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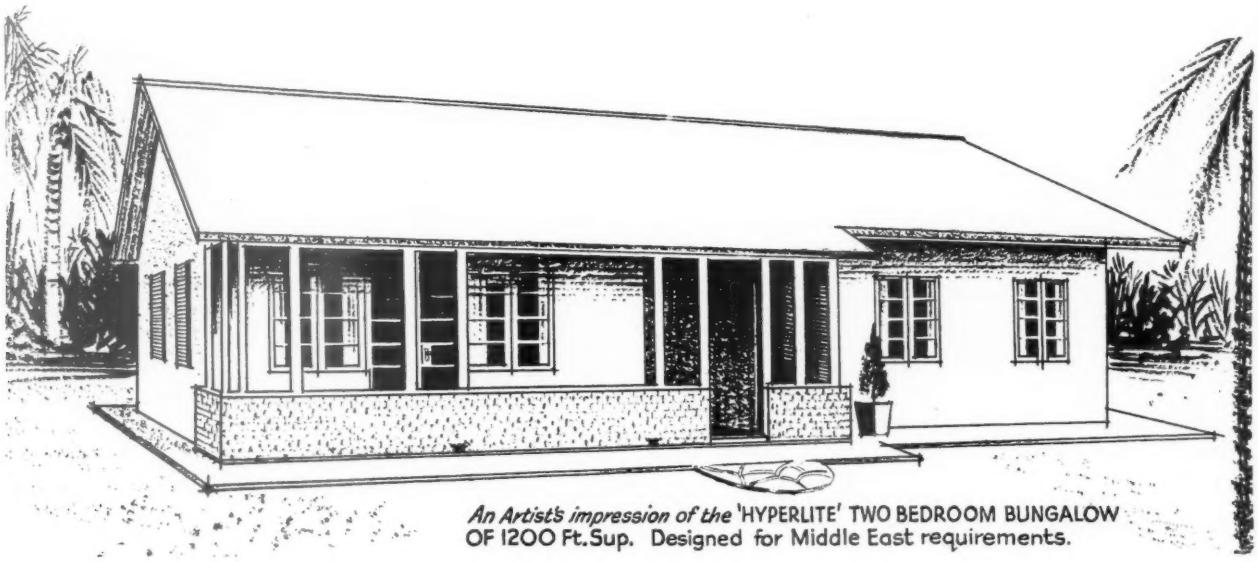
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ie one week, Ig to Z the next. In all cases where the town is not mentioned the word LONDON is implicit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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	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
ArchSA	Architectural Students' Association. 34/36, Bedford Square, W.C.1.	
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 8738
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
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. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRDB	British Rubber Development Board. Market Buildings, Mark Lane, E.C.3.	Mansion House 9383
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 2246
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 9000
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., Civic Centre, Newport, Mon.	Newport 5491
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.	
COID	Council of Industrial Design. Tilbury House, Petty France, S.W.1.	Abbey 7080
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
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
DPT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
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. 67, Oxford Street, W.1.	Gerrard 0021
FASS	Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, S.W.1.	Abbey 7232
FBBDO	Fibre Building Board Development Organisation, Ltd., Melbourne House, Aldwych, W.C.2.	Temple Bar 4561
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. .	Chancery 7583
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. 67, Oxford Street, W.1.	Gerrard 0021
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
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



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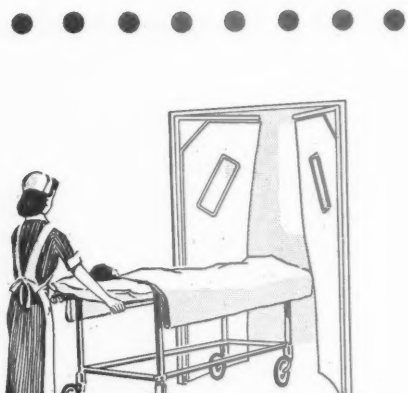

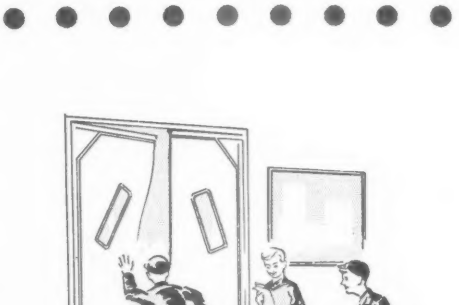

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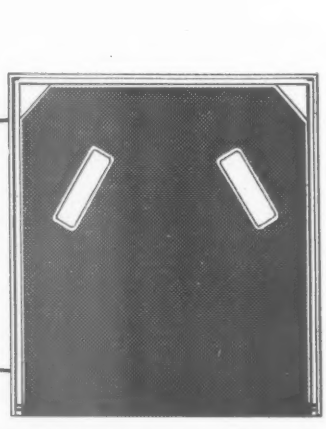

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DOMESTIC ELECTRIC WATER HEATING

ELECTRIC IMMERSION HEATERS IN SOLID FUEL INSTALLATIONS (2) INDIRECT SYSTEMS

In an indirect system the water in the hot water storage vessel from which the taps are supplied is heated indirectly by means of a coil or cylinder inside the vessel connected to the boiler by flow and return pipes in the normal way. The principal advantage lies in the reduction of scale formation in hard water districts. Once the scale from the initial filling-up of the primary circuit (indirect heater—flow and return pipes—boiler) has been deposited, no more will be formed as the water is used over and over again. In the hot water storage vessel itself, scale deposit is slight owing to the small difference in temperature between the indirect heater and the water surrounding it, and generally takes the form of a loose sludge that can easily be cleaned out.

The principles governing the positions of the immersion heater, cold feed, draw-off and vent pipes in relation to each other and to the hot water storage vessel already described in WH3 are still applicable when an indirect cylinder or 'calorifier' is used. The immersion heater must not of course foul the inner cylinder or coil which should leave $4\frac{1}{2}$" between its base and the bottom of the cylinder. If there is no standard tapping here for an immersion heater, the makers should be consulted about the clearance available.

Reverse Circulation

If the primary circuit is arranged as in Fig. 1a, circulation of electrically heated water will probably take place through the boiler when the latter is not in use, due to the cooling and consequent descent of water in the length of pipe XY. Fig. 1b shows how this risk can be avoided by keeping the upper part of the flow pipe at approximately the same temperature as the hot storage vessel (See also WH3).

Layout of Pipework

Although this appears to be more complicated than in a direct system the same principles apply. An incorrect example is given in Fig. 2a, corrected in Fig. 2b. The most serious error in Fig. 2a is the branch BA from the flow-pipe on the radiator circuit, which runs horizontally to the indirect heater in the hot water storage vessel. Electrically heated water will circulate through radiators and boiler and the whole circuit A B C D E F G H J will dissipate heat resulting in continuous consumption of electricity. The small loop K L M serving towel rail and bath, basin and sink taps forms another circuit for the waste of electricity.

These faults are avoided in the correct design by separating the radiator loop from the primary circuit (boiler—flow and return pipes—indirect heater) and connecting the towel rail thereto. The way is then clear to serve all taps by direct draw-off pipes. Single pipe circulation in the vent pipe is prevented by moving it 18 inches along the draw-off pipe from where it leaves the top of the hot water storage vessel, which should of course, be efficiently insulated as described later and in WH.3.

Position of Hot Water Storage Vessel

It is usually the practice to install the boiler and hot water storage vessel as near each other as possible in both direct and indirect systems to obtain good circulation

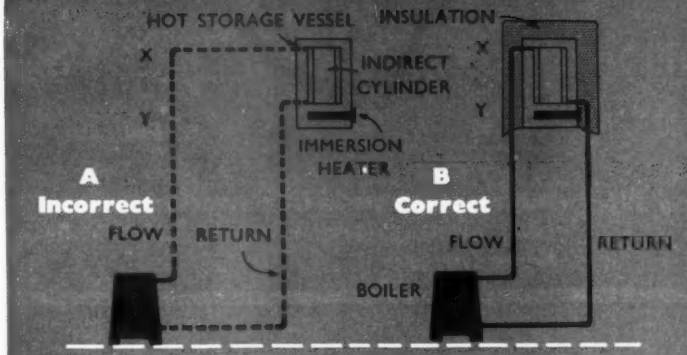

Fig. 1 Connections between boiler and hot storage vessel. Indirect system

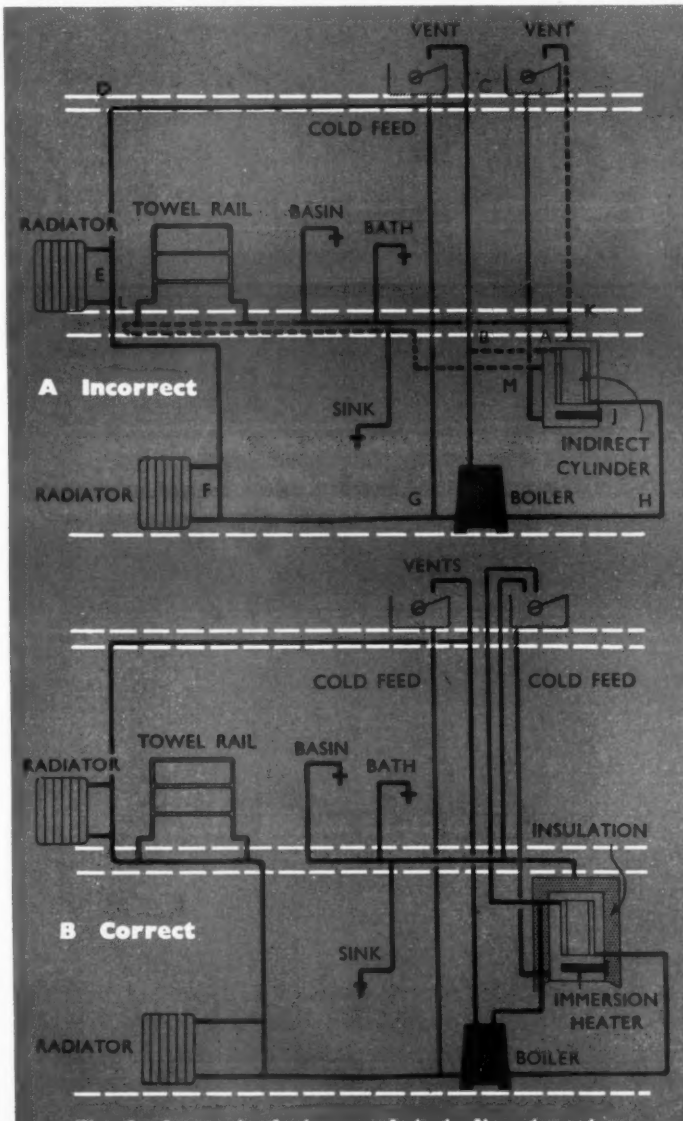

Fig. 2 Layout of pipework in indirect system

WH.4

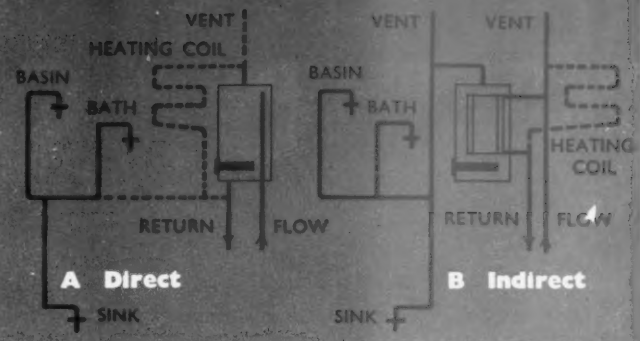

Fig. 3 Incorrect methods of connecting heating coils causing circulation of electrically heated water

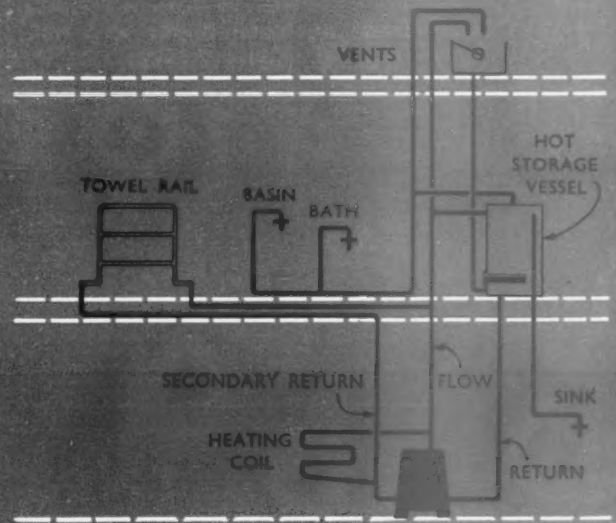

Fig. 4 Small installation on the direct system with heating coil in drying cupboard

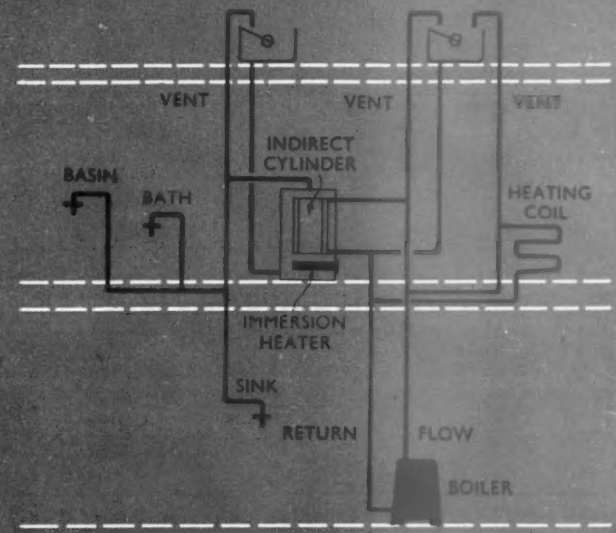

Fig. 5 Small installation on the indirect system with heating coil in linen cupboard

and to reduce the heat loss from the flow and return pipes. When water is heated electrically in the summer, the distance between boiler and hot water storage vessel is not so important, provided the circulation is satisfactory. Sluggish circulation in this circuit, which can cause a lot of trouble, is more often due to undersized pipes and numerous sharp bends than longer pipe runs, and the contribution of the latter to space heating in the winter is to be welcomed so long as adequate circulation is maintained when the boiler is in use.

As already pointed out, the hot water storage vessel should be as near the sink as possible under the circumstances in order to reduce the heat loss from the draw-off pipe when the water is electrically heated: in the resulting compromise it is generally placed on the first floor or just below the ground floor ceiling. In the latter case at least three inches clearance must be allowed for insulating material over the top as well as round the sides.

Linen Cupboard Heating

When a hot water storage vessel with an immersion heater as described above and in WH3 is installed in a linen cupboard, it is not advisable to endeavour to heat the cupboard by reducing or omitting part of the insulation. Sufficient warmth can be obtained during the winter from the flow and return piping or a pipe coil connected thereto as shown in Fig. 4, and from a small tubular heater in the summer months, placed below the slatted shelves so that articles cannot come in direct contact with it. Fig. 3 shows incorrect methods of connecting the pipe coil.

When installing the hot water storage vessel in a cupboard, sufficient space must be allowed all round and over the top to allow 3 inches of insulating material to be provided: if loose material is used for this purpose, means should be provided for "topping up" as a certain amount of settlement always takes place. Access is required to the head of the immersion heater, and also the hand-hole if one is provided, as well as space for the withdrawal of heater and thermostat.

If facilities are required for "airing off" damp clothes, these are better provided elsewhere, e.g., in the form of a drying cupboard in or near the kitchen, which can also accommodate the weekly wash, the heat being obtained from a heat-leak or an electric heater according to circumstances. Fig. 4 shows how this can be done. The layouts shown in Figs. 4 and 5 are suitable for either direct or indirect systems. The insulation to the hot water storage vessel is omitted in these diagrams for the sake of clearness.

Bi-metallic Corrosion

The combination of copper and galvanised iron in any hot water system will lead to corrosion due to bi-metallic action between the zinc and copper irrespective of how the water is heated: in consequence both piping *and* hot water storage vessel should be either copper or galvanised iron. Immersion heaters are coated with a metal which is suitable for use in either case. Whatever other metals may be employed, ungalvanised (black) mild steel pipes, elbows, etc., should never be used in any part of a hot water system, which in this respect includes the cold feed pipe to the hot water storage vessel, and the vent pipe.

For further details apply to

WH.4 British Electrical Development Association

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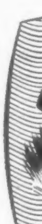

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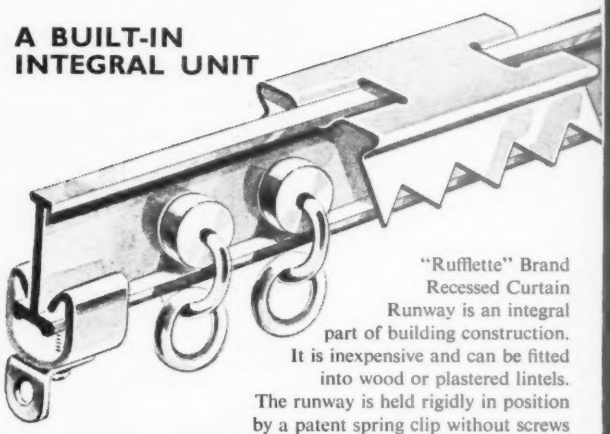

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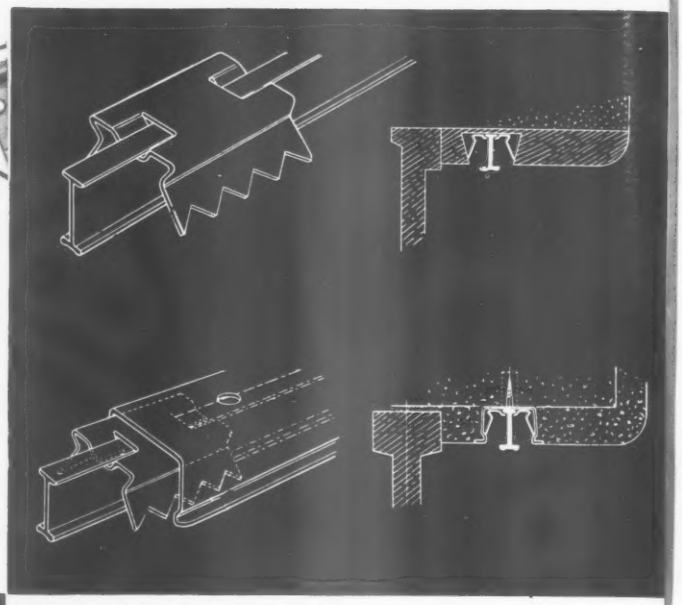

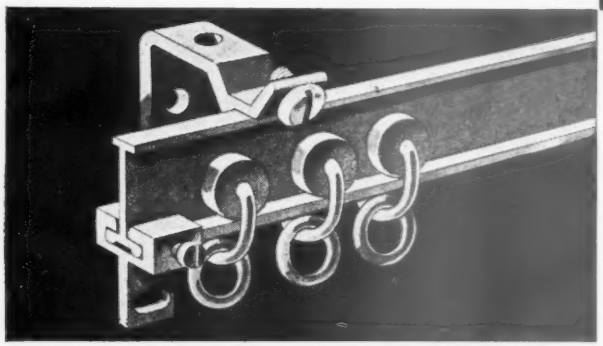

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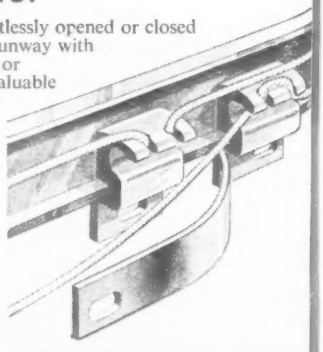

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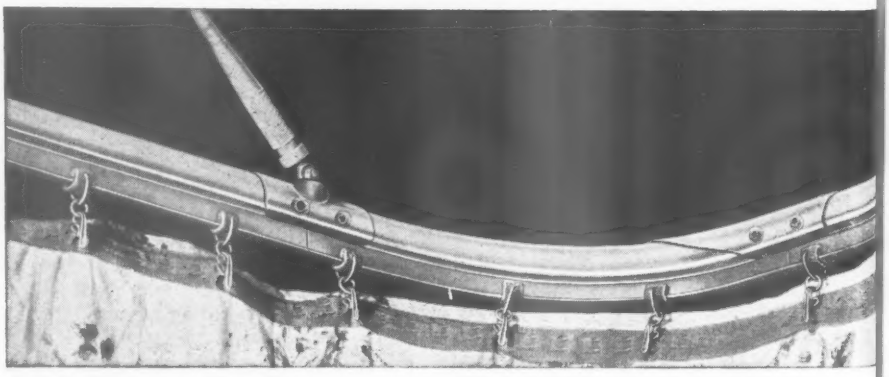

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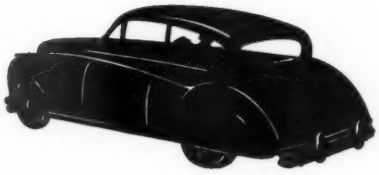

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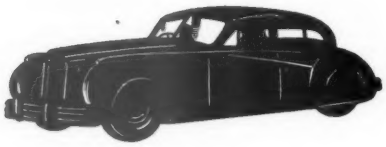

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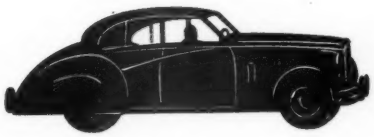

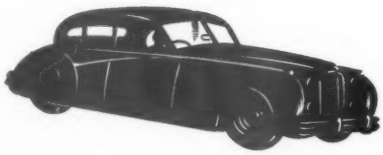

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IT takes a long time to make good clay tiles; time well spent, for the warm tones of Acme and Acme Sandstorm Tiles will never fade. Their colour, burnt in at high temperatures, is *absolutely permanent*—their superior strength saves on site breakages and maintenance.

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clay roofing tiles

DOWNING'S *range of roofing tiles includes :—*
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L.G.B.

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and Compositions

Semanco Mastic
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Sealon Grade L.180 Metal Casement Putty
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to N.A.P. Specification and B.S.S 544 Type 1.

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for bedding Window and Door frames.

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for filling glass block clearance joints.

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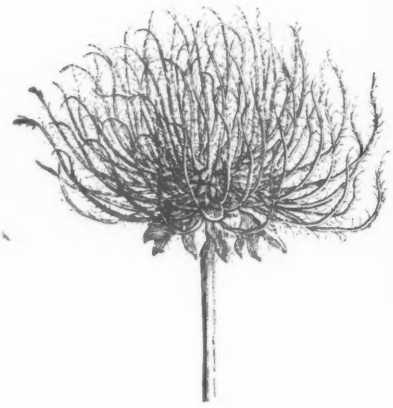
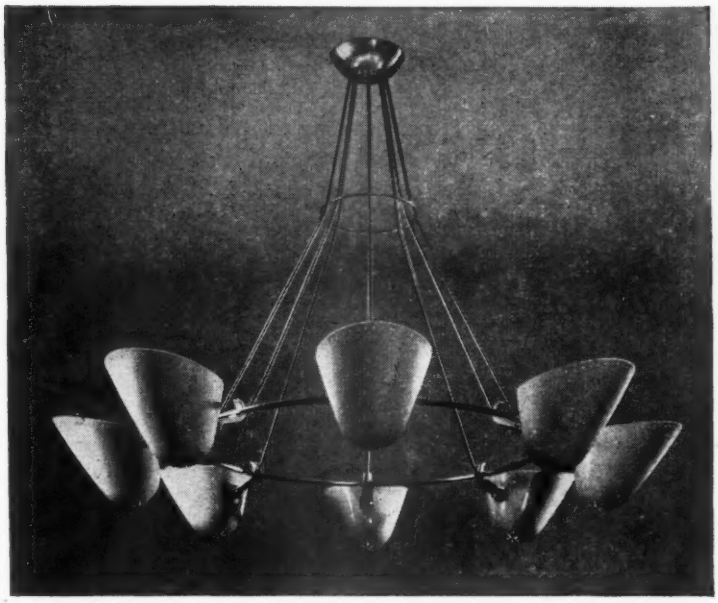
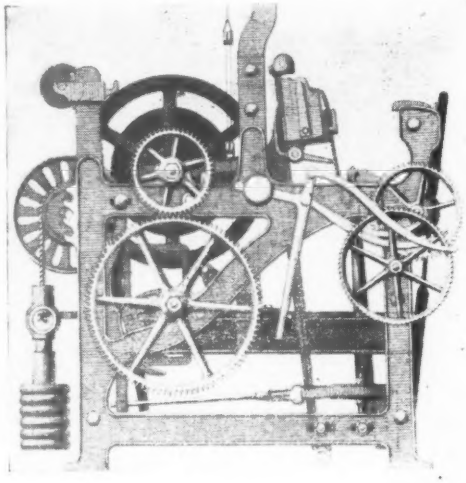
'Vitrolite' is the registered trade mark of Pilkington Bros. Ltd.

DESIGN





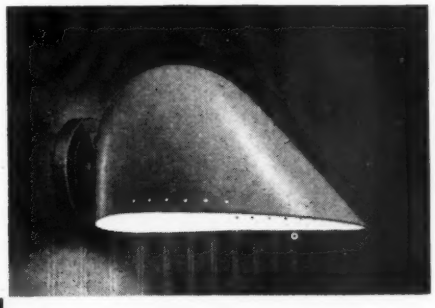
FV. 118 R

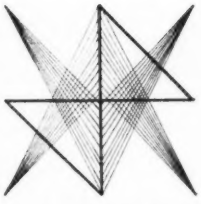


TROUGHTON & YOUNG

FV.3 R

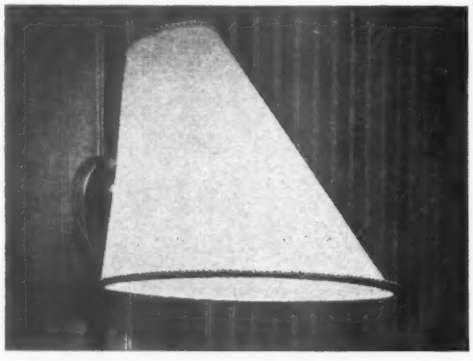
WORKMANSHIP





UNDERSTANDING

FV.3/S



Design, workmanship and understanding are qualities that are integrated in the four main sections of our range of lighting fittings—Mondolite, Tubalux, Ultralux and Versalite.
It is this understanding of the practical and technical problems of lighting that enable us to offer real assistance to architects.

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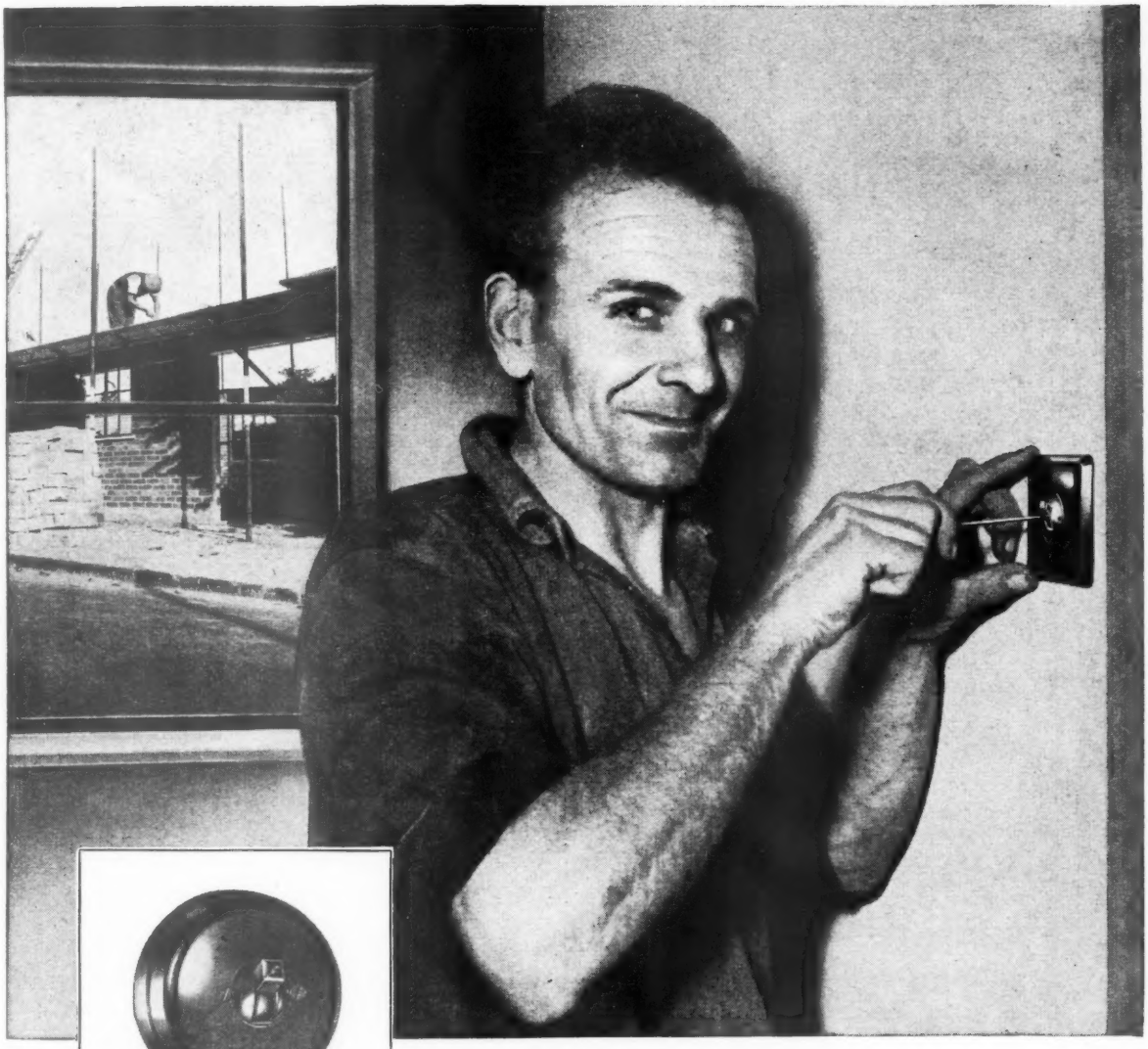
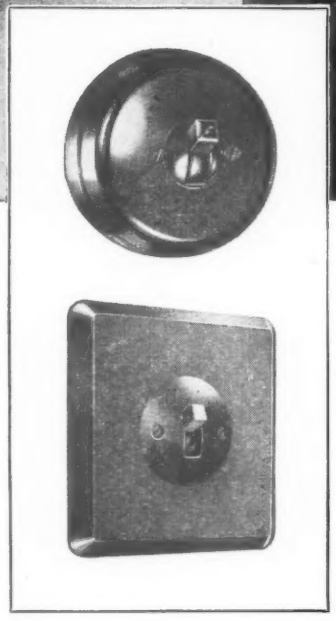
Tel. : Ken. 3444.





My point of view . . .

. . . is that the Avon Range of A.C. Switches has been designed with considerable thought. For instance when fitted in their plaster depth boxes they have a simple method of adjusting the switch depth whilst the switch is in position.
Points like these mean a great deal to chaps like me. They also show that apart from producing a jolly good switch at a very competitive price Ediswan Designers have given quite a lot of thought to making them simple to install.

Publication CE. 1693A. gives full details of the Avon range. We'll be pleased to send a copy on request.

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A catalogue and price list of the complete range of Ediswan electrical accessories is available on request.

E 32

THE EDISON SWAN ELECTRIC COMPANY LIMITED
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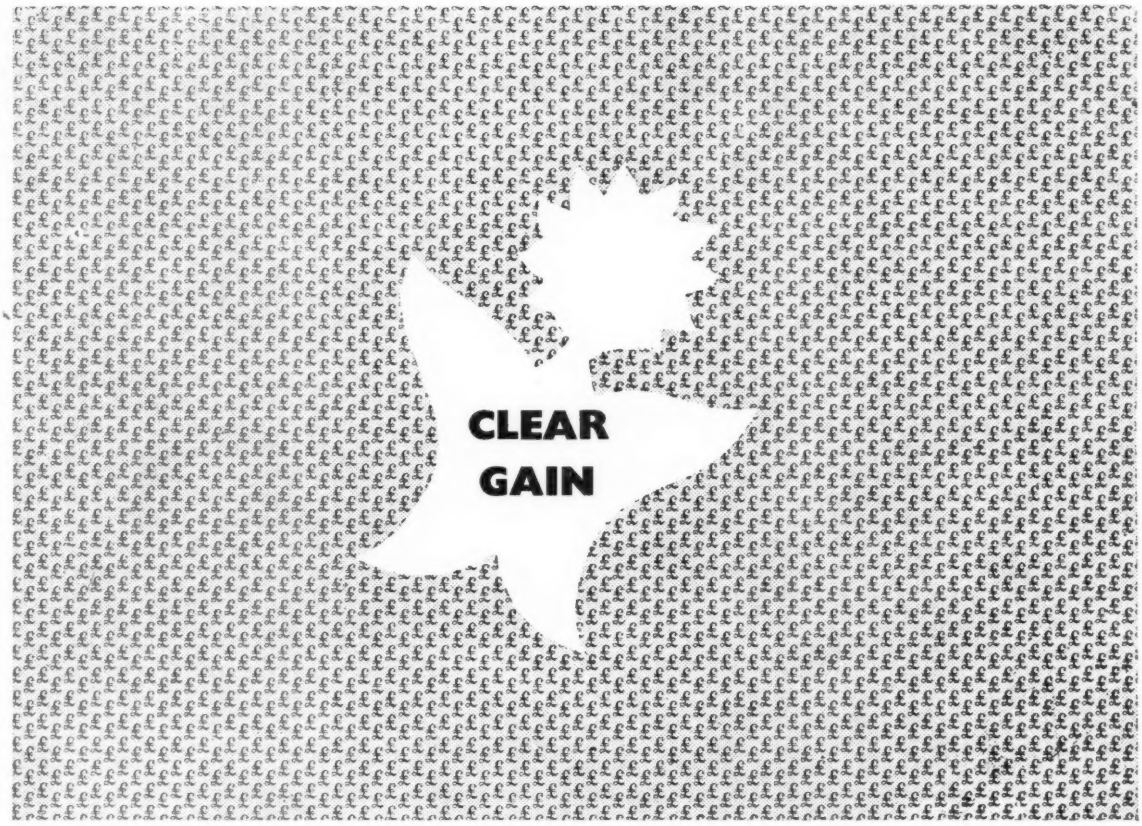

Gas burns clear and clean. It does not waste its substance in smoke. By the time the gas comes to the burners the smoke has been put to work by the Gas Industry in a hundred different ways, all of them beneficial, all of them contributing to keep down fuel costs.

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THROUGH your Area Gas Board you can bring the full resources of the Gas Industry to bear on fuel problems. The Boards' specialists are always available for consultation and their services are free. If you would like the latest information about gas, get your secretary to fill in these details (or pin this advertisement to your letter heading) **and send to your Area Gas Board or to the Gas Council, 1 Grosvenor Place, London, S.W.1.**

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WE NEED HEAT FOR 68

The Gas Industry makes the ***fullest*** *use of the nation's coal.*

GC07B

Extend the life of this versatile material with Monsanto preservatives . . .

WOOD'S GOOD

. . . make it last!

'PENTA', the short name for pentachlorophenol, is the most powerful wood preservative in commercial use. It protects against dry rot, powder-post beetles, furniture beetles, long-horned beetles and termites.

'Penta', is easy to apply. High penetration power enables most construction timbers to be treated by the simple cold bath method. Brush treatment will arrest attack by dry rot and insects and will prevent re-infestation of treated surfaces.

Clean, unstained and odourless, penta-treated wood can be painted or puttied. It requires no special drying and its natural properties are unchanged.

'Penta' is produced by Monsanto in these forms :—

PERMASAN* — Monsanto's own oil solution of pentachlorophenol, ready for application.

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Write for full information.

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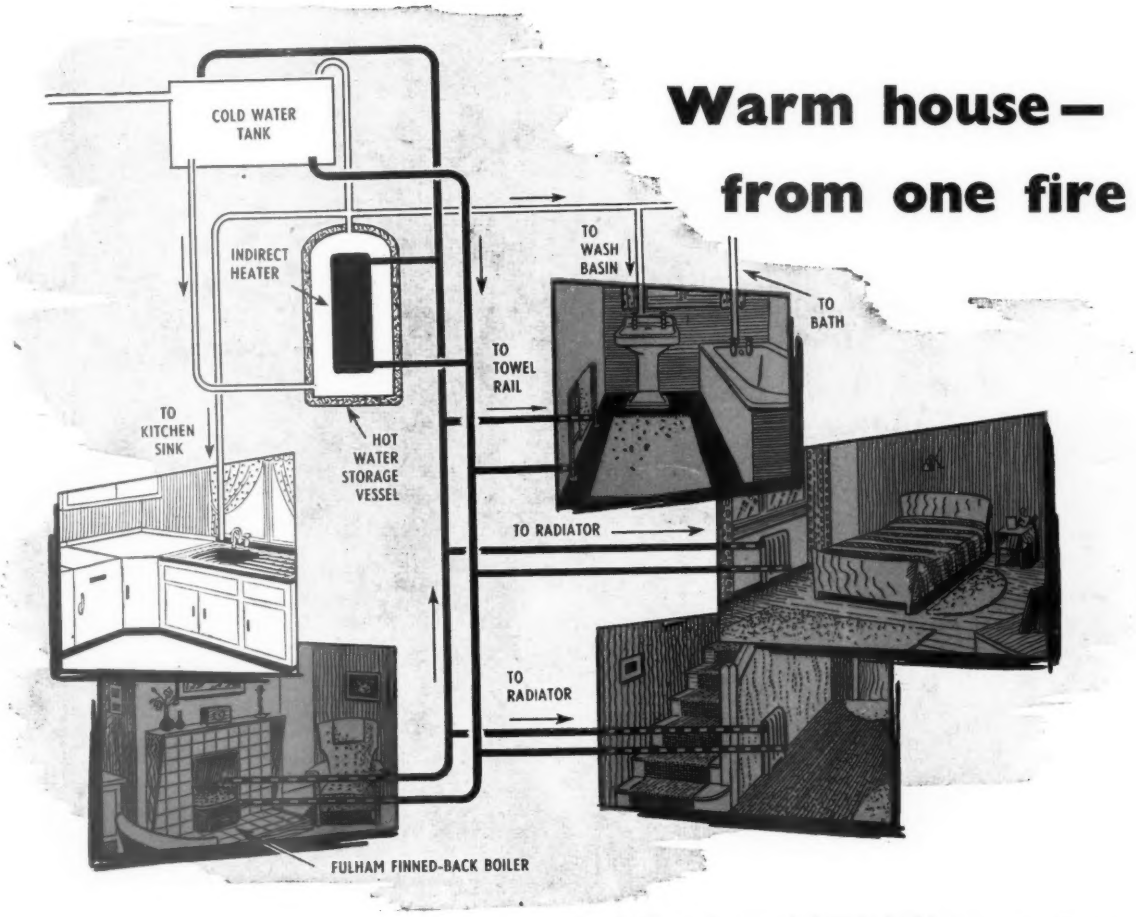
In association with: Monsanto Chemical Company, St. Louis, U.S.A. Monsanto Canada Ltd., Montreal. Monsanto Chemicals (Australia) Ltd., Melbourne. Monsanto Chemicals of India Ltd., Bombay. Representatives in the world's principal cities.



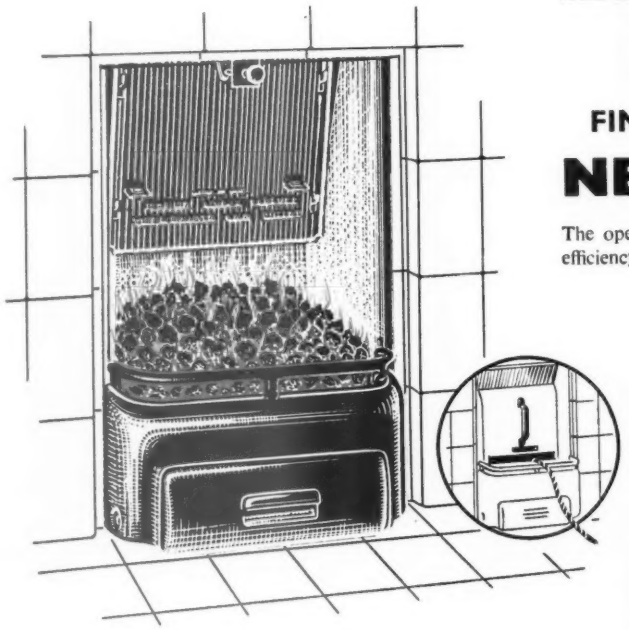
Warm house— from one fire

An efficient and economical method of hot water supply and room heating can be provided by installing the

FULHAM

FINNED BACK BOILER WITH

NEWBOLD GRATE



The open fire will heat one room and the large surface, high efficiency type boiler will supply hot water for :—

- All domestic purposes.
- Heating towel rail.
- Heating two small radiators.

SUMMA GAS ATTACHMENT. In the summer when the open fire and central heating are not needed this gas attachment can be hooked on to the boiler and it will heat a 30 gallon cylinder of water within 2 hours from 50° to 120°F.

FLAVELS *of* LEAMINGTON

MAKERS OF FINE QUALITY COOKING & HEATING APPLIANCES SINCE 1777

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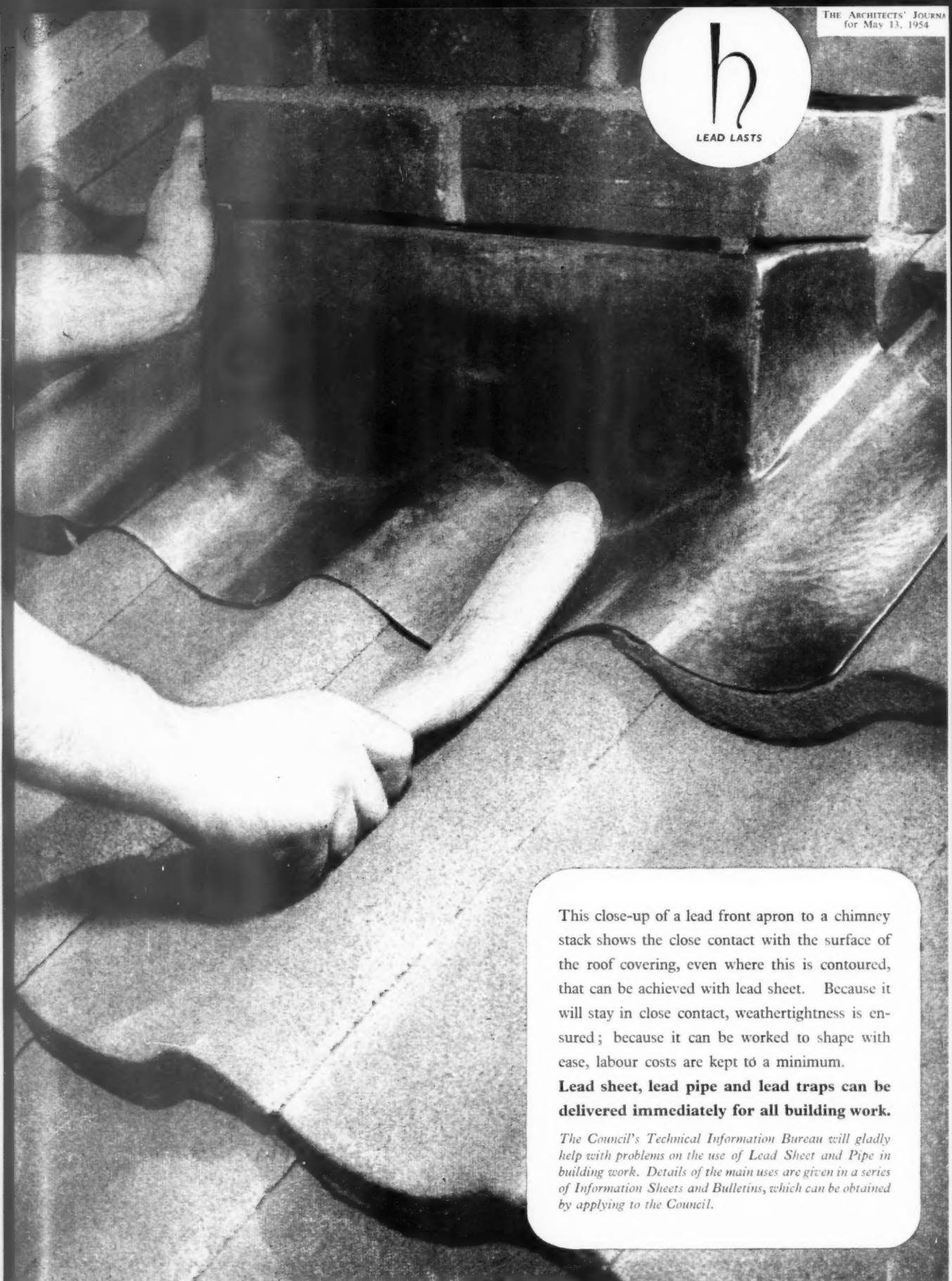


This close-up of a lead front apron to a chimney stack shows the close contact with the surface of the roof covering, even where this is contoured, that can be achieved with lead sheet. Because it will stay in close contact, weathertightness is ensured; because it can be worked to shape with ease, labour costs are kept to a minimum.

Lead sheet, lead pipe and lead traps can be delivered immediately for all building work.

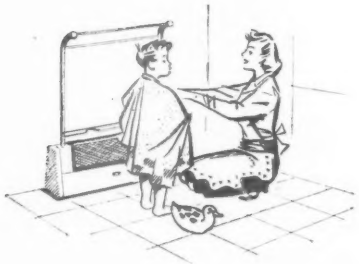
The Council's Technical Information Bureau will gladly help with problems on the use of Lead Sheet and Pipe in building work. Details of the main uses are given in a series of Information Sheets and Bulletins, which can be obtained by applying to the Council.

LEAD SHEET AND PIPE COUNCIL *in association with* LEAD DEVELOPMENT ASSOCIATION

EAGLE HOUSE · JERMYN STREET · LONDON S.W.1 Telegrams: Ukleadman, Piccy, London Telephone: WHitehall 4175

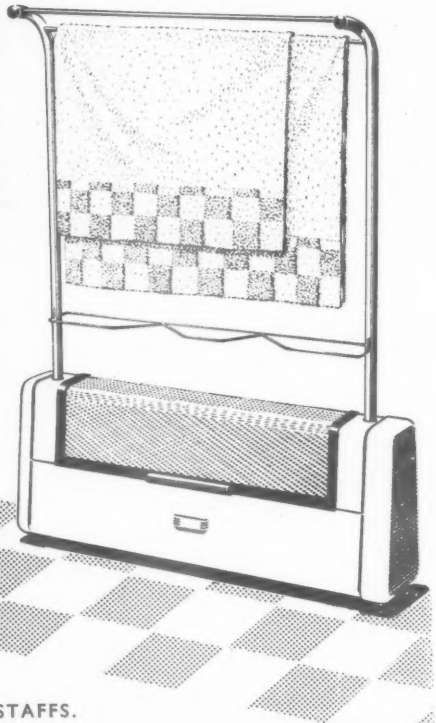
B.92/12.53

For modern bathrooms



HARPER HOUSEWARES are all designed to make modern living easier and happier.

Take the HARPER No. 325 Gas Heated Towel Rail, for instance. An outstanding example of efficient domestic equipment, it provides a constant supply of warm, dry, towels, for all the family, and consumes only 4½ cubic feet of gas per hour. Fitted with Chromium Plated rails and finished in ivory and green, it is a handsome addition to any home.



HARPER No 325

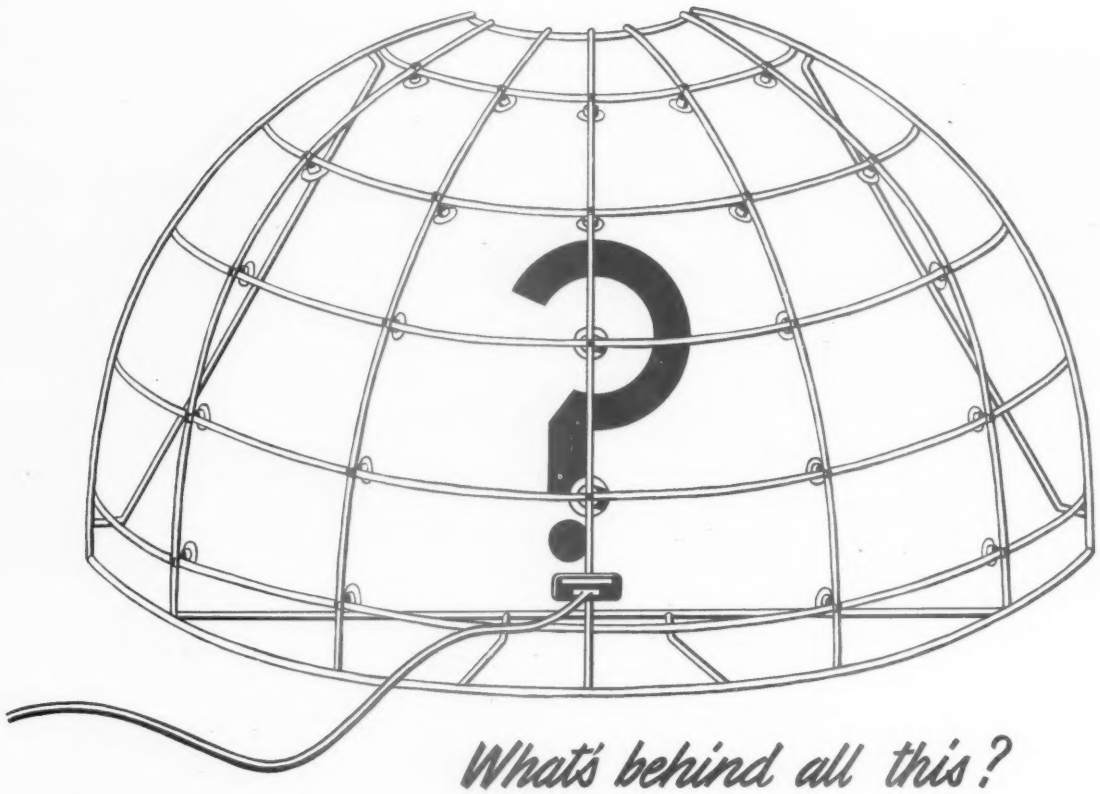
Gas Heated

TOWEL RAIL

HARPER HOUSEWARES

JOHN HARPER & COMPANY LIMITED · WILLENHALL · STAFFS.

H448



What's behind all this?

A birdcage? A beehive? A fire guard? Getting warmer. This is a radiometer — one of many devices used for performance tests in the Radiation Solid Fuel Research Laboratories. Fitted in front of a fire, the radiometer measures and records the heat radiated from the fire-bed.

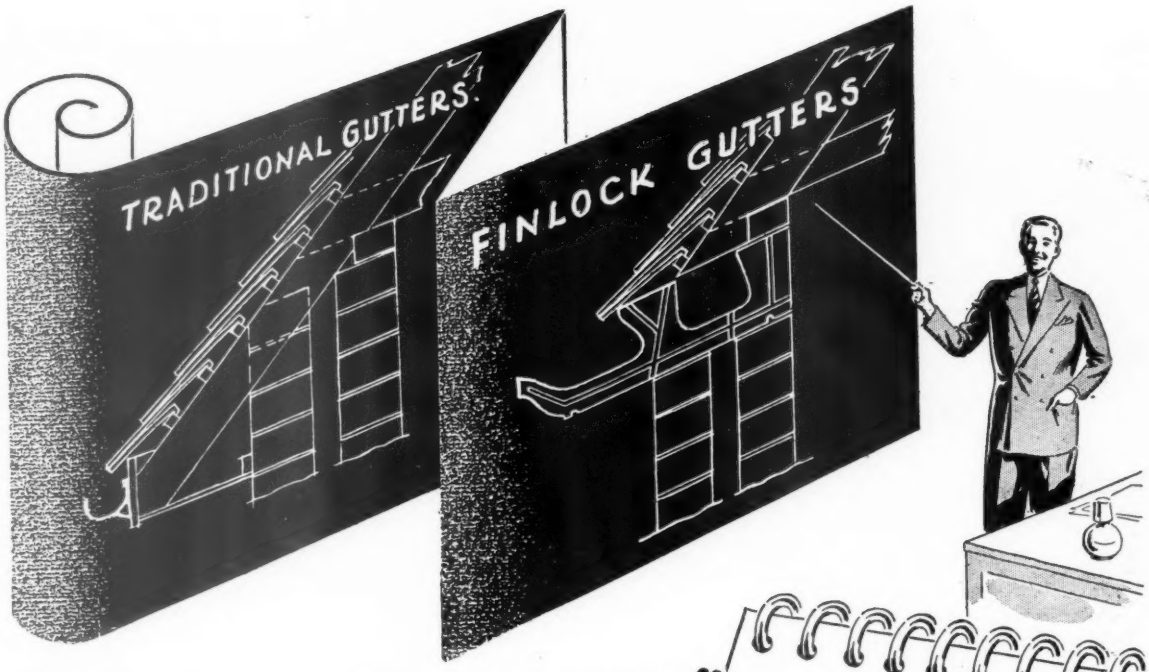
This test is typical of the care taken by Radiation scientists and technicians to keep architects and Local Authorities supplied with solid fuel appliances of proved efficiency that can be recommended and installed with complete confidence.

for space heating, water-heating and cooking, specify

Radiation

SOLID FUEL APPLIANCES

RADIATION GROUP SALES LTD., SOLID FUEL DIVISION, LEEDS, 12



"FINLOCK SAVES MONEY!"

The figures shown indicate the savings effected by the use of Finlock 'G' Type Gutter Blocks, as opposed to Traditional gutters, on one pair of hipped end houses, 40ft. by 25ft., Pitch 40°. A full analysis of omissions of labour and materials can be supplied on request.

Additional savings can be effected by :

- **Reduction in number of outlets.**
- **Reduction of drainage.**
- **Use of lintols cast in rear of gutter blocks in situ.**

Fully descriptive literature is available on application to Head Office and the nation-wide Finlock service is at your disposal to ensure speedy and accurate deliveries and free expert assistance on site.

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Head Office: **FINLOCK HOUSE, 25 FRANT ROAD, TUNBRIDGE WELLS, KENT. TunbridgeWells3396-9**

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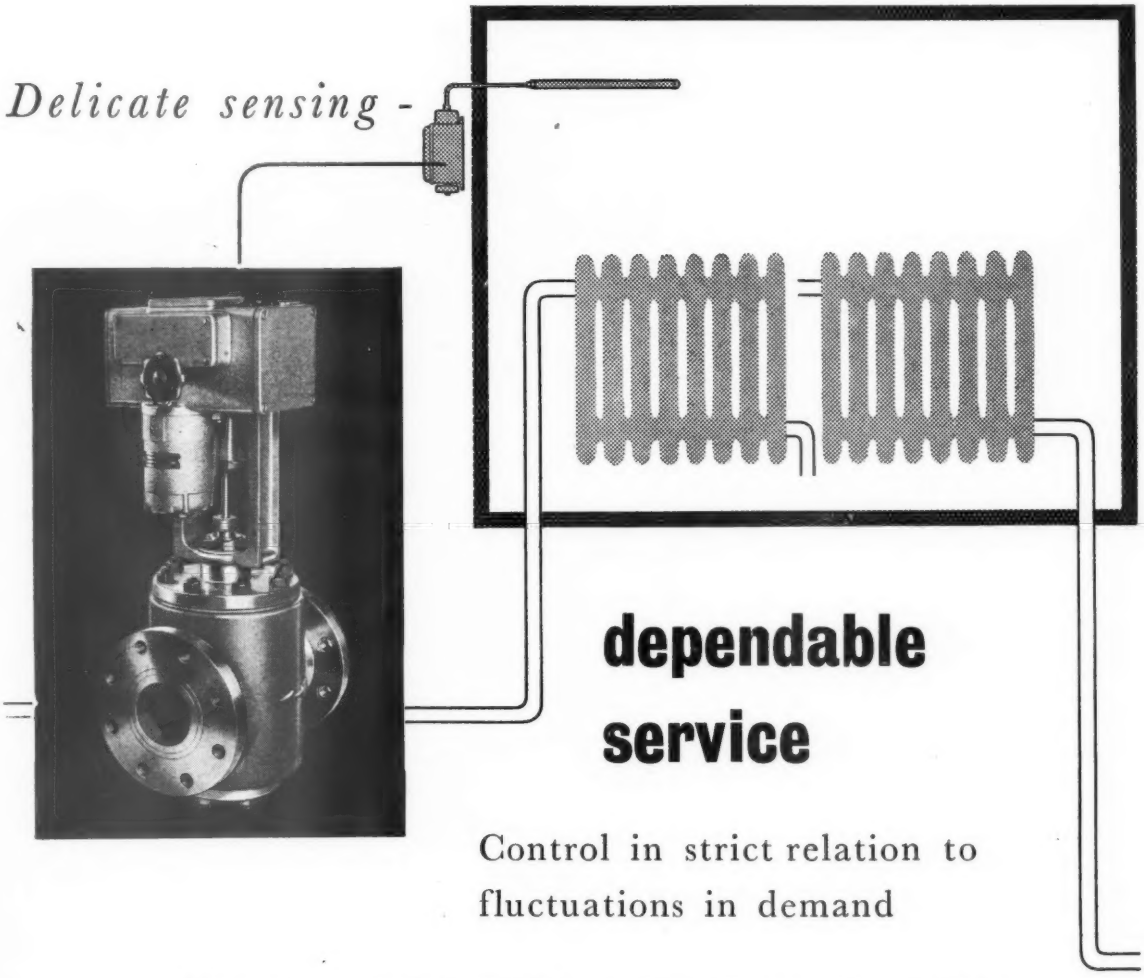
DHB

Delicate sensing -



dependable service

Control in strict relation to fluctuations in demand

Effective air treatment demands accurate and reliable regulation of temperature and humidity, which usually necessitates the use of control equipment which will provide smooth proportioning action in response to the smallest change in the controlled condition. This combination is by no means common especially when large valves and dampers have to be controlled from a remote position. The *Teddington* series ZA Electric Proportioning equipment meets these requirements without the use of amplifiers or any secondary power source other than the existing electricity supply. Full operating power is directly available at the valve, damper, or other actuator employed, and the distance between this and the control point is unlimited, being bridged by simple three-core cable only. A combination of controls can be offered to meet the needs of any heating or air treatment application. Write for details.

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DAMPER DRIVES.
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Teddington TYPE ZA
ELECTRIC PROPORTIONING EQUIPMENT

TEDDINGTON INDUSTRIAL EQUIPMENT LTD.
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are you

PUTTING COLOUR TO WORK?

These days each colour can do a specific and important job of work. Bright colours in a factory at all danger points, for instance; and colour tie-ups in kindergartens on the *your*-cloakroom-*your*-classroom principle. Colour is busy helping, soothing, guiding and classifying in hospitals and offices, too.

To make this comparatively recent colour trend easier to handle, Dockers' have produced 47 colours taken from the Munsell range. The colours are all made up from nine basic tints plus black and white. Dockers' believe this simplification will greatly assist the architect in planning new colour schemes.

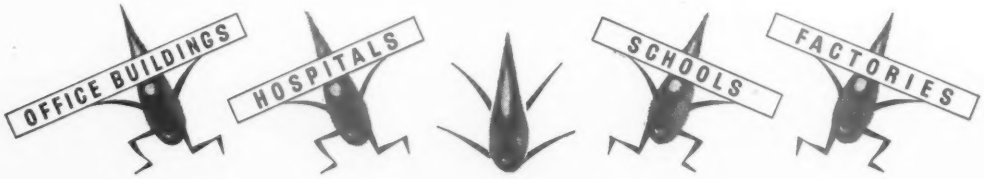
Write for Dockers' free booklet today

Dockers' illustrated booklet "Colour With a Purpose" gives examples of how colour can be usefully employed in factories, schools, hospitals and offices.

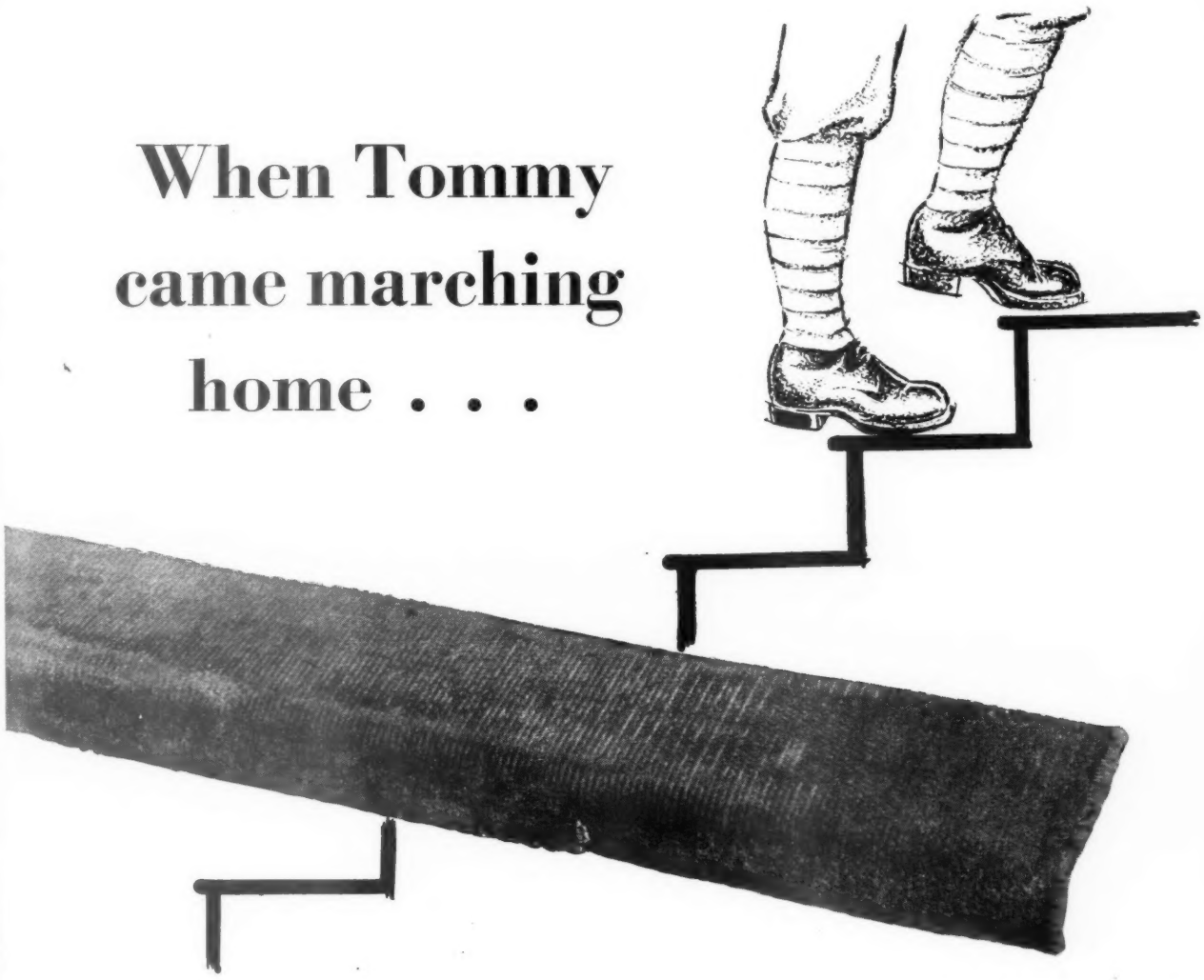
DOCKERS' PAINTS

Makers of Paints Lacquers and Varnishes for every purpose.

DOCKER BROTHERS
LADYWOOD, BIRMINGHAM, 16
London Showrooms:
17 Berners Street, W.1



When Tommy came marching home . . .



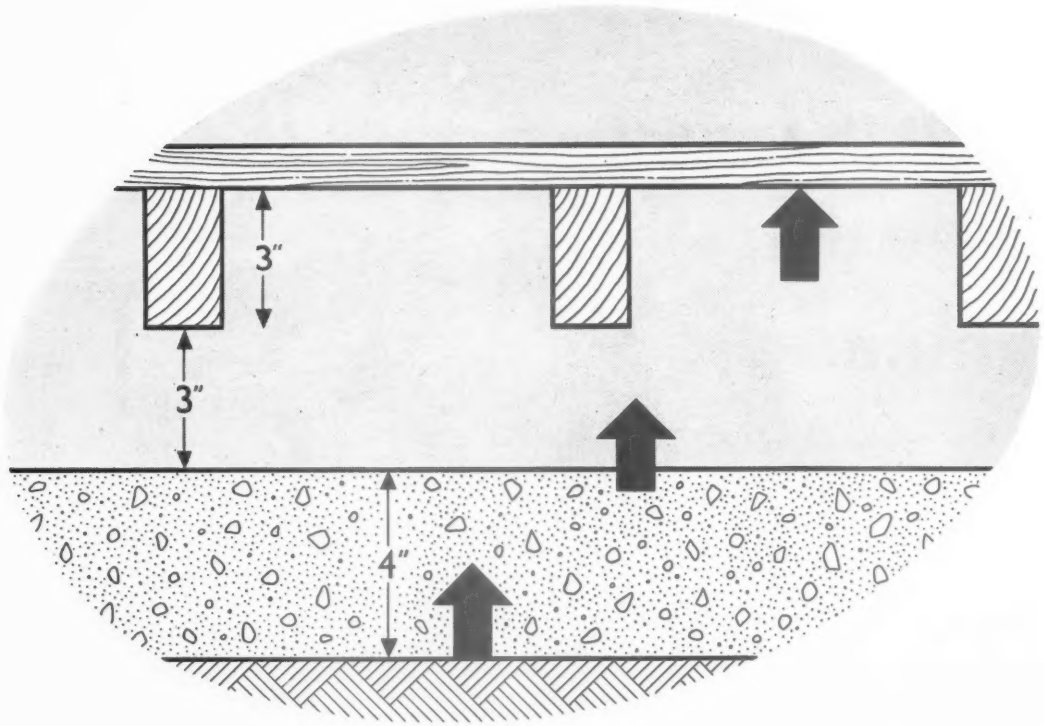
In 1918, when the students returned to the University Union in Manchester, they might have noticed that the stairway had been fitted with Ferodo Stairtreads. At that time there were between 500-700 students, but as the years went by the number of feet tramping up and down the stairway grew, until in 1953 the student body had reached the 6,500 mark.

Recently it was decided—after 36 years of continuous traffic—to renew the Ferodo Stairtreads. Today the University Union of Manchester have, of course, a wide range of types and colours from which to choose, but the same Ferodo tradition remains . . . a guarantee of long, safe service.

This is a photograph of one of the actual Stairtreads which was in continuous use at the University Union Building in Manchester for 36 years.

FERODO *Non-slip* **Stairtreads**

FERODO LIMITED · CHAPEL-EN-LE-FRITH · *A Member of the Turner & Newall Organisation*



Two floors for the price of one

The modern suspended timber floor incorporates two completely independent flooring systems with an air space between them.

Above the site concrete and the air space the inner wood floor provides a third barrier to the passage of moisture vapour, and is at the same time an insulating surface, always at or close to room temperature.

Warm, dry and resilient—that's the modern wood floor, the traditional floor of British homes.

There's nothing like WOOD

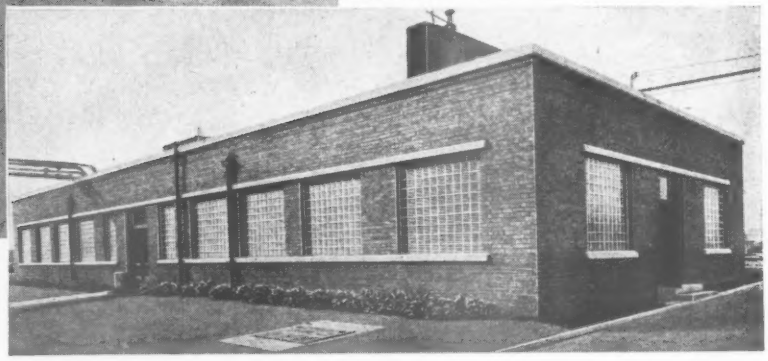
ISSUED BY THE TIMBER DEVELOPMENT ASSOCIATION LIMITED, 21 COLLEGE HILL, LONDON, EC4
and branches throughout the country.

TD45

Why are they here?

Antibiotics factory, Speke, Liverpool

Left: Controlling the "freeze-drying" process.
Below: Exterior view of the physiological department.



By courtesy of The Distillers Company (Biochemicals) Ltd.
Architects: Yates, Cooke & Darbyshire.

"INSULIGHT" HOLLOW GLASS BLOCKS

WERE USED BECAUSE . . .

Nearly all the processes involved in the manufacture of penicillin and streptomycin must be carried out under the most rigorously aseptic conditions. Indeed, the final filtration and filling of the drugs is done in totally enclosed rooms, supplied with sterilized air, the temperature and humidity of which are rigidly controlled. In such circumstances, "INSULIGHT" Hollow Glass Blocks are an obvious choice for glazing. For ease and efficiency in cleaning they present a far superior surface to the usual wood or metal frame glazing, and they require no surface treatment or maintenance. Their heat insulation properties are another vitally important feature, reducing heat losses, and so helping to maintain the temperature inside at a constant level regardless of conditions outside.

Consult the Technical Sales and Service Department at St. Helens, Lancs., or Selwyn House, Cleveland Row, St. James's, London, S.W.1. Telephones: St. Helens 4001, Whitehall 5672-6.

Send for the free booklet giving fixing details for "INSULIGHT" Hollow Glass Blocks.

PILKINGTON BROTHERS LIMITED

Supplies are available through the usual trade channels. "INSULIGHT" is the British registered trade mark of Pilkington Brothers Limited

BRITISH GLASS P.B.

HGB 4

A New Old Fashion

NOT so long ago, when prefabrication was wished upon us as the solution to the Housing problem, the word "traditional" became almost a term of abuse, but at least it was used with a knowledge of its meaning.

Now what are we to make of a recent statement by our Parliamentary Secretary to the Ministry of Housing and Local Government? "A 'new tradition' house", he says, "is the new name for a non-traditional house".

What, indeed! Can method or design be both new *and* traditional? Either may find favour, but let us at least pay to each the compliment of distinguishing it from the other.

The new provides us with the excitement of a venture into what must be, to some extent, the unknown and the untried, for the new is necessarily the experimental. The satisfactions to be derived from the traditional are of a different order. Here we have the sense of security of the known and the well-tried. When we follow tradition (and how closely knit in our common speech are the verb and the noun) we tread in the firm steps of those who have toiled before us. It is of the essence of tradition that we do not have to make our own.

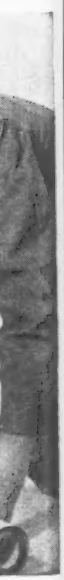
What was once new has made the tradition of today, yet not all new things become, in the fullness of time, secure traditions. Those which have value and meaning for us now are but a handful of the activities of the past, for most novelties fail to stand the test of time and the need for adaptability to changed conditions.

We can neither make the traditions of today, nor consciously mould the traditions of tomorrow. Only as those who come after us accept or discard, repeat or supersede, the new things of today, will traditions be established.

"New traditional"? Surely not.

(Reprinted from 'The Brick Bulletin')

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



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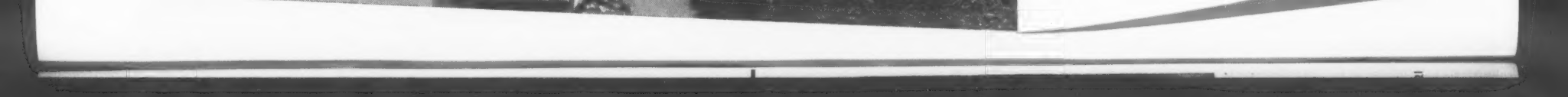

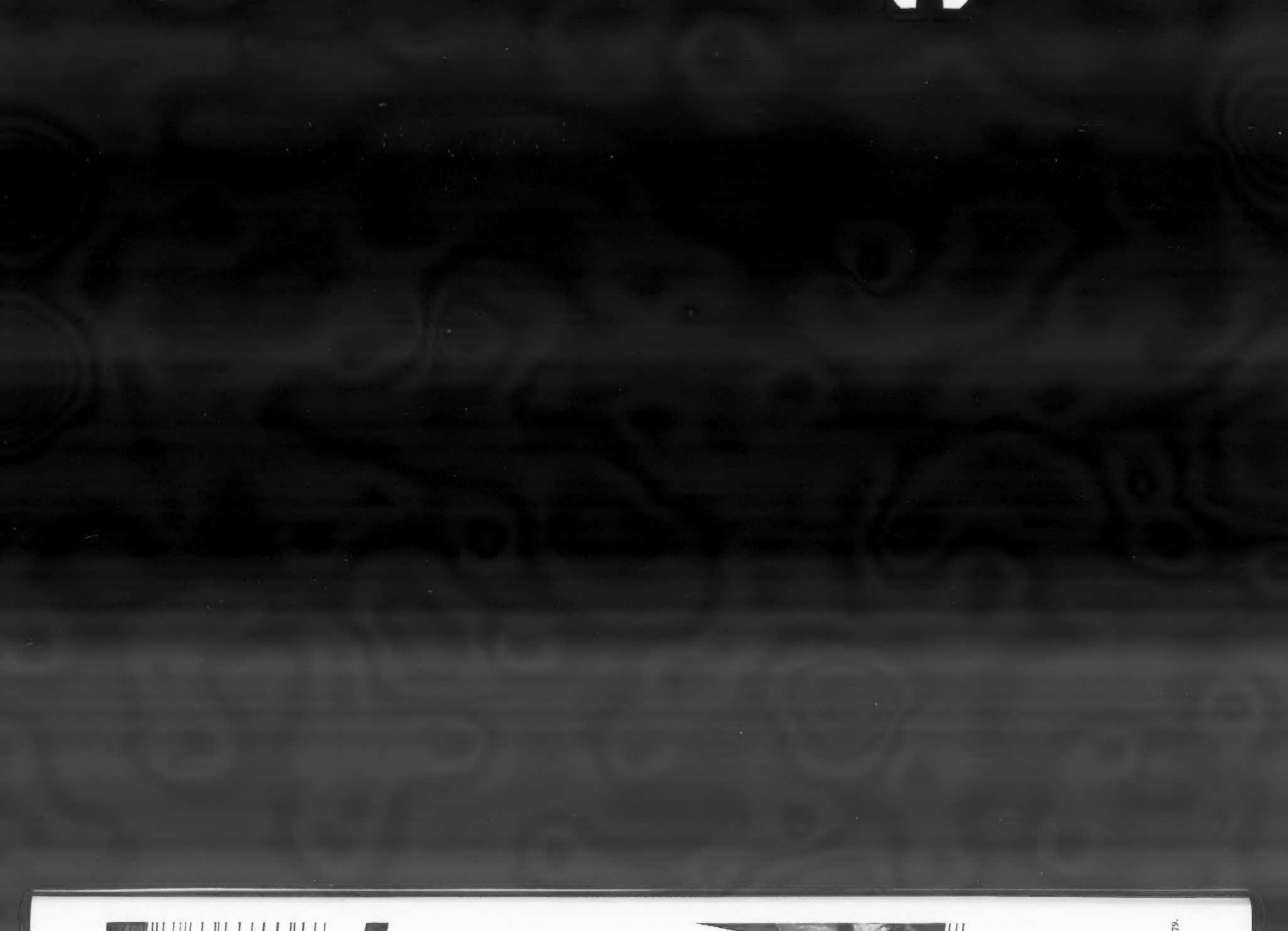

AJ

THE ARCHITECTS' JOURNAL

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

No. 3089 May 13, 1954 VOL. 119

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EASIER HOUSE-PURCHASE

The rumour that Mr. Macmillan was to make house-purchase somewhat easier was noted here at the end of March, and the scheme as finally announced last week tallies pretty well with the forecast. Five per cent. deposit only will be needed for post-1918 houses valued up to £2,000, and 10 per cent on any house not more than £2,500. Local authorities have had a circular from MOHLG urging them to use their powers under the 1949 Housing Act and the Small Dwellings Acquisition Acts. The main object of the whole scheme is to make house-purchase easier for the £700-a-year group—at least that is Mr. Macmillan's idea, though it's probable that many people with higher incomes will find it useful as well. It looks at first glance as though architects may have a fair number of survey jobs to do if the scheme proves popular, so brush up on your dry-rot symptoms.

THE BIF

So far as could be seen in a brief tour of Earls Court and Olympia, all is much as usual, though there doesn't seem any point in the new idea of exhibiting showcases without any staff to explain what is what. Inexpensive admittedly, but if I were a buyer I might well feel that the firms concerned were doing a little too much cheeseparing.

*

During the last few months a number of trade journals have been asking whether the BIF has served its purpose and should now be folded up. Certainly there are far more specialist exhibitions than there were, and it is equally true that a number of regular exhibitors have given up showing, perhaps because they don't get the expected results, perhaps because they fear (with some reason) the last-minute strikes which have messed up so many recent shows. On the other hand the BIF has grown quite steadily since the early Castle Bromwich days, and it is more than possible that the private company which has now taken over the organization from the Board of Trade may have some new ideas.

THE DUBLIN BUS STATION

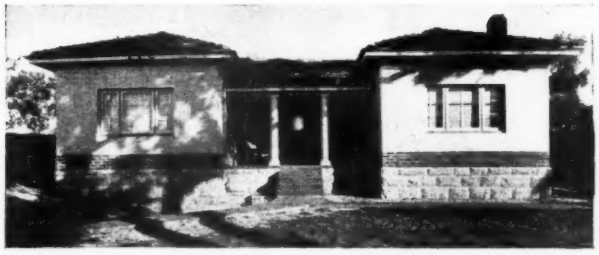
ASTRAGAL, inspired by the account of the Dublin Bus Station in the JOURNAL for April 15 decided to go and have a look for himself. Michael Scott has done more than make just another contribution to the Modern Movement. He has shown that Dublin can take it—and no one could pretend until now that Dublin was a stronghold of the Movement. It is a grey city and —for all its squalor—an Augustan city. And yet amid the grey monuments of the Quays the Bus Station not only looks well, it enhances its surroundings. In its modern glitter—metallic and tense and colourful—it stands right alongside the Customs House . . . yet each seems to be an admirable foil to the other, living together as buildings of diverse styles, if good in themselves, do live together in old and complex cities. One hopes that this is also the beginning of something long overdue—a North Bank Scheme for the Liffey.

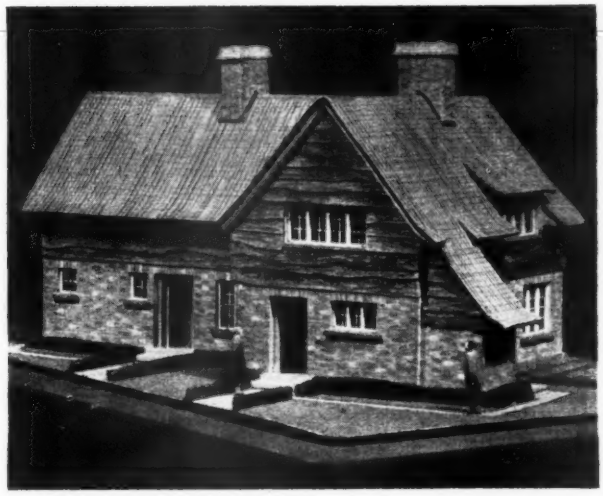
*

Michael Scott is also to be congratulated upon having persuaded his clients to indulge in the economy of expensive finishes. Marble, tiling and good Italian mosaic are everywhere. They look good now; they will look equally good in a hundred years and they will, meanwhile, cost nothing.

HOLLAND PARK AND THE LCC

After all the controversies surrounding Holland Park and Holland House, it is pleasant to hear something specific—however mild that something may be. The park itself is to be opened on May 28 and will be adorned by an open-air sculpture exhibition. "In showing works by artists of the present century," says the Press hand-out, "the Council has followed the precedents of Battersea Park in 1948 and 1951," but there is also some variation upon precedent in the display of two reproductions—one of the V. and A. 12th century Hindu "Celestial Drummer" and one of the Parthenon Dionysus. There will be twenty-nine contemporary works by almost as many sculptors, and almost all the great names, English and foreign, are on the list. How imagina-





The Building Societies Association has organized an exhibition of the work of building societies at Church House, Westminster. ASTRAGAL *was surprised to find that the photos of houses on view (those above—all overseas—are typical) did not include any examples from this country. The only intimation the Association gave of its conception of modern architecture in England was the model shown on the right.* *See pages 568 and 569.*

tive, upon occasions, the LCC can be! And how interesting it will be to see the Dionysus out-of-doors; ASTRAGAL has always said that this—whether in Athens or London—is where the Elgin Marbles ought to be.

WHAT MANCHESTER DOES TODAY . . .

. . . intelligent people gave up doing yesterday in university architecture and planning. At least, that is what some Manchester students imply. Some weeks ago reference was made in this column to the Manchester students' dissatisfaction with the post-war development of their university. This dissatisfaction has been intelligently expressed in the last number of the students' *News Bulletin*. There are illustrations of the Casson-Conder Cambridge scheme, of Mexico University, a reference to Sheffield, and an article on architectural competitions—obviously the students are perturbed that these outposts of learning may be housed in more efficient and attractive envelopes than their own. And the reference to competitions no doubt indicates what they felt the authorities should do about it. Better the devil you don't know, in fact, than . . .

*

There are two illustrations of Manchester buildings in the *Bulletin*. One which is referred to as Tech., and the other a new building for the Electrical Engineering Department. The captions do not say if an architect was employed in each. The former, which is under construction, promises to be a late issue of the marriage of Victorian Scholastic and Bankers' Georgian—part pitched roof, part flat, with high gables and bay windows alongside a slab of Park Lane. The latter is a more modest, pseudo-Georgian affair, with a long window through three storeys exclaiming its modernity. ASTRAGAL holds no brief for either.

*

It is not surprising, now that there are barely any architectural journals extolling traditionalism, that Manchester students write "styles and methods . . . adopted in Manchester are not adopted elsewhere. Are we right, are they wrong? . . . write to us and give your point of view." Some of the students—it *would* be the students and not some of the staff—have just awakened to the fact that the university, if it is not to become æsthetically moribund, needs a contemporary approach to its development plan and its architecture. Let's hope it now gets it—the students appear to deserve it.

ASTRAGAL

"Spec." Housing Revival

By relieving local authorities of a large amount of house-building the Government has, in fact, taken a great deal of housing away from architects. Some of the results are shown above. In showing them, as evidence of what happens when the architect is ignored, we ask the housing minister, Harold Macmillan, to spare a thought for the æsthetics, as well as the finance, of house-building. He has recently given the man-in-the-street a chance to own his home. Can he not ensure that the home is more than a box for living in? Can he not insist that the building societies, to whom he has just done such a good turn, shall finance only houses that are architect-designed? It is useless for the societies to protest that design is not their business; some of them have made it their business to thwart good design, as the editorial opposite points out. If they *all* had to cope with architects, their sponsorship of the crude and the monstrous in house building would soon cease.

LETTERS

A. E. Henson, F.R.I.B.A.
President of IAAS

The End of BAG?

SIR,—In a responsible paper one naturally looks for some consistency in editorial policy. Speaking for myself, I find it very difficult to reconcile the viewpoint expressed in your leader, "The End of BAG?" with that set out in your leading article (AJ, March 4, 1954).

In the latter you say "the only effective way of protecting and promoting the well-being of salaried members, as all professions are slowly discovering, is through the registered trades union." In your issue of December 17 you give the reasons why, in your opinion, the ABT fails to meet the need, a subject to which you return in your leading article of January 7, 1954. When in the British Architectural Guild a body is formed possessing all the attributes which you yourselves postulate as necessary, you oppose it with all the forces at your command—why? You have failed to advance any criticisms of its aims, objects or rules.

As a loyal member of the RIBA of many years' standing, I would be the last to lend myself to anything designed to oppose openly or covertly the traditions and high principles that the Royal Institute has established and maintained. But in view of the often-publicized difficulties that the RIBA would experience in forming a negotiating body, and the possible differences of opinion within the Institute between private practitioners and salaried architects as to the desirability of a trade union, there seemed no earthly reason why any members of the profession who were so disposed, and willing to devote time, trouble and expense to the project, should not attempt to find a solution of what you have stated to be an urgent problem.

In the event, this action which was motivated entirely by good faith has been seized upon and used as a weapon to play off one professional body against another—to represent the IAAS as being in opposition to the RIBA, and the British Architectural Guild as being designed as a "would-be rival" to the ABT, a body which the ARCHITECTS' JOURNAL had already dismissed as failing to meet the bill. It is further to be noted that you are exploiting your rejection of the British Architectural Guild in an attempt, as I see it, to embarrass candidates for election to the RIBA Council with a catechizing which is surely unique in the annals of professional journalism.

One may be forgiven for wondering whether loyalty to the RIBA or to any other professional body is not, after all, a secondary requirement of members of the architectural profession—secondary, that is, to a first obligation, which is blind and unquestioning allegiance to the mandarins of the JOURNAL.

A. E. HENSON.

London.

We had little faith in the usefulness of BAG because of the bad timing of the announcement of its formation. We do want a negotiating body, a trade union for architects, but it must have the support of the majority of the profession's members and, if possible, of the RIBA Council. The latter's rejection of BAG confirmed our doubts about it. If Colonel Henson wished to emphasize his loyalty to the RIBA he could have withheld the announcement of BAG's existence until members of the RIBA had given their opinions about the trade union proposal—and until the RIBA Council had considered their opinions. Then no one could have accused him of wishing to steal a march on the RIBA, or of trying to force their hand.—ED.

POINTS FROM THIS ISSUE

The Editors

BUILDING—OR DESIGNING—SOCIETIES?

LAST week the Building Societies Association staged an exhibition, in London, of the work done by building societies in "the United Kingdom, the Commonwealth and other countries overseas." Most of the work shown (see page 567) was typical of what we think of as "spec." building; but not one photograph in the exhibition showed housing in Britain. "Why *should* people be reminded of the sort of houses that are being put up in their own country?" said a representative of the Association. "They know very well the sort of work that is being done." That, of course, is sadly true. The pictures on the opposite page show buildings that are now becoming familiar sights all over the country—houses that are being financed by building societies and designed without the help of an architect. (This is surely something that Mr. Macmillan should deal with—perhaps in the way suggested in the caption opposite.)

It is true that the builder is more at fault than the building society if he puts up houses which are not architect-designed. But very often when an architect *is* employed the building society *controls his work*. What, you may ask, have building societies to do with design? Isn't their work limited to finance rather than aesthetics? That is the way it should be, but in fact a number of societies insist that an architect shall comply with their requirements before they will grant a loan to his client. One of the largest building societies in the country refuses to have anything to do with a flat-roofed house. If a house is to get the approval of this society's surveyor it must be brick-built and have a hipped roof covered with slates or tiles. Moreover, the surveyor, who does not approve of the use of any material other than brick for internal partitions, will not consider the use of timber for external walls, and is by no means sympathetic towards free planning.

Another building society recently took a fancy to some elegant houses which had been designed in a small but reputable architect's office for an intelligent builder. The society asked the builder for three hundred of these houses—with certain modifications: "Could the designs be altered to include bay windows? Could the specification be altered to include diamond-pane leaded lights?" And so on. By the time these modifications had been made there would have been very little left of the original work, and it is not surprising that the architects did not particularly want to put their names to the final design.

All this is, surely, an unwarranted interference with the architect's freedom of design. It should be sufficient that he has satisfied the requirements of the borough surveyor and the town planning committee, regarding structural and aesthetic requirements respectively, without suffering the indignity of having his design vetoed by men whose idea of perfection would appear to be the spec-built house of the 30's.

OVER THE FIRST HURDLE

Well over half the profession wants a trade union. The figures from the recent enquiry, see below, make that quite clear. While welcoming this result we would go further. We believe that a very much higher percentage of the profession would approve of some form of body, allied to the RIBA, which could deal both with fees and salaries, and thus leave the RIBA to concentrate its energies on being a learned society. This negotiating body should, in fact, handle the commercial side, and the profession's relations with the public and let the RIBA get on with those vital policies which will ensure that the architect is competent to be, and universally recognized as, the leader of the building team. That is, perhaps, a long-term scheme. The immediate aim, and a very important one, is to increase the support for the union from 63 per cent., to a figure which includes every salaried member of the profession. Salaried architects *must* be united.

N E W S

RIBA

The New President

C. H. Aslin, C.B.E., County Architect for Hertfordshire, is to be the RIBA President for the Session 1954-1955. He succeeds Howard Robertson, M.C., who retires from office on June 30.

C. H. Aslin was born on December 15, 1893. His architectural education started at Sheffield in 1910, where he was articled to a local architect, and attended the Sheffield University Department of Architecture.

He served in HM Forces throughout the first world war, obtaining, upon demobilization, a post with the Sheffield City Architect, which he held until 1922. From then until 1926 he was architect to the County Borough of Rotherham, and from 1926-29 Deputy County Architect of Hampshire.

After 16 years as Borough Architect of Derby, Mr. Aslin became County Architect of Hertfordshire in 1945, a post which he still holds.

Under his leadership at Hertford great advances have been made by the Hertfordshire County Council in their building programme, and particularly in school construction, in which Mr. Aslin has made extensive use of prefabricated units to overcome the acute shortage of site labour, steel and timber. This system of construction has aroused great interest abroad.

Mr. Aslin became an Associate of the RIBA in 1920 and a Fellow in 1932; he has been a member of the Institution of Structural Engineers since 1925. Since 1945 he has served on the Council of the RIBA and was a Vice-President from 1948-50. He was again elected Vice-President for 1952-53 and also for 1953-54. He served on the Salaried and Official Architects' Committee from its formation until June, 1952, and was its first Chairman. He has also been a member of the Finance and House Committee. He is at present a member of the Executive Committee, the Practice Committee, the Professional Conduct Committee and the U.K. Committee of the International Union of Architects. He is one of the Institute's representatives on the Joint Consultative Committee of Architects and Builders.

Nearly 6,000 Members want Union

Slightly more than half the RIBA members who received a trade union questionnaire from the Institute filled it in. And more than half of those who did so wanted a union.

Here are some of the figures issued by the RIBA, showing the results of the questionnaire:—

Number of forms sent out: 18,065.

Replies passed for sorting: 9,378 (51·9 per cent.).

Replies not accepted for sorting: 460 (2·5 per cent.).

Number in favour of a trade union: 5,958 (63·5 per cent.).

Number opposed to a union: 3,420 (36·5 per cent.).

Number already members of a protective staff association which negotiates salary scales: 2,918 (31·1 per cent.).

Number not members of such an association: 6,460 (68·9 per cent.).

Number prepared to join a union: 5,899 (62·9 per cent.).

Number unwilling to join: 3,479 (37·1 per cent.).

69 per cent. of the students who replied wanted a union. So did 58 per cent. of those in private practice; 68 per cent. of those in central government; 87 per cent. of those in local government; 74 per cent. of those in a corporation; 63 per cent. of those teaching; and 66 per cent. of those in other occupations.

Only 23 per cent. of the self-employed who replied wanted a union.

MOHLG

Easier House Purchase

Felix Walter, the JOURNAL'S Guest Editor for conversion articles, makes the following comments on Harold Macmillan's scheme for easier house-purchase:—

The growing burden of housing subsidies on the rate and taxpayer could be alleviated to a degree by Mr. Macmillan's latest tripartite guarantee which covers the risk of increased mortgages to potential owner-occupiers. By reducing the gap between the normal 70 per cent. advance and the purchase price of 10 per cent. and even 5 per cent., home ownership comes within the range of many lacking capital or the ability to save. Any loss by a building society will be shared equally between government, local authority and the society concerned.

The two proposals outlined in Circular 42/54 (MOHLG) are intended to cover private housing comparable with that of the local authority. Scheme A provides building society advances of 90 per cent. on any dwelling valued at not more than £2,500, whilst scheme B offers advances of 95 per cent. on any post-1918 dwelling valued at not more than £2,000. Total weekly outgoings vary and in the case of scheme A, for example, £2 12s. for a house costing or valued at £1,800 with a 10 per cent. capital outlay of £180, or £3 12s. 5d. for a house costing or valued at £2,500 with a capital contribution of £250. To illustrate scheme B, the total weekly outgoings would be £2 14s. 4d. on a £1,800 house with 95 per cent. mortgage and capital outlay of £90. The maximum 95 per cent. advance obtainable would amount to £1,900 with a capital contribution of £100, and weekly outgoings of £3 0s. 3d. on a £2,000 house.

In all cases mortgages are calculated over a 25-year repayment period. Although the application of these powers is in no way compulsory, the Minister is giving local authorities every encouragement to apply the schemes to all applicants approved by the building societies.

DIARY

Architectural Journalism. Ian McCallum and Ian Leslie. At the RIBA, 66, Portland Place, W.1. 6 p.m. MAY 18

The Design of New Schools. C. H. Aslin (Alfred Bossom Lecture.) RSA, John Adam Street, W.C.2. 2.30 p.m. MAY 19

Design for St. Pancras. Exhibition of scheme by diploma students, Department of Town Planning, University College, London. At North Thames Gas Board showrooms, 150, Camden High Street, N.W.1. UNTIL MAY 19

Public Discussion on above exhibition at same address. To be opened by Sir William Holford. Tickets available free of charge from the Town Hall, St. Pancras, or any branch library. 7.30 p.m. MAY 19

Architectural Criticism. Discussion on Hatfield Technical School. At the ICA, 17-18, Dover Street, W.1. 8.15 p.m. MAY 20

British Architects' Conference, Torquay. For full particulars apply to the Secretary, RIBA, 66, Portland Place, W.1. MAY 26 TO 29

CHOOSE YOUR LEADERS

1. A majority of the profession want some form of trade union or negotiating body allied to the RIBA. What, in the candidate's opinion, is the most urgent problem for such a body to tackle?

2. What aspects of architectural education today most obviously merit study with a view to possible alterations to the present system of education?

3. What further action can the RIBA consider taking on the problem of architectural practice undertaken by non-architects?

4. What other problem does the candidate consider should be exercising the RIBA Council during 1954-55?

Two weeks ago we asked all those who had been nominated by the RIBA Council for election to the Council to answer four questions in order to help members in casting their votes. We re-print the questions on the left, and we give the answers which many of those nominated sent in. We also publish the answers of those who accepted our invitation to candidates for the Council who have been nominated by members to take this opportunity for getting their ideas across to the electorate. Some of the Council-nominated candidates refused to answer and, where allowed, we give their reasons. While appreciating the sincerity of these refusals to answer we don't feel that the reasons are valid. A man who has already been on the Council will know more of the problems than one who has not, but this inside information should not, surely, prevent him from being able to express his views on the general policy matters which are exercising the minds of the whole profession today; nor do we feel that because a man does not know all the facts he is necessarily unable to form his own opinions. If the members of Council cannot make their views known they are liable to be accused of trying to act as a secret society. The profession is entitled to know what individual members of Council are endeavouring to achieve. In 1938 the question was raised at a RIBA *Annual Meeting whether candidates for election should be given space in the* RIBA Journal *to express in 250 words why they were standing for election and what they wanted to do. We feel that it is unnecessary that* THE ARCHITECTS' JOURNAL *should have to try and organise this information service for members of the RIBA—as it is doing this year—and we would be happy to see it done by the* RIBA Journal *in future. (N.B.—The following were all away and therefore unable to reply: Eric Bedford [Associate]; A. F. B. Anderson, A. R. F. Anderson, C. G. Stillman and T. E. North [Fellows].)*

REPLIES FROM FELLOWS OF THE RIBA

Nominated by Council: Lionel Brett, Sir William Holford, L. C. Howitt

Lionel Brett writes:

1. (*a*) Negotiating a new local authority salary scale which rises more steeply in the higher grades. (*b*) Pegging this scale to the cost of living, so that general cost increases are reflected in salaries as they are in fees.

2. (*a*) Combined research into the possibility of an identical basic course for all technicians concerned with building. (*b*) Ditto into the possibility of increased specialization in the final year. At present the architect is in danger of knowing dangerously little about a number of things and expert in none. (*c*) More emphasis in education on costs and on structural economy. (*d*) More academic freedom for the individual school combined with greater consistency in the standard of the external examinations. (*e*) Up-to-date textbooks.

3. Later on a campaign will have to be fought for legislation to provide that all buildings above a certain cube are designed by architects. Before this can be worth while, all architects have got to be better designers than non-architects.

4. Sale of cheap architect-designed house-plans sponsored by the RIBA. Up-to-date building legislation. Scale of fees for housing. Research into urban densities. Reconsideration of Code of Practice with a view to permitting architects to become directors of companies.

Sir William Holford writes:

1. Conditions of service for official and salaried architects and for all assistants; including conditions of collaboration with, and employment by, other branches of the building and civil engineering industries.

2. The broadening of the field and limitation of time for academic study of the subject, followed by a rationalization of practical training before a professional qualifica-

tion is earned. (This question needs 300 words on its own.)

3. Convincing those who spend money on building that the requirements of programmes and standards of performance should be such that—with certain exceptions—only trained architects can do them justice. I do not think that formal and legislative controls can go any further.

4. The cost of building and means towards reducing it. Internally, the composition of the Council itself.

These four answers are necessarily incomplete and somewhat abstract. I think it is fair to ask election candidates to express views if they wish to do so. But to say that they *must* have views, and should publish them, suggests toeing a party line. The advantage of a professional as opposed to a political council seems to me to reside largely in the absence of a party line or caucus, and in the capacity of a broad cross-section of members to act according to the facts and arguments produced.

L. C. Howitt writes:

I am of the opinion that any action which aims at stimulating interest and assisting members in making their choice of the candidates for election to the RIBA Council is to be welcomed and I congratulate the JOURNAL on their initiative in this respect. However, I do hope that the views expressed in reply to your four questions will not be the sole basis of the electors' judgment and that the other qualifications referred to in your leader and the detailed particulars printed in the RIBA Journal will receive serious study.

My answers to the questions are as follows:—

1. The problems which should be discussed by any trade union or negotiating body for salaried architects will be determined by that body and not by the RIBA Council; therefore the candidates' views on this subject are not entirely relevant. However, my answer is that the most urgent problem for such a body to tackle is the means whereby it may effectively negotiate minimum salary scales with representatives of all the various types of employers of salaried architects and also secure enforcement of the scales negotiated.

2. The most effective means whereby the acquisition of realistic "practical experience" may be combined with a full-time school course without unduly lengthening the period occupied in producing a truly "fully qualified" architect.

3. The long-term objective must be the extension of the present statutory protection of the *name* of our job to the *job itself*, the restriction to architects of all submissions under the building bye-laws and the statutory requirement that all public building work shall be carried out by architects. In the meantime the RIBA might intensify their education of potential clients, and practising members might in even greater measure prove by their works that no building developer can afford to do without their services.

4. The constitution of the RIBA Council should be reviewed and consideration given to how appropriate representation of the various interests within the membership of the Royal Institute may be achieved with due regard to the need for continuity and to the value of long service in the profession.

Nominated by Members: Richard Sheppard, Douglas Jones

Richard Sheppard writes:

It seems to me reasonable that candidates should be asked to state their views on questions affecting the profession, and I am very glad to do so. (I wonder whether these four questions are the most important or the only ones affecting the profession as a whole today.)

1. I do not know whether it is true to say that the majority of the profession want some form of trade union or negotiating body allied to the RIBA. I certainly think that some such body ought to be set up and it ought to be allied to the RIBA. The second part of your question is phrased in such a way that it puts me in mind of some sort of examination for the Civil Service. I think that the most important problem it has to tackle is the establishment of some minimum conditions of employment in public and private offices. The difficulty, as everyone knows, is not in the establishment of such minimum conditions, but in the grading afterwards. An RIBA qualification does not make a man a good architect, nor do years of experience.

2. Basically, I think the present system of architectural education is on the right lines, but the scope of technical qualifications required for admission needs to be extended. Much more important, in my view, is to make it the only recognized method of entry into the profession, as it is in nearly every other country. I do not believe that satisfactory architects can be trained by systems like pupilage and, although there should be scope for many different forms of architectural education, they should all be controlled by recognized schools. We need more scholarships and wider recognition on the part of local education authorities that school training is essential for architects.

3. I really do not know what effective action can be taken here. I can think of all sorts of things, but these are no more than irritants—it is perhaps a matter which can only be taken up on the political plane.*

4. I should think that if the RIBA gets on with 1, 2 and 3, they will be busy enough.

Douglas Jones writes:

1. The direct relationship with the public enjoyed by the architect in private practice is probably diminishing and may disappear entirely. It might be replaced by a system akin to the National Health Scheme in which architects enjoy the same semi-official status as medical practitioners and their trade union exercise similar functions to those of the BMA. Such a scheme would also, by ensuring the widespread, if not universal use of architects' services, go some way to solving the problems mentioned in Question 3: that of architectural practice being carried out at cut rates by non-architects.

The status of salaried qualified architects in public and large commercial offices need even more drastic attention and the

* Alas, if it were only practicable to limit all jobs above a certain value to architects.

organization of such offices as teams of experts with varying degrees of experience rather than of grades of assistants should be the ultimate aim. A trade union's negotiations must be based on the assumption that this aim will in time be achieved.

2. There are two outstanding educational problems. The first is the dissatisfaction felt by architects, employers and teachers with a system of school training which is not, at the moment, producing trained architects ready to make a contribution of real value to those who employ them. It is essential that a solution be found and universally adopted to bridge this gap between the schools and the world in which their products hope to earn a living.

The second problem is part-time training concerning which the evidence of your recent guest editor, Professor Bowen, is highly significant. According to him, 50 per cent. of non-full-time school trained men take 11 years to qualify and 20 per cent. take up to 10 years. These facts do not prove that one system is better than another, but they do show that the non-full-time trained student is at a serious disadvantage compared with his full-time trained counterpart—an anomaly which it is in the interests of the profession to put right.

3. The RIBA Council might devote some time to considering its own structure and making clear its functions to RIBA members. At this moment it consists of 75 members about half of whom are elected and the remainder are "nominated representatives." As at present constituted, is it best suited to deal efficiently with the present needs of the profession?

REPLIES FROM ASSOCIATES OF THE RIBA

Nominated by Council: William Allen, Robert Matthew, F. C. Curtis

William Allen writes:

1. The first job of any new organization such as a trade union is, of course, to get accurate factual data about the problems besetting its members. Subject to this, it seems to me on the face of it that the most urgent matter is then to see how architects compare with other senior professions in respect of status, competence, responsibilities, opportunities, and salaries or fees, and then to get to work on redressing deficiencies.

2. The outstanding problem in education is surely the development of post-graduate schools. This is an obvious place for architectural research, and research is the key to power and influence in the modern world. Improvement of undergraduate teaching would then take place almost automatically, and the profession would be greatly strengthened in its specialist knowledge both of building types and of technology. A second problem, perhaps related to this, is how to get the best experience from practice brought directly into the studio.

3. Here is another field where presumably we need more data—this time about how much and where architectural work is still carried out by non-architects, and why it happens. Perhaps we need something akin to a "poor man's panel" for some of the housing work, and there is the outstanding problem of the architectural work done by such people as borough engineers. Pressure that already exists to us architects might be intensified, but to some extent its acceptance depends on better and better demonstrations to the "consumer" that his money for building work is best put in the hands of architects.

4. There are so many problems that the Council can take up. Perhaps outstanding is this question of architects in business and industry which needs bringing to the surface, and the income tax position of the private offices, which have so little opportunity to become financially resilient. Then there is the question of pensions for assistants in private offices. On a broader canvas one could continue to press forward improvements in the relation between provincial practitioners and the Institute's activities, and between the Institute here in Britain and architects in the Colonies and Dominions. The list could go on.

Robert Matthew

Robert Matthew, writing from Prestwick Airport, on his way to America, expressed regret that he had little time in which to answer these questions, and suggested that we refer readers to his recent talks, and especially his Inaugural Address as Professor of Architecture, University of Edinburgh (published in the JOURNAL of November 26, 1953), to his article in the *Manchester Guardian* of April 5, and to his articles as Guest Editor to the JOURNAL in 1952. We have taken the opportunity of printing quotations from these articles and give his answers to two questions.

1. "I think the Union, if there is to be one, might think about the question of the statutory appointment of architects on the same lines as doctors."

2. From the *Manchester Guardian*. "This country will get the buildings it requires by one means or another, and the sooner the problem of industrial design is understood by the architect, the sooner the essential links are made, through the designer, between producer and client, the better. This opens a whole new field in architectural education, for methods are generally the same today as they were twenty-five years ago, when building was taken as based on the ancient handicrafts. As in medical education, practice and teaching must at some stage go hand in hand; the practical processes of today are not only different from those of yesterday but are developing rapidly. An essential triangular link between the universities (in the sphere of post-graduate architectural research), the public building authority, and the industrial producer is at present entirely missing—but here again there are some signs that this difficult relationship, focusing on an actual building project, may be brought about in one English university architectural department."

From Robert Matthew's Inaugural Address. "It is an astonishing and unfortunate fact that there is at present almost no post-graduate research work taking place in any university architectural department in this country. America is a long way ahead of us here . . . there is no doubt that a contributory factor to the slow evolution of building technique is this strange gap in Academic work."

F. C. Curtis writes :

1. The most urgent, but by no means only, problem to be tackled by such a body would be that of ensuring good pay for salaried architects, no matter where and by whom they were employed.

2. Today, as ever—telling those who have a genuine desire to make themselves into good architects how to go about it. Alterations in the system: remove extraneous subjects, such as sociology, research into soap manufacture, and the art of getting a group of chaps to do all the work for you into the spheres where they belong: self-education in citizenship, hobbies and blood sports.

3. Work towards a revision of the Architects' Registration Act which would eventually make it illegal for non-architects to be in architectural practice.

4. The fight against the subordination of architects in public authorities under engineers and surveyors.

I have one other comment and that is, that I do not consider our profession a new one as compared, for instance, with atomic scientists.

Nominated by Members: W. D. Lacey, Douglas W. Richardson

W. D. Lacey writes :

1. It seems to me, as a member of the staff of a local authority office, that the function of a trades union allied to the RIBA should be to look after the material interests of all salaried members. It should deal with problems of status and responsibilities, remuneration and conditions of service; it should be competent to negotiate with government departments and public authorities. The first task of the new organization should be to establish itself as an essential part of the architectural profession, representing all salaried members and receiving the support of architects as a whole, for it is only then that it can act authoritatively in its relationships with the public and employing authorities. Its policy should be not only to look after the material interests of the members, but at the same time to connect this with the continued improvement of the standard of service provided by architects. Undoubtedly the formation of a trades union has received a great deal of support because salaried members are concerned about their remuneration and conditions of working. Under present conditions there appears to be little prospect of more than a small proportion of salaried members ever getting a reasonable professional salary. As an immediate task I should like to see the RIBA Council approach the Inland Revenue—as suggested by Prof. Bowen—to establish the facts of the architects' salaries and the true seriousness of the present position.

2. In a satisfactory system of architectural education it is obviously desirable for a working relationship to exist between the schools of architecture and offices carrying out a large amount of work. The lecturers and studio instructors should be "top men" in their own subjects. So far, the profession does not appear to have found a satisfactory method of achieving this, the demands of running a busy office and teaching at a school seem to be incompatible. But if the present standard of architectural education is to be improved and the deficiency of practical content made good, the profession must go on studying this problem. It must try and find a way in which the busy architect, whether in private practice or official employment, can give the students the benefit of his views and experience.

3. It seems to me that the hard core of this problem is that the profession has not established with the public that the architect by virtue of his training and experience is better able to design and organize a building job than either the engineer or the builder working alone. The RIBA in its publicity should continue to try and get over the fact that the client can save money by employing an architect. Also that, by his skill, the architect can make an economic contribution and ensure that the best value is obtained for the money spent on the job. The RIBA should strenuously prevent any insidious practice by borough engineers or vested industries from encroaching on the architect's functions.

4. If the RIBA Council could satisfactorily solve the problems discussed in the previous questions, then 1954-55 would be a significant year in the history of the architectural profession.

Douglas W. Richardson writes :

1. To see to it that architects are engaged as architects with authority and responsibility and not as building draughtsmen in engineer's offices, and that remuneration is appropriate to such employment. It is also desirable for the number of qualified architects to be reasonably proportionate to the requirements of the building industry.

2. Some study of the economic limitations to design should be made in the last two years of an architectural course.

3. This is a matter which could perhaps with advantage be corrected by legislation on a broad front.

No one should, in my opinion, be allowed to practice in any science without holding a university degree in it or having passed the examinations of a particular chartered learned society, membership of such a society being voluntary.

4. Although there will always be architectural work available for a minority, it is desirable that present æsthetic and constructional trends should be carefully examined and criticized, in order that an architect shall be an essential designer and not engineered and prefabricated out of existence, leaving English architecture with no character of its own.

REPLIES FROM LICENCIATES OF THE RIBA

Nominated by Council: S. V. Goodman, Dudley W. Joel

S. V. Goodman writes :

The Council is elected by two methods, (*a*) by classes of membership, (*b*) by geographical representation, and having previously served on the council in each capacity, I can endorse the comments of your leading article (April 29).

1. Changing conditions have brought about corresponding changes in personnel of the Council, but vision of the prosperity of the profession as a whole is more important than sectional interest. We in Local Government Service know quite well that a healthy and prosperous private practice forms a good background to any discussion on conditions of service with an Authority. The suggested Union will no doubt concern itself with conditions in salaried employment, and I hope this will result in more interchange between public and private practice.

2. Education in the schools is amply justified by the product, and Portland Place has the atmosphere of home to the architect. These facilities are, however, enjoyed by comparatively few. Colleges of Further Education are materializing slowly and facilities there are biased by pressure from industrial sources. Our students in the provinces need all the support the Institute can give them in the provision of facilities they lack through living away from London. This can only be done through co-operation between the Council, Allied Societies' Conference and the students themselves.

3. The problem of architectural practice by non-architects can only effectively be cured by co-operation with the building federations. The quantity surveyor has made himself indispensable to the builder, who in turn looks to the architect for the best of his work.

Dudley W. Joel writes:

1. There is a risk, I think, that unless the Institute does more to look after the interests of its younger salaried members a large number may be tempted to join a body which does, and thereafter defect from the RIBA, which could have most serious consequences. As most architects are individualists I cannot see that any form of trade union could succeed in the profession, but do consider that something must be done to improve the status of the middle grade salaried architects. A negotiating body set up by the RIBA and to comprise employers and employees could, I feel, recommend a Scale of Minimum Salaries equated against specific qualification, or capabilities, and the acceptance of this scale generally by the profession could be considerably helped by strong backing from the Institute and also by its being taken up by the Allied Societies throughout the country. With the study of minimum salaries these might also be a consideration of profit sharing schemes.

2. The co-relation of practical training with academic education in one effective system of education.

3. The amendment of the Registration Act, nothing less.

4. That of allowing school trained architects to become qualified before they have sufficient practical experience. This can, and has, been instrumental in making the general public a little doubtful as to the advantages of employing a qualified architect and must be attended to before any amendment of the Registration Act can be called for.

Nominated by Members: Allan W. Vincent

Allan W. Vincent writes:

1. Urgent and complete review of all salaries, fees and status, on a basis not less than that enjoyed by the medical profession with which our exacting work and period of training is on par, being complementary and not dissimilar in nature, *i.e.*, in the public interest.

2. There are many, but I suggest that pupils and graduates should be given more practical experience in drawing offices; that X hours should be allowed for practical experience with tradesmen on work in progress, to obtain a better insight into their work. An example can be seen in the work of Dutch and Danish architects, particularly the magnificent design of brickwork in elevational treatment, the result of practical training with bricklayers and masons.

3. This is a difficult problem, but much is being done by city and borough architects when development applications are considered under Town and Country Planning and Byelaw control. Unsuitable drawings are being rejected, which can be a great deterrent.

4. City and borough architects should be statutory chief officers in accordance with the Local Government Act, 1933, in exactly the same way as town clerks, borough engineers and surveyors, and sanitary inspectors. They should be given the responsibility of employing private architects when the occasion arises in conjunction with Ministerial officials and not left to the tender mercies of Councillors, etc. Although my application is being supported by salaried members of the City and borough architects, and County architects' societies, I realize through experience in private practice that private architects and their assistants have special problems, the major one being continuity of work, which affects all in the profession. I would consider and support any practical proposition brought to my notice by members of our profession.

WHY SEVEN NOMINEES WOULD NOT REPLY

Fellows of the RIBA: Ronald Bradbury, H. Conolly, P. G. Fairhurst, F. J. Ormrod, N. Pyman

Ronald Bradbury writes:

How can the four questions you pose be answered when candidates do not know what the RIBA has done, is doing, or proposes to do, about the matters raised? It is a very poor councillor indeed who goes on to a council with preconceived views, arrived at without his having had access to the full facts on which an opinion alone should be based.

If elected, I shall study the full facts relative to each of the questions listed by you, before I come to a decision, and, in making that decision, I shall have the best interests of the profession as a whole honestly and sincerely in mind.

H. Conolly writes:

I agree that the questions you pose are important ones, and I congratulate the AJ on its insight into the problems of the profession. I have thought the matter over care-

fully, and I have come to the conclusion that I must ask you to excuse me from giving direct answers in the form you have set out.

You see, I have not been on the Council of the RIBA during this last session, and therefore I do not know to what extent these problems have in fact been discussed, or what action is proposed. Certainly, as a member of the Salaried and Official Architects' Committee, I knew the early history of the Report of that body on the question of trade unionism. But now that the matter is with the Council, it must surely be *sub judice* for the present. In this and other matters, unilateral statements by a candidate for election like myself could possibly be injudicious at this stage.

P. G. Fairhurst writes:

I have carefully considered your letter asking for my opinions on certain subjects for publication prior to the voting for the RIBA Council. I can quite understand that it is very difficult for some members to know the qualifications of candidates but your solution savours of canvassing for votes which would in my opinion be wrong for a professional body.

You will appreciate that as an existing member of the executive and Council, I am not disposed to allow you to publish my views on matters which are already under active consideration.

F. J. Ormrod writes:

I do feel that as it is the accepted procedure that all candidates are asked to supply standard information for publication in the RIBA Journal, candidates should adhere to the present arrangement, pending any agreed variation in this practice.

As a present member of the Council, I also feel that I am not in a position to publicly discuss, in the form you suggest, matters which are at present under consideration by Council.

N. Pyman writes:

As a member of Council I consider it wrong to express in public individual opinions, when the matter is being so seriously discussed by Council.

Associates of the RIBA: S. E. T. Cusdin, Norman P. Thomas

S. E. T. Cusdin writes:

I do not think anyone could form a proper assessment of a candidate for the RIBA Council by reading answers limited to 300 words on four major controversial subjects, full information concerning which is not generally known.

I believe your space would serve the profession better by telling your readers to vote only for the candidates known to them to be people capable of making a judgment on these and the other major questions before the Institute, and not people who are prepared to commit themselves before full knowledge of all the facts.

Norman P. Thomas writes:

In a Professional Institute I do not consider that it should be either necessary or desirable to publish the views of candidates for election to Council in one particular, or for that matter any technical journal, and I therefore regret that I am unable to reply to your questions.

The following did not wish to make public their reasons for not replying:
Fellows of the RIBA: W. Arthur Rutter, R. E. Enthoven, A. M. Chitty.
Associates of the RIBA: J. Gordon Woollatt.

At the Royal Institute of British Architects Annual General Meeting last week Howard Robertson, the President, presented the Annual Report of the Council and moved that it be received. Below is a greatly shortened account of the principal points raised during the discussion which followed.

RIBA

Annual General Meeting

JOINT COMMITTEE ON TENDERING PROCEDURE

H. Conolly: "I should like to ask whether any step has been taken to implement what, after all, is the most important recommendation in the Report, namely, the setting up of a Joint Consultative Committee with the Builders and Quantity Surveyors?"

The President: "Its sequel is already in being. Its membership has been appointed and its proceedings will start as soon as is feasible."

PRACTICE BY UNQUALIFIED PEOPLE

H. Conolly noted that a full report was published in the RIBA Journal last December. "I hope it does not stop there, and I should like to know what action if any, is being taken."

R. E. Enthoven: "There is not much that I can add to the Report. . . . We have found it difficult to do anything at high level . . . but a great deal can be done in different ways, particularly in the provinces. We hope that the allied societies are doing what they can and we shall be having a meeting of the public relations officers during the summer. Since the report was published we have not only met the representatives of the building societies, but on their advice met the National Federation of Registered House Builders and we feel that something can be done there."

MEMBERSHIP

H. Conolly said that the membership figures seemed healthy; three fewer Fellows, 68 fewer Licentiates, 88 fewer Students and 930 more Associates. The number of Associates had more than doubled since 1948 and the relative proportion between the Associate class and the Fellow class had altered very considerably. He wondered whether there were not a number of Associates who could, and should, be Fellows and whether the rules for entry into the Fellow class were too stringent. Finally, should the representation of the Associate class on the Council be looked at again?

No reply.

COMPETITIONS

H. Conolly: "What have the Competitions Committee to say about the possibility of speeding up procedure? Today with large programmes and fixed dates it is not easy to hold a competition and that is hard on young men of genius. In the Report of the Competitions Committee we note the reference to the Strasbourg Experiment has possibilities for the future."

Michael Farey replied that they had not come to any definite conclusion on how to speed up the preliminary announcement of competitions. It was agreed that the time taken for the answers to questions should be cut down considerably. There was a good deal of feeling in favour of two-stage competitions. No decision had been taken but it was felt

that it would be a good idea. The Strasbourg experiment (a competition for a complete tender, reputable firms were selected to put in schemes and there was collaboration between the architect, quantity surveyor and contractor) involved some big public body sponsoring, and the scheme was being discussed between the Institute and the Ministry, no actual scheme had been formulated.

K. C. Evans asked if it would be possible for the sponsors of a competition to compile from the entries a panel of architects to be used for future work.

The President: "If it was repetitive work—schools, hospitals or other buildings of which quite a number have to be done in the course of a few years—such a panel might be useful . . . an interesting suggestion which should be brought to the notice of the committee."

PUBLIC RELATIONS COMMITTEE

H. Conolly said he was glad to see the Report of the distribution of the two pamphlets, "The Architect and His Work" and "Before You Build," and asked if there had been any tangible result.

E. D. Jefferiss Matthews: "It is early days yet for there to be any tangible result." . . . After broadcasting and television programmes there have been marked increases in applications from completely outside services for this pamphlet. After one television programme alone there were 600 letters next morning asking for the pamphlet."

H. T. Swain said that he thought of the annual conference as part of the Public Relations of the profession, and that it therefore came under this heading. He felt that the annual conference was far too much a social occasion and not sufficiently an occasion for putting the point of view of the profession to the general public and discussing publicly, and before the correspondents of various papers, the very real building problems facing this country.

E. D. Jefferiss Matthews pointed out that a new committee had now been set up to consider the conference.

SALARIED AND OFFICIAL ARCHITECTS COMMITTEE

Thurston Williams asked what subjects the Committee had under consideration relating to black-listing. He would like to see this matter connected with the employment of non-architects in local authority offices in charge of architects. He also pointed out that both public authority employers and private employers sometimes refused to call their architectural staff architects. He wanted to know if the RIBA had ever made representations to the Chancellor at Budget time along with other organizations and whether it had given consideration to putting a little pressure on its own members with regard to the question of equal pay for men and women.

Leonard C. Howitt: "We feel that it is impossible to black-list the job because the employer is not an architect, because if we do that and prevent a qualified architect from taking the job his place would be filled by an unqualified architect, and that would not help the cause of architecture. We frequently make representations to employing authorities who call their architects "Admiralty Engineers" and so on. We cannot make them do anything."

The President, answering the question of equal pay, said: "We do not care for discrimination against either sex if they are qualified and rank for certain categories, and action would be taken if attention was called to a case."

SCHOOL DESIGN AND CONSTRUCTION COMMITTEE

H. Conolly: "This was stopped in the constructive work which it wanted to do by the Executive's veto and it seems to me that all they can do now is to sit around. . . . There is possibly a cause for disbanding the committee."

The President: "We should have to take that as a point for the Council."

SCIENCE COMMITTEE

H. Conolly: "When are they going to persuade the BRS to write Volume 2 of "The Principles of Modern Building?"

George Fairweather, replying, said that he had heard unofficially that Volume 2 was in draft and was being considered by the BRS at the moment. The Science Committee were pressing BRS to hasten publication.

BOARD OF ARCHITECTURAL EDUCATION

H. Conolly: "When is the Report of the McMorran Committee going to be published and when it is published will it be possible for us to know whether in fact that is the report which the Committee wrote or whether it has gone through the mill and been altered out of all recognition?"

Thomas Mitchell said: "We are dealing with it in the worst Government Department manner; a further year has passed and we have heard nothing more. We have a flood of post-war building and we don't know whether we are training our young men in a proper way to meet it."

Thurston Williams: "I raised this issue last year and was under the impression . . . that it would be coming out at any moment. I also asked that when the Report was in a more or less finalized stage the membership should have an opportunity to discuss it."

Anthony M. Chitty: "I have really nothing to add to what is published in the report to the Council. The Committee has held twelve meetings since the interim report was published and in recent months it has met every two weeks and spent the better part of a day on this subject. I hope that we shall hear something worth while before long and I hope, this year, but I cannot promise that. As regards the publication of the report . . . this is a committee of the Council (and they will report to the Council . . . the Council will do what they see fit with the Report.")

THE TOWN AND COUNTRY PLANNING AND HOUSING COMMITTEE

H. Conolly: "It is what is not in the Report that worries me because there are some very big problems today . . . which are not dealt with. . . . I should like to know whether the RIBA has thought about the rebuilding of the City of London from the point of view of seeing if it is possible either to introduce architectural control, or better still, to encourage the architects to do good architecture. Have there been any talks with the Ministerial Departments or the City Fathers?"

Professor Sir William Holford: "There are two procedures now going forward which are comparatively new. One is that there is a regular unofficial meeting between all the authorities at which alternative models are prepared for different areas, with the idea of giving individual architects an opportunity to look at the 'envelopes' suggested, the street line, the grouping and so on, so that they will be more likely to put in schemes which will receive fairly quick approval by the two authorities concerned, the LCC and the City Corporation.

"The other is that we have been asked to examine a number of the proposals which originated in the old plan of 1947 and relate them to very changed economic conditions. We were not in the early years after the war prepared for the slowness and unwillingness of owners to rebuild. The trouble has been, as everyone knows, that very often people who have not much interest in the quality of the building have rushed forward and obtained licences, while those who take time to think about what they want and commission good architects have been slow. The result is that although I have jotted down the names of forty firms the principals of which at least are members of this Institute and all work in the City, there are no doubt other names which all of us would wish to be represented on that list but are not. I do not know what the Institute can do about that. The procedure is being made more flexible."

H. Conolly asked whether the Institute thought that the new towns were architecturally successful or failures.

Peter Shepheard: "The Committee have not specifically considered the New Towns as such and it is a very reasonable suggestion that they should do so, though what they can do about it is not clear to me at the moment. The New Towns suffer from problems related to the sort of density at which they are expected to be built, and their layout, and the sort of dwellings that the people who live in them are considered by the New Town Corporations to want. The Corporations are autonomous bodies, and were given that autonomy in order that there should be as many different kinds of New Towns as possible. We shall certainly consider that, because it is a good subject for the Committee."

H. Conolly asked: "Is there anything we can do about speculative builders 'hashitecture' which is going to be encouraged still more by MacMillan's announcement. Is there any chance of helping the little man instead of the speculative builder?"

Peter Shepheard: "We are considering the implications of a very wide scale of architectural control, with the object of seeing how it works. One of the main things which we wish to consider is how it works in relation to the recrudescence of speculative building. I am not optimistic that architectural control can do more than turn something hideous into something dull, but it may be that that is what we should aim at so far as the speculative builder is concerned. There is only one way of improving speculative building, and that is to see that more architects do it. That is Institute policy, though perhaps not quite under my Committee."

Kenneth J. Campbell asked if the lighting of the lecture hall could be improved by introducing sparkle in the lighting and preventing the speakers on the platform being obscured because they were silhouetted against the white background.

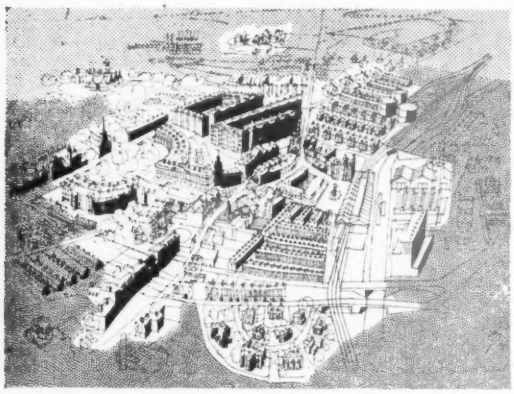
Lt.-Col. L. K. Watson supported Mr. Campbell.
The President: "We have had two very constructive suggestions."

WHY FLATS ARE MORE EXPENSIVE THAN HOUSES

A. A. MacFarlane: "Does it come within the province of the Committee to make some statement to show why it is that multi-storey dwellings cost so much more than houses in this country? There must be some value of land at which it is economic to build multi-storey dwellings."

Peter Shepheard: "We did try to find out, at the suggestion of one of the members of the committee who had travelled a good deal abroad, why multi-storey dwellings are more expensive than houses in England, whereas abroad they are cheaper. Frankly, we have found no evidence to suggest why that is so, but it is very largely connected, I think, with the attitude of the builder. To him a house is a house, and everybody knows how to do it even without an architect, but a multi-storey dwelling is a building, something for which you tender, and everything is quite different. That is all that came out of our discussions, and it is very unsatisfactory. I am sure that there must be some complicated reasons for this undoubted fact. The new Swiss book on housing shows that even 10-storey and 15-storey flats are cheaper than 2-storey houses and 3-storey flats in the same town and by similar contractors."

The President then formally moved the resolution for the Report to be received and the resolution was carried.



CONVERSIONS

Our Guest Editor for the year, Felix Walter, who is providing a series of articles on the conversion of old buildings, asked George Fairweather to write the following analysis of causes and cures of dilapidation. (On the left is a sketch by Gordon Cullen—published full size on March 11—showing the types of property whose conversion will be discussed during the year.)

DILAPIDATION IN BUILDINGS

WEATHER

The causes of dilapidation in buildings vary widely in origin and activity, but in practice, those most commonly encountered arise directly or indirectly from the weather.

As a factor in the design of buildings, consideration of the effects of the weather and its control does not always receive the attention it deserves, and this omission probably explains the failure of so many landlords to maintain their buildings in sound repair.

To maintain the weather resistance of a building, protective treatments may have to be renewed from time to time, and claddings may have to be repaired or replaced with new materials. Easy access and suitable fixings should always be provided to facilitate these works, and features that are difficult to maintain should be avoided.

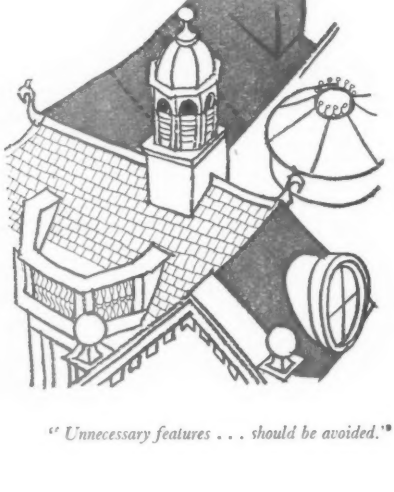
A further difficulty of maintenance arises from the possibility that external coverings may fail without showing any immediate result. The internal structure may in this way be exposed to conditions it is not designed to resist and may be extensively damaged before the original fault is discovered.

It is sometimes possible to introduce a second line of defence against failures of external coverings, or to introduce a system of warning to indicate such a failure, but sound detailing of construction and straightforward arrangements for surface water drainage are the surest remedies.

By complicating construction and obstructing the course of surface water drainage, recessed or projecting features increase the problems of maintaining the efficiency of external coverings. Unnecessary features of this kind should be avoided, otherwise they should be designed and constructed to embody all necessary safeguards against the additional risks they involve.

"Easy access . . . should always be provided."

" . . . introduce a system of warning."



" Unnecessary features . . . should be avoided."

Architects can therefore make a useful contribution towards the control of dilapidation by embodying the following features in their designs:

1. The main loadbearing and inaccessible parts of a building should be constructed so that they are:—
   (*a*) virtually permanent and unaffected by the conditions to which they are exposed, or;
   (*b*) suitably protected from such conditions as may destroy them.

2. The materials of claddings and other exposed parts of a building should be selected and arranged so that they are:
   (*a*) highly resistant to the conditions to which they are exposed, and;
   (*b*) easily accessible for renewal or repair.

3. Safeguards should be embodied wherever practicable to prevent possible extension of damage when materials fail in vulnerable positions, such as:
   (*a*) a second line of defence, and ;
   (*b*) a system of warning that failure has occurred.

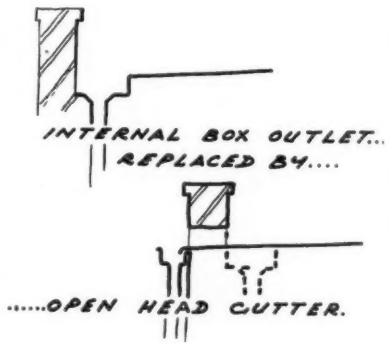
Roofs: The characteristics and performance of most types of roof coverings are well known, and providing that the normal requirements of arrangement and fixing are observed, no special difficulty should be experienced in maintaining them.

Occasional failure of roof coverings within the area of slopes or flat gradients will not as a rule cause serious damage internally. This is mainly due to the fact that the slopes or falls of the coverings within these areas will prevent accumulations of rainwater and so confine the amount and duration of leakage.

Failure of coverings at points or lines of intersection between adjoining slopes or structures, and in the regions of enclosed gutters are however an important cause of dilapidation in buildings. The risk of failure in these parts is aggravated by the complexity of their structural requirements, and the consequences are accentuated by the fact that rainwater is liable to drain in their direction from adjoining surfaces.

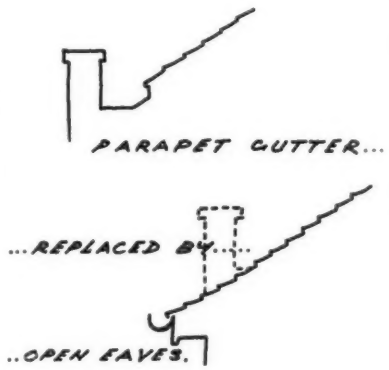
The flashings and linings of roof intersections and gutters are generally constructed of thin malleable metal sheets, shaped and fitted to form overlapping joints at their edges. These joints are not usually sealed, but are designed to take up the differential movements between the structures they join as well as the movements of expansion and contraction. Adequate falls are therefore necessary to ensure the free drainage of rainwater, and special precautions must be taken to prevent flooding.

In the inspection of a building with a view to rehabilitation or conversion, the arrangement and construction of all flashings and gutters should be carefully checked to ensure that they are suitable—and are not menaced by the danger of occasional flooding. Consideration should also be given to the possibilities for minimising the risks of future dilapidation by replacing deficient or unsuitable arrangements with new and more reliable ones.



Box outlets fail mainly because (a) leaves and silt are liable to collect in the box and choke the outlet (b) construction of the box involves the use of many small pieces of material which are liable to move and fracture the coverings.

Parapet gutters and arrangements necessary for their drainage are a frequent cause for serious dilapidation in buildings. They are difficult to repair or renew, and their drainage outlets are often inadequate. The damp proofing arrangements in parapets may also be deficient and expose the bearings of the roof to excessive damp with the inevitable risk of dry rot. In a case of this kind, the desirability of replacing the parapet and gutter by extending the roof slope over the external wall to form an open eaves should be considered.

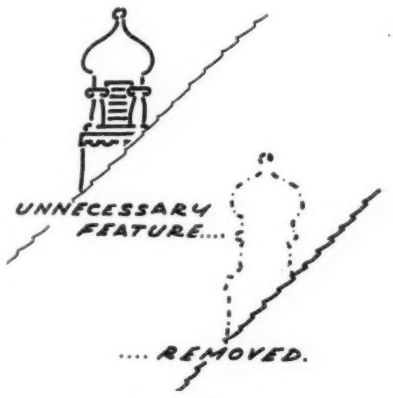


Showing removal of parapet wall and extension of existing roof slope carried over to form new eaves.

Internal valley gutters between converging roof slopes frequently involve even greater problems of maintenance, particularly when the outlet for drainage is restricted. A simple solution to problems arising from this arrangement can generally be achieved by stripping the coverings of the converging slopes and constructing a flat roof between the ridges.

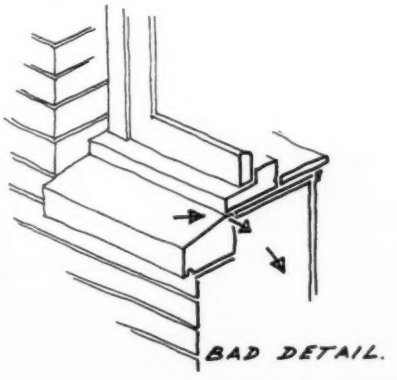
The flat roof framework can generally be of light construction relying on intermediate strutting from purlin positions.

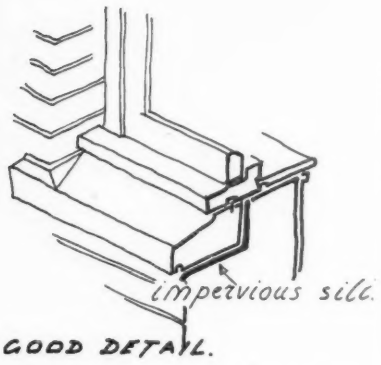
All unnecessary features involving intersection of roof slopes should be removed in any comprehensive scheme of roof repair, and overflows should be provided in all positions where the failure of drainage is liable to cause flooding.



External walls: The conditions most likely to break down the weather resistance of external walls are created by such features as windows, balustraded balconies and ornamental projections.

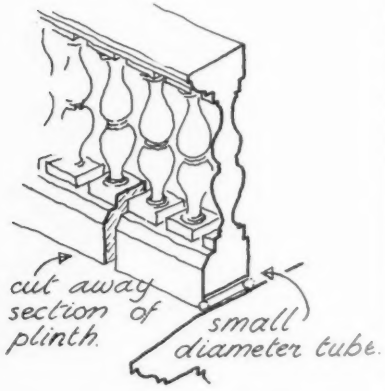
Defective pointing where door and window frames meet the reveals may cause serious leakages in exposed elevations, but this defect is easy to remedy. Failure at sill level is a more difficult problem however, and generally arises from unsuitable design. A simple system of metal flashings will generally relieve this weakness for a time, but it does not provide a solution.





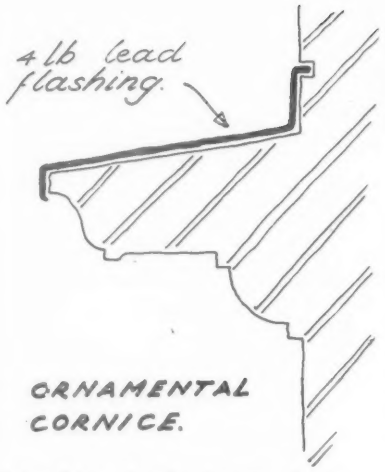
Where possible the introduction of a sill of efficient design should be considered where serious leakage occurs.

Balustraded balconies or enclosed flats over projecting bays very often rely upon a small diameter tube inserted through the plinth for drainage. This tube frequently chokes and causes flooding which may overcome the protection of the flashings. To correct this weakness, a section of the plinth should be cut away to give free drainage.



The balcony coverings and skirtings should be extended through the plinth where cut to drain over the cornice projection. The cornice should be protected with an impervious covering (see next column).

Ornamental projections in the form of cornices and string courses are a more common cause for dilapidation than might be supposed. If these features are to be preserved, their weathering surfaces must be covered with impervious material, or otherwise rendered water repellent. This protection is not often provided, and serious deterioration occurs with accompanying failure of the weather resistance of the wall. Serious failures also arise when drainage pipes are carried through the thickness of a cornice to avoid the unsightly alternative of carrying them round the projection. When this practice is adopted, lead sleeves should always be embodied.



Serious disintegration of cornices commonly arises from the absence of protection on the top weathering edge.

Small projections can be usefully protected by cement and sand-fillets.

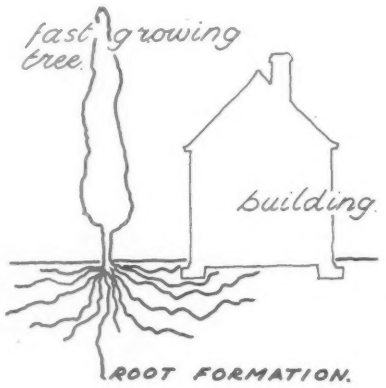
The weathering surfaces of even small projections in facing brickwork must be carefully maintained if serious concentrations of rainwater are to be avoided.

SUBSOIL

Variations of water content will influence the strength and behaviour of most soils, and is a common cause of uneven settlements in the foundations of buildings.

Clay is more susceptible to the influence of water than gravel, and its capacity for sustaining pressure is almost entirely governed by the amount of water present. Clay becomes unreliable as a bearing soil when saturation is exceeded, and it contracts appreciably when the water content is reduced.

The water content of clay formation is seldom constant, and is liable to change locally under the drying or wetting influence of the weather. Exposure to the wind and sun will lower the water content of a relatively thin layer without causing appreciable change in the soil of lower regions. Rapidly growing trees will also reduce the water content of the soil within range of the roots, and open excavations or loosely filled drainage trenches will extract the water from adjacent ground without altering the conditions beyond.



The fast growing poplar tree should not be nearer than 50 feet from a building.

The stresses induced in the foundations of the average two- or three-storey house of brick or stone construction will generally be much less than the safe bearing strength of the soil. Nevertheless, unequal settlements are common, and the walls fracture in the superstructure because their strength has been exceeded. Brick or stone masonry provides little or no resistance to the stresses arising from unequal ground settlements, and although the occasional fracture of thick walls may not seriously affect the stability of a building, the thinner walls of present day construction may be dangerously weakened.

Before undertaking major works of repair for the correction of defects arising from variable foundation movements, very great care should be taken to ascertain the original causes. The correction of deficiencies at foundation will involve a high degree of speculation even when the causes are apparent, and should be undertaken only when such a course is clearly necessary to prevent serious failure of the main structure.

Where variable movement occurs in shallow foundations due to the seasonal changes of weather, some relief may be achieved by covering the adjoining ground surface with a weathering concrete layer. Resistance to frost penetration will be improved if this concrete is laid over a thick bed of gravel or hardcore.

'BROLAC' ENAMEL PAINT

Surface	Preparation	Treatment
New Woodwork	The wood must be dry, smooth, clean and free from grease. It should be rubbed down well with sandpaper, across the grain, finishing along the grain. Joints, edges, corners and ends need special attention. Screws should be countersunk and nails punched just below the surface, depressions being stopped or filled after priming. The surface should be dusted off. Very bad knots should be cut out and the holes filled with sound wood. Normal knots or resinous areas should be coated with two thin coats of Hall's Knotting.	1st coat: Brolead red and white lead pink primer, or Brolinium aluminium primer: see notes on reverse of Sheet. When dry, this should be rubbed down and stopped. 2nd coat: Brolac undercoat. 3rd coat: Brolac Enamel Paint finish.
Old Woodwork (previously painted)	If paintwork is reasonably sound it should be washed down thoroughly to remove dirt and grease. Warm water with sugar soap or a mild paint-washing preparation should be used, followed by thorough rinsing with cold water. It should then be rubbed down with sandpaper or pumice to a matt surface, any bare patches primed, and all cracks stopped and made good with filler where necessary. Where the paintwork is in bad condition it should be completely stripped off with Ripping Paint Remover or a blow lamp. If damp has penetrated considerably, the latter process will assist drying. The surface to be treated as for new wood.	1st coat: Bare patches should be "spot-primed" with Brolead red and white lead pink primer or Brolinium aluminium primer: see notes on reverse of Sheet. When dry, this should be rubbed down and stopped. 2nd coat: Brolac undercoat. 3rd coat: Brolac Enamel Paint finish.
New Iron and Steel	The surface must be dry, clean and free from oil, grease and rust. Mill scale must be removed by chipping or scraping, or by oxy-acetylene flame; rust, by mechanical cleaning or by wire-brushing. To eliminate remaining traces of corrosion the surface should be treated with "Bristol" Phosphate Rust-inhibiting Solution: see notes on reverse of Sheet.	1st coat: Brolac Anti-corrosive Primer 570/25. This should be allowed to dry hard. 2nd coat: Brolac undercoat. 3rd coat: Brolac Enamel Paint finish.
Old Iron and Steel (previously painted)	If paintwork is intact, firmly adhering and free from all traces of rust, it should be washed down thoroughly to remove dirt and grease. Warm water with sugar soap or a mild paint-washing preparation should be used, followed by thorough rinsing with cold water. It should then be rubbed down with sandpaper or pumice to a matt surface, and any bare patches "spot-primed" with Brolac Anti-corrosive Primer 570/25. Where paintwork is in bad condition it should be completely stripped off with Ripping Paint Remover or a blow lamp. Where traces of rust remain, Bristol Phosphate Rust-inhibiting Solution should be applied.	1st coat: Brolac Anti-corrosive Primer 570/25, "spot-primed" where necessary and allowed to dry hard. 2nd coat: Brolac undercoat. 3rd coat: Brolac Enamel Paint finish.
New Aluminium	Should be cleaned thoroughly and degreased, then rubbed lightly with fine emery paper or steel wool and white spirit, care being taken to remove all traces of corrosion (this takes the form of a white powdery deposit).	1st coat: Hall's Grey Chromated Primer 570/7 (for aluminium only). 2nd coat: Brolac undercoat. 3rd coat: Brolac Enamel Paint finish.
New Galvanised Iron	The impervious zinc coating offers a poor key for painting and must be remedied by either: (*a*) Weathering for at least six months, by which time a minute film of oxide will have formed, giving sufficient key for painting. (*b*) The use of copper-sulphate solution, to etch the surface slightly (after thorough degreasing). One coat Mordant Solution 527/4 should be applied by brush and left for 10 minutes. It should then be washed down with water, using hot water for final wash if possible, as heat helps to dry off the metal.	1st coat: Brolac Anti-corrosive Primer 570/25. 2nd coat: Brolac undercoat. 3rd coat: Brolac Enamel Paint finish.
Copper, Brass, etc.	These surfaces should be cleaned free from grease and then etched lightly with steel wool and white spirit to form a key.	
Old Aluminium, Copper, Galvanised Iron, etc. (previously painted)	If paintwork is sound it should be washed down thoroughly to remove dirt and grease and rubbed down to a matt surface (as already described for other previously-painted surfaces). Where paintwork is in bad condition it should be completely stripped off with Ripping Paint Remover.	Treat as for new surface.

38.C3 'BROLAC' ENAMEL PAINT

Surface	Preparation	Treatment
New Lime Plasters, Brickwork, Masonry, Cement Rendering, Asbestos-Cement Hardwall (retarded hemihydrate plasters) Anhydrous (Keenes, Parian) and Anhydrite (Pioneer) Plasters	All new surfaces *must* be allowed to dry thoroughly before applying a permanent finish like Brolac. (If decoration is required within 6 months on a still "wet" surface, Murac P.E.P. Plastic Emulsion Paint or Bristol Oil-bound Water Paint should be used.) All loose material should be scraped off, including sand and any efflorescence. Cracks, defective masonry, pointing, etc., must be made good. When the surface has dried out, it should be given one or two coats of Brolaceal Damp- and Alkali-resistant Primer to minimise the risk of breaking through of any remaining moisture. *Note:* Very porous outside walls should be coated with Bristol Silicone Water-repellent Solution to prevent seeping of moisture through to the inside.	1st coat: Brolaceal Damp- and Alkali-resistant Primer. 2nd coat: Brolac undercoat. 3rd coat: Brolac Enamel Paint finish.
Building Boards	Many building boards are in use, ranging from very soft and absorbent types to hard and smooth types. All are liable to absorb large quantities of water and should be primed with Brolaceal to prevent the penetration of moisture and/or to assist adhesion. It is advisable to paint the backs and sides with the same material.	

This Sheet describes Brolac Enamel Paint for the decoration and protection of external and internal surfaces. The table gives specifications for its application to various old and new surfaces and should be read in conjunction with the following notes.

General

Brolac Enamel Paint provides a durable high-gloss finish for all exterior and interior work. The medium combines the latest alkyd resin with a base of Chinese wood oil which provides a tough protective film that is absolutely waterproof. It withstands condensation and the effects of salt water and corrosive atmospheres. The colours are fadeless.

Preparation and Priming of Surfaces

The table shows how the various surfaces must be prepared for priming and painting. The notes below give further details.

Wood primers: Lead primers are ideal for woodwork, especially over new or very porous surfaces. A full brush should be worked well into the wood to ensure thorough penetration. Ends and joints should be given two coats. For softwoods, Brolead pink primer, of which the only ingredients are red and white lead in linseed oil, is ideal.

For resinous, low-grade softwoods, e.g. Douglas fir, Columbian and Oregon pine, Brolinium aluminium wood primer is best. The timber must, however, be perfectly dry, as aluminium paint will peel on a damp surface.

For weathered hardwoods, lead primer is preferable, but on new work, aluminium is the safest recommendation especially over teak or cedar. A very open grain should be filled with a paste filler after the primer has dried.

Rust-resisting treatment: Where Bristol Phosphate Rust-inhibiting Solution is used on a ferrous metal surface, it should be brushed on with a clean brush or dabbed on with a cloth. When all the rust has dissolved (in a few minutes), excess solution should be removed with a clean cloth and the surface left over-night to dry. The solution has no weathering properties and *must* be protected by normal painting, including an anti-corrosive primer.

Metal primers: New metalwork is normally primed before leaving the factory, but the protection provided is often unsatisfactory. Where rust and flaking have occurred, the surface should be thoroughly cleaned down and all particles removed. It should then be primed, completely or where affected, as necessary, with Brolac Anti-corrosive Primer. If the factory coat is satisfactory it should be simply cleaned down: an additional coat of rust-proofing primer over the manufacturer's coat is useless, as the effectiveness of such a primer depends on its making direct contact with the metal.

Undercoat and finishing coat: In all cases each coat should be allowed to dry overnight.

Colours

Brolac is available in twenty-seven colours and in black and white. The standard colours may be mixed to obtain any other desired colour.

Maintenance

Brolac may be washed and scrubbed as necessary without damage to the hard surface.

Further Information

The manufacturer maintains a technical advisory bureau which may be consulted on colour schemes and techniques of paint application.

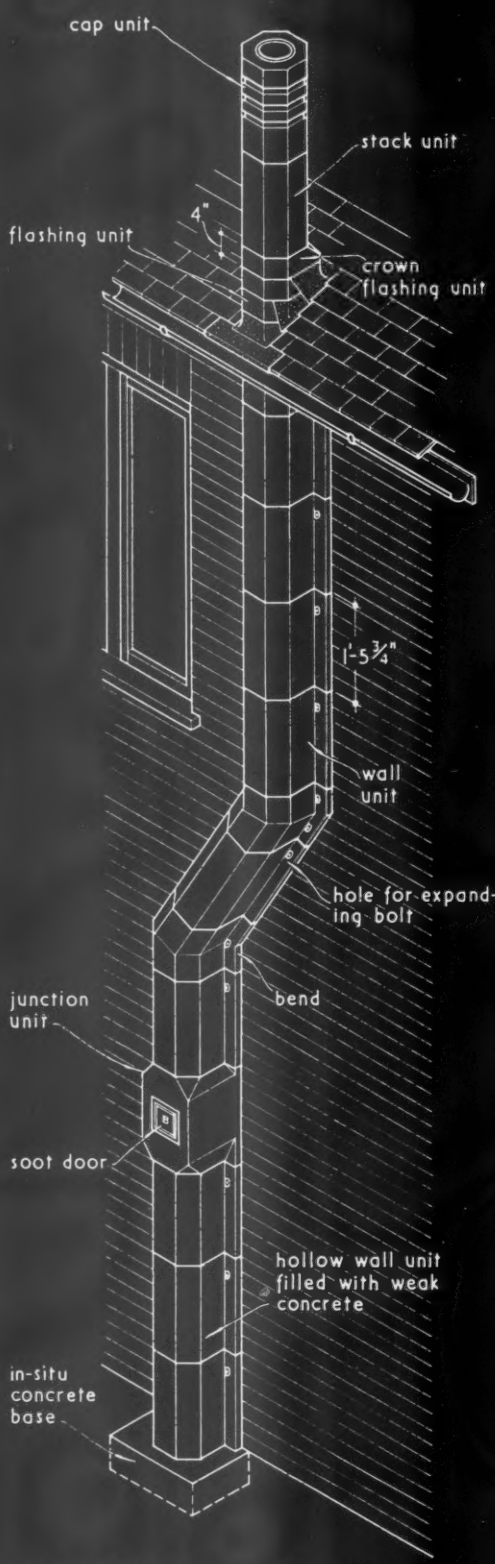
Compiled from information supplied by:

John Hall and Sons (Bristol and London) Ltd.

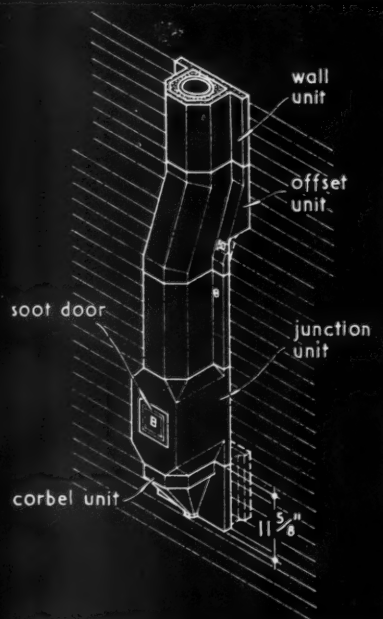
Address: Hengrove, Bristol 4.
Telephone: Whitchurch 2162.
London Office: St. Pancras Way, London, N.W.1.
Telephone: Euston 2262.

FLUES | SOLID FUEL

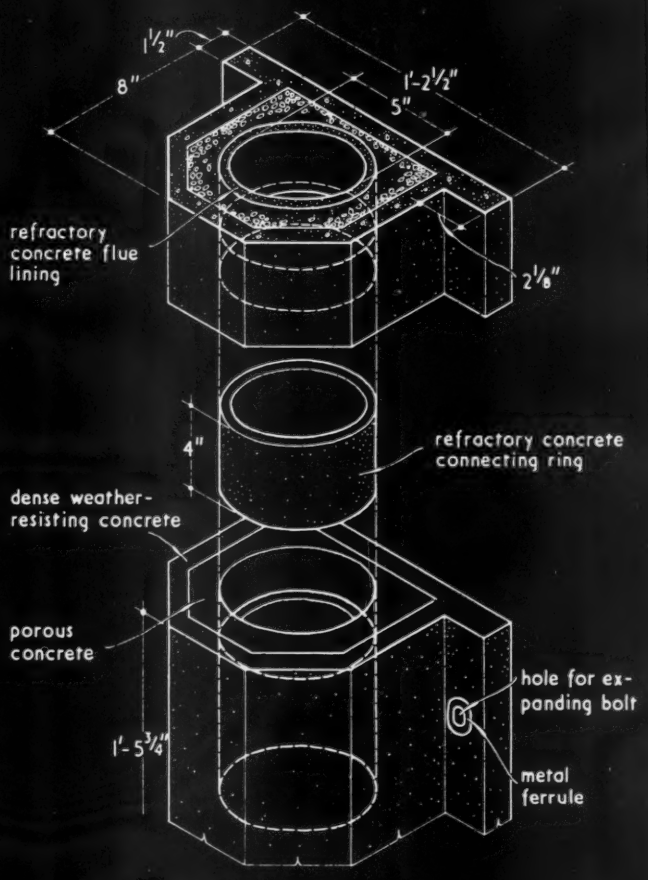
The Architects' Journal Library of Information Sheets 468. Editor: Cotterell Butler, A.R.I.B.A.



ISOMETRIC VIEW OF COMPLETE FLUE.



VIEW SHOWING OFFSET AND CORBEL UNITS.



METHOD OF JOINING UNITS.

·TRUE FLUE· PRECAST EXTERNAL FLUES (5" INTERNAL DIAMETER)

30.C3 'TRUE FLUE' PRECAST EXTERNAL FLUES (5 IN. INTERNAL DIAMETER)

This Sheet deals with the True Flue precast external flue which is designed chiefly for providing additional flues to existing buildings. The drawings on the face of the Sheet show the assembly of the units from which the flue is built up.

General

Precast units with an outer skin of dense weather-resisting concrete are used to form the flue. The inner lining of the unit is of refractory concrete and the space between inner and outer skins is filled with lightweight porous concrete, which acts as an insulating material. The refractory lining is stopped short at each end of the unit to enable a connecting ring of the same material to be inserted.
Wall units are secured to the main building structure by expanding bolts and washers. In the case of new buildings the units may be recessed into the brickwork.

Units

Standard wall unit: The standard unit is 1 ft. 2½ in. overall in width, 9½ in. deep and 1 ft. 5¾ in. high. The internal diameter of the flue is 5 in.

Junction unit: Used to connect iron or asbestos-cement flue pipe from appliance to main flue and to provide facilities for sweeping. A swivel-action refractory connecting-piece is incorporated in the unit to ensure correct alignment of the two flues and extends through the wall to give adequate fire protection. The refractory lining is recessed below the insulated soot door to form a trap for condensation.

Corbel unit: This is let into the wall to support the junction unit.

Hollow wall unit: This consists of an outer skin of dense concrete in every way similar to the standard wall unit but left hollow and filled on the site with weak concrete. It is used to build up from ground level a support for the junction unit where the corbel unit cannot be used.

Bend: For use when it is desired to rake a flue (150° rake). Two units used together give an offset of approximately 7 in. and this may be increased by incorporating standard units (see drawing on face of Sheet).

Flashing unit: Used where a flue passes through a roof so that adequate flashing may be tucked into the joints.

Crown flashing unit: This is the top flashing member, which is shaped at the back from square to octagonal to receive stack units above.

Stack units: For use above roof. Where more than three sections are required they should be supported by metal stays.

Cap unit: Used for completing flue. Inclined air channels minimise down-draught.

Offset unit: This is used to carry the flue back 4½ in. where there is a setback in the wall or, where there is insufficient soffit at eaves level, to obviate interference with rainwater gutter.

Note: Aga Heat Limited have approved the use of this flue with their appliances. In this connection an air dilution unit is now available, similar to the standard wall unit but with a rear connection for extending through the wall to a point just below ceiling level for fixing to the standard louvred ventilator supplied by Aga Heat Limited.

Fixing

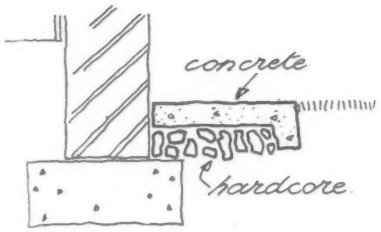
A hole is cut in the wall to permit the flue pipe from the appliance to be connected to the junction unit, and then the correct position for this unit may be ascertained and marked. The corbel unit is then built into position to receive the junction above.
When marking the positions of bolt holes, allowance should be made for a ¼ in. joint between units.
Where hollow wall units are to be erected instead of the corbel, they are arranged so that the uppermost one will exactly meet the underside of the junction. Each section is bolted to the wall and filled in turn with weak concrete. Though each section is secured to the wall, it is advisable to provide an in-situ concrete base for the hollow wall units, below ground level. This should be approximately 1 ft. 6 in. by 1 ft. 0 in. and 6 in. thick, depending on site conditions.
Circular holes, to take the shanks of the $\frac{5}{16}$ in. expanding bolts supplied with the units, should be drilled with a durium-tipped bit (obtainable from the manufacturer). The bolt should then be inserted and tightened against the washer provided; metal ferrules are cast in the unit to prevent fracture. Shanks of bolts should be flush with the wall face.
The junction unit is placed in position, the joint between the refractory concrete connection and the flue pipe sealed with fireproof cement and the wall made good. The first wall unit is then fixed. The connecting ring is placed in the lower unit and mortar laid before the next unit is lowered on to it. It is essential that all joints be properly sealed, including the upper joint in the connecting ring. This procedure is followed for the erection of the remaining units.
Treatment at the eaves is determined by the width of the soffit. Sufficient 4 in. flashing units should be used to enable the flashing to be carried to approximately 6 in. above the highest point of intersection of the roof covering. Flashing units may not be required where the flue is erected against a gable wall or where there is a flat roof. Finally the crown flashing unit, stack and cap units are placed in position.

Finish

The standard finish for the units is light grey, but they may be supplied to tone with existing buildings, if required, at small extra cost.

Compiled from information supplied by:
True Flue Ltd.
Address: Convector House, Acacia Road, St. John's Wood, London, N.W.8.
Telephone: Primrose 7161/2.

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



SHALLOW FOUNDATION.

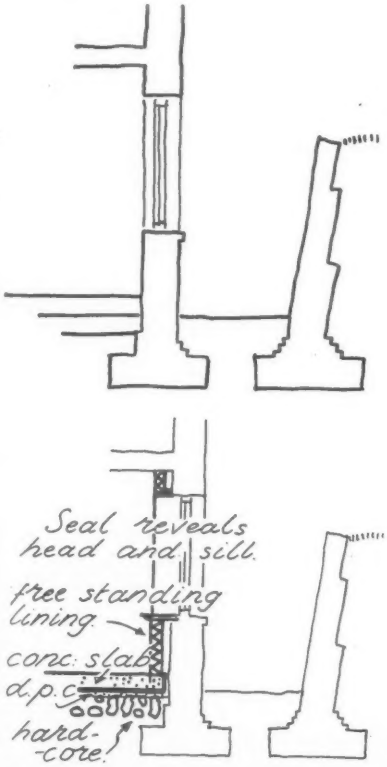
Underpinning is liable to produce a new system of differential movements and these may add to the extent of fracture in the superstructure. Before underpinning is decided upon, efforts should be made to relieve the causes by sub-soil drainage or protective coverings.

Basements: Before tanking methods were developed for the protection of underground walls and floors, airspaces were generally formed to provide moisture barriers between these structures and the subsoil. This technique has generally proved satisfactory where the water table is suitably below the deepest airspace and where all airspaces are freely ventilated.

The omission of damp proof courses through the thickness of the walls forming these basements makes them uninhabitable however, and steps must be taken to relieve the effects of this omission if advantage is to be gained by using them for habitation.

The work of inserting damp proof courses in walls requires painstaking effort and care, but need not prove an unduly expensive operation. As an alternative to the insertion of damp proof courses, consideration should be given to the possible advantages of building free-standing inner wall linings through the lower storey height of all basement walls.

It will generally be desirable to replace all timber floors with concrete slabs with efficient damp proof membranes.



In some cases it may be uneconomical to prepare existing services for new treatment to insert d.p.c's through existing walls.

WEAR AND TEAR

The effects of wear and tear on the materials and surfaces of a building can not always be separated from other causes for dilapidation that may be present. They may in fact be accentuated by such conditions as unsound arrangements and materials of construction; poor performance of the structure in relation to the weather; or dry rot and woodworm infestation.

In the absence of these associated causes for failure in the materials and finishes of a building, the effects of wear and tear will generally be negligible.

Floors: Little need be said here about the characteristics and performance of floor coverings, but it may be useful to bear in mind that a stage is reached at some time in the life of a building when the floors must be resurfaced. Irregular contours, open joints and loose panels in a floor surface severely restrict the effect and life of linoleum, carpeting and other coverings, and so place a heavy charge against the tenant for the maintenance of these items.

Walls and Ceilings: Whereas most serious failures of wall and ceiling surfaces arise from water concentrations, they are sometimes due to unsuitable use of materials, or to inadequate foundation treatment. The causes for all excessive moisture concentrations should be removed, either by correction of the original cause, or by suitable surface treatment where condensation is the main factor. All surfaces should be carefully inspected to ensure that they are able to support new decorative treatment, otherwise they should be stripped and rebuilt to provide a sound foundation. The durability of most decorative treatments is largely governed by the stability of the foundation to which they are applied.

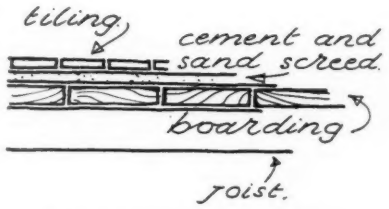
Large areas of paintwork on external elevations are expensive to maintain, and neglect to keep them in sound order is an extravagance that few building owners can afford because of the destruction it causes in the materials behind, and because of the difficulty of repairing the paint film once it has lost its bond. The preservation of external paintwork may be usefully helped by the provision of impervious coverings or flashings over all weathering surfaces.

STRUCTURAL ARRANGEMENTS

Incompatibility between different materials brought together by their arrangement and position in a building may cause unexpected failures. Fortunately, there are not many associations of this kind to be found in traditional forms of construction, but with the introduction of so many new materials during recent years, this danger must not be overlooked. The dangers of electrolytic reaction between different metals illustrate this kind of problem, and have to be borne in mind in the selection of materials for water services.

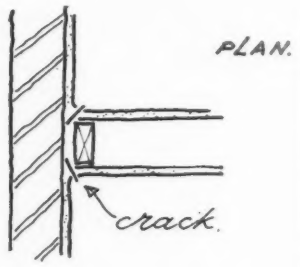
Incompatibilities in the behaviour of different parts of a structure under stress may finally result in the failure of one part due to the superior strength of the other. Alternatively, failure may occur in the connection or structure linking the two opposing parts.

Failures of this kind are not uncommon in buildings and include such examples as the laying of clay tiles on cement screed over timber flooring. This arrangement generally results in the failure of the tiling due to the resilience of the timber flooring. Another common example is illustrated by the crack that generally develops along the line of a junction between brickwork and a timber framework.

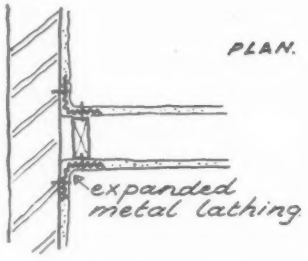


UNSOUND BASE FOR TILED FLOOR.

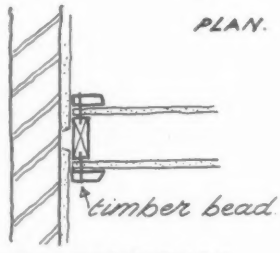
The main significance of this problem as a factor in the repair of a dilapidated building, lies in the knowledge that such failures are inevitable while the cause for them remains.



JUNCTION BETWEEN.....



....BRICKWORK & TIMBER.....



.....FRAME STRUCTURE.

Whereas the performance of a clay tile floor over timber boarding may be improved by embodying some form of metal reinforcement in the bedding when it is relaid, such a course is not to be recommended, and a different type of covering should preferably be used for repair.

The repair of plasterwork in line with an intersection between brickwork and a timber framework may be practicable if soft plaster is used over a wide strip of metal lathing fixed at edges only to the adjoining structures. Otherwise, the fracture may be retained and covered with a bead fixed to only one of the structures.

Failures of this kind in positions exposed to the weather are more difficult to deal with, but a system of lapped soft metal flashings may be effective in some situations. Otherwise, the incompatibility may have to be eliminated by new construction.

INFESTATION

Dry Rot: Identification of dry rot infestation during the early stages is made difficult by the fact that the conditions liable to promote it are present only in parts that are denied the normal conditions of exposure. Once established, the fungus will extend widely and vigorously through the enclosed background structure and damage it extensively before giving any indication of its presence on exposed surfaces. This stage in the development of dry rot is the most important one from the landlord's point of view because it is during this stage that the outside limits of the region of attack are reached. Further development will reduce the materials within the affected region to destruction, but will not necessarily extend the region of the attack materially.

Early recognition of dry rot infestation is therefore a very important factor in its control and eradication, and it may be that more can be done in this direction by the provision of inspection facilities in all vulnerable positions.

The precautions that should be taken in the design of buildings to obviate the causes of dry rot are generally known and commonly taken. Many of the common causes are however introduced by neglect in the use and maintenance of the building, and these can be best controlled by vigilant supervision and inspection.

The eradication of dry rot may not be a difficult matter if it is identified at the early stages of its development, and may be achieved by cutting away the affected materials and removing the causes for its development. Materials in the surrounding parts should at the same time be treated with antidotes, and extra precautions should be introduced to discourage further development.

The eradication of dry rot in its more advanced stages of development is a very much more difficult matter however, and may involve extensive reconstruction of the affected regions. Special care is also necessary to ensure that all affected parts are exposed for treatment in view of the possibility that regions favourable for continued development remain within the area of infestation.

No rules can be prescribed for the eradication or control of dry rot infestation, and each case must be treated on its own merits. On one hand there has been a tendency in the past to under-estimate the problems of dry rot, but on the other hand, there is a possibility that unnecessarily rigorous treatment is sometimes applied in the course of rehabilitation.

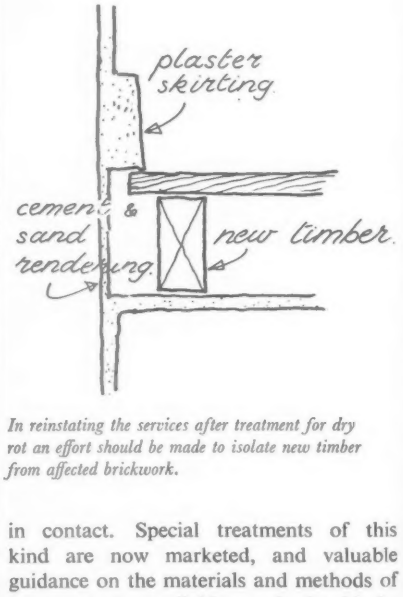
Whereas the damage caused by dry rot in buildings is not confined to its effect on timber, the fungus relies on timber for the necessary means of its growth. In practice, therefore, the secondary effects will be overcome by destroying the fungus where it is in contact with timber, and by isolating what may remain in other materials from possible contact with timber.

When dry rot infestation is extensive, the possibilities of introducing new arrangements and materials to take the place of affected timbers should be fully examined. Such a course will commonly recommend itself in ground floors, and in bathroom floors which will generally be improved by concrete construction.

Skirtings, architraves, door and window linings, and other joinery works should not be replaced by new timber in affected areas where alternative materials can be used. Plaster may usefully replace such features; otherwise metal trim should be used.

When carrying out works of reinstatement and repair of dry rot infestation, it is advisable to embody facilities for supervision of the results, and for renewal of precautionary treatments. Access panels should be provided in all large areas of timber, and these should be fixed with brass cups and screws.

Where new timber is introduced within the area of infestation, this timber should be specially treated to resist attack, and must be isolated from any possible contact with materials from which the fungus may not have been entirely removed. Cement and sand renderings will generally provide a useful barrier to the penetration of fungus and should be applied to the surfaces of brickwork against which timber may be in contact. Special treatments of this kind are now marketed, and valuable guidance on the materials and methods of treatment is available, and should be consulted by all concerned with the problem arising from dry rot infestation.



In reinstating the services after treatment for dry rot an effort should be made to isolate new timber from affected brickwork.

Wood Worm: Woodboring insects are not a serious cause for dilapidation in domestic

buildings, but when present they must be rigorously attacked and eliminated. Before undertaking any work of eradication and repair, an effort should be made to identify the species of insect concerned and to learn about its habits. This knowledge will help in tracing the range of attack, and will provide useful guidance for treatment.

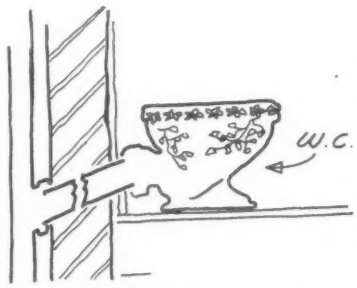
Literature dealing with this subject has been published by the Forest Products Research Laboratory, and by the Timber Development Association.

SERVICES

Drainage: Failure in the underground works of a drainage system may damage a building by undermining the foundations, or by causing excessive damp in the subsoil and lower parts of the structure.

Vigorous root growth may undermine the foundation of a drain, and after fracturing the pipes, may enter and block the system. Another possible cause for fracture of the underground pipework arises from the unequal pressures that may occur where drains pass through the foundations or lower walls of a building, and at connections with rigidly bedded gully pipes.

Failure in the drainage pipework above ground level is a frequent cause for dry rot in the wall bearings of timber joisted floors. Pipes may fracture where they pass through the external walls to join external stacks, and the external stacks may fracture due to neglect in the maintenance of protective paintwork adjoining walls.



PIPE FRACTURE IN BRICK WALL.

These failures may cause serious damp concentration in the walls, and may continue for a long time before they are recognised. A regular inspection should be made of all external pipework, and special attention should always be paid to the need for maintaining protective treatment of cast iron pipework on all surfaces.

Water Services: It would be unwise to put in hand an extensive scheme of repair or conversion in a building without full knowledge of the requirements of the water supply installation. The characteristics of the water will have an important effect on the life and performance of pipework and fittings, and where this effect is likely to involve occasional renewal in parts or all of the installation, arrangements should be made accordingly.

The concealment of water pipework may be highly desirable from many points of view, but the practical requirements of accessibility for repair or renewal and the need for insulation must not be overlooked when enclosing these pipes in the thickness of walls or floors, or when providing ducts.

Insulation against the dangers of frost action relies partly on the warmth available from the higher temperature in the rooms, and the placing and wrapping of pipes should always be arranged to maintain this condition.

A close association between hot and cold pipes, or the exposure of cold pipes to warm air may result in excessive condensation on the surfaces of the cold pipes. This condition can have very serious results, and generally calls for the lagging of all cold service pipes in rooms liable to high or variable air humidities. High level permanent ventilation is also desirable in rooms subject to these conditions.

Gas and Electricity: There is very little that need be said here about the problems and requirements of these services, but more care and attention could be usefully given to the provision and maintenance of access panels for occasional alteration and repair of tubing and wiring in domestic buildings.

PERFORMANCE STANDARDS

Most buildings of traditional construction provide an acceptable standard of shelter and comfort by virtue of their construction in compliance with the Byelaws. This standard is not necessarily a desirable one in all respects however, and may be insufficient for future requirements. The possibilities for raising deficient standards within reasonable limits of economy should therefore be examined when making a survey with a view to repair or conversion.

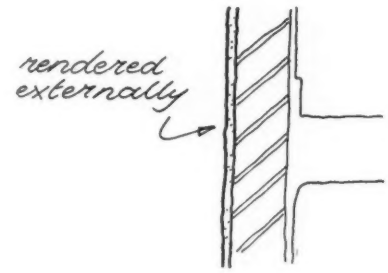
Weather Resistance: The resistance of external walls and roofs to the penetration of wind and rain may vary widely in different forms of construction. Few if any systems used for building construction are impervious to both wind and rain, and the standard of weather resistance they provide is a measure of the control exercised over the behaviour of the wind and rain in relation to the other functions and properties of construction.

When assessing the performance of external walls and roofs in relation to the weather, due consideration must therefore be given to thermal requirements and to other associated conditions.

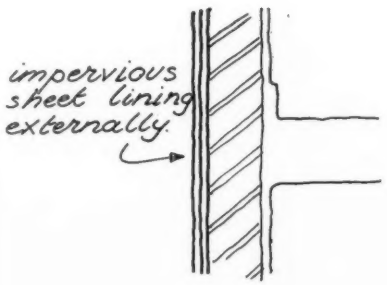
In practice, the design and construction of external walls and roofs should as far as possible be devised to maintain the internal structure and surfaces entirely free of damp from the outside. This is not generally possible in solid external wall construction even if the degree of moisture penetration can be kept within acceptable limits by suitable surface treatment.

Where the resistance of external walls to wind and rain penetration is deficient, consideration should be given to the possibilities for constructing an independent lining over the outer or inner surfaces. Water repellent surface treatments such as renderings, paint or other thin films may sometimes be difficult to maintain, and may do more harm than good if not maintained in a sound state of repair.

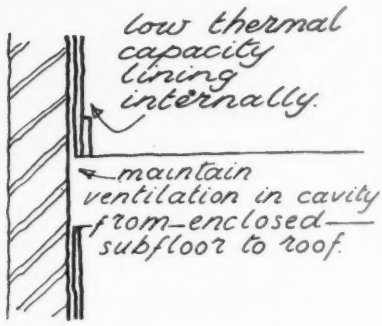
Where improvement of weather resistance is mainly required for the preservation of materials of the structure itself, external claddings should be provided, but where the improvement is mainly desired to



DOUBTFUL.



GOOD.



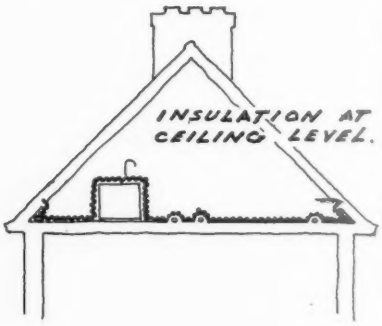
This method increases thermal comfort in a room.

correct internal deficiencies, an inner lining will generally prove more satisfactory.

Thermal Insulation: The resistance to heat loss through the thickness of external walls and roofs of traditional construction is generally low in relation to considerations of thermal comfort. No reasonable opportunity for improving the standard of insulation in these structures should therefore be overlooked when carrying out major works of repair or conversion.

To get the best results from insulation treatment, thermal resistance should be increased internally rather than externally. Insulation treatment at ceiling level of a pitched roof structure will generally be twice as effective as insulation treatment of the slopes. Similarly, internal treatment of wall surfaces will give very much better insulation than the treatment of the external surfaces.

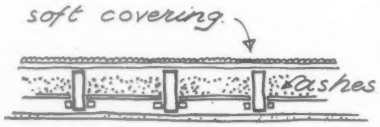
When providing insulation to the inner sides of wall or roof structures, care must be taken to ensure that water services are retained within the envelope in view of their dependence upon internal temperatures in the event of frost.



The use of low thermal capacity linings as a means for improving the thermal insulation of walls and ceilings is strongly recommended even if the surfaces of these materials are generally less resistant to the stresses of wear and tear than plaster. Improved lining materials of low thermal capacity are required before their general adoption can be recommended, but there are indications that these improved materials are on their way.

Sound Resistance: The resistance provided by traditional construction to the passage of sound is generally sufficient for single occupancy. Walls and floors dividing separate occupancies should, however, be sufficiently resistant to keep the level of transmission below nuisance limits. The standard of resistance generally considered adequate is that provided by an 11-inch thick cavity brick wall without ties. A 9-inch thick solid wall falls below this standard, but can be improved to a useful degree by independent linings on one or both sides.

Dividing floors are a very much more difficult problem to deal with than dividing walls. Timber joisted structures can be made more resistant to the passage of noise by filling the voids with dry sand or ashes. Suitably arranged light quiltings may give improvement in certain conditions, but can not generally be recommended as the solution to this problem. Silent air impervious floor coverings over a sand or ash filled timber floor structure will generally give a tolerable degree of sound resistance if not a desirable one. There is room for further research and development in this field before this aspect of flatted dwellings can be considered satisfactory.



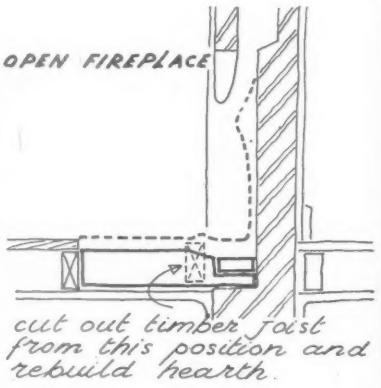
SOUND INSULATION OF TIMBER JOIST FLOOR.

The introduction of a quilting material between floorboards and joists will cause some further improvement.

The transmission of noises through piped services can be very pronounced and steps should be taken to isolate these services from impact if they can not be enclosed in specially constructed ducts.

Fire Resistance: The standard of fire resistance provided in traditional construction is generally high in relation to all normal hazards. There are however, certain features not uncommon in the construction of fireplaces and chimneys that are found in practice to be the most frequent causes for fire in domestic buildings.

The construction of hearths in earlier construction should always be fully investigated when introducing low level open grates. In many cases, the floors have not been trimmed for hearths, and the joists are carried through. These should be reconstructed to bring them in line with the requirements of the building byelaws.



The absence of renderings to brickwork enclosing flues where they pass through timber floor and roof structures is also a weakness that should be remedied wherever practicable. These renderings are a useful precaution against the possible occasional failure of pargings and beddings in the flue structures.

Resistance to Decay: It may be fair to say that dry rot is an important hazard in buildings of traditional construction. This hazard arises from failure to maintain the building and its services in a sound state of repair, but to some extent it is an inevitable result of the materials and relationships of the structural system.

The importance of dry conditions and adequate ventilation in all enclosed spaces can not be overstressed, and this should be specially borne in mind when applying treatment for the improvement of thermal insulation.

THE BUILDING BYELAWS

Whereas it is not necessary to alter an existing building to make it comply with the current Bye-laws if its use is not to be changed, such works as may be required for improvement or rearrangement of its accommodation must generally be carried out in compliance with the Byelaws. In the event of conversion, certain requirements of the current Byelaws will have to be observed, however, particularly in respect of the dividing structures. These are not generally applied without regard to existing conditions, and consultation with the Local Surveyor at an early stage is advisable.

TECHNICAL SECTION

J. H. Forshaw (Chief Architect to the MOHLG and to the MOH), speaking to the Modular Society last week, attributed " the great lag in the national building programme " to the dilatory acceptance of prefabrication. He further made the point that it is only when architect-engineer understanding and careful site organization become the rule that " new building will become contemporary architecture."

When asked why it was that new building types like schools had proved to be more susceptible to the change-over than older building types like housing; whether the MOHLG could not hasten the change-over by opting for prefabrication and, as a corollary, by establishing a module for their own use, he reiterated the warning of the BSI committee on the dangers of a too hasty acceptance of a module, and maintained that initiative in these matters must come from the professions and the industry, and not from Whitehall.

Clearly there are two questions here: the initiative in prefabrication and the initiative in settling on a universal module. It may well be that a universal module is not yet culturally within our reach. But that is no motive for not acting on the *principle* of universal modular co-ordination, which means the acceptance of factory techniques as the basis of building and the promulgation of such " partial " modules as day-to-day practice may suggest. Mr. Forshaw rightly fears his Ministry exerting a " Whitehall dictatorship." But there is a difference between dictatorship and leadership. It is pleasant to think of the professions and the industry leading the way, but in this matter neither are particularly well placed to do so. It is for the large building client to say the accommodation he wants and to make the price he will pay a price which only industrialized techniques can work to.

This week's special article

25 WATER SUPPLY AND SANITATION
single-stack plumbing

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

This week we report an advance in technical knowledge which should effect important changes in plumbing practice. It completes and expands the information first published in BRS Digests 48 *and* 49 *in November,* 1952. *Thus there is now in existence authoritative criteria for the architect in designing plumbing systems for flats and houses. It should be mentioned that the system outlined is not covered by the recent BSCP* 304 (1953)—Soil and Waste Pipes above Ground.

Soil and waste plumbing is one of the items in building that hitherto has remained on the fringe of the architect's control; partly, though not entirely, because there was no precise understanding of the behaviour of water and air inside the pipes. Accepted practice seems to have been the result of trial and error over a number of generations—a condition analogous to that of structural members before the advent of stress analysis. It became to some degree standardised by embodiment in building byelaws, and partly determined the range of pipes and fittings which manufacturers produced for the building trade.

Over the past few years, however, research

has been going on in the laboratory and in field tests, yielding results which from now on should bring about notable changes in common practice. For it is now known that our previous fears about the escape of foul air into buildings were rather pessimistic. Those principally concerned in the investigation are Mr. A. F. E. Wise of the Building Research Station, and Mr. J. Croft, Chief Inspector of the LCC Public Health Department.

First fruits of these studies to appear in the architectural world were contained in BRS Digests 48 and 49 of November, 1952, which explained the factors involved in soil and waste plumbing and outlined the design criteria applicable to 2 storey buildings. The findings relating to multi storey flats have now been presented—in an R.S.I. paper which was read to the Scarborough Health Congress on April 29 by Mr. Wise and Mr. Croft of which we here give a condensed account, beginning with a brief reminder of conventional practice.

CONVENTIONAL PRACTICE

Fig. I

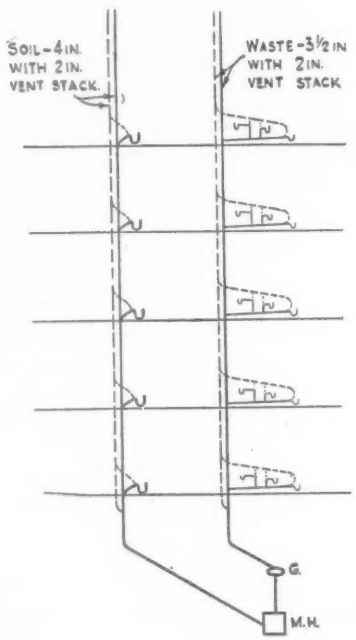
This shows the method in which baths, basins and sinks are connected to one stack, and wc's to another, each having a vent stack with branches to every fitting. A great deal of piping and a formidable number of junctions is required. The system is less common in new work nowadays and is perhaps confined to cases where architects are not able to group fittings closely on plan.

Fig. II

The same may be true of this system in which there is a separate stack for each kind of fitting, the wc traps only being vented to a vent stack. The main idea was that by reducing the number of fittings connected to any one stack, the need for separate trap venting was avoided—an economy largely countered by the increase in total length of stack.

Fig. III

This, the one-pipe system, is now most common practice in multi storey flats. It is not very much cheaper than the other two systems, and the task of building up pipe assemblies for each floor is never easy, either in fact or on the drawing board, especially with the added complication of hot and cold water connections to the taps. So much for conventional practice.



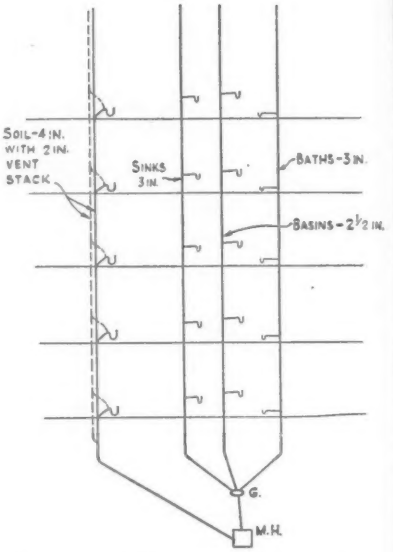


Fig. I left: Fully vented 2 pipe system.

Fig. II above: 2 pipe system, separate waste stacks.

THE NEW SYSTEM

Fig. IV

This is the solution to the soil and waste disposal problem now proposed for buildings up to 5 floors where all the design criteria outlined below can be applied. In other cases an additional vent to the ground floor wc trap is necessary as shown in (*b*).

Fig. V

For buildings over 5 storeys it is only necessary to vent the wc traps. It is thought that the upper limit for this system would be 10 storeys.

The success of a plumbing system is ultimately a question of maintaining the water seals in the traps intact, and this depends on the difference in pressure between the upstream and downstream sides of the seal water. Such a difference can occur in three ways:

a. Self siphonage. Water discharging down a branch may reduce pressure on the stack side sufficient to empty the trap.

b. Induced siphonage. Passage of water down the stack past a particular branch may reduce pressure in the stack sufficient to empty the trap on that branch.

c. Back pressure. Increase of pressure above atmospheric when air may bubble

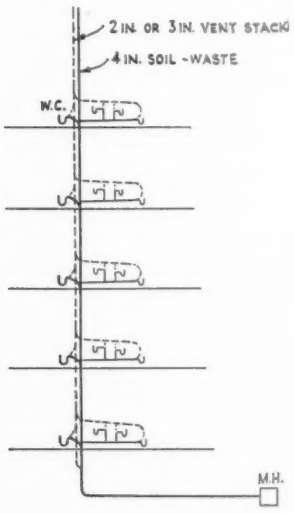


Fig. III: Fully vented one pipe system.

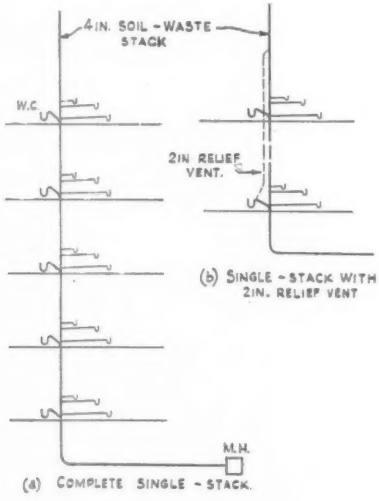


Fig. IV: Single stack system.

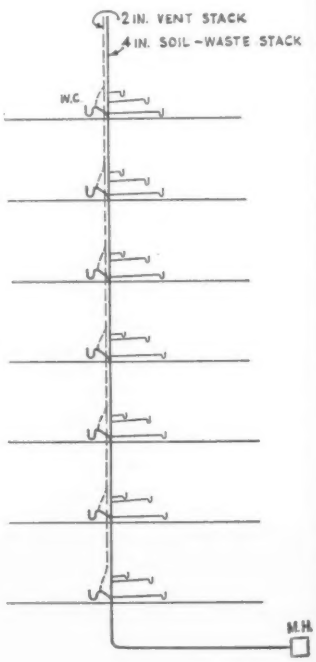
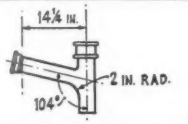
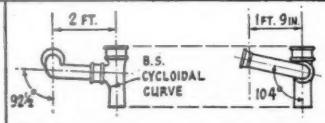
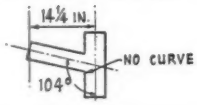
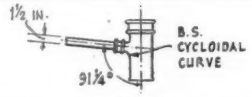
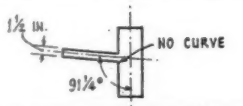


Fig. V right: One pipe system with W.C.*'s vented.*

REF.	STACK CONNECTION	MAIN FEATURES
A	4 IN. × 4 IN. SANITARY "P" CONNECTION.	
B	4 IN. × 4 IN. BRANCH, 92½° ANGLE, WITH 4 IN. SANITARY BEND	
C	3½ IN. × 4 IN. BRANCH, 92½° ANGLE, WITH 3½ IN. SANITARY BEND.	ARRANGEMENT AS B
D	3½ IN. × 4 IN. BRANCH, 100° ANGLE, WITH 3½ IN. SANITARY BEND	ARRANGEMENT AS B
E	4 IN. × 4 IN. "P" CONNECTION AS A BUT WITH STRAIGHT INLET.	
F	4 IN. × 2 IN. BRANCH, 92½° ANGLE, WITH 1½ IN. WASTE AT 1¼" SLOPE	
G	4 IN. × 1½ IN. BRANCH WITH 1¼° SLOPE (BOSSED PIPE)	

NOTES. ALL FITTINGS EXCEPT E & G ARE TO B.S. 416 (1944 & AMENDMENTS). ALL ARRANGEMENTS EXCEPT F & G ARE FOR P-TRAP W.C.'s WITH 104° OUTGO.

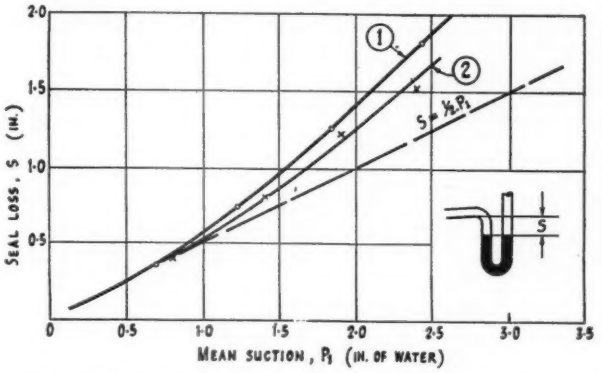
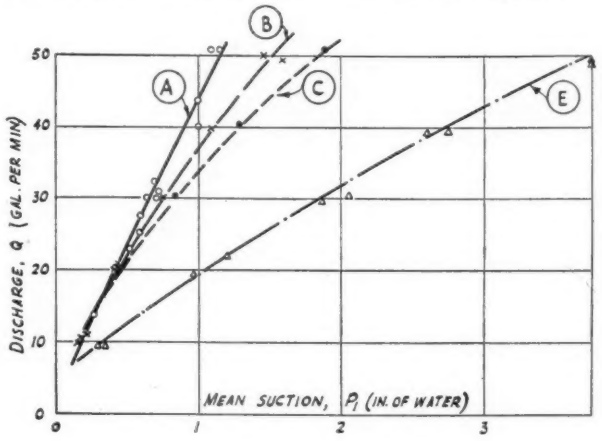


Fig. VIII above: Variation of seal loss (after ½ min.) with stack suction (1¼ in. bore, 3 in. seal traps).

Fig. VI left: Stack fittings used in tests.

Fig. IX below: Variation of stack suction for different fittings.



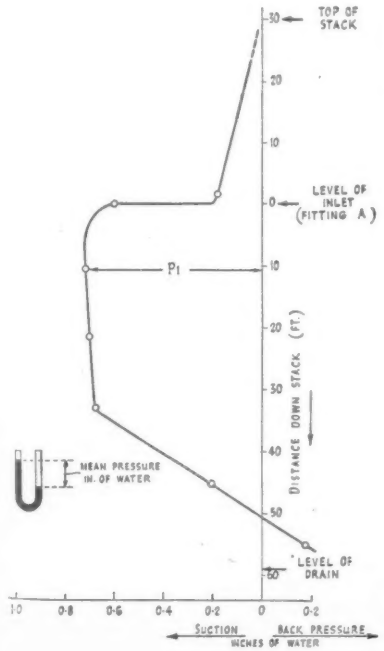


Fig. VII : Pressure variation down a 4-in. stack.

up through the trap, or water back up into the fitting.

Clearly then, pressure variation in the stack is significant and this has been investigated. A 60 ft. stack was set up and the performance at various rates of discharge with various kinds of inlet fitting was recorded. Fig. VI shows the inlet fittings and Fig. VII shows the pressure variations with a continuous discharge rate equal to the "peak" of a 2 gal. wc flush (31 g/min.). Except for a short length at the bottom, pressure in the stack is below atmospheric, and it is obviously important to know what this suction means in terms of seal loss. The value at P1 is 0·72 w.g.—enough to reduce the 3 in. seal in a 1¼ in. branch by rather less than ½ in. The effect of other values may be seen in Fig. VIII, curves 1 and 2 representing two slightly different kinds of trap.

The degree of suction varies with: *a.* height of discharge point above the drain; *b.* the rate of discharge; *c.* the shape of the discharge inlet. The latter is particularly significant, and Fig. IX shows the results for inlet fittings A, B, C, and E shown in Fig. VI. Clearly the "swept" type of inlet materially reduces stack suction. The same is true of waste inlets, but to a lesser degree because of the smaller rate of discharge (the bath with 1½-in. branch is the greatest with 14 g/min.). But swept inlets on waste branches increase the chance of self siphonage and this is the more important consideration, thus straight inlets are recommended.

A good deal of the research was concerned with definition of the "worst case" that could occur in practice, elucidation of which involved probability theory and the binomial theorem. The broad conclusion, rather surprisingly, is that it is only necessary to dis-

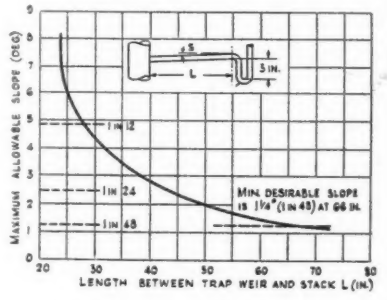
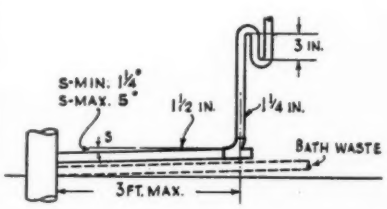


Fig. X above: Fall of 1¼ in. lav. basin waste.

Fig. XI below: Lav. basin waste with S trap.



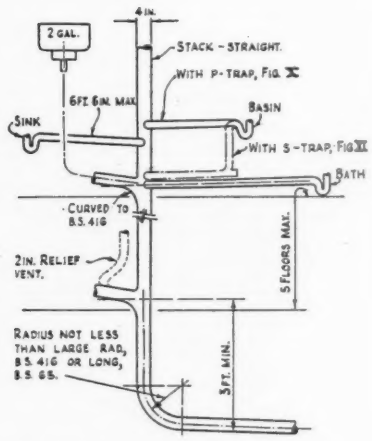


Fig. XII: Summary of design criteria.

charge any one wc, basin and sink simultaneously to simulate the worst case in 5-storey flats. Discharge of these fittings on the top floor induced a seal loss on the floor below of nearly ½ in. Addition of toilet paper or newspaper to the wc flush was found to increase stack suction only slightly.

BACK PRESSURE

Pressure in the lower length of the stack seems to be mainly significant when there is foam in the water from synthetic detergents. The most severe test was to tip a bucket of detergent water down the top wc; the top sink of detergent water was then discharged and 5 seconds later a lower wc flushed. The foam seems to collect in the drain at the bottom of the stack and causes an increase in pressure so that air bubbles up through the ground floor wc. The latter was connected to the stack 18 in. above the drain, and the recommendation is that this distance should not be less than 3 ft., that the bend should be of large radius, and that 3 gal. flushes should not be used on single stack systems. A warning is also sounded about conditions in the external drain, for the water level and the presence of interceptors in this will affect the pressure build up at the foot of the stack. It is largely a matter of the number of connections to the main drain upstream of the connection concerned.

SELF-SIPHONAGE

This question was discussed in BRS Digests 48 and 49. For wash basins the branch pipe should be not less than 1¼ in., the seal should be 3 in. and the slope not steeper than that shown in Fig. X. Beyond 66 in. length of branch 1½-in. or 2 in. pipes are needed.

For baths and sinks much the same applies, except that the pipes should be 1½ in. 72 in. long wastes have been used successfully and longer ones are possible, largely because these fittings have flattish bottoms from which the last slow trickle of water may refill the trap. The stack connections in all cases should be as shown at F or G in Fig. VI. S traps are more liable to self-siphonage that P traps, but they can be used provided the conditions shown in Fig. XI are observed.

The conclusions of the research have been summarized for the guidance of designers in the diagram shown in Fig. XII.

COSTS

As with so much of contemporary development in building technique, the motive towards research is pervaded by the urgent need to reduce costs. Figures are given in a DSIR press release indicate the value of different systems:

Two pipe system	£41 per flat
One pipe system	£34 per flat
Single stack system	£20 per flat

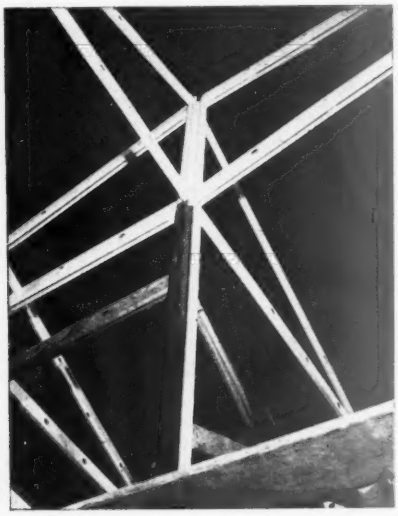
It should be mentioned that detail matters such as the proper location of branch inlets to avoid cross flow, the provision of cleaning eyes and so forth are not shown, but they were more fully discussed in BRS Digests 48 and 49.

THE INDUSTRY

The paper from which this information has been taken does not discuss trade practice in the design of pipes and junctions except to mention that the system can be built up from available fittings.

It seems to us, however, that the time is now ripe for the industry to re-examine the question and see if it is not possible to evolve a simpler and quicker technique for pipework, and so complete the other side of this encouraging picture.

20 CONSTRUCTION: COMPLETE STRUCTURES
prefabricated buildings at the BIF



Mod-X standard steel units assembled for roof trussing.

Our survey of the London end of this year's British Industries Fair takes the form of a review of the Prefabricated Buildings Section in which the writer notes the structural developments in the various systems which have taken place since last year.

Architectural interest at the London end of this year's B.I.F. centres round the Prefabricated Buildings Section, which occupies about a third of the floor space at Earls Court. Last year, readers will remember, saw the debut of this new industry at the Fair and it is therefore inevitable that a review of this year's entry should take the form of a comparison with last.

There are this time fewer exhibitors, which may be fortuitous or may be some indication that the market is settling down. It is as well if the last is true, for last year a legitimate pride in Britain's commercial initiative was more than offset by doubts about the quality of the goods she was providing. These doubts have not all been allayed, but there are at least signs that sales managers have been visiting the countries they are setting out to supply. Some of the more uncouth essays have vanished, and it is noticeable that development on the others has taken the form of the development of systems rather than the development of specific building types. Last year it was already possible to discern a profound difference in approach between those firms which set out to export ideas and those which set out to export complete packaged houses. Though there is still a large market for these last, it seems that in the long run this country would do best to concentrate on the other kind, for the limitations which packaging imposes are such that people will only tolerate them so long as they are in dire need. This same thought is brought home another way when firms begin to realize the wide variety of uses and climates they have to provide for. Firms who enter in earnest into this field must think of a cabin for the natives, a bungalow for the white man, and some kind of truss for the public buildings; and all of these must be somehow adaptable for a variety of climates. This embarrassing scope is reflected at Earls Court in the exotic appearance of the Fairground, and it makes it virtually impossible to generalize. It seems more valuable, therefore, to relate each exhibit to its predecessor of last year and to confine comment, in the main, to developments of detail.

Mod-X Constructions Ltd. (architectural consultant, Harrison and Seel) belong pre-eminently to the class of manufacturers who reckon to export ideas, and it is perhaps for this reason that they are among those whose practice has developed most spectacularly since last year. They have mounted a large composite structure repre-

senting their two main concerns, one half being in the form of a timber house raised up on piles designed for the natives of Guiana, and the other half being a construction which is designed to illustrate the scope of the new Mod-X system of steel beams and trusses.

The most significant technical feature of the timber house is the changeover in the type of connector. Formerly the members were clasped together by two dogged plates which engaged in grooves in the wood, which in turn were forced together by screws. This method necessitated heavier beams than would otherwise be required. The new method employs a single connector for each joint in the form of a short strip of aluminium of flanged section. Into the web of this connector are cut a number of bolt holes at 2 in. centres and, at one end, a square mortice to receive wedges. By this method, which is reminiscent of traditional timber construction, it is possible to reduce the standard beam size to 6 in. by 1⅜ in. Though the company will export all that is required, the connectors represent the irreducible minimum which at the present time must be transported.

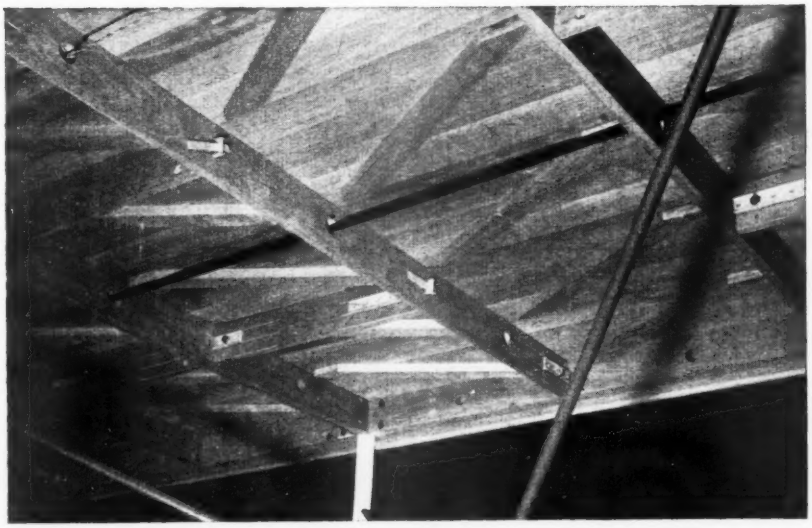
Last year's version of the Mod-X house used steel for the columns but not for beams or trusses. The other part of this year's exhibit shows steel used for these members as well. One standard section serves for both trusses and beams, each member being pierced at 20 in. centres to allow for fixing (for the structure is designed scrupulously to a 40 in. module) as well as for the passage of wiring and pipes.

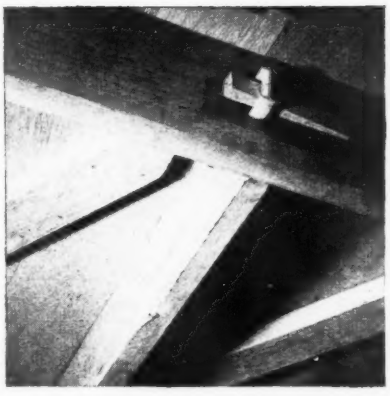
Riley-Newsum (Senior Architect D. J. Middlebrook, Consultant Structural Engineer F. I. C. Fevre) have three exhibits: a low-cost house for natives of the tropics, the "Hobart" house which is an adaptation of the Riley-Newsum system for the home market, and a set of four laminated timber arches of 30-ft. span for use in industrial buildings. The *native cabin* varies hardly at all from the version shown last year. The Hobart house varies principally in its use of 10 ft. external panels in place of the 3 ft. 4 in. panels required by packaging and in the placing of the trusses (which are now pre-assembled in one piece instead of two) at 10 ft. and not 6 ft. 8 in. centres. One interesting departure is the use of a stove enamelled finish on the cladding of the main roof—a processing which has apparently proved surprisingly cheap and which should go a long way towards removing the stigma which still seems to attach to sheet roofing materials. The Canadian origins of this house can still be observed in the eaves, which are scalloped to close the edges of the ribbed cladding against driving snow.

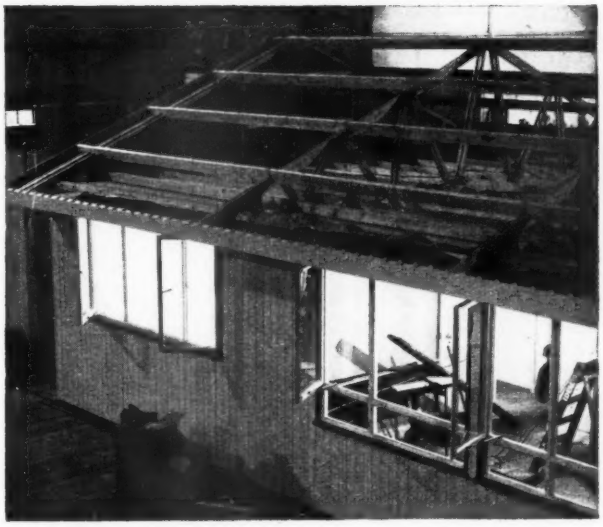
Riley-Newsum claim that their *laminated timber portal trusses* work out cheaper for industrial buildings than their counterparts in steel. The trusses are pre-assembled in two parts, the eaves gusset being normally glued under factory conditions. Testimony of the cohesive strength of this structure was given impromptu during the preparations for the Fair when a heavy lorry splintered one of the uprights without throwing any of the other parts out of alignment.

The Bristol Aeroplane Company Ltd. (architectural consultants: Richard Sheppard & Partners) have mounted two exhibits: a Mark III two classroom school designed for tropical Africa, and a Mark 1A Hospital Surgical Unit. The Mark III system has been developed out of the justly celebrated Mark 1A to allow both for awkward transport problems and exacting climatic conditions. It is the latter of these and—more specifically—the need for permanent cross ventilation at both eaves and clearstorey levels which has determined the architectural character of the whole. The resulting structure with its curious profile (lean-to: clearstorey: barrel vault) has great technical interest in that it is believed to be the first example of a shell aluminium structure in the world. The light structural members which can be seen from the interior merely support the ceiling while the 24 ft. span barrel vault roof over the centre section acts as a longitudinal beam supporting the lean-to's on either side.

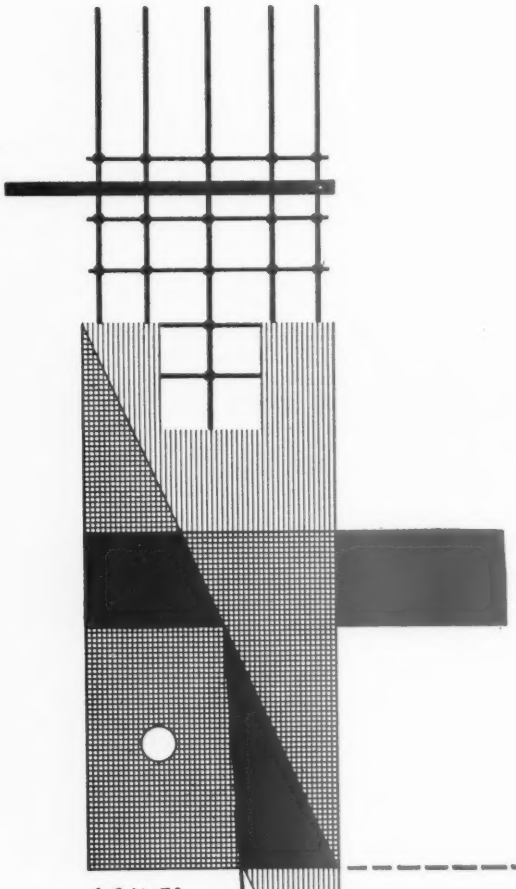
The Mark 1A Surgical Unit is an item which was chosen to exhibit the fast expanding repertoire of the Mark 1A system: its increasing variety of spans, of window units and of panel finishes. One technical development since last year is the use of a different fixing method for jointing internal partitions. Formerly these were jointed by means of bolts run through projecting flanges at the edge of each panel. This joint could only







Top and above, details of the new Mod-X timber connectors. Above, right: Knee of the Riley - Newsum timber truss. Right: Roof structure of the Riley-Newsum "Hobart" House.



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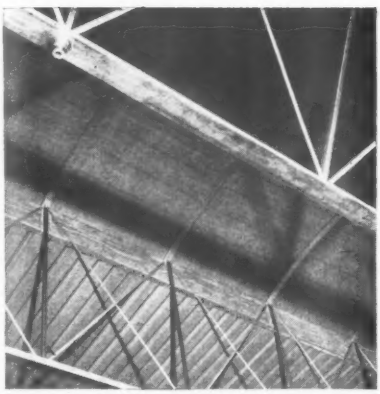
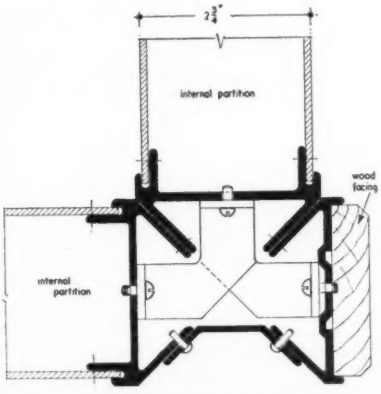




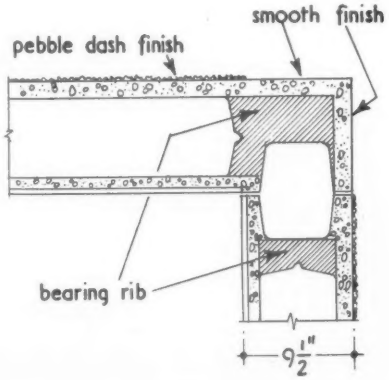
Above: "Bristol" Mark III Tropical School. Detail of Aluminium Shell Roof. Above right and right: Details of "Bristol" Mark IA internal panel fixing.

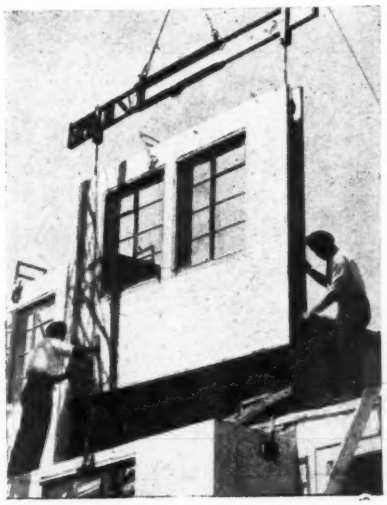
serve as a two-way connector and required a flat cover plate which was inclined to be clumsy in itself, and which was architecturally misleading, giving the impression of a panel and post construction. The new panels have flanges which are turned inwards at 45° to make a two- three- or four-way connection as required, necessitating a cover-strip of corresponding section where the joint would otherwise be open to view. Apart from its practical advantage, this new arrangement gives a more authentic expression both of the weightbearing panel and of the aluminium fixing.

Booth and Co. (Consulting architects: Covell and Matthews) use a timber frame and panel for their "Overseer" houses, though the operative constructional idea is their use of portal trusses at 6 ft. centres. Originally evolved for relatively temperate climates, the Overseer system has now been adapted for full tropical conditions and for the ready demountability which is so often wanted at the same time. The "Overseer Tropical XI" shows no change in the actual constructional system, for the new requirements are met chiefly in the range of equipment, which includes Johnson louvres and the mounting of a quite spectacular set of folding glazed doors which cover virtually the full width of the house.

Other systems represented at the Fair have undergone modifications of a minor kind. The **"Reema"** system (consulting architect: Wallace Smith), which is characterized by hollow precast concrete storey height wall panels, has been simplified by incorporating the quoin in one of the adjoining panels, instead of inserting a separate quoin piece after the panels are in place. The **"Neata"** system (consulting architects: Eric Cole & Partners), which is a cedar loadbearing panel wall construction, is varied only in the prefabricating of the gable as a single unit. The **"Buckwyn"** system, which is a steel construction making particular use of tubular sections, has been modified as the result of the increasing use of Buckwyn metal tiles (each 1 ft. wide and up to 12 ft. long) in place of corrugated sheet materials, which has led in turn to the substitution of metal angle for tubular purlins. SMD Engineers have not varied their **Alframe** system, though they have much extended its use, and G. H. Burgess & Co. have adapted their "Supalite" construction (narrow storey height timber framed weight bearing panels) to make their "Hyperlite" house for use in the Middle East but without involving any modification of technical importance.

Cruden Houses Ltd. of Musselburgh, whose chief exhibit is a steel Portal frame, also show a model of a prototype Tropical Bungalow designed by Douglas Stapleton & Partners (designers) and Ove Arup (structural engineer). The chief structural idea of this design is the sparing use of light steel sections (4 in. by 1¾ in. RSJs and 2½ in. by 2½ in. stanchions). The main beams cantilever beyond the stanchions in the walls to form verandahs and are held down at the verandah edge by aluminium faced "Permaply" plywood sheets held by a turnbuckle at the foot.



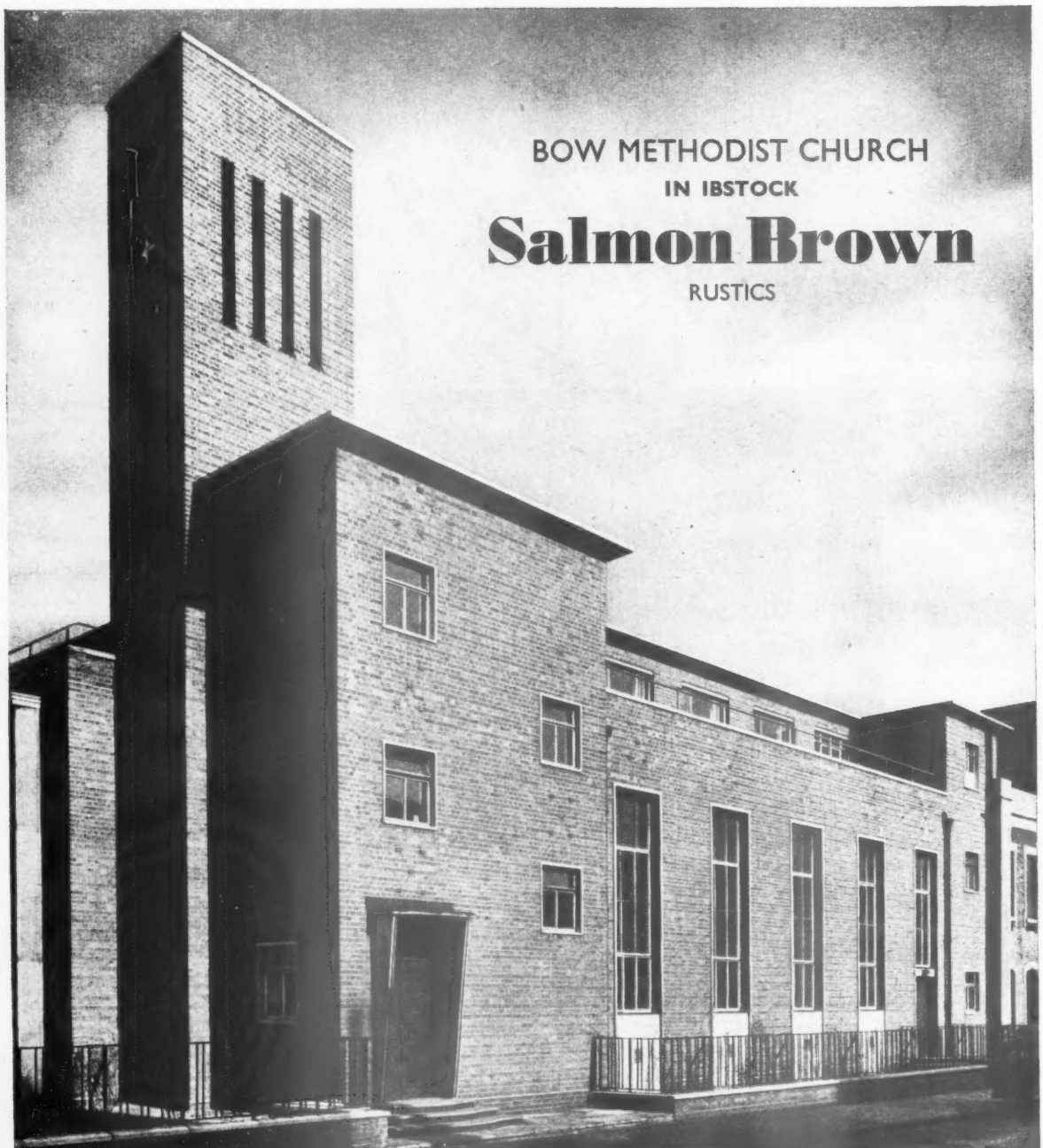


Above: Detail of the "Reema" club end corner joint. Right: "Reema" panel being lifted into position.

THE INDUSTRY

This week we give a brief selection from items on show at the Castle Bromwich BIF.

So far as those industries allied to building are concerned the Castle Bromwich end of the BIF does not convey a very encouraging impression. Manufacturers appear generally to be marking time, for many of the products heralded as "new" in the publicity turn out to be the same things with minor titivation, originating one suspects from the sales rather than the technical department. The impulse given to industries by the housing drive in the years after the war, seems to have run down. The search for better and more economical ways of fitting means to ends is no longer pursued with much zeal. Perhaps the most rewarding section to walk around is that displaying contractors plant and equipment. Although there is nothing very new, manufacturers are here dealing with problems which they have taken the trouble to define precisely. The products consequently, are often more convincing and genuine than those which "show" in the



BOW METHODIST CHURCH

IN IBSTOCK

Salmon Brown

RUSTICS

Architects: Mauger & May, F/F.R.I.B.A., London N.W.1.
Contractors: Field Davies Ltd., London, N.16.

THIS pleasant building adds another notable element to the growing architecture of London's East End. The Ibstock Salmon-Brown Rustic Bricks contribute a handsome colour and texture to the symmetrical profile and clean-cut stone dressings of the building.

Owing to present heavy demand, supplies of facing bricks of most types are booked for a long time ahead and reservations for 1954-5 are now being made.

IBSTOCK BRICK & TILE CO. Ltd., near Leicester. *Phone:* Ibstock 391
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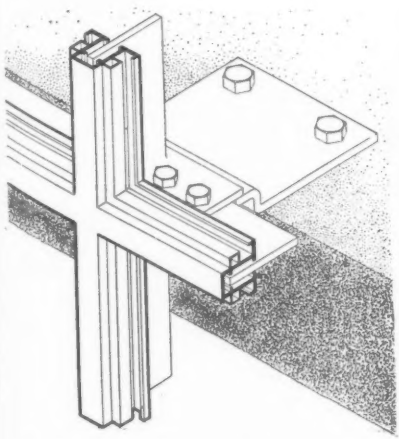
IBSTOCK Facings *for Colour*

finished building, or which may be chosen directly by the building owner. Unfortunately this was the least complete part of the show on press day.

The technical achievements are individually nearly always thorough—whether it is a fire alarm device, an inclined conveyor or a domestic back boiler, but the total picture is a chaotic one. The problem of public need is being met in a piecemeal and sadly wasteful fashion, one feels. But this is hardly the occasion for examining the structure of British Industry.

Below we give a brief account of some of the items being exhibited which should be regarded as selective rather than comprehensive.

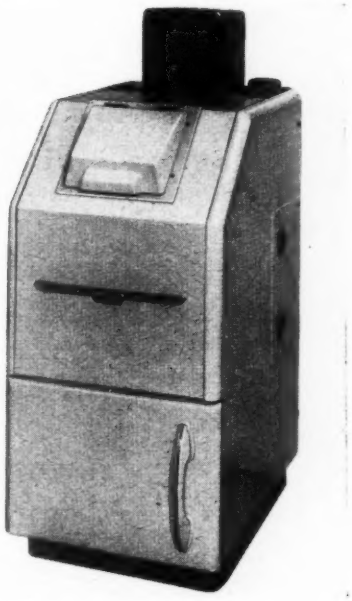
Henry Hope and Sons Ltd. are showing their "Windowgrid" system of window walls, which was first developed for the LCC Parliament Hill Comprehensive school. This consists of a series of steel brackets bolted to the external edges of the floors to which are fixed flat section steel mullions spanning from floor to floor vertically; and transomes extending horizontally. So far there is no standard spacing for this grid—it is made according to the architects requirements. Over the outer edge of these "fin" mullions and transomes fits an aluminium "top hat" section which provides rebates for the glazing, glass being retained by a screw fixed metal bead. Solid walling can, of course, be built off the edges of the floor slabs clear of the grid; or certain types such as woodwool can be accommodated just behind the glass—held between extensions on the glazing bar sections.



Junction of mullion and transome in the "Windogrid" system.

Radiation Ltd. are showing a version of their whole house heating plant for oil firing. It is available as a space heater only, or as a space and water heater. The vaporizing burner which uses kerosene (paraffin) as the fuel, is mounted at low level in the casing beneath a single tube flue heat exchanger. Air drawn in by an electric fan passes up around the heat exchanger to the top of the unit, and then (in the water heating model) passes down over the 40 gallon cylinder which is alongside the heat exchanger. The cylinder also receives heat by direct radiation from the latter. The warmed air emerges from the unit through low level grilles into the room or into a duct system, returning at high level to be re-heated. The heat output of the unit is regulated by room thermostats and there is a second internal thermostat which switches the oil vaporizer from pilot to full flame to maintain a constant internal temperature in the unit. Room temperatures may also be regulated by adjusting the room outlet registers. There is an immersion heater in the hot water cylinder for Summer use. It is estimated that this will require from 1,500 to 2,000 units of electricity a year.

The Danish central stove.



The Glow-Worm A25 boiler.

The whole unit fits into an insulated recess the same size as that required by a solid fuel type, and is covered by an insulated cover plate.

Annual consumption (maker's figures) are: 450 gallons per year (space heating only), and 600 gallons per year (space plus water heating). This provides 60° F. in the whole house at all times, with 67° F. for 8 hours a day in the living room and dining space; 65° F. for 4 hours a day in bedrooms. Hot water is at the rate of 50 gallons a day at 140° F. These figures are for a house of 1,000 f.s. floor area insulated to the Egerton standards. For comparison, the fuel consumption of the solid fuel type giving the same results is quoted as 4 tons of coal or anthracite a year.

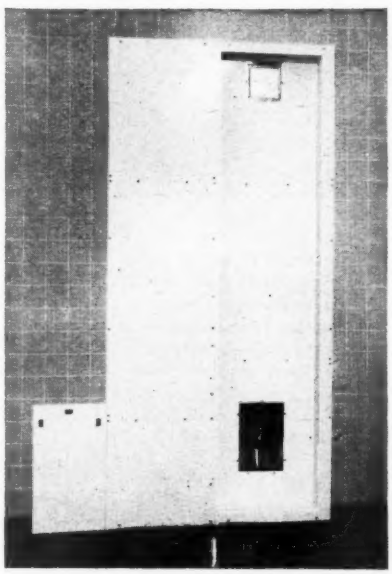
On the same stand, although not new for the BIF, is the **"Parkray"** convector fire. This is worthy of mention because it is one of the few appliances to come on the market as a result of the Ridley Committee's recommendations. Its main virtue is that the larger convection component in the total output gives better room distribution, and the restricted throat cuts down on the 5-6,000 f.c. of air per hour which the conventional fire sucks out of the room. It is available with or without a back boiler.

Glow-Worm Boilers Ltd. are showing a perspex model of a Danish house equipped with a "Danish central stove" for which latter they hold the British manufacturing rights. This should be of some interest and we hope to give more information about it in a later issue.

The same firm are showing the A 25 Automatic boiler which has a rated heating output of 25,000 BTU/hour. The water temperature operates a thermostat which controls the primary air, the chimney damper and the spoil draught. A knob on top of the boiler gives control of the water temperature. Fuelling need be only twice a day, and, one thoughtful point, there is a cover for preventing ash blowing about when you carry the ash pan to the dust-bin.

Also on this stand, and also described as new, is the **"Ecclesbourne"** open fire with back boiler of 20,000 BTU/hour output. This is an uncommonly high figure for an open fire, though doubtless one has to keep it well stoked. There is a damper gear to regulate the open fire and boiler output.

Nu-Way Heating Plants Ltd. show a neat gas oil vaporizing burner—the "Home Fire"—described as being new on the market. The main idea is that it can be used for converting existing solid fuel boilers of domestic rating, to oil firing. There is a small closed casing which contains the electric fan and oil feed mechanism. This is fixed to the outside of a special front plate covering the former fire door opening, through which projects the draught tube and burner pot. The unit operates on the "high-low" flame principle; that is, there are two burn-



The whole-house heating plant for oil firing, made by Radiation Ltd., which is available as a space heater only, or as a space and water heater.

Lloyd roof insulation has cut fuel costs by

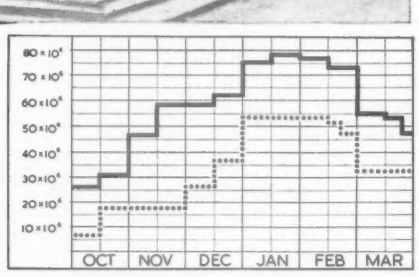
42%

The office block of the Armstrong Whitworth aircraft factory at Coventry has a floor area of 63,750 sq. ft.

Lloyd ½ in. Insulation Board lined with Ardor aluminium foil has been fixed by the Lloyd Talon system to the underside of the south slope of its roof. This insulation has reduced the average rate of heat transmission through the roof from 1.13 to 0.15 B.Th.U's per sq. ft. per hour, and has meant a saving in fuel costs of as much as 42% during last winter.

The boards and metal fixing components are light and easy to manipulate and two men handled the job comfortably. The boarded roof looks trim and even, reflects more light.

In summer, too, considerable benefits are derived from the insulation. By minimising the radiation of solar heat from the roof it keeps the block so pleasantly cool that only half the extraction and air circulation plant need be used.



The 42% fuel saving over the six months October to March 1952 is clearly shown in this graph. The top line shows the heat input before insulating the roof; the dotted line traces the input after insulation. Heat saved by insulation equals 4,416,200,000 B.Th.U's or 219.05 tons of coal.

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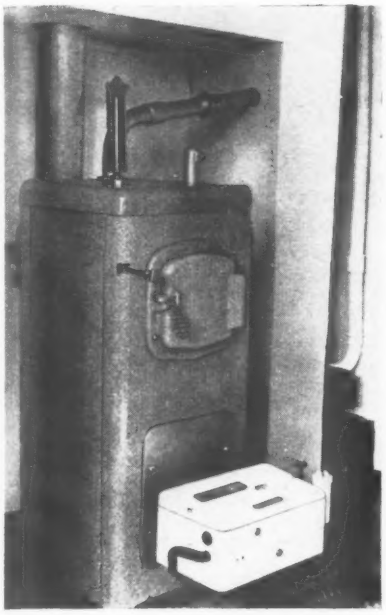

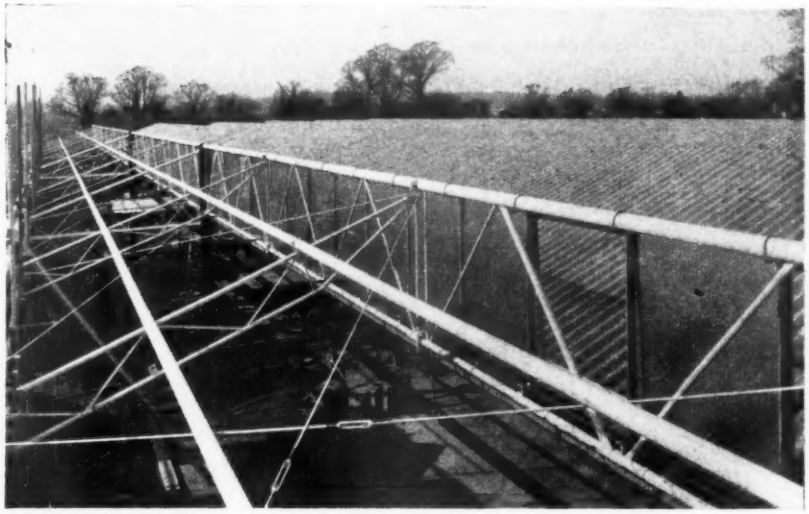

Left: The "Home Fire," made by Nu-Way Heating Plants Ltd., which can be used for converting existing solid fuel boilers of domestic rating to oil firing. Above: An Arcon north light Roof Building, made by Taylor Woodrow Ltd. for Messrs. Racal Ltd., a model of which is shown on the Bracknell New Town Development Corporation stand.

ing rates of 0·55 gallons an hour and of 0·25 pints an hour, a thermostat switching from one to the other according to water temperature. The higher value gives 62,000 BTU/hour at a boiler efficiency of 70 per cent.

F. H. Bourner and Co. Ltd. have been making a rivet gun for some time now, but state that only recently has it begun to sell in quantity. This is the "Super Dynamic" Power Driving Tool—one of those gadgets that seem to have been unheard of until the Anglo-American Productivity Team returned with accounts of its common use in the USA. It fires pins with threaded or butt heads of $\frac{3}{16}$ in., $\frac{1}{4}$ in., or $\frac{5}{16}$ in. dia. using a 0·22 cartridge available in five strengths. These are chosen according to the hardness of the material, the penetration needed and the length of pin. A rate of four shots a minute is claimed. Contractors (including those who have tried them) seem generally to take a pessimistic view of rivet guns, but their undoubted popularity in America suggests that this is due to lack of experience and acceptance on the part of building tradesmen.

Bracknell New Town Development Corporation occupy a stand at which they demonstrate facilities for industrial buildings on the new town site. The most interesting item here is a model of an Arcon factory for Messrs. Racal Ltd. electronic equipment manufacturers. It has a north light roof, the lights being vertical and not sloping, and is constructed of welded and bolted steel tube and rod. Tube purlins are supported on diagonal braced lattice rafters which rest, one end on the top, the other on the bottom chords of the longitudinal girder which is in the plane of the glazing. Two rod windbraces are provided in the sloping plane, with turnbuckle adjustment. The factory is nearly completed and the main roof area covers 20,000 ft. sup.

Arcon structures represent an interesting departure in industrial practice for they are produced by a group of firms: Stewarts and Lloyds, ICI, United Steel Companies, Williams and Williams, Austins of East Ham and Taylor Woodrow Ltd.

INFORMATION CENTRE

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

23.197 **heating: ventilation**

FLOOR HEATING

"Electrical Floor Warming," by J. W. Moule. EDA Conference, April 7, 1954.

In recent years, interest has increased in the use of electricity at "off-peak" periods for floor heating of buildings. This paper was prepared primarily for the benefit of the commercial staffs of Electricity Boards to assist them in developing this form of heating, which is considered by the Boards as an important method of raising the "off-peak" loads at power stations.

The author discusses factors affecting human comfort, which he concludes can be provided most satisfactorily by a floor warming system; his claim that such a system is also the most efficient as air temperature can be kept to a minimum needs considerable qualification.

In considering the design of an electrical floor warming installation, the paper states that with large buildings the heat storage capacity of the floor is sufficient to enable the supply to be cut off between 7 a.m. and 7 p.m. At present it is standard practice to accept this and design accordingly, although the capital installation cost is higher than would be the case if a mid-day boost were allowed for. The author states that this basis for design may need reconsideration; for lighter buildings such as dwellings, however, he considers that a mid-day boost is definitely desirable and suitable tariffs should be offered.

The need to provide good structural thermal insulation is emphasised and also the necessity to consider the exposure conditions of the building when designing the installation.

The maximum floor surface temperature recommended is 73° F. if foot discomfort is to be avoided. The paper describes the Panelec system in which the heating wires are run in "D" shaped housings connected together thermally by a layer of expanded metal in order to distribute the heat and to provide a uniform temperature over the whole of the floor surface. The purpose of this is to avoid "hot spots" and thus to allow the whole floor surface to be raised to the maximum temperature to ensure maximum heat output when required without exceeding the optimum surface temperature. Interesting installation details of this system are given in the paper, but the author considers that further experimental work is required on the development of the thermostatic control.

Another system using a cable such as the Pyrotenax cable is also described; this is stated to be a somewhat simpler and cheaper system. Simple installation is one of the advantages claimed for electrical floor warming systems; the capital cost of the Panelec system for example is given as about two-thirds that for an ordinary central heating system. As regards running costs, the author points out that the electrical system necessitates the building being heated 24 hours a day. Its most suitable use is therefore for such buildings as hospitals which are continuously heated; for intermittent heating, however, its suitability is not so obvious, although it is claimed that it can compete favourably with other forms of heating.

Comparison of electrical "off-peak" floor heating with, say, a conventional radiator scheme is obviously not a simple matter. Factors such as the heat loss from a warmed floor and the intermittency of heating must necessarily be taken into account. In the present state of knowledge, the author's suggestion that the comparison should be made by obtaining estimates of capital and running costs from the Electricity Board and independently from a specialist in the conventional system is to be commended. The latter should make his assessment from a study of the building plans rather than from an estimated heat input requirement based on the electrical scheme.

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

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.)

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Please ask manufacturers to send further particulars to :—

NAME .....

PROFESSION or TRADE

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ADDRESS .....

.....

13.5.54

Announcements

T. McEwan Porter, A.R.I.B.A., and Peter Wakefield, A.R.I.B.A., associates of the late G. Blair Imrie, F.R.I.B.A., of Teffont Magna, Salisbury, have formed a partnership to continue his practice and that of B. Wakefield & Son, of 18, Orchard Street, Bristol, 1. They will continue to practise from 18, Orchard Street, pending the establishment of a combined office.

Richard E. G. Hope, A.R.I.B.A., requests that all correspondence be addressed to him at P.O. Box 592, Ndola, N. Rhodesia.

Platt Metals Ltd., are now producing lead sheet and pipe as independent manufacturers and have appointed as sole distributors K. L. Cobb Ltd., Suffolk House, Laurence Pountney Hill, E.C.4. (Tel.: Mansion House 5931/2.)

Clarence E. Smart, F.I.Q.S., quantity surveyor, has taken into partnership George C. Winton, F.I.Q.S. The firm will in future practise under the style of Clarence E. Smart and Partners, 42, Theobald's Road, W.C.1 (Tel.: Holborn 2972), and also at Lloyds Bank Chambers, Cathedral Gateway, Peterborough (Tel.: Peterborough 3625).

Jack F. Byfield has joined the board of S. N. Bridges & Co. Ltd., Parson's Green Lane, S.W.6, manufacturers of portable electric tools, members of the John Brown Group.

S. Cornthwaite has been appointed midlands sales manager of Marryat & Scott Ltd., lift manufacturers, and will operate from the Birmingham Office at 41, Water Street.

George Fairweather, F.R.I.B.A., has taken into partnership Eric Rheinberg, A.R.I.B.A., and Geoffrey L. Cannon, A.R.I.B.A. The firm will practise under the style of George Fairweather and Partners, 28/30, Wigmore Street, W.1 (Tel.: Welbeck 5489/0).

The Rom River Co. Ltd. have moved to St. Richard's House, 90, Eversholt Street, N.W.1 (Tel.: Euston 7814-9).

Siemens Electric Lamps and Supplies Ltd., now have a permanent exhibition stand at the Building Centre, Store Street, W.C.1. Situated on the second floor, it is devoted to the needs of architects, designers, contractors, etc.

Harald Weinreich, A.R.I.B.A., has taken W. A. F. Sewell, A.R.I.B.A., into partnership. The firm will be known as Harald Weinreich and Partners, and will continue to practise at 180, Piccadilly, W.1 (Tel.: Hyde Park 4404).

Lt. Col. W. E. Cross, F.R.I.B.A., has been appointed by the Board of the Bracknell Development Corporation to serve on the General Committee of the Berkshire Branch of the Council for the Preservation of Rural England.

Cruickshank & Seward, F.R.I.B.A., have moved to Royal London House, 196, Deansgate, Manchester, 3 (Tel.: Deansgate 6161).

W. H. Heywood & Co. Ltd. announce the appointment of George T. Noble as General Sales Manager at Bayhall Works, Huddersfield. J. L. Thomas now becomes manager and is working from 5, Newton Place, Glasgow C.3 (Tel.: Glasgow Douglas 0103).

Tretol Ltd. have formed a subsidiary (Tretol Associated Products Ltd.) to market a range of flooring and roofing products. Alan Smethurst, formerly a divisional manager of the Neuchatel Asphalte Co., has joined the Tretol organization as a director of the new subsidiary to take over its management.

W. H. Heywood & Co. Ltd. announce the appointment as area representative for South Staffordshire, Worcestershire and Warwickshire of T. H. Irwin. Mr. Irwin will operate from Partons Road, Kings Heath, Birmingham, 14, in conjunction with John Gibbs Ltd., Partons Road Works, Birmingham, 14.

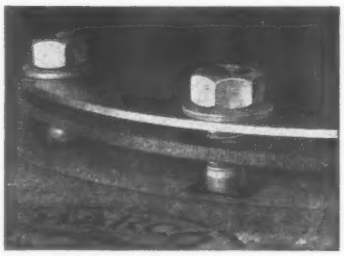
An Important Improvement

in

HOT WATER TANKS

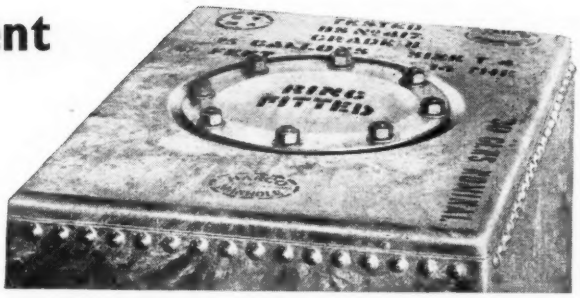
IN keeping with their progressive policy, and to meet the requirements of the Building Industry, Harveys have designed a new type of Manhole and Cover for 'HARCO' HOT WATER TANKS.

The main advantage of this development is that of preventing the thread of the bolts from coming into contact with water, thereby avoiding corrosion—and the consequent risk of shearing the bolt heads—and greatly facilitating removal of the cover for servicing.



This is achieved by securing the heads of the bolts inside the tank, so that the screwed portion projects outside.

No hemp, red lead or other jointing material is required when fixing the cover other than



the India Rubber Ring which is supplied with the tank. This ring, together with the grummets fitted under the bolt heads inside the tank, enables a perfect seal to be made in much less time.

The cover itself is slightly convex to give additional strength and the turned-over edge of the manhole presents a smooth rounded surface which cannot injure the hands or arms when installing the tank.

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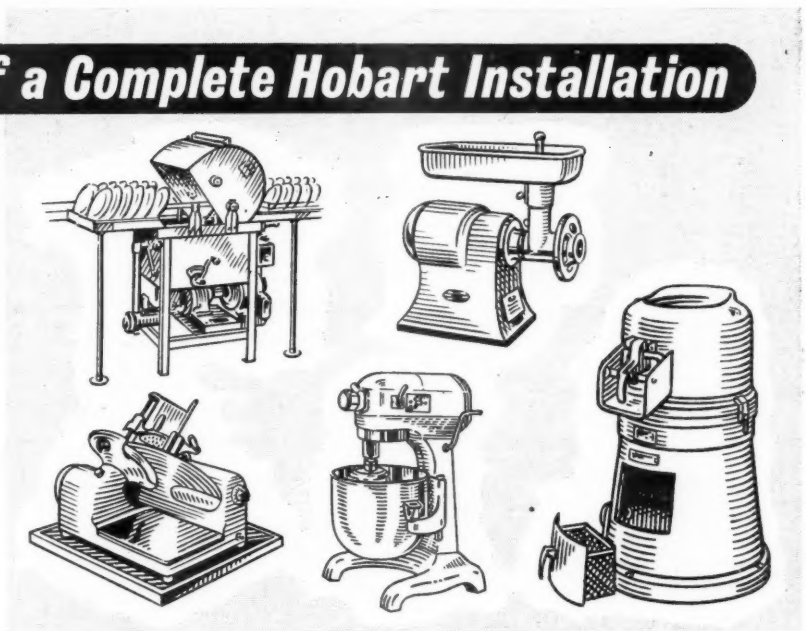

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LIVERPOOL Stoneycroft 7274	**MANCHESTER** Ardwick 1169		**NEWCASTLE-ON-TYNE** Low Fell 7-5279		**NOTTINGHAM** Nottingham 84771	

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.

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

MINISTRY OF WORKS.

Vacancies exist in the Chief Architect's Division, in London, Cambridge, Colwyn Bay and Bristol for ARCHITECTURAL ASSISTANTS. Must have had at least three years' architectual training, one year's experience in an architect's office and be of Inter. R.I.B.A. standard.

London salary: Up to £670 per annum. Starting pay up to £580 per annum according to age and experience. Salary outside London slightly lower. Although not established posts, many have long-term possibilities. Reasonable promotion prospects; competitions held periodically for establishment.

State age, nationality and full details of training and experience to W.G. 10/C.A.4, Ministry of Works, Abell House, John Islip Street, London, S.W.1. 2075

BOROUGH OF LUTON.
APPOINTMENT OF SENIOR ASSISTANT QUANTITY SURVEYOR.

Applications are invited for the above appointment (salary: A.P.T., VII-VIII, £735-£860).

Candidates should be Chartered Quantity Surveyors, and have considerable experience in all branches of work. A knowledge of valuation and estates work an advantage, but not essential.

Applications, in candidates' own handwriting, stating age, qualifications and experience, with names of two referees, to be sent to the Borough Engineer, Town Hall, Luton, by 22nd May, 1954.

A. D. HARVEY,
Town Clerk.
2467

METROPOLITAN BOROUGH OF WANDSWORTH.
ASSISTANT ARCHITECTS.

Applications are invited for the appointment of:—

(*a*) SENIOR ASSISTANT ARCHITECT. A.P.T., VII/VIII (£765-£890 p.a.).

(*b*) ASSISTANT ARCHITECT. A.P.T., Va/VI (£680-£790 p.a.).

Applicants for both posts should be Associates of the R.I.B.A., and have had considerable experience in the design and planning of housing estates, particularly multi-storey blocks of flats and/or other framed buildings, and in the supervision of their erection. Applicants for (*a*) must also have had experience in the control of staff.

Application forms, obtainable from the Borough Engineer, must be returned to me by 24th May, 1954.

R. H. JERMAN,
Town Clerk.
Municipal Buildings, Wandsworth, S.W.18. 2485

OXFORDSHIRE COUNTY COUNCIL.
ARCHITECTURAL ASSISTANTS—Salary A.P. & T. Grade III (£550-£595).

Applications are invited for the above posts in the County Architect's Department. Applicants should have had experience in the preparation of working drawings and details in connection with Schools and other County work, and should be neat and accurate draughtsmen. Preference will be given to candidates who have passed the R.I.B.A. Intermediate Examination and/or attended a School of Architecture. The appointments are subject to the provisions of the Local Government Superannuation Act 1937/53 and to medical examination.

Applications stating age, experience, qualifications and the names of two referees, are to be sent to the County Architect, Park End Street Offices, Oxford, not later than the 28th May, 1954.

GERALD GALE BURKITT,
Clerk of the Council.
County Hall, Oxford. 2552

COUNTY OF LEICESTER.

(*a*) SENIOR ASSISTANT ARCHITECTS—(£735-£860).

(*b*) SENIOR ASSISTANT ARCHITECTS—(£695-£810).

(*c*) ARCHITECTURAL ASSISTANT—(£580-£625).

(*d*) BUILDING SURVEYOR—(£550-£610).

(*e*) ASSISTANT HEATING ENGINEER—(£650-£710).

(*f*) ASSISTANT HEATING ENGINEER—(£550-£595).

Applicants must be for (*a*) and (*b*) Registered Architects, (*c*) Students of R.I.B.A., (*d*) capable of producing plans and specifications for alterations, (*e*) and (*f*) preference given Associate/Graduate I.H.V.E. respectively. Apply by 24th May for (*a*) to (*d*), 5th June for (*e*) and (*f*), on forms obtainable from County Architect, 123, London Road, Leicester. 2556

COUNTY BOROUGH OF BURTON-UPON-TRENT.
APPOINTMENT OF JUNIOR QUANTITY SURVEYOR.

Applications are invited for the appointment (subject to satisfactory medical examination) of a JUNIOR QUANTITY SURVEYOR in the Architectural Section of the Borough Surveyor's Department. Salary A.P.T. Grade I (£490-£535). Applicants should have had experience in simple taking-off, abstracting, billing, site measuring and work in connection with final accounts and will be engaged in the Quantity Surveyor's Section.

Applications giving age, training and experience, and the names of two referees, should be received by the Borough Engineer and Surveyor, Town Hall, Burton-upon-Trent, by Thursday, 27th May, 1954.

H. BAILEY CHAPMAN,
Town Clerk.
Town Hall, Burton-upon-Trent.
1st May, 1954. 2554

HARROW URBAN DISTRICT COUNCIL.
ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the appointment of ARCHITECTURAL ASSISTANT, A.P.T. Grades V/Va/VI (£620-£760 per annum, plus London "weighting") in the Department of the Engineer and Surveyor.

Applicants must have had sound technical experience in all building trade subjects, be competent draughtsmen, experienced in the preparation of specifications and tender documents and in the supervision of repairs, alterations and decorations in connection with schools and other municipal buildings.

The appointment will be subject to the provisions of the Local Government Superannuation Acts; the passing of a medical examination; and the National Joint Council's Scheme of Conditions of Service.

The Council is unable to assist in obtaining housing accommodation for the successful candidate.

Canvassing will be a disqualification.

Forms of Application may be obtained from the undersigned, to whom they should be returned not later than Friday, 28th May, 1954.

D. H. PRITCHARD,
Clerk of the Council.
Council Offices, Harrow Weald Lodge, Harrow, Middlesex. 2555

OXFORD REGIONAL HOSPITAL.

Applications are invited from qualified persons for the post of ASSISTANT QUANTITY SURVEYOR in the Regional Architect's Department. Salary Scale £600 × £25(7) × £30(3)—£865 p.a., starting salary may be above the minimum according to years of experience since qualifying, subject to a maximum of not more increments than the years by which a candidate's age exceeds 25. Compulsory Superannuation. A car is desirable. Applications stating age, training, qualifications (giving dates); previous experience and present salary, with the names of two referees, should be submitted to the Secretary, Oxford Regional Hospital Board, 43, Banbury Road, Oxford, by not later than 27th May, 1954. 2557

BOROUGH OF WALTHAMSTOW.
ASSISTANT ARCHITECT.

Applications are invited for the above appointment on Grades I/V, A.P.T. Division (£520-£700, inclusive of London Weighting), commencing salary according to qualifications and experience.

Applications, with names of two persons for references, should be received by the undersigned not later than Saturday, the 29th May, 1954, endorsed "Assistant Architect."

G. A. BLAKELEY,
Town Clerk.
Town Hall, Walthamstow, E.17. 2553

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Vacancies for SURVEYING ASSISTANTS in District Surveyor's service. Salaries up to £721, qualifications A.M.I.Struct.E., A.R.I.B.A. or A.R.I.C.S. Structural knowledge essential. Particulars and application forms returnable by 22nd May from The Architect (AR/EK/DS/2), County Hall, S.E.1 (538). 2550

THE UNIVERSITY OF MANCHESTER.

Applications are invited for the post of LECTURER IN ARCHITECTURE. Salary on a scale £500-£1,100 per annum with membership of F.S.S.U. and Children's Allowance Scheme: initial salary according to qualifications and practical experience. Applications should be sent not later than 1st June, 1954, to the Registrar, the University, Manchester, 13, from whom further particulars and forms of application may be obtained. 2551

LONDON ELECTRICITY BOARD.
ENGINEERING DRAUGHTSMAN.

Applications are invited for the above position in the Drawing Office of the North-Eastern Sub-Area.

Candidates should have had a good general and technical education, and be experienced in one or more of the following subjects: engineering drawing; plant layout in sub-stations; layouts and site plans of mains work; electrical diagrams.

The post is graded under Schedule "D" of the National Joint Board agreement as Grade 6—£458 to £595 7s. per annum, inclusive of London allowance.

Application forms obtainable from Personnel Officer, 46, New Broad Street, E.C.2. Please enclose addressed envelope and quote ref. V/1735/A. on envelope and all correspondence. 2526

HER MAJESTY'S COLONIAL SERVICE.
SUPERINTENDING ARCHITECT, PUBLIC WORKS DEPARTMENT (DEVELOPMENT ESTABLISHMENT), NORTHERN RHODESIA.

The selected candidate will be directly responsible to the Assistant Director (Buildings), and will be required to co-ordinate the work of at least four Senior Architects, each in charge of large building programmes.

Appointment will be on contract for one tour of approximately 3 years at a fixed salary of £1,750 per annum, with gratuity of £150 per annum on satisfactory completion of contract. Cost-of-living allowance at the rate of £195 10s. per annum is at present payable.

Free passages for officer, wife, and children up to cost of one adult fare on first appointment and on leave. Leave at rate of 5 days for each month of resident service. Government quarters provided at rental of not more than 10 per cent. of salary.

Candidates, between the ages of 38 and 50, must be A.R.I.B.A., with at least 10 years' experience, comprising the design and supervision of construction of large building schemes carried out by contract and the administration of a large staff.

Apply in writing to the Director of Recruitment, Colonial Office, Great Smith Street, London, S.W.1, giving briefly age, qualifications, and experience. Mention the reference No. BCD.112/3/08. Closing date for receipt of initial enquiries: 26th June, 1954. 2560

GLENROTHES DEVELOPMENT CORPORATION.

A vacancy has occurred for an ARCHITECT (HOUSING). Applications for the post are invited from Corporate Members of the R.I.B.A., with experience in contemporary design and construction of large housing developments. Salary grade: £550-£890 per annum, commencing according to qualifications and experience.

The Corporation will provide a house to let, if required. The post is superannuable under the Local Government (Scotland) Act, 1937, and the successful candidate will require to pass a medical examination. Applications, stating age, qualifications and experience, must reach the Secretary, Glenrothes Development Corporation, Glenrothes, Fife, not later than 20th May, 1954. 2525

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

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

The scale of salary attaching to the post is £675×25—£750×30—£960×£40—£1,000, the entry point depending on the age, qualifications and experience of the successful candidate.

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

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

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

Application forms may be obtained from the Director of Establishments, Ministry of Finance, Stormont, and should be returned, with copies of two recent testimonials, so as to reach him not later than 26th May, 1954. 2566

EAST ANGLIAN REGIONAL HOSPITAL BOARD.

Applications are invited for post of ARCHITECTURAL ASSISTANT. Applicants must have passed Intermediate Examination of R.I.B.A. Commencing salary, within grade £440-£625 per annum, will depend on applicant's age and practical experience since passing Intermediate Examination, but will not exceed £525. Sound architectural training and practical experience in an architect's office essential.

Applications, stating age, qualifications and experience, and names of three referees, to Secretary of Board, 117, Chesterton Road, Cambridge, by 24th May, 1954. 2580

MOUNTAIN ASH URBAN DISTRICT COUNCIL.
APPOINTMENT OF ASSISTANT ARCHITECT.

Applications are invited for the above appointment. Applicants must have passed the Intermediate Examination of the Royal Institute of British Architects or its equivalent, and have had at least two years' experience in an Architect's office, preferably on housing work. The conditions of employment will be in accordance with the National Scheme of Conditions of Service, and the appointment will be remunerated in accordance with Grade A.P.T., IV (£580×£15—£625). The appointment will be superannuable and will be terminable by one month's notice on either side. The successful applicant will be required to pass a medical examination.

Applications, stating age, qualifications and experience, together with the names of two persons to whom reference may be made, must reach the undersigned not later than Wednesday, the 26th May, 1954. Housing accommodation will be provided if required.

BERNARD M. MURPHY,
Clerk of the Council.
Town Hall, Mountain Ash.
5th May, 1954. 2579

BRITISH ELECTRICITY AUTHORITY.
EAST MIDLANDS DIVISION.

Applications are invited for the following positions within the Division :—

ENGINEERING DRAUGHTSMEN (CIVIL), CONSTRUCTION DEPARTMENT. (Vacancy No. 1/54/AJ.)

Candidates should have experience in design and detail of reinforced concrete structures, piled and slab foundations for heavy plant, culverts, cable subways, etc., for general building construction drainage and sanitation schemes, associated with official and administrative buildings.

The salary will be in accordance with Grade 5 (£567-£671 per annum) or Grade 6 (£433-£567 per annum) of Schedule D of the National Joint Board Agreement.

ENGINEERING DRAUGHTSMEN (MECHANICAL), CONSTRUCTION DEPARTMENT. (Vacancy No. 2/54/AJ.)

SENIOR DRAUGHTSMEN are required in the Mechanical Section of the Construction Department at North Wilford Power Station. Candidates should have experience in one or more of the following :—

(*i*) Design and layout of Power Station equipment, including turbo-alternators, boiler plant, coal and ash plant, and general station auxiliaries.
(*ii*) H.P. and L.P. steam and feed pipework. Condensing plant and feed heating systems.
(*iii*) Conveyor plant, coal handling systems and material handling of station auxiliary equipment.

The salary will be in accordance with the National Joint Board Agreement Grade 5 (£567-£671 per annum) and Grade 6 (£433-£567 per annum) of Schedule D according to experience.

ENGINEERING DRAUGHTSMEN (ELECTRICAL), CONSTRUCTION DEPARTMENT. (Vacancy No. 3/54/AJ.)

Candidates should have experience in the preparation of layouts and diagrams for the installation of E.H.T. and L.T. switchgear, transformers, E.H.T. and L.T. cables; knowledge of protective gear systems would be an advantage.

The salary will be in accordance with the National Joint Board Agreement Grade 5 (£567-£671 per annum) and Grade 6 (£433-£567 per annum) of Schedule D according to experience.

DRAUGHTSMEN, TRANSMISSION DEPARTMENT. (Vacancy No. 46/54/AJ.)

DRAUGHTSMEN are required in the Transmission Department at this Divisional Headquarters. Experience on the design and construction of H.V. sub-stations or overhead transmission lines an advantage.

Salary, according to experience and ability, within Grade 6 (£433-£567 per annum) or Grade 5 (£567-£671 per annum) of Schedule D of the National Joint Board Agreement.

Closing date for receipt of applications is 17th May, 1954.

The above positions will be pensionable within the provisions of the British Electricity Authority and Area Boards Superannuation Scheme.

Applications should be submitted on the official form which may be obtained from the Divisional Establishments Officer, British Electricity Authority, P.O. Box No. 25, British Electricity House, Barker Gate, Nottingham, and should be returned to the undersigned by the date stated. Please quote Vacancy Number.

L. F. JEFFREY,
Divisional Controller.
2534

CITY AND COUNTY OF KINGSTON-UPON-HULL.
CITY ARCHITECT'S DEPARTMENT.
EDUCATIONAL BUILDING PROGRAMME.

Applications are invited for the following appointments :—

PERMANENT STAFF.

ENGINEERING SERVICES ASSISTANT. Grade V A.P.T. Division £620-£670 per annum. Applicants must be experienced in the design and preparation of drawings for modern hot water heating and supply schemes and ventilating apparatus and some knowledge of electrical installation work will be an advantage.

TEMPORARY STAFF.

(*a*) ASSISTANT ARCHITECTS. Grades IV or V A.P.T. Division £580-£670 per annum; according to qualifications and experience.

(*b*) QUANTITY SURVEYORS. Grade VII A.P.T. Division £730-£810 per annum. Applicants should be fully experienced in taking off quantities in all trades.

(*c*) QUANTITY SURVEYORS. Grade V A.P.T. Division £620-£670 per annum. Applicants should be fully experienced workers-up.

(*d*) DRAUGHTSMEN. Miscellaneous Division Grade III £395-£460 per annum. Applicants must be experienced Draughtsmen and good tracers.

Application forms to be obtained from the undersigned are to be returned completed on or before the 31st May, 1954.

ANDREW RANKINE, O.B.E., A.R.I.B.A.,
City Architect.
Guildhall, Kingston-upon-Hull. 2592

SENIOR ARCHITECTURAL ASSISTANT required by HAYES & HARLINGTON U.D.C. Salary: A.P.T., V, £620 to £670, plus London weighting (21 to 25 years £20, 26 years and over £30). Preference given to applicants who have passed the Intermediate Examination of the R.I.B.A. and who have experience of housing work with a local authority. Housing accommodation available, if required. Application form from Engineer & Surveyor, Town Hall, Hayes, Middx., to be returned by 24th May, 1954. 2559

CITY OF LIVERPOOL.
ARCHITECTURAL & HOUSING DEPARTMENT.

Applications are invited for the undermentioned appointments, viz :—

(1) ARCHITECTURAL ASSISTANT (Arch. Housing Section)—Salary, £580 × £15—£625 per annum (A.P.T. Grade IV).

Applicants must have passed the Intermediate Examination of the R.I.B.A. or equivalent and should have some experience of housing design and layout.

(2) TWO ARCHITECTURAL ASSISTANTS (Arch. General Section)—Salary within the range £490-£625 per annum according to qualifications and experience.

Applicants must have a good architectural training and preferably have passed the Intermediate Examination of the R.I.B.A. Office experience is desirable.

Application forms, obtainable from the City Architect & Director of Housing, Blackburn Chambers, Dale Street, Liverpool, 2, must be returned to him by 29th May, 1954.

The appointments are superannuable and subject to the Standing Orders of the City Council. Canvassing disqualifies.

THOMAS ALKER,
Town Clerk.
Municipal Buildings, Liverpool, 2 (JA.3544). 2593

BOROUGH OF OLDBURY.
APPOINTMENT OF ASSISTANT ARCHITECT.

Applications are invited for the appointment of ASSISTANT ARCHITECT, Grade Va (£650 × £20—£710), in the Architects' Section of the Borough Surveyor's Department.

Applicants for the appointment should be qualified members of the R.I.B.A. and preferably have had previous experience with a Local Authority. The appointment will be mainly in connection with Municipal housing and candidates should be experienced in the layout of contemporary housing schemes; design and construction of Municipal houses, flats and shopping centres and capable of administering building contracts.

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

Applications, giving particulars of age, qualifications and experience and the names of two referees, should be delivered to the undersigned not later than Saturday, 29th May, 1954.

Housing accommodation will be made available to married applicants if required.

KENNETH PEARCE.
Town Clerk.
Municipal Buildings, Oldbury.
6th May, 1954. 2594

COUNTY BOROUGH OF GATESHEAD.
BOROUGH SURVEYOR'S DEPARTMENT: ARCHITECTURAL SECTION.

ASSISTANT ARCHITECTS required: A.P.T. VI (£695-£760 p.a.). Must be Registered Architects, Corporate Members of R.I.B.A., and experienced in design and construction of Public Buildings, Schools and/or Municipal Housing. The appointments are Established, pensionable, subject to Medical Examination, prescribed conditions and Local Government Superannuation Acts.

Application forms from Mr. G. F. Winters, B.E., A.M.I.C.E., Borough Surveyor, Municipal Buildings, Swinburne Street, Gateshead, 8, returnable by 3rd June, 1954. Canvassing disqualifies.

J. W. PORTER.
Town Clerk.
Town Hall, Gateshead, 8.
6th May, 1954. 2595

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Applications are invited for Planning Officers Grade I (£1,027-£1,168) and Grade II (£862 10s. £1,027). Professional Qualifications—A.R.I.B.A. (A.M.T.P.I. desirable). The redevelopment of the County of London raises many difficult problems of urban design, particularly those created by the architectural aspects of development applications. These require for their consideration imaginative ability, experience in architectural design and building methods, and up-to-date knowledge of planning technique. Application forms from The Architect (AR/EK/PO1/5), County Hall, S.E.1, returnable by 22nd May, 1954. (560) 2568

CANNOCK URBAN DISTRICT COUNCIL.
(Population—41,030.)

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

(*a*) QUANTITY SURVEYOR. A.P.T., VII (£735-£810). A.R.I.C.S. or equivalent required.

(*b*) ARCHITECTURAL ASSISTANT. A.P.T., III (£550-£595), IV (£580-£625), or V (£620-£670).

HOUSING ACCOMMODATION AVAILABLE to married candidates.

Further particulars and forms of application are available from the undersigned.

Closing date: 24th May, 1954.

W. C. SPEEDY,
Clerk of the Council.
Council House, The Green, Cannock, Staffs. 2529

IRAQ: MINISTRY OF EDUCATION invites applications for appointment of ARCHITECT for school buildings. Wide experience of designing school and other buildings necessary. Salary: between £1,200 and £1,800 a year, according to qualifications and experience. Allowances for: cost of living—£120-£168 a year; housing—up to £144 a year; annual leave passage—£40-60. One year contract initially, renewable by mutual agreement annually. First class return fares paid, but not at present for family. Two copies of applications should be sent to Cultural Attaché, Iraqi Embassy, 22, Queen's Gate, London, S.W.7. 2546

COUNTY BOROUGH OF HALIFAX.
BOROUGH ENGINEER'S DEPARTMENT.

Applications are invited for the appointment of an ARCHITECTURAL ASSISTANT (SCHOOLS) on the permanent staff in accordance with Grade A.P.T., V (£620-£645 per annum).

Candidates should possess appropriate technical qualifications, and will be required to pass a medical examination for superannuation purposes. The Corporation is unable to offer housing accommodation.

Applications, stating age, qualifications, present position, salary, and experience, accompanied by copies of three recent testimonials, should be appropriately endorsed and delivered to the undersigned not later than Saturday, 22nd May, 1954.

RICHARD DE Z. HALL,
Town Clerk.
Town Hall, Halifax.
30th April, 1954. 2562

WEST SUFFOLK COUNTY COUNCIL.

ARCHITECTURAL ASSISTANT, N.J.C. service conditions. Salary: £650-£710 (A.P.T., Va). Post pensionable; medical examination. Applicants should have had at least two years' office experience, and should be Registered Architects. Application forms, obtainable from the Clerk of the County Council, Shire Hall, Bury St. Edmunds, to be returned by 5th June, 1954. 2567

DERBY CORPORATION.
BOROUGH ARCHITECT'S DEPARTMENT.

JUNIOR ARCHITECT, Grade I/II. Salary: £490 to £565 per annum, commencing at £490, and National Conditions of Service.

Applicants should be not less than 21 years of age.

Qualifications: Preliminary R.I.B.A., and experienced in general architectural work.

Permanent staff appointment, subject to one month's notice, and pensionable, subject to medical examination.

Form of application obtainable from and to be returned to, the Borough Architect, The Council House, not later than 24th May, 1954.

Canvassing disqualifies.

G. H. EMLYN JONES,
Town Clerk.
2528

NORTH RIDING EDUCATION COMMITTEE. Vacancy for ASSISTANT ARCHITECT. Grade A.P.T., V. Salary: £620, rising by annual increments to £670. Candidates must be Associate Members of the R.I.B.A. Previous experience may be taken into account in fixing the commencing salary. Local Government Superannuation Act; send stamped envelope for form and particulars. Closing date for applications: 22nd May, 1954. Canvassing disqualifies. F. Barraclough, County Hall, Northallerton. 2527

ALDRIDGE URBAN DISTRICT COUNCIL.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited at a salary scale in A.P.T. Grade III-V according to qualifications and experience. The appointment is subject to a medical examination and to one month's notice on either side. Housing accommodation will be provided if necessary and reasonable removal expenses paid. Names of two referees required. Closing date, Monday, 17th May, 1954.

H. G. G. NICHOLS,
Clerk to the Council.
Council House, Aldridge, Walsall, Staffs.
3rd May, 1954. 2549

CITY OF STOKE-ON-TRENT.
CITY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments :—

(*a*) ASSISTANT ARCHITECTS. Salary: A.P.T. Division, Grade VII (£735-£810).

(*b*) ASSISTANT QUANTITY SURVEYOR. Salary: A.P.T. Division, Grade VIII (£785-£860).

(*c*) ASSISTANT QUANTITY SURVEYOR. Salary: A.P.T. Division, Grade VII (£735-£810).

Housing accommodation may be made available for appointments (*b*) and (*c*).

Applications, stating date of birth, particulars of training and experience, with copies of two recent testimonials, should be received by J. R. Piggott, T.D., F.R.I.B.A., City Architect, Kingsway, Stoke-on-Trent, Staffs., endorsed with the title of the appointment, not later than Saturday, 5th June, 1954.

HARRY TAYLOR,
Town Clerk.
2558

BRITISH ELECTRICITY AUTHORITY.
EASTERN DIVISION.

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

SITE ENGINEER.

Salary range in accordance with N.J.B. Agreement, £649-£953 per annum. The commencing salary depending upon experience and qualifications.

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

Forms of application may be obtained from the Controller, British Electricity Authority, Eastern Division, Northmet House, Southgate, N.14, and returned not later than 22nd May, 1954.

W. N. C. CLINCH,
Controller.
2531

CITY AND COUNTY OF NEWCASTLE UPON TYNE.

Applications are invited for the following appointment in the City Architect's Department:—

(*a*) SENIOR QUANTITY SURVEYOR. A.P.T., Division, Grade VIII (£785-£860).

(*b*) SENIOR ASSISTANT QUANTITY SURVEYOR. A.P.T. Division, Grade VII (£735-£810).

Candidates for the above appointments should be thoroughly experienced in the preparation of Bills of Quantities, Specifications and Estimates for Housing, Flats and Building Work of a general character and the settlement of final accounts.

Preference will be given to professional Associates of the R.I.C.S.

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937, and to one month's notice on either side. Successful candidates will be required to pass a medical examination.

Applications, stating position applied for, age, particulars of training, qualifications, experience, present and past appointments, together with copies of two recent testimonials or the names and addresses of two persons to whom reference may be made, should be addressed to George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle upon Tyne, 1, not later than Thursday, 20th May, 1954.

JOHN ATKINSON,
Town Clerk.

4th May, 1954. 2576

EAST RIDING OF YORKSHIRE COUNTY COUNCIL.
APPOINTMENT OF ASSISTANT ARCHITECTS.

Applications are invited for the appointment of ASSISTANT ARCHITECTS on the staff of the County Architect's Department in A.P.T. salary grades III-VI inclusive.

The commencing salaries will be appropriate to professional experience and qualifications.

The appointments are superannuable and subject to the passing of a medical examination.

Applications, giving particulars of age, qualifications, experience, past and present employment (with salaries) and accompanied by copies of three recent testimonials, should be addressed to the County Architect, County Hall, Beverley, and must be received by him not later than 21st May, 1954.

THOMAS STEPHENSON,
Clerk of the Council.

County Hall, Beverley.
May, 1954. 2532

COUNTY BOROUGH OF SOUTHPORT.

Applications are invited for the following appointments in the Borough Architect and Town Planning Officer's Department:—

(*a*) ASSISTANT QUANTITY SURVEYOR.

(*b*) ASSISTANT ARCHITECT.

Both appointments are at salaries in accordance with A.P.T. Division Grade VI of the National Scales of Salaries (£695-£760 per annum). Candidates for appointment (*a*) must be Associates R.I.C.S. (Quantities Division). Candidates for appointment (*b*) should have had experience in School Design and Construction and must be Registered Architects and/or Associates R.I.B.A.

Application Forms may be obtained from the Acting Borough Architect and Town Planning Officer, 93/105, Lord Street.

R. EDGAR PERRINS,
Town Clerk.
2530

METROPOLITAN BOROUGH OF WOOLWICH.
BOROUGH ENGINEER'S DEPARTMENT.

The Council requires:—

(*a*) SENIOR ARCHITECTURAL ASSISTANT. Grade VIII (£785-£860), plus London weighting. A.R.I.B.A. or equivalent essential. Superannuation scheme. Medical examination.

Application forms from Borough Engineer, Town Hall, Woolwich, S.E.18.

(*b*) ARCHITECTURAL ASSISTANT. Grade V, unestablished post (£620-£670), plus London weighting. Applicants should be qualified, and state their age, qualifications and experience, and give two referees.

Applications for both vacancies to be submitted to the Town Clerk by 22nd May, 1954.

Canvassing disqualifies. 2565

COUNTY BOROUGH OF SOUTHEND-ON-SEA.
LANDSCAPE DRAUGHTSMAN.

Applications are invited for the above appointment. Salary A.P.T. Div. Grade IV—£580—£15—£625 per annum.

Age limit 45 years.

The post is subject to the Local Government Superannuation Act, 1937. Medical examination.

Applicants must be fully qualified Draughtsmen, with experience in surveying, levelling and setting out, conversant with planning of gardens, playing fields, etc., and production of perspective drawings; have a sound knowledge of building construction, preparation of estimates, specifications and bills of quantities. A knowledge of horticulture and planting is desirable but not essential.

Applications, together with the names and designations of three referees, should reach the Parks Superintendent, Burdett Road, Southend-on-Sea, in a plain envelope endorsed "Appointment of Landscape Draughtsman," within 14 days of the appearance of this advertisement.

No application form will be provided.

ARCHIBALD GLEN,
Town Clerk.
2607

URBAN DISTRICT COUNCIL OF COULSDON AND PURLEY.
APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

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

SENIOR ARCHITECTURAL ASSISTANT on the permanent staff.

Grade A.P.T., VI (£695×£20 (2)×£25 (1)—£760), plus £30 London area weighting. Applicants should be Chartered or Registered Architects, experienced in the preparation and execution of Municipal Housing Schemes by Contract, the Maintenance of Public Buildings, etc. Preference will be given to candidates who have passed the Final Examination of the Royal Institute of British Architects.

ARCHITECTURAL ASSISTANT on the temporary staff.

Grade A.P.T., IV (£580×£15—£625), plus £30 London area weighting. Applicants must have had good general architectural experience, and preference will be given to candidates who have passed Intermediate Examination of Royal Institute of British Architects or its equivalent, at a recognized School of Architecture.

The above appointments will be subject to Scheme of Service, Local Government Superannuation Acts, medical examination, and termination by one month's written notice on either side. Applications on forms to be obtained from the Engineer and Surveyor to the Council, at the address stated below, giving age, details of experience, qualifications, etc., accompanied by copies of two recent testimonials, must be submitted to him by not later than first post on Friday, 28th May, 1954.

Canvassing in any form will be a disqualification.

ERIC F. J. FELIX,
Clerk of the Council.

Council Offices, Purley, Surrey.
May, 1954. 2581

GOVERNMENT OF NORTHERN IRELAND.
MINISTRY OF HEALTH AND LOCAL GOVERNMENT.
ASSISTANT ARCHITECT.

Applications are invited for an unestablished post of Assistant Architect, Class I (Planning).

Remuneration: Commencing salary within the range £940-£1,195 per annum; will be determined according to qualifications and experience.

Qualifications: Candidates must be Registered Architects by examination, must possess a recognised qualification in town planning, and have good experience in town planning work.

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

Application forms may be obtained from the Director of Establishments, Ministry of Finance, Stormont, to whom they must be returned, together with copies of two recent testimonials, so as to reach him not later than 9th June, 1954. 2578

COUNTY BOROUGH OF WEST BROMWICH.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the following permanent appointments:—

(*a*) SENIOR ASSISTANT ARCHITECT. Grade A.P.T., VIII (£785×£25—£860).

(*b*) ASSISTANT ARCHITECT. Grade A.P.T., VII (£735×£25—£810).

(*c*) ARCHITECTURAL ASSISTANT. Grade A.P.T., III (£550×£15—£595), or Grade IV (£580×£15—£625).

(*d*) ASSISTANT BUILDING INSPECTOR. Grade A.P.T., I (£490×£15—£535).

Housing accommodation will be available for one of the Architectural appointments in Grade A.P.T., VIII, or Grade A.P.T., VII.

N.J.C. Conditions of Service.

Applications, naming two referees, to Borough Surveyor, Town Hall, West Bromwich, by 20th May, 1954. 2571

BOROUGH OF CAERNARVON.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment in the Department of the Borough Engineer & Surveyor on A.P.T. Grades III or IV depending upon qualifications and experience.

Candidates should be qualified in accordance with the requirements of the N.J.C. Scheme of Conditions of Service and preference will be given to those with housing and general architectural experience.

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

Application forms may be obtained from, and must be returned to O.E.W. Street, Esq., M.I.Mun.E., Borough Surveyor, Guild Hall, Caernarvon not later than 21st May, 1954.

W. P. DAVIES,
Town Clerk.

Briggs Chambers, Caernarvon. 2533

COUNTY BOROUGH OF CROYDON.
ARCHITECTURAL ASSISTANT.

Applications invited from persons having local authority housing experience. Salary: A.P.T., I/III, £490-£595 per annum, plus London weighting. Application forms from Borough Engineer, Town Hall, Croydon.

Closing date: 24th May, 1954.

E. TABERNER,
Town Clerk.
2561

BOROUGH OF WALTHAMSTOW.
ARCHITECT, ENGINEER & SURVEYOR'S DEPARTMENT.
APPOINTMENT OF ASSISTANT HEATING AND VENTILATING ENGINEER, A.P.T. GRADE V.

Applications are invited from suitably qualified persons for the above appointment, and some experience in Electrical work would be an advantage.

Applications and names of two persons to whom reference may be made, to be sent to the undersigned not later than 12 noon on Wednesday, the 2nd June, 1954.

G. A. BLAKELEY,
Town Clerk.

Town Hall,
Walthamstow, E.17. 2604

THE EDINBURGH AND EAST OF SCOTLAND COLLEGE OF AGRICULTURE invite applications for the post of ARCHITECTURAL or BUILDINGS DRAUGHTSMAN in the Farm Buildings Department. Candidates should be good Draughtsmen and have knowledge of building construction and able to execute isometric sketches.

Salary: Grade B (Int.) £245 (age 18)—£400 (age 25 or over)—£540 plus Pay Addition of £24:12:—rising to £52:6:—.

Application Forms obtainable from Secretary, 13, George Square, Edinburgh, with whom they should be lodged within two weeks of appearance of this advertisement. 2606

Architectural Appointments Vacant

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

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

REQUIRED for Architects' office, Central London area, young qualified ASSISTANTS interested in design and construction. Write, stating experience and salary required. Box 2325.

SENIOR AND JUNIOR ARCHITECTURAL ASSISTANTS and Draughtsmen or women required in busy office in the Home Counties. Some experience essential. Large varied practice. Please state experience and salary required. Box 2137.

A SENIOR ARCHITECTURAL ASSISTANT required, full experience in preparation of Working Drawings, Details, and supervision of office and Industrial Buildings in the London Area. Good knowledge of construction and design essential. Apply in writing giving full particulars of qualifications, age, experience and salary required to Box 9829.

ARCHITECTURAL ASSISTANTS required for busy practice engaged upon schools, industrial buildings, offices, etc. Write, giving full particulars of qualifications, experience and salary required, to Johns & Slater, F./A.R.I.B.A., 32, Foundation Street, Ipswich. 1836

RONALD WARD & PARTNERS require several ARCHITECTURAL ASSISTANTS, intermediate standard. Apply Sloane 8291, or 17, Lowndes Street, S.W.1. 2419

ASSISTANT required in progressive practice, W.1, for interesting domestic, commercial and industrial work. Experience essential, preferably qualified or final standard. Salary according to ability. Phone HUNTER 0451 or write Box 2443.

ARCHITECT'S ASSISTANT required in West End office. Should be good draughtsman, with some knowledge of design and construction. Please write, stating age, experience, and salary required, to Box 2374.

ARCHITECTURAL ASSISTANT required in Westminster office of Consulting Engineers for work in connection with designs of Power Stations, Industrial Buildings, Administrative Office Blocks, etc. Apply stating age, experience and qualifications. Box 2445.

SENIOR ARCHITECTURAL ASSISTANT required immediately in busy and varied practice in South Yorkshire. Final R.I.B.A., essential, and some office experience desirable. Salary according to qualifications and experience. Pension Scheme in operation. Apply with full particulars. Box 2459.

JUNIOR ARCHITECTURAL ASSISTANT required immediately in busy and varied practice in South Yorkshire. Intermediate R.I.B.A. qualification essential and a minimum of three years' office experience. Salary in accordance with qualifications and experience. Pension Scheme in operation. Apply with full particulars. Box 2460.

QUALIFIED and experienced SENIOR ASSISTANT required by provincial private practice with varied works in hand. Apply giving full details and salary required to Deacon & Laing, 9, St. Paul's Square, Bedford. 2474

ARCHITECTURAL ASSISTANT required for Worcester office. Intermediate standard, with at least three years' office experience. Knowledge of alteration work and specification writing desirable. Good salary to suitable applicant. Reply to Willis, Llewellyn Smith & Waters, 103, Old Brompton Road, S.W.7. 2498

ARCHITECTURAL ASSISTANT required for private practice in Worcester, capable of carrying out work from sketch drawing to final account. Please give full particulars, including salary required. Box 2514.

ARCHITECTURAL ASSISTANT required in busy West End office engaged on commercial work. Able to prepare sketch schemes and working drawings. Ability to prepare perspectives an asset. Reply, stating age, experience, and salary required, to Box 2512.

EXPERIENCED SENIOR ASSISTANT required, capable of carrying out work from sketch plan to completion, in a private practice dealing with commercial work, offices, shops, factories, etc. Please write, stating experience and salary required, etc. Lewis Solomon, Son & Joseph, 21, Bloomsbury Way, W.C.1. 2499

ARCHITECTURAL ASSISTANT with at least 2 yrs. office experience required in Reading office. Apply in writing, giving details of experience, age, salary, etc. Box 2548.

ARCHITECTURAL ASSISTANTS with not less than two years' experience required immediately. Salary according to experience and qualifications. Apply to :—W. Curtis Green, R.A., Son & Lloyd, 5, Pickering Place, St. James's Street, S.W.1. 2478

QUALIFIED ARCHITECT ASSISTANT required for practice which deals extensively with commercial work. Previous London experience essential. Salary up to £1,000 p.a., according to experience. Write Box 2500.

REQUIRED in country town, South Midlands, competent ASSISTANT. Inter. to Final stage. Also JUNIOR, to Inter. stage. Accommodation can be made available. Apply Box 2494.

JUNIOR ARCHITECTURAL ASSISTANT, Intermediate R.I.B.A. standard, required immed.ately by London Architects. Apply, stating age, experience, and salary required, to Box 2596.

DERBY. ASSISTANT. High inter.-standard. Capable working drawings and details from sketches with minimum supervision. Growing practice with varied work. Salary £450-£550 according capabilities. Write giving age, training, experience, etc. Present staff notified. Box 2600.

ARCHITECTURAL DRAUGHTSMAN required by prefabricated building manufacturers to take charge of Works Drawing Office and deal with design development. A senior and progressive position with salary commensurate with qualifications of applicant. Medway Buildings & Supplies Ltd., 13, Upper Belgrave Street, S.W.1. 2599

ARCHITECTURAL DRAUGHTSMEN required, with experience in industrial buildings, offices, welfare and canteen buildings, for drawing office of large works on north-east coast. Age 25 or upwards. Reply stating qualifications, experience, salary expected and when at liberty, to Box 2598.

SENIOR & JUNIOR ARCHITECTURAL ASSISTANTS required for general London practice. Write stating age, details of experience, and salary required, to H. & H. M. Lidbetter, F./F.R.I.B.A., 2, Verulam Buildings, Gray's Inn, W.C.1. 2597

ARCHITECTURAL ASSISTANT required in Mid-Essex office. Previous office experience and good draughtsmanship essential. Reply, stating age, experience, and salary required, to Box 2582.

ARCHITECTURAL ASSISTANT wanted for country practice in North Essex. Write, stating experience, salary required, etc., to Box 2583.

ARCHITECTURAL ASSISTANT, up to Intermediate standard, required. Some experience of heavy industrial work. Westminster area. Write, stating experience and salary, to Box 2584.

EXPERIENCED ASSISTANTS required by firm of London Architects for the preparation of working drawings for various interesting projects. Salary: £10-£15 per week. Box 2585.

YOUNG office-trained ASSISTANT required for Norfolk office. Car driver; competent surveyor; draughtsman and detailer. Knowledge of final accounts a distinct advantage. Apply, with details of experience and salary required, to Box 2586.

ARCHITECT'S ASSISTANT, of Inter. standard, required immediately at Chelmsford office. Must be neat and accurate draughtsman, with office experience. Varied and interesting work, mainly agricultural and housing. 5-day week. Apply, giving full particulars of age, experience, and salary required, to Box 2588.

BIRMINGHAM firm of Chartered Architects requires SENIOR ASSISTANT for carrying out a variety of interesting work. Write, stating experience and salary required, to Box 2493.

EXPERIENCED SENIOR and INTERMEDIATE ARCHITECTURAL ASSISTANTS required, preferably with experience in industrial work. Write or telephone to Hasker & Hall, Architects, 13, Welbeck Street, London, W.1 (Welbeck 0061). 2542

NORMAN & DAWBARN require ARCHITECTURAL ASSISTANTS with three to four years' continuous office experience at salaries by arrangement. Applications, stating age and details of career, should be made in writing to 5, Gower Street, London, W.C.1. 2541

ASSISTANT ARCHITECT required for overseas service by large firm. He will work with Senior Architect already established. Large interesting buildings being designed. Final qualifications not essential but must have sound experience in architectural draughtsmanship with practical knowledge of building construction. Salary in accordance with experience and qualifications. Applications giving age, details of experience, past and present employers, in confidence to Box 2544.

THE ENGLISH ELECTRIC CO. LTD., Preston, require an ASSISTANT ARCHITECT for work on Offices, Canteens, Factories, alterations, etc., in Preston area initially. The applicant should be prepared to work at other branches of the Company, if required. Applicants should be aged 24-30, A.R.I.B.A. and preferably school-trained. Previous industrial experience not essential. The post is permanent and offers good experience and prospects. Reply giving details to the Chief Personnel Officer, Strand Road. 2563

SENIOR ARCHITECTURAL ASSISTANT required in Exeter office. Box 2536.

AN immediate vacancy occurs in private office for a JUNIOR of intermediate standard. Some practical knowledge desirable — good draughtsmanship essential. Permanent post for suitable applicant. Reply stating age, experience and salary required to Box 2539.

ARCHITECTURAL ASSISTANT required with sound knowledge of construction and specification writing. Salary £600 per annum. S. Dodson & Son, L./A.R.I.B.A., Museum Buildings, Priestgate, Peterborough. 2540

JUNIOR ASSISTANT required for architect's office in Westminster district. Apply stating experience and salary required to Box 2477.

ARCHITECTURAL ASSISTANT required in Lincolnshire coastal town, intermediate R.I.B.A. standard. Apply stating age, experience, and salary required. Box 2564.

ASSISTANT ARCHITECT of R.I.B.A. Intermediate or higher standard with at least two years' office experience, for Architects' office with interesting general practice. Apply in writing to C. J. Epril & Associates, 55, Pall Mall, London. S.W.1. 2574

ARCHITECTURAL ASSISTANT required in Inverness Office; must have practical experience. Apply stating age, experience and salary required to Box 2572.

ARCHITECTURAL DRAUGHTSMAN required in Wembley district. Reply in writing stating age and salary required. Box 2570.

Architectural Appointments Wanted

MERSEYSIDE. Position with prospects sought in progressive office on Merseyside by Architect, aged 29, Dipl. Arch. (distinction) (Lvpl.), Dip. C.D. (Lvpl.), A.R.I.B.A., A.M.T.P.I., with over five years' varied experience in private and local Authority offices and with builder. Please state salary range and prospects offered. Box 880.

STAFF ARCHITECT requires similar position with Multiple or Commercial firm, London or South. Thoroughly experienced in commercial and domestic work. Surveys, Reports, Specifications, etc. Able to organise, administer and control office. Box 879.

SENIOR/MANAGING ASSISTANT, free shortly, requires responsible position with progressive office. Good draughtsman, technically proficient and accustomed to full charge from sketches to completion on factories, offices, housing, etc., in good offices. £1,200 p.a. min. 46, A.R.I.B.A., A.M.T.P.I. Box 2602.

SENIOR ASSISTANT (32) school trained with 6 yrs.' London multi-storey designing of commercial, industrial, ecclesiastical and educational schemes. Salary expected £900 p.a.— Box 882.

SENIOR ASSISTANT ARCHITECT (A.R.I.B.A. etc.) with several years' experience in Private Practice and Local Authority, including staff supervision and office administration, etc., seeks in the Greater London Area a position of responsibility in which he can combine his experience in housing and allied works with his qualifications in Town Planning. Salary by arrangement.— Box 881.

SENIOR ASSISTANT, A.R.I.B.A. (33), present salary £760, used to taking complete charge of contracts, seeks responsible post in Southern half of England. Box 2590.

Other Appointments Vacant

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

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

ESTIMATOR with experience in building construction and quantities required by old-established firm of Specialist Sub-Contractors, South Manchester. Prospects for man with initiative. State experience, age and salary. Box 2475.

THE MIDLAND JOINERY WORKS, LTD., Burton-on-Trent, have a vacancy for an experienced ESTIMATOR (preferably) with all-round knowledge of the technical side of a joinery undertaking.

The appointment would be progressive, and, if satisfactory, may lead to executive position. This is an unusual opportunity for a young man of ability, with the will to work.

Residential accommodation is offered, together with pension scheme.

State fullest details of age, qualifications, experience, salary required, and when available. 2513

ARCHITECTURAL SENIOR DRAUGHTSMAN required for Housing Department of large old-established contracting company. Must be fully capable of preparing house plans, site layout schemes, road and drainage details, dealing with local authorities, etc. Progressive post for the right man. Apply by letter only to The Housing Dept., Sir Lindsay Parkinson & Co., Ltd., 171, Shaftesbury Avenue, W.C.2. 2587

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