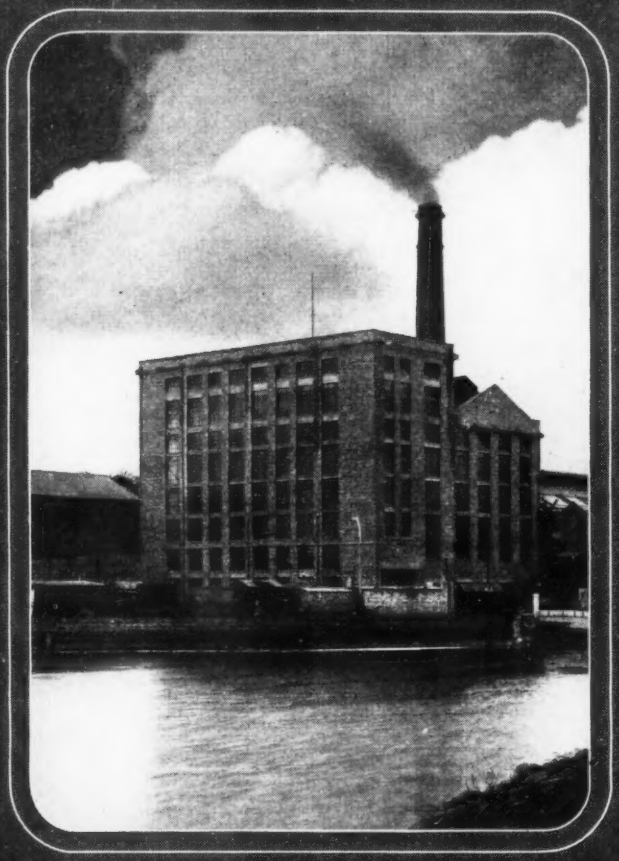
TEMCO Switches comply with B.S.S. 816 and are made to the same high standard of quality as all TEMCO Accessories. The quick-make-and-break underslung action is semi-positive and the spring contacts are self-adjusting. The base is of best quality porcelain, while the dolly and cover are moulded. The dolly has no metal insert. Supplied in surface, semi-recessed and flush patterns in brown on white, all brown, or all white finishes. Switch plates up to 4 gang in brown or white available for use with flush Switches. Complete Accessory Catalogue Series 2 available on request.

Manufactured by: TELEPHONE MANUFACTURING COMPANY LTD.
and Marketed by their Sales Organisation: T.M.C.-HARWELL (SALES) LTD.
37 UPPER BERKELEY STREET, LONDON, W.1. Tel: Paddington 1867-8-9



BEACON

ZINC SPRAYED FACTORY SASHES

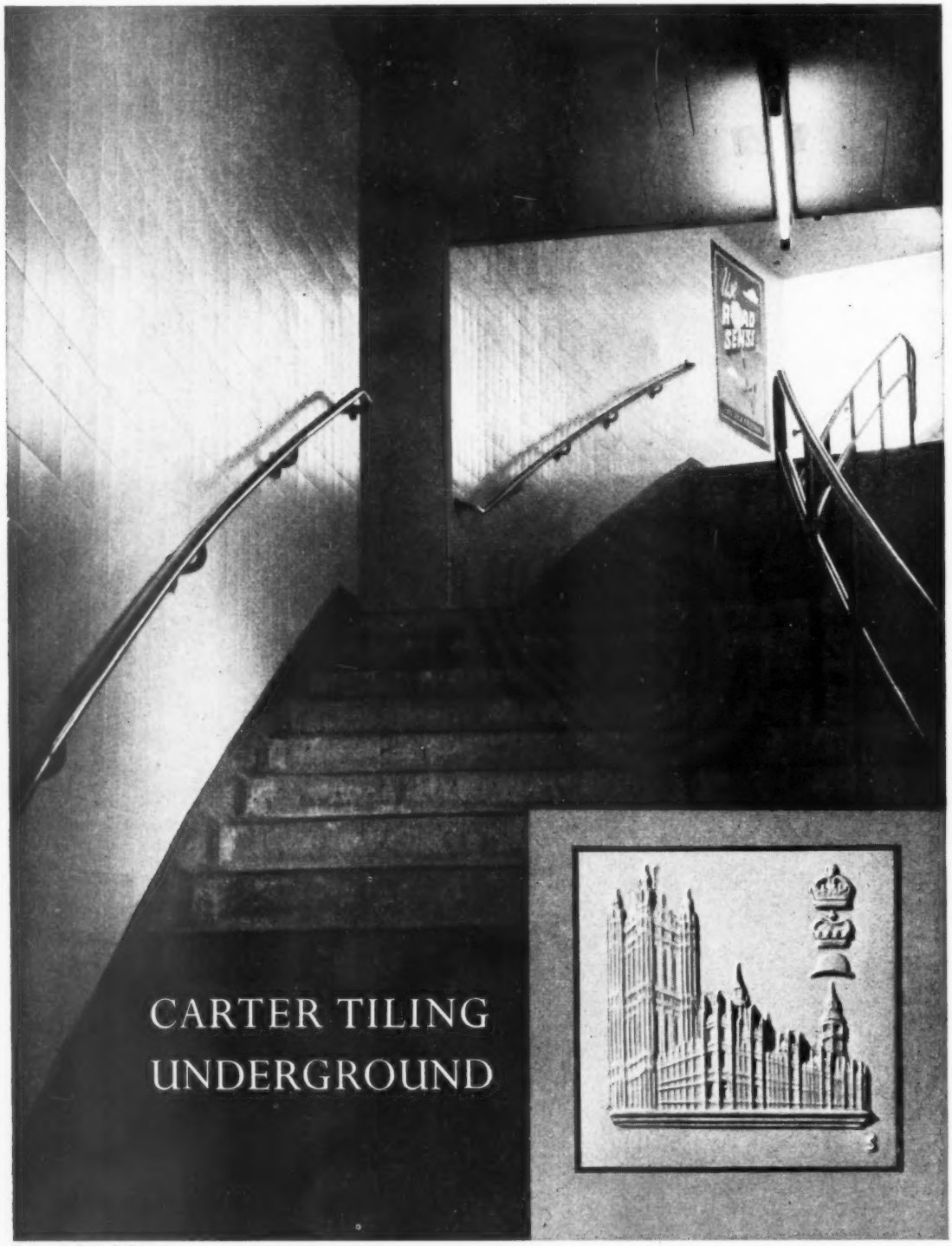


Installed at GUARD BRIDGE PAPER CO. LTD., SCOTLAND
Consultants and Civil Engineers; BLYTHE & BLYTHE, Edinburgh

JOHN THOMPSON BEACON WINDOWS
LIMITED

Ettingshall, Wolverhampton & Imperial House, Kingsway, London, W.C.2

Telephone: BILSTON 41121 *Telephone:* TEMPLE BAR 3216



Stairway—Perivale Station
Architects: F. F. Curtis, D.Ing., A.R.I.B.A. B. B. Lewis, M.A., B.Arch., F.R.I.B.A. Howard Cavanagh A.R.I.B.A. Contractors: Holliday & Greenwood Ltd.

There is no need to tell a Londoner how widely, or how successfully, glazed tiles have been used throughout his Underground system. The large photograph indicates the extent to which an otherwise depressing stairway can be made more cheerful and attractive by the characteristic texture of glazed tiles. The small inset shows an embossed tile, designed by Harold Stabler, used at St. John's Wood Underground Station. A very high percentage of the tiles used in the London Underground are made and fixed by Carter.

CARTER

CARTER & CO. LTD., POOLE, DORSET

For all contracting work: CARTER & CO., LONDON, LTD., 29 ALBERT EMBANKMENT, LONDON S.E.11

In character, manners, style, in all things, the supreme excellence is simplicity . . . in interior decoration this is most readily achieved by the use of Walpamur Quality Paints

BY APPOINTMENT PAINT AND WATER PAINT MANUFACTURERS TO H.M. THE KING

THE WALPAMUR COMPANY LTD · DARWEN AND LONDON

W108

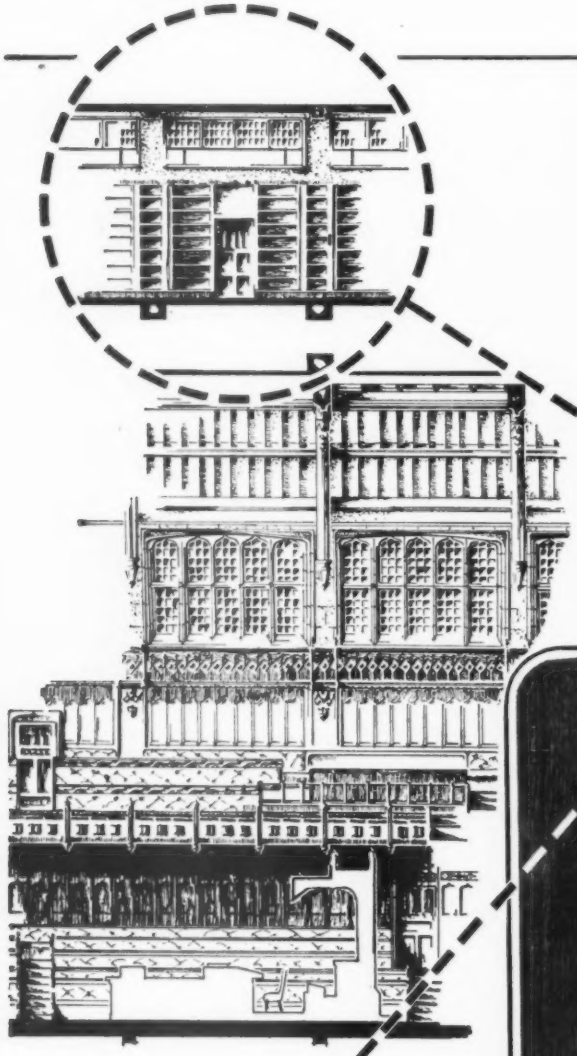
HOUSE OF COMMONS REBUILDING

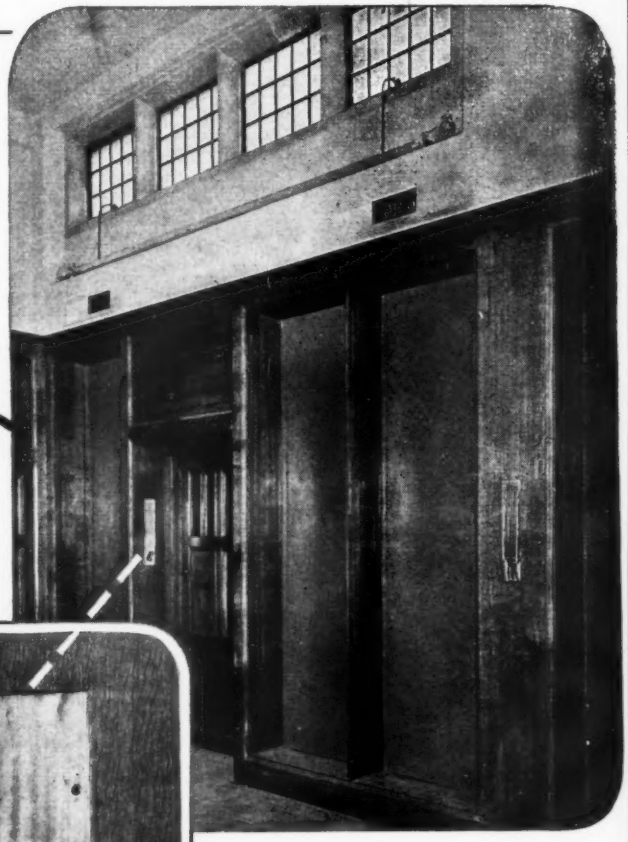
for the Ministry of Works

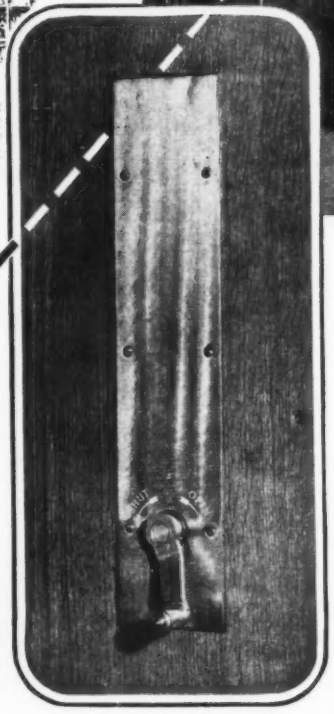
ARCHITECT: *Sir Giles Gilbert Scott, O.M., R.A.*

CONTRACTORS: *John Mowlem & Sons Ltd.*

CONSULTING ENGINEER: *Oscar Faber, O.B.E., M.Inst.C.E.*







ARENS

REGD TRADE MARK.

REMOTE CONTROLS

Covered by Patent

AN INSTALLATION OF ARENS WINDOW GEAR

ARENS CONTROLS LIMITED,
TUNSTALL ROAD,
EAST CROYDON, SURREY.

Telephone: Addiscombe 3051/4

Telegrams: Unicontrol, Phone, London

CELOTEX LOOKS BACK AT THE GREAT EXHIBITION 1851

Osler's Crystal Fountain

"The visitors to the Exhibition seem to have a special regard for this fountain . . . It became notable as a trysting place and as a landmark, by hovering near which, those who were lost or scattered from their friends among the human billows, might be found and restored to the anxious searchers" *(Tallis's Illustrated London, 1852)*. The Crystal Fountain consorted admirably with an age which glorified skill and inventiveness.

But its inventions did not include Celotex—and for a good reason. With house coal selling freely in London at 20/- per ton, or less, the architect of 1851 had less need to concern himself with those problems of thermal insulation which, in these later days, Celotex so effectively solves.

CELOTEX

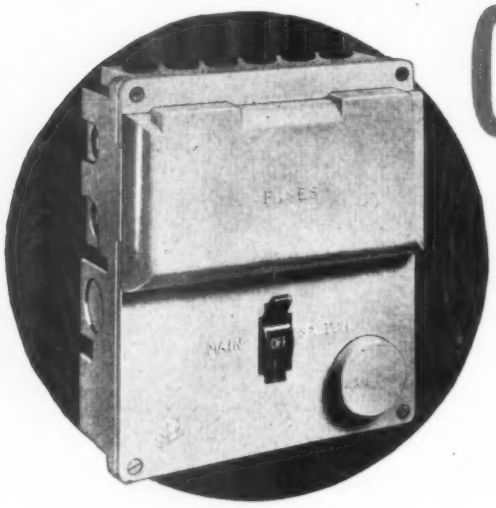
CELOTEX LIMITED, NORTH CIRCULAR ROAD, STONEBRIDGE PARK, LONDON, N.W.10

B.I. Callender's

INSULATED SWITCH AND FUSE CHAMBER

(British Patent No. 577848)

for Consumer's Services HAS THESE ADVANTAGES



EASY TO INSTALL Chassis-mounted components simplify installation. Ample cabling facilities are provided.

EXTRA SAFETY Insulating case encloses all live parts.

SIMPLE IN USE Safe, quick and easy fuse replacement.

Available in Cream, Black or Brown.

1 Snap-action fuse cover hinged at top.

2 Up to eight sub-circuits with fully-protected cartridge fuses, coloured to B.S. 1361 : 1947 ; arranged in any combination of 5-amp., 15-amp. and 30-amp. ratings.

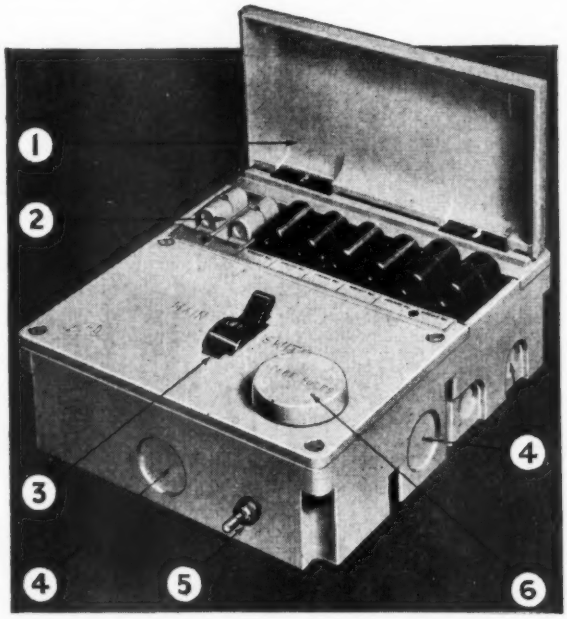
3 60-amp. double-pole main switch. Interchangeable chassis mounting allows alternative 2-switch arrangement with 1 - 60-amp. and 1 - 30-amp. double-pole switches.

4 Moulded knock-outs for cable entry in four sides and back.

5 Earth terminal.

6 Spare fuse-links.

For further information on Insulated Switch and Fuse Chambers write for Publication No. 290S.



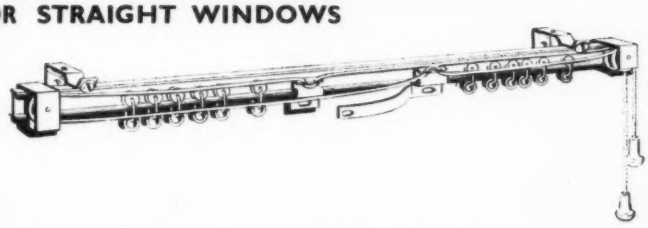
BRITISH INSULATED CALLENDER'S CABLES LIMITED
NORFOLK HOUSE, NORFOLK STREET, LONDON, W.C.2

Specify 'Rufflette' BRAND Runway

a complete and specialised range of curtain suspension systems

'RUFFLETTE' BRAND CORD-CONTROLLED RUNWAY FOR BAY WINDOWS

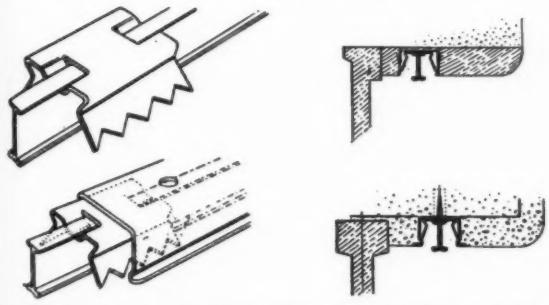
'RUFFLETTE' BRAND RUNWAY FOR STRAIGHT WINDOWS



★ For smooth and trouble-free operation specify 'Rufflette' brand cord-controlled Curtain Runway. It is recommended for use in large establishments, hotels, offices and residences where curtain can be controlled without handling. Available for bay as well as straight windows.

BAY WINDOW COMPONENTS

'RUFFLETTE' BRAND RECESSED (BUILT-IN) CURTAIN RUNWAY



'Rufflette' brand Recessed Curtain Runway is a permanent and integral part of building construction. It is inexpensive and can be fitted into wood or plastered lintels. The runway is held rigidly in position by a patent spring clip without screws and is a concealed and a permanent fitting.

FOR FULL SPECIFICATIONS PLEASE WRITE TO:

THOMAS FRENCH & SONS LTD., CHESTER ROAD, MANCHESTER 15

FACTORIES: Manchester, Wythenshawe, Fall River, Mass., U.S.A. *LONDON OFFICE*: 156-162 Oxford Street, W.1

Also at BRITISH EMPIRE BUILDING, NEW YORK CITY, *and* 75 VICTORIA SQUARE, MONTREAL

Forget that Neutraliser!

ASBESTOS CEMENT CAN BE PAINTED *Direct* WITH SPRAY OR BRUSH

TRETOLIN Paint can be applied to asbestos cement surfaces without previous neutralising or sealing treatment. Highly resistant to alkalis, Tretolin gives an attractive finish that is waterproof and extremely durable.

Available in many attractive colours.

SIX SPECIAL ROOFING SHADES FOR ONE COAT PAINTING

TRETOLIN PAINT

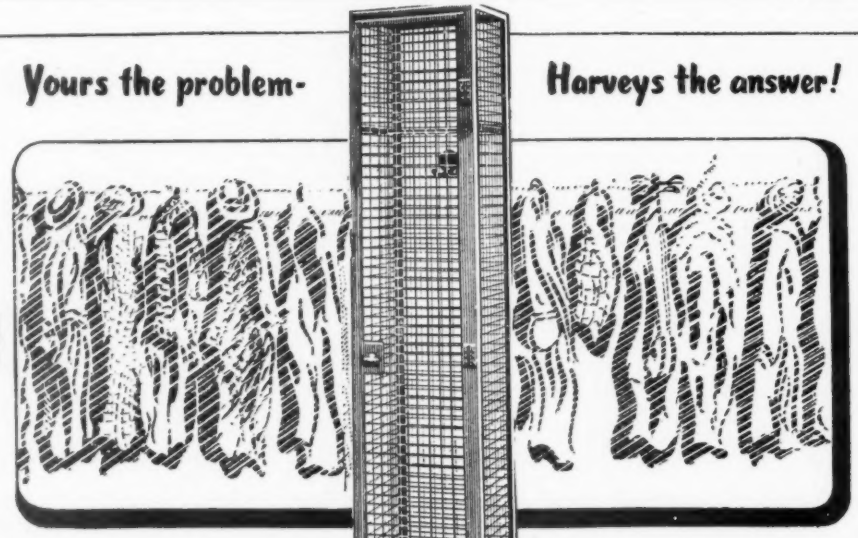
ACID & ALKALI RESISTANT
WATERPROOF · DURABLE

Write for our Illustrated Leaflet

TRETOL LIMITED, 12/14 NORTH END ROAD, LONDON, N.W.11 Tel.: SPEedwell 4621 (5 lines) WORKS: SLOUGH, BUCKS

Yours the problem- Harveys the answer!

"Harco"



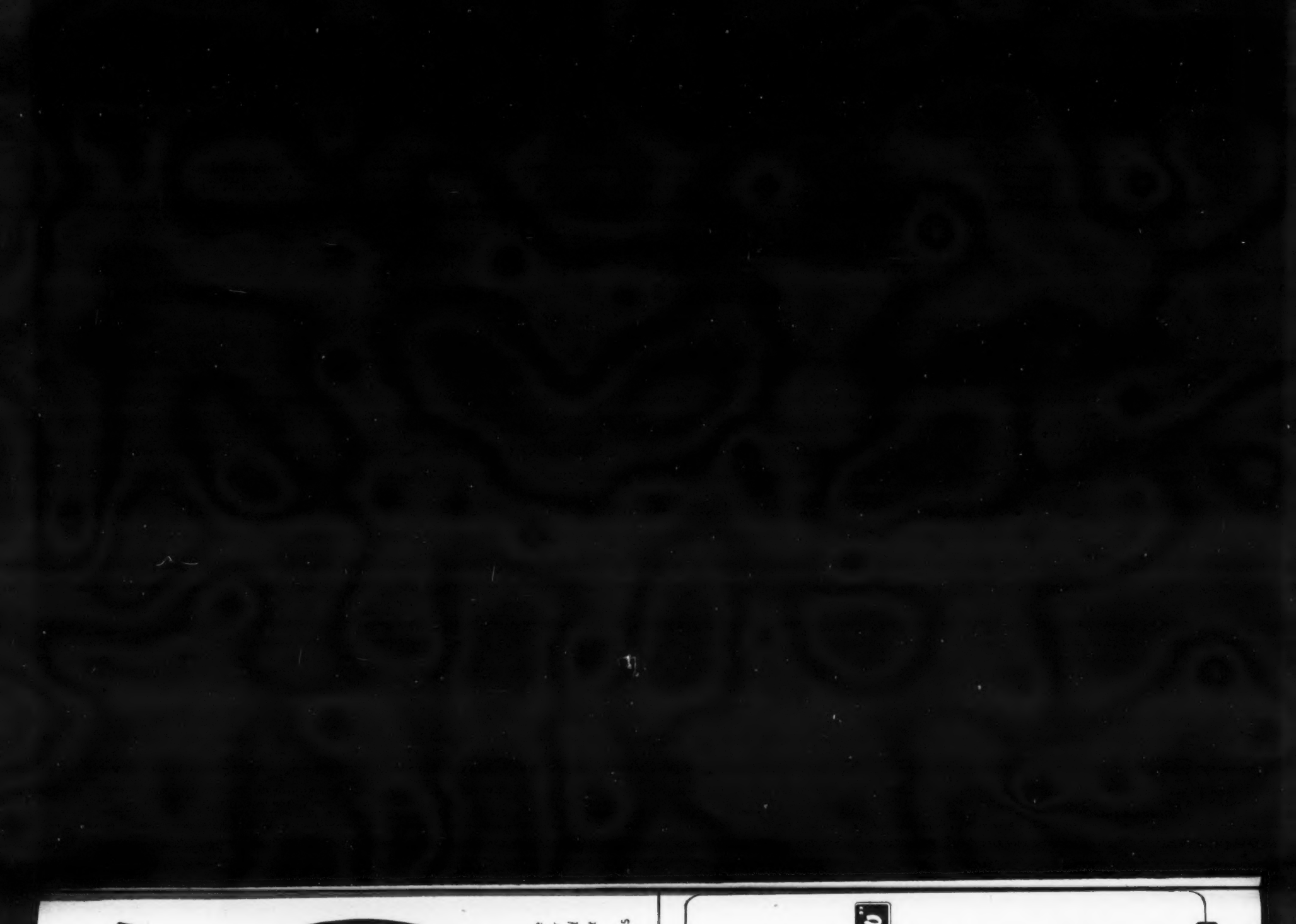
"Harco"

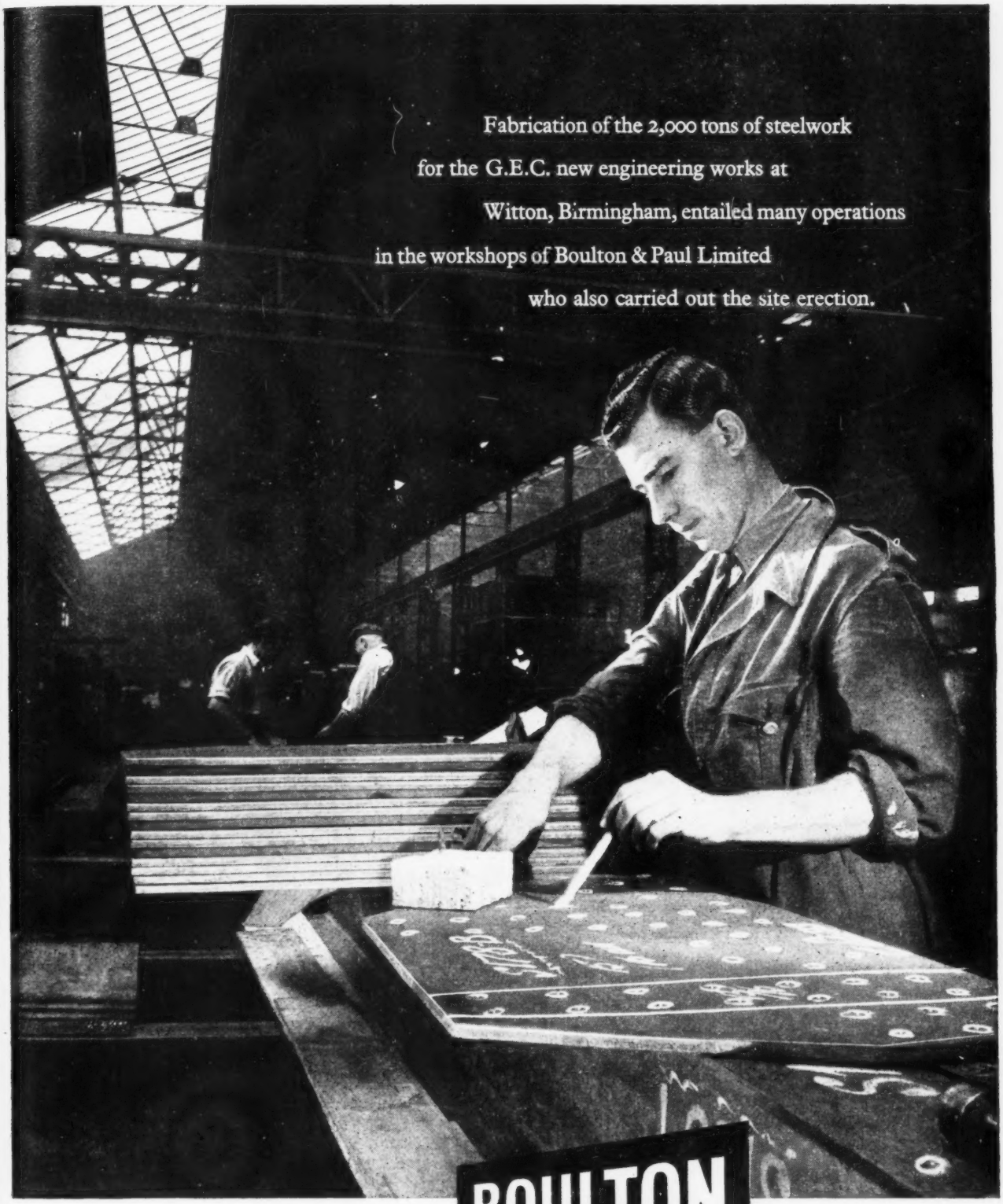
Whenever it is a question as to "Where to get" Wire Work of every description, and for all purposes—remember Harveys. Their "Harco" products are especially designed for use in Factories and Schools.

Amongst the many "Harco" products made, especial attention is drawn to Lockers, Cloakroom Fittings, Partitions, Lift Enclosures, Radiator and Pipe Covers, Machinery and Belt Guards.

Send for Catalogue . . . AI.725

G. A. Harvey & Co. (London) Ltd. Woolwich Road, London, S.E.7





when the structural steel is by

BOULTON AND PAUL

NORWICH LONDON BIRMINGHAM

IT'S A FIRST CLASS JOB

CRC 14 SE

BOLT down those new machines and get them working right away with Rawlbolts! Rawlbolts save time — no grouting-in — no waiting for cement to harden. Fix the switchgear — wiring — lighting — fire and canteen fittings and all similar equipment with Rawlplugs. Rawlplugs are the world's firmest and speediest screw fixings in brick, cement, concrete and all solid materials.

Use Rawlplug Fixing Devices where "speed is the essence of the contract"

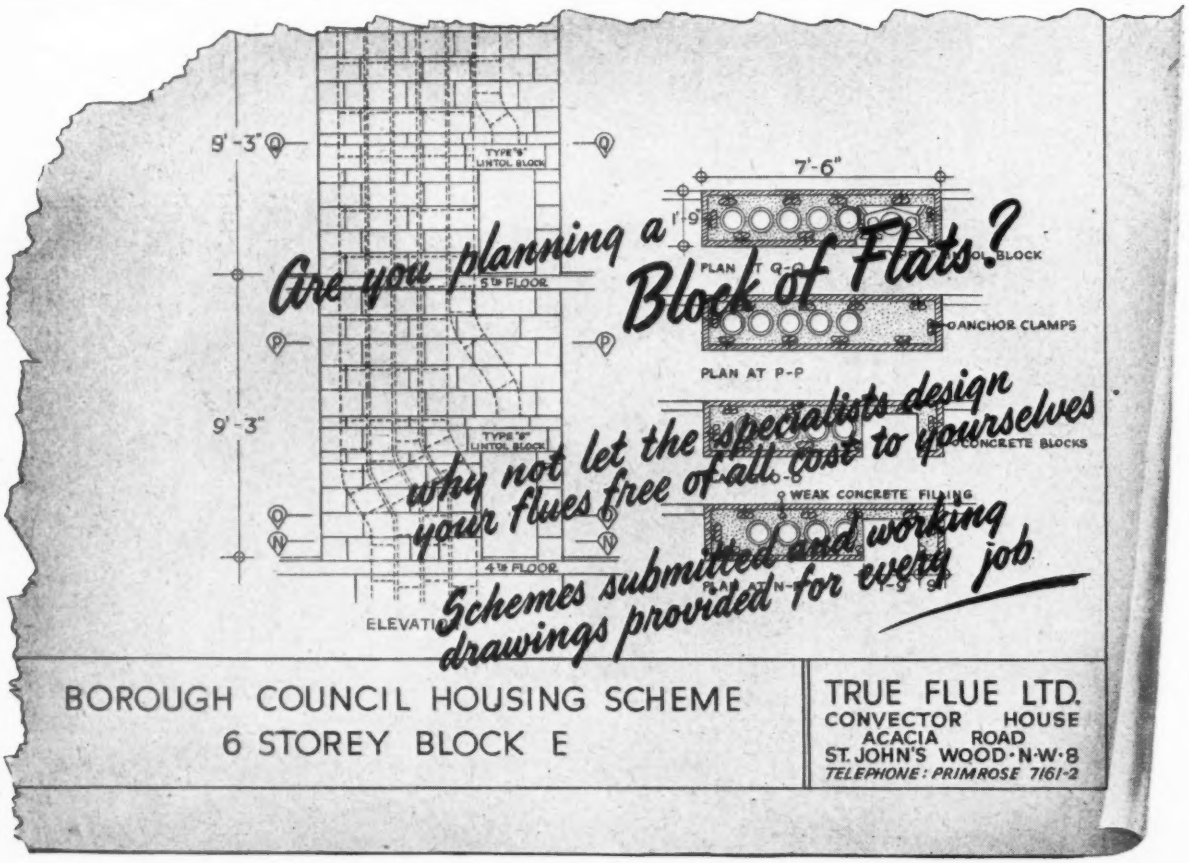
RAWLPLUG WALL PLUGS

FIXING DEVICES

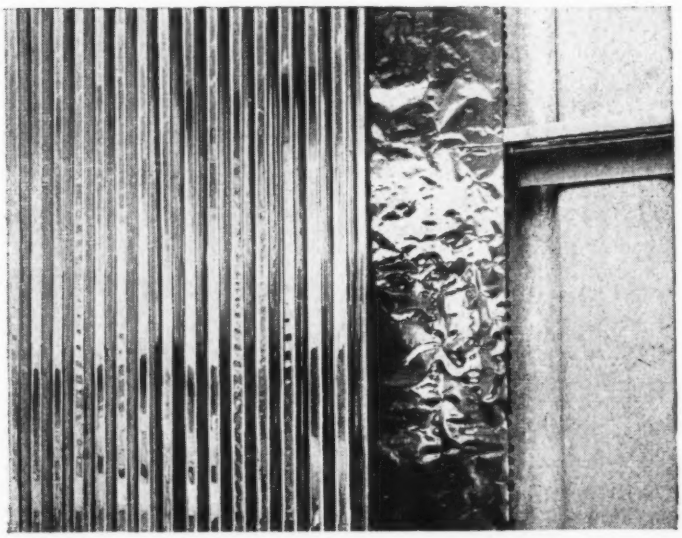
WRITE FOR TECHNICAL LITERATURE

B 395

THE RAWLPLUG COMPANY LIMITED · CROMWELL ROAD · LONDON · S.W.7



Efficient insulation can substantially reduce heating costs in all types of buildings and Rigidal Corrugated Aluminium Alloy Sheet used in conjunction with Ardor aluminium foil provides a most effective insulator. Above is shown the roof of a Royal Naval Air Station Hangar at Stretton, Lancs., which is lined with these materials. Being extremely light this insulation is easy to erect and reduces the number and size of supporting members. Details of use for roofing applications are obtainable from the Development and Technical Service Sections of The British Aluminium Company.



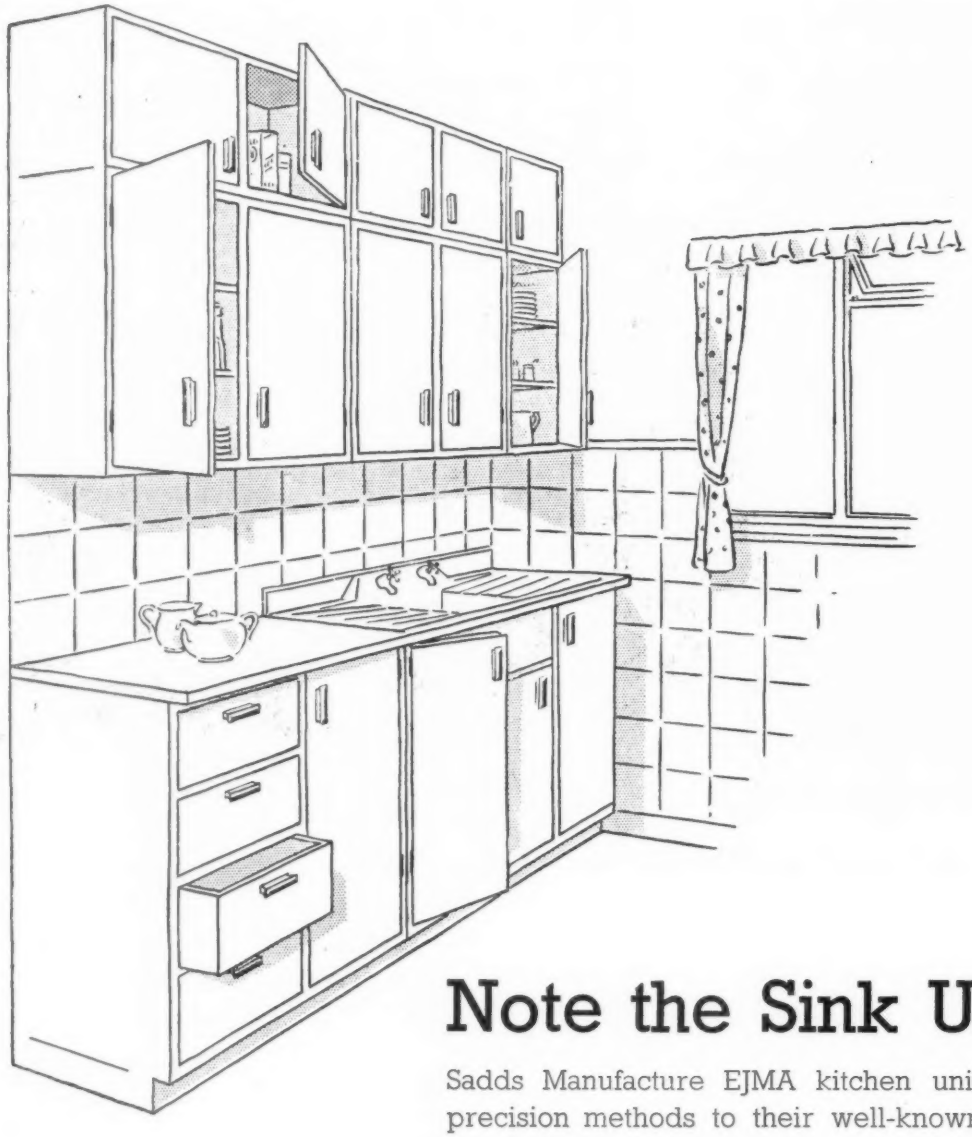
British Aluminium

THE BRITISH ALUMINIUM CO LTD
SALISBURY HOUSE LONDON EC2

Photo shows section of 26g Rigidal Corrugated Aluminium Sheet backed with Ardor aluminium foil.

Acknowledgement : *Rudders & Paynes Ltd., Chester St., Birmingham, 6.*
Main Contractors : *J. R. Ashall Ltd., Warrington*

138/576



Note the Sink Unit

Sadds Manufacture EJMA kitchen units, by precision methods to their well-known high standard of quality.

The practical sink unit illustrated above is a supplement to the standard range of twenty different Kitchen Units.

Sink Units

A. For stainless steel sink with two draining boards: Height 3 ft. 0 ins. Width 5 ft. 3 ins. Depth 1 ft. 7 ins.

B. For stainless steel sink with single draining board (right or left hand). Height 3 ft. 0 ins. Width 3 ft. 6 ins. Depth 1 ft. 7 ins.

EJMA is the certification trade mark of the English Joinery Manufacturers' Association

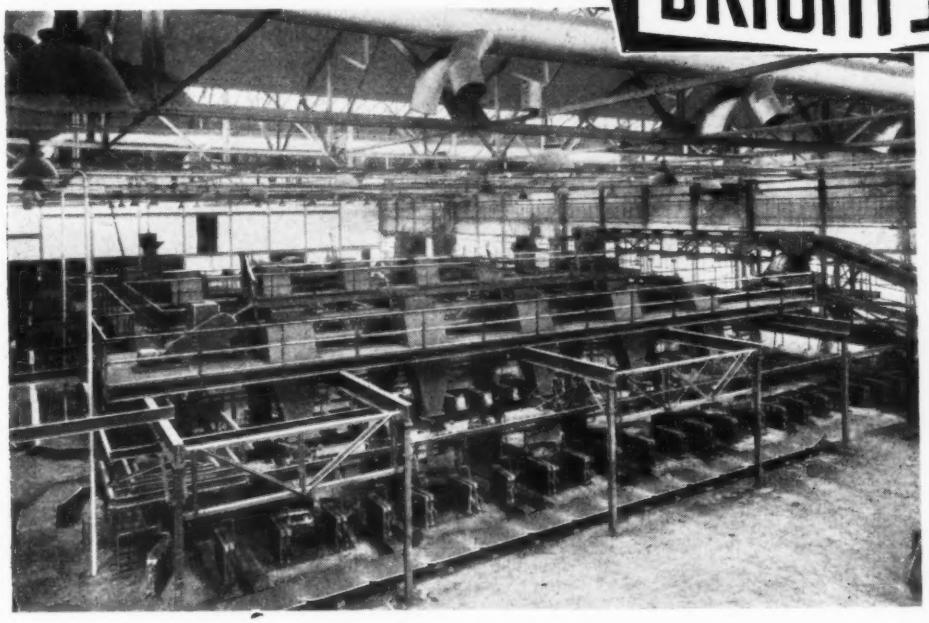
JOHN SADD & SONS LTD.

DOORS, WINDOWS, STAIRCASES, JOINERY
FOR AIREY AND OTHER STANDARD HOUSES

MALDON MALDON 131 (6 lines) ESSEX

London Office: ALDWYCH HOUSE, W.C.2. Chancery 7214

Plenum heating by BRIGHTSIDE



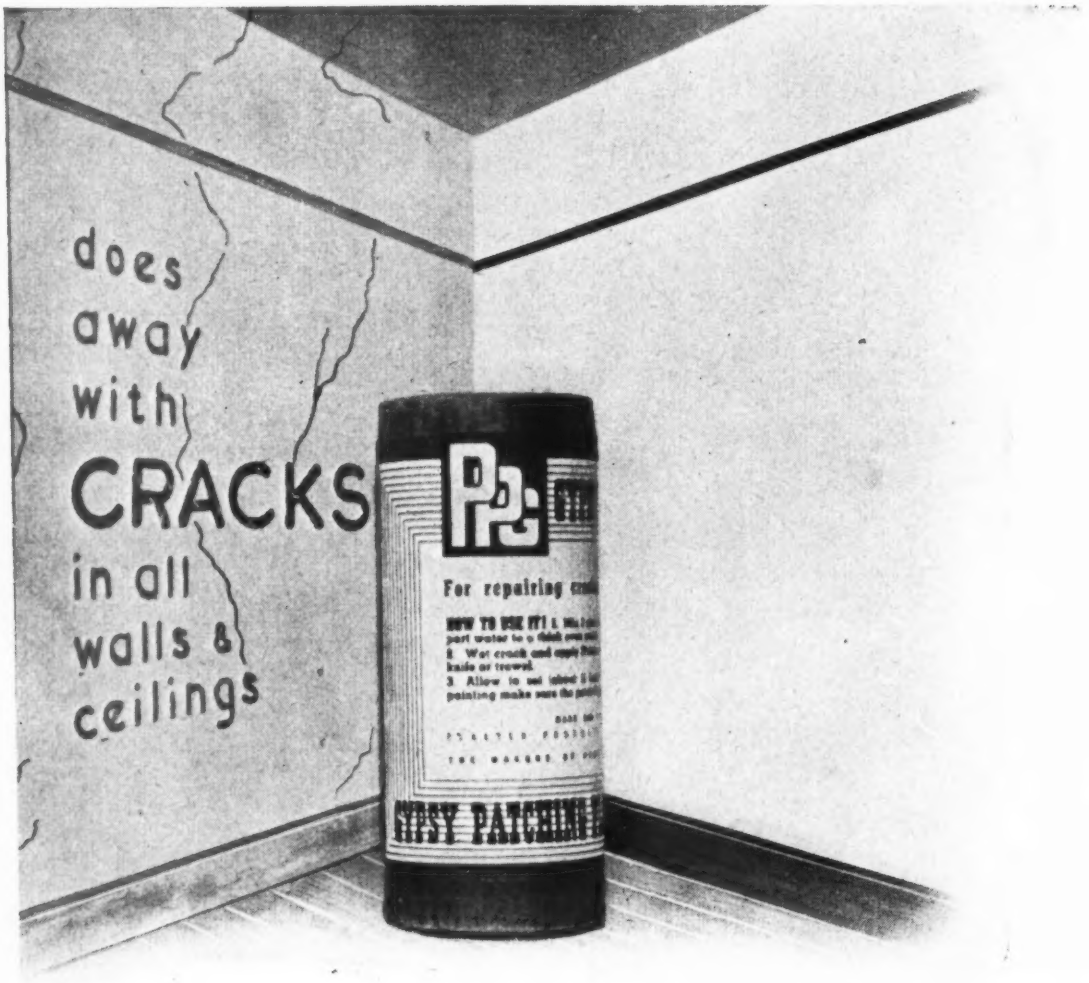
Brightside Plenum Heating in a modern mechanised foundry ; the vitiated air is extracted and replaced by warm clean air. The smaller illustration shows a plenum installation in a machine shop.

Where ventilation is a dominant consideration, it is often most economical to combine ventilation with heating in a common system of Plenum Heating. The flow of air into the rooms is controlled both as to quantity and temperature ; in some cases partial re-circulation is permissible. Such installations are well adapted to buildings with high-density occupancy.

THE BRIGHTSIDE FOUNDRY & ENGINEERING CO. LTD. SHEFFIELD

and at BIRMINGHAM BRISTOL LIVERPOOL LONDON MANCHESTER
NEWCASTLE PORTSMOUTH EDINBURGH GLASGOW BELFAST

BP 24



A **NEW** product for the purpose shown, but **BETTER** and **CHEAPER**

for the **HANDYMAN** and **SMALL JOB.** 1 lb. pack 1/1d. ; 5 lb. pack 4/3d., from your local stockists.

for **LARGE MAINTENANCE CONTRACTS** 1 cwt paper sack 45/6d. from our factory to your contract through your stockist.

Already specified and used on many large municipal maintenance contracts.

In case of difficulty in obtaining supplies locally write to the sole manufacturers.

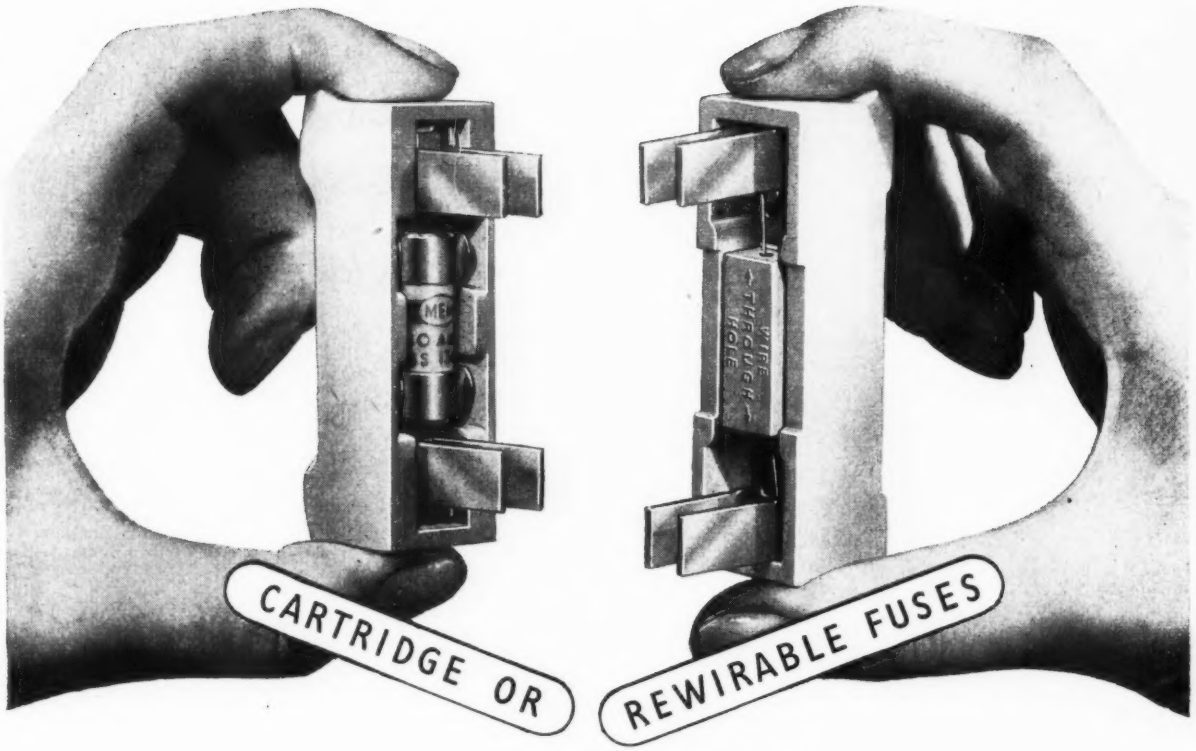
PLASTER PRODUCTS [GREENHITHE] LIMITED

THE MAKERS OF PLASTERBOARD

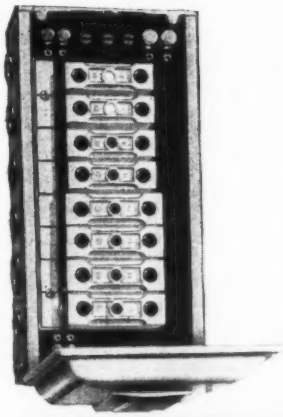
GREENHITHE, KENT

GREENHITHE 138-140

C 7 7 /2/51

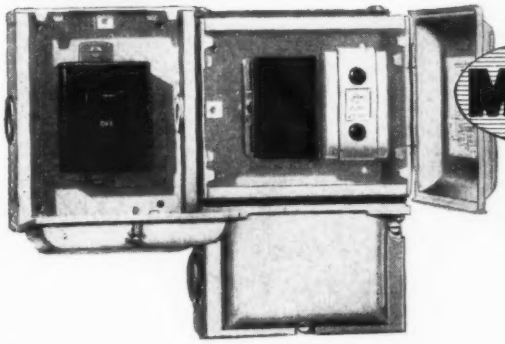


TAKE YOUR CHOICE



WITH MEMERA

You can choose either cartridge or rewirable fuse types with 'Memera'. And you can choose from a wide range of different fuse combinations—there are 'Memera' consumers' control units to suit every house and flat. Modern and compact in design, they simplify installation and wiring extensions. You'll like the price, too—factory efficiency at MEM makes high quality possible at moderate cost.



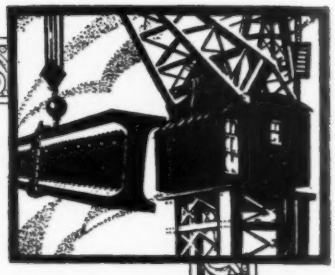
MEM

Switch, fuse and motor control gear, electric fires and localised lighting equipment

Send for folder No. 308 for full information on 'Memera' metalclad units, composite units and wood-cased units.

MIDLAND ELECTRIC MANUFACTURING CO. LTD., BIRMINGHAM 11

Branches in London and Manchester



FOR USE ON IRON AND STEEL WORK-WILL ARREST AND PREVENT FORMATION OF RUST-COVERS WELL AND LASTS A LIFETIME

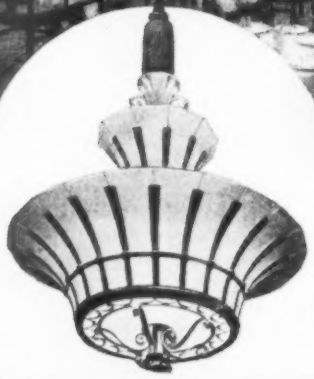
ANTI-RUGINE

A METALLIC PAINT READY FOR USE

FURTHER PARTICULARS AND SAMPLES ON APPLICATION TO THE SOLE MAKERS

Charles Turner

& SON LTD.
165, HIGH HOLBORN,
LONDON, W.C.1
Telephone: TEMPLE BAR 7651



Piccadilly Hotel—Louis XVI Dining Room. Illuminated by Ediswan Harcourt specially designed 12-light 2-tier pendant fittings glazed with coloured Dewdrop glass.

Efficient and Beautiful Lighting

Classical, period and modern designs available for home and commercial use.
WRITE FOR COMPLETE LIST No. HL. 1476
Fittings made to architect's specifications.

EDISWAN

HARCOURT

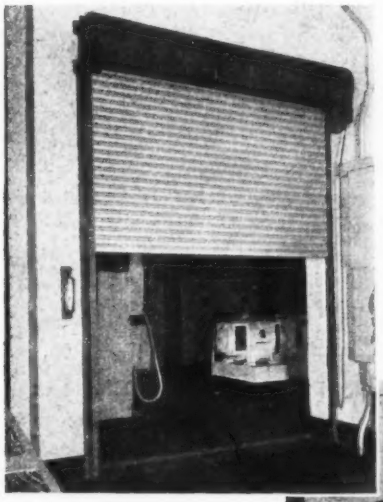
LIGHTING FITTINGS

THE EDISON SWAN ELECTRIC CO. LTD., 155 Charing Cross Road, London, W.C.2
Member of the A.E.I. Group of Companies

HL126

PATENT STEEL ROLLING KINNEAR SHUTTERS

Registered KINNEAR Trade Mark

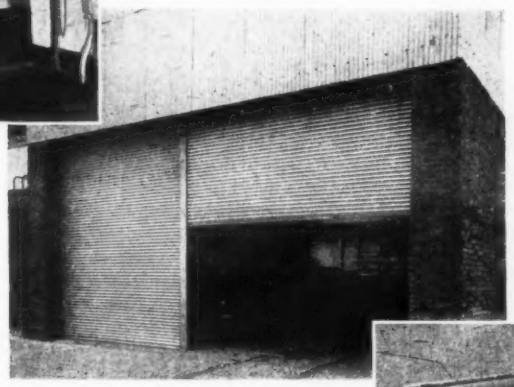


No. 17B. Sub-Station.
This Shutter erected 1946.

NORTHERN ALUMINIUM CO., LTD.

Rogerstone, Newport, Mon.

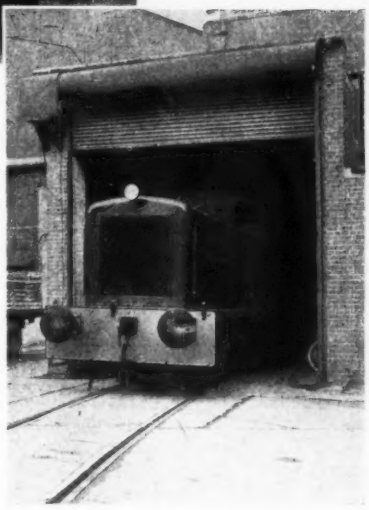
Architect : Gilbert T. Gardner, Esq., Oxford.
Contractors : Messrs. Hinkins & Frewin, Ltd., Oxford.



These Shutters erected 1942.

Illustrating 4 of the 22 Kinnear Shutters, in Steel and Aluminium, in use at these Works.

Loading Bay 15' 3" high by 27' 5" wide fitted with 2 Kinnear Shutters and traversing intermediate guide; when shutters are raised and guide moved along its top track to side of opening, its entire width is made available without obstruction of any kind.



Sheet Mill Dept., East Works.
This Shutter erected 1938.

"Rolling Shutters" is a term indicative of class, not quality, but the word "Kinnear" prefixed gives added significance and carries with it the assurance of superior service.

Head Office:
Radnor Works - Twickenham.
Telegrams: "Shannies Twickenham"
Telephone: Popesgrove 2276

Sole Manufacturers:

ARTHUR L. GIBSON & Co LTD

Branch Offices:- Birmingham: 136, Yarningale Road Highbury 2804 Manchester: 90 Deansgate Blackfriars 3138 Glasgow: Lister Road, Hillington Halfway 2928

Another VOLEX installation . . .

Reproduced by courtesy of Messrs. F. Perkins Ltd., of Peterborough

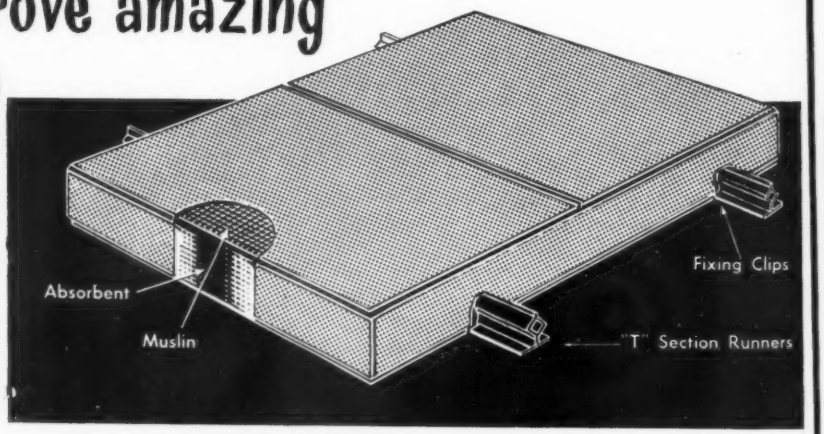
The VOLEX WARM AIR SYSTEM

is recognised as the most efficient and economical system of Heating and Ventilation for Schools, Clinics, Churches, Shops, Offices, Factories, Workshops and all buildings where a pleasant equable atmosphere — essential to health and efficiency — is required. It maintains an even temperature and draughtless ventilation all the year round, and the air in the building can be changed as often as desired according to the processes carried on. The heaters are made either for gas-firing, hand-firing, worm feed stokers or oil-firing.

Ventilate as you heat

Sole Makers: T. E. SALTER LIMITED TIPTON STAFFS. *Telephone:* TIPTON 1657/1658

N.P.L Tests prove amazing efficiency of (New) Acoustic Tiles



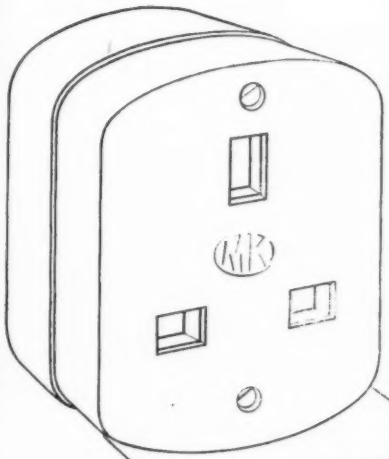
Soundpro ofing takes a new step forward ! Burgess have pr oduced—and the National Physical Laboratory have tested (Report Ref. 1015 of 12th June 1950) an Acoustic Ceiling Tile with an exceptionally high sound absorption coefficient. (see N.P.L. chart under diagram). Construction—a specially perforated metal tray, size 24in. by 12in. by 1⅛in., fitted with clips containing a non-inflammable, non-hygroscopic, sound absorbent pad. The clips make for rapid and easy attachment to the specially shaped tee bar runner. The Tiles are stove enamelled which gives this treatment an exceptionally uniform and neat appearance.

REVERBERATION ABSORPTION COEFFICIENTS TO NEAREST 0·05

Frequency c.p.s.	125	250	500	1000	2000	4000	6000	8000
"A" 3/32in. dia. hole.	0.15	0.50	0.75	0.80	0.75	0.75	0.75	0.75
"B" 1/8in. dia. hole.	0.15	0.45	0.70	0.75	0.80	0.85	0.85	0.85

HEAD OFFICE & WORKS
HINCKLEY · LEICESTERSHIRE
LONDON OFFICE
72 HORSEFERRY ROAD, WESTMINSTER, S.W.1

BURGESS
PRODUCTS COMPANY LIMITED



List No. 727

NOW — M.K. 13 amp Switchsocket-outlets

List No. 2959

From the makers of Britain's best switchsockets comes a new range in the old tradition. These 13 ampere units with fused-plugs to B.S. 1363 : 1947 incorporate all the well-known M.K. features.

- ★ Self-adjusting spring-grip socket contacts.
- ★ Original M.K. "Anti-Flash" shutters.
- ★ Non-track heavy section mouldings of Urea.
- ★ Slow break high-efficiency switches conforming with the tests of B.S. 1299: 1946.
- ★ Pure silver contacts.
- ★ Silent operation.
- ★ Good proportions and compact dimensions.

Also in this range :—

List No. 2957 — 13 amp. Flush all-insulated switchsocket to fit B.S. 1299 Boxes.

List No. 2977 — 13 amp. Surface metalclad switchsocket in drawn steel seamless box.

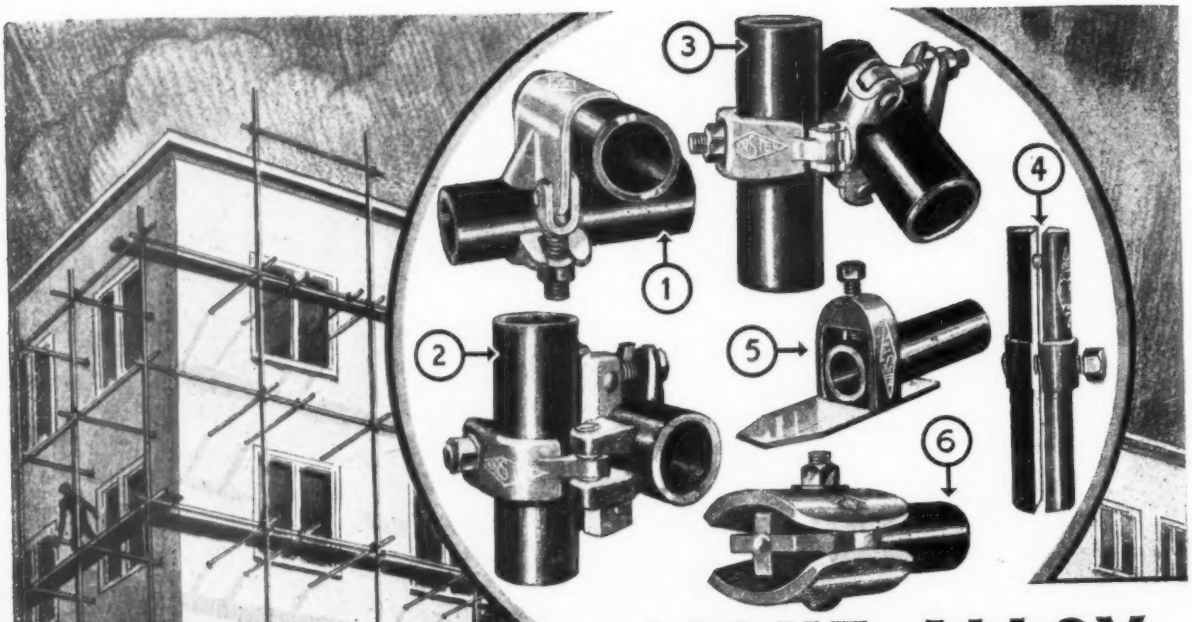
M.K. ELECTRIC LIMITED

WAKEFIELD STREET, EDMONTON, LONDON, N.18

Telephone : Tottenham 5151 (6 lines) *Telegrams* : Multiconta, Southtot, London

M.K. REGD

A.38



LIGHT ALLOY SCAFFOLDING

For safety, strength, stability and speed of erection, there is nothing to touch this light alloy tubular scaffolding. It is easy to handle, corrosion resisting and strong as strict metallurgical control can make it; and each fitting is scientifically designed for its especial purpose by experts with many years' practical experience of the problems involved.

For your next contract make certain you use light alloy scaffolding.

The fittings illustrated above are available in light alloy or steel and comprise

1. Putlog Coupler
2. Titan Double Coupler
3. Swivel Coupler
4. Expanding Joint Pin
5. Putlog Head
6. Combination Joint Coupler

Write for further information and for details of the T.W.W. SALE or HIRE arrangements.

ANOTHER ASPECT OF TWW SERVICE

Selling Agents

THOS W. WARD LTD.

ALBION WORKS · SHEFFIELD

London Office: BRETTENHAM HOUSE, LANCASTER PLACE, STRAND, W.C.2

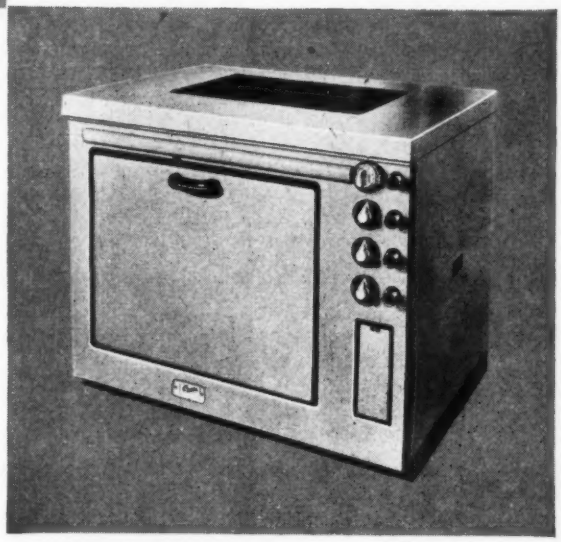
BT/9

Chef range — Chef-d'œuvre

Canteen Kitchen Stoke Newington Borough Council

'A chef-d'œuvre, a masterpiece'— that strikes us as a perfectly fair description of the Creda Chef Range. But of course we're biased. Anyhow, here you see Creda Chef Ranges as a multiple unit—a good plan when they are used in the large hotels or restaurants for which they are so well suited

Other good points are the accessibility of everything—pilot light, boiling plate and element fuses are all easily replaced from the front, for example. And then there's the one and only Creda well-sprung drop-down door; thermostatic control; and the tough Creda construction



HC 2407 CREDA CHEF RANGE

- **4 Boiling plates per range**
- **Oven 19″ H x 26″ W x 27″ D**
- **Silver-grey mottled V.E.**
- **Recessed plinth**
- **All elements and boiling plates interchangeable**

Catalogue No. HC2407 *Delivery ex stock*

Did you know about our Kitchen Planning and Installation Service? Some of the finest kitchens in the country are designed by this team. We shall be glad to tell you more if you write to

reduce overheads and labour costs with Creda

heavy duty cooking equipment

made by the house of Simplex

Simplex Electric Co Ltd Oldbury Birmingham & Branches (Electrical engineers for over 50 years) A TI COMPANY

Copper was well in the industrial picture in 1851. Tons of Copper were used in the G.W.R. express locomotive shown at the Great Exhibition.

COPPER IN THE PICTURE

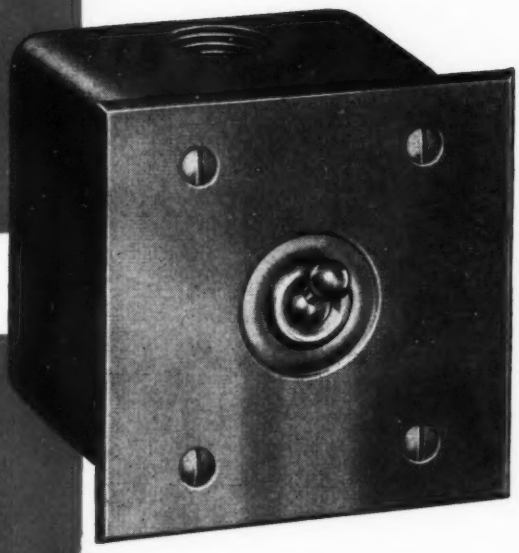
Copper has always been in the forefront of the industrial picture. And now, in these times of raw material shortages, it is more than ever important to ensure the most efficient use of copper and its large family of alloys. The Copper Development Association, a non-trading organisation, backed by the full resources of the British copper industry, exists solely to help copper to help you. A sound opinion on everything that copper can or cannot do is obtainable without charge or obligation simply by asking the C.D.A.

THE COPPER DEVELOPMENT ASSOCIATION

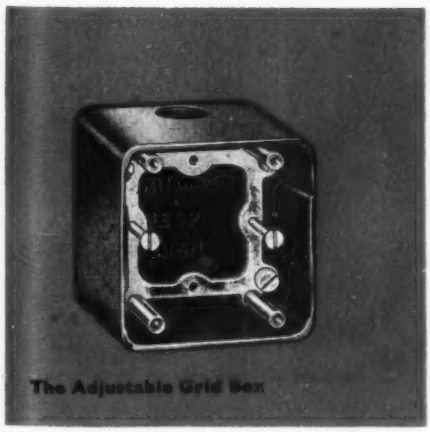
KENDALS HALL · RADLETT HERTS · RADLETT 5616

5 amp. & 15 amp. flush switch units

The Switch Plate



The Switch



The Adjustable Grid Box

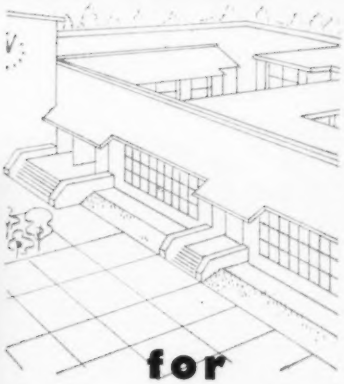
The switch unit illustrated, assembled from standard components, is particularly suitable for electrical installation in schools, technical colleges, hospitals and other public buildings. Strength, safety and efficient operation over long periods are the important characteristics and large quantities have been supplied during recent months . . . from single units up to 48 gang assemblies.

THE SWITCH PLATE: Incorporates the cuttered-hole and four corner screws, dispensing with the need for a switch ring. For added safety, corner screws of a 'secret' pattern can be supplied.

THE SWITCH: This is the well-known 'Silomac,' for use on A.C. current only and, as the name implies, is silent in operation.

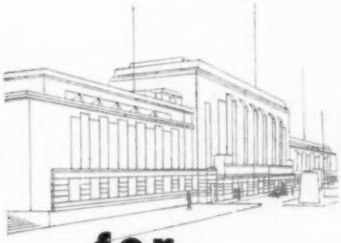
THE GRID BOX: Rigidly constructed and designed to give a wide margin of adjustment and the maximum space for wiring.

This flush switch unit is a worthy criterion of all BRITMAC products. A large number of County Architects and Local Authorities are already specifying BRITMAC ELECTRICAL ACCESSORIES by name and thereby ensuring the highest standard of quality and perfection of finish throughout the building.



for schools

for hospitals



for public buildings

BRITMAC

BRITMAC ELECTRICAL CO. LTD.

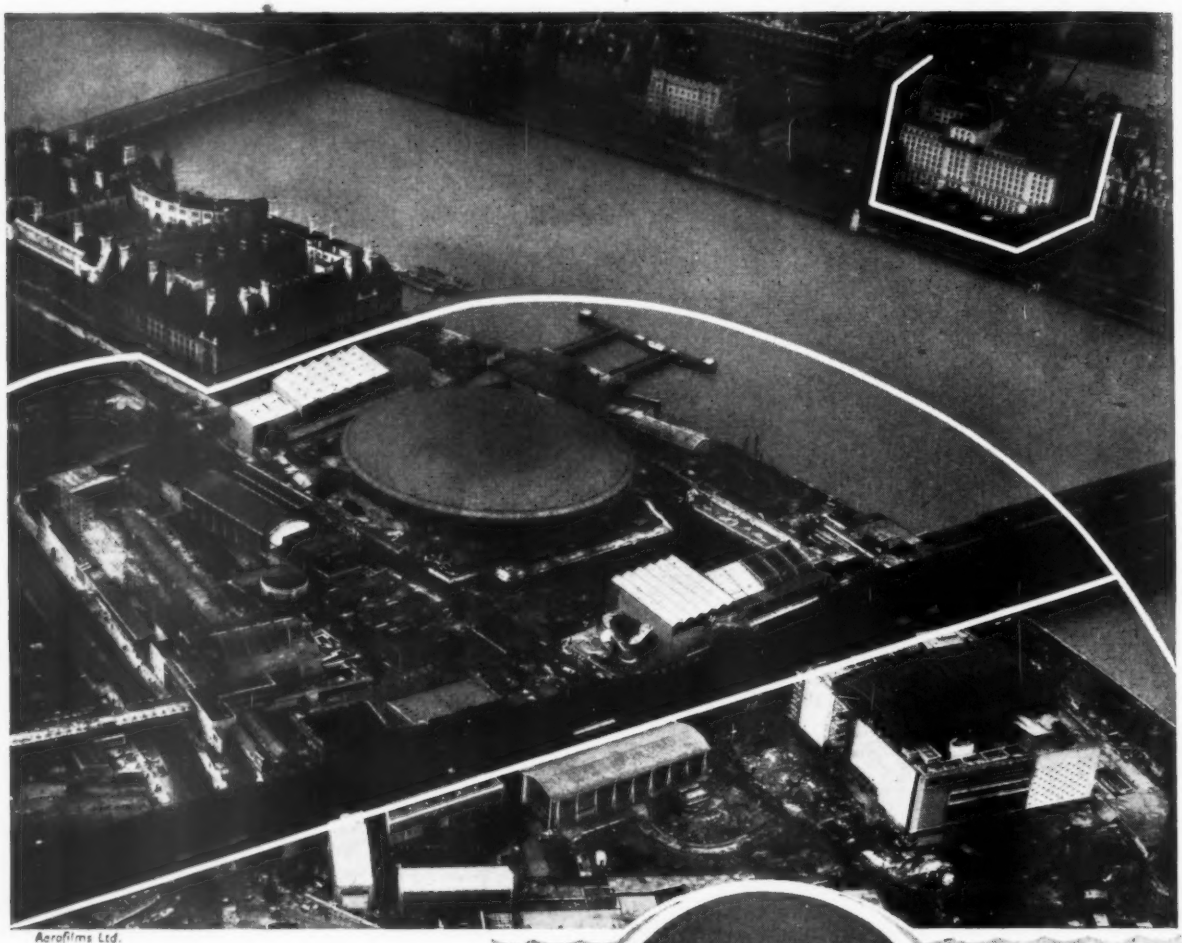
SALES ORGANISATION OF C. H. PARSONS LTD

HEAD OFFICE · BRITANNIA WORKS · WHARFDALE ROAD · TYSELEY · BIRMINGHAM · 11

Telephone: ACOCKS GREEN 1191 (3 lines) · Telegrams: "BRITMAC, BIRMINGHAM"

London Office: 121, VICTORIA ST., LONDON, S.W.1. Telephone: VICTORIA 9778/9

Glasgow Offices: 247a, ST. VINCENT ST. & 93, DOUGLAS ST., GLASGOW, C.2. Telephone: CENTRAL 3445/6



Aerofilms Ltd.

New Government Offices at Whitehall Gardens and the L.C.C. South Bank Reconstruction Scheme for the 1951 Exhibition, are two of the many important contracts now being carried out.

Building & Civil Engineering Contractors

Richard

COSTAIN

Limited

LONDON S.W.1. VICTORIA 6624

We Say it in Paint

Our century-old history is a story of unending research and analysis, of continuous progress in painting materials. We tell it in the paint itself—and to us NINE ELMS PURE WHITE LEAD PAINT is more eloquent than a thousand words. This famous Farmiloe product is made to a guaranteed formula from genuine White Lead, finely ground and scientifically blended with Refined Linseed Oil and the best Liquid Driers and Thinners. With the addition of pigment it is also available in a variety of pastel colours. NINE ELMS is supreme outdoors and protects as no other paint can. Its constant use by professional decorators is the finest tribute to the Farmiloe tradition of quality.

NINE ELMS PURE PAINT

A TRADE MARK AS NINE ELMS TRADE MARK BRAND GOOD AS A BOND

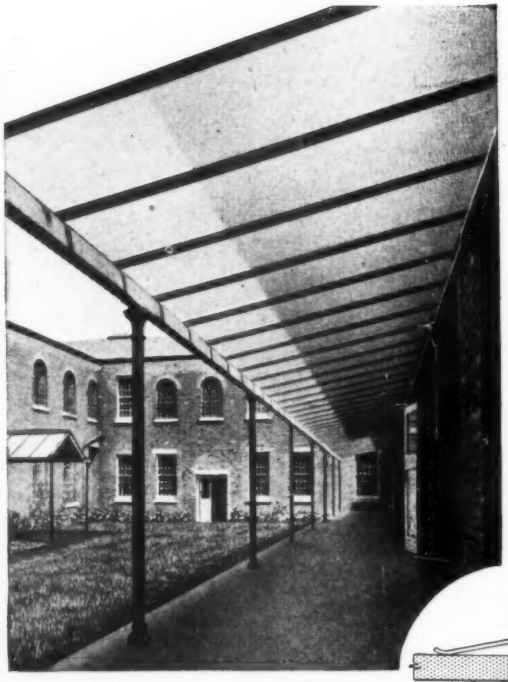
CONFORMS TO BRITISH STANDARD SPECIFICATION No. 261 WHITE No. 262 TINTED

T. & W. FARMILOE LIMITED, ROCHESTER ROW, WESTMINSTER, LONDON, S.W.1. 'Phone: VIC. 4480

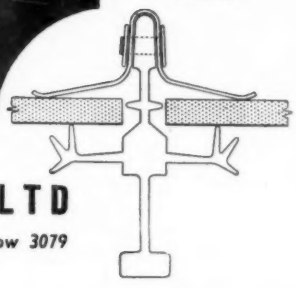
Glass roofing

BY SPECIALISTS

For nearly half a century The Standard Patent Glazing Co. Ltd. have designed, made and fixed glass roofing renowned for its durability, strength and maximum natural light.
In your own interests consult "STANDARD" the specialists for every type of trouble-free roof glazing.



"STALUMIN" CRUCIFORM SECTION



MODERN — NEAT — EFFICIENT — DURABLE

THE STANDARD PATENT GLAZING CO. LTD

WORKS: DEWSBURY Phone: 1213-4 LONDON OFFICE Phone: HOUnslow 3079
Branches at BIRMINGHAM and BRISTOL

HARDWEARING

FLOORINGS

IN
COLOURED ASPHALT
OR
DECORATIVE TILES

THE
LIMMER & TRINIDAD
LAKE ASPHALT CO., LTD.
STEEL HOUSE, TOTHILL ST., WESTMINSTER, LONDON, S.W.1
TELEPHONE: WHITEHALL 6776

How to Save Fuel

There is no doubt that fuel is going to remain scarce and expensive for a long time to come. Yet the amount required to warm a building can be drastically reduced, by a method which involves an initial outlay only, with no maintenance charges.

the answer is INSULATION —the TENTEST way

We are continually demonstrating the value of insulating structures by means of lining with Insulating Board, using our Specialised Construction methods. By thus increasing the Thermal Resistance of the building, you can make fuel go very much further, and if the TenTesT Fibre Board Company carries out the work, you are sure of a sound job by the ORIGINATORS of this type of fixing. Before the war we were advertising the savings to be obtained by lining, and if they were worth while then, how much more so are they now!

THERE IS A SPECIALISED CONSTRUCTION METHOD TO SUIT YOUR JOB. MAY WE ARRANGE FOR OUR REPRESENTATIVE TO CALL?

**Our book "Structural Insulation" is a mine of information on this vital subject. We shall be glad to send you a free copy on application.*

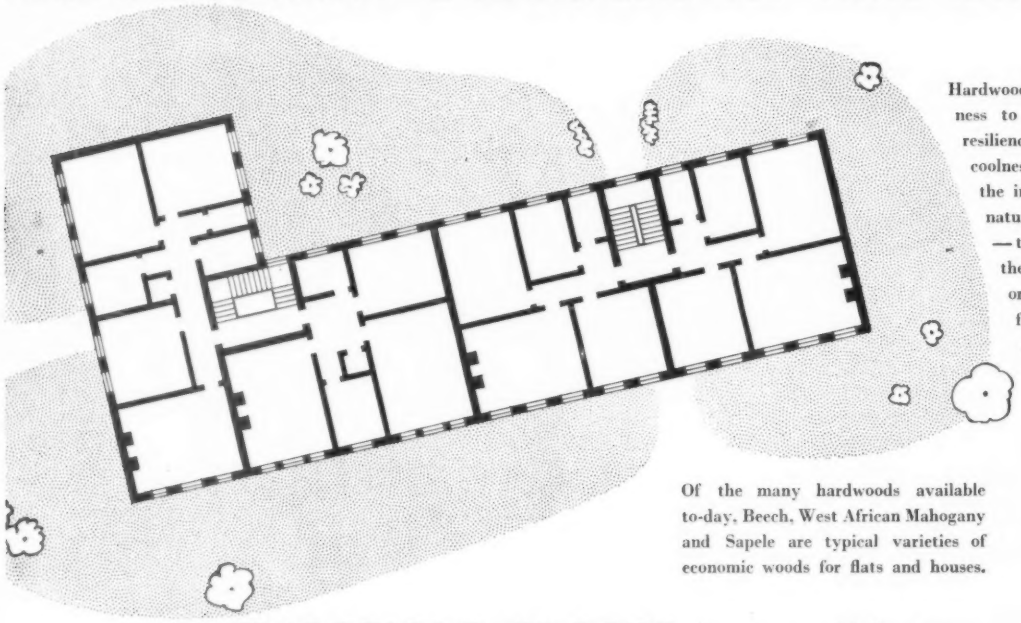
TENTEST TRADE MARK
Made in Canada

TENTEST FIBRE BOARD CO., LIMITED

SPECIALISED CONSTRUCTION DEPARTMENT, 75, Crescent West, Hadley Wood, Barnet, Herts.

Telephone: BARnet 5501 (5 lines). Telegrams: Fiboard, Norphone, London.

HARDWOOD FLOORS *for flats and houses*



Hardwoods have many virtues. Kindness to the feet because of their resilience, their warmth in winter and coolness in summer. Character—the incomparable beauty of their natural grain and colour. Economy—they last a lifetime, whilst their comfort and charm reduces or saves altogether the need for covering materials. And, remember, hardwoods are free from control.

Of the many hardwoods available to-day, Beech, West African Mahogany and Sapele are typical varieties of economic woods for flats and houses.

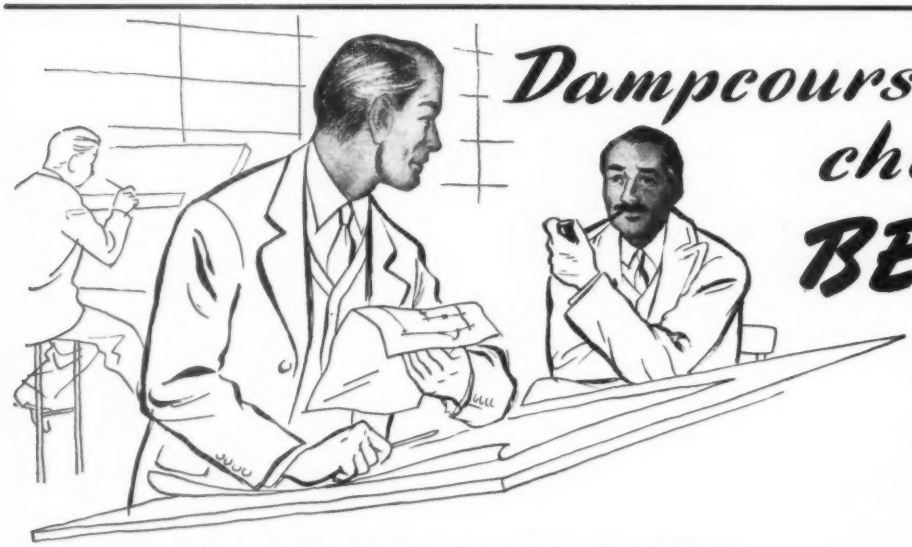
HFMA

HARDWOOD FLOORS last a lifetime

THE HARDWOOD FLOORING MANUFACTURERS' ASSOCIATION

14 New Bridge Street, London, E.C.4. Telephone: City 1476-7

T.A. 3817



Dampcourse?... My choice is BESTOS!

BITUMEN DAMPCOURSE (Asbestos Base)

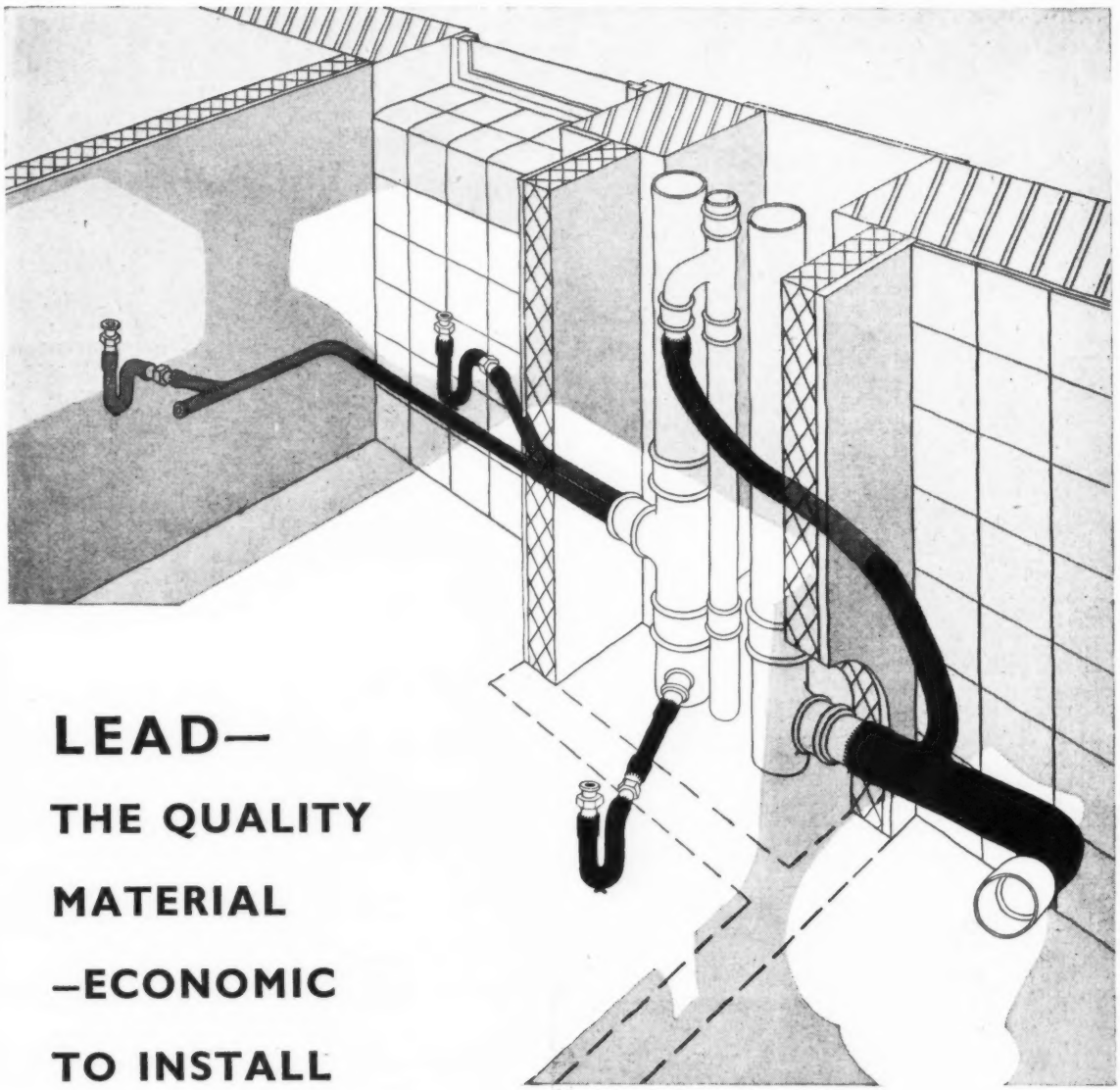
Architects and Builders choose a dampcourse that will meet the requirements of any Building site. Bestos, manufactured entirely from mineral asbestos and asphaltic bitumens, is a flexible, water-proof dampcourse and absolutely permanent. Its composition renders it unaffected by normal building settlement, organic rot and capilliary action.
Architects and Builders are wise to choose the best — BESTOS.

Architects everywhere specify **BESTOS**

D. ANDERSON & SON LTD · STRETFORD · MANCHESTER

ROACH ROAD, OLD FORD, LONDON E.3.

JNa257



LEAD—
THE QUALITY MATERIAL —ECONOMIC TO INSTALL

Well designed soil and waste pipe installations need LEAD PIPE, because LEAD is readily deviated to permit a compact arrangement, such as that illustrated.

LEAD is not corroded by soil and waste effluents. It can be readily worked—without the need of periodic annealing. Even with the most compact duct plumbing, the smooth bends essential for an efficient soil and waste disposal system are easily formed.

The flexibility of LEAD PIPE permits easy connecting up with sanitary appliances, with in situ adjustment to meet normal variations in building dimensions.

Sound practice is widely understood, since the skilled plumber is a craftsman in LEAD and knows how to get the best results from his material.

h

LEAD LASTS

The Technical Information Bureau of the Lead Industries Development Council, which exists to give assistance on problems relating to the use of lead sheet and pipe in building work, will be pleased to give advice on any questions relating to the uses of the materials.

LEAD INDUSTRIES DEVELOPMENT COUNCIL, EAGLE HOUSE, JERMYN STREET, LONDON, S.W.1

LEAD TECHNICAL INFORMATION BUREAU, 90 EBURY STREET, LONDON, S.W.1. TELEPHONE: SLOANE 0474

B93/2/51

CUT THE POWER STATION IN HALF

..... by natural lighting and heat conservation as provided with MELLOWES **Double *Patent Glazing and Metal Windows.***

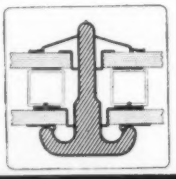
Two Layers of Glass *with prescribed gap and efficient seal give first class results and users have reported* Halving of Boiler Costs.

FUEL ECONOMY

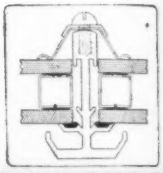
Specify MELLOWES

Double *Patent Glazing*

and Metal Windows.



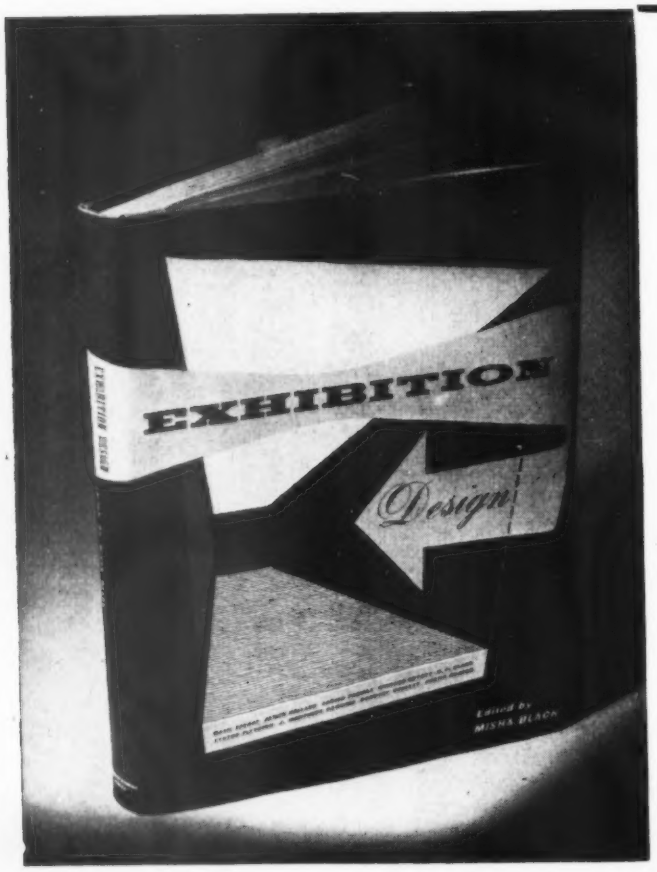
'Eclipse' Lead Covered Double Glazing Bar



'Alumell' Light Alloy Double Glazing Bar

MELLOWES & Co LTD

LONDON SHEFFIELD OLDHAM



EXHIBITION DESIGN

Edited by Misha Black. O.B.E. *Contributors: Misha Black,* O.B.E., *Basil Spence,* F.R.I.B.A., *James Holland,* F.S.I.A., *Adrian Thomas, Richard Guyatt, Lynton Fletcher,* M.A., *J. Mortimer Hawkins,* M.I.E.S., *H. F. Clark,* A.I.L.A., *Dorothy Goslett, Austin Frazer.*

THE PURPOSE OF THIS BOOK IS to show what are the essential qualities of a good exhibition and how to achieve them. It contains over 250 illustrations—photographs, drawings and plans—of well designed recent exhibitions grouped under "Trade Fairs", "Public Exhibitions", "Propaganda Exhibitions", "Travelling Exhibitions", and "National and International Exhibitions". The technique of exhibition design is covered comprehensively and in detail. Each chapter is written by an expert in his own field. The mass of information the book contains will be of value to the professional exhibition designer and equally to the exhibition promoter.

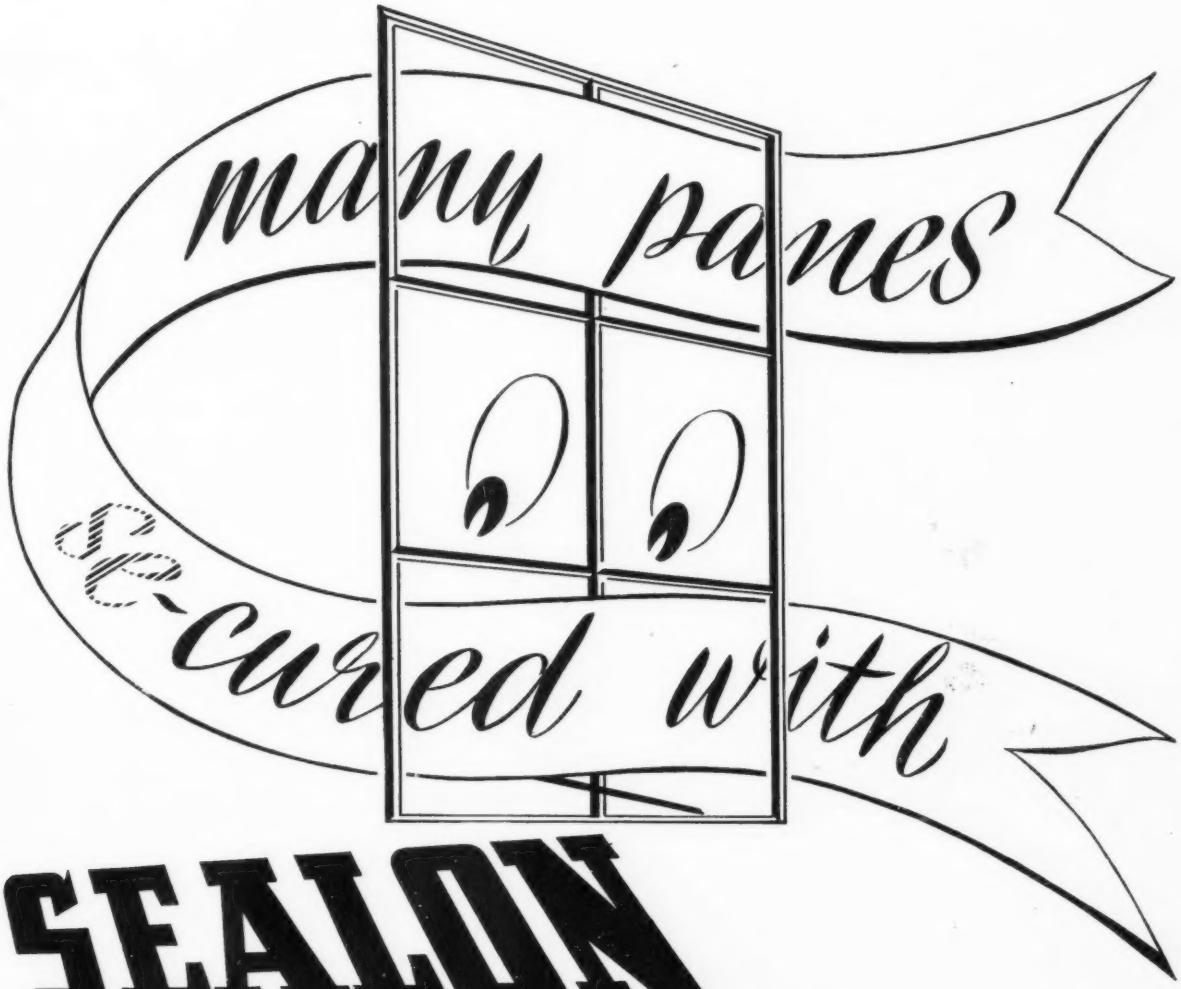
Bound in full cloth boards. Size 9¼ ins. by 7¼ ins.: 188 *pages;* 274 *illustrations.*

25s. net, postage inland 10d.

The book is stoutly bound in heavy cloth boards

THE ARCHITECTURAL PRESS

9-13, *Queen Anne's Gate, Westminster, S.W.*1



SEALON

metal casement PUTTY

Down in the cold Antarctic of South Georgia, at many places on the Equator or in the more temperate zones there are hundreds of installations of long standing Safely Sealed with SEALON. SEALON is supplied ready for use, keeps indefinitely when stocked, will not crack or run and may be painted in three to four days.

SEALON Metal Casement Putty is manufactured by the largest exclusive manufacturers of Putties and similar compositions in Gt. Britain.

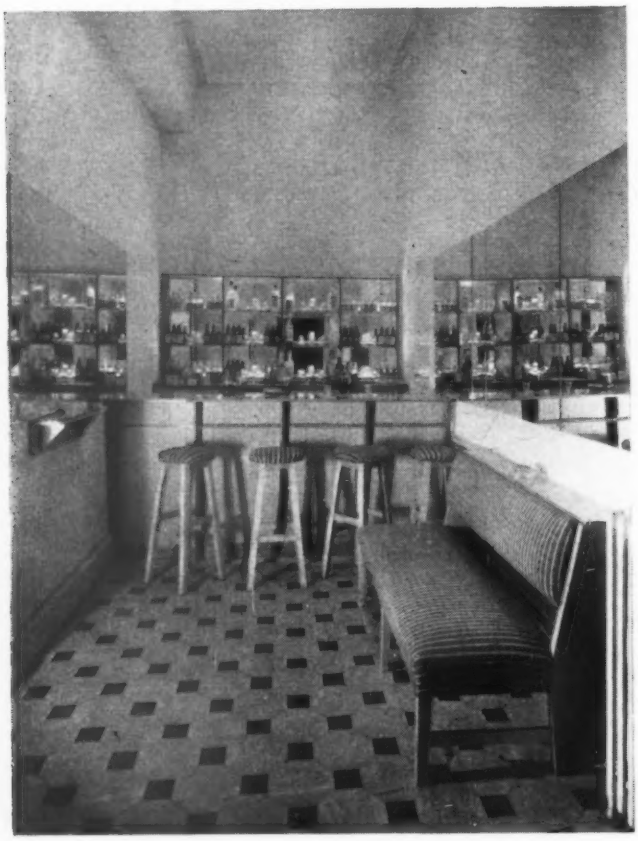
Seal Safely - specify **SEALON**

The most keenly priced **TOP GRADE** *Casement Putty available*

OBTAINABLE FROM ALL LEADING MERCHANTS

Manufactured by SEALANCO (ST. HELENS) LTD., ST. HELENS, LANCS.

Specialists in the manufacture of Putty for all purposes.



The Small Bar illustrated was designed and made by *Hammers* for the East African Government Club, London. African timbers were used throughout and the upholstery was carefully chosen to give warmth to the scheme. *Hammers* gratefully acknowledge the help of the British Council in furnishing this Club.

"Hammers personal service."

GEO. M.
HAMMER
& CO. LTD.
Craftsmen in Woodwork since 1858,
CROWN WORKS, HERMITAGE ROAD,
LONDON, N.4.
Stamford Hill 6691/2

SAND-FACED FACING BRICKS

BERKHAMSTED BRICK CO. LTD.

Head Office and Sales Dept.: 85 Gloucester Road, London, S.W.7 Telephone: FRObisher 8161 (10 lines)
Works: Shootersway, Berkhamsted, Herts

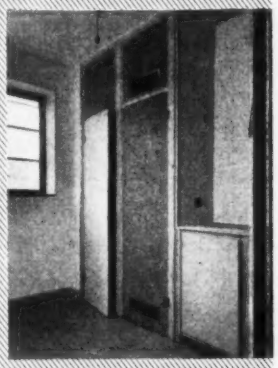
5 recent uses for PLUTO BOARD

Pluto Board is an inert resin bonded material, combining many of the virtues of plastics and timber, with the durability of steel. It can be nailed and sawn with ordinary woodworking tools, and paint, stove enamel and veneer adhere firmly to its surface.

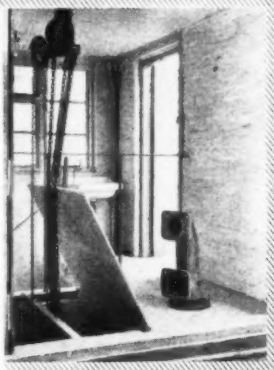
1. ¼" Pluto Board Balcony Panels screwed to mild steel frame.

2. ¼" Pluto Board bolted to 2½" steel angle frame for concrete shuttering.

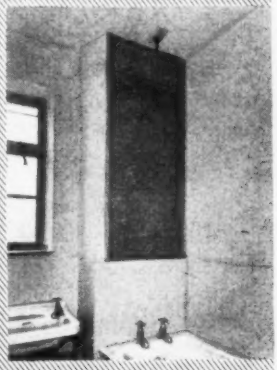
- Unaffected by the worst weather conditions indefinitely.
- Will never warp or wave.
- Very hard surface.
- Highly resistant to corrosion.
- Fireproof (Class 1 resistance to flame spread).
- Very tough (particularly when laminated.



3. ¼" doors for Drying cupboard fitted with Gas Heaters.



4. Boiler House access floor covers made from ½" Pluto Board.



5. ¼" Pluto Board Panels to cover bathroom water-pipes.

It can be supplied to the following specifications:

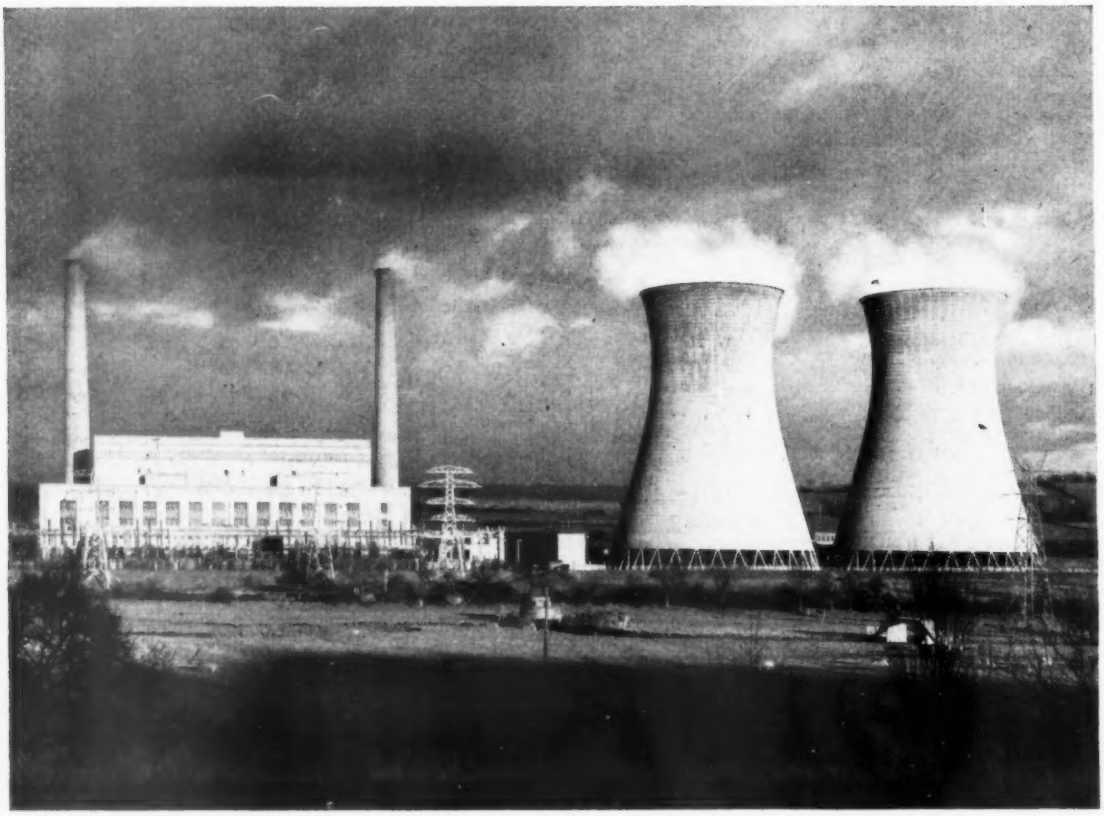
Standard size of sheets 8 ft. x 4 ft.
Standard thicknesses 2mm. ⅛", 3/16ths", ¼".
Also available with wood veneer.

These are 5 uses, there are 500 others.

Photographs 1, 3, 4, 5, taken at Wyvil Road Housing Estate, Lambeth.
Contractor: J. Jarvis & Sons Ltd.
Architects: Wornum & Playne.

THE CAPE ASBESTOS CO. LTD.

114/116 Park Street, London, W.1 Telephone: GROsvenor 6022



MEAFORD POWER STATION, STAFFS

SIR ALEXANDER GIBB & PARTNERS, CONSULTING ENGINEERS

HOPE'S WINDOWS

HENRY HOPE & SONS LTD

SMETHWICK, BIRMINGHAM AND 17 BERNERS STREET, LONDON, W.1

AJ

THE ARCHITECTS' JOURNAL

No. 2928 12 APRIL 1951 VOL 113

EDITORIAL BOARD: (1) *Consulting Editor*, F. R. Yerbury Hon. A.R.I.B.A. (2) *Guest Editor*, Frank Russon, F.I.O.B. (3) *Town Planning Editor*, Dr. Thomas Sharp, L.R.I.B.A., P.P.T.P.I. (4) *House Editor*, J. M. Richards A.R.I.B.A. (5) *Technical Editor*, R. Fitzmaurice, B.SC., M.I.C.E., Hon. A.R.I.B.A. (6) *Editor Information Sheets*, Cotterell Butler A.R.I.B.A. (7) *Editorial Director*, H. de C. Hastings.
SPECIALIST EDITORS*: (8) Planning (9) Practice (10) Surveying and Specification (11) Materials (12) General Construction (13) Structural Engineering (14) Sound Insulation and Acoustics (15) Heating and Ventilation (16) Lighting (17) Sanitation (18) Legal.
ASSISTANT EDITORS: (19) *Chief Assistant Editor*, D. A. C. A. Boyne (20) *Assistant Editor* (News) K. J. Robinson *Assistant Editors* (Buildings), (21) L. F. R. Jones, (22) A. P. Lambert, (23) *Assistant Editor* (Information Sheets) E. G. Johnson (24) *Assistant Technical Editor*, M. Jay *Photographic Department*, (25) E. R. H. Read, (26) H. de Burgh Galwey *Editorial Secretary*, Betty E. Harris
* To preserve freedom of criticism these editors, as leaders in their respective fields, remain anonymous

9, 11 & 13 Queen Anne's Gate, Westminster, London, S.W.1 Whitehall 0611

Subscription rates: by post in the U.K. or abroad, £2 10s. 0d. per annum. Single copies, 1s.; post free, 1s.3d Special numbers are included in subscription: single copies, 2s.; post free, 2s. 3d. Back numbers more than 12 months old (when available), double price. Half-yearly volumes can be bound complete with index in cloth cases for 25s. 0d.; carriage 1s extra.

FABRICS AND FURNITURE

It is rather sad to think that enterprising manufacturers so often go to Scandinavia for their designs. Not that I object to Scandinavian designs. But there are talented designers in England who are capable of producing equally satisfactory work given the opportunity. The designs woven originally on hand looms in Sweden by Madame Gullberg are now to be manufactured by Scatchards Fabrics Ltd. on power looms. They are now on exhibition at 7, Bedford Square. For the most part they are of admirable taste, are well-conceived and are produced at reasonably low prices. I am sure, however, that some of our designers, could have produced an equally interesting series.

*

Upstairs at the same exhibition there is some very pleasant Swedish unit furniture, designed by Bergt Gullberg. There is justification for any attempt to import such furniture at reasonable prices as the quality of timber used, which is mainly softwood, is not available in this country. And I am glad to hear that the Board of Trade is being approached to permit the import of this furniture, which, I am told, will be illustrated in due course in the JOURNAL. Its price, incidentally, will be in the utility range.

THE US WASTE STANDARD

I have just been reading a report in the US magazine, *The Architectural Forum*, of a round-table conference of the building industry, held with the intention of discovering means by which the cost of building may be reduced by eliminating waste. The conclusion reached was that it is possible to cut costs "in labour, materials and dollars by between 20 per cent. and 40 per cent." (This should not surprise those who read Dr. Bronowski's paper in a recent JOURNAL.) The conference also had an eye on the saving of "critical" materials to avoid a serious reduction in the number of new houses permitted—another problem with which we are not unacquainted in this country.

*

The report reveals an astonishing variation in local building code requirements and a substantial amount of the suggested saving would result from bringing excessive local standards into line with material codes in such things as electrical wiring, permissible live loads on floors, septic tanks (one half of the houses being built in the US are not connected to public sewers), road widths, prohibition of flat roofs, and so on. While we have learnt our lessons in many of these things, and local requirements are usually reasonable about details, there are, no doubt, many requirements—such as those relating to foundations—which could be simplified, and all local authorities have not yet accepted the 7 ft. 6 in. ceiling height.

*

Incidentally, the American building industry is, apparently, very keen on "modular co-ordination," but, according to the recent BSI report on the subject, this is one field in which we have a lead, and the Americans can probably learn more about it from us than we can from them.

BREATHING IRE ON MOKE

Riding my critical high horse in my usual Quixotic inaccurate style I discover that the landscape before me is bestrewn with metallic-sealed, fire-breathing dragons at which to tilt. Less ancient eyes than mine would call them railway trains. One segment of such a monster I illustrate (page 443) internally and externally.

*

With the outside I have no great fault to find except for the lettering, of which I illustrate a part. Once again it is of that sans-serif type which, Pick-promoted in the 'thirties, was found, on grounds of clarity, admirably suitable for signs and noticeboards on London Transport vehicles.

*

But why is that type of lettering necessary for the name of a train? When hurrying to find and catch a train one looks for a platform number, there is no question of scurrying up and down its flank in an attempt to read its name. So here was one piece

BISON

wins the approval of

"The Engineer"

The following is an extract from the report, published in "The Engineer", of the Ocean Terminal Dock, Southampton:

"The upper floors throughout the building are constructed in precast reinforced concrete hollow 'Bison' flooring units, supported on shelf angles attached to the webs of the main and secondary R.S.J. floor beams, a method of construction which achieved considerable economy in shuttering and also facilitated a very rapid completion of the first floor, thereby providing a valuable addition to the very restricted working space at an early stage in the job."

LONDON: Hounslow 0171 LEEDS: Leeds 75421 LICHFIELD: Lichfield 3078

EDINBURGH: Craiglockhart 1729 FALKIRK: Falkirk 1585

of lettering on which the designer could have relaxed and enjoyed himself.

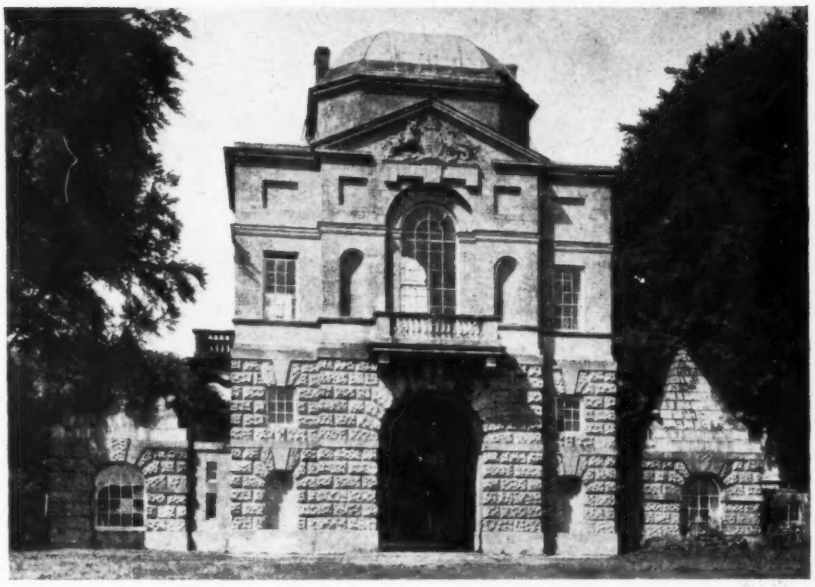
*

Now look below and study the first-class compartment. It is not bad, is it? (Except, perhaps, for the upholstery.) But remember that we have had competently designed railway carriages for many years. What one expects, therefore, on a new design for what is to be a *standard* carriage is certain marked advances. I have, for instance, no confidence that those coyly-draped curtains will give real privacy or prevent the sun from scorching me on a long trip. (Has anybody experimented with adjustable louvered blinds?) I fail to see the necessity for going to the trouble of providing large windows—so large, I am assured, that a stretcher can easily be passed through them, if that is any comfort to you—and then sticking on an irritating little slip marked "First." And in other smaller details the effect is not, to my mind, very happy: the ash trays and that odd shelf, the relationship of the light fixing and the mirror—all could be improved.

*

Next to be considered is the *first-class* dining car. No doubt the old-type high-backed chairs have been removed to give a sense of spaciousness. But when the result only emphasizes the extreme length and narrow breadth of the room, has any marked advantage been achieved? I liked the sense of enclosure of the high-backed seats, which enabled me to dribble my soup in comparative privacy. And I liked the luggage racks above them which held what I pretended to call my valuables. Where am I supposed to put them now; under the table?

A last point—and this is a fault common to architects as well—why paint sheet materials which are bound to have slight irregularities of surface with a gloss paint? The broken dazzling reflections on the curved ceiling are unavoidable, and are surely not considered attractive.



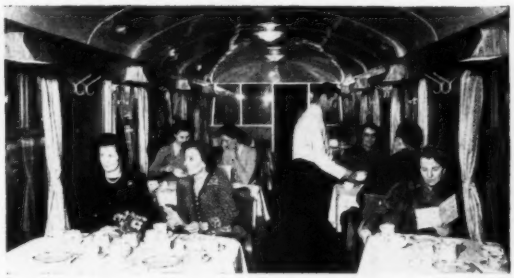
Badminton Lodge, Worcester. (*See frontispiece overleaf and note on page* 445.)

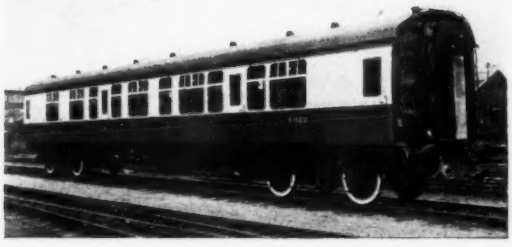
WHAT TO DO WITH THE DOME

Ever since the erection of the Dome (Ralph's Tubb) started, there have been endless rumours about what is to happen to it when the show is over. It is said that the Navy wants to turn it upside down and make it into an aircraft carrier; that the RAF wants it, and that the Americans have now actually bought it, though nobody knows quite what for. The Festival Press Office tells me categorically that it has not been sold, is not the subject of negotiations and that, in fact, no arrangements have yet been made for the disposal of any of the Festival buildings.

*

Nobody seems to have realized that there is an obvious market for the Dome. Why do readers suppose that we have been watched lately from another world? Isn't it likely that Gerald





The first standard passenger coaches now being built tn British Railways workshops. Right, top, lettering on the exterior. Right, bottom, a first-class compartment. Extreme right, top, a first-class dining car ; and bottom, the exterior. See Astragal's comments above.

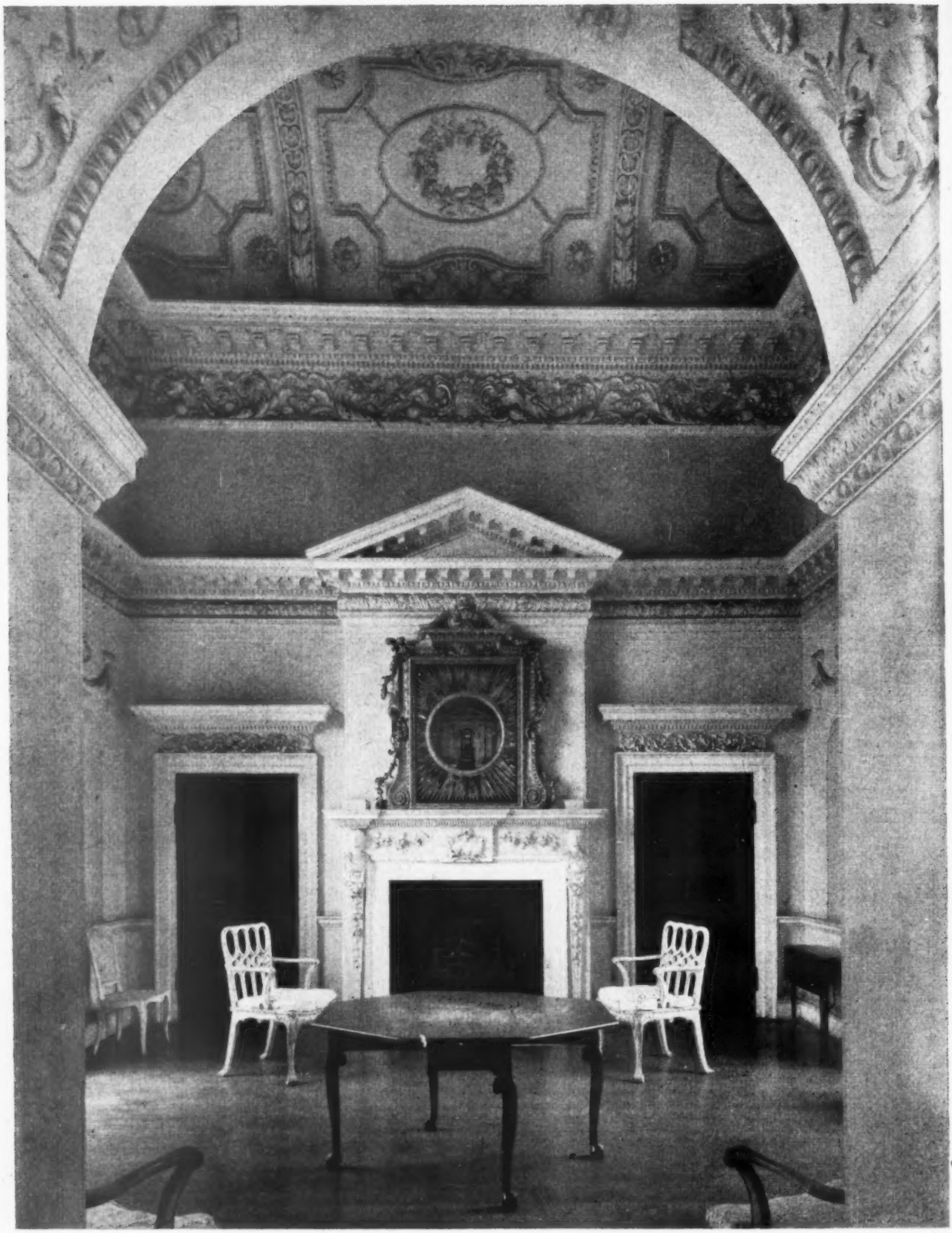


Photo: Country Life

Roofs of Precious Metal

The stealing of lead from the roofs of country buildings is a crime which has become seriously frequent since the war. The latest victim is Worcester Lodge, Badminton (Gloucestershire), designed *circa* 1740 by William Kent. The Lodge is a great gatehouse flanked by pavilions with pyramidal tops; over the arch, and under the dome from which the lead was stolen, is the room here shown. Of the plaster ceiling of this room it has been said that "there is no more characteristic and successful example of Kent's handling of decoration."

Heard's "extra terrestrial" spectators have their eyes on the building? Surely it would make an admirable saucer park?

At Waterloo did Kubla Khan a stately pleasure dome decree,
Where Thames and British Railways run close by the LCC,
The Yanks might use it as a flying saucer,
(Though readers might imagine something coarser.)

PLUMB CRIMINAL

Worcester Lodge, Badminton, was a sitting target for lead thieves—isolated, flanked by tall beeches, standing far enough back from the road to be out of the beam of passing headlights, and facing a stretch of turf on which a lorry could be parked without attracting notice. I don't know how much damage the weather did before the theft was discovered and measures taken to protect the splendid ceiling which is the chief interior feature of William Kent's remarkable buildings (see picture on the opposite page); we have had naughty nights for plasterwork to be exposed in.

*

Lead stealing, as every village constable and many country parsons have reason to know, has become a thriving rural industry of late. (AJ readers will remember the case of Hartwell Church, with its Gothic plaster fan-vault.) It isn't an easy problem to tackle, for the thieves often work in gangs and have been known to be armed. But may not its Achilles heel be—if you'll pardon my anatomy—at the receiving end? In any case, the police have been known to solve problems that were both more difficult and less important.

ASTRAGAL

The Editors

THE BUILDING INDUSTRY AND THE ECONOMIC SURVEY

THE Economic Survey for 1951, which is dealt with at greater length on page 450 of this issue, is, inevitably, a general survey of all industry, yet it does give a miniature, but commendably up-to-date picture, of many individual industries, including building and civil engineering. In that picture what stands out is the comparison between the almost dead level of housing production and the considerable expansion in other building and works. Broadly speaking, the labour force available in each has not changed radically over the last three years. The amount of capital investment in housing has tended to fall, which, in relation to the level of house production, shows a small increase in productivity. The figures for other building tell a very different story. Capital investment in 1949 was 21 per cent. greater than the figure for 1948 and the figure for last year showed an advance of almost 19 per cent. over 1949. That, of course, is not necessarily solely due to increased productivity, but, when the Survey itself talks of an increase of some 4 to 6 per cent. a year for the combined trades, it is obvious that the rate of improvement is far from uniform. The explanation that most would offer is that civil engineering, from its nature, provides greater scope for the use of mechanical equipment and that, today, increased productivity is very largely a matter of further mechanization. None the less, we have yet to see a completely satisfactory explanation of why mechanization in housing building does not come faster than it does and why the impacts of bonuses and incentives in that industry have not produced their own better results. One thing is clear. With the housing shortage still acute and with the prospect of district cuts in the number of houses contracted for, the public will become increasingly impatient with a house building industry that lags so far behind its more vigorous cousin.

Technical Editor

THE COLOUR PROBLEM

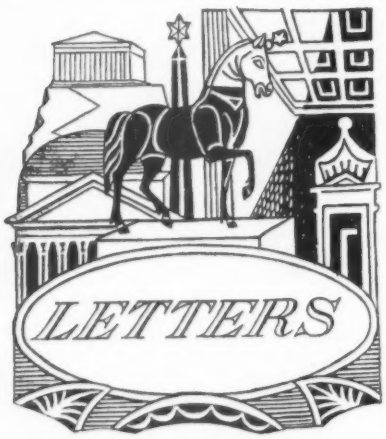
One of the many effects of re-armament and "stock piling" is a shortage of the raw materials used for paint manufacture. In particular, the shortage of sulphur (for sulphuric acid) will tend to reduce further the already limited range of colours which paint manufacturers are able to produce, and is likely to reduce supplies of the lighter and brighter colours.

There is one particular danger which architects should guard against. It is not uncommon for "subtle" hues which cannot be found even in the present ranges of the paint manufacturers, to be specified. Presumably the decorator on the job is expected to mix such colours himself. But paint manufacturers maintain that, if paints of different hues (and often of

different chemical composition) are mixed, the resulting colour may not be permanent ; particularly if a large amount of white is added to a small quantity of a bright colour.

Architects would do well, therefore, always to seek the advice of an expert, for paint manufacturers can produce, to order, almost any colour, and, in most cases, can guarantee its permanency. For reasonably large quantities—say 50 gallons and over—there is seldom any extra cost. Hence, smaller ranges of standard colours need not restrict unduly the architect's choice.

As for the expected shortage of light and bright pigments ; it seems particularly unfortunate that such a shortage is imminent just when there is a wider appreciation of the value of the intelligent use of these colours in factories, schools, hospitals and the home.



John Madge, A.R.I.B.A.
Herbert S. Morel, A.R.I.B.A.
Ernest P. Mawson, F.R.I.B.A., M.T.P.I., M.I.Struct.E.

Low Cost Housing : Social Surveys

SIR,—On March 1 you remarked that "social surveys should by now have settled the question" of "what the housewife (or her family) actually want." On March 15, Plan Group asked for "families to live in houses built to their (?) plans." After a bit of fun with *wants* and *needs*, you agree that "the only real test of a design is for it to be built and lived in."

I find all this a little obscure. Do you imply that social surveys have settled the question, or only that it would be nice if they had? Do not architects (and administrators) "tell the housewife what she needs" each time they build houses without consulting their occupants, either before or after the event? If you believe that properly conducted social research and controlled experiment can tackle other design problems as effectively as the question of heating and HW has been tackled could you not use your great influence to promote research and experiment in this crucial field?

JOHN MADGE.

Bristol.

[There are some questions to which social surveys could provide (and should, by now, have provided) satisfactory answers. For example: Do families in a particular locality prefer to eat in the kitchen, the living room, or a small dining room? Do they prefer the WC (if there is to be only one) to be on the ground or the first floor? For other problems, however, social surveys can provide the architect only with guidance in framing his solution for, as Mass Observation's *Enquiry into Peoples Homes* showed, few laymen show much imagination when asked to design their own homes. The architect must interpret the "needs" of his somewhat nebulous clients as expressed by their "wants" and then, ideally, a number of alternative houses should be tested by being lived-in. This surely should have been done in 1945, before nearly 1,000,000 more or less conventional homes were built. But that is not to say that 1951 is too late; why not an "Abbot's Langley" on planning? Meanwhile, it would be of great value to have the comments of the tenants of post-war houses and the MOH would do well to carry out some "user research" on house planning.—ED.]

RIBA Competitions : No Incentives Offered

SIR,—My attention has been drawn to the letter from Eric Ambrose in the JOURNAL for March 29. As the finalist whose design in the RIBA Victory Competition was called "Out of this world, or on the other side of the Thames" by R. E. Enthoven, I feel bound to point out that Mr. Enthoven was comparing the exterior character of the design with that of the interior, which he had actually praised as having "interest and charm."

I saw the point of this criticism and agreed with the critic. As long as the critic is constructive he is useful; otherwise he is merely ridiculous.

In my opinion, the main reasons why the results of the RIBA Prizes and Studentships are so mediocre are as follows:—(1) The three months work required of the finalist in the Victory Scholarship, or Soane Medallion, means loss of three months pay and experience, or about £120, and this is the value of the prize. All but one of the finalists have lost £120 in order to have the very dubious honour of reaching the finals. The student who wins can balance his books; the rest are either bankrupt or do not spend much time on their entries.

(2) The actual value of the prizes has been much diminished due to devaluation and the rising cost of living. Something must be done to make these prizes financially attractive.

(3) The RIBA cannot yet decide whether modern architecture has any validity. Apparently not in the case of the Tite Prize. Promising students will not accept the dead academicism implicit in the Tite Prize Conditions, and it is foolish to expect them to do so.

I would like to point out that only four students from the AA School entered for the Victory Scholarship in 1951, and that of these four, two reached the Finals. Many of their colleagues would have done equally well or better, if they had been given sufficient incentives to do so.

A student is in the happy position of being able to judge his critics' architectural achievements, whereas the poor critics can only judge the students' immature paper projects.

HERBERT S. MOREL.

Croydon.

Whole House Warming

SIR,—I have been most interested in the articles you publish from time to time on whole house warming, as I live in a house which I designed around this system of heating. The house is a detached one of 1,134 square feet in floor area situated in north Lancashire.

My heating unit is of the ducted forced warm air type, is gas fired, and is rated at 50,000 BThU's/hour.

The house was planned to have easy and inconspicuous duct runs, with the heater in a central position. After living in the house for 10 months, I now know the faults of the system. These are as follows:—a severe temperature drop from ceiling to floor in the living room. This, I think, is due to the high level inlet and low level extract principle employed, and from the Stanmore experiments, it would appear that the solution is to have low level inlets. Perhaps with perfectly seasoned timber and perfectly insulated ducts, the woodwork would be unaffected by the duct temperatures, but with present-day timber one finds excessive shrinkage in all woodwork near the ducting. In addition, the shrinkage in the first floor joists fractures the plasterboard ceiling. Another problem is the disposal of refuse in the absence of a fire, and some form of incinerator is essential.

In my house are the following defects (which may occur only in my individual installation); the two rooms farthest from the heater are much cooler; the unit is noisy, possibly because of the vibration transmitted through the metal to metal fan mounting. The makers are attempting to eliminate this. The air in the house is not lacking in oxygen but is *different* from fresh air. Two remedies occur to me, a larger fresh air inlet, and an "ozoniser."

No machine can be infallible, and my unit has had two breakdowns. Twice the dirt inside the new gas main clogged the diaphragm valves, and the air heater burner failed to cut out when the electric thermostat switched off the circuit and the fan. As a result the heat exchange unit became red-hot and might have caused a serious fire. Unfortunately, not every householder has had the mechanical experience which enabled me to deal with this.

But the advantages outweigh the faults. The whole house is beautifully warm in the coldest weather, and it is always like high summer inside. The warm bedrooms are ideal for little children who never can be kept under the blankets, and there is no danger in leaving them alone in any room, as there are no fireplaces. Have you ever been tempted to linger in your bathroom in February? Ours is so comfortably warm that one can be as slow as one likes. My wife appreciates the convenience of the automatic thermostats which keep the air and hot water at the ideal temperatures.

A gadget of my own is a time switch that shuts the unit down at night and switches it on again before we get up in the morning.

It can be adjusted to any hour so that, for instance, the heater can be made to cut in an hour before we return from an outing. The house is never dusty because of the dust filter and the absence of open fires. The cost of all heating fuel averages out at about 14s. per week. High?—perhaps, but this is luxurious living.

What then are the advantages of background and intermittent heating when this system is so supremely satisfactory?

ERNEST P. MAWSON.

Lancaster.

The EDITORS reserve the right to shorten letters from readers. Whenever possible however, they are published in full.

YORK

Summer School of Architecture

A summer school of architectural and historical study will be held in York from August 11 to 25. In arranging this school, it has been the aim of the Academic Development Committee, York Civic Trust, to place the treasures of architecture and craftsmanship of the City of York at the service of students of architecture in schools recognized by the RIBA and others for the purposes of study. The school has the support of the Board of Architectural Education of the Institute.

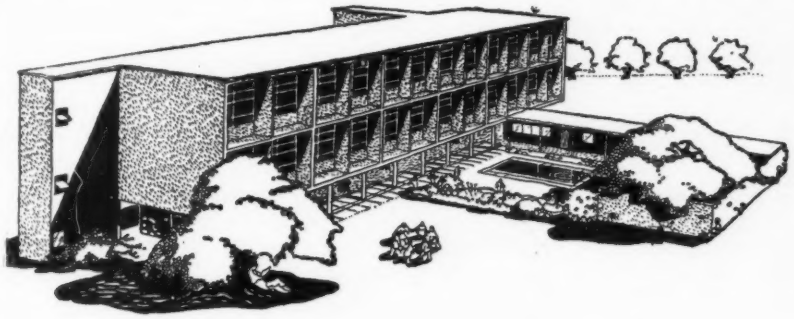
The particular objects of the school are to enable students of architecture to make measured drawings and sketches of buildings in York under the guidance of a staff of experts, and to provide, in addition, a series of lectures on various aspects of the history of architecture by a number of distinguished architectural historians who could not normally be brought together in one place, and thus to provide a meeting ground between those with a vocational and those with a liberal interest in architecture.

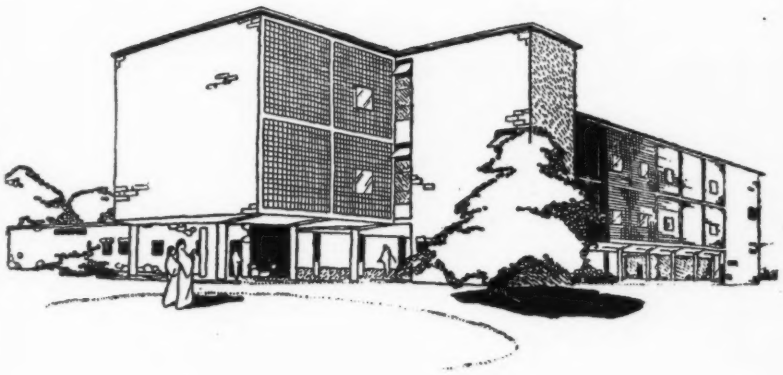
Lectures will be given by Professor A. E. Richardson, Professor Geoffrey Webb, Maurice Beresford, John Charlton, Professor Ian Richmond, Professor Gordon Stephenson, John H. Harvey, John Summerson, J. Brandon Jones and the Dean of York.

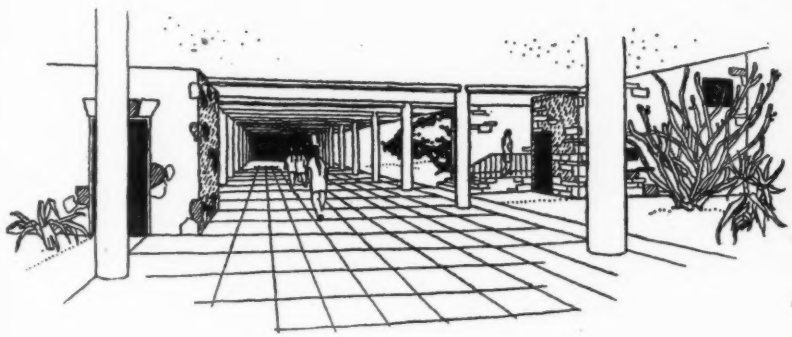
The school will be open to students in schools of architecture recognized by the RIBA, and others, on the recommendation of their tutors. Preference will be given to students who wish to make measured studies in preparation for the RIBA Intermediate Examination or its equivalent.

In the course of the fortnight an additional programme of visits to historic buildings in the district together with an evening

SCHOOL AT KISUMU, KENYA BY ERNST MAY



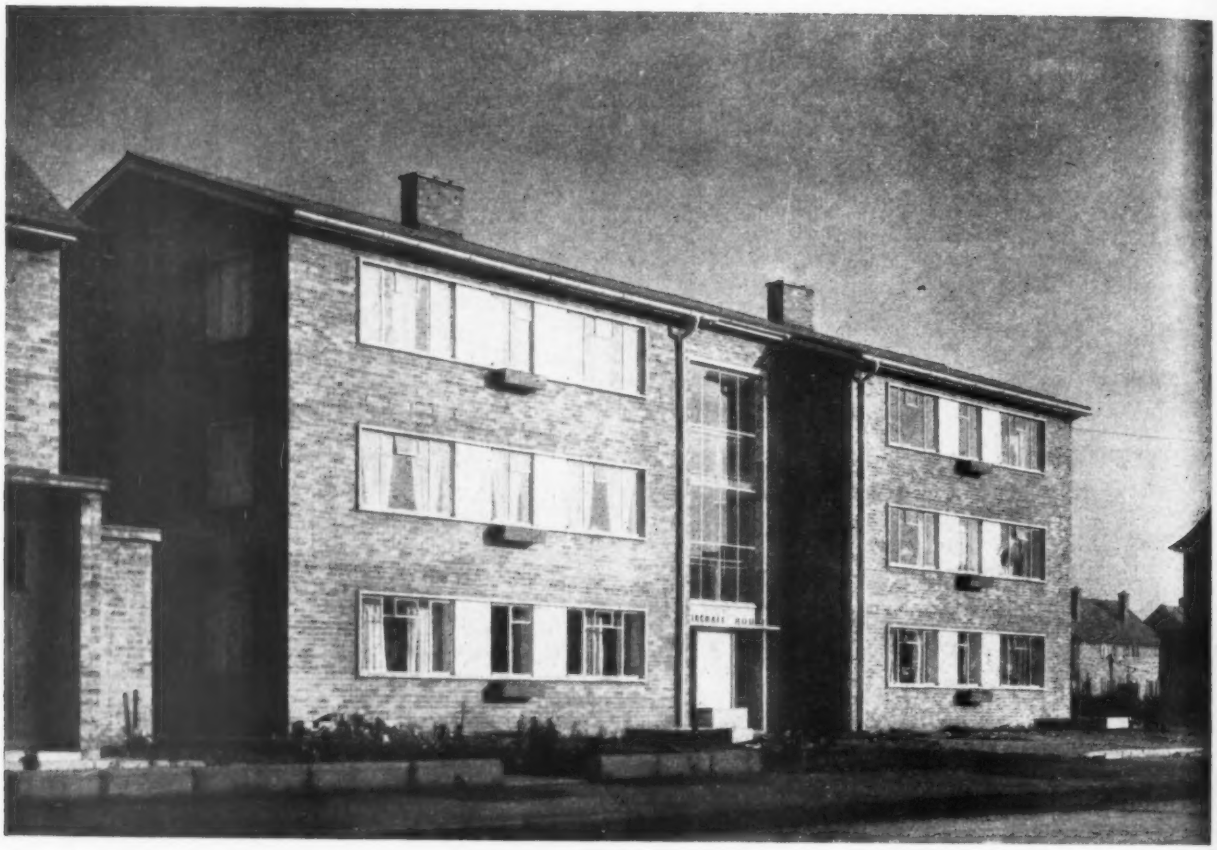


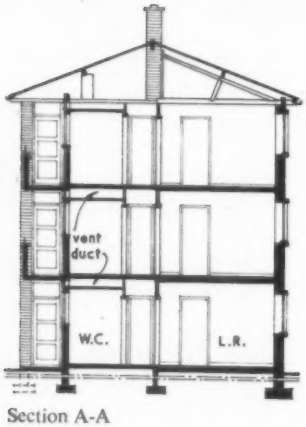


The sketches shown above are of the H. H. the Aga Khan's Girls' High School at Kisumu, Kenya, designed by Ernst May. In the top illustration the administrative wing is seen on the right of the main block and the lower pictures show the covered recreation walk at ground level. Below is the Maternity Home and Dispensary for H. H. the Aga Khan's Ismailia Provincial Council designed by the same architect. The foundation stones were laid late in February by Prince Aly Khan and work is now in progress.

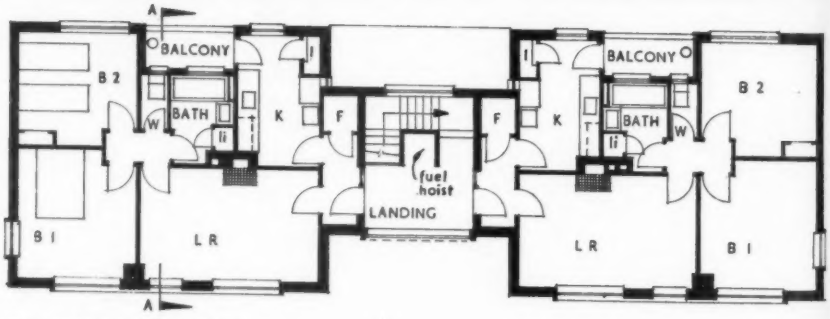
D

FLATS AT KINGSTON - UPON - HULL,

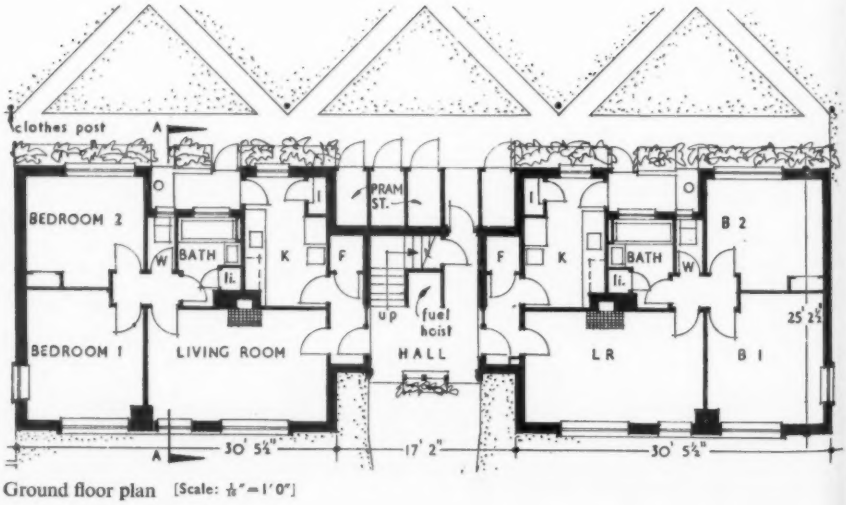




Section A-A



First and second floor plans



Ground floor plan [Scale: ⅛" = 1'0"]

EAST YORKSHIRE

The flats illustrated on this page and opposite are on the Southcoates Lane Estate at Hull and are designed by Andrew Rankine, the City Architect. The blocks, which contain six flats each, are a standard design which is at present being repeated on five other estates in and around the city. The siting of a single block or combination of blocks is determined by the conditions of the individual sites. The plan takes the form of two identical flats on each floor, linked by the central stairs and main entrance hall. The height has been restricted to avoid the expense of a passenger lift but fuel hoists have been incorporated. A long corridor has been avoided by planning an outer entrance lobby to the living room and kitchen and a small inner lobby to the bedrooms and bathroom. External walls are of 11-in. cavity brickwork with rustic facings, internal walls are of 4½-in. brickwork or 2½-in. foamed slag. Ground floors are of solid concrete, upper floors of patent hollow tiles. Roofs are of patent steel decking on timber purlins and finished with green mineralized felt. The main staircase window, seen below, and flat windows, are set in projecting precast artificial stone surrounds. There are specially designed aluminium refuse shoots as seen below, left. The contract price for the first four blocks was £25,973. The general contractors on this estate were Scruton & Co. (Builders), Ltd. For sub-contractors, see page 470.

reception will be arranged in conjunction with the York Summer School of Archives, which will be taking place at the same time. The fee for the school will be four pounds. Residential accommodation for those attending will be arranged through St. John's College, York, at a charge of four pounds per week.

Applications for admission should be made to the Secretary, York Civic Trust (Academic Development Committee), 6, High Petergate, York. They should be received not later than Saturday, May 26. As there is not a guarantee that a place can be offered to every applicant, those who wish to attend should indicate any special qualifications which they feel should be taken into consideration.

NORTH WALES

Detrimental Aspects of Hydro-Electric Plan

In a statement to the Press last week, Sir Patrick Abercrombie said that the North Wales hydro-electric power scheme would be detrimental from the point of view of amenity. He would not comment, he said, on the general merits of the scheme for the production of electric power from water in North Wales for the purpose of supplying the needs of Merseyside, North Wales and beyond; but he considered that, as it would take some fifteen to twenty years to complete the scheme, it might be that during that time some cheaper or more effective way might become available for attaining the desired ends. The processes of construction, while admittedly giving employment, would create disturbance and unsightliness which would last for many years, including as its most enduring feature the disposal of spoil and waste from the tunnels.

Sir Patrick issued this statement after the Caernarvonshire Planning Committee had considered, at a private meeting, his report on the scheme, together with a letter from A. R. Cooper, divisional controller of the British Electricity Authority. In his letter Mr. Cooper "corrected" certain technical inaccuracies in Sir Patrick's report.

MOW

Plan to Build Welsh Tourist Village

A project for a nucleus of a Welsh tourist village is to be built on the northern shores of Cardigan Bay. The village, which will be on Black Rock sands, between Portmadoc and Criccieth, and will comprise 28 bungalow cottages, will be sponsored by the MOW.

The idea behind the project is the attraction of middle income group American visitors, particularly those of Welsh extraction. It was intended that construction work should begin this summer, but it has been held up pending certain guarantees over sewage.

Plumbing and Drainage Recommendations

As a result of a series of discussions the Minister of Works held with his National Consultative Council on the observations and recommendations contained in the reports of the Working Party on Building and the Anglo-American Productivity Team, the MOW set up an ad hoc committee in 1950, to study modern developments in plumbing

ALTERATIONS TO TEA CENTRE, LONDON

Alterations to the Tea Centre, Regent Street, London, which have been carried out by Fry, Drew and Partners (assistant architects: John Bramwell and S. Kowalczewski) were undertaken primarily to provide more direct access from the foyer to the exhibition gallery on the first floor. A new staircase (ext eme left in the background of the picture) was constructed from the ground floor to a new gallery at mezzanine level. The entrance doors to the exhibition gallery can be seen at the back of the mezzanine gallery. The inner foyer (under the mezzanine gallery) has also been re-planned to provide more accommodation in the tea lounge beyond. The scheme will be illustrated next week.

with particular reference to current practice in the USA.

The report of this committee has now been approved by the National Consultative Council.

The conclusions reached by the committee may be summarized as follows:

(*a*) Detailed schemes for plumbing and drainage should be prepared as part of the main design of any building before tenders are invited and the work should always be entrusted to qualified designers with specialized knowledge.

(*b*) Local authorities and water undertakings should regularly review their requirements with a view to ensuring that in no case is a sound modern development in plumbing and drainage being unnecessarily prevented from being brought into use.

(*c*) Examination and approval of plumbing and drainage schemes and inspection of the work should be undertaken only by officers with specialized knowledge and provision should be made for inspection while installation is actually in progress.

(*d*) For water supply, advantages are offered by the system in which cold water storage cisterns are provided only to supply hot water tanks; all other outlets being connected to the mains. The possibility of using this system should be carefully considered whenever new water schemes are being installed or old schemes substantially extended.

(*e*) In designing plumbing layouts for water supply in buildings more attention should be paid to close grouping of appliances, simple joints, adequate space for pipework and components, and easy access for maintenance.

(*f*) The one-pipe system of soil and waste disposal should be more widely adopted and its application to small houses further studied and developed. The committee considers it would be an advantage if the BSI specified a wider range of BSS for suitable multi-branch fittings.

(*g*) There is considerable scope for effecting economies in underground drainage by using only the most suitable pipe sizes, reducing the number of manholes to a minimum, eliminating intercepting traps from connections to new sewage systems and avoiding excessive use of concrete under and around pipes.

(*h*) The prefabrication of parts of plumbing systems in well equipped site workshops should be adopted whenever the scheme involves a sufficient number of repetition jobs.

(*i*) There is urgent need of publicity for up-to-date developments with detailed examples of their practical application; the knowledge is available but its distribution is insufficiently wide. The committee therefore welcomes the decision of the BRS to undertake the preparation of a new document dealing with modern developments in plumbing and drainage in considerable detail.

DIARY

AA Annual Reception. At 34-36, Bedford Square, W.C.1. 8.30 p.m. to 1 a.m.

APRIL 12

Housing Needs of the Old. Exhibition at 66, Portland Place, W.1. Weekdays: 10 a.m. to 7 p.m. Saturdays: 10 a.m. to 5 p.m. Discussion on same subject (chairman, H. S. Goodhart-Rendel; speakers, Sir Edward Bligh, Mrs. M. N. Hill and A. Llewellyn Smith) opens exhibition on April 13 at 2.30 p.m. (Sponsor, RIBA.)

APRIL 13 TO 28

Tour to Harold Hill Estate. Leaving 13, Suffolk Street, S.W.1, at 2 p.m.; returning approx. 5.30 p.m. (Sponsor, HC). Inclusive charge, 5s. 6d.

APRIL 18

Planning Rural China. Julian Friedman. At 28, King Street, Covent Garden, W.C.2. (Sponsor, TCPA.) 6.15 p.m.

APRIL 18

Hospitality at Home. At Tea Centre, Regent Street. Exhibition of furniture and furnishings. (Sponsor, CID.)

UNTIL MAY 12

ERNEST WATKINS

The Architect and Current Affairs

This year's Economic Survey is more hypothetical than usual. All its calculations are founded on uncertainties. Yet it is the best available guide to our immediate future. It is possible to extract from it clues as to the impending events in the building trades.

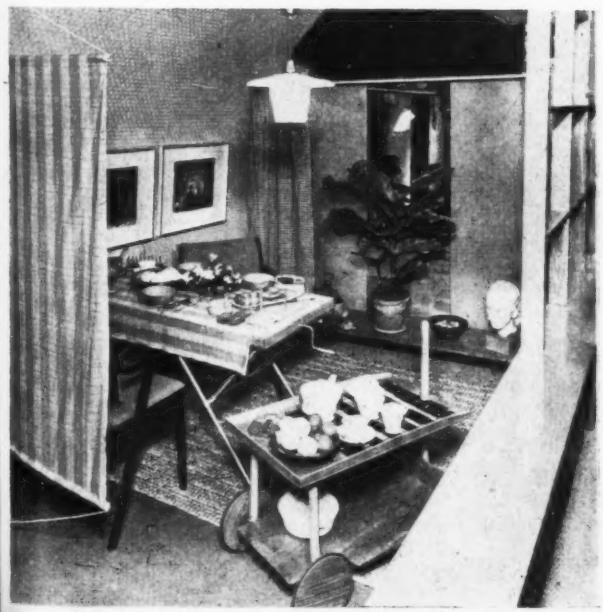
But first let us look at some figures from the Survey which show the progress made in the building and constructional work over the last three years.

	1948	1949	1950
	(Figures in £ millions)		
Housing	330	297	300
Other building and works	275	334	397
Repair expenditure on buildings and works	560	600	585
Totals	1,165	1,231	1,282

The Survey tells us that the work in hand for the present year was planned, and largely

"HOSPITALITY AT HOME" EXHIBITION AT THE TEA CENTRE, LONDON

These photographs were taken at the CID exhibition of furniture and furnishings, "Hospitality at Home," which will be on view at the Tea Centre, Regent Street, London, until May 12. Above, part of the living room. Right, nursery. Below: left, kitchen (the table's height can be adjusted); right, bedroom. Most goods are on the home market and much of the furniture is tax free.



licensed, in 1950. It goes on to say, by implication, that Ministries will allow licensed work to be carried out. But it is pointed out that in localities where defence work is needed, other work is liable to be deferred. This may be interpreted as a hint that while large official and industrial operations will be continued, regional offices of the MOW are likely to defer or suspend schemes with little official backing. The estimate for defence work for the year 1951-52 is £145m., of which £115m. will be work undertaken directly by the Service and Civil Defence Authorities, and £30m. by other Government work.

It seems that the housing programme in some districts will be curtailed if local resources are being employed on priority work. And it will certainly become progressively more difficult to obtain licences for other building operations that have nothing to do with the defence programme. But the main re-adjustments will not be effective until 1952. By then the volume of building work, other than housing, which is not sponsored by the Government may be no more than 75 per cent of the 1948 figure, if that. There should, however, be plenty of work for architects and draughtsmen over the next twelve months as civil servants.

TOWN AND COUNTRY PLANNING AMENDMENT ACT

To turn to legislation; the Town and Country Planning (Amendment) Act, 1951, received the Royal Assent just before Easter and is now in force. Since the preamble to the Bill had been carefully drafted (thus limiting the variety of amendments that could be moved to the Bill), the Bill itself went through more smoothly than might have been anticipated (there was no opportunity to turn it into one revising the 1947 Act in any general way). As it now stands, the Act makes two specific alterations to the 1947 Act, and to the corresponding Scottish Act.

Under the original Act [Section 12, Subsec. 2(a)], no planning permission was needed for any works to the interior of a building not materially affecting its exterior appearance. The amendment now made is to exclude works "for making good war damage" from that freedom. The effect of this is that anyone seeking to restore the interior of a war-damaged building (as a correspondent, rebukingly, pointed out at the time, my original note on the Bill did not make it clear that only interior work was involved), is compelled to obtain planning permission if the work was begun after December 13, 1950. He is not liable to pay any development charge and his right to restore is a factor to be taken into account on valuation if the land is compulsorily acquired, but he has no right to claim compensation for the refusal of the planning permission itself. All this is achieved by including this right to restore the interior of a war-damaged building among those rights set out in para. 1 of the 3rd Schedule to the Act.

ENFORCEMENT NOTICES

The second point on which the 1947 Act is amended is in connection with enforcement notices. The new Act extends the period within which a planning authority may serve an enforcement notice to four years from the time when any condition imposed on the grant of permission is broken. Under the 1947 Act, as passed, an enforcement notice had to be served within four years of the original development. So, if planning permission for a development was given subject to a condition and the developer observed the condition for four years, he was free after that to break the condition without fear of an enforcement notice. No one could call that a desirable state of affairs.

EAST FOR EASTER

An architectural diary of an air journey from London to the Far East and back again.

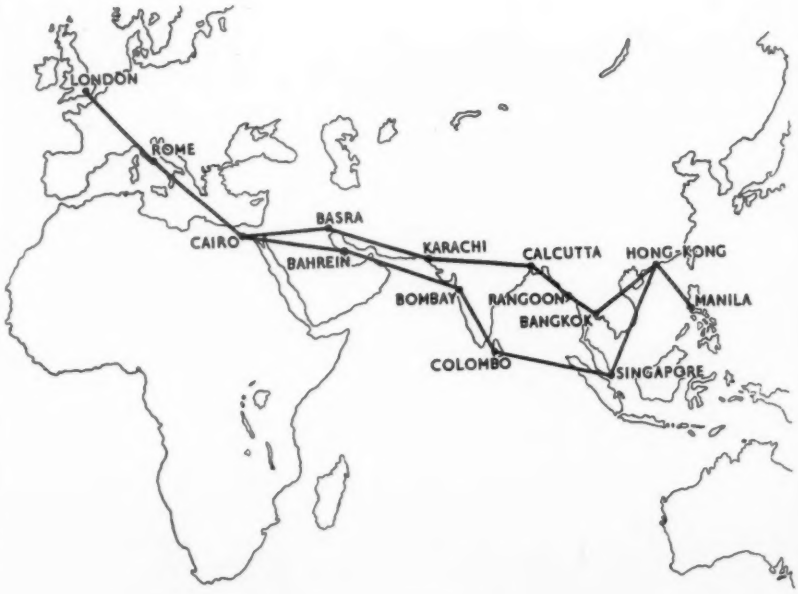
By J. M. Richards.

IT no doubt adds piquancy to the glamour of departing for far places that one sets out from so banal a building as the Airways Terminal in Buckingham Palace Road, but that hardly compensates for the depressing sequence of architectural experiences provided by the initial stages of an air journey from London, of which this building is but the first, and which do not end until one is inside the aeroplane.

The building is spacious enough inside, but outside is an object lesson in false monumentality, in the clumsy application of period detail and sculpture and in the senselessness of an elaborately symmetrical façade that is never seen except from an oblique angle. Departure is through a side door into an alley strewn with dustbins and empty milk bottles, designed as a drive-in for coaches but so tightly planned that the coach has to turn and back and turn again before it can drive out. It is strange, incidentally, that nearly all air termini push their passengers out in some such casual fashion; seeing that the moment of departure is the climax of the whole proceeding for which the building is planned, one would expect the designers to have concentrated their evident liking for architectural formality round the point of departure.

After this undignified exit to Buckingham Palace Road, a drive through the seedier parts of Pimlico and Kensington and along Western Avenue, lined with factories embodying caricatures of every recent style of architecture from that of the Stratford-on-Avon Memorial Theatre to that of Hilversum Town Hall, and with ribbons of suburban houses, crossed by footbridges no one ever seems to use. Thence to London airport — an agglomeration of sheds with an untidy skyline of masts and watertanks—but this, though it has been a long time at it, is still an airport in the making and one must not be too critical of its appearance until the results of Frederick Gibberd's permanent rebuilding begin to be evident. The passengers' waiting rooms, it should be added, are not at all disagreeable inside considering their makeshift nature. Out on to the tarmac (after fewer than usual of those delays that frequently offset the time-saving advantages of air travel), aboard the aeroplane and the real journey begins.

Tuesday. Punctual take-off 10.30 a.m.; first stop Rome. The aeroplane is an Argonaut, seating about 40 people and with a cruising speed of just under 300 m.p.h. The passenger space is divided in two by an entrance lobby, which also serves as the kitchen-pantry, a logical economy in planning because entrance space (and for that matter the entrance itself) is only needed when the machine is on the



ground, and meals are only served when it is in the air. The only disadvantage is that passengers trying to make their way from the rear compartment to the washroom in front, or from the front compartment to the lounge at the back, do so just before a meal only at the cost of pushing past the steward and stewardess trying to dish out hors d'oeuvres in an already confined space.

The aeroplane is thoughtfully fitted out for long distance flights, even to the extent of providing shaving things in the washroom for passengers who want to step out at their destination looking respectable and who have forgotten to put their own in their hand-luggage. The interior decoration is discrete and pleasant—wall surfaces in different tones of grey; upholstery dark blue; window curtains red and white. Everything has clearly been *designed*. Notably well designed are the glasses in which drinks are served at meals.

Cloudy weather, but glimpses of England below, showing that toylike quality that the domesticated English landscape with its red-roofed two-storey houses, its neat gardens and tidy demarkation of fields always possesses when seen from the air. Later on, glimpses of the patchwork surface of agricultural France. After that, unbroken cloud, till a sudden patch of clear weather reveals the unmistakable shape of the Lake of Geneva. Then the rock and snow of mountain ranges, curiously flattened from above, and then more cloud again, which continues solid till we dive down through it to land at Rome.

An exciting prospect—to survey the Holy City from the air, but the first impression is much like that of other great cities composed of huge square blocks of modern flats. The new railway station is easily located, but in a single swift crossing of the city it is difficult to pick out even one celebrated historic monument. There are glimpses of a couple of brown amphitheatres and the contrasting white sugar-cake of the Victor Emmanuel memorial. For some reason St. Peter's is elusive, though later at the airport its dome stands up boldly on the horizon. South of the city the brown arches of the Claudian aqueduct stutter across the green landscape; then down we go, on to the steel-shod runway of Ciampino Airport.

As usual there is a lot of messy work going on—airports seem to be constantly under construction; one never comes across a finished one. Their architectural character moreover is the same the world over—you can hardly tell whether the particular combination of cream-coloured horizontally fenestrated façade, rounded control tower tarmac foreground and radio masted skyline that you happen to be looking at is in Europe, Asia or Africa except by the colour of the skin of the shouting individuals who gather round with gangways, chocks, trucks and hose-pipes directly your aeroplane lands.

The centre of Rome from the air.

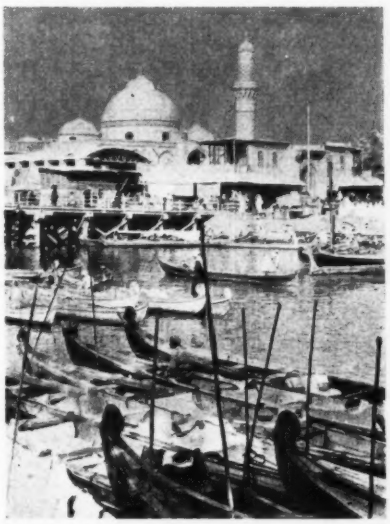
Ciampino is no exception, though the airport buildings are more ramshackle than most. Sections of them are formally designed with a conscientious use of modern clichés and glass swing-doors flanked by bay-trees in tubs; then uaccountably these give place to mere shacks—as though a child was building it who had suddenly lost interest—and then the architecture begins again for a stretch. But Rome is fortunate; even the shacks are not wholly unlovely, for in sunshine peeling plaster and drooping wires do not look so squalid as in the damp climates farther north.

Ciampino seems very free and easy compared with airports elsewhere. The waiting passenger is not supervised and shepherded, but can wander out on to the tarmac, among the cruising jeeps and vociferous officials. Alongside the edge of the airfield run a railway line and a road, and together with the parked aircraft they have the effect of one of those instructional pictures showing all the means of modern transport. The road is a busy one; why do so many Italians seem to have just acquired brand-new racing bicycles? There is a rattle and a roar, rising to a deafening crescendo. Another aircraft taking off? Not at all, it is only one of those motor-scooters (called topolinos—little mice) which the Italians now dote on, approaching along the road.

After an hour's wait, off again for Cairo. Five o'clock by local time, and before long it's growing dark. Across the Mediterranean in total darkness, but eventually clusters of lights below indicate the thickly populated Nile valley. A larger spread of lights indicates the approach to Cairo, and soon, as we lose height, they reveal themselves in the form of avenues, streets and buildings, with blank patches marking the location of the so-called cities of the dead—tombs and shrines ranged along miles of traffic-less streets—and as we circle round segments of lights are progressively cut off by the steep escarpment of the Mokattam hills.

Approximately at midnight a smooth landing at the airport, which turns out not to be Almaza—familiar to so many wartime travellers—but Payne Field, the huge airfield built by the US Army during the war, renamed Farouk. Almaza is now used by the Egyptian Air Force. Spaciously planned one-storey buildings, including an arcaded stucco transit-passengers' waiting room with well-tended garden forecourt; a brief glimpse of officials with tarbooshes, policemen carrying rifles and the ubiquitous Egyptian night watchman with head-scarf wound round the neck and over the mouth in protection from the chill night air; then off again to Basra.

Wednesday. First daylight over the north Arabian desert, muddy brown in colour, as grim and lifeless as the surface of the moon. The same landscape continues till almost within sight of the



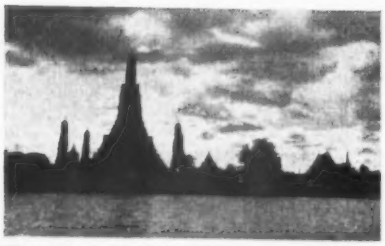
The old and the new at Basra: bellum's plying for hire in Ashar creek and the airport buildings at Margil.

Shatt-el-Arab, the great estuary that carries the combined waters of the Euphrates and the Tigris into the Persian Gulf. Then it is gradually superseded by groves of date-palms, among which Basra itself is almost buried. Here we are in the greatest date-growing centre of the Middle East. Here, too, for the first time we see the veritable Middle East without the surface changes Western civilization has imposed on so much of Egypt and the Levant: dusty villages among the date-palms; a biblical way of life. But as a contrast there are merchant ships at anchor and modern dock installations, over which we circle preparatory to landing at another airport—Margil—hardly distinguishable from any other. The long low building, with the usual circular balconied control tower, incorporates in this instance a hotel.

Off again after a short delay (but by now a couple of hours behind schedule, owing to head-winds). The spreading

waters of the Shatt-el-Arab, with a glimpse of the Marsh Arabs' strange reed-plaited huts; then a featureless journey, first over the barren hills of southern Persia, then over the Indian Ocean. Karachi: a great sprawling brown city beside its lagoon-like harbour, surrounded by mangrove swamps, its buildings from the air looking like quantities of English prefabs. It is hot on the ground—a sudden change after unexpected chilliness at Basra—even though it is already evening. In fact, the sun has set before the by now familiar refuelling routine is finished. But as we gain height it rises again redly and blazes for a while just above the horizon, then sinks once more as we speed eastwards in gathering darkness across the burnt plains of central India.

Calcutta next, but nothing of it visible as we glide in about midnight, except an immense map of lights spreading, it appears, to the horizon. More delays now: there is fog, it seems, over the airfield at Rangoon and we are to wait five or six hours at Calcutta to give it time to clear—a chance to snatch something more sustained in the way of sleep than one can get dozing in a reclining chair in the aeroplane. Verandahed airport waiting-room; bare-footed Indian servants; the clack and whirr of fans slowly revolving in the ceiling—a sound that in the days to come is to be as inescapable on the ground as the sound of the vibrating engines in the air.



Top, life on the water in Siam; bottom a frieze of temples at Bangkok.

Thursday. First light reveals the usual airport scene once more. The air is steamy, and the smell of burning fat as cooking fires are lighted in the native compounds nearby hangs about among the smoke. Off at 6.30, eight hours behind schedule, but low cloud again prevents a view of Calcutta. Cloud all the way to Burma, but it breaks up as we approach Rangoon. A country-side like an immense golf-course, brown and tangled in the roughs but with well-kept, well-watered greens. As we circle to land: the muddy estuary of the Rangoon river, ships at anchor, the familiar aspect of a great Asian port—docks and cranes contrasted with a jumble of close-packed shanties—the spread-out city sombre in colour, but relieved by our first glimpse of a world-famous building since the dome of St. Peter's disappeared over the Italian horizon: the Schwe Dagon temple, with its newly regilded conical pagoda, 360 feet high, glittering in the sun.

A minimum wait at Rangoon in the somewhat ramshackle airport, among the plump and amiable Burmese, then off across the ocean to Siam. Land again soon; tidy criss-cross of brown paddy-fields, with little farmsteads embosked in greenery; Bangkok airfield, with pleasant buildings, though rather more primitive than elsewhere, in which Coca-Cola is served to everyone on disembarking. Little smiling people who scamper about like mice; lunch in the airport restaurant (beer canned at Milwaukee with the usual stringy chicken); then an announcement that we must stay here till early next morning because we are too far behind schedule to make Hong Kong by daylight. Hong Kong is the one airfield on this route where aircraft do not land or take off in the dark—for a very good reason, as one can understand on seeing it, for it is right down on sea level, closely surrounded by high peaks and rocky islands.

Instead of a take-off for Hong Kong therefore, a bus drive of some miles along the road that leads eventually to Bangkok city, as far as the KLM rest-house—a dreary, dusty road, like all roads leading to airports, but the rest-house a refreshment and a delight. Set in a large garden laid out with trees and fishponds (among the trees, neat little huts for the Siamese servants and their families) is a two-storey timber structure with spreading eaves and wide verandahs; the whole of the ground floor a lounge with bamboo furniture, office and bar; beyond, steps lead down from the verandah into a courtyard at the far end of which is an open sided dining-room and ranged along either side are two-storey blocks of bedrooms, approached by an open verandah at each level. The bedrooms, and the bathrooms opening off each, are beautifully equipped, even to the extent of providing a cradle with its own miniature mosquito net in case passengers are travelling with babies. Everything in the rest-house is spotless and highly polished, the joint product presumably of Dutch house-pride and the plentifulness of conscientious Siamese servants. As it gets dark, insects buzz and the broad leaves of tropical trees show up acid green in the lights spreading from beneath the verandahs.

Hong Kong: the land-locked harbour from Victoria Peak. Below is the centre of the city with tall commercial buildings grouped round the cricket ground. Across the water is Kowloon linked to Hong Kong proper—which is an island—by ferry.

Friday. Take off at 2 a.m. from Bangkok, so as to make Hong Kong by first daylight. Cloudy all the way. The weather over Hong Kong has deteriorated and there is now doubt whether a landing can be made. Over the harbour, 7 a.m.; down through the clouds to a low-level close above a steel-blue sea; square-sterned junks with brown corrugated sails; rocky islands; high peaks beyond, partially obscured by cloud; a circling course low over the land-locked harbour, trying to find a cloudless approach to the airstrip; glimpses through the clear patches of ships at anchor, more islands; a densely built-up section of Kowloon, a stretch of waterfront crowded with people, ships unloading, then into cloud again; one more circle with glimpses of high peaks spotted with white houses, but the clouds keep low and the landing is off.

Up again above the level of the peaks, therefore, and off south-eastwards to Manila in the Philippine Islands, the nearest alternative airport, four hours' flight away, Canton being no longer accessible. At first through cloud, then beneath clear skies, drumming steadily over the wrinkled sea (to use Coleridge's adjective, chosen by him with remarkable pre-vision of how the ocean looks from the air). In due course, the brown landscape of Luzon, and then the thickly inhabited country around Manila, remarkable for the hundreds of new tin roofs reflecting the sun. An hour and a half of baking heat refuelling at Manila airport, a somewhat blowsy building in the now familiar style, in this case highly spiced with Americana. Then off again for Hong Kong. The clouds, which still hang low over the peaks, have lifted enough for a landing to be possible, 28 hours' late. The journey from England was scheduled to take 49 hours, which means the passage of only 41 hours, the other 8 hours being time lost by travelling eastwards.

Hong Kong: a thriving pulsating city, lately swollen in population, by migrants from Communist Shanghai, to nearly 3 million. Most of these seem to live in the teeming tenements along the waterfront, between the harbour and the steeply rising Peak, except those whose only home is one of the countless little boats with arched roofs of matting like water-borne caravans that continually come and go among the islands and inlets. The density along the waterfront has been calculated at 3,000 to the acre. There are as many people living there as in the whole of New Zealand.

The buildings in the older part of the city have an almost standardized façade, with verandahs on every floor and shops and cafes at ground level. Those facing the water-front, in the old comprador tradition, have warehouses behind them into which the goods comprising Hong Kong's immense *entrepot* trade are directly unloaded. Wide streets parallel with the water-front, thronged with foot-passengers, separate the high buildings; at right-angles are narrow alleys, sometimes changing into flights of steps as they meet the rising ground behind.

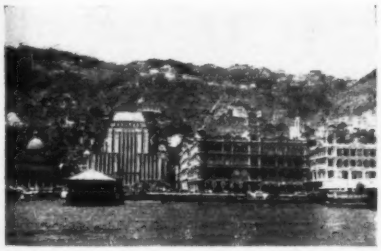
On the same stretch of flat ground between the harbour and the Peak—partly reclaimed land—is the commercial centre; tall blocks of bank and office buildings of conventional pattern, such as you might see in any western city, with a clearly discernible American influence. Climbing up behind, on ledges scooped out of the steep hillsides, are innumerable bungalows and villas and (especially in recent years, since the price of land was multiplied by six) blocks of flats. A number of these have been allowed to encroach on the skyline, not to the benefit of Hong Kong's magnificent setting. Some form of town-planning control is now being instituted, though it is too late to stop a good deal of badly sited building.

But it is to be welcomed none the less, because the amount of building activity current and projected (in spite of the fact that the cost of building that was 40 or 50 cents per square foot before the war has risen to 3 dollars) is prodigious. Private architects are busy, and are put off neither by the typhoons nor the white ants. The biggest firm, for example (in fact, the biggest in the Far East), Palmer and Turner, are building amongst other things what will be the tallest building in the Colony. It is in the very heart of the city and is to be, strangely enough, the Hong Kong headquarters of the Bank of China, the clients of this symbol of capitalist solidarity being the Communist Chinese Government. The steel frame is completed, and the stone casing half way up. The same architects have recently completed a pleasant junior school at Kowloon, the rapidly expanding city on the other side of the harbour.

Government House, Hong Kong, altered by the Japanese during the occupation to give it a more oriental appearance.

The Public Works Department is even busier, with schools, police stations, housing for government employees and many other jobs. Their programme involves the expenditure in the next five years of over 15 million pounds, and includes a general hospital, a great new abattoir (alone costing a million pounds with its equipment), a city hall and a new secretariat to replace the charming but now obsolete colonial-style stucco building half-way up the hill.

The University, too, has an ambitious building programme, including the repair and extension of the war-damaged main building, a new students' union and a number of students' hostels. Designs for these are in the hands of Gordon Brown, head of the University's newly established Department of Architecture, previously Professor at Edinburgh and Principal of the AA. His will be the first school of architecture in the Far East run on modern lines, and when it has its full course running and has gained RIBA recognition, will be a great asset to the University and to the Colony, for both PWD and the pri-



Top left, the commercial centre of Hong Kong, with the hillside residential districts beyond; top right, many of the rapidly increasing Chinese population live permanently in boats; bottom, a main street in one of the Chinese districts, with the architecture almost concealed by the characteristic vertical signs.

vate architects have at present nowhere to turn for well trained assistants and junior partners. The course has only been going two terms, but over forty students have joined, mostly Chinese and Malays. The curriculum is largely modelled on that of the AA, and a country school is already planned on Lan Tau island, two hours away by boat.

Another important architectural enterprise is a new reclamation scheme along the water front, which will push the centre of the city 150 yards out into the harbour. The first section, a quarter of a mile in width, is soon to begin. An impressive aspect of building in Hong Kong is its rapidity, nine months being regarded as plenty of time for the construction of a large building. The native labour seems to be willing to work at night as well as day, seven days a week.

Most of the new buildings in the Colony are conventional in style, and they are very mixed in quality. Outstanding in design is the latest work of PWD under its chief architect W. Shewan. The new police station at Kowloon with its European married

Top, temporary office buildings at Hong Kong designed for their own use by the Public Works Department architects; bottom, new flats for Government employees, designed by the P.W.D. architects; a glimpse of the harbour beyond.

quarters adjoining, the rebuilt Queen's College and several blocks of Government flats, refined in detail and spaciously planned, have a real architectural quality that makes a large proportion of the other new buildings look clumsy and ill-conceived. That a public works department should set a lead in good quality design is particularly encouraging, accustomed as we have become to the conservative engineering-with-frills-on attitude of most official departments.

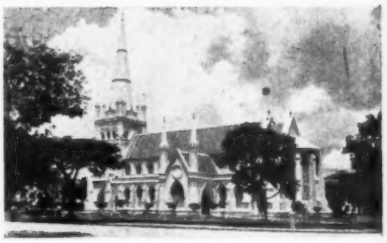
Other impressions of Hong Kong: the gay effect of the Chinese-quarter streets, with the architecture completely hidden by an array of vertical signs; the standard pattern English pillar-boxes, the efficiency of the frequent ferry service across the harbour to Kowloon, including a number of smart Canadian-built car ferries; Government House, occupying an imposing position half way up the hill, but altered outside by the Japanese during the occupation to give it a real Japanese style, so that it now looks like a Walt Disney castle; the wonderful views over the harbour and its islands from almost every building site in the Colony; the cricket ground right in the middle of the commercial centre, surrounded by office blocks; the Chinese delight in neon-signs, which lavishly adorn all the main streets and go particularly well with Chinese characters—a kind of stationary fireworks.

The airport buildings at Singapore, in almost standard international style.

Tuesday. A different route for the return journey. Off early in the morning to Singapore. A long uneventful crossing of the South China Sea, skirting the coast of Indo China on the way. Singapore, flat as a pancake and therefore dull to look at after the mountainous drama of Hong Kong, but a pleasant enough city, not unlike Hong Kong in character but without its lively waterfront, the city centre being largely cut off from the water by docks and harbour works. To compensate, it has a far larger number of early colonial-style cream-washed buildings, some of them quite delightful; notable are St. Joseph's Convent, the Roman Catholic Church and, most charming of all, the Presbyterian Church, beautifully set among lawns and trees. Not to be missed also are the angular Gothic Cathedral (1862) and Ellenborough Market, a splendid example of decorative cast-iron work. There is a quantity of good, forthright but somewhat coarsely detailed housing by the Singapore Investment Trust.

A night in Raffles Hotel, traditional centre of social life in the city. Though altered by the Japanese it still retains its atmosphere of early days. Mostly on one storey, it spreads around endless courtyards, with lofty halls and suites of guest rooms as large as London flats opening off cool paved verandahs. Inside, the perpetual hum of ceiling fans; white-robed waiters carrying drinks on trays; oppressive steamy heat.

Wednesday. Off again in the morning, flying first across the Malayan peninsula to Port Swettenham, then over the Malacca Straits and the dull brown landscape of Sumatra; then four



Singapore: top, typical coastal landscape; centre, the Municipality, like many other heavy western-style public buildings that dominate the centres of commercial cities in the Far East; bottom, St. Andrew's Cathedral built in 1862, equally unsuited to the locality in style but with some Victorian charm.

Raffles Hotel, Singapore, characteristic of the early white man's architecture of the Far East.

hours across the Indian Ocean, flying steadily over the blue water, only marked by purple shadows cast by small cotton-wool clouds. Strange that in these ocean flights no ships are ever encountered except when entering or leaving ports. Traffic keeps to a few shipping routes; elsewhere the ocean is quite empty.

The coast of Ceylon, with a scalloped edging of bright sand and inland the dense growth of the jungle—looking from above like a lot of parsley. Small outcrops of rock and sandy river beds. Then the island grows mountainous, rising to high peaks in the centre. Inhabited valleys; then tidy tea plantations, looking like the planted parterres in engravings of Elizabethan gardens—a vivid contrast to the brown criss-cross of paddy-fields elsewhere.

A glimpse of the western Indian Ocean; red-roofed bungalows among the plantations; then down to land at Colombo. The drive from Negombo airport to the city, 20 miles through dense palm groves; potters' workshops by the roadside; low verandahed houses among the trees, thatched and stuccoed; at intervals larger bungalows, many with elaborately fretted timber gables, painted pale blue and white, sparkling in the sun, and with bargeboards more intricately carved than any at Sidmouth or Oxhey; the road, even in the stretches between villages, crowded with strolling long-skirted pedestrians; high-sided carts drawn by grey humped oxen.

The outskirts of Colombo, as squalid and chaotic as the approach to most big cities; ornately carved Hindu temples alongside bicycle repair-shops and seedy brick tenements; the commercial centre, similar in pattern to Hong Kong or Singapore, but the western-style buildings somewhat uglier; hawkers, desperately anxious to dispose of foreign postage stamps; the Grand Oriental Hotel, everybody's meeting-place; views over the harbour and its shipping from the upper windows but a sense, as in Singapore, that the siting of the docks deprives the city-centre of the charms of an open

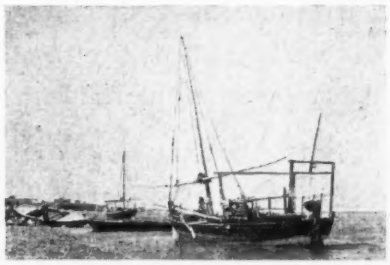
Colombo: top, rural scene on the road approaching the city; bottom, city centre, with its ugly assortment of Western-style buildings.

water-front. That, on reflection, is Hong Kong's great asset in addition to its mountain setting.

Thursday. Another early morning start, and another long ocean flight; thence up the west coast of India—brown and featureless (at least from 17,000 feet)—to Bombay. Not much to be seen of this great city while coming down to land; the now too familiar airport lay-out, but the passenger buildings a refreshing departure from the usual pattern. They consist of a couple of huge arched sheds—hangar style—their ends (facing the approach road and the airfield) completely open up to about 20 feet, then only filled by glazed and louvred panels, so that air blows freely through the vast upper spaces, and coolness and sufficient shade is provided in the stabbing, stifling heat. Only the floor-space is subdivided by light partitions into the necessary waiting rooms, restaurants, offices and customs sheds.

The usual hour refuelling, then off again (4 p.m.) across the ocean towards Arabia. As the sun sets the rocky outlines of the Trucial Coast; the familiar undulating sandy landscape, the very embodiment of infertility; glimpses of the Persian Gulf beyond, then a landing in darkness on the oil-bearing island of Bahrein. Off again for Cairo at midnight.

Friday. The last day of the journey. Once more a halt at Cairo in the darkness, then off home on the same course as the outward journey ten days ago.



The Trucial Coast: pearling boats in a lagoon off the Persian Gulf.

Clustered lights in the Nile Delta; over Alexandria at first daylight; the mountains of Crete and a glimpse of southern Greece; the coast of Calabria in the hazy morning sunshine; up the west coast of Italy a few miles out at sea; over Capri and Ischia with the bay of Naples spread out between them and the mountains, still sprinkled with snow, rising blue-grey behind; then Rome again; a glimpse of Mussolini's ridiculous new marble capital as unfinished as he left it; then off across the city to the cloudier north, on the last few hundred of 20,000 miles.

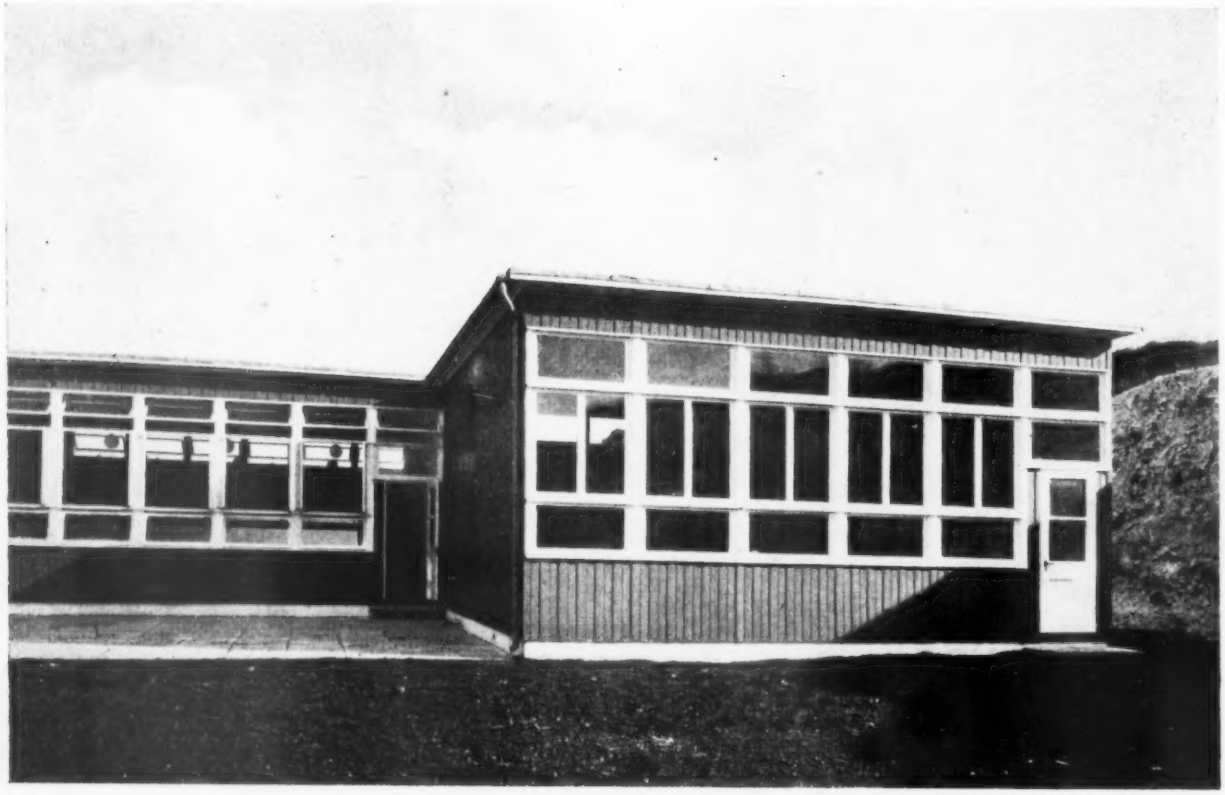
The clouds accumulate. Nothing more to be seen till the descent over the damp landscape of Middlesex; wet suburban roofs; the puddled runways of London Airport across which the wind blows in icy gusts. It is only mid-afternoon but in the scattered sheds that fringe the tarmac the lights are being put on already.

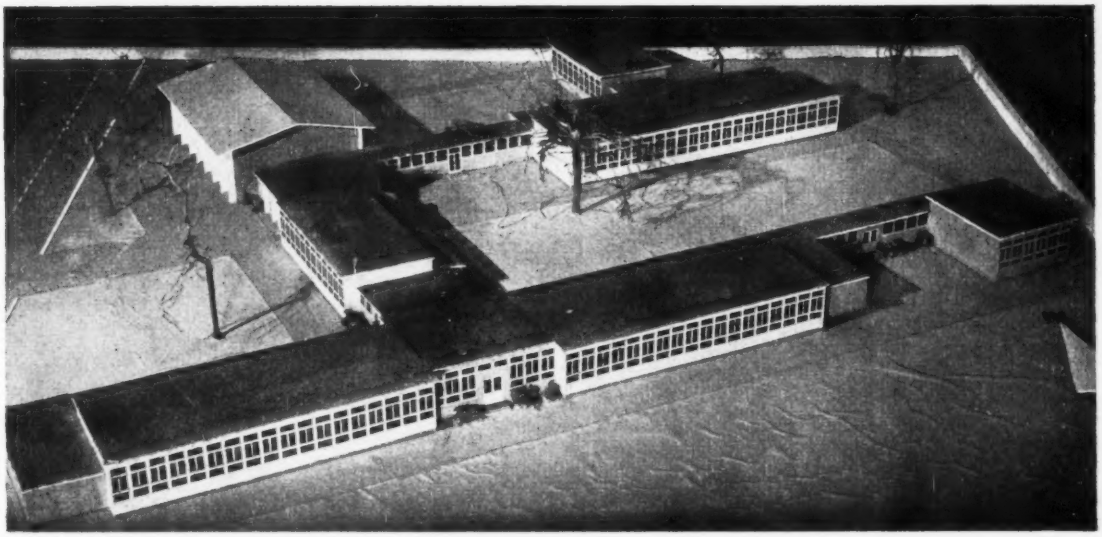
PREFABRICATED TIMBER SCHOOLS

designed by RAGLAN SQUIRE

In order to meet the unprecedented need for school buildings at the present time and to reduce the demand on limited labour resources in the building trade, a range of prefabricated school buildings with scope for individual planning has been designed for Medway Buildings and Supplies Ltd. There are three different types of buildings being produced at the present time. The second and third stages illustrated here have been evolved from the original simple timber building of traditional design, based on a 6-ft. module and with a span of 24 ft., many of which have been in use for some years.

Prototype stage three classroom block.

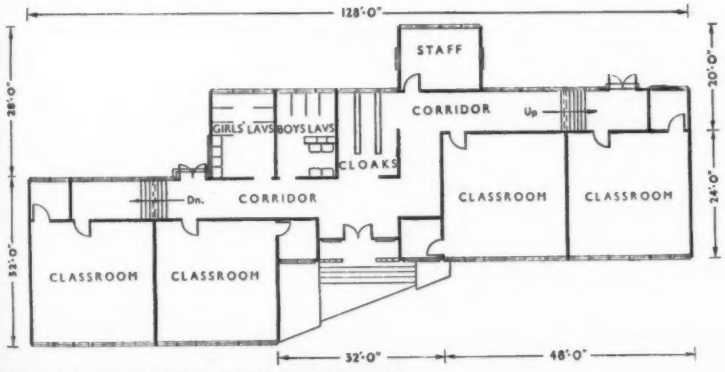




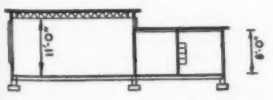
Above, model of typical lay-out for a complete school, looking north-east. The assembly hall, seen top left, would be built in traditional materials.

PLAN.—The third stage, shown on pages 458 to 460 is a basic system of permanent school building offering facilities for planning entirely new schools. The organization of the whole scheme is sponsored by the relevant Government departments and the buildings are available to education authorities without a timber licence. The mass-produced wall, floor, roof and partition units may be assembled in a great variety of ways to form school buildings in accordance with recognized educational requirements. Planning is on a 4-ft. grid with alternative ceiling heights, and the classroom blocks are intended to be combined with a central administrative block built in traditional construction. Units can be planned on the basis of independent blocks of one, two, three or more classrooms, with or without cloakroom and lavatory accommodation.

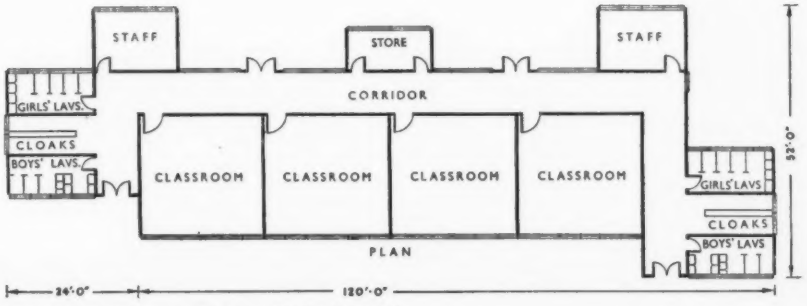
CONSTRUCTION AND FINISHES.—All timber is new imported softwood and the construction is based on a 4-ft. module. Plain wall sections are of 3-in. sq. framing with 3-in. by 1½-in. rails and braces, clad on the exterior with 4-in. by ⅞-in. vertical tongued and rebated boarding, backed with building paper. Interior linings are ⅜-in. foil-backed plasterboard. Classroom windows are 4 ft. wide by 8 ft. high and there are clerestory windows over corridors 4 ft. wide by 2 ft. high. Classroom roofs



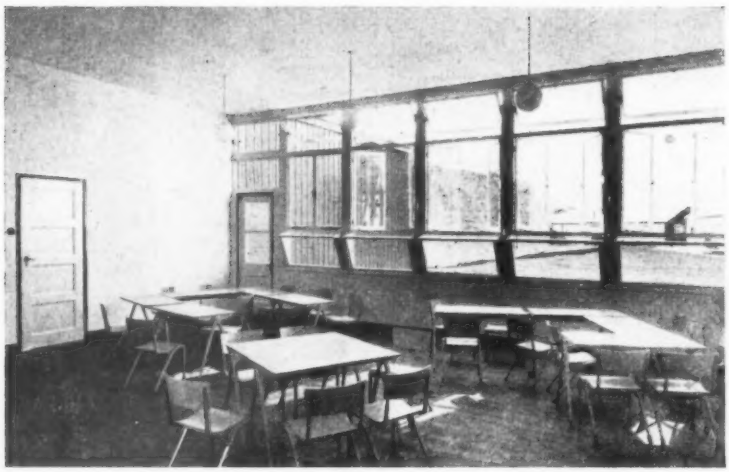
Plan of classroom block adapted for sloping site



Cross section through classroom, corridor and store



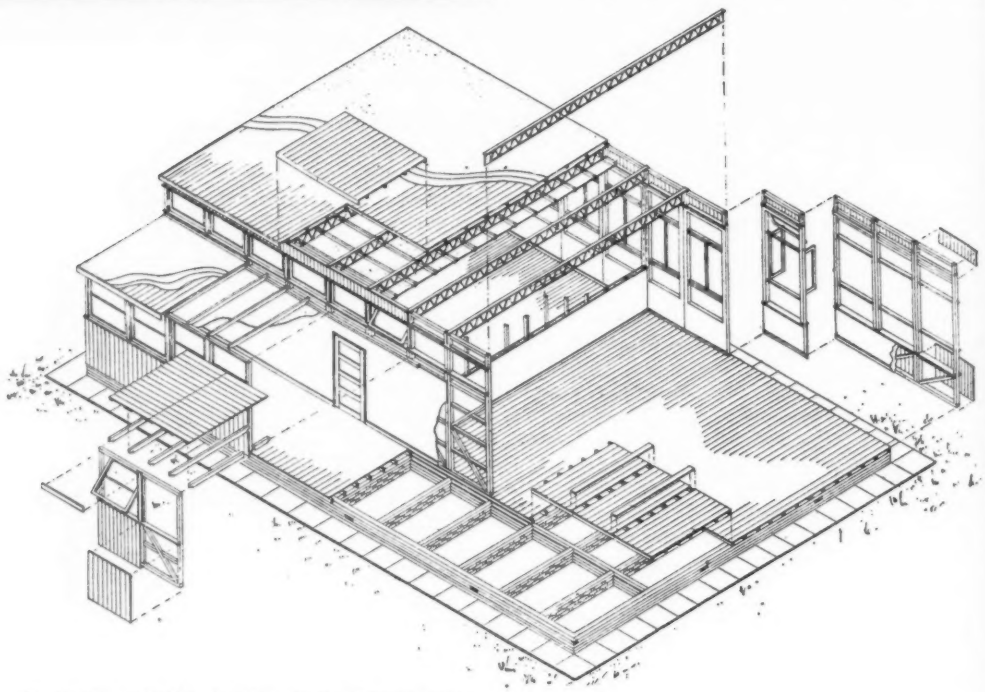
Plan of typical classroom wing [Scale: $\frac{1}{32}$" = 1'0"]



PREFABRICATED TIMBER SCHOOLS

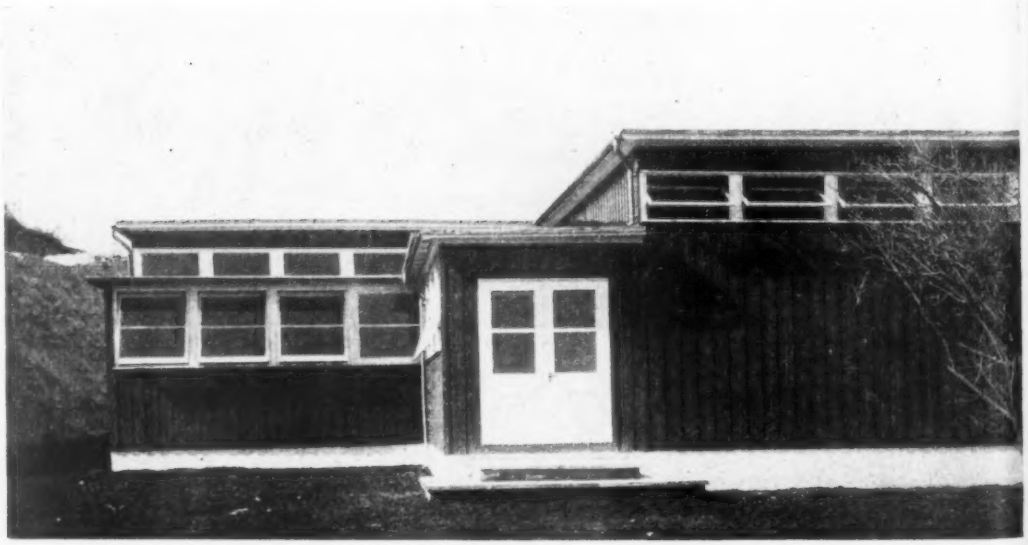
designed by RAGLAN SQUIRE

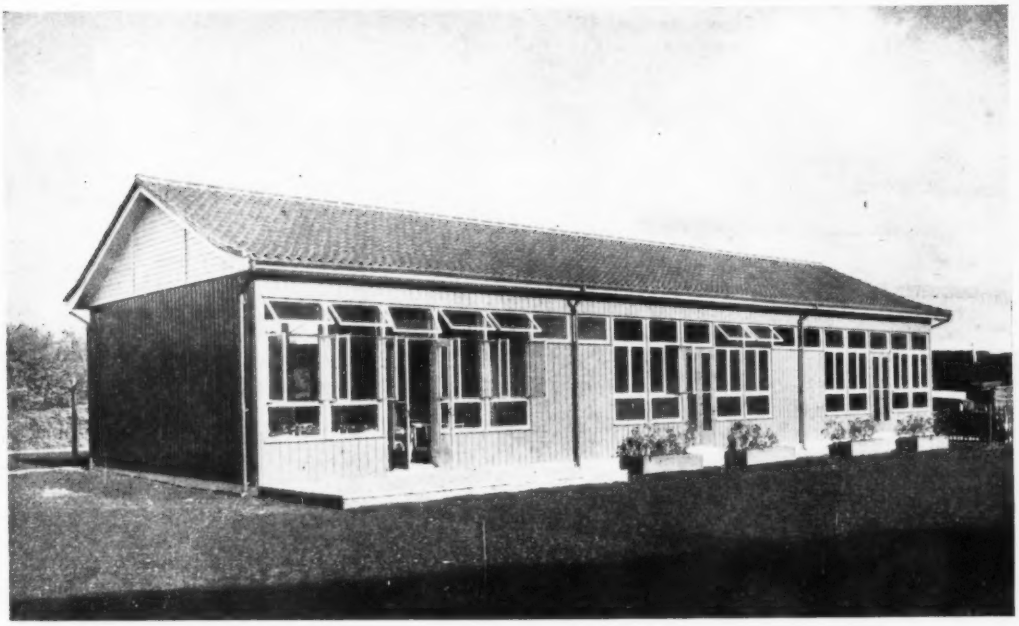
are of prefabricated panels of tongued and grooved boarding on 2-in. by 1½-in. joists, supported on light welded lattice beams (weighing approximately 190 lbs.) at 4-ft. centres. The covering is a multiple felt and bitumen compound with sanded finish. Flooring is in 8-ft. by 4-ft. sections of ⅞-in. tongued and grooved boarding on 3-in. by 2-in. joists at 16-in. centres. The 4-in. by 2-in. wall plates will be laid on brick or concrete foundations. Ceilings are of ⅜-in. foil-backed plasterboard carried on 2-in. by 1½-in. joists at 2-ft. centres. All sections are made to bolt or screw together and are supplied complete with bolts, screws and nails. The thermal value of wall panel consisting of timber cladding, building



Isometric projection showing structural components

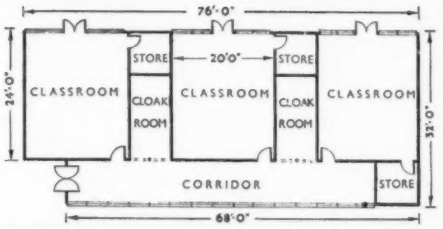
Above, typical classroom interior. Right, main entrance to stage three prototype classroom block. This prototype shows two staggered classrooms and an L-shaped corridor and cloakrooms. Various sections typical of the system are demonstrated.





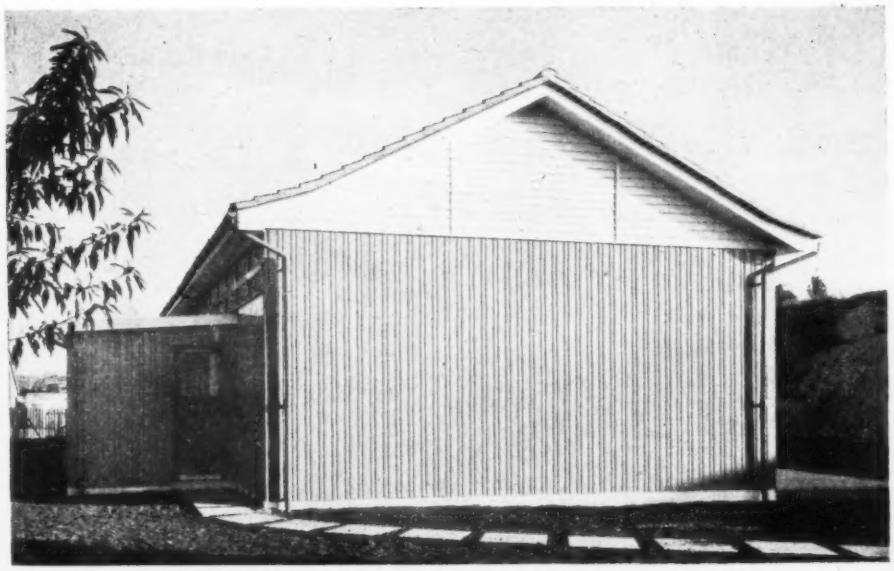
paper, 1" air space and foil-backed plasterboard is 0·25, which is superior to an 11-in. cavity brick wall. The floor units, which span 4 ft., will carry 120 lb. as against the required 80 lb.

STAGE TWO.—Permanent classroom blocks which form the intermediate stage between the simple timber building mentioned on page 458 and the units which are intended to form a complete school, as illustrated on the previous three pages, are designed primarily to meet the demand of existing schools requiring additional classroom accommodation. These classrooms are designed on a 4-ft. module with a standard 24-ft. span. The 8-ft. corridor can be omitted if required or doubled in width to allow for the inclusion of additional cloakrooms and lavatory accommodation.

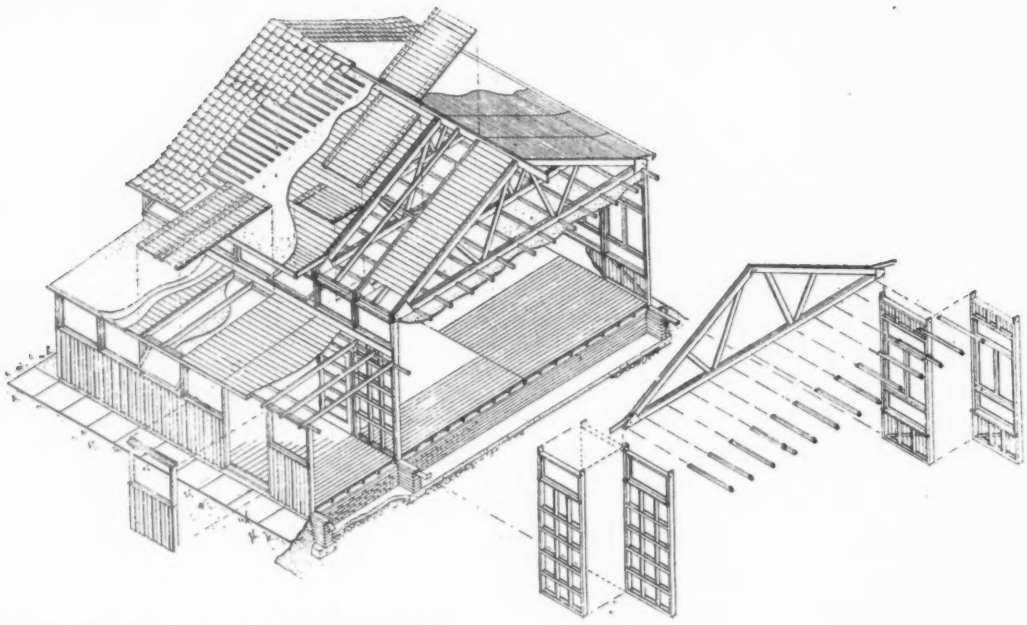


Typical classroom block plan [Scale: $\frac{1}{16}$ = 1' 0"]

CONSTRUCTION AND FINISHES.—Plain wall sections are framed in 4-ft. panels of softwood with an overall thickness of 5½-in. Vertical framing is 4½-in. by 1¾-in. (forming 4½-in. by 3½-in. column at 4-ft. centres) with 3¾-in. by 1-in. studs and 2-in. by ¾-in. ledges and braces clad on exterior with 4-in. by ⅞-in. vertical tongued and rebated boarding backed with building paper. The interior linings are similar to



Above, prototype of stage two classroom block intended for additions to existing schools. Left, a gable end with horizontal boarding over tongued and rebated vertical boarding.

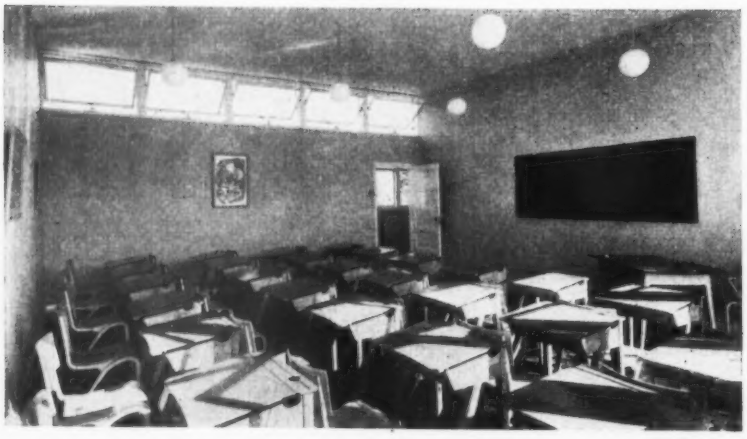


Isometric projection showing structural components

PREFABRICATED TIMBER CLASSROOMS

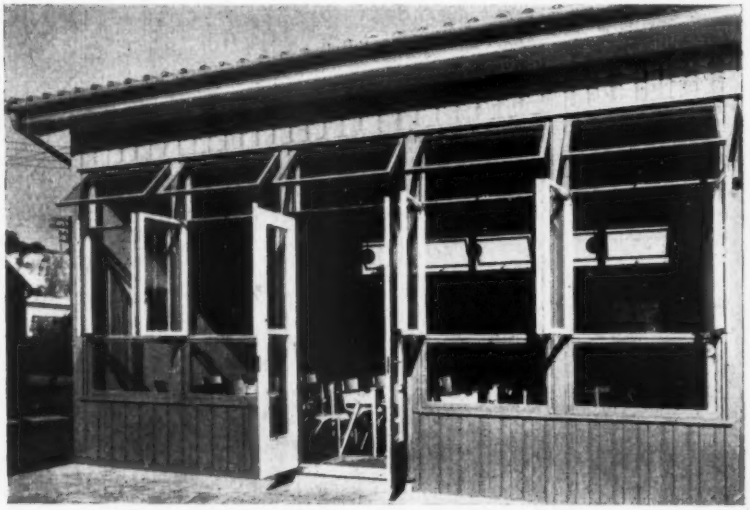
designed by RAGLAN SQUIRE

Below left, typical classroom with pivot-hung clerestory windows above the corridor. Bottom left, cloakroom. Below, window detail in prototype stage two classroom.



the stage three classrooms and also the door and window sizes, but the clerestory windows over corridors are 2-ft. 3-in. deep. The roof is of prefabricated timber trusses at 4 ft. centres with 4 in. by 2-in. intermediate rafters and 4-in. by 2-in. purlins supporting panels of $\frac{7}{8}$-in. tongued and grooved boarding, tied with $\frac{3}{4}$-in. by 2-in. ledges and covered with pantiles. Horizontal boarding is used on the gable ends.

The prototype classroom blocks have been erected by the manufacturers, Medway Buildings & Supplies, Ltd. For list of sub-contractors see page 470.



ivot-
orri-
elow,
two

and
over
pre-
4 in.
rlins
oved
vered
the

ected
plies,

WORKING DETAIL **FURNITURE AND FITTINGS : 3**

ADJUSTABLE SHELVES : SHOP AT HARLESDEN

Brian Peake, architect

The mahogany shelves on tubular aluminium brackets may be inserted in almost any position on the perforated display screen, which is of cellulosed metal-faced plywood.

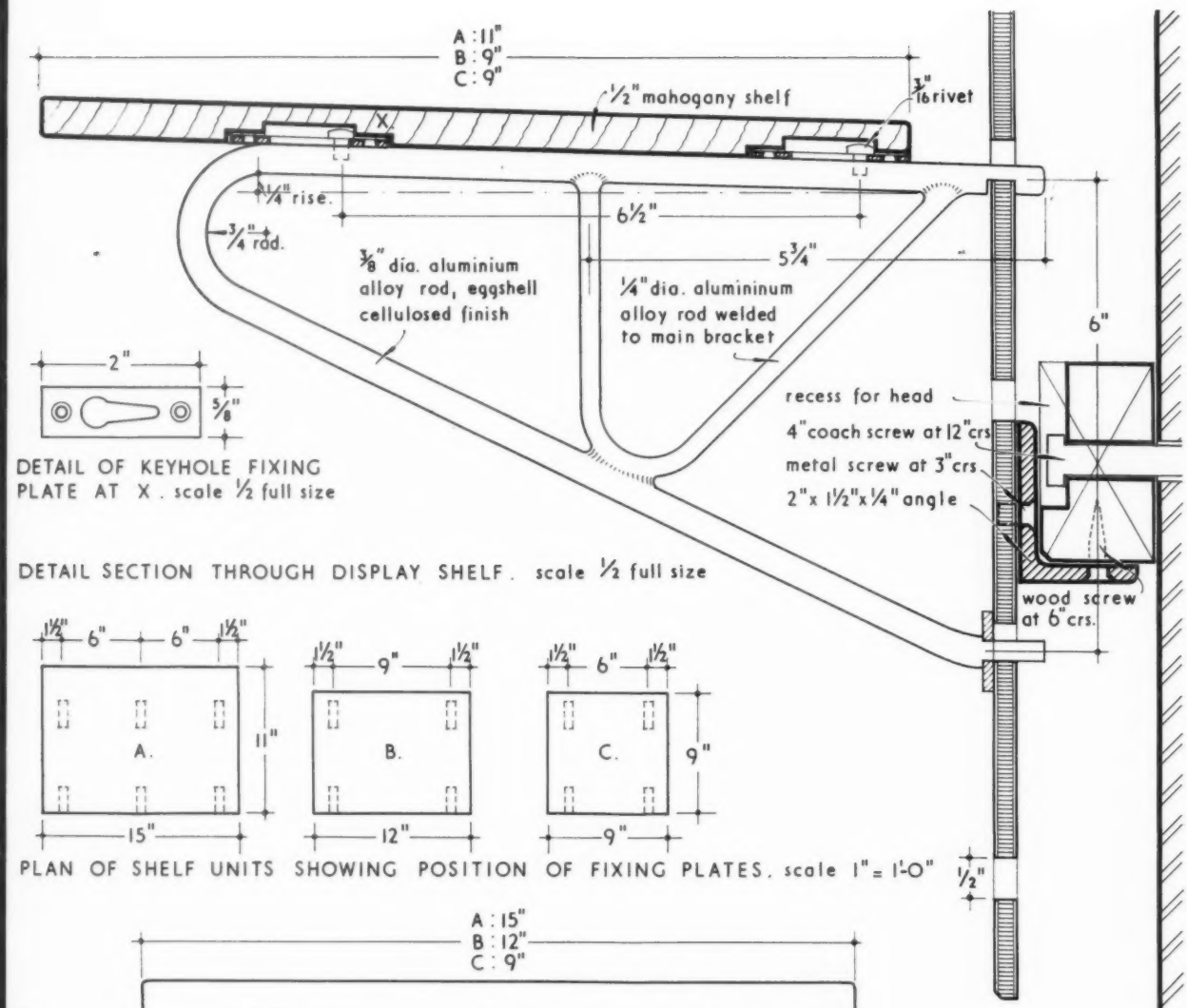
Architects' Journal 12.4.51

WORKING DETAIL

FURNITURE AND FITTINGS : 3

ADJUSTABLE SHELVES : SHOP AT HARLESDEN

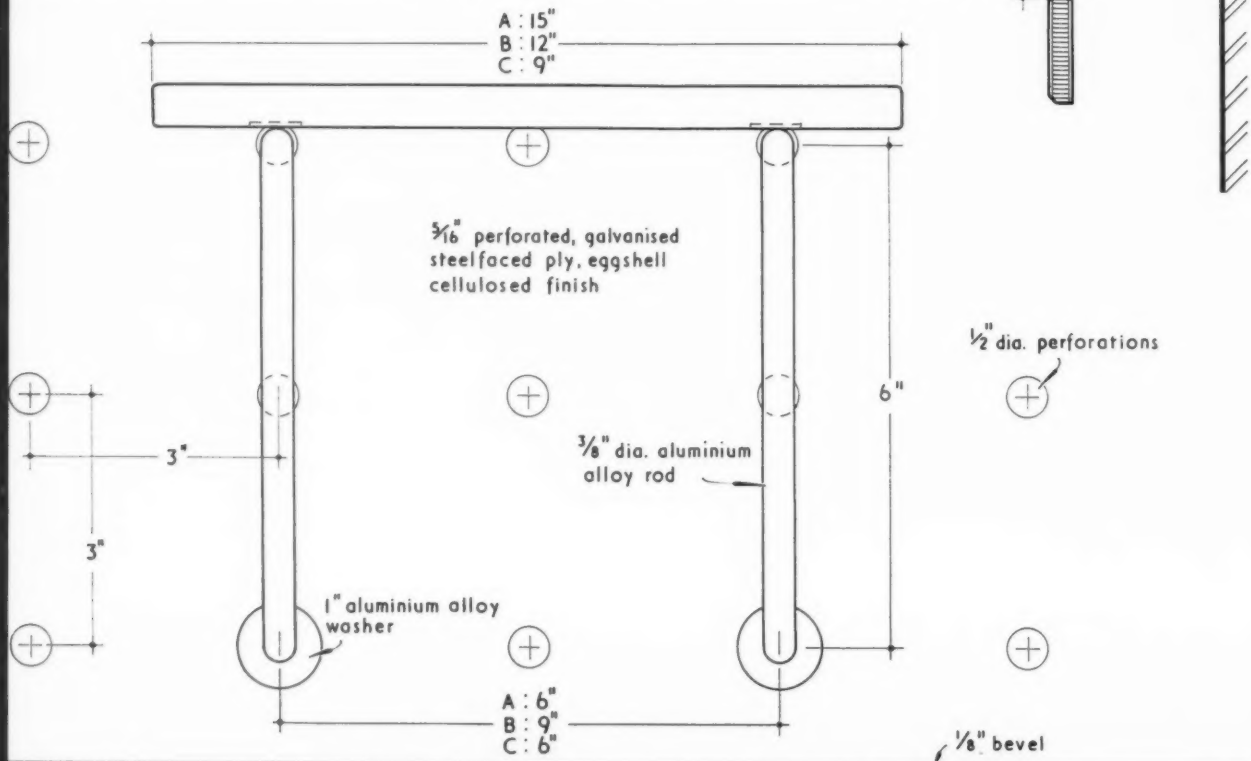
Brian Peake, architect



DETAIL OF KEYHOLE FIXING PLATE AT X . scale ½ full size

DETAIL SECTION THROUGH DISPLAY SHELF . scale ½ full size

PLAN OF SHELF UNITS SHOWING POSITION OF FIXING PLATES. scale 1" = 1'-0"



DETAIL ELEVATION OF DISPLAY SHELF AND BRACKET . scale ½ full size

WORKING DETAIL

STAIRCASE : SCHOOL AT FLINT, MICHIGAN

Lyndon and Smith, architects

The steel tread, riser and nosing of each stair is formed in one piece, the tread being filled with terrazzo and supported on angle members fixed to the metal string.

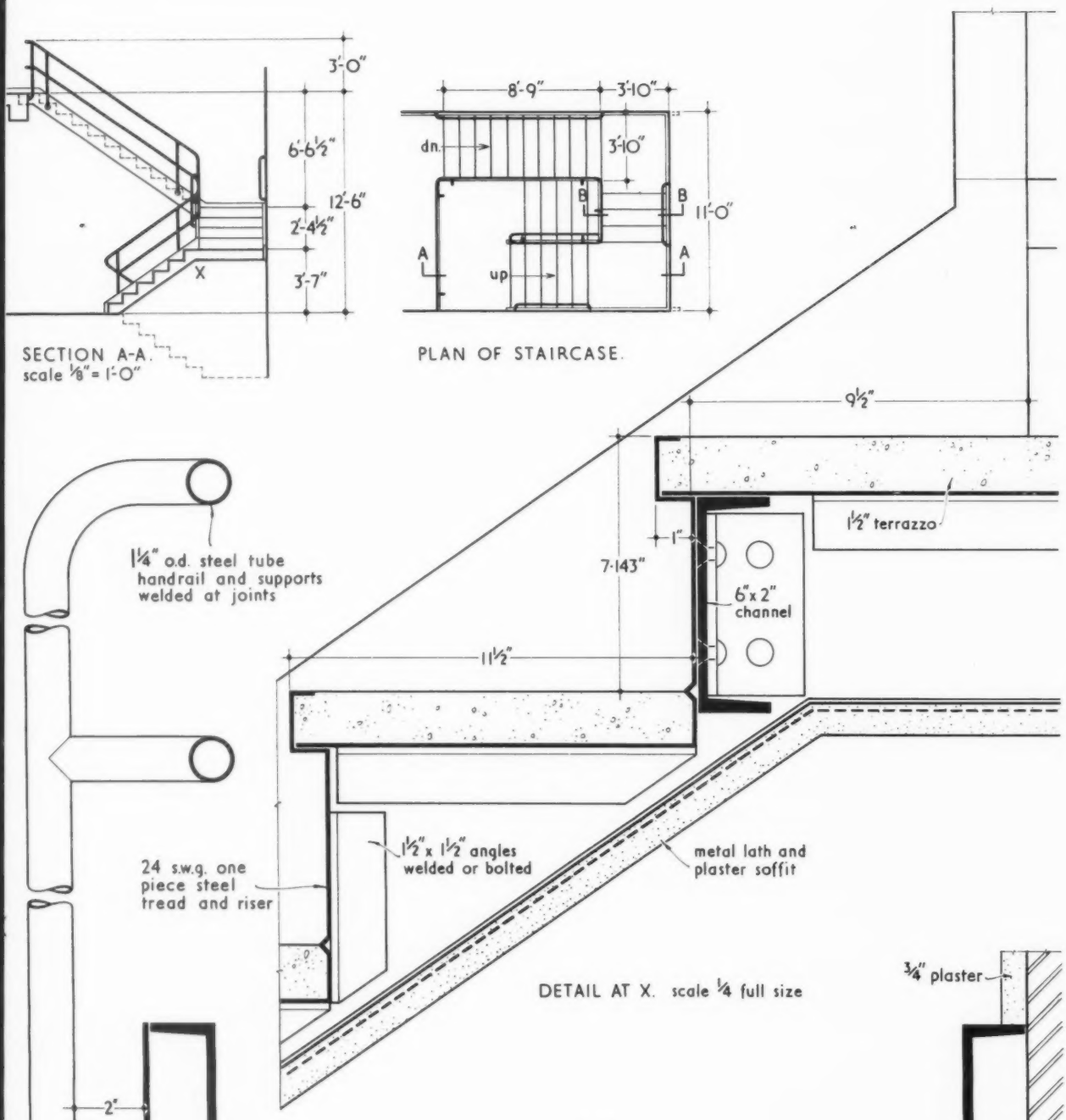
WORKING DETAIL **STAIRCASES : 3**

STAIRCASE : SCHOOL AT FLINT, MICHIGAN

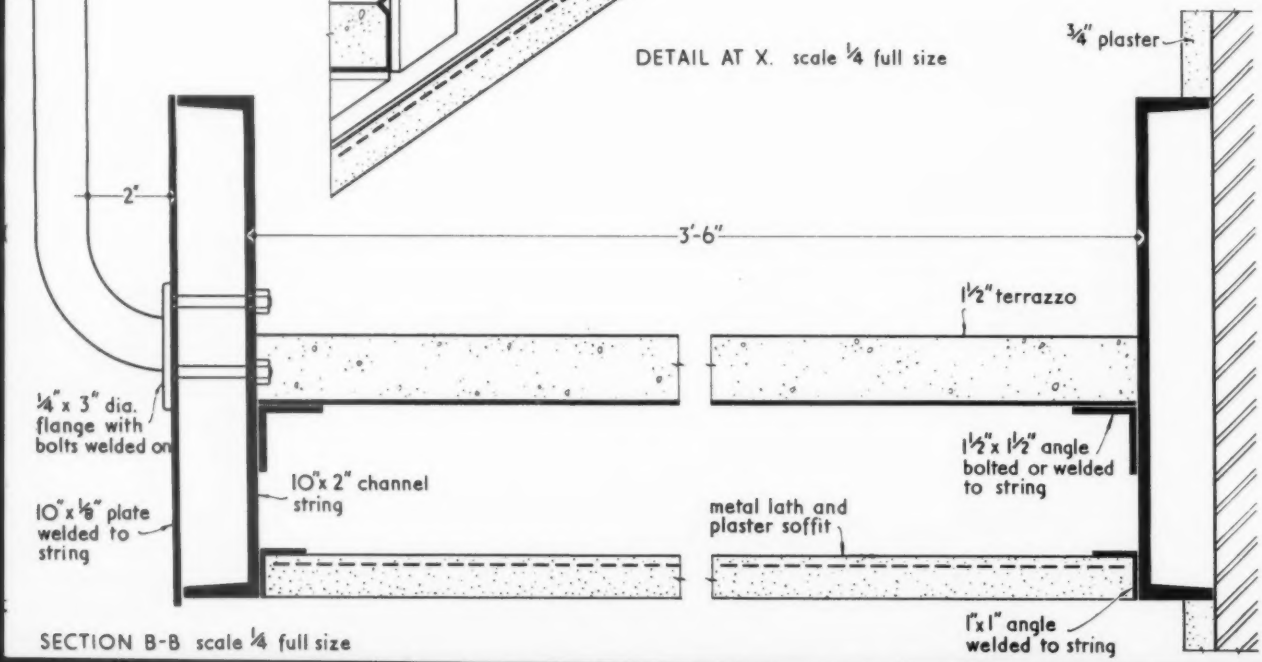
Lyndon and Smith, architects

SECTION A-A.
scale ⅛" = 1'-0"

PLAN OF STAIRCASE.



DETAIL AT X. scale ¼ full size



SECTION B-B scale ¼ full size

INFORMATION CENTRE · INFORMATION SHEETS
QUESTIONS AND ANSWERS · CURRENT TECHNIQUE
THE INDUSTRY · PRICES · TECHNICAL ARTICLES

TECHNICAL SECTION

The "interim reports" on the BRS heating experiments at Abbot's Langley have been of great assistance to architects. Experiments of this nature take years to complete, but it is often possible to make useful and important recommendations whilst the experiments are still in progress and before all the results have been correlated.

HEATING RESEARCH IN OCCUPIED HOUSES

By H. G. Goddard

[A report on the paper read by Dr. J. C. Weston at a meeting of the Institution of Heating and Ventilation Engineers on March 14 1951.]

In this paper Dr. Weston summarized the results obtained during the "occupied phase" of the BRS full-scale heating experiment at Abbot's Langley between May, 1948, and May, 1950. Some of the results he has already given us in previous papers. These, together with the results obtained during the "unoccupied phase" have already been published in synopsis form in the JOURNAL.*

Readers will remember that ten pairs of houses were built on the Abbot's Langley site, with U values about 0·20, and a variety of heating systems. Later, a terrace of four houses with open plans and forced warmed air heating, and four houses of three non-traditional types were built, mainly so that the effects of varying thermal capacity could be studied.

Whilst this paper was chiefly concerned with results achieved in the first twenty of these houses, data obtained from the group of eight houses at Bucknall's Close are quoted to illustrate specific points. These houses, the first experimental ones to be erected by the BRS, were originally intended for use in a study of the economics of insulation; they have different U values, but the same heating systems.

Clearly, in occupied houses, the "thermal habits" of the occupants have a profound effect on results, and information must be obtained in a form which is as far as possible, independent of this. To some extent, this could be achieved by determining derived parameters, such as "system efficiency," which, for some heating systems, at least, would not be dependent on thermal habits. However, each house has only one heating system, so the alternative method of "tenant rotation" was adopted. Tenants are moved from house to house each year. The scheme has been applied to the twenty houses and to the open-plan terrace and, so far, two rotations have been made. The moves have been planned to give as wide a range of thermal load as is available with the habits of different families. As the experiment is still proceeding, it is too early to attempt to make a detailed comparative analysis between the results obtained with different tenants in the same houses, but there are many general features which can be considered, the correct appreciation of which will be essential to the understanding of the final analysis. And several important conclusions can already be deduced.

MEASUREMENTS

The air temperatures of all the rooms in all the houses are measured continuously, at a height of 5 ft. above floor level, and temperature, wind speed and sunshine are also recorded. Special equipment has been developed to enable a limited number of recording instruments to deal with a large number of measuring points, whilst an "integrator" simplifies the obtaining of weekly means. Housing managers obtain weekly information as to consumption of fuel, gas and electricity, besides being generally responsible for the houses and, at intervals, getting the tenants' reactions. Tenants pay for their fuel weekly, at rates typical of those obtaining in the London region. At first, at Bucknall's Close, there was a subsidy on fuel but, later, this was removed. This showed in a convincing way the relationship between "tenant behaviour" and fuel prices but showed, also, that for valid results, the economic conditions must be "normal."

Whilst room temperatures and fuel consumption give basic data, to aid in the subsequent analysis, ventilation rates also had to be known. To this end, measurements of rates (by the tracer gas method) were taken both during the occupied and unoccupied periods, and a record of the window-opening habits of the tenants was also kept. Weekly records of the heat content of domestic hot water have also been kept and have been discussed elsewhere, (AJ March 2, 1950).

MEAN HOUSE TEMPERATURES

Mean house temperatures are taken as the arithmetic mean of all the rooms, with the living room taken twice, to allow for its greater size and ventilation rate. It will be seen that there is a wide range—53·9°F. to 61·3°F. in 1948-9, and 53·5°F. to 63·5°F. in 1949-50. Also, there are large differences between the same house in the two years due to the different requirements of individual households. There is, however, little change in the overall "site mean," 57·8°F. for one year, and 58·3°F. for the next, corresponding to an inside/outside differential of 13·3F.° and 12·9F.° respectively. An investigation of some 200 Local Authority houses during 1949-50, (Information Centre, 23.145: 29.3.51) showed that for houses insulated to the Abbot's Langley standard, the mean differential was 12·9F.°, so that it is reasonable to conclude that the Abbot's Langley figures are fairly representative. It should be noted that most of the Abbot's Langley tenants are fairly young, and this may affect results to some extent; but these have been confirmed where possible from the wider survey, which included all age groups. The mean house temperature is not constant from week to week, but falls with falling outside temperature. This is partly because heating in this country is usually intermittent and the drop during the unheated period is greater with a lower outside temperature; partly because the appliances have only a limited output and cannot maintain the inside temperature when the temperature outside falls below a certain minimum; and partly because tenants are unable, or unwilling to increase expenditure

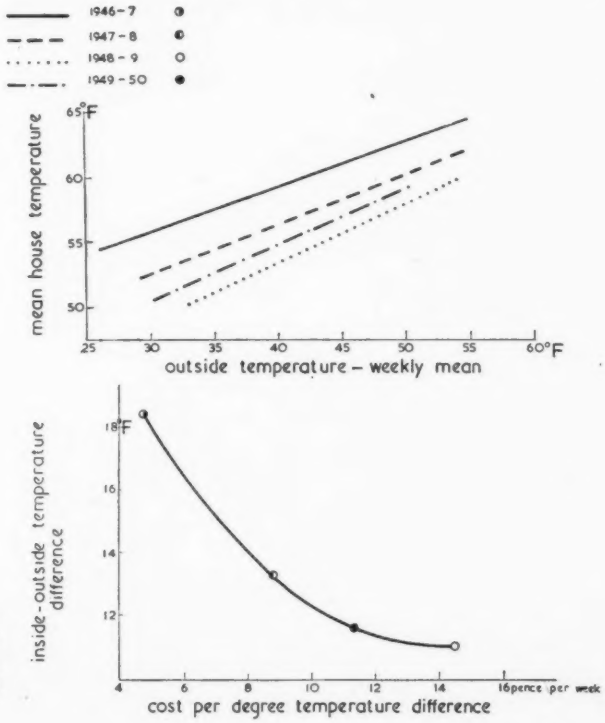


Fig. 1. House temperatures and the cost of heat. (Bucknells Close — mean of 8 houses.)

* The BRS House Heating Trials, December 2, 1948; Domestic Water Heating, March 2, 1950; and Information Centre items—23.145: 29.3.51 and 23.146: 29.3.51.

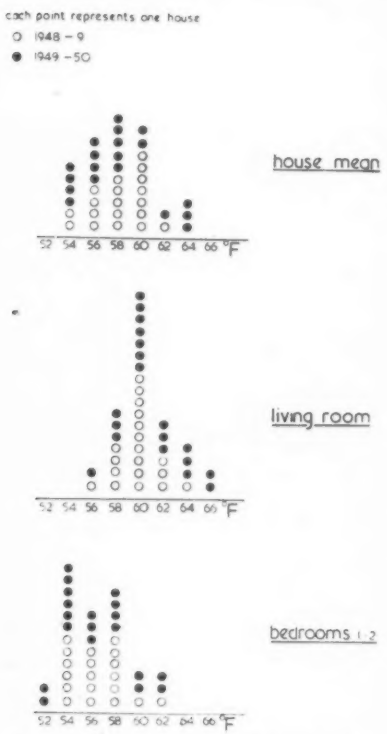


Fig. 2. Seasonal mean temperatures.

to the extent required to maintain a constant inside temperature.

The weekly mean inside temperature falls about 0·5°F. for each degree drop of outside temperature; there is little difference between the two years. The dependence of inside temperature on tenant requirements is shown by the data for House 22, with two different families in the two years. In the second year, the general level is 4°F. less than in the first, and the average outside temperature drop, per degree drop outside is 0·7°F. instead of 0·5°F. On the other hand, tenants are found to maintain different temperatures in different houses. One tenant occupied first a house with a pre-war open fire in the living room, and domestic boiler in the kitchen; then, the next year, he had full central heating. With the former, the weekly mean inside temperature, with outside temperature 35°F., was 52°F., and with the latter 58°F.; whilst with outside temperature 50°F., the corresponding figures were 60°F. and 63°F.

It is a matter for interesting speculation whether the higher temperature with the latter system merely reflects the ability of the system to give better service or whether the absence of a high temperature radiant heat source forces the tenant to have a higher air temperature. Certainly, the tenant regarded the second house no more comfortable than the first; in fact he thought the living room in the latter *less* comfortable. It must be remembered that, although the mean temperature of the centrally heated houses is higher than that of the others, the difference is as much due to better heating in the bedrooms, as it is to higher temperatures in the living rooms.

COST OF FUEL AND HOUSE TEMPERATURES

The importance of thermal habits, and of the ability or willingness of the tenant to pay for fuel, has already been indicated; it is brought out strikingly by the results from the houses in Bucknall's Close. In 1946-7, the tenants received a subsidy amounting to two-thirds of their fuel bills. In 1947-8, the subsidy was reduced to one-third, and in 1948-9, it was removed altogether. In 1949-50, a 25 per cent. subsidy was re-instated on solid fuel only. Fig. 1 shows the weekly mean temperatures, year by year. The fall in temperatures as the subsidy was removed, and their subsequent rise when the small subsidy was replaced is noticeable; whilst it should be emphasized that, although the occupants accepted lower temperatures, as the price of fuel increased, there was a substantial increase in expenditure. In 1948-9, the expenditure was in fact about twice that in 1946-7, while the fuel prices had increased threefold. (This is shown in the lower part of Fig. 1.) Whilst there may be individual variations in the relationship between temperature and expenditure, the figures shown represent a fair average.

INDIVIDUAL ROOM TEMPERATURES

The temperatures in a house are, then, a result not only of the heating arrangements but of tenants' circumstances. Fig. 2 summarizes, in the form of histograms, the data in respect of "house means," "living room means" and "means for bedrooms 1 and 2." The height of each column is proportional to the number of houses or rooms observed, during one winter, to have a temperature within 1°F. of the figure at the base of the column. It is shown that for houses of traditional construction, the seasonal mean living room temperature is of the order of 60°F. Bedrooms show a wide range but, even when unheated, are seldom unduly cold, except for the small bedrooms in one or two houses. The conclusion reached is that when the U value for the structure of a house is of the order of 0·20-0·25, there is little necessity for background heating, and the use of warmed air or radiators is only necessary where insulation is less good.

A number of houses have "unheated" kitchens, except for stray heat from the cooker and a well-insulated water heater. The average temperature here is 58·2°F.-59°F., compared with a mean of 65°F. for the other houses of similar plan. This has been the subject of adverse comment; the provision of heat in the kitchen is considered more important than in the bedrooms.

LIVING ROOM TEMPERATURES

It would be expected that the fall in temperature of the living room, when compared with that of the outside temperature, would be less than in the case of the house mean, and that, in fact, a temperature of 65°F. at, say, 9 p.m., would normally be found. This is partly true, for, taken as a mean, the average fall, per 1°F. fall in outside temperature, is 0·4°F., and taken as an average of 9 o'clock temperatures it is 0·25°F. Measurements were taken of the distribution of living room temperatures at 9 p.m. for three different outside temperatures — "mild," "average" and "cold" — *i.e.*, 51·1°F., 45·4°F. and 33·4°F. A feature which was immediately clear was that, in average or mild weather, the commonest observation is in the range 67°F.-69°F., whilst there are a considerable number of readings over 70°F. Many of these higher values occur in centrally heated houses, and this suggests that the higher temperatures current in North America may be associated more with convective heating than with basic differences in comfortable temperatures between Great Britain and America. It is also noticeable that in cold weather the range of readings increases; the peak moves to a much lower value, but there are still a substantial number of high values. These are mainly due to House 19, where warm-air heating gave high vertical temperature gradients, so that although the temperature at 5 ft. might be 80°F., at 2 ft. 6 in. it might only be 60° or 65°F. The very low values probably occur when the tenants are out, or using the kitchen as their sitting room. The conclusion reached is that a comfortable temperature for sitting during the evening is well over 65°F. and probably nearer to 70°F.

THERMAL INPUT

It will be clear from the above that the amount of heat used annually will depend partly on the heating installation, and partly on the occupants' requirements. In spite of this, the general level of consumption is of interest, and some valid conclusions can be drawn. Fig. 3 shows, by histograms, the summer, winter and annual consumptions. The latter cover a wide range, but half are less than 1,050 therms. It will be seen that in the second summer (1949) there are many more low consumptions of 50-150 therms. These were found about almost entirely in houses where auxiliary gas or electric water heating equipment was provided in the spring of 1949, and indicates that a substantial reduction in thermal input is possible by such means.

COAL EQUIVALENT INPUT

From the national point of view, the coal equivalent is more important than the thermal input. Fig. 4 shows this information, taking an efficiency for electrical generation and distribution of 20 per cent. and gas and coke production of 75 per cent.; whilst raw coal is assumed to have a heat equivalent of 300 therms/ton. The results show that of 35 observations, 10 lie below 4 tons and four are about 3 tons. A recent analysis (Information Centre, 23.146: 29.3.51) showed that 3 to 3½ tons of coal a year would provide only a minimum service, even in a well-insulated house; but 3½ to 4 tons would give reasonable service in average conditions. There is a smaller but appreciable reduction in coal consumption when auxiliary water heating is used.

VARIATION OF THERMAL INPUT WITH OUTSIDE TEMPERATURE

It has been shown that inside temperatures fall as the outside temperature falls, but the ventilation rate falls also, due to the closing of windows. Hence thermal input does not increase, as outside temperatures drop, by as much as might be expected. The input is shown to increase from about 15 therms

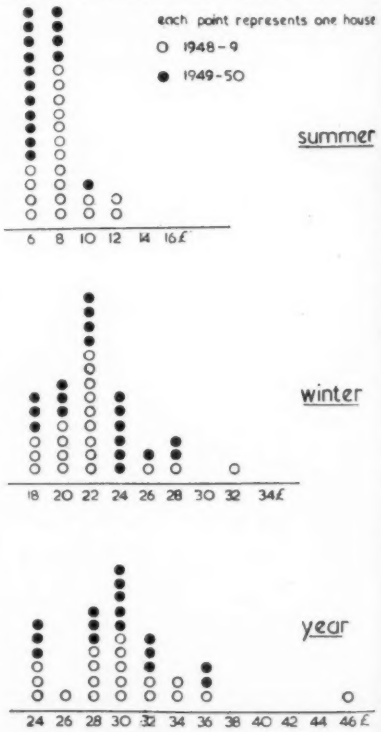


Fig. 3. Thermal input.

"Now if I'd designed the new House of Commons...

I, too, would have put in 'Falkirk' Heavy Duty Cooking Equipment"

SIR CHRISTOPHER WREN, it is recorded, was drawn up in a basket several times a week to inspect the progress of the building of St. Paul's, the cost of which amounted to £747,661.10.0. precisely. Such an acute and omniscient brain could not fail to appreciate the practical and lasting qualities of the ' Falkirk ' appliances which completely equip the Press Gallery kitchen in the new House of Commons. ' Falkirk ' are unchallenged experts in community catering. The Company has specialised for many years in strong, durable yet simple cooking appliances designed for gas, steam, electricity, solid fuel and oil. ' Falkirk ' installations are used and praised throughout the world.

'FALKIRK' SERVICE FOR CATERERS

Catering problems differ, but there is always one right way and many wrong ways of laying out the kitchens, whether in industrial and factory canteens, hotels, hospitals, restaurants, clubs or cafés. When asked, ' Falkirk ' supply individual plans, worked out by their own experts in the light of their long and varied experience. There are ' Falkirk ' representatives all over Britain to provide suggestions, supervise installation, inspect and carry out maintenance, when once the kitchens are in actual use.

A comprehensive catalogue of ' Falkirk ' Heavy Duty Cooking Equipment is available to architects and other interested persons, upon request.

THE FALKIRK IRON CO. LTD., FALKIRK, SCOTLAND

MORTIMER HOUSE, 37/41 MORTIMER ST., LONDON, W.1. LILLIES CHAMBERS, ALBION ST., LEEDS 18 LEIGH ST., LIVERPOOL

(PROPRIETORS: ALLIED IRONFOUNDERS LIMITED)

Architects: Easton & Robertson. Contractors: Gilbert Ash Ltd.

The roof of Hatfield Technical College is insulated with 'Fibreglass' quilt

Photograph illustrates the application of 'Fibreglass' quilt *under* the concrete roof slabs.

FIBREGLASS

TRADE MARK

For structural, heat, and cold insulation. Sound-deadening. Acoustic correction. Porous membranes for pipe-wrapping, flooring, roofing. Battery retainer mats and air filters. In textile form for electrical insulation and flameproof decorative fabrics.

FIBREGLASS LIMITED, RAVENHEAD, ST. HELENS, LANCS. (ST. HELENS 4224)

LONDON OFFICE:
63/65 Piccadilly, W.1 (Regent 2115/6)

GLASGOW OFFICE:
136 Renfield Street (Douglas 2687)

NEWCASTLE-ON-TYNE OFFICE:
c/o Pilkington Brothers Limited, Westgate Rd. (Newcastle 20938)

per week at the end of the heating season to 35 therms in "32° F." weather. The degree-day method of estimating heat requirements for domestic dwellings is not adequate when normal economic circumstances are exercising a modifying effect. The heat gain from sunshine, at either end of the heating season, is roughly 5 therms/week.

TOPPING-UP IN BEDROOMS

It has been shown that the temperature even in unheated bedrooms is not unreasonably low. This is reflected in the small consumption (generally less than 10 therms and often less than 5) used for this purpose. The provision of built-in appliances for this purpose seems unwarranted.

EXPENDITURE

The importance of the price of fuel in determining consumption has been established. Tenants have been charged at rates which are typical of current prices in the London region. Fig. 6 shows the expenditure in histographic form. 24 out of 35 houses show an annual expenditure of less than £31 for fuel, gas and electricity for all purposes, including standing charges. A fall in the weekly mean temperature by 10° F. increases the average expenditure by 3s. 4d. The small range (8s. to 18s.) is remarkable.

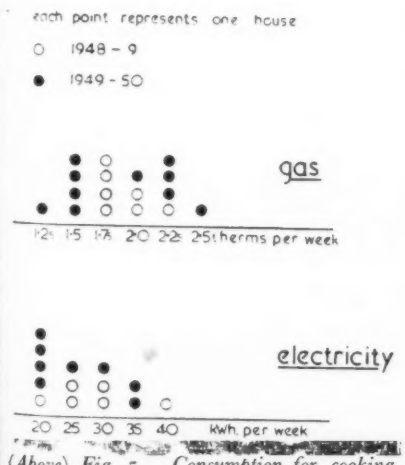
WEEKLY EXPENDITURE FOR SPACE AND WATER HEATING ONLY

Fig. 7 shows the proportion of the houses which fall within certain limits of mean weekly expenditure. The vertical axis gives the number of observations for which the expenditure is less than the value given on the horizontal scale. Fifty per cent. were less than 7s. 9d., and 90 per cent. less than 9s. 6d. This gives a pointer to the amount such tenants would be able to pay for district heating; the charge should be less than 9s., and preferably less than 8s., per week.

The cost of cooking by gas or electricity can be deduced; gas is likely to be a little cheaper than electricity but not much.

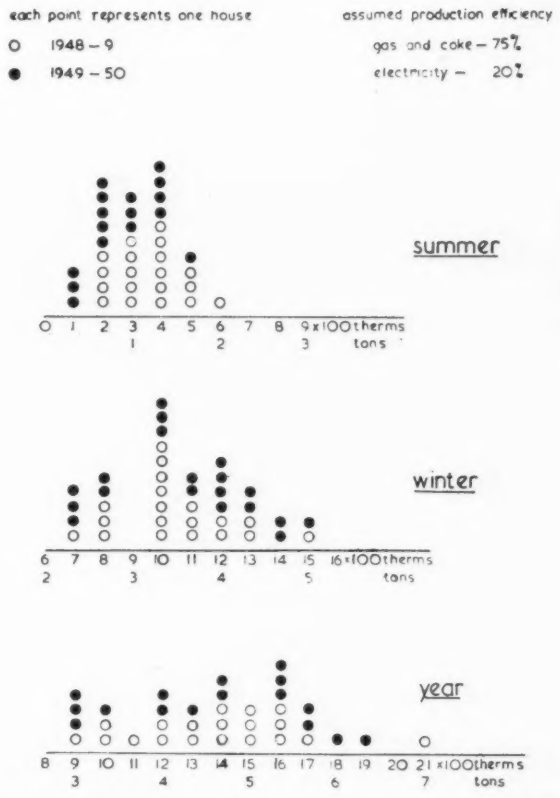
VENTILATION

Ventilation rates are commonly in the range 1·75 to 3·25 changer per hour, even in those houses where the front and back doors are weather-stripped. The usual effect of the opening of windows by tenants is to increase the rate by 1 change per hour. Six therms per week is the commonest value for ventilation heat loss, so that with heat costing 3d. to 10d./therm, the cost of ventilation is around 5s. per week. Well-fitting doors and windows, and restraint in the opening of windows are obviously necessary.



(*Above*) *Fig. 5. Consumption for cooking.*
(*Right*) *Fig. 6. Total expenditure on fuel.*

Fig. 4. Coal equivalent thermal input.

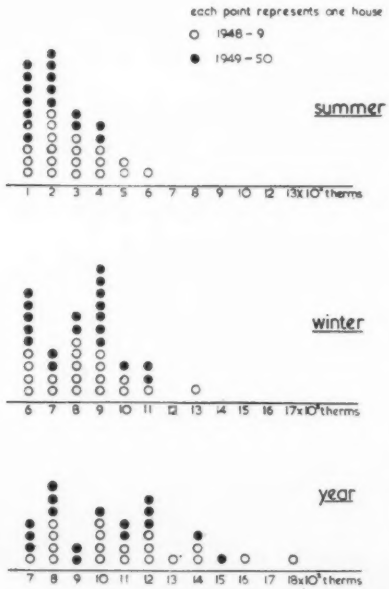


EFFICIENCY

The efficiency of various groups of appliances can be deduced: central heating is the most efficient (60-70 per cent), the back-to-back cookers and combination grates are worst, some of them are less than 30 per cent. efficient.

COMPARISON OF GROUPS OF HOUSES

The central heating system, on account of its high cost, the use of sized fuel, and greater heat requirement on account of higher house temperatures, is not necessarily the "best" method of heating small houses, in spite of its high efficiency. Free standing cookers are generally to be preferred to "back-to-back" or "combination" types, especially the latter.



CONCLUSIONS

The conclusions reached by Dr. Weston, in this paper, are of considerable importance to architects, and are quoted in full:—

1. *Construction.* The house should be insulated to U values between 0·20 to 0·25 BThU/sq. ft./hr./°F. This may be achieved for the walls by using unventilated cavity construction with a brick outer leaf and light-weight concrete (such as foamed slag or clinker) inner leaf. This is little, if anything, more expensive than 11 in. cavity brickwork (U=0·30).

U values in the required range for the ground floor can be achieved by using a solid floor laid on the ground or, where necessary, over hardcore. The floor finish has only a slight effect on the U value.

A pitched roof with tiles, or slates, on battens, with roofing felt over the rafters requires additional insulation to achieve U values in the range 0·20 to 0·25. This may be provided by adding a material such as glass silk, slag wool or aluminium foil, laid over, or better between, the ceiling joists.

2. *Windows and Doors.* The windows and doors should fit as well as possible and external doors should be "weather-stripped".

3. *Flues.* No flue should be on an external wall.

4. *Space Heating.* The main space and water heating load in winter should be taken by a single solid-fuel appliance in localities where gas or electricity is available for cooking. The solid-fuel appliance may be some version of continuous burning open fire with back boiler, or inset or free-standing stove with boiler. The back boiler should preferably be of sufficient size to provide both domestic hot-water supply and heat about 30 sq. ft. of radiator surface, and the radiators should be placed in rooms

I saw this advertisement . . .

. . . and that's where my problem of planning and equipping the canteen ended

Lockhart Equipment Ltd. have designed hundreds of industrial canteens. Whether it be in connection with an entirely new undertaking or the re-organisation of existing facilities, their experience is at your service. Lockhart Equipment Ltd. plan and supply *all* the equipment including utensils, cutlery, crockery, linen, etc., handing over complete and ready for operation.

LOCKHART EQUIPMENT
LIMITED
SPECIALIST CATERING EQUIPMENT ENGINEERS AND SUPPLIERS

LOCKHART EQUIPMENT LIMITED, 72 Berkeley Avenue, Reading. Telephone: Reading 4847 (4 lines)

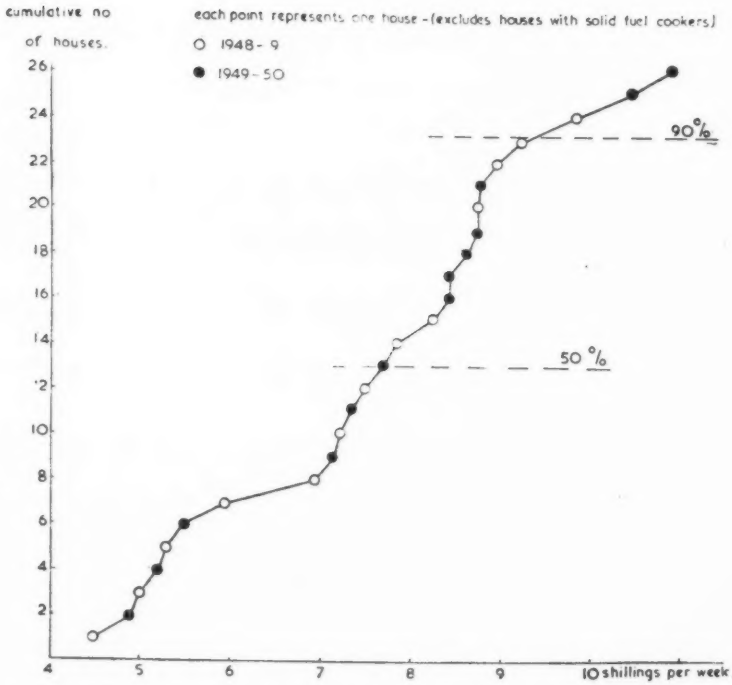


Fig. 7. Annual mean weekly expenditure—space and water heating only.

downstairs, such as a kitchen or dining space. If the boiler is not of sufficient size to heat adequate radiator surface then the appliance should provide convected warm air, and this should be supplied to the room in which the appliance is situated or to an adjacent downstairs room, rather than to bedrooms on the upper floor. In one bedroom, at least, facilities should be provided for the use of either gas or electric fires, or where these fuels are not available, an additional solid-fuel appliance should be provided.

5. *Water Heating.* Electric immersion heaters or gas multi-point heaters or circulators are desirable additions for summer use. Thermostatic control is desirable for electric immersion heaters. A somewhat less satisfactory alternative is to use the living-room appliance to supply hot water for baths, and provide only a gas or electric sink heater in addition.

6. *Insulation of Storage Tanks.* The hot-water storage tank should be lagged with 1 in. of insulation. Where the storage tank is to be used in conjunction with a gas circulator or electric immersion heater in the summer, 3 in. of insulation should be used, and a removable cover provided for the top.

If the cold-water tanks and water pipes are placed in the roof space, the ceiling insulation should be carried over the tank and no insulation should be placed immediately below it. Water pipes should be kept away from external walls, and the whole of the plumbing layout should be as compact as possible. Flow and return pipes from the heating boiler should be lagged with 1 in. insulation.

7. *Cooking.* Cooking should be done by gas or electricity where this is available. Solid-fuel cookers, preferably of the free-standing type, may be used in rural areas where gas or electricity is not available or in urban areas where there is traditional preference for cooking by solid fuel.

8. *Bedroom Ventilation.* Bedrooms without flues may be vented to a ventilated roof space by an opening of 30 sq. in. free area in preference to using air bricks in the external wall.

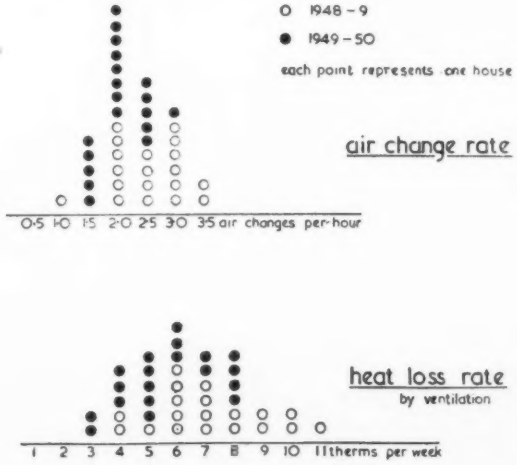


Fig. 8. Seasonal mean ventilation.

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.

INFORMATION CENTRE

4.66 planning: urban and rural
WILLESDEN SURVEY

The Willesden Survey 1949. John C. Morris (The Corporation of Willesden, 1950)

A very carefully produced basic survey by a local authority planning staff under the direction of the Borough Engineer. 96 pages, 33 maps and diagrams, 70 photographs and illustrations.

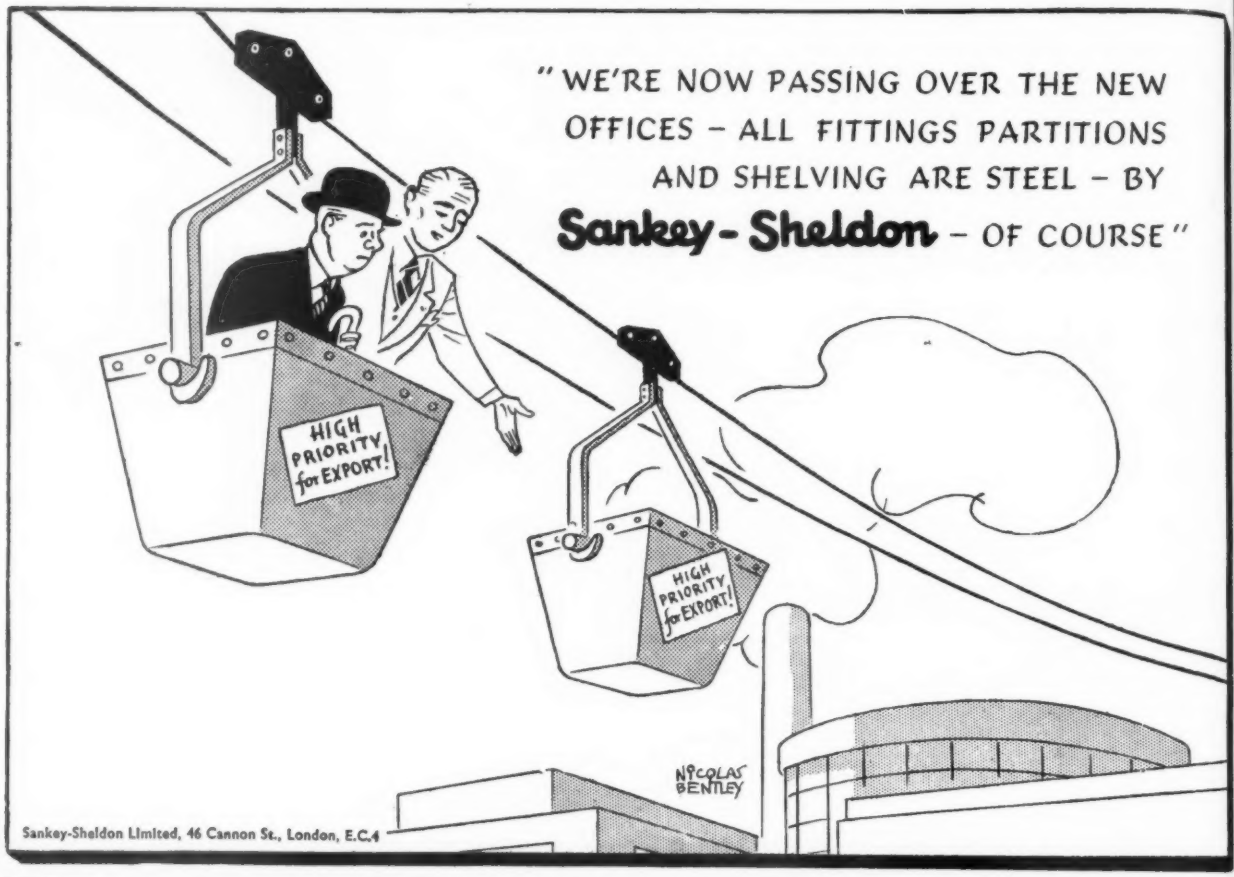
The problem of rehousing must be as difficult in Willesden as in any borough on the fringe of the LCC area. In the GLP the problem is described as almost insuperable. The borough includes such well-known districts as Neasden, Cricklewood, Kilburn, Kensal Rise and Harlesden, and the famous Park Royal industrial estate. During the last seventy-five years Willesden has been transformed from a green-belt suburb of 20,000 into an overcrowded modern borough of 189,000—completely urbanised, with few civic or social amenities and with a population possessing few local ties. Relief will be attempted by encouraging the migration of about 48,000 people into the new towns (*e.g.* Hemel Hempstead). For the general reader, one of the most interesting chapters of the survey is the last one on "Migration to a New Town," which gives a brief analysis of the conclusions reached in the social survey "Willesden and the New Towns" undertaken in 1947 by the COI.

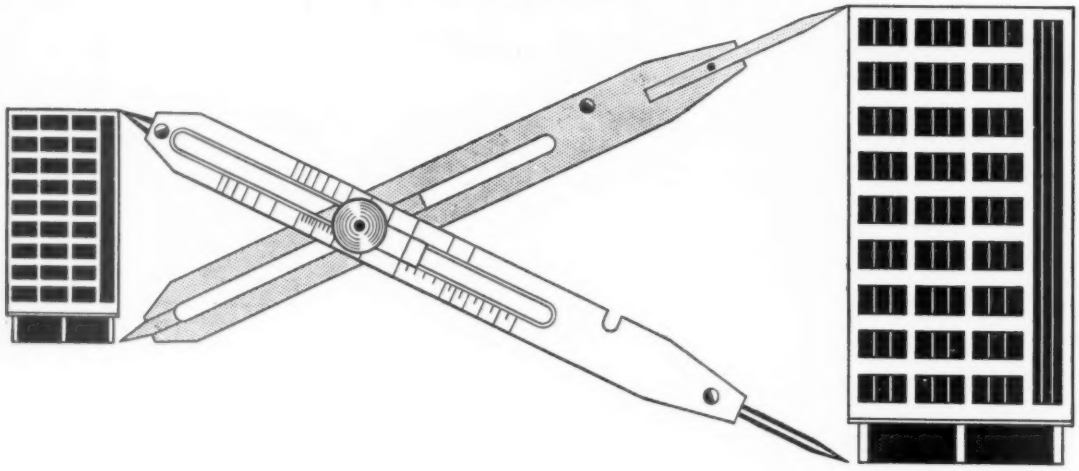
The *Willesden Survey* is a good example of a survey which succeeds in attaining a limited objective. In the main, this is the compilation of detailed facts and figures which will help in the preparation of a series of local re-development plans. Chapter III, "Population and Housing," is most informative. It includes tables and maps showing housing conditions in each area. To give an example from the table on Neasden: Housing unit-2B, approximate date of development 1925-30, type of housing—owner occupied semi-detached and terraced villas; condition of housing—sound for at least 50 years; average number of rooms—5; average number of occupants—3·9; average population density—41; other remarks— medium size gardens.

The following chapter on Re-development is the only one not directly concerned with survey. It includes a description of the South Kilburn Re-development Scheme, which shows the detailed planning proposals for the most urgent re-development area in the Borough. This scheme, however, judging from the layout plan and the accompanying perspective drawing by an engineer/artist, bears little promise of rising above a very low level of civic design. It is to be hoped that, in practice, the layout and design of the buildings will reach a far higher standard than is foreshadowed by this scheme.

8.24 surveying and specification
QUANTITY SURVEYING; PROFESSIONAL PRCTICE

Practice and Procedure for the Quantity Surveyor. Arthur J. Willis (Crosby Lockwood & Son, Ltd. 1951. 18s.).





THE NEUCHATEL ASPHALTE CO. LTD.
58 VICTORIA STREET, LONDON, S.W.1

However Large or Small

ASPHALTE BY NEUCHATEL

GLASGOW · EDINBURGH · NEWCASTLE · MANCHESTER · BIRMINGHAM · PORSTMOUTH · PLYMOUTH · FROME

A book of 180 pages intended for students of quantity surveying working for their final examination, for young surveyors who need to extend their knowledge of professional practice and for surveyors about to set up in practice on their own.

This book does not deal with the technical processes involved in the preparation of a Bill of Quantities, which are covered in well-known previous works by the same author. In the present book Mr. Willis outlines the scope of the quantity surveyor's work, discusses the relationship between client, architect, surveyor and contractor, and deals in detail with many aspects of office procedure and professional practice.

There is much in the book of interest to architects; Mr. Willis rightly stressed how important it is that the two professions, which are so dependent upon each other, should understand each other's problems.

The chapter on law is especially valuable, but might well have been extended to cover the many difficulties encountered, afflicting surveyor and architect alike, in interpreting the contract and considering contractors' "claims".

An appendix to the book gives a number of forms, typical letters, etc., of value to the young practitioner.

18.75 construction : theory
ALUMINIUM STRUCTURES, REPORT

Report on the Structural Use of Aluminium Alloys in Buildings. (The Institution of Structural Engineers, Sept., 1950. 3s. 6d.)

Latest report issued by the Institution of Structural Engineers. Gives actual design data. Useful to architects.

Far too little has, so far, been published on the actual designing of light alloy buildings and other LA structures. Architects have often to rely on design data taken from commercial pamphlets. This authoritative report will, therefore, be a welcome guide to the designer. While it has been prepared for the structural engineer, the architect will find it especially useful when studying the relative merits of various structural materials. Permissible stresses, the dimensions of individual members, the total weight and the total cost can all be compared.

The foreword gives a good summary of the outstanding differences between LA's and steels from the designer's point of view. The table giving the comparative properties of aluminium alloys and mild steel will be appreciated by the architect who wants to start from first principles in design. A section on materials deals with quality of plates, tubes, rivets and bolts, and the importance of identifying the various materials. In another section, useful data are given on the means of protection against atmospheric conditions and fire and on the dangers of contact between light alloys and other building materials. The main chapter, both in length and importance, is that on design. A comparison between some of its clauses and those for mild steel in building construction (BS 449 : 1948) is most instructive.

It remains a popular misconception that LA's *look* light in a complete structure. As a rule, they look heavier than steel, especially when deflection is the limiting factor in design. The present tendencies regarding the supply of raw materials do not favour the use of LA's in building construction but this, it is hoped, may be a passing phase, and eventually this report will serve its purpose as a reliable guide to the designer, whether architect or engineer.

19.116 construction : details
PRESTRESSED CLAY BLOCK FLOORS

Prestressed Hollow Clay Block Construction. Max Birkenmaier and F. Walley. (The Brick Builder. Jan., 1951. 6 pp., illustrations.)

Prestressed hollow clay block construction. (*See* 19.116).

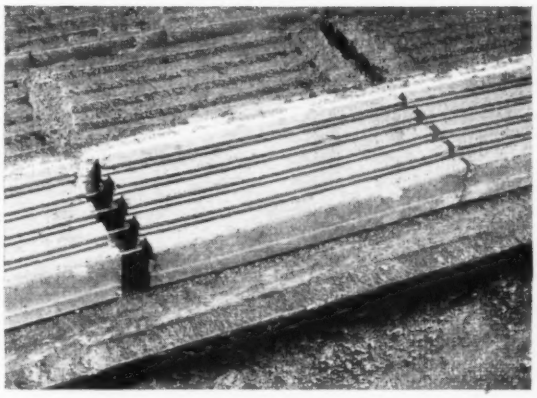


Fig. 1. *Method of assembly of prestressed hollow clay block "planks."*

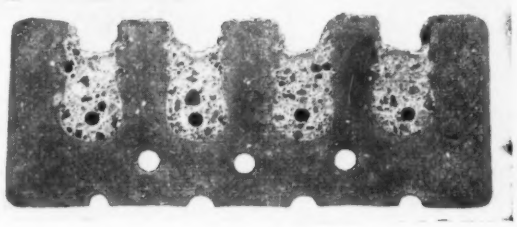


Fig. 2. *Cross section through* 6 *cm.* × 15 *cm. "plank."*

Fig. 3. *Prestressed hollow clay block unit used as lintel.*

Well illustrated useful description of the manufacture and use on the continent of prestressed units of hollow clay blocks.

This system of construction has been used in Switzerland since 1944 and two large factories are in operation making the units.

The article describes the construction of the units (Figs. 1 and 2); wires run in grooves in the blocks. The light weight of the units, 3½ lb./sq. ft. enables them to be erected quickly, the under surface of a floor has a uniform tiled appearance and there is freedom from cracking. Spans up to 24 ft. have been erected. The reinforced planks can also be used to make reinforced brick beams (Fig. 3).

The article includes useful information on strengths and calculations for use of these units.

19.117 construction : details
ROOM HEIGHTS

The Height of Rooms in Dwellings in Relation to Health and Comfort. G. P. Crowden (Journal of the Royal Sanitary Institute, March, 1951)

Experimental studies on effect of room height of 7 ft. 0 in. or 7 ft. 6 in. Results suggest no objection to such heights for domestic rooms on grounds of health or comfort.

This is an interesting and important paper. Investigations were carried out in experimental rooms. With similar conditions of heating, trials were made in rooms 7 ft. 6 in. and 8 ft. 0 in. high. The results showed no material difference in ventilation or in physical comfort sensations. These results were subsequently confirmed by observers from the staff of the MOW and, later, by members of the public. Similar experiments were then carried out with a room having a ceiling height of only 7 ft. and conditions were shown to be still quite acceptable.

Following these experiments a field survey was made of 50 houses where rooms were 7 ft. 6 in. high. Occupiers appear to approve of the low ceilings—45 said the ceilings were "all right."

There is a report of a lengthy discussion which followed the paper. Many criticisms were raised but these seem to have been answered very adequately by the author.

The æsthetic and economic advantages of lower ceilings are such that this paper is of great importance. The chief architect to the MOH said, during the discussion, that no objection to lower ceilings would be raised by the Ministry, but it seemed that some local authorities will object.

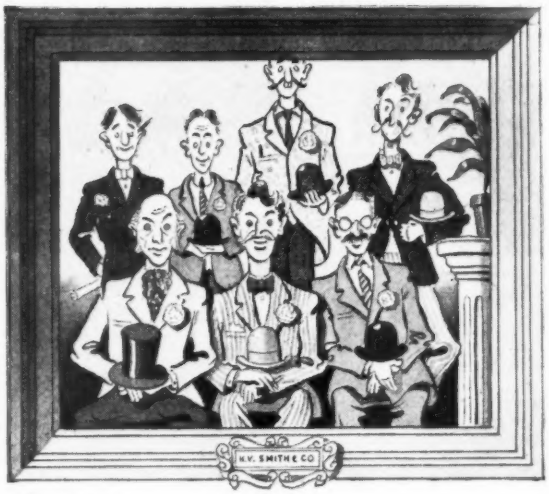
WILLIAM MALLINSON & SONS LTD

Timber
Veneers
Plywood

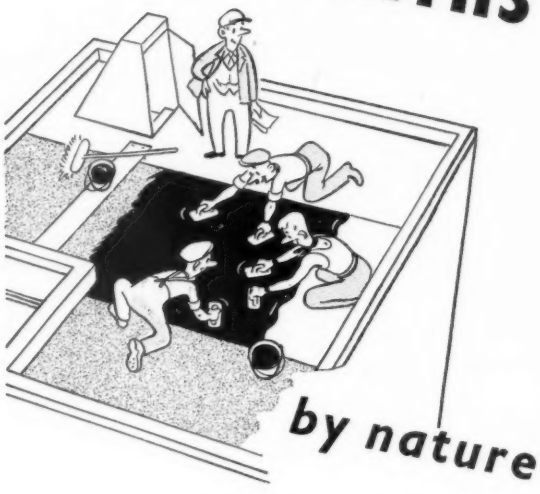
130-150 HACKNEY ROAD
· LONDON · E.2

TELEPHONES · SHOREDITCH 8888-8811

SMITHS *by name*



ASPHALTSMITHS



Asphalt roofing and tanking . . . industrial and coloured asphalt flooring . . . built-up felt roofing . . . to any specification.

Smiths get on with it!

H.V. SMITH & CO. LTD

ASPHALTSMITHS — *EASY TO REMEMBER !*

Head Office: 54 Victoria Street, Westminster, S.W.1
'Phone: VICtoria 4575. 'Grams: TRENCHES, SOWEST, LONDON

It is up to architects to persuade local authorities to adopt a sensible attitude, for, as these experiments and surveys have shown, there is a good case, on the grounds of economy and æsthetics, for the adoption of, at any rate, a 7 ft. 6 in. ceiling height in most houses.

19.118 construction: details

PRESTRESSED CONCRETE BUILDING

Three-storey Building in Prestressed Concrete. R. W. Pearson. (Chartered Civil Engineer, Feb., 1951, pp. 14-20.)

Some figures relating to this multi-storey building in prestressed concrete, at Sighthill, Edinburgh, were given in an earlier note (see 20.115: 5.1.50). It has now been completed by the MOW as a warehouse for HMSO. The purpose of the novel design was to save steel. A comparative design with structural steel frames was therefore prepared for this 220-ft. by 120-ft. building, using the same column spacing of 30 ft. by 20 ft., and a superimposed load of 10 cwt. per sq. ft. on the ground floor and 3 cwt. per sq. ft. on the two upper floors. An overall saving in steel of about 76 per cent. was shown and the construction time was roughly the same for both methods. It appears, however, that the cost of the concrete framing was higher than that of a more traditional structure, but there is no reason why prestressed concrete for multi-storey buildings should not be an economical proposition. Interesting points to note are: the external cladding of the concrete with anodized aluminium; the semi-circular end staircases cantilevered from a central concrete newel; one pipe copper plumbing; RWP's for roof drainage taken down through the centre of the columns and the imaginative use of colour. Pastel shades have been used extensively and the columns on each floor have been painted in a series of three different colours. This not only relieves the monotony of the view of such a large number of supports, but should help employees to identify different stacking areas.

24.147 lighting

LIGHTING OF HOUSE OF COMMONS

Lighting of the New House of Commons. C. D. Brown. (Trans. IES. Vol. XVI. No. 2. 1951.)

Preliminary trials, Chamber lighting design and control system; lobby lighting. Useful documentary; illustrated; photos and diagrams.

The lighting design in the Chamber consists essentially of 150 lighted panels in the ceiling, lights in the window cills to light the ceiling itself, and a row of lights beneath the side balconies where there would otherwise be shadows.

The ceiling panels are lighted by coils of cold cathode tube 14 ft. 8 in. long and consist of plyglass specially tinted to look like wood when not lighted. The lights can be dimmed gradually so that compensation for failing daylight can be made imperceptibly. Trials with hot cathode lamps showed that these offered no advantage, and their shorter life is an inconvenience. The present cold cathode gives between 9 and 12 foot candles at floor level.

The under-gallery lighting is housed at the outer edge and consists of a row of 2 ft. hot cathode fluorescent lamps, screened by opal perspex. The cill lighting is by a pair of 8 ft. hot cathode lamps in each cill.

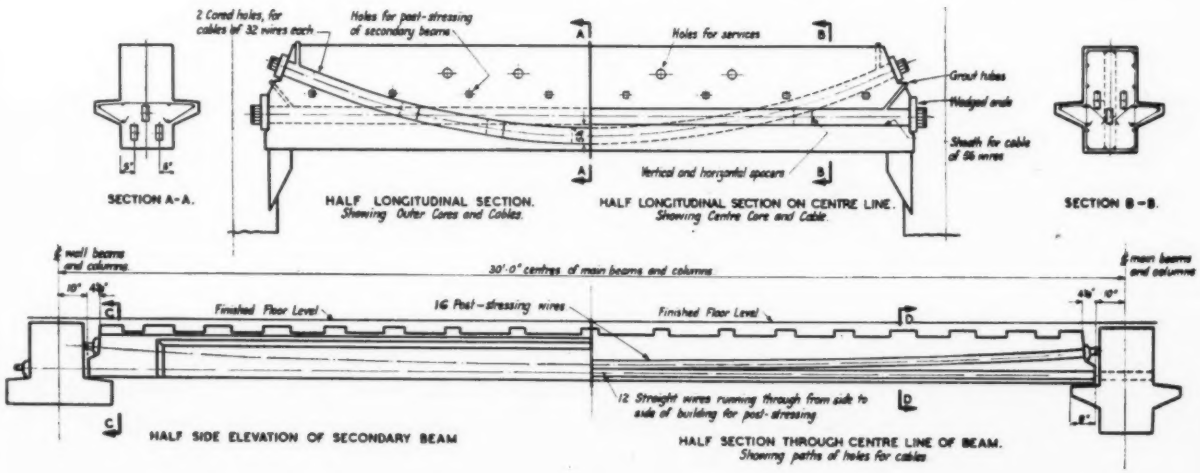
The Speaker's chair has its own 2 ft. fluorescent tube under the canopy, controlled by the Speaker.

General control is manual, by an engineer in a room in the basement; he sees the Chamber through a periscope with its head in the ceiling 60 ft. above him.

The commons Lobby has five bronze fittings, each holding ten vertical 4 ft. fluorescent tubes. In other rooms and lobbies, "gothicised" fluorescent fittings of more conventional design are used.

Technical ingenuity is good, but otherwise the scheme defies comment.

Top, left, warehouse for HMSO, Sighthill, Edinburgh. Above, the first floor with prestressed concrete beams on cylindrical columns of normal R.C. and columns to second floor commenced. Below, typical details of floor beams. (*See* 19.118). *Illustrations—Crown Copyright Reserved.*



ENQUIRY FORM

I am interested in the following advertisements appearing in this issue of "The Architects' Journal." (BLOCK LETTERS, and list in alphabetical order of manufacturers names please).

.....

.....

.....

.....

.....

Please ask manufacturers to send further particulars to:—

NAME .....

PROFESSION or TRADE

.....

ADDRESS .....

.....

.....

A.J. 12.4.51

Readers requiring up-to-date information on building products and services may complete and post this form to The Architects' Journal, 9, 11 and 13, Queen Anne's Gate, S.W.1.

Announcements

In the annual golf match between the RIBA Golfing Society and the Building Alliance Golfing Society, held recently on the Royal Wimbledon Golf Course, the architects were on the losing side by scoring 11½ points to their opponents' 15½. This was the reversal of last year's result when the architects came out on top.

Members of the Building Alliance Golfing Society might like to note that the society's spring meeting is being held at the Sunningdale Golf Club on Tuesday, May 1. Full particulars of the meeting are being sent to all members and the secretary hopes that replies will be sent in promptly. Closing date for entries being April 19.

Corrections

On page 368 of our issue for March 22 the production floor space in the factory extension for Vauxhall Motors at Luton was shown as 552,000 sq. ft. This should have read 852,000 sq. ft.

On page 367 of the JOURNAL for March 22 the authors of the book *Acoustic Designing in Architecture* should have been given as Knudsen and Harris. The second author's name was wrongly spelt as Hains.

On page 380 of the same issue the Adamite Co. Ltd. were omitted from the list of sub-contractors for the Vauxhall Motor factory. They were responsible for non-slip staircase nosings and non-slip tiles in the cafeteria kitchen.

On page 410 of our issue for March 29 Mr. I. M. Williams, A.R.I.B.A., was mentioned as assistant architect for Scheme 1 at the factory at Coleford, Gloucestershire. He was, in fact, the associate architect for this scheme.

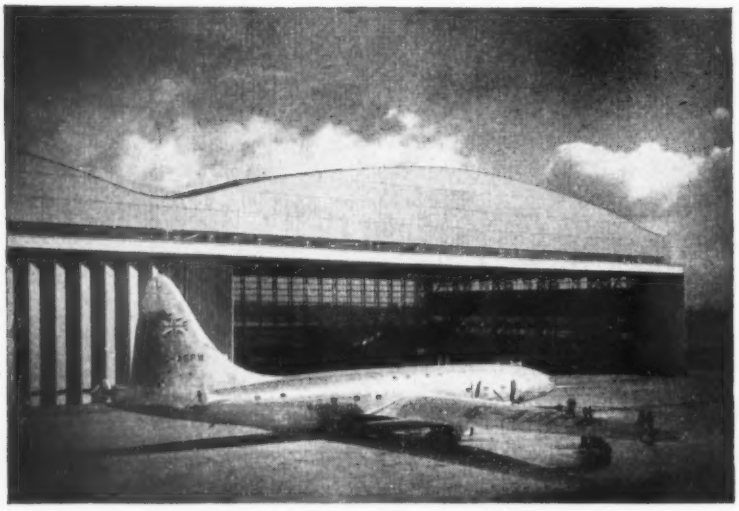
The structural engineer for the Pavilion Buffet, Battersea Park, is Mr. C. V. Blumfield, not C. F. Blumenfeld as was stated on page 422 of our issue for April 5.

Buildings Illustrated

Prefabricated Timber Schools. Prototype Classroom blocks (pages 458-462). Architect: Raglan Squire, F.R.I.B.A. Manufacturers and General Contractors: Medway Buildings and Supplies, Ltd. Sub-contractors: stage three, roofing felt, Vulcanite Ltd., stage two, tiling, Marley Tile Co., Ltd.

Flats at (a) Southcoates Lane Estate, (b) Priory Road Estate, (c) Bellfield Avenue Estate, (d) Bricknell Avenue Estate, (e) St. Pauls Street Area, (f) Marlborough Terrace, Hull, E. Yorkshire. Architect: Andrew Rankine, O.B.E., A.R.I.B.A., City Architect, Hull. General Contractors: (*a*) Scruton & Co. (Builders) Ltd., (*b*) and (*c*) Spooners (Hull) Ltd., (*d*) J. Mather & Son, (*e*) Quibell & Son, Ltd., (*f*) P. Larvin & Co. Ltd. Sub-contractors: Excavation, foundations, general contractors; reinforced concrete, (*a*) and (*d*), Frazzi Ltd., (*b*) and (*c*), Helical Bar and Engineering Co. Ltd., (*e*) and (*f*), Quibell & Son, Ltd.; bricks, The London Brick Co.; artificial stone, Kingston Concrete Products Ltd.; special roofings, roofing felt, steel deck roof, The Ruberoid Co. Ltd.; patent flooring, (*a*) Semtex Ltd., (*b*) and (*c*) J. T. Chadwick, (*d*) Limmer & Trinidad Lake Asphalt Co. Ltd., (*e*) and (*f*) Northern Asphalte Co.; electric wiring, (*a*) and (*e*), A. Lee, (*b*) Booker & Tarran, (*c*) W. Marlowe; sanitary fittings, Ideal Boiler & Radiators Ltd.; casements, Henry Hope & Sons Ltd.; shrubs and trees, Parks Department, Guildhall, Kingston-upon-Hull; lifts (*a*) Pickering Ltd., (*e*) and (*f*), "Reliance" lifts, Short (Lifts Ltd.); signs, Frederick Sage & Co. Ltd.

BIG DOORS or little doors . .



The door of this vast hangar which houses the Bristol 'Brabazon' is a perfect example of the adaptability of the Esavian principle of slide and fold. 200 tons in weight, 65 ft. 9 ins. high and 25 ft. longer than the "Queen Mary"... it is the largest door Man has yet built. Though you may never call for a door of these proportions, it is worth remembering that the Esavian principle, with all its advantages, can be applied just as successfully to doors of *smaller* dimensions. Doors for garages for instance, hangars, railways, or folding screens for luxury liners. No matter what size your 'closure' problem — or for what purpose—Esavian can solve it! Our designers are always ready to co-operate with architects in preparing designs to meet special requirements.

Architect: Eric Ross, F.R.I.B.A.
Consulting Engineers:
Brian Colquhoun & Partners

ESAVIAN LIMITED FOR DOORS, WINDOWS, PARTITIONS & FOLDING SCREENS

THE ESAVIAN PRINCIPLE

ESAVIAN LIMITED, Esavian House, 181 High Holborn, London, W.C.1 Tel: Holborn 9116 ★ 101 Wellington Street, Glasgow, C.2. Tel: Central 2369

WPD.50

The Simon Langton Secondary Grammar School for Girls, Canterbury. City Architect: L. Hugh Wilson Esq., A.R.I.B.A., A.M.T.P.I.

Roof Insulation with Cell Concrete

CELL CONCRETE for insulation against heat and cold

Technical Data — Commercial Density Range 19-85 lbs. per cu. ft. "K" Value ·42-2·60 B.T.U./sq. ft./hr./°F./inch Crushing Strength 100-700 lbs. per sq. in.

Applications — **CAST IN SITU** — INSULATION OF ROOFS (SCREEDED TO FALLS) FLOORS AND UNDERGROUND HEATING PIPES; **PRECAST UNITS**— FOR INSULATION OF PITCHED ROOFS, WALLS AND COLD STORES.

Celcon Limited
58 Victoria Street, London, S.W.1.
Telephone: Victoria 3216/7

P639

For work of the HIGHEST QUALITY

PAMMEL

THE PERFECT ENAMEL FINISH

FOR OUTSIDE AND INSIDE USE

BLUNDELL SPENCE & Co LTD
9 UPPER THAMES ST. LONDON, E.C.4., and HULL
and at WEST BROMWICH, NEWCASTLE, BOMBAY and SYDNEY, ASSOCIATED COMPANY AT VALPARAISO.

BLUNDELL

Algeciras

Antofagasta

Askieselos

Antananarivo

Which word is the "odd man out?"

Three of the words are place names. *The fourth is Askieselos, a material acknowledged by modern science to be one of the finest fire-resisting substances yet produced. Take pressed steel sheets with double channel steel frames rigidly secured by a patent process, fill in the space between the sheets with Askieselos, and you have a Dreadnought Door approved by the Fire Office Committee and the L.C.C.

* Algeciras (Spain), Antofagasta Chile), Antanarivo (Madagascar)

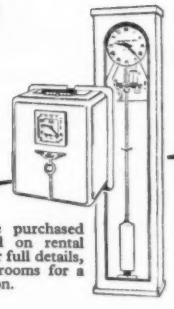
Dreadnought Doors are available in a variety of panel shapes or *"Kleenflush" with flat surfaces and will fit perfectly into any architectural or decorative scheme for buildings or ships.

★KLEENFLUSH Firescreen Doors are approved by the International. Convention for Safety of Life at Sea, 1948, after Official Test

DREADNOUGHT Fireproof Doors

DREADNOUGHT FIREPROOF DOORS (1930) LTD.,
26, VICTORIA STREET, WESTMINSTER, LONDON, S.W.1
Telephone: ABBey 1411

When you say that* SMITHS, *famous for all time, make the finest* MASTER CLOCKS *and* TIME RECORDERS, *you are absolutely accurate

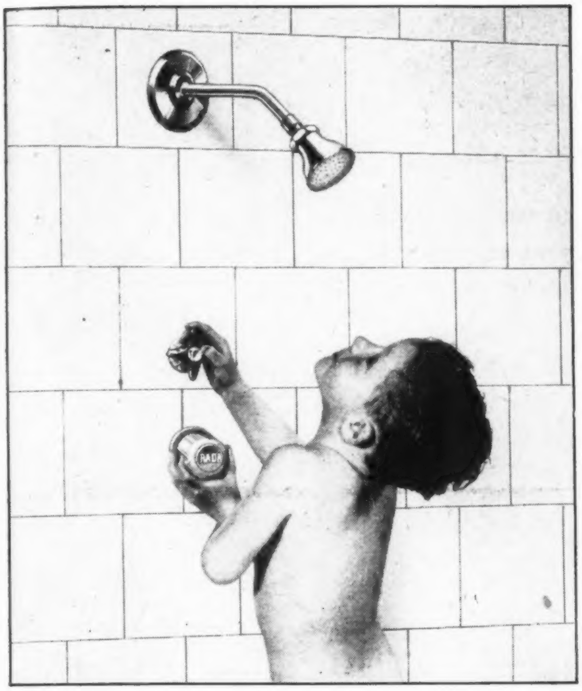


Installations may be purchased outright or arranged on rental terms. Write to us for full details, or call at our Showrooms for a practical demonstration.

ENGLISH CLOCK SYSTEMS LTD.

Speedometer House, 179-185 Great Portland Street, London, W.1. *Langham 7226.*
153-155 Bothwell Street, Glasgow C.2. *Central 3972*

THE INDUSTRIAL BRANCH OF SMITHS ENGLISH CLOCKS LIMITED



Shower Baths should be fitted with the new

Leonard REGISTERED

RADA THERMOSTATIC SHOWER VALVE

for safe, steady temperature control

The RADA Shower Valve keeps the temperature of the shower steady, preventing those sudden changes from hot to cold and back again which are so often uncomfortable, and even dangerous. The user chooses the temperature simply by moving the control knob, and cold, warm or hot water can be instantly obtained. A hidden "stop" prevents too high a temperature being used, making it safe for children and old people.

Write for Pamphlet RD/2

WALKER CROSWELLER & CO LTD
CHELTENHAM

Phone: Cheltenham 5172 London: Holborn 2986

tions this ... problem, though it is the most urgent. The Dutch have shown that it is possible to rationalise marketing; in the interests of both grower and housewife, we, too, must find a solution without delay.

Gordon Kitmar, of ... Town, London, N.W., were ... when their car was in collision with a coach full of Tottenham Hotspur supporters at Stretton (Rutland). A woman was seriously injured.

FUEL SHORTAGE—WARNING

Stocks of coal are dangerously low.
A serious shortage will close factories, cause unemployment and bring hardship to your home.

ACT NOW

by using less

COAL GAS ELECTRICITY

Issued by the National Coal Board, the Gas Council and British Electricity in support of the Ministry of Fuel & Power campaign.

THOUGH the recognised indexes of industrial production for January will not appear for a good many weeks yet, it is already clear that over a wide range of industry output since the turn of the year has changed significantly for the worse.

to the "bottlenecks" in sheet steel, copper, zinc, etc. The current troubles of the motor manufacturing industry have in particular been well publicised.

Sheet steel deliveries to the industry were cut by 15 per cent. early in January and further cuts are on the way.

EVERYONE is being asked to save coal, gas and electricity and the efforts of the nation must not be wasted in the factories.

In every factory fuel must be used to the greatest effect and economies made wherever possible.

Your extra care will help to keep industry working.

CHEAPER TO BUY

CHEAPER TO FIX

PERFECTLY STREAMLINED

MANUFACTURED FROM LATEST CORROSION RESISTING ALLOY

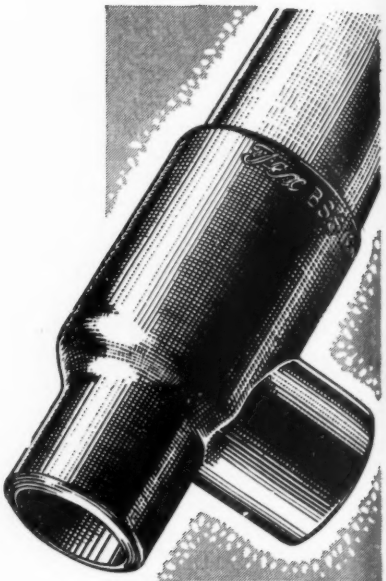
MADE TO BRITISH STANDARD SPECIFICATION

QU·ALITY

A much welcomed and fast becoming popular newcomer to the capillary or soldered range of joints. Fixing time has been slashed to the minimum, with the use of Tex joints and Frytex solder paint, the latest and best fixing method yet. Neat, with cunning streamlined proportions.

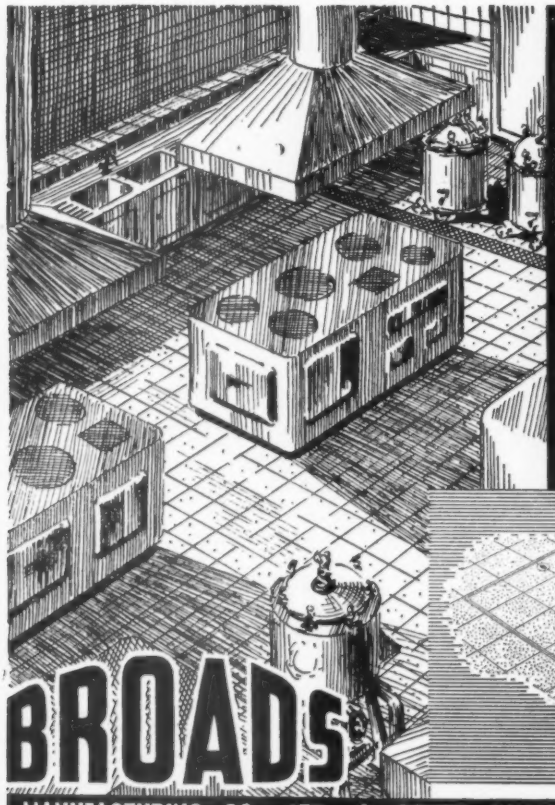
TEX JOINTS CAN ALSO BE WELDED

COMPRESSION JOINTS LTD.
TYBURN ROAD
BIRMINGHAM 24



Tex

"ONE OF THE GOOD CAPILLARY JOINTS."



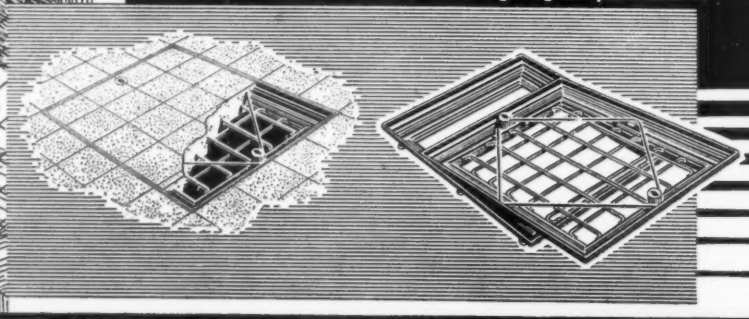
where DRAINAGE should be sound but NOT SEEN

use

PATENT **BROADSTEL** UNIVERSAL COVERS and FRAMES

RECESSED FOR SURFACING WITH TILES, WOOD BLOCKS ETC., TO MATCH SURROUNDING AREA

Write for illustrated Brochure giving full particulars.



BROADS

MANUFACTURING CO., LTD. 4, SOUTH WHARF · PADDINGTON · LONDON. W·2 · TEL·PAD·7061

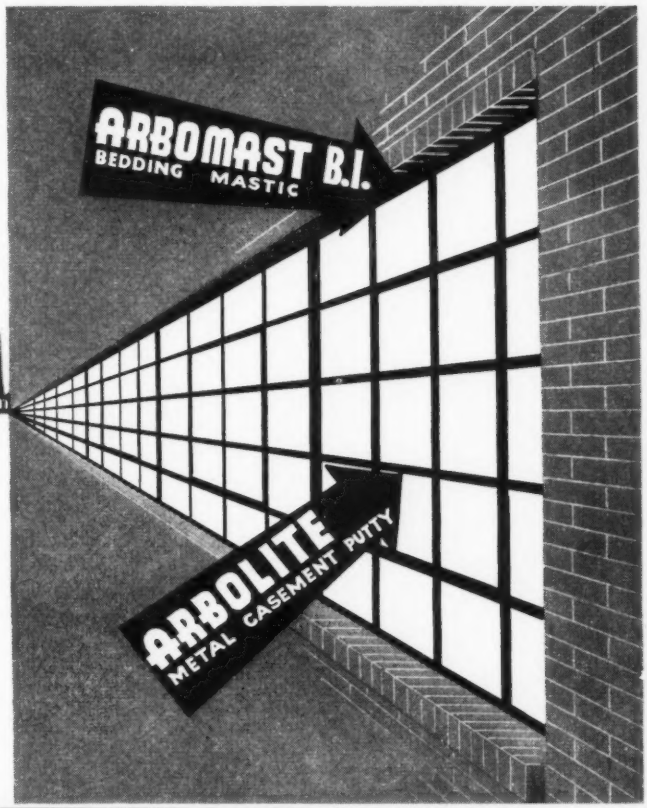
AS SPECIFIED . . .

ARBOMAST B.I. BEDDING MASTIC withstands the most rigorous climatic conditions and eliminates all possibility of running, sagging and staining. Equally suitable for bedding frames into brick or wood surrounds, or for completely filling the interstices when composite units are coupled together with mullion and transom bars.

ARBOLITE is supplied in a "ready for use" consistency and consequently requires no pre-mixing on the site.

It works easily, points neatly and remains exactly as finished without shrinking, cracking or wrinkling.

ARBOLITE has excellent keying properties and ensures a tight, tough waterproof joint, adding considerably to the life of metal windows.



ADSHEAD RATCLIFFE & CO. LTD. · BELPER · DERBY · PHONE BELPER 351/2

Specify

"DURABLE REFLECTIVE ROOFING"
is a scientific mastic roofing carrying a twenty year guarantee and very moderate in price. May we send you details?

"Durable"

Durable Asphalte Co. Ltd.

FOR "BUILT UP" FELT ROOFING AND ASPHALTIC

FLOORING
To B.S.S. 1451/1948

ROOFING
To B.S.S. 1162/1944 & 988/1941

TANKING
To B.S.S. 1418/1947 & 1097/1943

DAMP COURSE WORK
To B.S.S. 1418/1947 & 1097/1943

"KIMBERLEY HOUSE"
14/17 HOLBORN VIADUCT, E.C.1
TELEPHONE CITY 1456/7, 4553, 6271

Southern Depot: Great Testwood, Totton, Near Southampton

Northern Depot: Gladstone Street, Huntingdon Road, York

"A.B.S."

House Purchase Loans

ALTERNATIVE SCHEMES

1. Normal Advance: 80 per cent of Valuation. Interest: 4 per cent gross. Borrower pays Survey Fee and Legal Costs, totalling 1 per cent of loan.

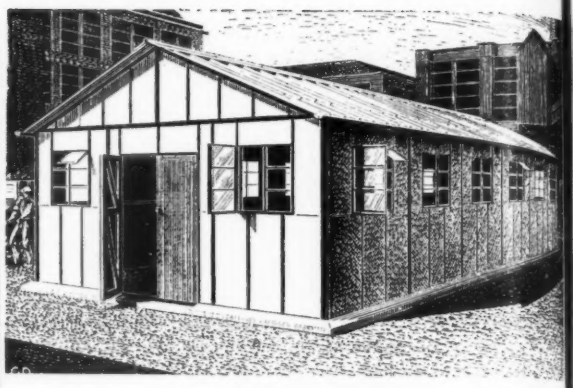
2. Normal Advance: 85 per cent of Valuation. Interest: 4½ per cent gross. (Office pays Survey Fee and own Legal Charges.)

Repayment by means of an Endowment Assurance term not exceeding 25 years under (1) or 30 years under (2).

Houses in Course of Erection

Advance increased to 90 per cent of the controlled selling price.

Particulars from: **The Secretary, A.B.S. Insurance Department, 66, Portland Place, London, W.1.** (Telephone: LANgham 5721.)



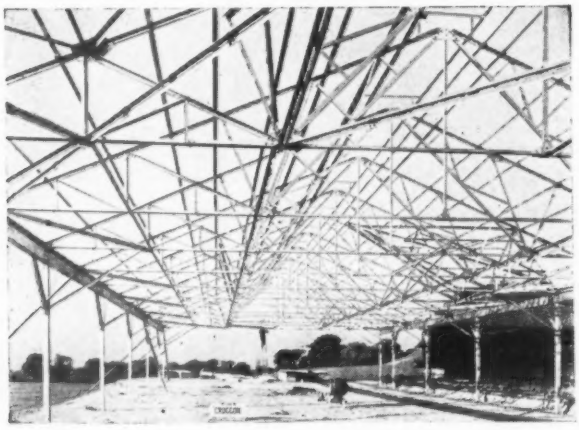
The building you need . . .

is very likely one of Thorns standard range of industrial buildings, which includes new steel structures for factories, stores, garages; timber and asbestos buildings for offices, canteens, halls, etc., and reconditioned Nissen type huts and 'Blister' hangars.

★ Write today, stating details of your requirements and requesting prices of suitable buildings.

THORNS J. THORN & SONS, LTD.

BOX 199, BRAMPTON RD., BEXLEYHEATH, KENT. Bexleyheath 305



STRUCTURAL STEELWORK

for Industrial or Agricultural Buildings

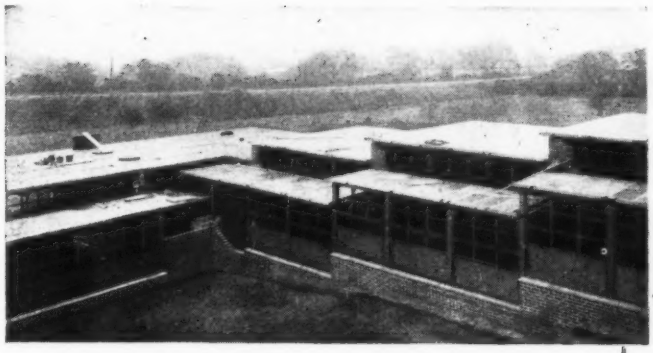
CROGGON & Co. Ltd.

230, UPPER THAMES ST., LONDON, E.C.4
Central 4381/3 Works: Colnbrook

ESTD. 1835

Thermacoust *Channel Reinforced*

WOOD WOOL ROOFING SLABS



★ NO purlins needed at less than 7 feet centres.

★ NO other insulating material has greater structural strength.

★ NO ceiling essential : high sound absorption if left bare.

LITTLEOVER MODERN SECONDARY SCHOOL, DERBY
F. Hamer Crossley, A.R.I.B.A., County Architect.

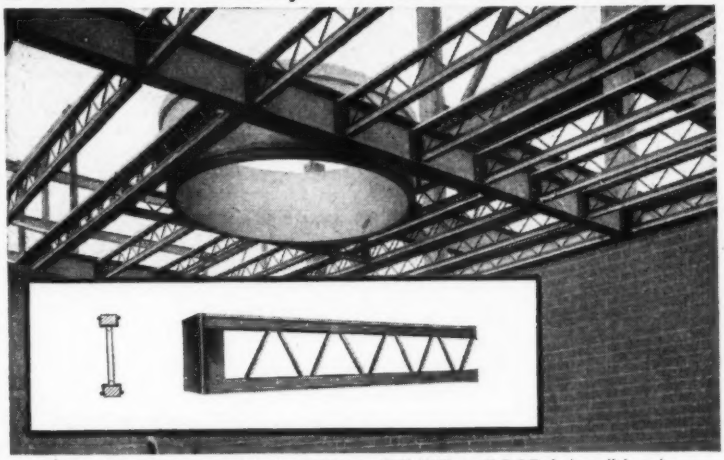
THERMACOUST Channel reinforced Slabs are light in weight, large in unit size, with exceptional structural strength. They keep buildings warm in winter, cool in summer. If left bare beneath, they provide valuable sound absorption in Assembly Halls, Dining Rooms, etc. When required to be plastered, their surface provides an excellent "key". They are being extensively used for roofs, flat or pitched, for schools, municipal buildings and factories. **Standard slabs, 6 ft. long ; 6 ft. 8 in. and 7 ft. slabs made to order.**

THERMACOUST ADVISORY SERVICE

We maintain a highly-qualified technical staff to advise on the use of "Thermacoust" to the best advantage. It must be emphasised that it is NOT a matter of merely ordering an available building material. There are considerations of thermal insulation ; acoustic properties, etc., and, more important, the constructional methods to ensure that the considerable savings on building costs that "Thermacoust" makes possible are, in fact, made. All this is best settled at the design stage. It is then that the help of our technical department and drawing office, freely available, can be most wisely employed.
Enquiries are invited and will incur no obligation.

For Information Sheets and prices apply to :— THERMACOUST LIMITED, 39 VICTORIA STREET, LONDON, S.W.1. *(Abbey 2738)*

SAVE TIME, TIMBER AND TRANSPORT WITH



Solihull, Lyndon Secondary School. Architects: Rolf Hellberg, F.R.I.B.A. in collaboration with C. H. Elkins, F.R.I.B.A., F.R.I.C.S., County Architect, Warwick

METAL SECTIONS LIMITED

NAILABLE STEEL JOISTS FOR ROOF & FLOOR CONSTRUCTION

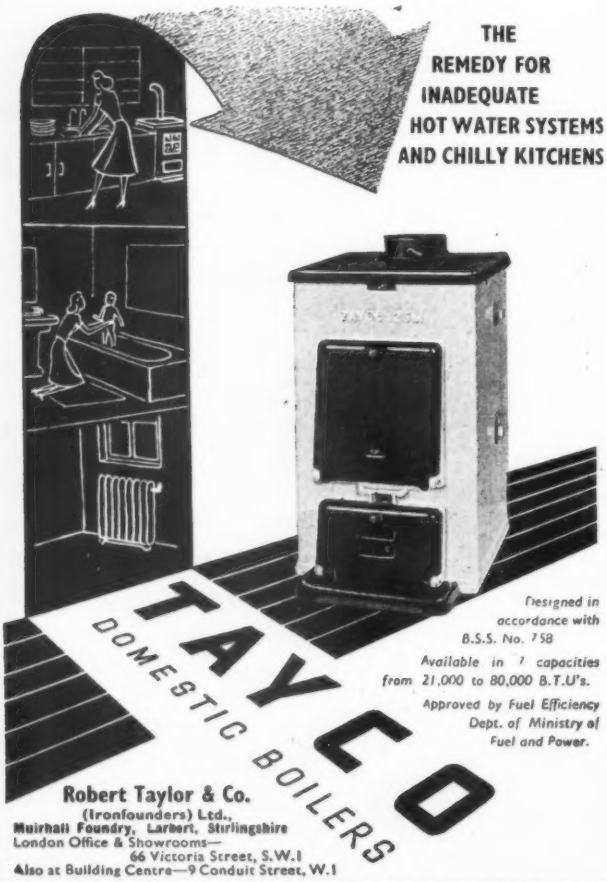
For housing, school buildings and similar structures, Metal Sections open web nailer Joists offer the following outstanding advantages: (1) They reach the job ready for placing *without cutting or fitting*. (2) Open Web permits free, unobstructed passage of pipes. (3) The saving of time, timber and transport. A Metal Sections Ltd. Joist of the type illustrated on left, when used at 18" centres will carry a superimposed load of 60 lbs. per superfoot on spans up to 12 ft. with a deflection of under 1/300th of the span.

A TI COMPANY

Descriptive literature available on request to :

METAL SECTIONS LTD., OLDBURY, BIRMINGHAM. TELEPHONE: BROADWELL 1461

MEMBER OF THE COLD ROLLED SECTIONS ASSOC.



THE REMEDY FOR INADEQUATE HOT WATER SYSTEMS AND CHILLY KITCHENS

TAYCO DOMESTIC BOILERS

Designed in accordance with B.S.S. No. 758

Available in 7 capacities from 21,000 to 80,000 B.T.U's.

Approved by Fuel Efficiency Dept. of Ministry of Fuel and Power.

Robert Taylor & Co.
(Ironfounders) Ltd.,
Muirhall Foundry, Larbert, Stirlingshire
London Office & Showrooms—
66 Victoria Street, S.W.1
Also at Building Centre—9 Conduit Street, W.1

THORNTON'S *Quality* INSTRUMENTS & SLIDE RULES

Accuracy

For over 70 years Thornton's Drawing Instruments have been used by the Engineers and Surveyors responsible for the world's most famous constructions. The more important your work the greater the necessity for Reliable and Accurate Drawing Instruments. Insist on using only Thornton's for complete satisfaction. Illustrated catalogue sent post free on request.

A. G. THORNTON LTD
Drawing Instrument Specialists
WYTHENSHAWE, MANCHESTER
Tel: WYThenshawe 2277 (4 lines)

Important

Once again
PARQUET FLOORING
of traditional quality and craftsmanship is freely at your disposal

HOLLIS BROS LTD.
FLOORING CONTRACTORS
HULL – LONDON
LEICESTER - BIRMINGHAM

Pelican Graphos

Drawing Ink Fountain Pen for lettering and technical drawing

FROM YOUR USUAL DRAWING OFFICE MATERIAL SUPPLIERS

Wholesale Distributors :

G. H. Smith & Partners,
28 Berechurch Rd.,
Colchester, Essex, Tel. : 5526

Also distributors of Pelican world renowned Waterproof Drawing Inks and Drawing Ink Cartridges.

TRADE WITH CANADA

Enquiries regarding Trade with Canada are warmly welcomed and should be addressed to:

R. Douglas Roe, Commercial Secretary (Timber), Office of the High Commissioner for Canada, Canada House, Trafalgar Square, London, S.W.1.

Representatives will also be in attendance at

THE BRITISH INDUSTRIES FAIR

APRIL 30th TO MAY 11th

LONDON: (EARLS COURT) COMMONWEALTH COURT

BIRMINGHAM: STAND No. B326

Visit the Canadian International Trade Fair, Toronto, May 28 to June 8, 1951

Palabora EXFOLIATED VERMICULITE INSULATION AGGREGATE

Efficient · Practical · Lightweight · Permanent

Palabora VERMICULITE AGGREGATE

for

- Insulating, lightweight roof and floor screeds from 22 lbs. cu. ft. and "K" value 0.60.
- Loose-fill insulation over ceilings, between floors, in partitions.
- Easy-to-apply, lightweight, insulating, fireproof plaster.

EXFOLIATORS (VERMICULITE) LTD.

21, BROADWATER ROAD, WELWYN GARDEN CITY

Welwyn Garden 4234

Roof and Floor Screeds

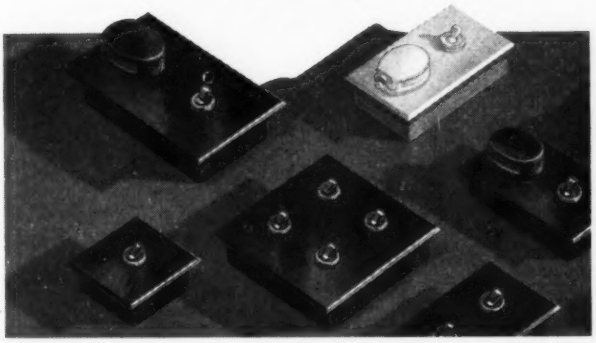
Ceiling, Floor and Partition Fill.

Insulating Plaster.

Restricted Usage of Non-Ferrous Materials

under Statutory Instruments Nos. 275 & 277

The above Orders prohibit manufacture of Switch units with Brass Plates after March 1st



EQUIVALENT PATTERNS WITH MOULDED PLATES

provide a complete range of

Tucker FLUSH SWITCHES

for Domestic and Industrial Installations which can be specified with every confidence

The range includes:

5 and 15 Amp Q.M. & Q.B. Switches	CA 2001 types
5 and 15 Amp Switched Socket-outlets (B.S. 546 type with Shutters)	CS 7846 & 8056 types

in Wood or Iron boxes

Tucker TELAC

J. H. TUCKER & CO. LTD.

Kings Road, Tyseley, Birmingham, 11

Makers of First Grade Electrical Accessories since 1892

London Office: 2 Newman Street, W.1

Fine fabrics

for furnishing . . .

The loveliest and fastest colours. The most beautiful modern and period designs. See the 'Old Bleach' range. Full information (Trade only) from Randalstown, N. Ireland or from the London Showrooms. 26 Berners St. London, W.1.

'Old Bleach'

FURNISHINGS LIMITED

DUNBRIK

THE PRECISION FACING BRICK

Introduced in 1934 and since specified by Government Departments, Local Authorities, Leading Architects, Builders, etc. Buildings faced with Dunbriks include Houses, Schools, Factories, Hospitals, Drillhalls, Cinemas, Flats, Office Blocks, etc.

Dunbriks are Manufactured by :—

London and Home Counties
DUNBRIK LIMITED 26, Chilworth Street, London, W.2. 'Phone: Paddington 2471/2

Suffolk, East and Central Essex
ALPHAMSTONE BRICK & TILE CO. LTD.
Alphamstone, near Bures, Suffolk. 'Phone: Twinstead 229

Dorset, S.W. Hants and S. Wilts.
W. E. MASTERS, Brick Manufacturer, Lytchett Minster, near Poole, Dorset. 'Phone: Lytchett Minster 291/2

Oxon, Berks, N. Wilts and N. Glos.
THE COTSWOLD BRICK AND TILE CO. LTD.,
47, Market Square, Witney, Oxon. 'Phone: Witney 390

East and West Ridings, Yorkshire
DUNBRIK (YORKS) LTD., Stanley Ferry, near Wakefield, Yorks. 'Phone: Wakefield 3694

Counties of Notts, Lincs, Leicester, Rutland, Derby.
THE HOVERINGHAM GRAVEL CO., LTD.
Hoveringham, Notts. 'Phone Bleasby 242.

Scotland
SCOTTISH DUNBRIK LTD., 250, Alexandra Parade, Glasgow, E.1. 'Phone: Bridgeton (Glasgow) 1818; Dundee 81673.

Ulster
DUNBRIK (ULSTER) LTD., Doagh Station, Co. Antrim, N. Ireland. 'Phone: Doagh 59.

Beauty · Economy · Permanence · Uniformity

Victor Door Springs are installed in the Royal Festival Hall

FOR INFORMATION ON

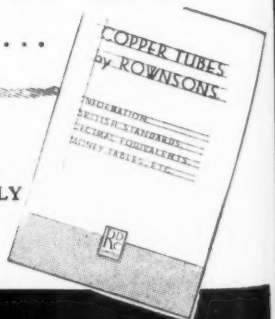
COPPER TUBES

Write for this 16 page publication

PRESENTING IN CONCISE FORM

- PROPERTIES
- B.S.S. SPECIFICATION DETAILS
- APPLICATION DETAILS
- WEIGHTS OF VARIOUS GAUGES

ETC. . . . .



ROWNSON'S TUBES
ARE THE MOST ECONOMICALLY PRICED TUBES AVAILABLE

ROWNSON, DREW & CLYDESDALE LIMITED
225 UPPER THAMES STREET, LONDON, E.C.4
Established 1819 Phone: WAT. 6321

BAD NEWS FOR BURGLARS

RELY—999

This is NOT just another 999 alarm. Over two years research has resulted in important new patented safeguards, exclusive to 'RELY-999', that make it the most scientific protection of its kind in the world.

'Rely-999' is backed by Rely-a-Bell's thirty-five years experience as Britain's leading burglar alarm specialists. It is admirably suited for the protection of lock-up shops, private houses, factories and warehouses.

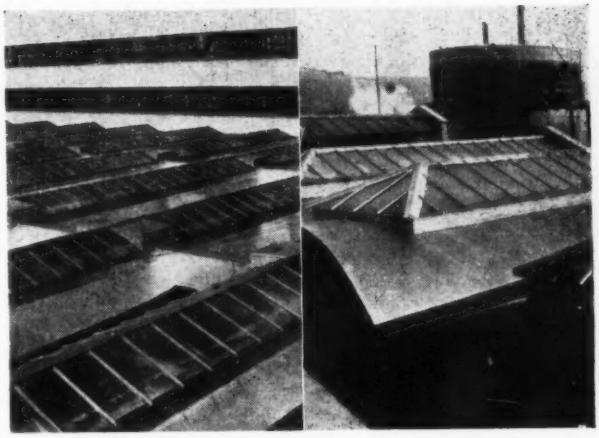
Descriptive leaflet sent on request.

Technical representative will be pleased to call without obligation, and discuss your problem.

Please call, write or telephone (Dept. A.J.)

Rely-a-bell
BURGLAR & FIRE ALARM CO. LTD

54 WILSON ST., LONDON, E.C.2.
Telephone: BIShopsgate 1955 (4 lines)



B.O.A.C., Filton, near Bristol. Workshops, Stores, Link Training Departments and Offices (for the Bristol "Brabazon" type aircraft). Architect: Eric Ross, Esq., F.R.I.B.A. Reinforced Concrete work designed by B.R.C. Ltd., Stafford.

Chis-arc Shell "D" Roof at Bridge Dye Works, Honley, Yorks. Architects: Messrs. Stocks, Sykes & Hickson, Huddersfield Contractors: Messrs. John Robinson (Huddersfield) Ltd.

Waterproofed with the EVODE INSULATING PASTE MEMBRANE TREATMENT and finished with ALUMINIUM HEAT REFLECTION TREATMENT.

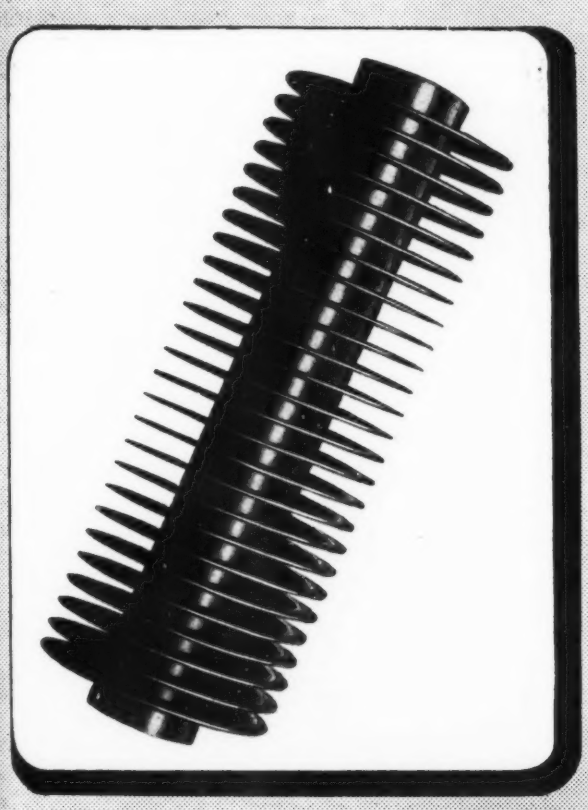
EVODE INSULATING PASTES

Quickly and effectively solve your roof waterproofing problems. For use on concrete, zinc and lead flats. For revival of asphalt and felt roofs. Waterproofing gutters, forming flashings (eliminating lead). For waterproofing glazing bars and sky-lights.

EVODE INSULATING PASTES are high grade Bituminous materials with additional advantages—odourless, tasteless, non-inflammable. Applied cold. Will adhere to moist surfaces. Do not produce injurious vapour or gases. Can be applied in various thicknesses.

EVODE Ltd., Glover St., Stafford

Tel: 1590·1·2 Grams: EVODE



TO THE ARCHITECT—SURVEYOR AND BUILDER

Yours the problem-Harveys the answer!

Whenever it is a question of "where-to-get"

GILLED TUBES

—remember Harveys. For the "Harco" Mild Steel "Tapergil" Gilled Tube is superior to any other form of Gilled Tubing. This type of Gill has no crimp, is twice as wide at the bottom of the Gill than at the outside edge and the cross section of the strip is tapered. For full particulars send for List AJ 806

Harvey

G.A. Harvey & Co. (London) Ltd.
Woolwich Rd. London, S.E.7

THE ORIGINAL

SOLENT

REGD.

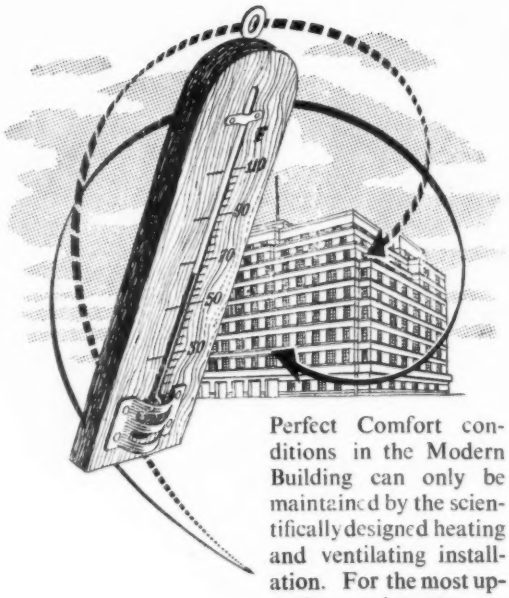
VARNISHES ENAMELS PAINTS

Specially made and highly recommended for Institutions, Hospitals, Schools, etc.

With a reputation for QUALITY, DURABILITY and RESISTANCE TO SEA AIR

LISLE MUNDAY & Co. LTD

Head Office: SOLENT PAINT WORKS SOUTHAMPTON



Perfect Comfort conditions in the Modern Building can only be maintained by the scientifically designed heating and ventilating installation. For the most up-to-date equipment—

Consult CANNONS

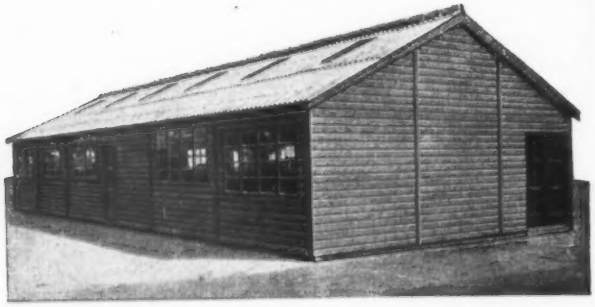
HEATING, VENTILATING & AIR CONDITIONING ENGINEERS · SPECIALISTS IN OIL, GAS & AUTOMATIC FIRING.

Telephone: CROydon 4535-6789

145/147 NORTH END CROYDON · SURREY

HALL WIDE SPAN BUILDINGS

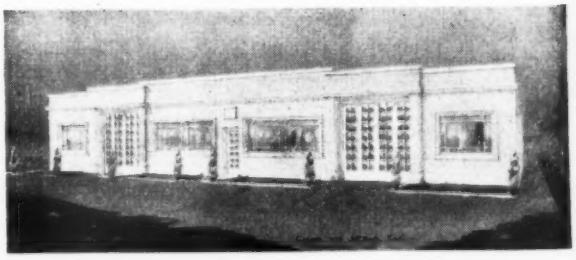
For CANTEENS · STAFF RECREATION ROOMS · WORKSHOPS *for* LIGHT WORK



Hall's are renowned for their timber buildings not only as manufacturers but as prime designers and pioneers. Your needs receive the personal attention of those responsible for the high Hall standard and any building purchased is backed by the reputation, skill, and integrity of Halls of Paddock Wood. Building for Industry, Education, Sport, Municipal or Constructional needs. Site offices and Contractors' Huts also supplied. NO MATERIAL LICENCES NEEDED.

Let us quote you for your requirements, write.

HALL'S Dep. AJ. PADDOCK WOOD TONBRIDGE KENT



Pre-cast CONCRETE

Cast Stone

Granolithic

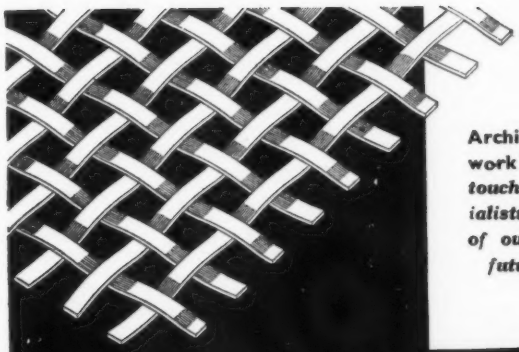
Terrazzo

RAPID DELIVERIES OF FENCING PAVING WALLING BLOCKS AND PRE-FAB STRUCTURES IN MANY SIZES

EBOR

CONCRETES LTD. URE BANK, RIPON

Telephone: Ripon 202



A NAME TO *Remember*

Architectural Wire-work? *Better get in touch with the specialists. Make a note of our address for future reference*

F·L·&·E SMALL LTD

PERSEVERANCE WORKS · 72-73-74 MOSELEY STREET · BIRMINGHAM 12

FITZPATRICK'S

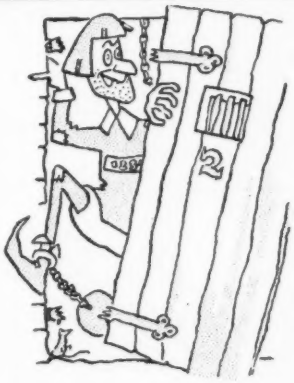
Specialists in the construction of

ROADS, FOOTPATHS
DRAINAGE
FACTORY FLOORING
FOUNDATIONS, etc.

FITZPATRICK & SON (Contractors) LTD.
455, OLD FORD ROAD, LONDON, E.3.
Contractors to the Government, County and Municipal Authorities.

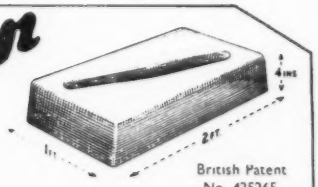
"'Pon mine honour! Thanke goodnesse ye hinges aren't BALDWIN'S!"

BALDWIN'S Cast Iron **HINGES**
STRONG · SMOOTH · SILENT



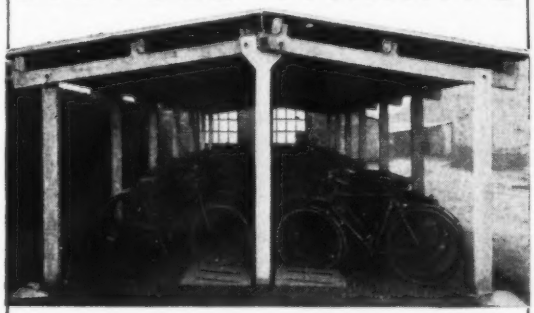
Sole Manufacturers: BALDWIN, SON & CO. LTD., STOURPORT-ON-SEVERN

Stelcon



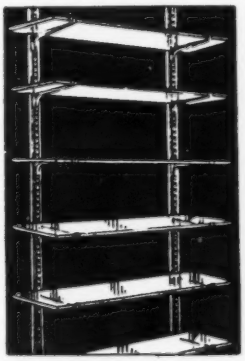
British Patent No. 425265

BICYCLE PARKING



This "All Concrete" park is practical and requires no maintenance. Full details will gladly be sent on request.

STELCON (INDUSTRIAL FLOORS) LTD.
Cliffords Inn . . . . LONDON E.C.4
Telephone: HOLborn 2916



STORAGE SHELVES adjusted to requirements— IN SECONDS !

Hokon Cantilever Brackets are the perfect space-savers for warehouses, factories, offices, libraries and department stores. Made from light alloy, these sturdy, light-weight brackets are supplied in both commercial and high-grade finishes in sizes 6in., 9in., 12in., 15in. and 18in.

TheBrackets can be inserted in the supporting co umns at various heights in a matter of seconds. They are perfectly safe, hard wearing and look attractive and tidy. Just insert the top anchor hook, depress the bracket and it locks itself! Brackets and support are non-corrosive and will take either wood or glass shelves.

We shall be pleased to discuss your particular requirements.

CHURCH & Co. (FITTINGS) Ltd.
16 The Oracle, Minster Street, Reading

SOME WELL-KNOWN USERS OF

Lightfoot Refrigerating Plant

QUELQUES NOMS BIEN CONNUS D'USAGERS DES FRIGORIFIQUES LIGHTFOOT

ALGUNOS BIEN CONOCIDOS USUARIOS DE LOS FRIGORIFICOS LIGHTFOOT

Admiralty.
Air Ministry.
War Office.
Ministry of Agriculture.
Ministry of Education.
Ministry of Food.
Ministry of Health.
Ministry of Supply.
Ministry of Works.
Crown Agents for the Colonies.
Department of Scientific & Industrial Research.
Imperial College of Science & Technology.

Anglo-Iranian Oil Co. Ltd., London and Oilfields.
Anglo-Saxon Petroleum Co. Ltd., London and Oilfields.
Armour & Co. Ltd., London.
Army & Navy Stores Ltd., London, Calcutta and Bombay.
Asiatic Petroleum Co. Ltd., London and Oilfields.
Austin Motor Co. Ltd., Birmingham.
Austrian State Railways.
Bass, Ratcliffe & Gretton Ltd., Burton-on-Trent.
Barclay, Perkins & Co. Ltd., London.
Birmingham Cold Storage Co. Ltd.
Bombay, Baroda & Central India Railway.
Bombay Municipality.
Boots Pure Drug Co. Ltd., Nottingham and Branches.
Bradford Corporation Cold Stores.
Bradford Dyers Association Ltd., Bradford and Branches.
Bradford Clear Ice & Cold Storage Co. Ltd.
Bristol Corporation Cold Stores.
British Broadcasting Corporation.
British Xylonite Co. Ltd., London.
British India Steam Navigation Co. Ltd., Calcutta.
Brooke, Bond & Co. Ltd., London.
Buenos Aires Pacific Railway.
Burma Ice & Cold Storage Co. Ltd., Rangoon.
Burroughs, Wellcome & Co., London.
Cadbury-Fry-Pascall Pty. Ltd., Australia.
Cafe Royal, Regent Street, London.
Calico Printers Association Ltd., Manchester and Branches.
Central Argentine Railway.
Co-operative Wholesale Society Ltd., Manchester and Branches.
Corporation of the City of London.
Courage & Co. Ltd., London.
Courtaulds Ltd., Coventry and Branches.
Crosse & Blackwell Ltd., London.
Dewhurst, J. H., Ltd., London.
Distillers Co. Ltd., Glasgow and Branches.
Dorchester Hotel, Park Lane, London.
Dunlop Rubber Co. Ltd., Birmingham and Calcutta.
Elder Dempster Lines Ltd.
English Electric Co. Ltd., Stafford.
Express Dairy Co. Ltd., London.
Fabrica de Cervezas Santander, Madrid.
Ford Motor Co. Ltd., Dagenham.
Forte, D., Ltd., London.
Fortnum & Mason Ltd., Piccadilly, London.
Frosted Foods Ltd., London.
Gas Light & Coke Co., London.
Gilbey, W. & A., Ltd., London.
Glaxo Laboratories Ltd., London.
Government General Hospital, Rangoon.
Government House, Calcutta.
Great Eastern Hotel, Calcutta.
Great Indian Peninsula Railway.
Great Western Railway (British Railways).
Guiness, A., Son & Co. Ltd., London and Dublin.
Harland & Wolff Ltd., Belfast.
Hawthorn (R. & W.) Leslie & Co. Ltd., Hebburn-on-Tyne.
Home & Colonial Stores Ltd., London and Branches.
Hull Ice Co. Ltd.
Imperial Chemical Industries Ltd., London and elsewhere.
Iraq Petroleum Co. Ltd., London and Oilfields.
Jacob, W. & R. (Liverpool) Ltd.
Jurgens Ltd., Plymouth.
Kearley & Tonge Ltd., London.
Keiller, Jas., & Son Ltd.
King Albert Country Club, Brussels.
Kodak Ltd., Harrow.
Leeds City Hospital.
Lever Bros. Ltd., Port Sunlight and Branches.
Lipton's Ltd., London.
London Central Meat Markets, Smithfield, London.
London Co-operative Society Ltd., London.
London County Council.
London Midland & Scottish Railway (British Railways).
London & North Eastern Railway (British Railways).
Lyons, J., & Co. Ltd., London.
Macleans Ltd., near London.
MacFisheries Ltd., Stornaway and Branches.
Malayan State Railways.
Manchester Corporation Cold Stores.
Marshall, Sons & Co. Ltd., Gainsborough.
Mayfair Hotel, London.
McVitie & Price Ltd., London, Edinburgh and Manchester.
Midland Dairy Machines Ltd., Birmingham.
Morton, C. & E., Ltd., London.
Municipality of Oporto, Portugal.
Murrayfield Ice Rink, Edinburgh.
Nestle & Anglo-Swiss Condensed Milk (A/asia) Ltd.
Nile Cold Storage, Egypt.
Nizam's State Railway.
North Western Railway of India
Nottingham General Hospital.
Peek Frean (Aust.) Pty. Ltd.
Piccadilly Hotel, London.
Port of London Authority.
Price's Patent Candle Co. Ltd., London.
Prince of Wales Medical College, Ceylon.
Queen's Hospital, Birmingham.
Queensland Meat Export Co. Ltd.
Rhodesian State Railways.
Robertson, James, & Sons Ltd.
Rowntree & Co. Ltd., York.
Savoy Hotel, Strand, London.
Schweppes Ltd., Bristol.
Sheffield Pure Ice & Cold Storage Co. Ltd.
Sheffield City Hospital.
Shell Petroleum Co. Ltd., London.
Siemens Bros. & Co. Ltd., London.
Singapore Cold Storage Co. Ltd.
South African Railways.
Southern Railway (British Railways).
Standard Telephones & Cables Ltd., London.
St. Bartholomew's Hospital, London.
Swan, Hunter & Wigham Richardson Ltd., Wallsend-on-Tyne.
Swifts Australian Co. (Pty.) Ltd.
Taylor Walker & Co. Ltd., London.
Technicolour Ltd., Harmondsworth.
Union Castle Mail Steamship Co. Ltd.
Union Cold Storage Co. Ltd., London.
Union Fresh Meat Co. Ltd., Durban.
United Carlo Gatti, Stevenson & Slaters Ltd., London.
United Africa Co. Ltd., London.
United Dairies (London) Ltd.
Unilever Ltd., Factories in England, India and Ceylon.
Van den Berghs & Jurgens Ltd., Purfleet.
Vestey's (W. Angliss & Co.) (Aust.) Pty. Ltd., London.
Wall, T., & Sons Ltd., London.
Watney, Combe, Reid & Co. Ltd., London.
West Australian Meat Exports Ltd.
Whitbread & Co. Ltd., London.
White Star Lines
Woolworth, F. W., & Co. Ltd., London and Branches.
Worthington & Co. Ltd., Burton-on-Trent.
Younger, Wm., & Co. Ltd., London.

LIGHTFOOT

THE LIGHTFOOT REFRIGERATION CO. LTD.,

Abbeydale Road, Wembley, Middlesex.
[D.T.V./A39

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.

Public and Official Announcements

25s. per inch; each additional line, 2s.

LONDON COUNTY COUNCIL

Applications are invited for positions of ARCHITECTURAL ASSISTANT (salaries up to £680 a year) in the Housing and Valuation Department. Commencing salaries will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Acts, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

Successful candidates will be required to assist in the design, layout and preparation of working drawings for housing schemes (cottages and multi-storey flats), and will be employed in the Housing Architect's Division.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope required and quote reference A.A.D). Canvassing disqualifies. (816) 4558

NEWCASTLE REGIONAL HOSPITAL BOARD. QUEEN ELIZABETH AND SHERIFF HILL HOSPITALS, GATESHEAD.

The Board wishes to plan the comprehensive development of the Queen Elizabeth and Sheriff Hill Hospitals (the sites of which adjoin each other) from their present combined bed accommodation of about 275 to between 500 and 600 beds, together with the provision or extension of all related departments.

Architects who are interested in receiving an invitation to act for the Board in connection with this project should forward their names and give full details of their experience of hospital design and construction or of their qualifications for undertaking the work.

Responses to this advertisement should be received by the undersigned not later than the 7th April, 1951.

E. B. JENKINS,
Secretary.

"Dunira," Osborne Road, Jesmond, Newcastle-upon-Tyne, 2.
27th March, 1951. 2261

WARWICKSHIRE COUNTY COUNCIL. COUNTY PLANNING DEPARTMENT.

Applications are invited for the following appointment:—

SENIOR PLANNING ASSISTANT. A.P.T., Grade VI (£595-£660 per annum).

Applicants must be Corporate Members of the Town Planning Institute, with good experience in Development Plan work. The successful applicant will be engaged on the preparation of the County Development Plan and will be stationed at Warwick.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, and the successful applicant will be required to pass a medical examination. He will also be required to provide and maintain a motor car, for which travelling and subsistence allowances will be paid in accordance with the Council's scale.

Applications, giving age and full details of experience, together with the names of two persons to whom reference may be made, should be forwarded to J. J. Brooks, M.I.Mun.E., M.T.P.I., County Planning Officer, Northgate, Warwick, not later than Saturday, 21st April, 1951.

Canvassing, directly or indirectly, will be a disqualification.

L. EDGAR STEPHENS,
Clerk of the Council.

Shire Hall, Warwick.
22nd March, 1951. 2233

DEVON COUNTY COUNCIL. COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the undermentioned appointments on the permanent staff. Conditions of service and salaries are in accordance with the National Joint Council Scheme for Local Authorities.

ASSISTANT ARCHITECTS:
Grade A.P.T., V (£520-£570 per annum).
Grade A.P.T., III (£450-£495 per annum).
Grade A.P.T., I (£390-£435 per annum).

DRAWING OFFICE JUNIOR. General Division (salary according to age and experience).

The appointments are subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidates will be required to pass a medical examination.

A weekly allowance of 25s. and return fare home every two months will be paid, for a period not exceeding six months, to the successful candidates, if married, if they have to maintain a family in another home away from Exeter.

Application forms, with full particulars of qualifications and experience, required for the various posts, may be obtained from the County Architect, 97, Heavitree Road, Exeter, and must be returned to him by Saturday, the 28th April 1951.

H. A. DAVIS,
Clerk of the County Council.

The Castle, Exeter.
5th April, 1951. 2320

ABERDEEN HARBOUR COMMISSIONERS. HARBOUR ENGINEER'S DEPARTMENT.

Applications are invited for the post of ARCHITECTURAL ASSISTANT in the Harbour Engineer's Office, Aberdeen. Applicants should be under 40 years of age, with experience in structural steelwork reinforced concrete and general building design and construction. Preference will be given to candidates with some experience of property procedure and the preparation of reports. The salary £395-£570, according to qualifications, rising by annual increments of £15. The appointment is subject to the Commissioners' Superannuation Scheme, and the candidate selected will require to pass a medical examination before appointment.

Applications, stating age and qualifications, with full details of experience, together with copies of recent testimonials, should be lodged with the Harbour Engineer, 15, Regent Quay, Aberdeen, not later than 30th April, 1951.

Harbour Engineer's Office, Aberdeen.
31st March, 1951. 2267

LEEDS REGIONAL HOSPITAL BOARD invites applications from members of the Institute of Clerks of Works of Great Britain (Inc.) for the appointment of a TEMPORARY CLERK OF WORKS for the erection of a 116-bed Ward Block at the Sutton Branch of Hull Royal Infirmary, Sutton, Hull.

Applicants must have had experience in the erection of large steel-framed buildings and in hospital construction and finishings. The work is estimated to cost £200,000, and is expected to start in May, 1951. The salary for the post will be £610 per annum.

The appointment will be subject to the provisions of the National Health Service (Superannuation) Regulations, 1950, to the passing of a medical examination where the candidate is not already in the Health Service, and will be terminable by one calendar month's notice on either side.

Applications, stating age, qualifications, experience and details of present employment, together with the names of two referees, to be forwarded to the Secretary to the Board, 29/31, Eastgate, Leeds, 2, by not later than 21st April, 1951. Canvassing in any form, either directly or indirectly, will disqualify. 2262

MINISTRY OF WORKS.

There are vacancies in the Chief Architect's Division for ARCHITECTURAL ASSISTANTS and LEADING ARCHITECTURAL ASSISTANTS with recognised training and fair experience. Successful candidates will be employed in London and elsewhere on a wide variety of Public Buildings, including Atomic energy and other Research Establishments, Telephone Exchanges, and Housing.

Salary: Architectural Assistants, £300-£525 per annum; Leading Architectural Assistants, £500-£625 per annum. Starting pay will be assessed acording to age, qualifications and experience. These rates are for London; a small deduction is made in the Provinces.

Although these are not established posts, some of them have long term possibilities, and competitions are held periodically to fill established vacancies.

Apply in writing, stating age, nationality, full details of experience and locality preferred, to Chief Architect, W.G.10/BC, Ministry of Works, Abell House, London, S.W.1, quoting reference W.G. 10/BC. 4826

GLAMORGAN COUNTY COUNCIL.

Applications are invited for the following appointments on the Permanent Establishment of the County Architect's Department:—

(*a*) ASSISTANT ARCHITECTS. A.P.T., Grade VI (£595-£660).

(*b*) ASSISTANT ARCHITECTS. A.P.T., Grade V (£520-£570).

(*c*) ASSISTANT ARCHITECTS. A.P.T., Grade IV (£480-£525).

Candidates for posts (*a*) and (*b*) must be Registered Architects, and for posts (*c*) they must possess the Intermediate Certificate of the Royal Institute of British Architects.

Applications forms, together with particulars of the above-mentioned appointments and conditions of service, etc., may be obtained direct from L. R. Gower, F.R.I.B.A., County Architect, County Hall, Cardiff, to whom applications must be returned in sealed envelopes, appropriately endorsed, not later than the first post on Monday, 23rd April, 1951.

D. J. PARRY,
Clerk of the County Council.

Glamorgan County Hall, Cardiff.
31st March, 1951. 2282

HERTFORDSHIRE COUNTY COUNCIL. COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments:—

SENIOR ASSISTANT ARCHITECTS. Grade VII, £635-£710.

SENIOR ASSISTANT QUANTITY SURVEYORS. Grade VII, £635-£710.

ASSISTANT QUANTITY SURVEYORS. Grade VI, £595-£660.

ASSISTANT QUANTITY SURVEYORS. Grade V, £520-£570.

ASSISTANT QUANTITY SURVEYORS. Grade IV, £480-£525.

Applicants need not have had previous Local Government experience.

Applications, stating which post is applied for, together with the names of three referees, should be addressed to the County Architect, County Hall, Hertford, Herts., to be received not later than the first post on Saturday, 28th April, 1951. 2281

COUNTY BOROUGH OF BOURNEMOUTH. BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointment:—

SECOND ARCHITECTURAL ASSISTANT (Unestablished Post). Salary Grade A.P.T., III, £450-£495 per annum.

Applicants must have had one year's experience after passing R.I.B.A. Intermediate Examination, and some experience on Housing Contracts.

The successful candidate will be appointed at his present salary if such salary is within the incremental scale of the advertised post.

The above appointment will be terminable by one month's notice, in writing, on either side, and subject to the provisions of the Local Government Superannuation Act, 1937, also to the conditions of service in accordance with the National Scheme.

The successful candidate will be required to pass a medical examination. No assistance can be offered regarding housing accommodation.

Applications, on forms to be obtained from the Borough Architect, Town Hall, Bournemouth, accompanied by copies of three recent testimonials, to be returned to the undersigned in envelopes endorsed "Staff Architectural," not later than 9 a.m. Saturday, 21st April, 1951.

A. LINDSAY CLEGG,
Town Clerk.

2263

LONDON TRANSPORT EXECUTIVE.

Applications are invited for a temporary post in the Office of the Works and Building Engineer, London.

The successful candidate will be required to work under the direction of the Works and Building Engineer, and will be responsible for the prosecution of experiments in building maintenance, organisation, and methods now proceeding.

The ability to collect data and to make clear and concise reports, and a general knowledge of building and construction matters, are essential.

The salary range for the post is £600 to £700 per annum, with prospects of advancement. Commencing salary within that range according to qualifications and experience.

There may be opportunity for establishment to the permanent staff, which would involve membership of a contributory superannuation scheme.

The appointment is subject to a medical examination.

Applications, giving full details of age, training, experience and present salary, should be sent within 14 days of the appearance of this advertisement, to the Staff Officer (F/EV 174), London Transport Executive, 55, Broadway, London, S.W.1. For acknowledgment enclose addressed envelope. 2284

CITY OF LEICESTER. CITY ARCHITECT'S DEPARTMENT.

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

(*a*) ASSISTANT ARCHITECT, A.P.T., Grade VII. Salary £635-£710 per annum.

(*b*) ASSISTANT ARCHITECT, A.P.T., Grade V. Salary £520-£570 per annum.

Applicants must be Registered Architects, and preference will be given to those holding a recognised architectural qualification. Experience in the design and erection of large buildings is desirable for post (*a*).

The appointments will be subject to the National Scheme of Conditions of Service and to the passing of a medical examination. Applications, stating post desired, age, experience, qualifications, present appointment and salary, together with copies of two recent testimonials, to be sent to the undersigned not later than Saturday, 21st April, 1951.

J. H. LLOYD OWEN,
City Architect.

10, Loseby Lane, Leicester. 2321

BOROUGH OF WEYMOUTH AND MELCOMBE REGIS. APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT.

Applications are invited from Registered Architects for appointment as Senior Architectural Assistant, in the Borough Engineer and Surveyor's Department, at a salary in accordance with A.P.T., Grade VI (£595×£20×£25—£660 per annum).

The appointment is in connection with the large scale re-development of an area of extensive bomb damage, and the candidate should have had suitable architectural training and considerable experience in the design of shops and large blocks of flats. The point of entry in the scale will be determined in accordance with qualifications and experience. Candidates must hold the examination of the Royal Institute of British Architects or a similar qualification by examination.

A flat overlooking Weymouth Bay will be made available by the Corporation for occupation by the successful applicant should he so desire.

The appointment will be terminable by one month's notice on either side, and will be subject to the provisions of the Local Government Superannuation Act, 1937.

Applications, stating age, qualifications, training and experience, together with the names of three gentlemen to whom reference may be made, to be forwarded, endorsed "Senior Architectural Assistant," to the undersigned not later than Monday, 23rd April, 1951.

PERCY SMALLMAN,
Town Clerk.

Municipal Offices, Weymouth.
March, 1951. 2296

ANGLESEY COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the permanent appointment in the County Architect's Department of ONE ASSISTANT ARCHITECT. Salary, Grade IV, commencing at £480 per annum and rising to £525 per annum. Applicants should have had good experience in the preparation of working drawings, and preference will be given to applicants who have passed the Intermediate Examination of the Royal Institute of British Architects.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and will be subject to one month's notice on either side.

Candidates called for interview will be required to undergo a medical examination by the County Medical Officer.

A lodging allowance of 26s. per week will be paid for a period up to six months to the successful candidate if married (or if single with dependants) and unable to secure housing accommodation in the district, as from the date of appointment.

Further particulars regarding the appointment may be obtained from N. Sq. Johnson, Esq., A.R.I.B.A., A.M.T.P.I., County Architect, Shire Hall, Llangefni, Anglesey.

Applications, stating age, training, experience, qualifications, names of two referees, and accompanied by a copy of one recent testimonial, are to be sent so as to reach the undersigned not later than Monday, 30th April, 1951.

WILLIAM JONES,
Clerk of the County Council.

Shire Hall, Llangefni, Anglesey.
3rd April, 1951. 2316

FULHAM BOROUGH COUNCIL.
SENIOR ASSISTANT ARCHITECT.

Applications are invited for this appointment in the Architectural Section of the Housing and Public Buildings Department.

Salary: A.P.T., Grade VI (£625 × £20 (2) × £25 (1)—£690 per annum, including London weighting).

Applicants should be Registered Architects experienced in designing and dealing with large contracts through all stages. The successful applicant will be employed in a senior capacity in connection with the planning, design and execution of large schemes of flats and public buildings. Lack of previous experience in a Municipal office will not debar applicants from consideration.

Applications on forms obtainable from me: closing date 20th April, 1951.

CYRIL F. THATCHER,
Town Clerk.

Town Hall, Fulham, S.W.6. 2290

SECOND ADVERTISEMENT.
ISLE OF WIGHT COUNTY COUNCIL.
APPOINTMENT OF CHIEF QUANTITY SURVEYOR.

Applications are invited for the appointment of Chief Quantity Surveyor, on the permanent staff of the County Architect's Department, at a salary in accordance with Grade VIII, A.P.T. Division (£685 × £25—£760).

Candidates should possess approved qualifications and experience, and preference will be given to those who are Members of the Royal Institute of Chartered Surveyors (Quantities Sub-Division). They should be capable of undertaking all stages of the work for the preparation of Bills of Quantities, preparation and settlement of Final Accounts, Site Measurements, Interim Certificates, and general administrative duties, including preliminary estimates and Ministry forms.

Applications on forms to be obtained from the County Architect, Mr. Frederick H. Booth, A.R.I.B.A., A.M.T.P.I., should be returned completed to the undersigned at the address stated below, together with a copy of one recent testimonial and the names of two persons to whom reference may be made, not later than the 25th April, 1951.

L. H. BAINES,
Clerk of the County Council.

County Hall, Newport, I.W.
2nd April, 1951. 2302

COUNTY BOROUGH OF SOUTHAMPTON.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the following appointments:—

(*a*) ASSISTANT ARCHITECT. Grade A.P.T., VI (£595-£660).

(*b*) ASSISTANT QUANTITY SURVEYOR. Grade A.P.T., V (£520-£570).

Applicants for (*a*) must have had experience in housing design, layout, construction, and the administration of contracts, and must be Associate Members of the Royal Institute of British Architects.

Applicants for (*b*) should be suitably qualified and have had experience in housing work.

The appointments will be subject to the scheme of conditions of service of the National Joint Council for Local Authorities for Administrative, Technical, Professional and Clerical Services; to the Local Government Superannuation Act, 1937; to the successful applicants passing a medical examination, and to termination by one month's notice on either side.

Applications, stating age, experience, qualifications, and war service, together with copies of three recent testimonials, should be submitted to the Borough Engineer and Surveyor, Civic Centre, Southampton, not later than Friday, 20th April, 1951.

R. RONALD H. MEGGESON,
Town Clerk.

Civic Centre, Southampton.
April 1951 2318

CITY AND COUNTY OF BRISTOL.
CITY ARCHITECT'S DEPARTMENT.
APPOINTMENT OF SENIOR ASSISTANT ARCHITECT—GRADE VIII.
(£685 × £25—£760 p.a.)

Applications are invited from qualified Architects for the above appointment.

Candidates must be Associate Members of the R.I.B.A. or hold equivalent qualifications, with considerable experience, particularly in housing, and the control of a number of senior and junior architectural staff. Experience in Local Authority office work will be an advantage.

The appointment is subject to the provisions of the Local Government Superannuation Acts, 1937 and 1939, and successful applicants required to pass medical examination. The appointment is terminable by one month's notice in writing on either side.

Housing accommodation provided, if necessary, at an economic rent.

Applications, stating age, full details of training, qualifications and experience, present appointment and period held and salary, together with the names of three referees, must be delivered to the undersigned by Friday, the 20th April, 1951.

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

Eagle House, Colston Avenue, Bristol, 1.
3rd April, 1951. 2306

WESTERN REGIONAL HOSPITAL BOARD.

Applications are invited for the appointment of TWO ASSISTANT ARCHITECTS. Candidates must be Associate Members of the R.I.B.A. Hospital experience desirable, but not essential.

Salary scale £685 × £25—£760.

The appointments are superannuable, and will be terminable on two months' notice on either side. The successful candidates may be required to pass a medical examination. Applications, stating age, qualifications, experience and present salary, together with the names of three referees, should be forwarded to the Chief Architect, 64, West Regent Street, Glasgow, C.2, not later than Monday, 23rd April, 1951. 2266

CITY AND ROYAL BURGH OF EDINBURGH.
CITY ARCHITECT'S DEPARTMENT.
ARCHITECTURAL ASSISTANT. Associate of R.I.B.A. preferred. Administrative experience in Housing essential. Salary: N.J.C. scale for Scotland, A.P.T., Va (£550-£610). Successful applicant will require to pass a medical examination, and will be subject to the Corporation's Superannuation Scheme. Apply by letter, giving full particulars as to qualifications and experience, to:

A. G. FORGIE, A.R.I.B.A., Dip.Arch.(Edin.),
City Architect.

City Chambers, Edinburgh, 1. 2328

COUNTY BOROUGH OF OLDHAM.
APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

Applications are invited for the appointments of Architectural Assistants in my Department as listed below:—

(*a*) SENIOR ASSISTANT. Grade A.P.T., Va.

(*b*) GENERAL ASSISTANT. Grade A.P.T., V.

Applicants for (*a*) should be Chartered Architects, and for (*b*) should possess the appropriate qualifications laid down by the National Joint Council for the Grading—Special Classes—Architectural Assistants.

The appointments will be subject to the Local Government Superannuation Act, 1937, and the successful candidates will be required to pass a medical examination.

Housing accommodation will be provided if necessary.

Applications, giving age and previous appointments, in addition to qualifications and experience, and copies of two recent testimonials, must reach me not later than Monday, 30th April, 1951, in envelopes endorsed "Architectural Assistant," Grade Va or V, as the case may be.

A. L. HOBSON,
Borough Engineer and Surveyor.

Municipal Buildings, 75, Union Street, Oldham.
6th April, 1951. 2327

BOROUGH OF SOUTHGATE.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.
ARCHITECTURAL STAFF.

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

(*a*) TWO SENIOR ARCHITECTURAL ASSISTANTS, A.P.T., Va-VI.

(*b*) ARCHITECTURAL ASSISTANT. A.P.T., IV-V.

(*c*) ARCHITECTURAL ASSISTANT. A.P.T., I-III.

In all cases the appropriate London weighting will be paid, and the starting salary will be in accordance with qualifications and experience.

Preference will be given to applicants who are Associate Members of the Royal Institute of British Architects, but for appointments (*b*) and (*c*) applicants who are in possession of the Intermediate Examination of that Institute or who are undergoing a regular course of study for the examination will be considered.

Forms of application may be obtained from the Borough Engineer and Surveyor, and should be returned to the undersigned not later than 9 a.m. on Monday, 30th April, 1951.

Canvassing, directly or indirectly, will be a disqualification.

GORDON H. TAYLOR,
Town Clerk.

Town Hall, Palmers Green, N.13.
4th April, 1951. 2330

CITY OF BATH.
CITY PLANNING AND ARCHITECTURAL DEPARTMENT.

Applications are invited for the following permanent appointments:—

(*a*) CHIEF ARCHITECTURAL ASSISTANT, Grade A.P.T., VII (£635-£710).

Applicants must be Registered Architects, and preference will be given to those who are Associates of the Royal Institute of British Architects.

(*b*) ARCHITECTURAL ASSISTANT. Grade A.P.T., III (£450-£495).

Applicants for (*a*) should have had good experience in the design and construction of Municipal Housing and other works.

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidates will be required to pass a medical examination.

Applications, stating age, qualifications and experience, together with the names and addresses of three referees, should be sent to the City Planning Officer, 2, Princes Buildings, Bath, not later than the 28th April, 1951.

JARED E. DIXON,
Town Clerk.

Guildhall, Bath.
April, 1951. 2319

BOROUGH OF WORTHING.
BOROUGH ENGINEER'S DEPARTMENT.
ARCHITECTURAL STAFF.

Applications are invited for the following appointments in the Architectural Section of the Borough Engineer's Department:—

(*a*) TWO ARCHITECTURAL ASSISTANTS, Grade A.P.T., IV (£480-£525). Applicants should be suitably qualified, having passed at least the Intermediate Examination of the R.I.B.A., and have had experience in the design and preparation of working drawings for work carried out by Local Authorities, including school buildings.

(*b*) ONE DRAUGHTSMAN. General Grade (£135-£385, according to age). Applicants should be neat, expeditious and accurate architectural draughtsmen.

(*c*) ONE ASSISTANT QUANTITY SURVEYOR. Grade A.P.T., IV (£480-£525). Applicants should have passed the Intermediate Examination of the R.I.C.S. Sub-section III, and must be capable of and have had experience in abstracting and billing and measurement of works on site. Experience in "taking off" would be an advantage.

All the appointments are subject to the National Scheme of Conditions of Service of Local Government Officers, to the Local Government Superannuation Act, 1937, and to the successful applicants passing satisfactorily a medical examination.

Applications, endorsed respectively "Architectural Assistant," "Draughtsman" or "Assistant Quantity Surveyor," as the case may be, stating age, status, qualifications, experience, present and past appointments with dates, and accompanied by at least two copies of testimonials, should be sent to the Borough Engineer and Surveyor, Town Hall, Worthing, so as to reach him not later than Friday, 20th April, 1951.

ERNEST G. TOWNSEND,
Town Clerk.

Town Hall, Worthing. 2317

COUNTY BOROUGH OF GREAT YARMOUTH.
APPOINTMENT OF ASSISTANT ARCHITECTS.

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

(*a*) CHIEF ASSISTANT ARCHITECT. Salary A.P.T., Grade VIII (£685-£760).

(*b*) SENIOR ASSISTANT ARCHITECT. Salary A.P.T., Grade VII (£635-£710).

Candidates for these appointments should be Associates of the Royal Institute of British architects. The appointments will be terminable by one month's notice on either side, subject to the provisions of the Local Government Superannuation Act, 1937, and to the passing of a medical examination. Housing accommodation will be offered to the successful applicants if married.

Applications, stating age, qualifications and experience, together with the names of three persons to whom reference could be made, should be enclosed in an envelope endorsed with the title of the appointment, and must be received by me not later than Friday, 27th April, 1951. Canvassing will be deemed a disqualification, and candidates must disclose in writing any relationship to any member or holder of any senior office under the Council. Candidates who fail to do so will be disqualified and, if appointed, will be liable to dismissal without notice.

FARRA CONWAY,
Town Clerk.

Town Hall, Great Yarmouth.
4th April, 1951. 2315

WARWICKSHIRE COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Applications are invited for the post of ASSISTANT QUANTITY SURVEYOR. A.P.T., V, salary £520-£570 per annum. Applicants should preferably be in possession of Final Examination certificate (Quantities) of R.I.C.S., and good experience of analysis of prices would be an advantage.

The appointment is subject to the conditions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Application forms can be obtained from C. H. Elkins, F.R.I.B.A., A.R.I.C.S., County Architect, Shire Hall, Warwick.

L. EDGAR STEPHENS,
Clerk of the Council.

Shire Hall, Warwick. 2301

SUDAN GOVERNMENT.
MINISTRY OF EDUCATION.

The Director of Education invites applications from candidates, aged not less than 38 on the 1st July, 1951, for the post of VICE-PRINCIPAL, Khartoum Technical Institute.

Candidates must possess the qualifications and experience normally associated with a Head of a Department, or a Senior Assistant with appropriate service, of a Municipal Technical College in the United Kingdom.

Alternatively, applications from candidates who have had no previous full-time experience in technical education but who possess a degree, or its equivalent, in technical subjects, coupled with industrial experience, will also be considered.

The appointment offers unusual scope, and the possibility of promotion to Principal within five years.

Appointment will be on either a Long Term Contract (salary £E.1,316-£E.1,450), with special post-service gratuity, or a Provident Fund Contract (salary £E.1,547-£E.1,700), or a Short Term Contract (salary £E.1,644-£E.1,812), with different post-service benefits.

Cost-of-living allowance varying between £E.142 and £E.352 p.a., according to the number of dependants, is at present payable. Free passage on appointment. There is at present no income tax in the Sudan.

Further particulars and application forms are available on written application, from the Sudan Agent in London, Sudan Agency, Wellington House, Buckingham Gate, London, S.W.1. Please mark envelope "Vice-Principal—Khartoum Technical Institute—4/306." 2305

COUNTY COUNCIL OF DURHAM.
COUNTY PLANNING DEPARTMENT.

Applications are invited for the following permanent appointments in the County Planning Department:—

(*a*) FOUR PLANNING ASSISTANTS, Grade VII, A.P.T., of the National Scheme of Conditions of Service (£635-£710), for work on the preparation of Town Maps.

(*b*) TWO PLANNING ASSISTANTS, Grade Va, A.P.T. (£550-£610), for work in connection with Development Control.

(*c*) TWO PLANNING ASSISTANTS, Grade III, A.P.T. (£450-£495).

(*d*) ONE DRAUGHTSMAN, Misc., Grade III (£315-£375).

Applicants for (*a*) and (*b*) must have passed the Final Examination of the Town Planning Institute or some other recognised professional institute, and in the case of (*a*) preference will be given to candidates who have also architectural qualifications. Applicants for (*c*) should be experienced and have obtained the Intermediate Examination of the Town Planning Institute or its equivalent.

The appointments are subject to such conditions of the National Scheme of Service as have been adopted by the Council; to the provisions of the Local Government Superannuation Act, 1937, and the successful candidates will be required to pass a medical examination by the Council's Medical Officer; to termination by one calendar month's notice in writing on either side. Canvassing, either directly or indirectly, will disqualify, and applicants must disclose in writing whether to their knowledge they are related to any member or senior officer of the Council.

Applications, stating age, whether married or single, and giving full particulars of qualifications, experience and present salary, and the names of two persons to whom reference may be made, must be delivered to the County Planning Officer, 10, Church Street, Durham, by 21st April, 1951.

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

Shire Hall, Durham.
3rd April, 1951. 2304

BOROUGH OF WATFORD.
APPOINTMENT OF CHIEF ASSISTANT ARCHITECT.

Applications are invited for the above appointment, at a salary within Grade IX, A.P.T., £750-£900.

Application forms may be obtained from the undersigned, to whom they must be returned by Friday, 20th April, 1951.

The Corporation is unable to assist in the provision of housing accommodation.

F. C. SAGE,
Borough Engineer, Surveyor and Architect.

Town Hall, Watford.
April, 1951. 2303

METROPOLITAN BOROUGH OF FULHAM.
ASSISTANT QUANTITY SURVEYOR (PERMANENT).

Applications are invited for the above-mentioned appointment in the Quantity Surveying Section of the Housing and Public Buildings Department.

Salary: A.P.T., Grade VI (£625×£20 (2)×£25 (1)—£690 per annum, including London weighting).

The person appointed will be mainly employed in "taking-off" for large blocks of flats and other public buildings, together with a certain amount of measurement of works on site and specification writing from bills of quantities.

Membership of a recognised professional institute is desirable but not essential if the applicant has good practical experience.

Applications, on forms obtainable from me, should be returned with copies of not more than three testimonials, not later than 23rd April, 1951.

CYRIL F. THATCHER,
Town Clerk.

Town Hall, Fulham, S.W.6. 2313

COUNTY BOROUGH OF CROYDON.
BOROUGH ENGINEER'S DEPARTMENT.
ARCHITECTURAL TRAINEE.

Applications are invited for this appointment from *bona fide* students of architecture, age 19 or over, with a good standard of draughtsmanship.

Salary according to age—£190 per annum at age 19, £210 per annum at 20, and £240 per annum at 21, etc.

Application forms can be obtained from the Borough Engineer, to whom they must be returned not later than the 20th April, 1951.

Canvassing will disqualify.

E. TABERNER,
Town Clerk.

Town Hall, Croydon. 2283

B.B.C. invites applications for the following posts in Building Department, London:—(i) TWO ASSISTANTS, III (Architectural): Applicants must be Registered Architects up to Final R.I.B.A. standard, with several years' office experience. Salary in grade rising by annual increments to maximum of £725 p.a. (ii) TWO ASSISTANTS, IV (Architectural): Applicants should be up to Intermediate R.I.B.A. standard and have sound knowledge of building construction. Salary in grade rising by annual increments to maximum of £620 p.a. (iii) DRAUGHTSMAN (Building): Applicants should preferably have some experience in an architect's office and be studying for the Intermediate R.I.B.A. examination. Salary in grade rising by annual increments to maximum of £520 p.a. Applications, stating age, qualifications, experience, and the post for which application is being made, to reach Engineering Establishment Officer, Broadcasting House, London, W.1, within 7 days. 2314

AMENDED.
METROPOLITAN BOROUGH OF FULHAM.
ARCHITECTURAL ASSISTANT.

Applications are invited for an appointment in the Architectural Section of the Director of Housing and Public Buildings Department.

Salary: A.P.T., Grade II (£420×£15 to £465 p.a.), plus weighting of £10, £20 or £30, according to age.

Preference will be given to candidates who have passed the R.I.B.A. Intermediate Examination or its equivalent.

Applications on forms obtainable from me: closing date, 23rd April, 1951.

CYRIL F. THATCHER,
Town Clerk.

Town Hall, Fulham, S.W.6. 2312

WARWICKSHIRE COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.
APPOINTMENT OF CLERK OF WORKS.

Applications are invited for the appointment of Clerk of Works for Warwick Oken School, for the duration of construction, estimated to be two years, salary to be £10 per week.

Applicants must have a thorough knowledge of all sections of the building trade, and be capable of setting out, measuring up, keeping records, and making reports.

Application forms can be obtained from C. H. Elkins, F.R.I.B.A., A.R.I.C.S., County Architect, Shire Hall, Warwick.

L. EDGAR STEPHENS,
Clerk of the Council.

Shire Hall, Warwick.
April, 1951. 2300

HORNCHURCH URBAN DISTRICT COUNCIL.

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

ARCHITECTURAL ASSISTANT, Grade Va. Commencing salary £550, rising by annual increments of £20 to £610 p.a.

ARCHITECTURAL ASSISTANT, Grade V. Commencing salary £520, rising by two increments of £15 and one of £20 to a maximum of £570 p.a.

ARCHITECTURAL ASSISTANT, Grade IV. Commencing salary £480, rising by annual increments of £15 to a maximum of £525 p.a.

Full particulars of appointment and Form of Application can be obtained on application to the undersigned, by whom the completed applications in envelopes endorsed "Architectural Assistant," should be received not later than Friday, 20th April.

P. L. COX,
Clerk of the Council.

Council Offices, Billet Lane, Hornchurch. 2299

NEW ZEALAND.
DEPUTY GOVERNMENT ARCHITECT.

Applications are invited for the position of Deputy Government Architect, at a salary up to £1,650 N.Z. per annum. This salary is at present being reviewed and it is possible that a substantial increase may be granted.

The appointee must be competent to succeed the Government Architect within a year.

The Government Architect is responsible for the design, construction and maintenance of a large range of public buildings, such as schools, hospitals and offices, and controls an organisation employing a professional and technical staff of over 600, located in various places throughout New Zealand.

Applicants must be Fellows or Associates of the R.I.B.A. and have administrative ability and experience.

The appointment is to the permanent staff of the New Zealand Public Service, and full conditions, together with application forms, may be obtained from:

THE HIGH COMMISSIONER FOR NEW ZEALAND,
415, The Strand, London, W.C.2.

with whom completed applications, in duplicate, should be lodged not later than 22nd April, 1951. 2295

COUNTY BOROUGH OF BARNSLEY.
BOROUGH ENGINEER AND SURVEYOR AND PLANNING OFFICER'S DEPARTMENT.
APPOINTMENT OF JUNIOR PLANNING ASSISTANT.

Applications are invited for the permanent appointment of Junior Planning Assistant, at a salary in accordance with A.P.T., Grades I-II (£390×£15—£465) per annum.

Applicants should have passed or should be studying for the Intermediate Examination of the Town Planning Institute or its equivalent, and preference will be given to candidates who have had previous experience in a Planning Office and who have been engaged in the preparation of Development Plans.

The appointment is subject to the National Scheme of Conditions of Service and to the provisions of the Local Government Superannuation Act, 1937, and the successful applicant will be required to pass a medical examination.

The appointment will be subject to one month's notice on either side.

Applications, stating age, present and previous appointments, experience and qualifications, etc., accompanied by copies of three recent testimonials, should be addressed to the Borough Engineer and Surveyor and Planning Officer, Town Hall, Barnsley, to reach him not later than Friday, 27th April, 1951.

A. E. GILFILLAN,
Town Clerk.

Town Hall, Barnsley.
April, 1951. 2294

APPOINTMENT OF ARCHITECT AND ARCHITECTURAL ASSISTANT.

THE TYRONE COUNTY EDUCATION COMMITTEE invites applications for the following posts:—

(*a*) ASSISTANT ARCHITECT. Salary scale: £650×£25 to £750 per annum. Applicants should be Registered Architects.

(*b*) ARCHITECTURAL ASSISTANT. Salary scale: £350×£20 to £500 per annum, plus cost-of-living bonus (£78 to £90). Applicants should have reached the standard of the R.I.B.A. Intermediate Examination.

The qualifications and experience of the persons appointed will determine the points of entry on the salary scales.

Application forms and conditions of appointment may be obtained from the undersigned, with whom applications should be lodged not later than Saturday, 21st April, 1951.

A. GIBSON,
Chief Education Officer.

Education Office, Omagh,
County Tyrone, N. Ireland.
2nd April, 1951. 2293

SUDAN GOVERNMENT.
MINISTRY OF EDUCATION.

The Director of Education invites applications for the post of SENIOR ASSISTANT, in the Department of Arts and Crafts, Khartoum Technical Institute, aged not less than 30 on the 1st of July, 1951.

Candidates should possess good qualifications in craftwork and be experienced in Art Teaching. Preference will be given to an A.R.C.A.

Crafts of special interest include typography and process reproduction, cabinet making, jewellery, metalwork, wood and stone carving and textiles.

Appointment will be on probation for either a Long Term Contract (salary range £E.617-£E.1,316), with special post-service gratuity, or a Provident Fund Contract (salary range £E.720-£E.1,547), or a Short Term Contract (salary range £E.771-£E.1,644), with different post-service benefits.

Cost-of-living allowance varying between £E.142 and £E.352 p.a., according to the number of dependents, is at present payable, and, subject to certain limitations, an outfit allowance of £E.60 is payable on appointment. Free passage on appointment. There is at present no income tax in the Sudan.

Further particulars and application forms are available on written application from the Sudan Agent in London, Sudan Agency, Wellington House, Buckingham Gate, London, S.W.1. Please mark envelope "Senior Assistant, Art.—4/308." 2292

SUDAN GOVERNMENT.

The Public Works Department requires an ARCHITECTURAL ASSISTANT, aged 24 to 36, for service in the Sudan. The duties consist of the preparation of working drawings for general building work.

Candidates must have a sound Architectural training and experience of general building works, and be capable of the preparation of working drawings required.

Appointment will be on probation for Short Term Contract for a period of two years, with or without bonus as may be agreed.

Salary for Short Term Contract (with bonus) ranges from £E.593 to £E.860 and for Short Term Contract without bonus from £E.632 to £E.917. Starting rate will be determined according to age, qualifications and experience.

Cost-of-living allowance varying between £E.142 and £E.352 per annum, according to the number of dependents is at present payable, and, subject to certain limitations, an outfit allowance of £E.40 is payable on appointment. There is at present no income tax in the Sudan. Free passage on appointment.

Full particulars and application form may be obtained on written application to: Sudan Agent in London, Wellington House, Buckingham Gate, London, S.W.1. Please mark envelopes "Architectural Assistant—4/140A." 2291

THE SOUTH WALES ELECTRICITY BOARD.
Applications are invited for the position of an ARCHITECTURAL DRAUGHTSMAN in the Civil Engineering Department of the Board at St. Mellons, near Cardiff.

Applicants will be required to undertake the layout and preparation of working drawings for showrooms, offices and sub-stations, including measuring up and alterations to existing buildings.

The salary for the position will be in accordance with the scale £390 per annum, rising by annual increments to £450 per annum.

Applications, stating age, present position, present salary, qualifications and experience, together with the names and addresses of three referees, should be addressed to the Secretary (Establishments Section), The South Wales Electricity Board, St. Mellons, near Cardiff, so as to reach him not later than 21st April, 1951.

D. G. DODDS,
Secretary.
2329

Partnership

6 lines or under, 12s. 6d.; each additional line, 2s.

MAJORITY PARTNERSHIP offered in small established practice in the Channel Islands. Applications for further particulars should give details of qualifications, experience, and *bona fides*. Box 2289.

Architectural Appointments Vacant

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

ARCHITECTURAL ASSISTANT, of Inter. standard, required for work on designing and detailing industrial and administrative buildings. Write, stating experience and salary required, to Box 2198.

THE CO-OPERATIVE WHOLESALE SOCIETY, LIMITED, invite applications for an appointment as SENIOR ARCHITECTURAL ASSISTANT, on the staff of the Manchester Architect's Department, at a commencing salary of £550-£650 per annum, according to experience and ability.

Applicants, who must have had practical office experience, are required to have a sound knowledge of building construction and be able to produce working drawings and details from sketch plans. Experience in the design and planning of modern industrial and commercial buildings will be considered an advantage.

The appointment is permanent, with prospects of promotion. The successful candidate will be required to undergo a medical examination for entry into a compulsory superannuation scheme.

Applications, stating age, experience, and qualifications, to be addressed to the Chief Architect, Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester. 2209

ARCHITECTURAL ASSISTANT, Intermediate or higher standard, required for industrial projects. R.I.B.A. scale of salaries. Application invited to Box 2228.

ARCHITECTURAL ASSISTANT required, with about 5 years' office experience. Practice is of varied nature, offering ample scope for suitable man. Write, stating full particulars of experience, how soon free, and salary required. Welch & Lander, FF.R.I.B.A., 38, Gloucester Place, Portman Square, W.1. 2230

ARCHITECTURAL ASSISTANTS, with good experience, required for light industrial work. Applicants should be at least Intermediate standard. Salaries will be in accordance with the R.I.B.A. scale. Pension Scheme available. Apply in writing to Fairbrother, Hall & Hedges, Chartered Architects, 63, Castle Street, Edinburgh, 2. Tel. 25542. 2251

SCHERRER & HICKS, 19, Cavendish Square, W.1. require ARCHITECTURAL ASSISTANT, second or third year evening standard. Salary by arrangement. Telephone Museum 1105. 2245

ARCHITECT'S ASSISTANT required for small office centre of Manchester. Varied practice. Must be good draughtsman, able to survey, age 20-25. Initiative essential. State experience and approx. salary. Box 2238.

JUNIOR ASSISTANT required for Harrow office. Apply in writing, with full details, to E. S. W. Atherton, A.R.I.B.A., A.M.T.P.I., 40, College Road, Harrow, Middx. 2298

LADY ARCHITECTURAL ASSISTANT required in West End Architect's office. Apply Box 2297.

ARCHITECTURAL ASSISTANT required by Gollins, Melvin & Partners. Capable working drawings. Salary £450-£550. Office experience essential. 5 day week. Telephone Museum 0893 for appointment. 2287

ESTABLISHED London Firm requires able ASSISTANT. Permanent position. Interested contemporary architecture. Salary £500-£650. Box 2288.

ARCHITECTURAL ASSISTANT required. Salary £600-£600. Write, giving details of experience, to Frederick Gibberd, 8, Percy Street, London W.1. 2285

ARCHITECT'S ASSISTANT, Inter. standard, with experience in industrial and commercial buildings. Clifford Tee & Gale. Central 6693. 2272

SENIOR ARCHITECTURAL ASSISTANT (3rd or 4th year) wanted for Hampshire branch office of established practice. Must be good draughtsman. Write, with full information, to Box 2275.

ARCHITECT required for senior appointment in the Head Office of a large contracting company in West London. Successful applicant will be given time to acquire background knowledge of non-traditional construction handled by this firm, with a view to assisting with the design and working drawings for projects in the United Kingdom and abroad. Salary up to £650 p.a., according to experience. Write, giving brief details of experience, age, and qualifications, to Box 2276.

ASSISTANTS required in Architects's Department of large commercial organisation. London office. Sound all-round training in the profession essential, including supervision of work. Excellent opportunities for men of initiative. Apply in writing, giving details of experience, age, and salary required, to Box No. 596/1, Foster Turner & Everetts, Ltd., 11, Old Jewry, E.C.2. 2277

ARCHITECTURAL ASSISTANTS, one Final and one Intermediate, stage, required by West End Architect's office. Applicants should reply stating age, experience, and salary required, to Box 2279.

ARCHITECTURAL ASSISTANT required. Intermediate standard. Small progressive London office. Write, stating age, experience, qualifications, salary, etc. Box 2308.

CLIFFORD CULPIN & PARTNER require ASSISTANT, with office experience, to work in the first instance at Enfield, on work requiring a high standard of draughtsmanship. Salary £500 p.a., plus share of profits. 'Phone HOL. 0163. 2322

ARCHITECTURAL ASSISTANT required, of Intermediate R.I.B.A. standard or over, and with some previous experience in an architect's office. Salary according to ability. Write, stating age and experience, to Staff Officer, Handley Page, Ltd., Cricklewood, N.W.2. 2326

COMPETENT ARCHITECTURAL DRAUGHTSMAN required in contemporary office. Should have sound knowledge of construction. Salary £350-£450, according to experience. Tel. No.: Grosvenor 1140. 2323

Architectural Appointments Wanted

YOUNG Lady, Inter. R.I.B.A., living Shenfield, requires position, preferably in the City or en route. Farrer, Lovats, Alwyne Avenue, Shenfield, Essex. 120

A. R.I.B.A. (34), office trained and varied experience in general practice, including housing, shops, bank, flats, conversions, etc., requires responsible position, with prospects of partnership. Box 117.

ARCH. ASSISTANT (29) desires position in the London area. Comprehensive experience. Box 118.

CHARTERED ASSISTANT, with varied experience in private office, seeks position within 50 miles of York. Box 115.

CAPABLE A.R.I.B.A., completed Planning course, with 8 months' sound architectural office experience and executed minor works on own account, seeks position in London area at a salary of £450 or upwards. Box 119.

SENIOR ARCHITECTURAL ASSISTANT, 10 years' continuous experience, particularly in factories, flats, offices, housing, etc., seeks progressive position, with room for initiative. Preferably in small office in London or Midlands. Box 116.

KEEN 3rd year evening STUDENT requires position in progressive London or District office. Experience working drawings, details, surveys, etc. Box 123.

COTSWOLDS or Counties south or west of London.—SENIOR ASSISTANT (32), having wide experience, including local authority, housing, and industrial work, and used to administration, seeks responsible position in this area. Box 122.

TWO Danish STUDENTS, Inter. standard, seek interesting work for 3 months during summer, preferably together. Previous English experience with Festival of Britain Architects' Section. Box 2311.

ASSISTANT, 6 years' office experience, between Inter. and Final R.I.B.A., seeks post requiring initiative in London. Reply Box 121.

Other Appointments Vacant

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

SECRETARY required immediately. Specialised experience preferable but not essential. Elsom & Pearlman, A./A.R.I.B.A., 44, Catherine Place, S.W.1. Victoria 4304/5. 2307

DRAUGHTSMAN required for Reconstructed Stonework, Hollow Beam Floors and all types of Precast Concrete products. Write, stating experience and salary required. Girlings Ferro Concrete Co., Ltd., Great South-West Road, Feltham, Middlesex. 2278

BUILDING AND QUANTITY SURVEYOR required immediately in the Society's Works Dept. Office, Manor Park, E.12. Applicants should be members of a Professional Institution and have had wide experience in all aspects of Quantity and Surveying work. The successful applicant will be required to pass a medical examination, and after a short probationary period participate in the Society's contributory superannuation scheme. Salary £700 per annum. Applications to be made in writing, giving fullest details of experience in chronological order, and stating qualifications, to be submitted to the Staff Manager (AJ), London Co-operative Society, Ltd., 54, Maryland Street, Stratford, E.15. Envelopes to be endorsed "Quantity Surveyor." 2286

For Sale or Wanted

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

HALBRO Portable Drawing Table, size of board 42 in. by 32 in. As new. £20. Box 2250.

ARCHITECT'S DESK, new, modern design, in 3 sections. 8 ft. by 3 ft. top, 4 D.E. and 4 file drawers. Also Stool, Boards, Rests, T-squares, Lamp. Box 2310.

WANTED.—Secondhand Oak Panelling. Minimum 500 sq. ft. Details to Stone & Co. (Bristol), Ltd., Builders, Redland Road, Bristol, 6. 2271

Services Offered

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

OUTSTANDING ACADEMY DRAWINGS now being completed, further Commissions can be undertaken by Perspectivist, Winston Walker, F.R.I.B.A., A.A.Dipl., Dipl.T.P., A.R.Ae.S., 107, Sloane Street, S.W.1. Telephone SLOane 1410. 2176

MANUFACTURERS, with established connections through their own salaried Technical Representatives in England, Scotland and Wales, wish to negotiate owing to restricted supplies of materials, with other manufacturers of products for the Building Industry, with a view to representation of their products, either for the Country or for particular Counties. Sales can be guaranteed almost immediately. Box 2244.

ARCHITECTURAL MODELS and Dioramas. Edward J. Ashenden, A.R.C.A., 15, Chesil Studios, 183, Kings Road, S.W.3. Tel.: Flax 6103. 2566

FREE-LANCE Surveyor offers Services to Architects requiring accurate surveys of land and buildings, levelling, contouring, etc.; own car and complete equipment. 2272

LONDON ARCHITECT offers part-time help in the Preparation of Sketch Plans, Working Drawings, Surveys and Perspectives. Box 2309.

DESIGN, Detailing, Quantities and Estimates for all types of building and civil engineering work carried out by fully qualified staff. Box 2274.

TWO ASSISTANTS, Dipl. Arch., offer part-time assistance in own office. London, S.W., Surrey area. Box 2324.

MODELS and Perspectives executed in any medium. Specialist in exhibition work of contemporary design. Offers to prepare Continental Architect. Box 2325.

Miscellaneous

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

A. J. BINNS, LTD., Specialists in the supply and fixing of all types of Fencing, Gates and Cloakroom Equipment. Harvest Works, 99-107, St Paul's Road, N.1. Canonbury 2061.

The Race Upholstery Unit will be pleased to report on and tender for your specialised upholstery requirements and repairs. 22, Union Road, Clapham, S.W.4. 4040

WINKFIELD MANOR NURSERIES, ASCOT, lay out Rock and Formal Gardens and Labourless "Allweather" Tennis Courts. Six Chelsea Gold Medals since 1947. Winkfield Row 393 1716

VERMICULITE.—Exfoliated Vermiculite in all grades, suitable for loose fill, furnace lagging, heat and sound insulation, partition block making, light weight aggregate, and many other purposes. Available for prompt delivery from London stock. John Chapman & Son, 351, Purley Way, Croydon. Croydon 5583. 2189

WROUGHT IRONWORK.—Gates, Grilles, Balustrading etc.; Electric Light Fittings, Door Furniture. Hyders, Ltd., 10, Fitzroy Street, W.1. LANgham 6192. 2207

OFFICES TO LET

STRAND.—700 ft., very light offices, redec. £375 p.a. incl. FLA. 9854. 2273

Educational Announcements

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

R.I.B.A. EXAMS.—Mr. L. Stuart Stanley, M.A., F.R.I.B.A., M.T.P.I., Distn. in T.P. (Tutor in the Sch. of Arch. Lon. Univ.), and Mr. G. A. Crockett, B.A., A.R.I.B.A. (Medallist), A.M.T.P.I., F.R.S.A., prepare Students by correspondence tuition. Stuart Stanley & Crockett, 10, Adelaide Street, Strand, W.C.2. TEM. 1603/4.

RIBA INTER, FINAL & SPECIAL FINAL

Postal Courses in all subjects of the 1951 exam syllabus (including Professional Practice) are conducted by

THE ELLIS SCHOOL OF ARCHITECTURE

Principal: A. B. Waters, M.B.E. G.M., F.R.I.B.A.

103B, OLD BROMPTON RD., LONDON, S.W.7

Phone: KEN 8641 and at Worcester

QUANTITY SURVEYING

Postal Courses for R.I.C.S., I.A.A.S., and I.Q.S. Exams in all subjects of each syllabus. Tuition by well qualified tutors under the direction of the Principal, A.B. Waters M.B.E., G.M., F.R.I.B.A. Descriptive booklet on request.

THE ELLIS SCHOOL

103B, OLD BROMPTON RD., LONDON, S.W.7

Phone: KEN 8641 and at Worcester

QUALIFYING EXAMINATIONS

R.I.B.A. AND **T.P.I.**

INTER & FINAL FINAL

Courses of Instruction by Correspondence and Personal in Studio, including TESTIMONIES OF STUDY AND PROFESSIONAL PRACTICE

C. W. BOX

F.R.I.B.A., A.I.STRUCT.E., M.R.SAN.I.

115 GOWER STREET, W.C. Euston 3906

"GUIDE ANSWERS"

R.I.B.A. FINAL

Numerous past Examinations answered & illustrated in detail

S. UNDERWOOD, A.R.I.B.A., M.R.San.I. — 13, Langham Court, RAYNES PARK, S.W.20

LLANDUDNO

A hotel of character, quietly efficient and comfortable at all seasons. Write now for attractive tariff. Special terms now 13/6. Top season 6½ gns.

BALMORAL PRIVATE HOTEL, TRINITY SQUARE Phone: 7131

The World's Greatest Bookshop

FOYLES FOR BOOKS

Large dept. for Books on Architecture & Art

New, secondhand and rare Books on every subject. Over 3 million volumes

119-125 CHARING CROSS RD LONDON WC2

Gerrard 5660 (16 lines) ★ Open 9-6 (inc. Sats.)

LIGHTNING PROTECTION

By

FURSE

W. J. FURSE & CO., LTD.

10, TRAFFIC STREET, NOTTINGHAM.

LONDON—MANCHESTER—BRISTOL

PROFESSIONAL ADVANCEMENT

through **ICS** STUDY COURSES

I.C.S. Home Study Courses help the professional man to further his career. They include many courses for Membership Examinations of the various technical bodies. Brilliant successes have been recorded in the spheres of architecture, building, and surveying.

Here are some of the subjects in which we offer fully qualified instruction:—

Architecture
Architectural Drawing and Designing
Building Contracting
Building Construction
Building Construction and Interior Work
Building Construction and Quantities
Building Specifications
Quantity Surveying
Civil Engineering
Surveying and Mapping
Plan and Map Draughtsmanship
Structural Engineering
Concrete Engineering
Structural Drawing
Construction Draughtsmanship
Sanitary Engineering
Air Conditioning
Heating and Ventilation

Special Courses for the examinations of the R.I.B.A. I.O.B., R.I.C.S., Inst.C.E., I.M.E. (Building Inspectors) Inst.Struct.E., I.Q.S., Inst. Clerk of Works etc. Examination students are coached till successful.

Write to-day for free booklet describing our Course in any of the subjects mentioned above.

International CORRESPONDENCE SCHOOLS

Dept. A.J. International Buildings Kingsway London W.C.2

SECOMASTIC

SEGD.

Joint Sealing Compound

Provides a permanent, weather-proof seal of any joint or crack

Full particulars from Architectural Department, SECOMASTIC LTD.

11 Upper Brook St., Park Lane, London, W.1

FIBROUS PLASTERWORK OF EVERY DESCRIPTION

ALLIED GUILDS

King Edward Square, SUTTON COLDFIELD. Tel: Sut 3809

LINOLEUM

Information Sheets 19/G1, 2, 3 & 4

Reprints available on application to:—

Linoleum Manufacturers' Association, 273/287, Regent Street, London, W.1.

MODELS ESTAB. 1883.

John B. THORP BY

FOR TOWN PLANNING, PUBLIC BUILDINGS, ESTATES and INTERIORS

98 GRAY'S INN ROAD, W.C.1

TELEPHONE: HOLBORN 1011

For inside and outside use "Aspilin Gloss" ENAMEL PAINT *for "sheer" quality*

Aspinalls (Paints) Ltd., Carleton, Skipton, Yorks

COLEMANOID

WATER PROOFERS AND HARDENERS

THE ADAMITE COMPANY LIMITED

MANFIELD HOUSE, STRAND, W.C.2

COMPLETE FRAME-WORKS — NEW STEEL ROOF TRUSSES — STANCHIONS PURLINS ETC.

TRUSSES 20'-0" TO 100'-0" SPAN

NORTHARC ORGANISATION

260, LANGHAM ROAD, WEST GREEN, LONDON, N.15

PHONE:- BOWES PARK 3757 & 7548

Technical Literature?

CONSULT BIS

Specialists in the production of technical drawings and catalogue material for the building and allied industries

Building Industries Services Ltd

25 LOWER BELGRAVE ST., LONDON, SW1

Telephone: Sloane 0474

For Electric motor Starters

of proved reliability-specify-

ELLISON

MADE BY GEORGE ELLISON LIMITED · PERRY BARR · BIRMINGHAM · 22B

LURIE LABORATORIES introduce

"LURIFUGE"

FIREPROOF PAINT

ABSOLUTELY NON-INFLAMMABLE

CHEAPER THAN ORDINARY PAINT

Write or telephone:

Sales Manager, 95 Frampton Street, London, N.W.8. *Phone:* AMB 5563

Alphabetical Index to Advertisers

For Appointments (Wanted or Vacant), Competitions Open, Drawings, Tracings, etc., Educational, Legal Notices, Miscellaneous Property, Land and Sales, see lxxiii, lxxiv, lxxv, lxxvi and lxxvii.

YOURS *for the Asking*

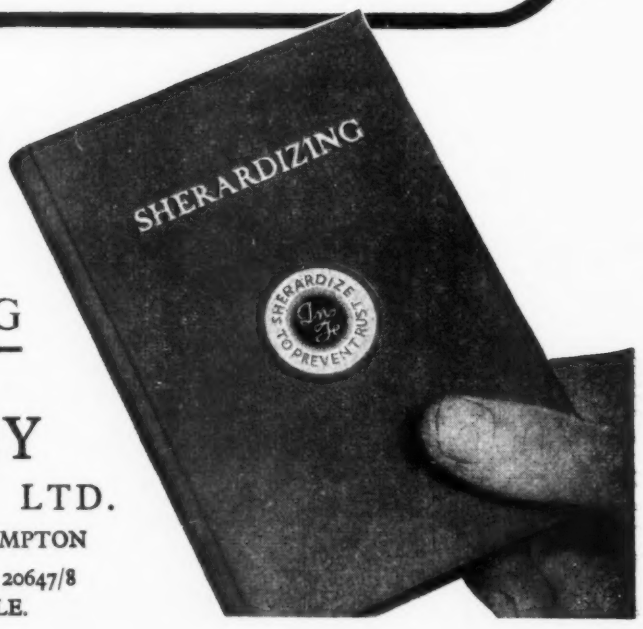
LEARN HOW TO—

SPECIFY,

TEST,

USE,

SHERARDIZING



ZINC ALLOY

RUST PROOFING CO. LTD.

SHAKESPEARE STREET, WOLVERHAMPTON

TELEPHONE : WOLVERHAMPTON 20647/8

ALSO AT LONDON & ROCHDALE.

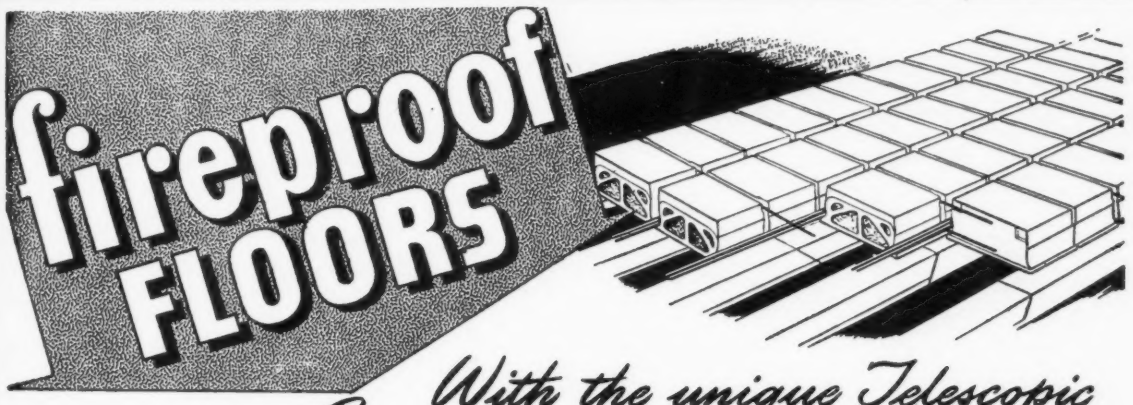
ESTABLISHED 1875

TRUETT & STEEL LTD

BUILDING CONTRACTORS

WESTMINSTER — THORNTON HEATH

WHITEHALL 3342 & 4051 — THORNTON HEATH 1122/4/5/6



With the unique Telescopic Centering in all types of Buildings

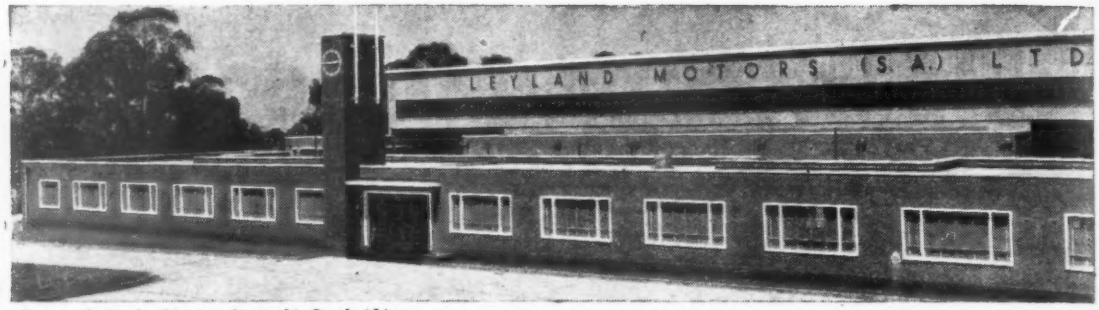
The Smith Two-way reinforced fireproof floor can be employed for any flooring and roofing requirements.
All materials are available from stock.
The employment of patent telescopic centers permits the immediate use of the floor with the additional advantage of their removal in the minimum of time.
Working space for other trades not obstructed by props and timber shuttering.

Midland Licensees:—**Messrs. Parkfield Concrete Products Co., Ltd.,** St, Peters' Road, Netherton. 'Phone: Dudley 4315

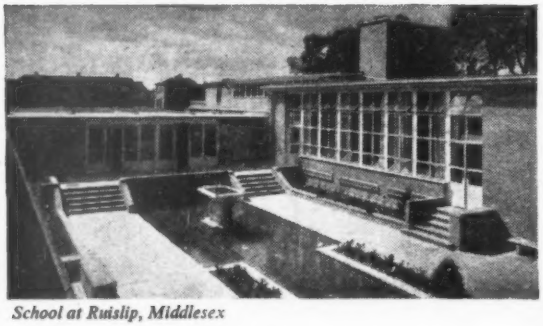
SMITH'S

SMITH'S FIREPROOF FLOORS LIMITED
(Dept AJ.) Imber Court, East Molesey, Surrey
Phone: Emberbrook 3300

2 WAY REINFORCED FIREPROOF FLOORS



Factory for Leyland Motors Limited in South Africa



School at Ruislip, Middlesex

King George V Merchant Seamen's Memorial Hospital, Malta

Flats at Hurlingham, Fulham

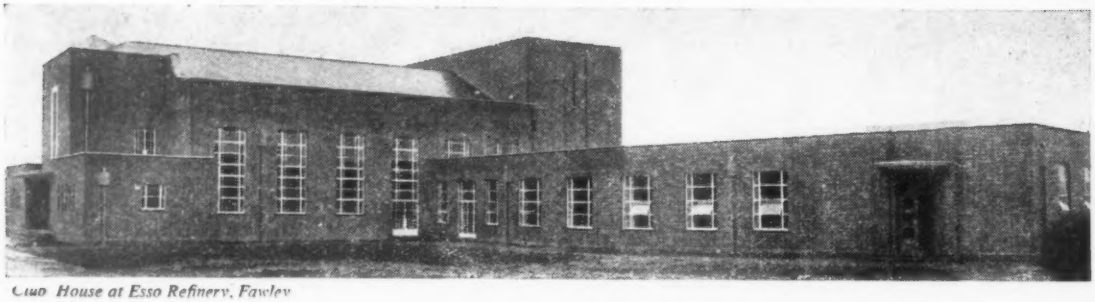
Contractors for every class of Building and Civil Engineering work at home and overseas

LAING

John Laing and Son Limited, Building and Civil Engineering Contractors, London, NW7, Carlisle, Lusaka and Johannesburg. Established in 1848

Entrance Hall, Patons and Baldwins Limited, Darlington

B.B.C. Television Studios, Lime Grove



Club House at Esso Refinery, Fawley

Printed in Great Britain for the Proprietors of "THE ARCHITECTS' JOURNAL" (The Architectural Press, Ltd.), 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, by HARRISON & SONS LTD., Printers to His Majesty The King, London, Hayes Middx.), and High Wycombe