The Architects' JOURNAL for April 23, 1959

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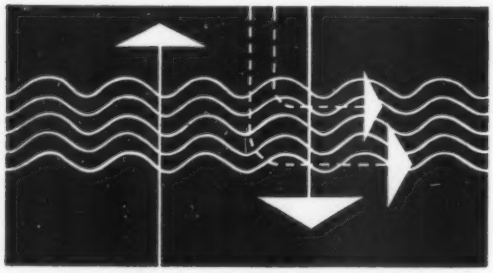
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ii one week, Il to Z the next. In all cases where the town is not mentioned the word LONDON is implicit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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. L. Stevenson, College of Art, Hope Street, Liverpool 1.	Royal 1826
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5533
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James's Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 5861
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
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
BE	Building Exhibition. 11, Manchester Square, W.1.	Hunter 1951
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
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
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 4040
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
CABAS	City and Borough Architects Society. C/o S. A. G. Cook, A.R.I.B.A., Borough Architect and Director of Housing, Town Hall, High Holborn, W.C.1.	Holborn 3411
CAS	County Architects' Society. C/o S. Vincent Goodman, F.R.I.B.A., Shire Hall, Bedford.	Bedford 67444
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Belgravia 6661
CDA	Copper Development Association. 55, South Audley Street, W.1.	Grosvenor 8811
COID	Council of Industrial Design. 28, Haymarket, S.W.1.	Trafalgar 8000
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.1.	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
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
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. 68, Gloucester Place, W.1.	Welbeck 9966
FASS	Federation of Associations of Specialists and Sub-Contractors, 14, Bryanston Street, W.1.	Welbeck 1781
FBBDO	Fibre Building Board Development Organization Ltd. (Fidor), Stafford House, Norfolk Street, W.C.2.	Covent Garden 3008
FBI	Federation of British Industries 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	Regent 0221
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., 33, John Street, W.C.1. Tel.: Chancery 7583 (6 lines)	
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 4341
GPDA	Gypsum Plasterboard Development Association. 11, Ironmonger Lane, E.C.2.	Monarch 8888
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 2, Chester Street, S.W.1.	Belgravia 3081
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1.	Belgravia 3755
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. 1, Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square.	Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers. 100, Park Street Grosvenor Square, W.1.	Mayfair 7086



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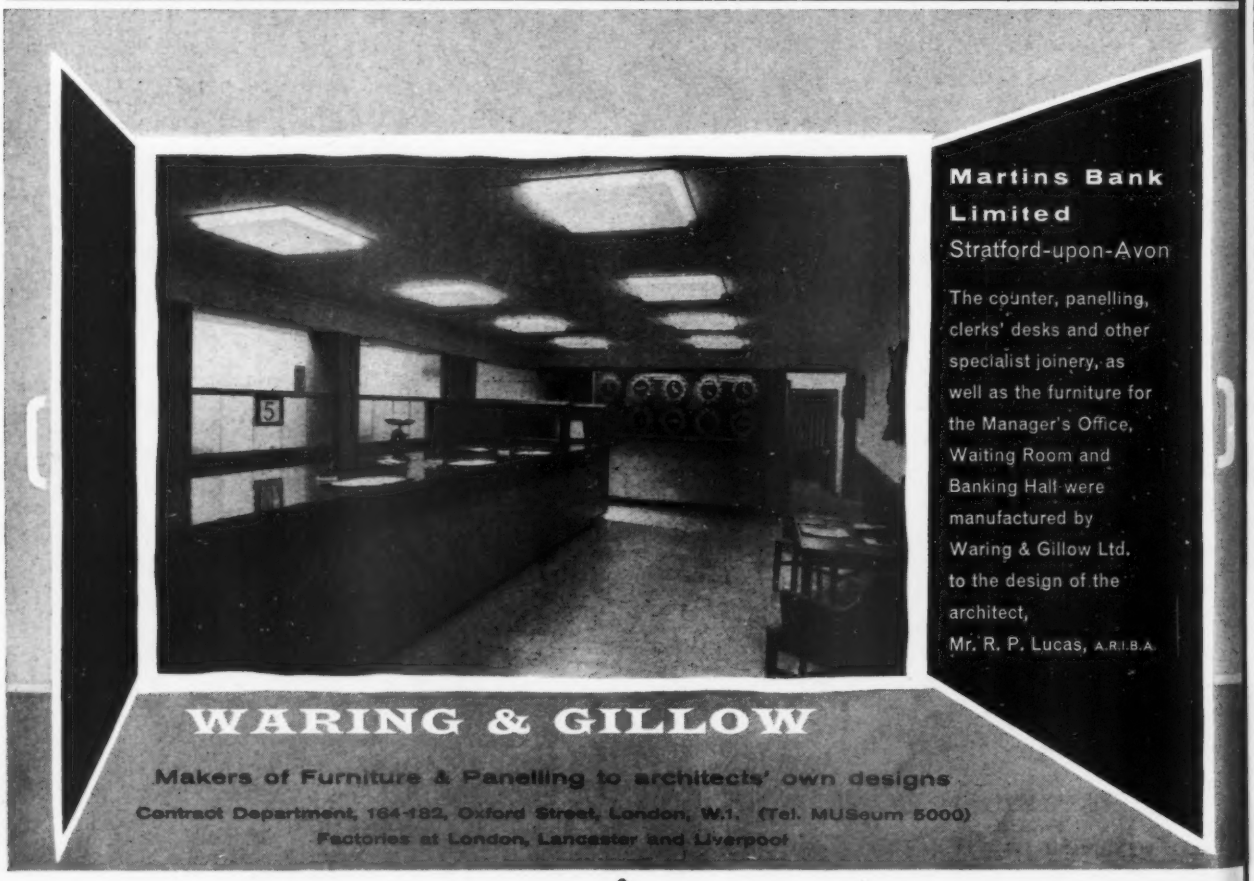

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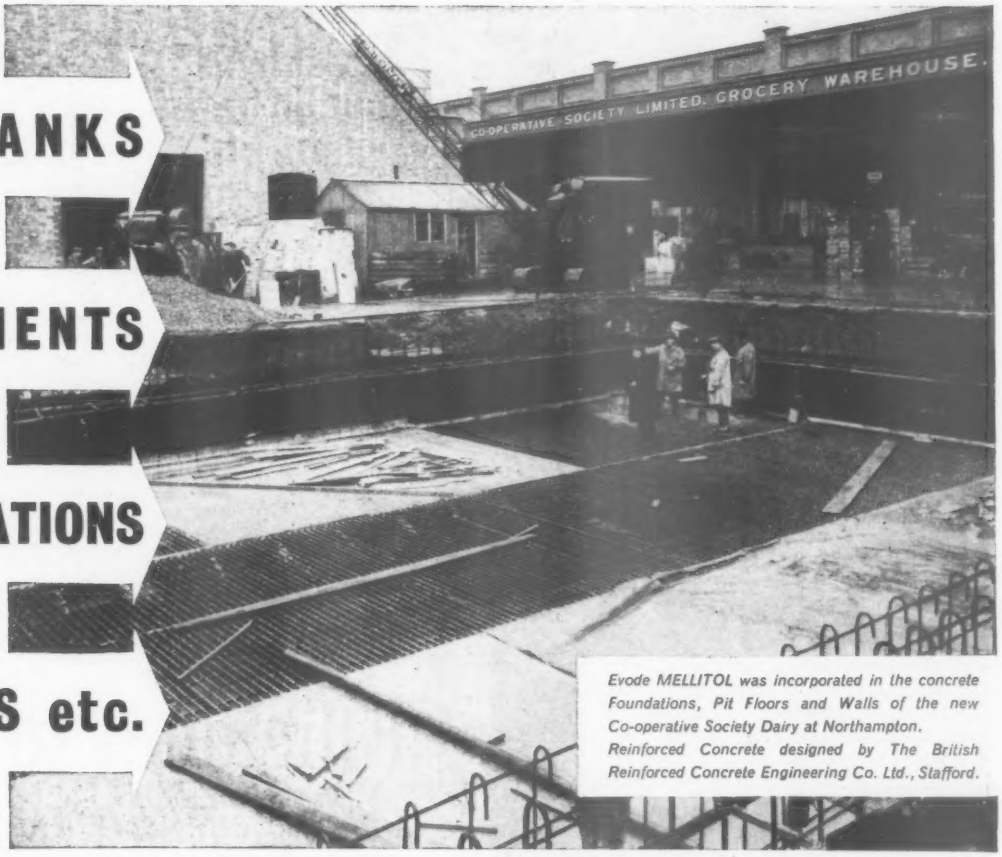

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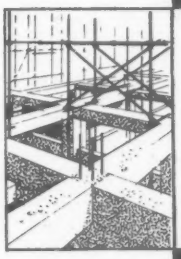

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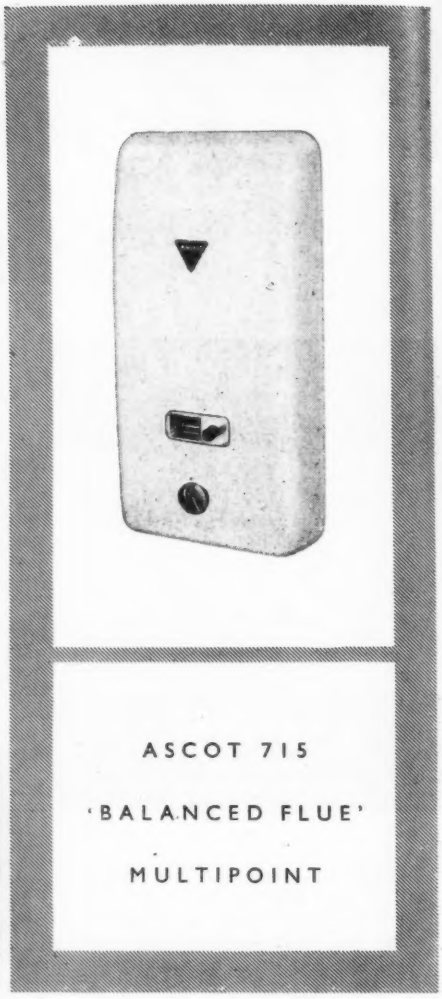
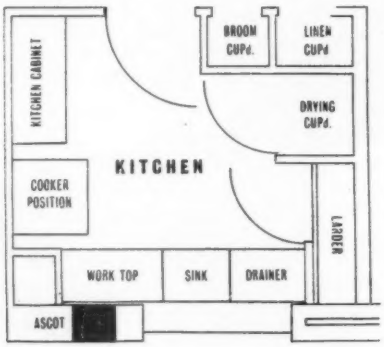


ASCOT IN NEW HOUSING (8)

Two 11-storey blocks of flats built by the COUNTY BOROUGH OF WEST HAM at Water Lane, E.15, and Claremont Estate E.7, are identical in accommodation, construction and services provided. The two blocks, "Green Point" at Water Lane, and "Forest Point" at the Claremont Estate, each comprise 43 flats housing a total of 130 persons in 22 four-person two-bedroom flats, and 21 two-person one-bedroom flats. Hot water in every flat in both blocks is provided by an Ascot 715 'balanced flue' multipoint installed in the kitchen to provide instant all-purpose hot water for the working couples comprising most of the flats' tenants. The Ascot 715's were selected since they could be installed extremely compactly in the carefully-planned working kitchens of the flats.

Simplified plan of a typical kitchen showing installation of Ascot 715 'balanced flue' multipoint.



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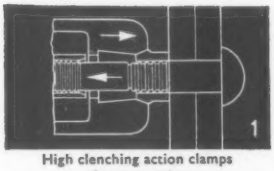

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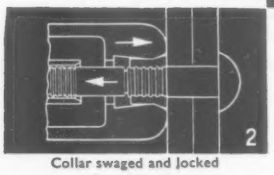
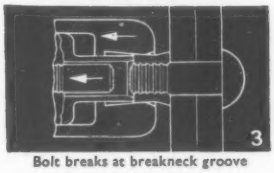
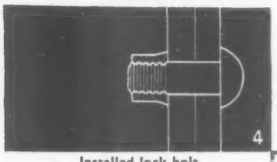


Collar swaged and locked into grooves



Bolt breaks at breakneck groove



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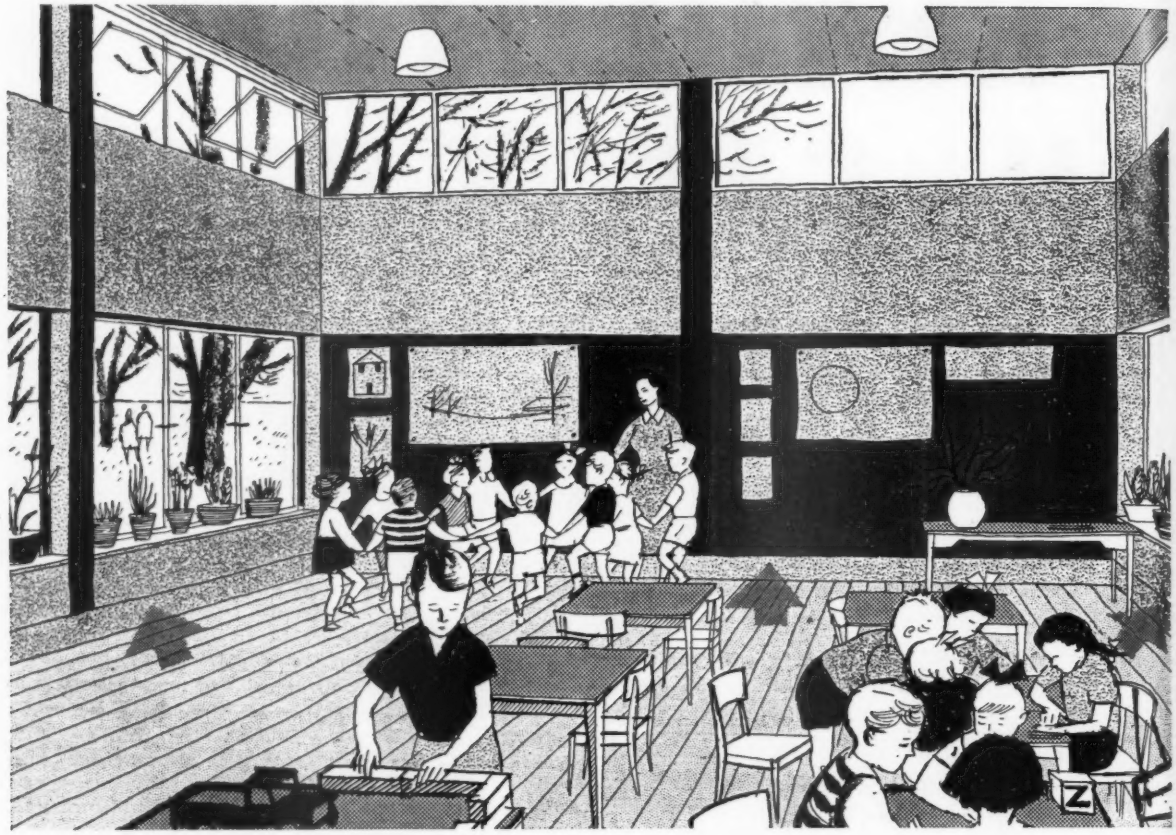

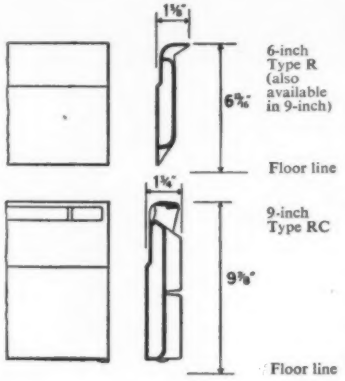

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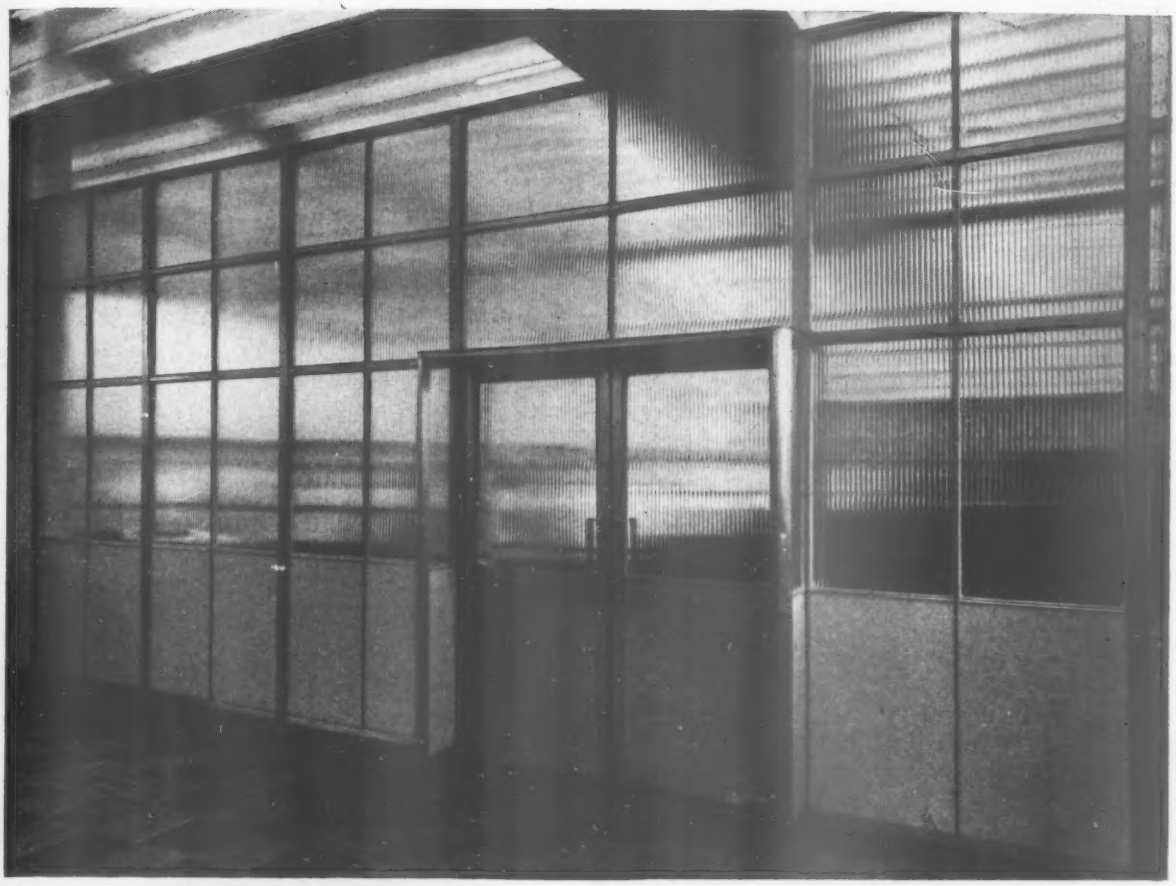
ONE of the important factors in education being the primary comfort and well-being of the children, it is essential, amongst other things, that the schoolroom should be evenly and equably heated. The young occupants are normally well distributed throughout what is generally a large room: the warmth should be spread equally impartially. It was for just such a situation as this that the Crane Skirting Heating system was evolved.

Crane Skirting Heating is finding ever increasing favour among architects and heating engineers, and the reasons are clear. The system employs heating panels in place of the normal skirting boards. They are therefore unobtrusive; they avoid 'hot spots'; they are easy to clean; they permit freedom of arrangement and design; and—of special significance in this case—they offer no dangerous protuberances. In the illustration above the panels are indicated by arrows.

Crane Skirting Heating panels are made in two types. Used here is the 9-inch Type R (radiant) illustrated above which is also made in the 6-inch size for smaller heat requirements. Type RC (radiant-convector) is made only in the 9-inch size. All panels are in 2-ft. and 1-ft. lengths and are made of cast iron, which gives them considerable resistance to accidental damage. The operations of calculating heat requirements and designing the pipework are in principle no different from those for conventional radiator heating systems.

Wherever the architect needs greater freedom of expression than conventional heating systems allow him, and at the same time has to pay due consideration to costs, the answer is, undoubtedly,

CRANE skirting heating



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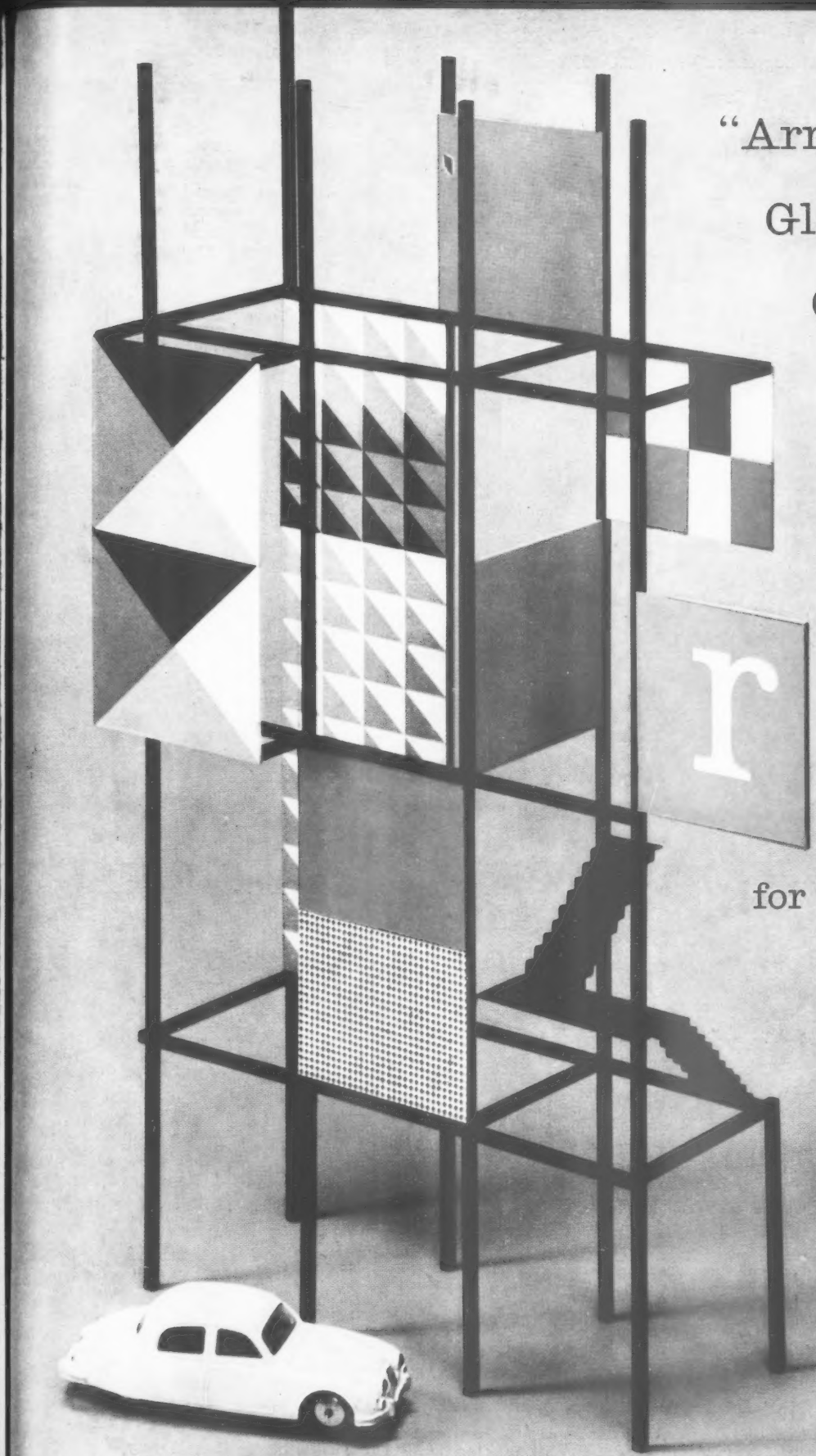

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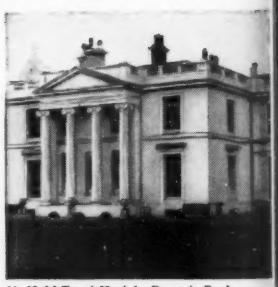

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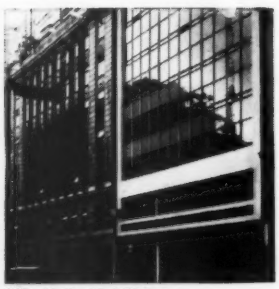
Architect Eric S. Brown B.Sc., F.R.I.C.S.

Notre Dame Church—Leicester Square.
Architect Professor Corfiato F.R.I.B.A., F.S.A., S.A.D.G.



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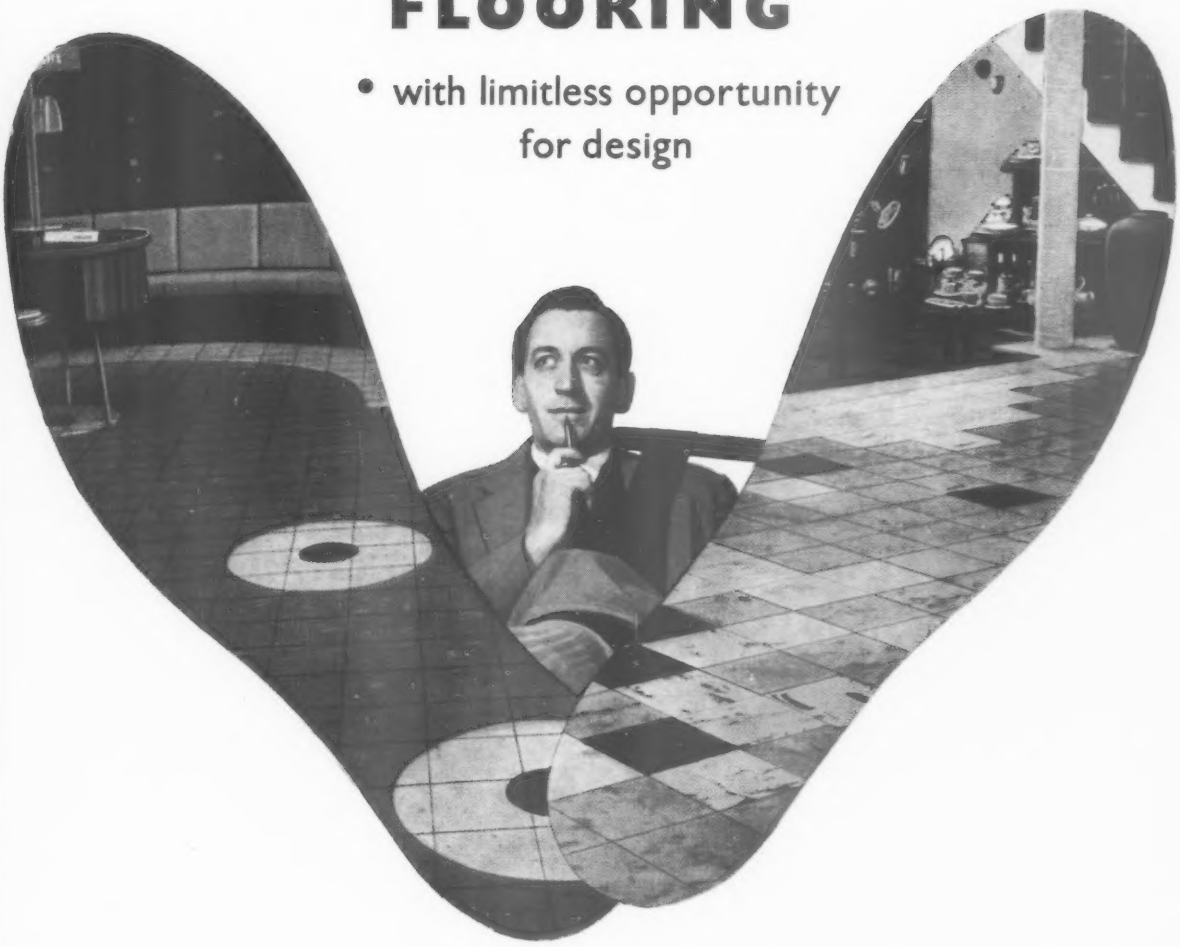

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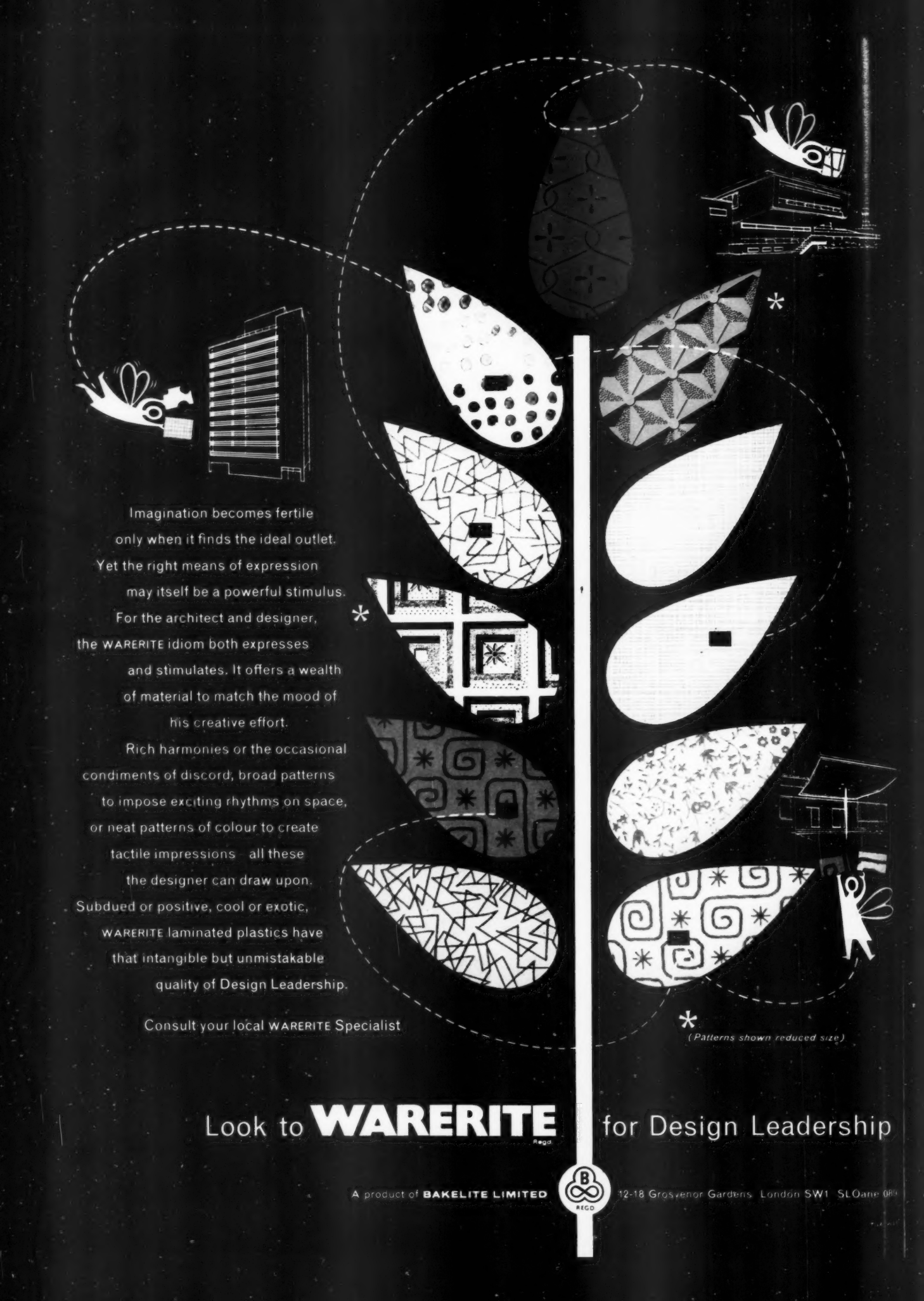

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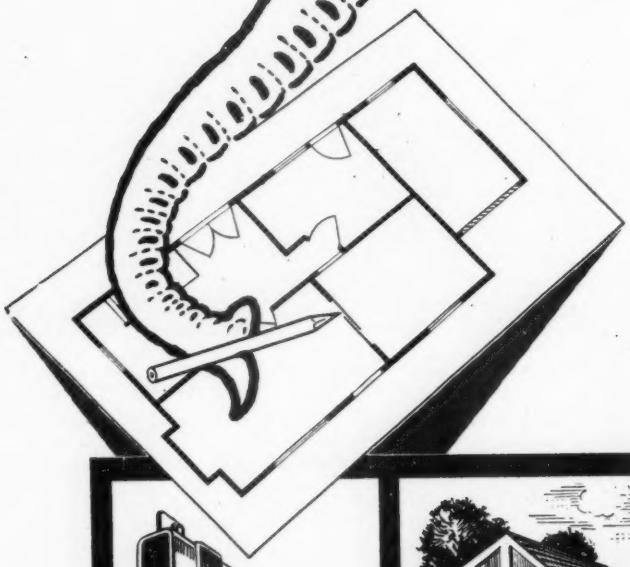

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TECHNICAL DATA SHEET No. 6

Minerva
FIRE PREVENTION BY NUCLEAR DETECTION

TRANSMITTING MINERVA SIGNALS TO REMOTE FIRE STATIONS

GENERAL

As soon as the beginnings of a fire incident have been detected by a Minerva installation audible alarms sound, and the appropriate zone indicating lamp at the Minerva Control Unit and Signal Panel lights to show in which portion of the protected premises the incident has arisen. To ensure that the Fire Brigade is informed simultaneously that their attendance is required, arrangements are usually made with the co-operation of the Fire Brigade authority for the signal to be repeated in the Watch Room at the nearest Fire Station. Ideally this is achieved by connecting equipment installed in the Watch Room to the Minerva Control Unit and Signal Panel by means of a pair of telephone wires leased from the G.P.O. and used exclusively for this service. Special precautions are taken by the G.P.O to ensure that the circuit is permanently in service, but should it inadvertently be interrupted, the equipment in the Watch Room is arranged to indicate immediately that a fault condition exists.

Fig. 1

DESCRIPTION OF EQUIPMENT

The equipment at the Fire Station comprises two main parts:—

(a) A control set to which the wires from the Minerva Control Unit and Signal Panel are connected. This control set comprises an arrangement of relays, the operation of which causes the appropriate lamp to light:—

(b) The terminating unit, which comprises:—

(i) a red lamp, which when alight indicates that a fire alarm has been raised. This lamp remains alight until a fire incident has been dealt with and the equipment at the protected premises has been re-set,

(ii) an amber lamp, which when alight, indicates that a fault condition exists,

(iii) an audible alarm which sounds to call attention to the light signals when either of them is alight, or when either of them, having been alight, is extinguished,

(iv) a switch which may be used to silence the audible alarm when the alarm or fault signal has been noted and acted upon. It may also be used to originate tests so that the correct functioning of the unit may be checked at any time.

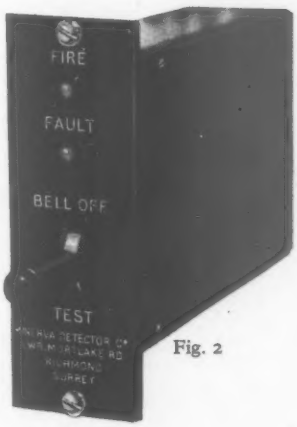
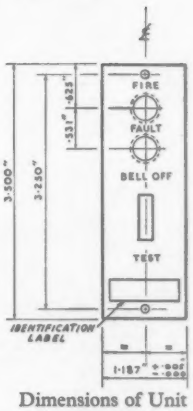


Fig. 2

ARRANGEMENT OF UNITS

Figures 1 and 2 (right) indicate alternative forms of the unit for installation at Fire Stations. That in Figure 1 combines the control set and terminating unit, built into a single wall mounting steel case which also houses a battery to operate the signal lamps and audible alarm.

Figure 2 illustrates the terminating unit which is mounted alongside others in a common frame when a number of units, referring to a number of protected premises, have to be accommodated in restricted space in one Watch Room.

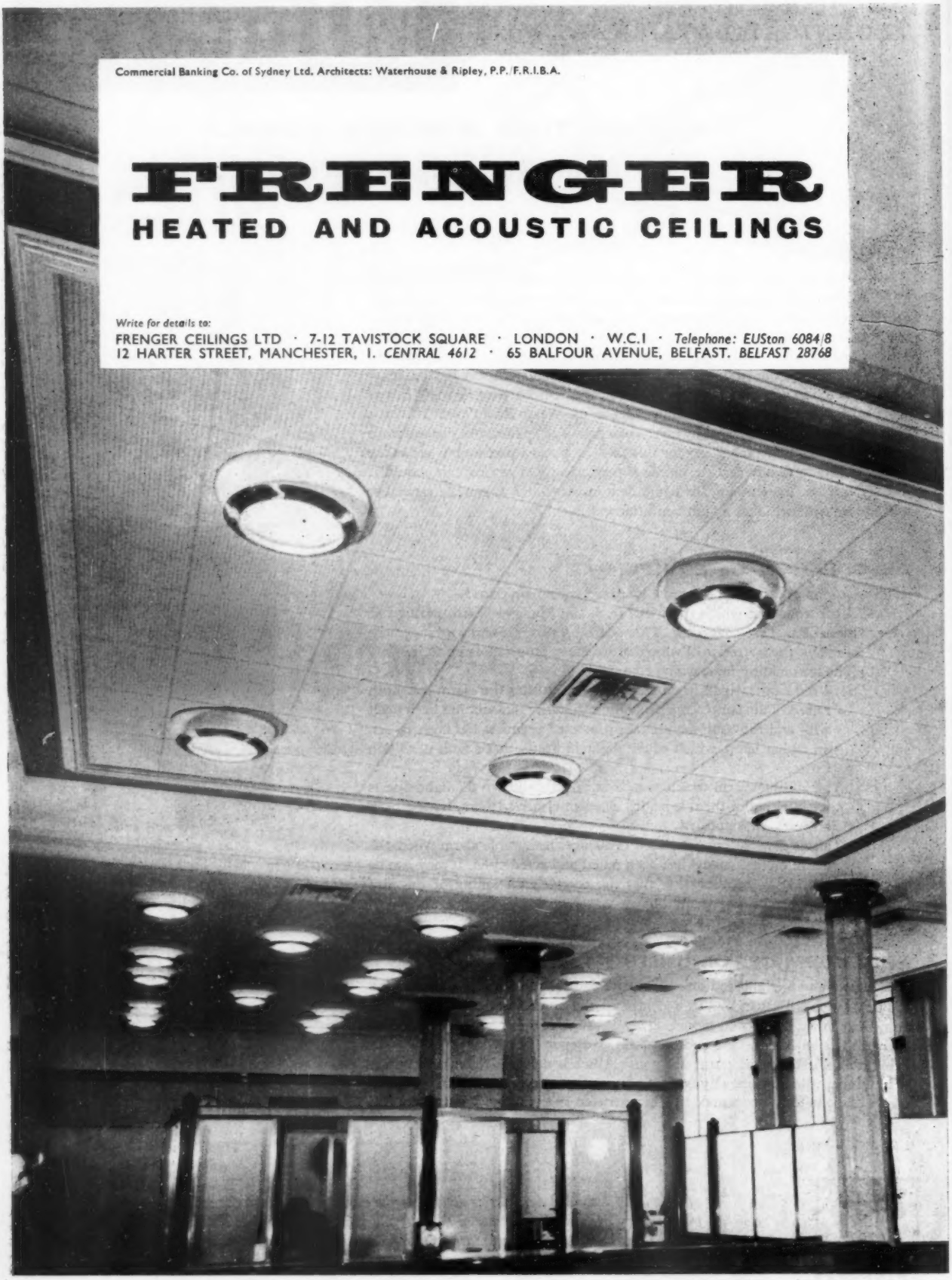


Dimensions of Unit shown in Fig. 2.

TE CUSTOS URBIS
MINERVA

This is one of a series of technical data sheets describing the various features of the Minerva System of Fire Prevention by Nuclear Detection. The Minerva Detector Company Ltd. provides a complete Fire Prevention Service, undertaking surveys, design of installation for specialised risks, commissioning and routine inspection. A Minerva engineer will be pleased to call to advise on your fire prevention problems. Write to:

THE MINERVA DETECTOR COMPANY LTD., LOWER MORTLAKE RD., RICHMOND, SURREY. (Richmond 6431)



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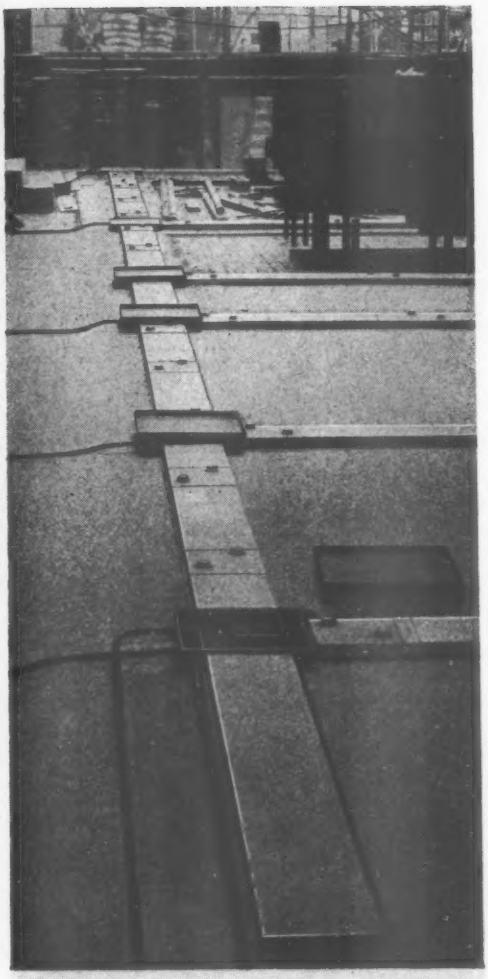

Bankers Trust Company (New York) Bucklersbury House, E.C.4 Architect: O. Campbell-Jones, Esq. FRIBA, FRICS, London, E.C.4. Main Contractors: Humphreys Limited, London, S.W.1. Electrical Contractors: Thorpe & Thorpe Limited, London, E.C.4.

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. . . provides for all cables to be accommodated in one duct with adequate screening between telephone and power cables.

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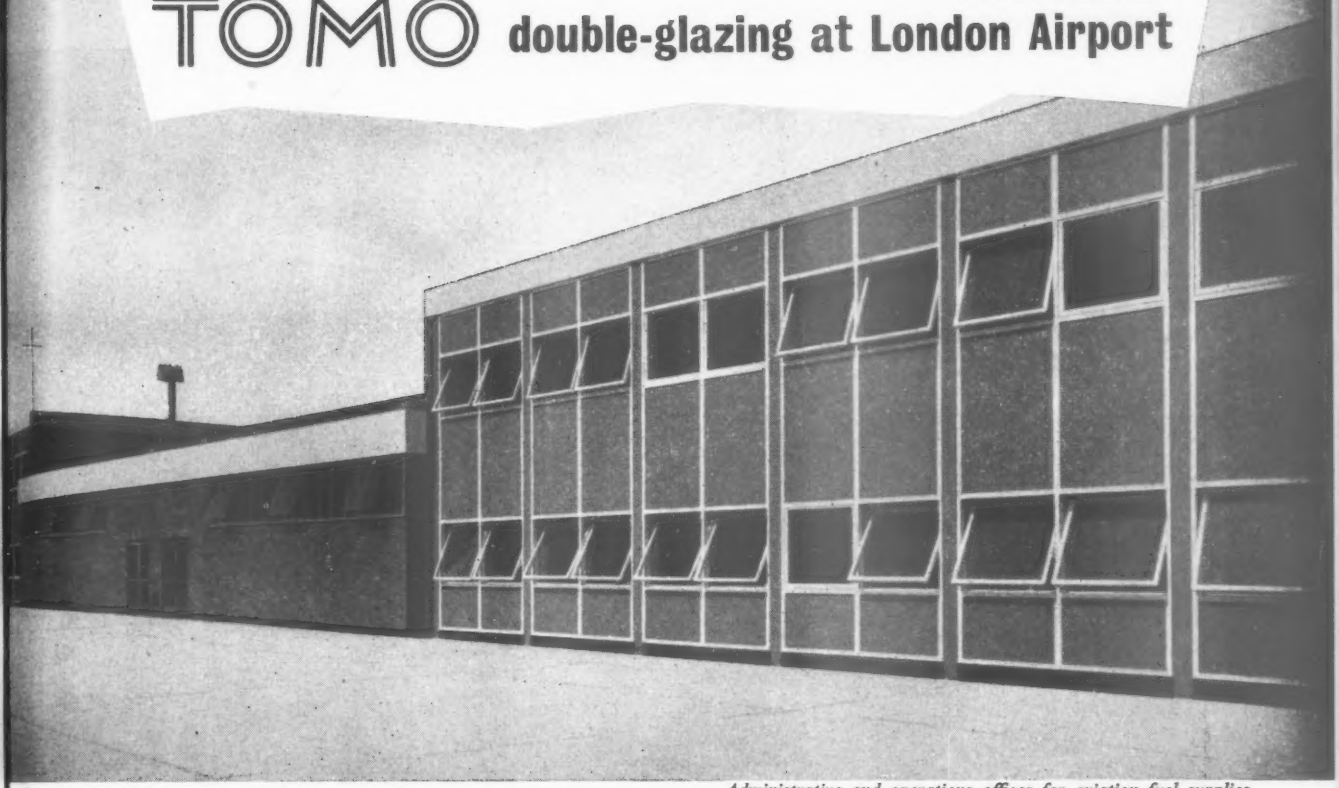
TOMO double-glazing at London Airport



Administrative and operations offices for aviation fuel supplies at London Airport, half of which are occupied by Shell-Mex & B.P. Ltd. and the other by Esso Petroleum Co. Ltd. Architect: Frederick Gibberd, C.B.E., F.R.I.B.A., M.T.P.I.

We think you'll agree that the appearance of these attractive offices at London Airport is enhanced by their TOMO double-glazed WINDOWS. But that's only a small part of the story. TOMO double-glazing also offers excellent thermal-efficiency values, remarkable sound-reduction properties, finely-controlled ventilation and total indoor window-cleaning.

On the subject of thermal efficiency, we should like to refer you to the report of a recent B.R.S. test quoted on the right. It speaks volumes.

When you work within whistling distance of aircraft, sound reduction becomes a matter of vital importance. Here TOMO WINDOWS score heavily. The total reduction in sound level depends finally, of course, on the thickness of glass employed and the space between panes. Using 32-ounce glass spaced at 1⅞in., TOMO double-glazing gives a reduction of approximately 40 decibels and will, we hope, save Shell-Mex and Esso personnel not a few headaches in the future.

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When a standard-production TOMO WINDOW Wall-Unit (8ft. by 8ft.) was tested at the Building Research Station, Garston, the mean thermal transmittance of the complete unit was found to be 0·31 B.Th.U./sq. ft./h./°F. This is equal to the thermal transmittance of a traditional 11in. cavity brick wall! This impressive result was further improved to 0·29 when the TOMO pleated blinds, fitted between the panes, were lowered. The U-value of the window-area only was found to be 0·38 which, with TOMO pleated blinds down, became 0·35. At 0·38, TOMO double-glazed WINDOWS are substantially (29%) better than the U-value of 0·47 quoted for conventional double windows in the I.H.V.E. Guide to Current Practice, 1955.

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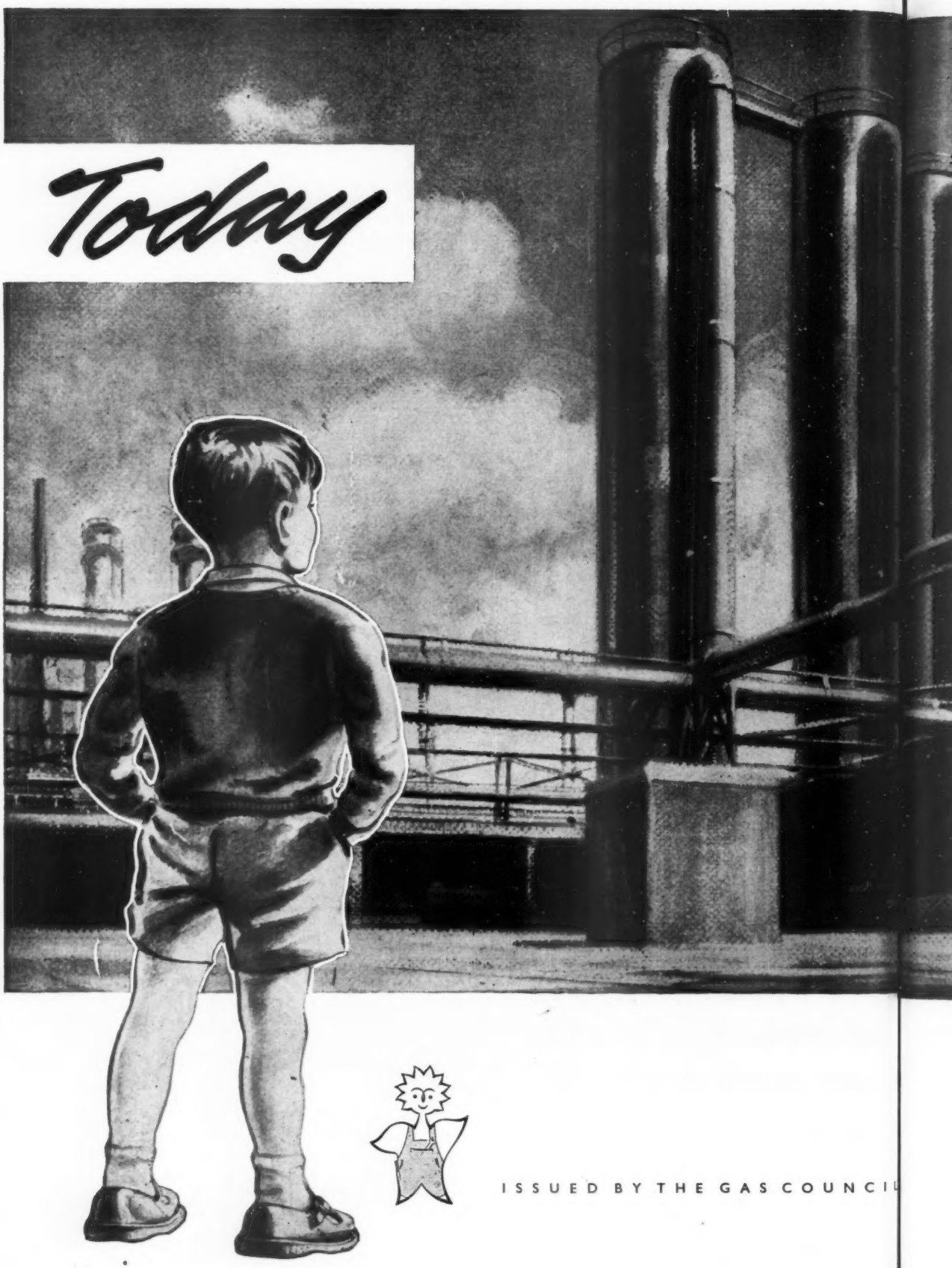

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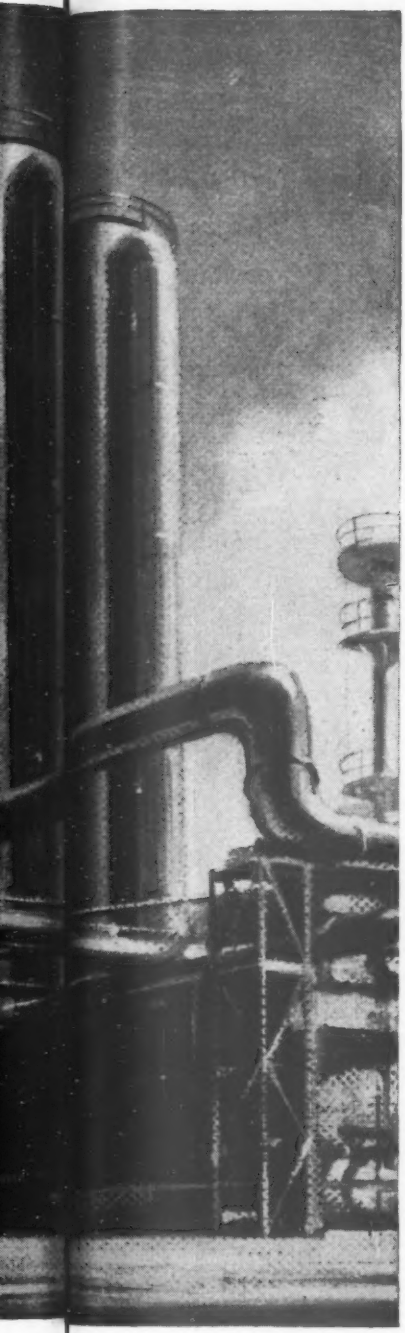
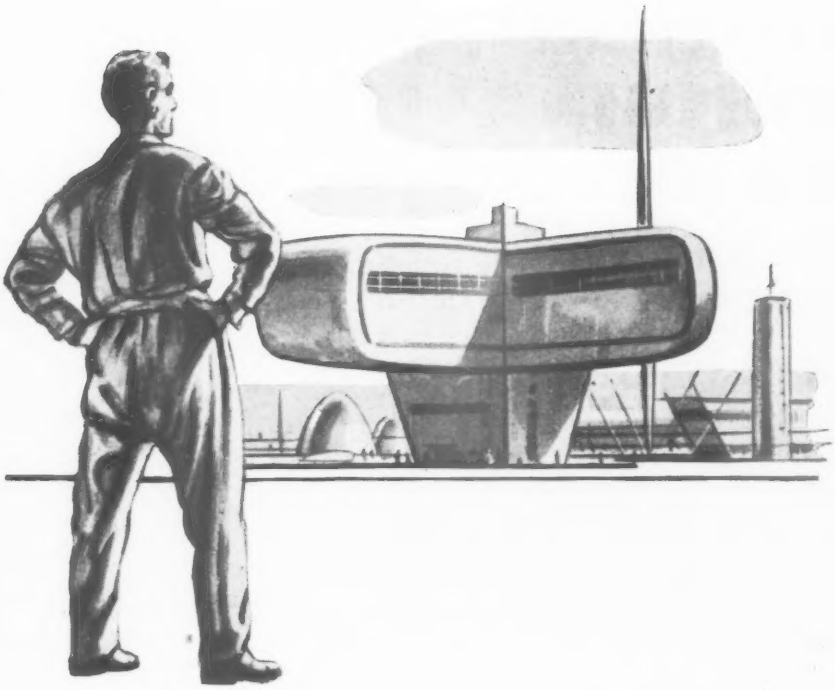


Tomorrow



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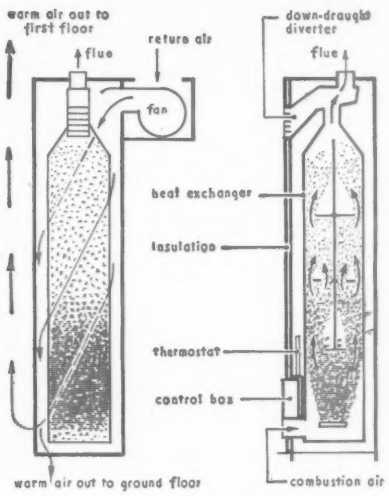

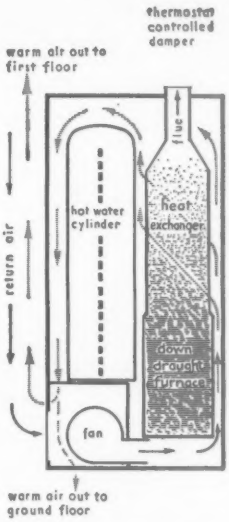

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These are the main advantages of ducted warm air heating:—

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Freedom of planning—by heating the *whole* building *all* the enclosed space becomes useful space. Ducts are easily accommodated at planning stage and they make no demands on wall space. Outlet and return grilles are unobtrusive. Ducted warm air makes both "open" and conventional planning easier and offers scope for new ideas.

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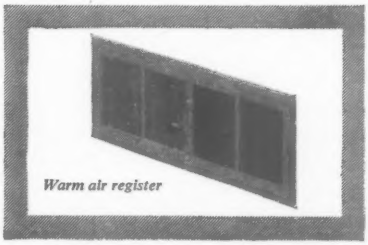
Warm air register

to speed the drying out of new buildings for early occupation.

Here are the reasons why:—

Running costs—Radiation engineers take running costs to be the true efficiency index of an appliance. Here is a short example—many others, in detail, may be seen on request. *Bungalow at Oulton Broad, Suffolk. 1500 sq. ft. insulated to Egerton standard. Heated by Ductair 0.50. Average oil consumption over 2 years (heating period 1 Oct. to 31 March) . . . 625 gallons domestic fuel oil. Standard of heating attained: Living room 60°F. Bedrooms 55-60°F (day and night averages.)* N.B. plus *domestic hot water during heating season. Out of season hot water by immersion heater.*

Installation costs—the Ductair system is cheaper than, for example, a fully thermostatically controlled radiator system using comparable fuel. Detailed comparisons are available.

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10 years' working experience in Britain. After a detailed examination of the best American practice in this field and research, Radiation have developed the Ductair system over ten years. This gives Radiation unrivalled experience *under the actual climatic and living conditions peculiar to this country.*

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RADIATION DUCTAIR is more than just another central heating system. It offers a fully integrated service to architects and builders. Its aim is to raise comfort standards and to make possible the more efficient use both of fuels and building space.

DUCTAIR units (of all sizes, powered by Solid Fuel, Gas, or Oil) have been successfully installed in buildings of all kinds—from houses to shops, flats to schools, churches to pubs. Write to us about the sort of buildings that are of interest to you. We particularly welcome new problems—we've been solving them all our working lives.

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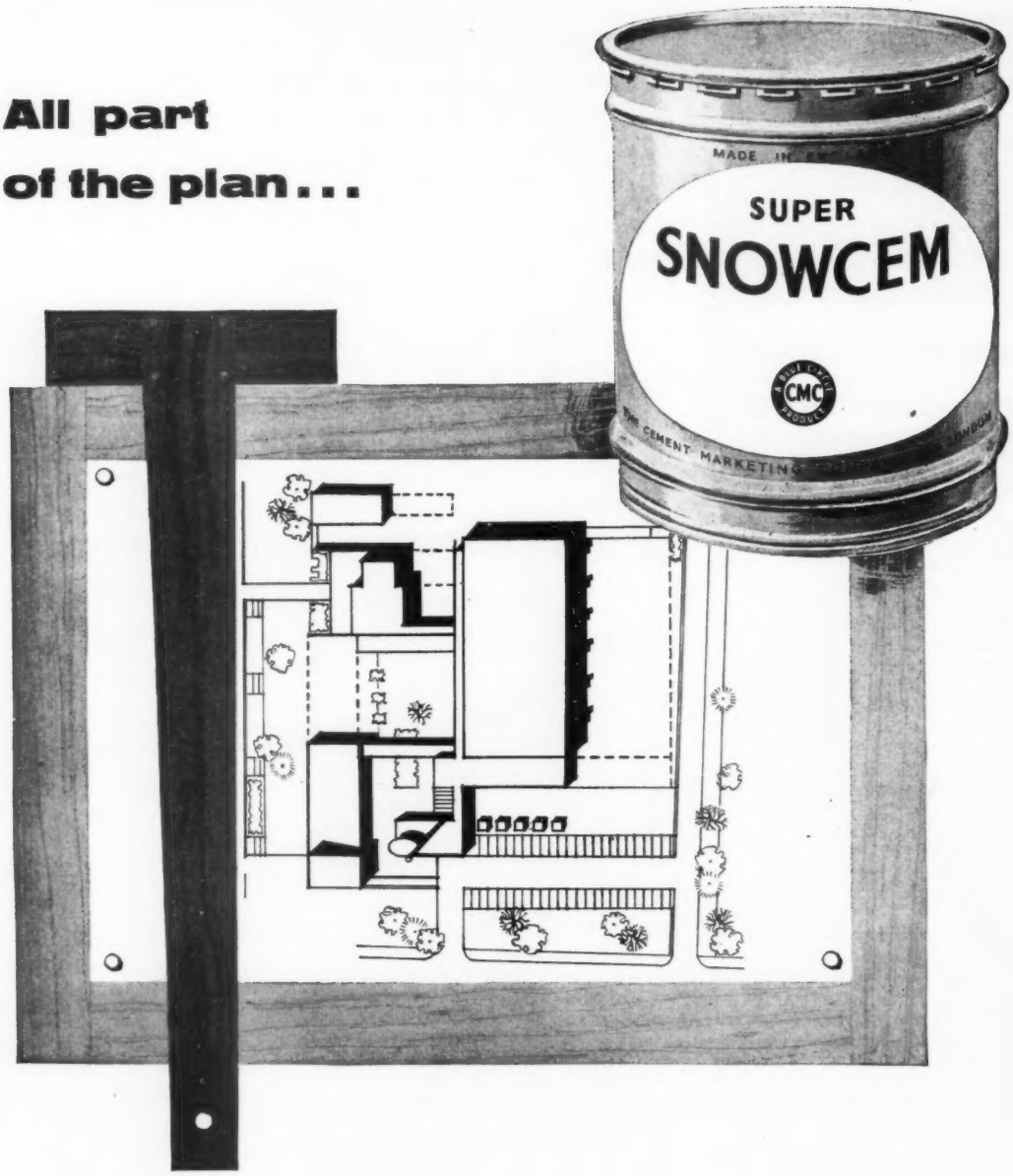

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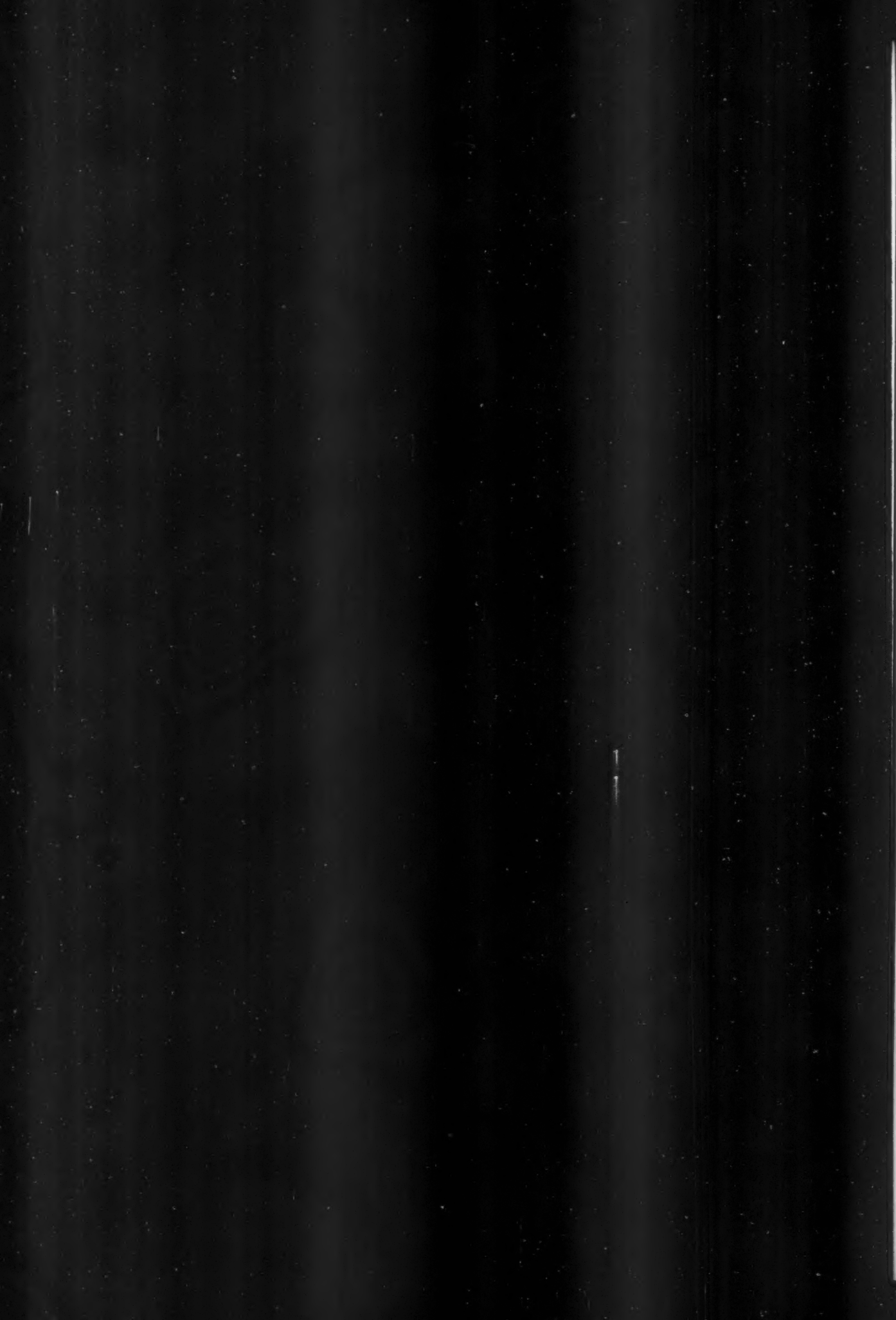

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Standard Maclean make a good Metal Window

Other products of the company include:
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Doors of all types
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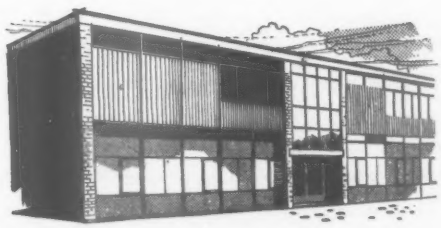
Standard Maclean Limited



A Standard Maclean Metal Window installation.

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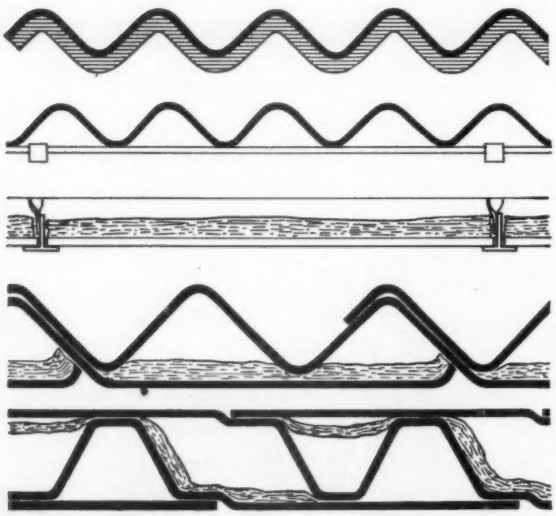

① *Single skin corrugated sheet plus ¾" Sprayed "LIMPET" Asbestos on underside. U=0.28.*

② *Single skin corrugated sheet with underpurlin lining of "TURNALL" Asbestos Insulation Board ¼" with 1" glassfibre or mineral wool mat in cavity. U=0.18.*

③ *"TURNALL" LARGESPAN Combined Sheet (Asbestos-Cement) with 1" glassfibre or mineral wool infill. U=0.17.*

④ *"TURNALL" Asbestos-Cement Cavity Decking with ½" glassfibre or mineral wool infill. U=0.18.*

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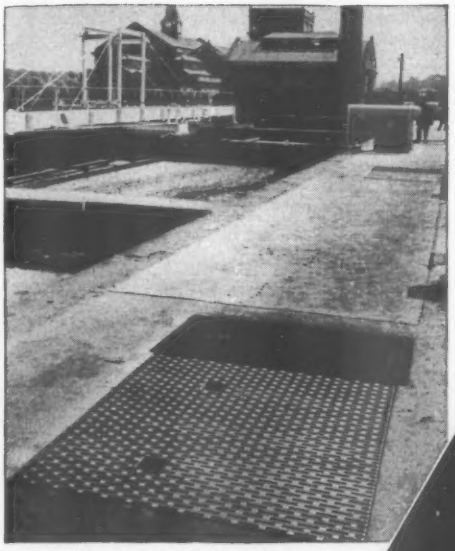

Alaflor grid flooring as installed over the de-sludging valve chambers of the sedimentation tanks at Derby Corporation reconstructed sewage disposal works.
Consulting Engineers: Messrs. J. D. & D. M. Watson.
Photograph reproduced by courtesy of Mr. M. L. Francis, F.R.I.C.S., M.I.Mun.E., Borough Engineer and Surveyor.

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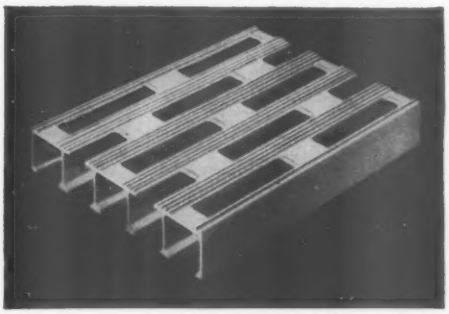

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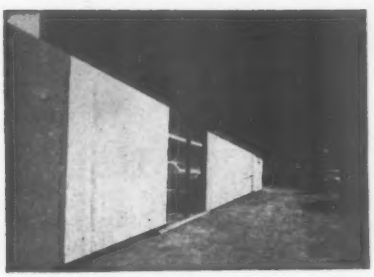

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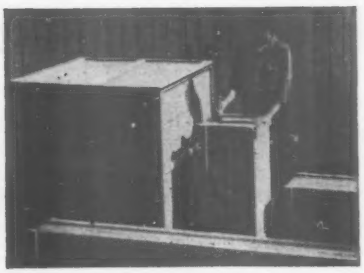

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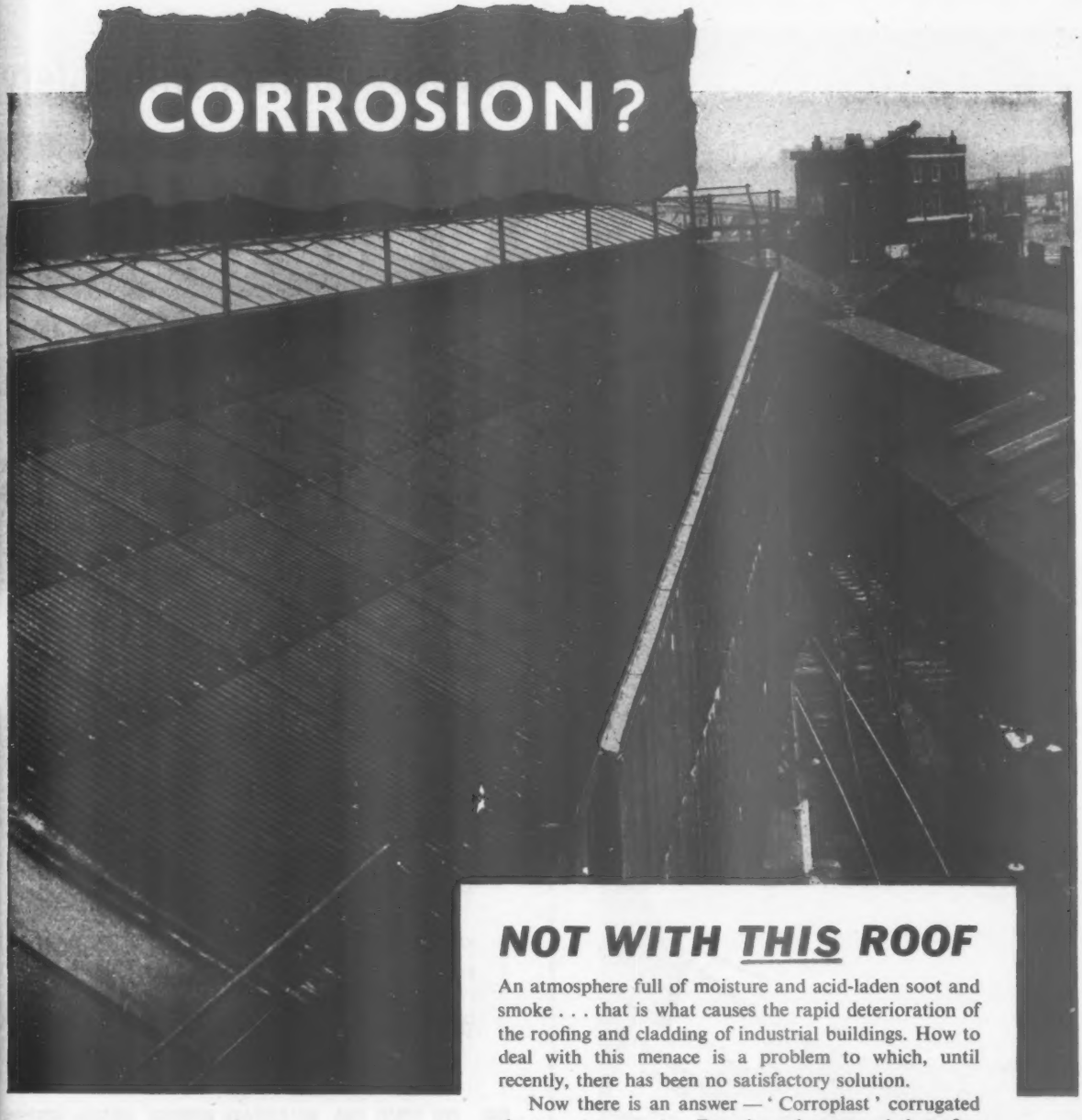

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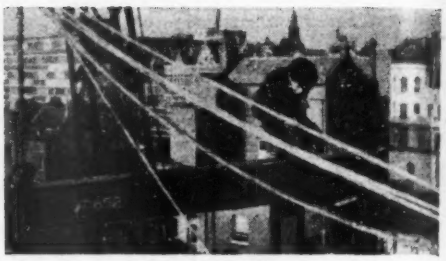

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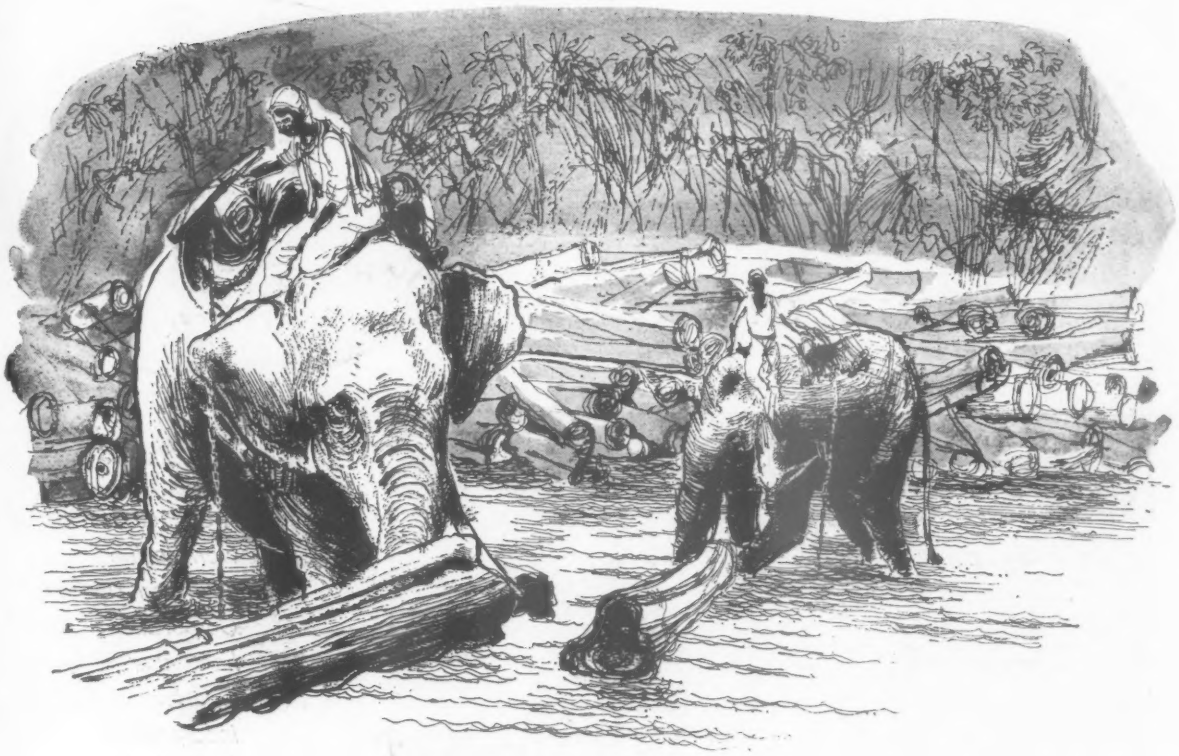

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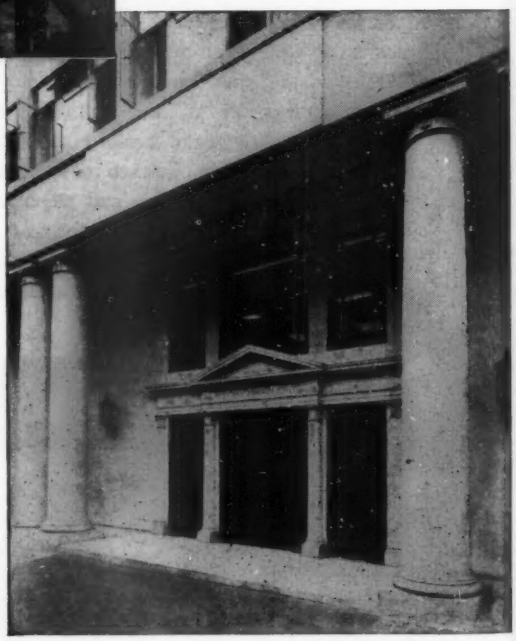

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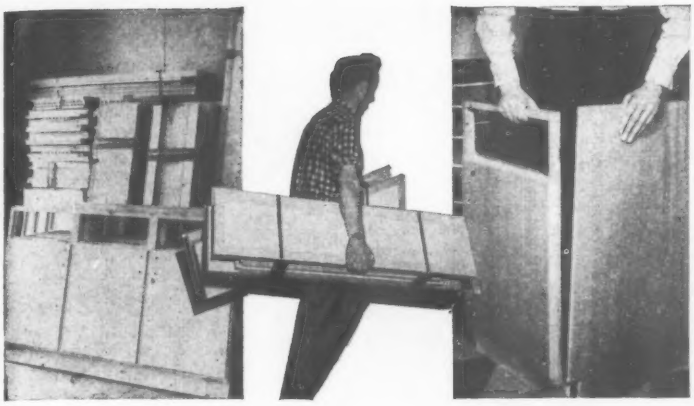

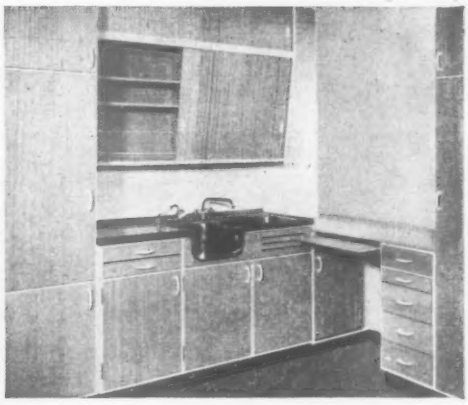

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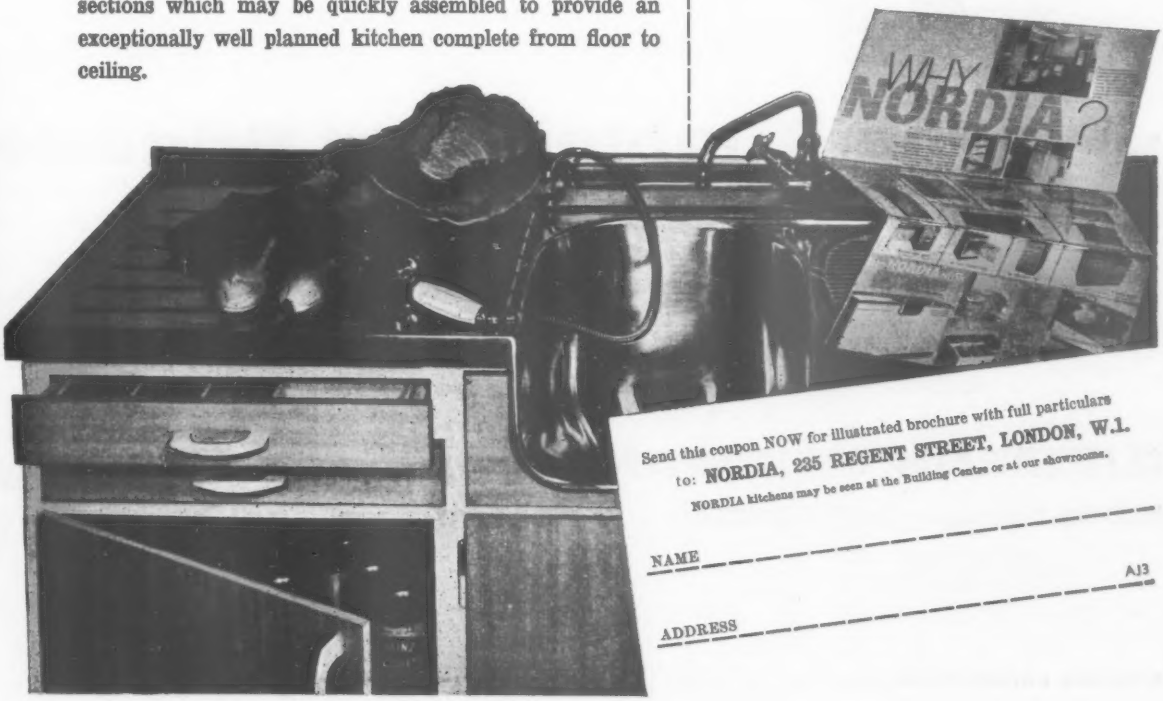

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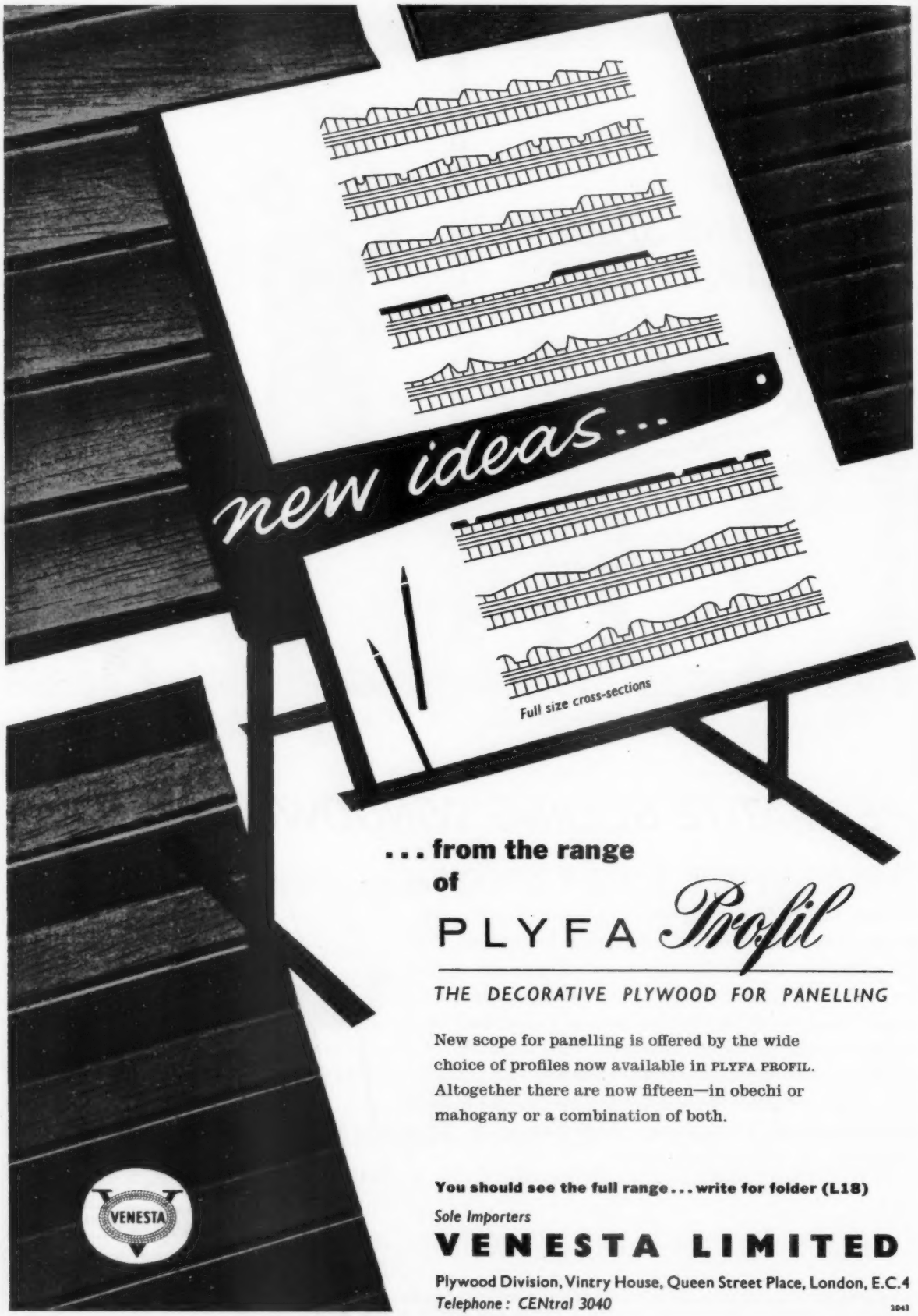

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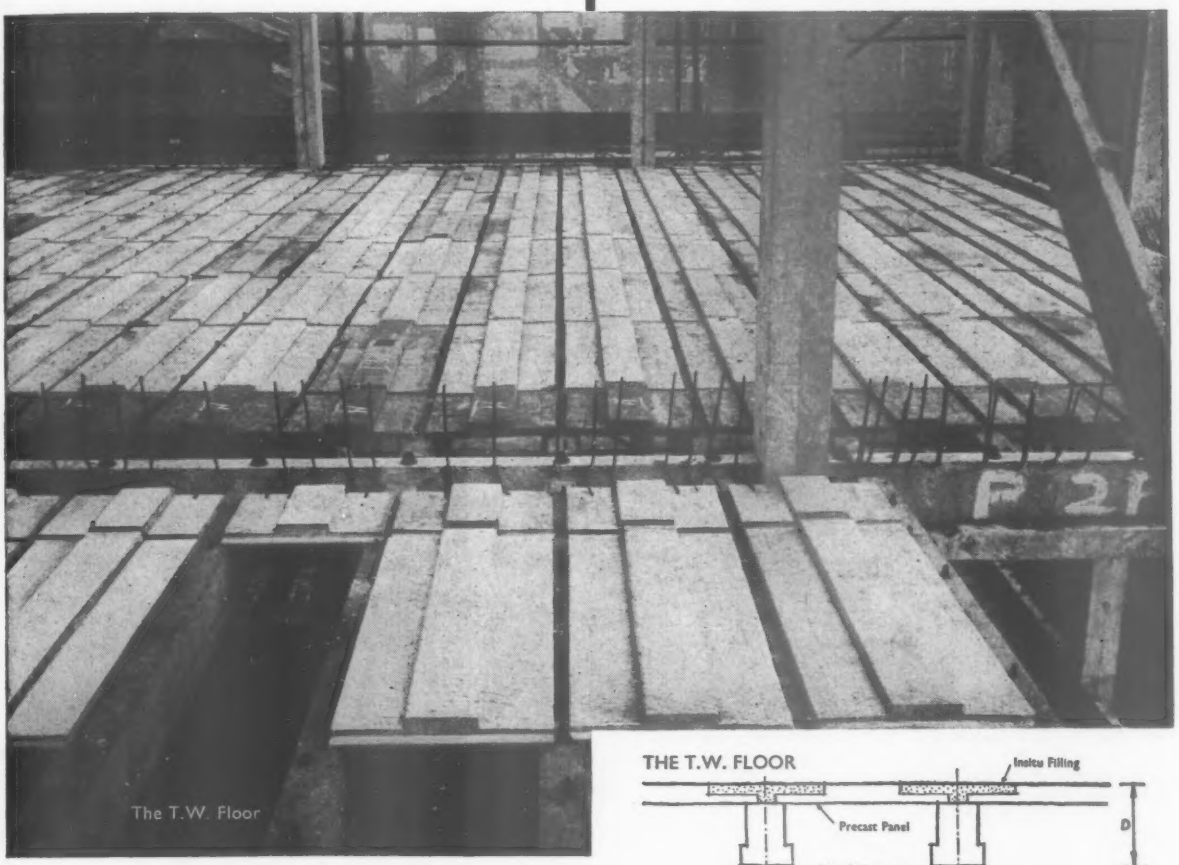
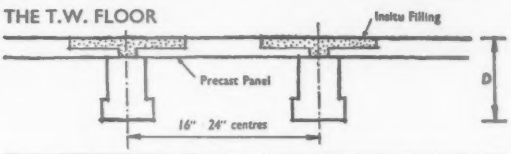


The T.W. Floor

THE T.W. FLOOR



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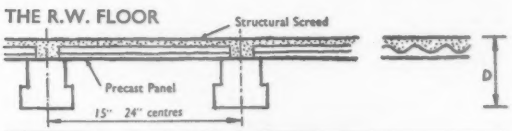

80 lb./sq. ft. Superload					
Depth:	6"	7½"	9"	10½"	12"
Span:	15' 0"	19' 0"	24' 0"	27' 0"	32' 0"

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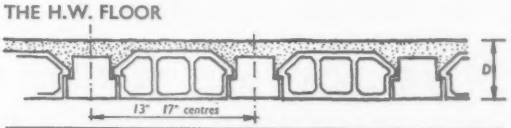

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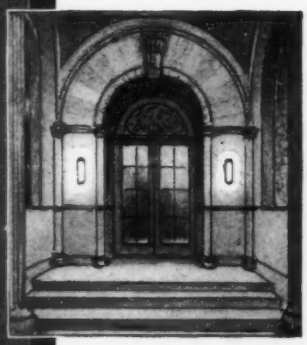

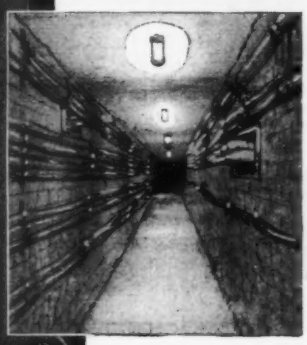

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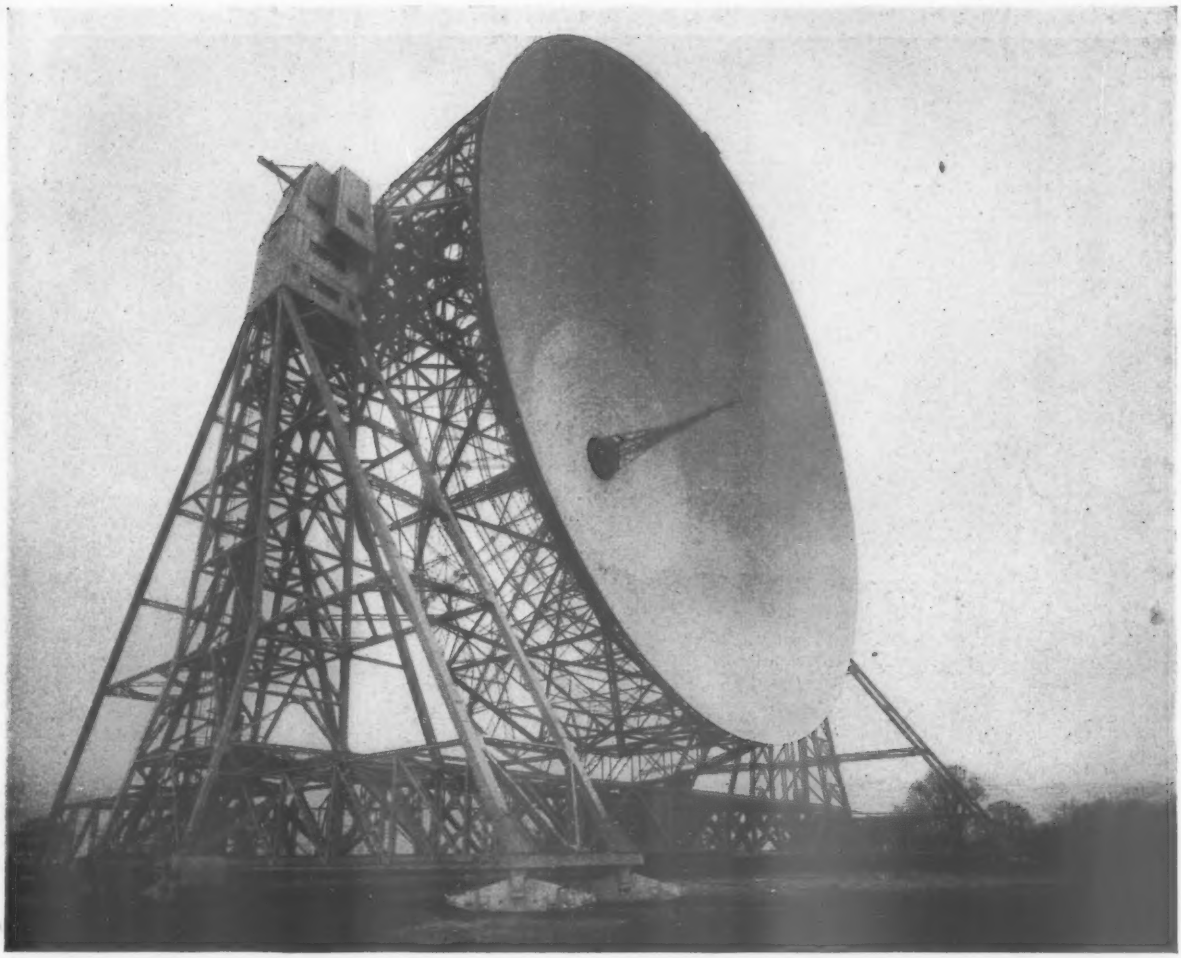

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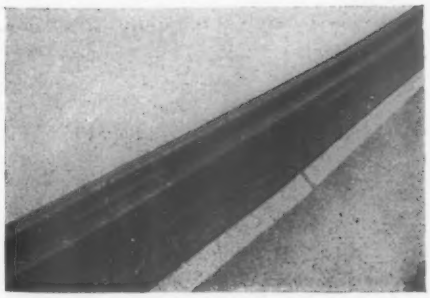

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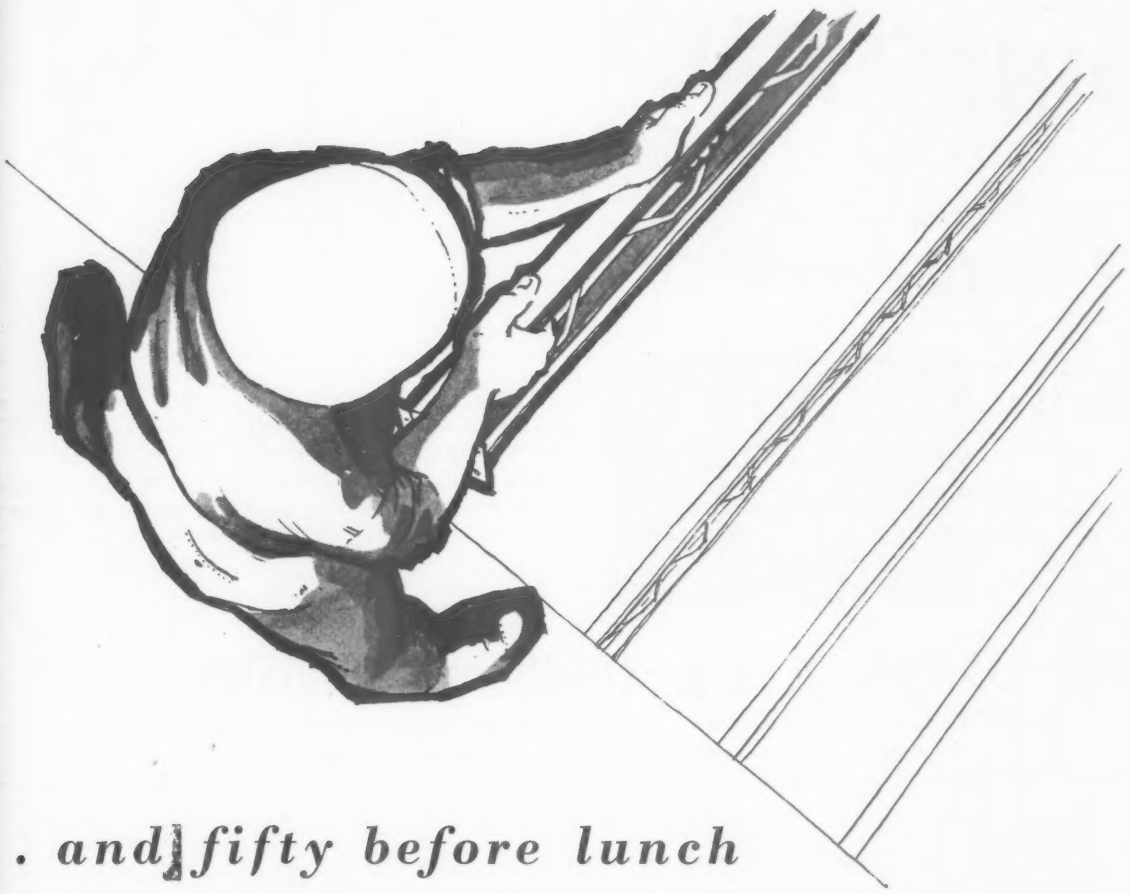

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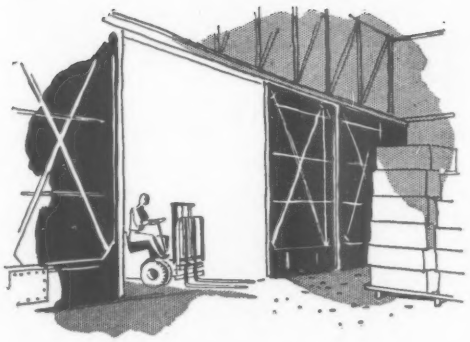

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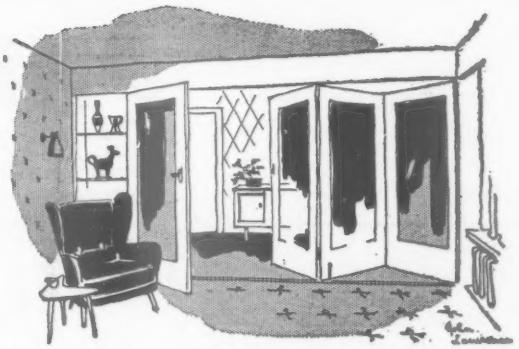

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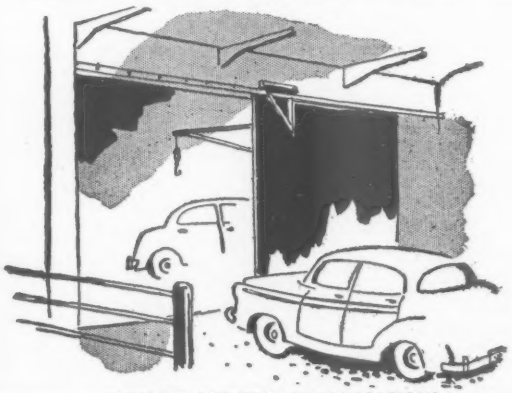

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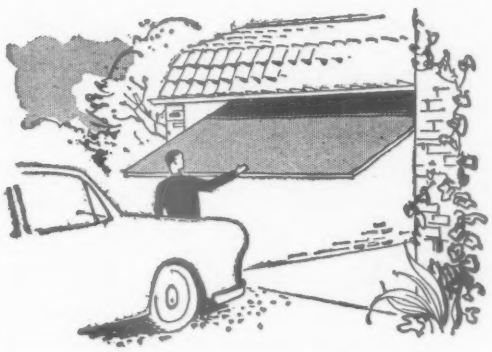

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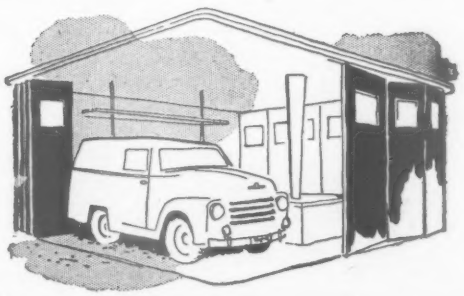

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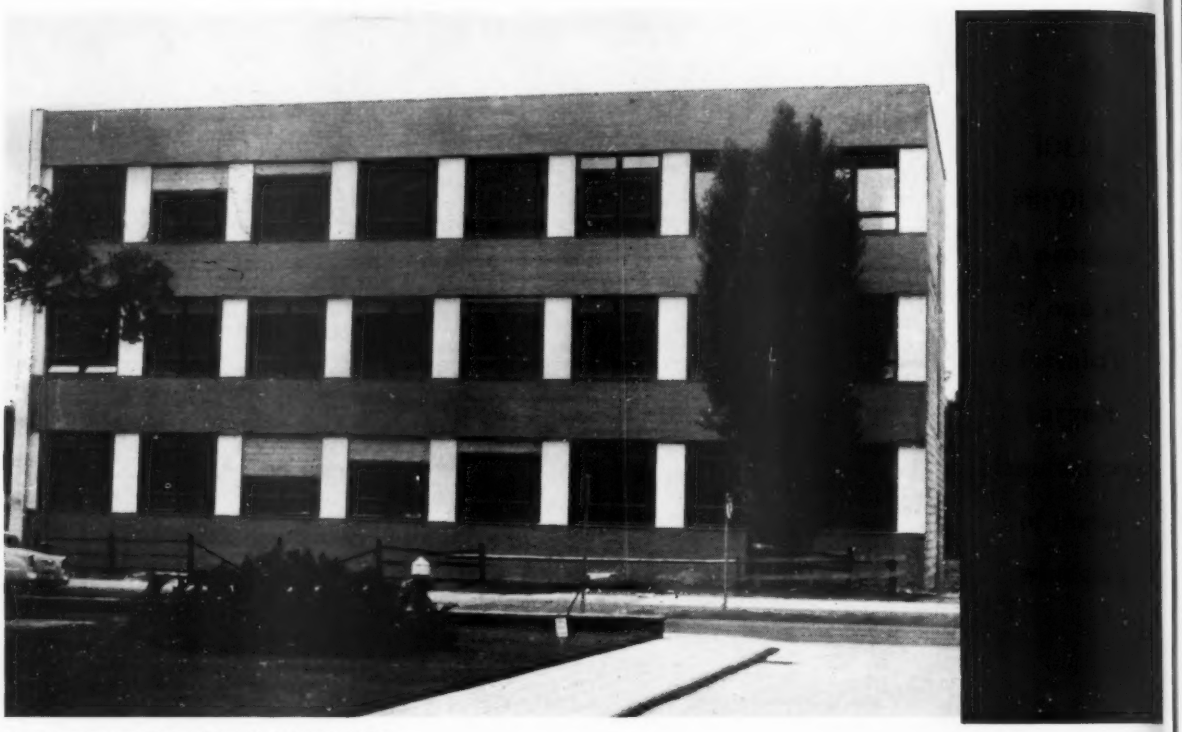

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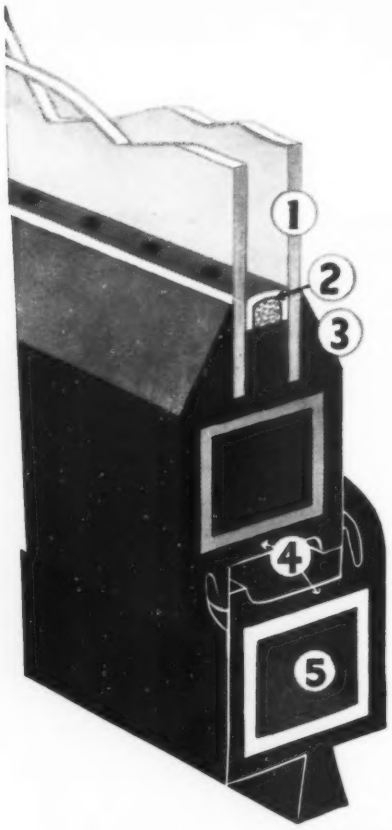

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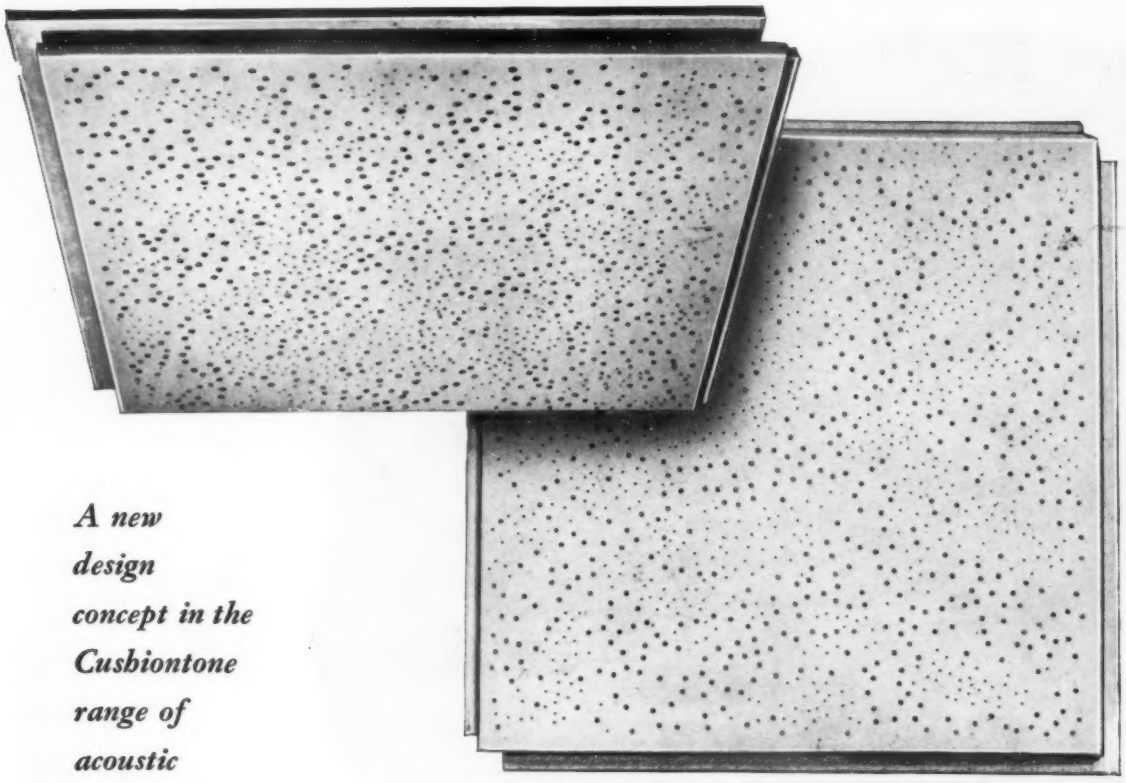

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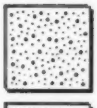
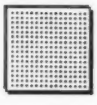


Armstrong Straight Row Cushiontone. Sizes 12″ × 12″ and 24″ × 24″, ½″ and ¾″ thicknesses.



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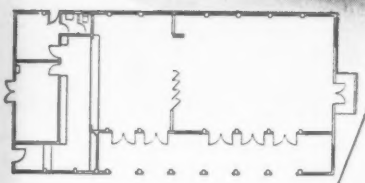

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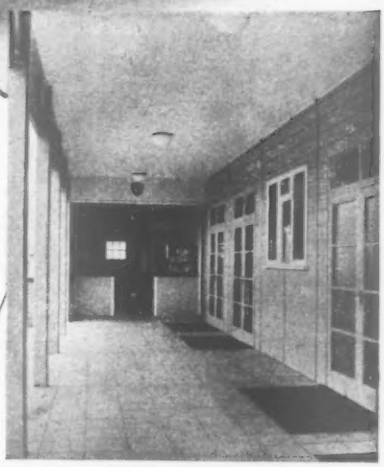
A building 80' x 40' x 10'9" to eaves, including verandah, plus porch at one end size 10' x 5', partitions and folding doors, lining, ceiling to verandah, tile flooring and granolithic flooring.

Clear site, excavate and prepare foundations, lay drains, install hot and cold water services, sinks and sanitary fittings, provide electrical installation from new main with all light fittings and electric heating, erect building, fit rain water goods, and decorate throughout.



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This client wanted a club-house building erected at very short notice. THORNS were able to match his requirements closely from their range of standard designs.

Manufacture began at once from existing drawings. By the time the site was ready, an erection team was on hand with the prefabricated sections. Plumbing and electrical services were co-ordinated with the structural work.

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Mr. Stanley gives customers a wide choice of house designs (he designs them himself). This is the St. Lawrence bungalow – heated like all the others with an oil fired warm air system.

In more ways than one Mr. Stanley is a go-ahead builder. He offers not only oil-fired central heating in his houses, but also landscape gardening, timber construction (which gives excellent insulation) and modern open planning.

'When I announced oil fired heating house sales doubled'

says 37 year-old Ronald Edward Stanley, leading Bournemouth builder

YOUNG, go-ahead Bournemouth builder, Ronald Edward Stanley, first advertised houses with oil fired heating about fifteen months ago. "The response was fabulous, " he told us. "Greater than any we'd ever received. *Actual sales doubled!* And it's gratifying to note that most of the enquiries actually repeated the words oil fired heating – as if to make doubly sure."

HIS OWN GUINEA PIG

Mr. Stanley tries out anything new in his own home first. "I'm my own guinea pig, in fact. I tried oil firing at home and was more than satisfied. I knew my customers would be just as happy about oil firing – and sales proved it."

A MUST FOR *REALLY* MODERN HOMES

Put oil firing into new houses and sales shoot up – not only in Bournemouth but throughout the country. That's because more and more people today want something more than a new house – they want the very latest in labour-saving homes. As Mr. Stanley put it – "If we hadn't put in oil fired heating we'd be way behind the times. It's an absolute must nowadays."

HOUSES EASIER TO SELL

Oil fired heating is an absolute must not only from the customers' point of view, but from the builders', too. It makes a house more desirable, *easier to sell*. It increases the value of a house out of all proportion to the cost of the heating system itself.

WHAT MR. STANLEY'S CUSTOMERS SAY

John Backler is a retired bank official. He and his wife

Mr. and Mrs. John Backler in the lounge of their home at Highcliffe-on-Sea near Bournemouth. The house is heated by an Agavector air system (ideal for new homes) which not only keeps it warm, but also fresh because with a warm air system the air is always gently on the move. The Agavector can also be used for circulating cool air in the summer months.

Marion live in one of the Stanley houses near Bournemouth. In Mrs. Backler's words – "We *had* to have oil fired central heating in our new home. No work, no dirt, no noise, no smell – and it's really economical. Why, we never keep our system running at more than medium." That was in mid-winter, what's more. Inside their lovely home the Backlers basked in glorious oil fired warmth. And all hot water problems solved! The Backlers enjoy their baths – and they can draw one bath and the water's immediately ready for another. Another point Mrs. Backler made was that oil fired heating warmed up the house in only a few minutes.

ENQUIRY PROVES PUBLIC WANTS OIL FIRING

A recent enquiry covering 5,000 families in the U.K. showed that what the customer looks for in home heating now is:

1. A better standard of house heating – constant, even warmth in the home.
2. Economy.
3. An automatic labour saving heating system – one which virtually runs itself.
4. Cleanliness and convenience – no dirt, dust or ashes to be cleared away.

Mr. Stanley gives all his customers these advantages. So can *you* – by installing oil fired heating into the houses you build. And you'll be making your houses *more profitable* to sell. Let your customers know that the entire oil firing installation can be bought as part of the house mortgage.

HOW SHELL-MEX AND B.P. LTD. HELP *YOU*

Shell-Mex and B.P. Ltd. are playing the major part in the development of the new domestic oil firing market, working in very close co-operation with the building and heating trades. What's more, they have over 100 domestic oil firing representatives throughout the country. Shell-Mex and B.P. Ltd. are advertising extensively in the consumer press and every day are creating more and more prospects for oil fired heating. Customers wanting oil firing will go to *you*. Shell-Mex and B.P. Ltd. will be happy to help you satisfy them. Free technical advice is available at all times.

The Backlers, like many thousands of families throughout the country, get their fuel supplied through the Authorised Distributors of Shell-Mex and B.P. Ltd. That's why they get a good fuel fast and efficiently. With this sort of service, Mr. Stanley knows all his customers will be satisfied.

It may have been snowing, but it's summer-warm inside the Backler's house designed like all the other Stanley houses on his estate along modern Canadian lines.

Photograph reproduced by courtesy of B.B. Chemical Co. Ltd.

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The new B.B. Chemical Co. Ltd. factory at Leicester is really safe. They have the latest A.F.A. fire alarm system which, with its sensitive detectors in all parts of the building and the direct connection to the works fire station, will automatically call the brigade to the smallest outbreak *within minutes.*

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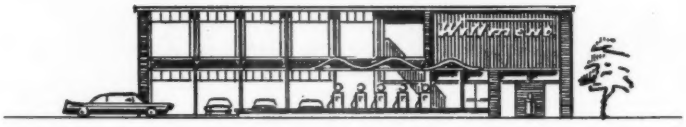

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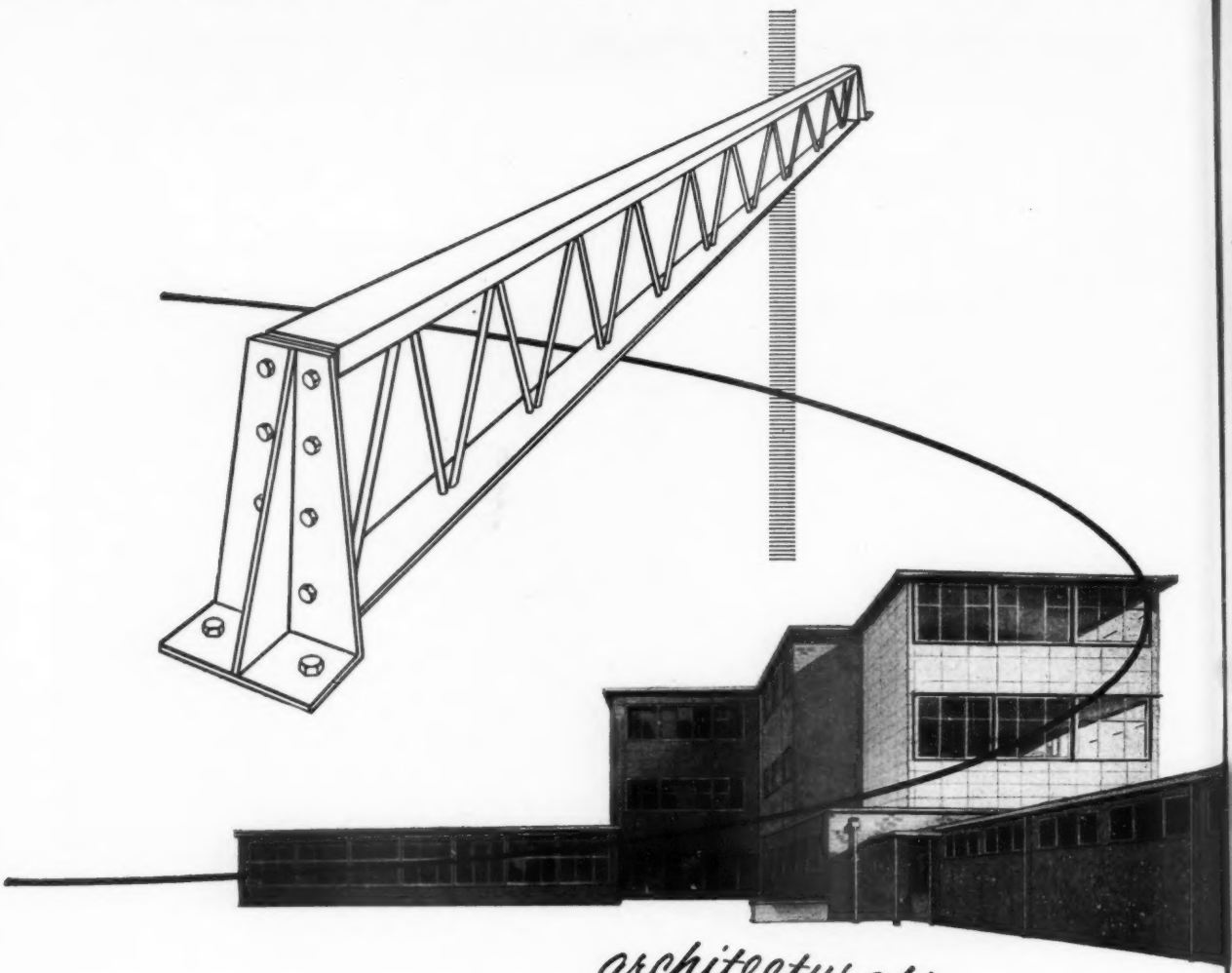

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The Lowline

Porcelain Enamelled Bath

New to the range of 'Standard' baths is the Lowline. Its flat bottom gives a no-slip safety to young as well as elderly users and is a great advantage if an overhead shower is fitted. Overall length is 5' 6" and there is a choice of overall height varying from 17¼" to 23" which, together with a shallow internal depth, allows very easy access. The Lowline has an anti-splash rim at the sides and head end. At the waste end, pillar taps can be fitted centrally or on either corner—for ease of installation and maintenance. The Lowline is also available without pillar tap holes, and with or without overflow. The chromium-plated handgrip in the illustration is an optional extra.

The Lowline—made of rigid cast-iron with a superb glossy porcelain enamel finish—is available in a choice of white or any of the five distinctive 'Standard' colours, and with a variety of fittings and matching panels.

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CONCRETE
EXAMPLES OF ECONOMY IN BUILDING

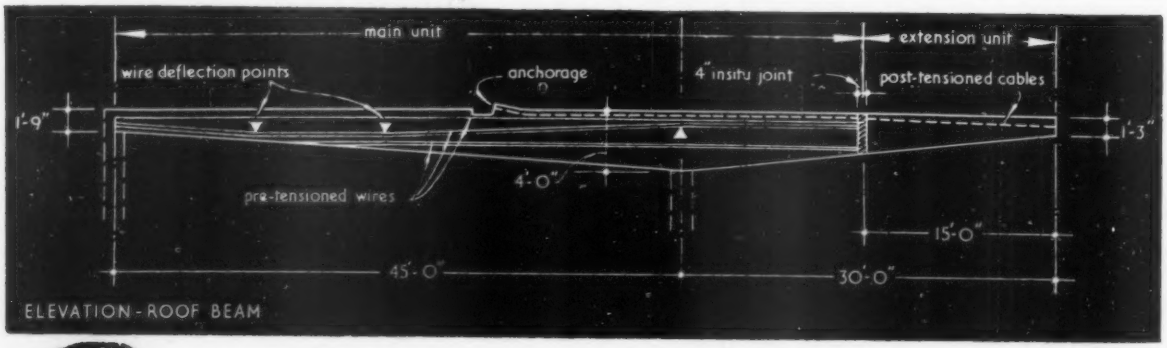
Fire Station, Twickenham

The roof to the Appliance Room. The beams are at 15′ 0″ centres and span 45′ 0″; they are cantilevered 30′ 0″ to form a canopy.

The initial design was for the usual type of post-tensioned beam construction. On investigation it was decided that it would be more economical to confine the post-tensioning to the cantilevered section only, with the main beams pretensioned. This arrangement reduced work at the site to the minimum.

The final design, which was reached in consultation with Concrete Limited, was for a 15′ 0″ section to be post-tensioned to the end of the main, pretensioned part of the beam, which was thus made as large as possible consistent with handling and transport facilities available. The jointing of the beam 15′ 0″ from its end meant that comparatively few of the prestressing wires needed deflecting; and by laying the roof slabs before stressing the post-tensioned cables in the end section, critical stresses in the main beam, due to bending at the support, were greatly reduced.

Architect: C. G. Stillman, F.R.I.B.A., M.C.C.
Contractors: Prestige & Co. Ltd.



ELEVATION - ROOF BEAM

AJ

The Architects' Journal

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NOT QUITE ARCHITECTURE

RHEIN-RUHR RUNDSCHAU

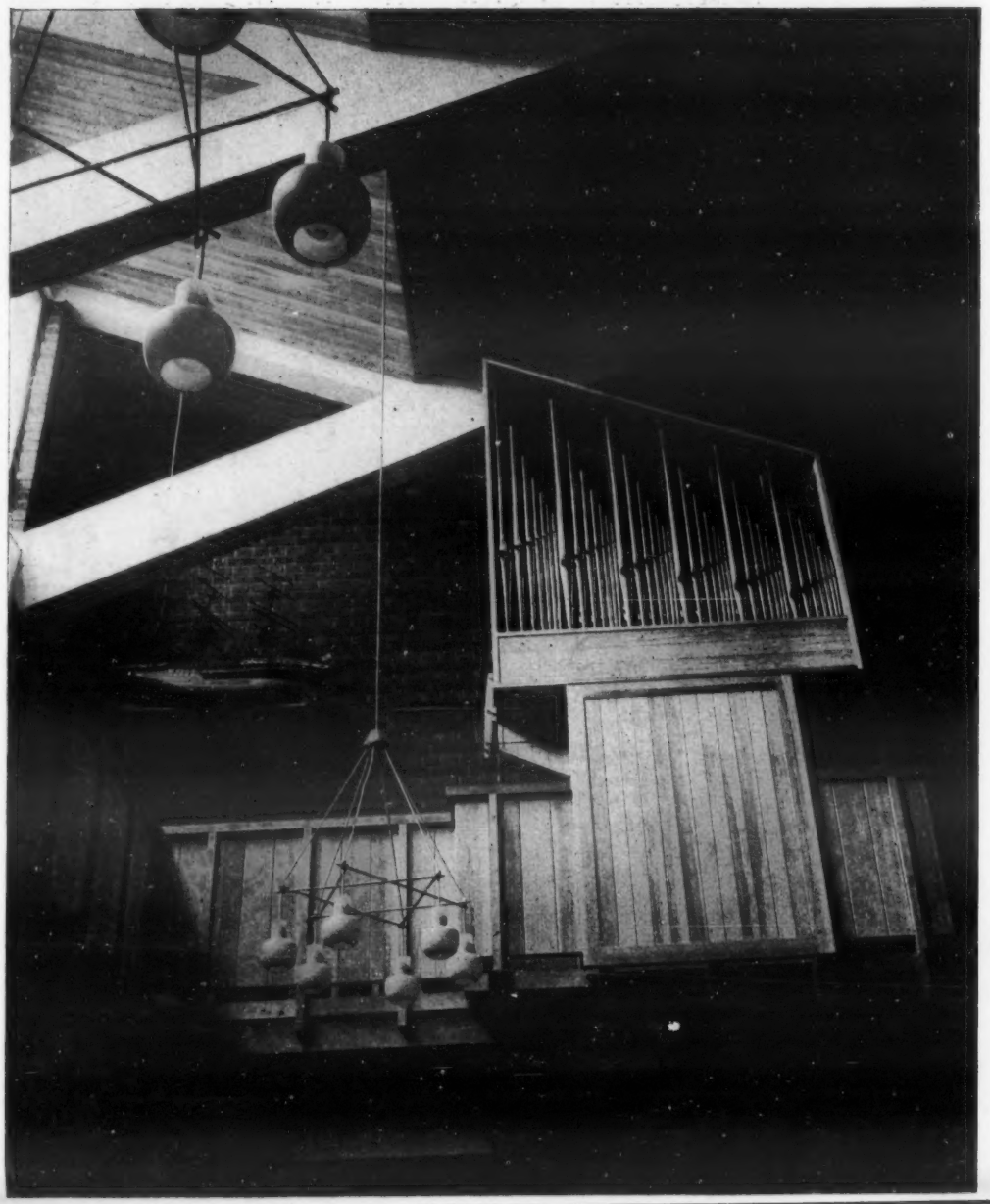
In Düsseldorf—"Daughter of Europe"—strapping Rhine-maidens teetered by in short skirts, fashiony shoes, wore their hair "very weird" as *Esquire* once put it. There was a copy of *Esquire*, the famous one with Nude Croquet, on a white marble-topped table in *i d*, the shop that sells the smartest furniture in Free Europe—chairs by Eames, Jacobsen, Saarinen, and in that special just-missed-it style (shaggy bear-pelts and too-thick steel legs) that seems to be a German speciality.

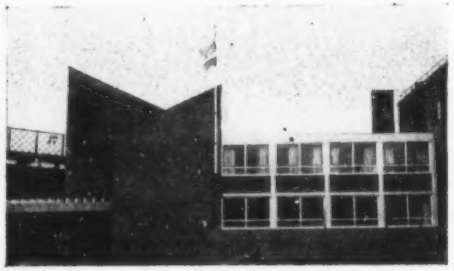
*

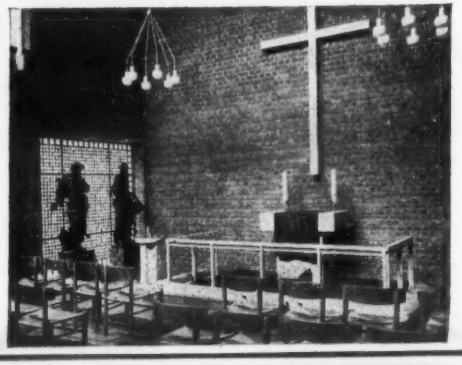
In the streets the "German Miracle" was in full swing—symbol, a man raising himself *and a Mercedes*, by his boot-laces—and the sun shone on the bustle of a flourishing northern metropolis, a light brushing of green on the trees in the Königsallee, and uniformed newsbodies hawking *Bild-zeitung*, the paper that looks like the *Mirror* redesigned by Paolozzi and sells three million copies. And the sun also shone on what will shortly be the two best office blocks in Europe—Schneider-Esleben's thin, tube-framed tower for Mannesmann, faced in finer-than-Bunshaft aluminium curtain-walling, standing up like an exclamation mark next to Peter Behrens' earlier, squat, stony-faced classicist block for the same firm; and, on a magnificent site with greenery and water at the end of the Königsallee, Hentrich's tremendous block for the other giant tube-manufacturer, Phönix-Rheinrohr, also curtain-walled, but in form like three over-lapping, biscuit-thin slabs with corridors and services sandwiched between.

*

Tea-time, we are in Oberhausen, a shapeless







Danish Church in Stepney

The appointment of a Danish architect, Holger Jensen, well known in Scandinavia for his churches, to design the Danish Seamen's Church and Mission which was opened in Stepney this week by the Danish King, is not really surprising. It also proves once more that we can all benefit from the free interchange of architects between countries. The bold brick wall surfaces of the exterior and the extensive use of plain timber internally reflect the nationality of the designer and should help its users to feel more at home. Other typical Danish features are the plain timber organ (far left) and the model ship ornament (this latter is not confined to use in churches specifically for seamen). The simple, almost austere altar and east wall (bottom left) depends largely for its success on the careful proportioning of the individual elements and particularly in work of this nature on good craftsmanship (executive architects, Armstrong and MacManus; general contractors, W. H. Gaze & Sons Ltd.). The coloured glass window, designed by Palle Bruun, behind the two 17th century figures, is abstract in design and built in iron, concrete and special coloured glass. This whole section serves as an admirable foil to the rectangular treatment of the east wall.

glass. This whole section serves as an admirable foil to the rectangular treatment of the east wall.

town with mining subsidence, looking at schools in which the lessons of Hertfordshire have been learned, digested, and made unrecognizable by budgets that will support acres of applied art-works, but not prefabricated structures. You never saw such doors, floors, finishes and details, nor such calm acceptance of the proposal to cover five walls of two-storey height with elaborate brick reliefs. If the integration of architecture and the arts is your dream, then wish your name was Kallmeyer, your office in Duisburg.

*

In time, you get used to the cha-cha-cha motion of the Volkswagen's swing axle when driven competitively over uneven basalt setts, but it was raining the next morning, and the motion felt vicious at times. We crossed the Rhine in front of a giant Kruppscape of furnaces silhouetted against the overcast, and entered Rheinhausen, with its endless semi-det. workers' housing (Krupp-financed? It could be; there is an excellent public Krupp-library by Hentrich there). Town centre being redeveloped on almost Roehampton lines, and just beyond it a madly smart church by Luntz (Smart churches? The woods are full of them); Corb, Mies and what appear to be Hunstanton clichés all at once, plus an acoustic ceiling of wooden pyramids and a very correct Liturgical plan. On second thoughts I like it—I think.

*

Then Krefeld. Surprise—a Rhine town that had a nineteenth century, with big Biedermeyer houses lining the wide streets of trees and articulated trams. We found everything on our list: the Mies factory buildings, concrete prototypes of the IIT campus, and very, *very* good—I can't think why he has suppressed them; Eiermann's office block, also for the silk combine, smo-o-o-ooth, and detailed like a watch; Pfau's Silk-industry Institute, a stupendous wall of tinted glass and pencil-line glazing bars, and—crashing into it head down—a dirty great Martian toad of an auditorium on reptilian pilotis. How *could* he?

*

And Mies's Lange House, now a museum of modern art, and extraordinarily, seductively beautiful in its red-brown-purple brick and exotically grained woodwork. If I had to pick my last architectural experience on German soil, I don't think I could wish better than this—sitting in a Barcelona chair, surrounded by Mathieu action-paintings, looking through one of those gigantic motorized windows into a wet garden of spring greenery, with a big sheet-iron sculpture by someone-or-other on the terrace, and beyond it, a Hansel-and-Gretel dovecote bustling with white fantail pigeons.

REYNER BANHAM

The Editors

ARCHITECTS AS PLANNERS

WE have long believed that the principal local authorities should be required by law to have an Architect's Department, just as they are required to have a Medical Officer of Health. Lionel Brett's almost accidental disclosure, at the RIBA press conference on motorways, that the RIBA considers that every sizeable town and city should have an Architect's Department, will be welcomed by the profession.

The RIBA's view that the City Architect should ultimately be responsible for planning (with which we agree in principle) raises much greater difficulties. Lionel Brett himself admitted that architects of the right kind do not yet exist in sufficient numbers to accept such a responsibility, though he added that it was only on the basis of an architectural training that the right kind of man would ever be produced. While the Royal Fine Art Commission's statement last week stressed the importance of the architect-planner's contribution at every stage to the planning and design of urban motorways, the RIBA omitted the word " planner," and claimed that the architect alone is " trained to think in terms of the total human environment." Unfortunately, the architect is not trained sufficiently to think positively of the *total* human environment (how much does he learn about traffic, economics, or sociology?) and the RIBA statement itself expresses the architect's natural tendency to be pre-occupied with the visual, design aspect of the problem. The architect's function is three-dimensional design, and it is the architect-planner who is (or should be) trained to think of the total human environment.

Unfortunately, too many architects in recent years have turned their backs on planning, regarded planning as a dirty word, and allowed their annoyance with irritating and negative controls to obscure the need for a revival of positive planning in which architects would play the leading role. It is only a few months ago that the President of the RIBA, in a sad lapse into anarchism, was urging the abolition of the very planning committees whose sympathetic understanding of the value of architects the RIBA is now trying to enlist in the cause of motorway design. If the RIBA is to make good its claim to the architect's leadership in planning, will it not have to consider with the TPI how architect-planners of the right calibre are to be trained?

AIDS TO COSTING

While there is a considerable and developing interest in cost analysis, there are still varying views about how effective a complete cost analysis is. There are even more opinions about the best form in which such analyses can be prepared. While further work and experience may be expected to result in improved methods and may possibly eventually lead to a standard method, it seems likely that for

a long time to come many small offices will not be able or willing to carry out full cost analyses. There will also be many small and medium sized jobs where such an exercise might be thought to be uneconomic. At the same time, general discussion of costs is making all offices aware of the necessity of doing something other than "hope for the best." Often the architect knows that a job is in the "cut price," "medium cost" or "fairly lavish" class and with even this rough guide should be able to design accordingly. It is felt that if he had some indication of the relative costs of different ways of designing some of the common components of buildings he would be in a much better position to arrive at a total cost near the target figure. Enquiry shows that many assistants who at the drawing board make decisions affecting cost are frequently unaware of the implications of such decisions. The JOURNAL is, therefore, commencing in this issue a series of articles dealing in a simple way with the comparative costs of elements which occur frequently in buildings. It is hoped that these may help to increase the average architect's ability to meet cost targets without involving any appreciable additional office work.

C. H. ASLIN

Every week now we seem to learn of the death of great and famous men in the world of architecture and planning. The latest is C. H. Aslin, Past President RIBA (1954-1955) and the County Architect of Hertfordshire during its great years. Aslin will always be remembered as the only county architect, in fact the only architect leading a large organization, who was aware of the realities of the situation in building in the immediate post-war years.

*

No one else (except Donald Gibson and Robert Matthew) would have appointed young and relatively inexperienced architects and encouraged them to develop the unique school building programme which made his county internationally famous. No one else would have been prepared to take the tremendous responsibilities such an enterprising action entailed.

*

He did not take part in the details of architectural development. His rôle, and he performed it admirably, was to act as a shield ("an umbrella-man" was the phrase coined, I believe, to describe him) for the brilliant brains he picked to work in his team. For he was superbly good at convincing ministries, committees and councils that the extraordinary was logical, sensible and reasonable. (*The Times*, incidentally, was wrong to suggest that the Treasury and the MOE were "difficult" about the Herts schools: they were co-operative.) He allowed inexperienced men to do novel work in his name: he never played safe. These are virtues which are all too rare.

*

His great powers were waning when he became President of the RIBA. In any event he had never shone at large public meetings—his abilities showed best at small gatherings. But it should be noted that it was in his years of office that the great changes that have been taking and are taking place in the RIBA were originated.

STOCKBROKER'S MODERN

The *Daily Telegraph* was probably the last of the serious national dailies to drop a policy of extreme conservatism in design. In the last year or so its attitude has become markedly progressive. In recent issues columnist Alice Hope has shown once again how stupidly some planning committees have behaved over house design and, even more important, what a stultifying effect on modern developments in housing is exercised by building and insurance societies. It is interesting to see that of the avalanche of letters received by the *Telegraph* after Alice Hope's reference to somebody's modern house-building plight, 80 per cent. of the letters were on the side of modern design: yet another pointer to the rate at which public opinion is swinging against by-pass variegated. There is a strong probability that in 20 or 30 years' time a large number of house purchasers will pay a final instalment on a house which is unsaleable. The villains of the piece are, of course, the same chaps who ruined the City with office blocks, a handful of surveyors working for the money-lending companies.

DANGER ON THE LINE

James Adams, the planning officer of Kent (practically the only county one ever hears about—in favourable terms—in planning affairs), discussed current landscape design problems at the TCPA last week. He is convinced that electricity authorities are not solving the problem of overhead transmission cables because they are under no compulsion to do so. He is frankly worried at the prospect of nuclear power stations having limited lives of 20 years or less and then being left undemolished because they are too radio-active to touch. He also deplored the appointment of landscape architects as a panacea to cure the evils of development when it has taken place—obviously they should be consulted when a site is chosen. When asked if he was as worried about railway electrification by overhead wires as he was

about overhead power cables, he ruefully admitted that, of course, county authorities had no say in the matter whatsover. This is typical British semi-planning. ASTRAGAL has seen one of the railway's overhead-line designs and they were appalling.

ALL DONE WITHOUT MIRRORS

Problem. If eight needlewomen and two supervisors stitched an oil-painted design on to canvas in eleven weeks, using wool dyed in 200 colours, a photostat enlargement 20 ft. by 8 ft. and 1,200,000 *petit point* stitches, (*a*) how old were the girls, (*b*) what were they doing, and (*c*) who was the designer?

*

Answer. (*a*) The girls were half under 20 and half over 30, as a Press handout tactlessly pointed out, (*b*) they were preparing an embroidered wall hanging for a salon in a Kuwait building by Farmer and Dark, (*c*) the designer was Geoffrey Clarke, who doesn't call himself a painter but is a sculptor and designs mosaics and stained glass.

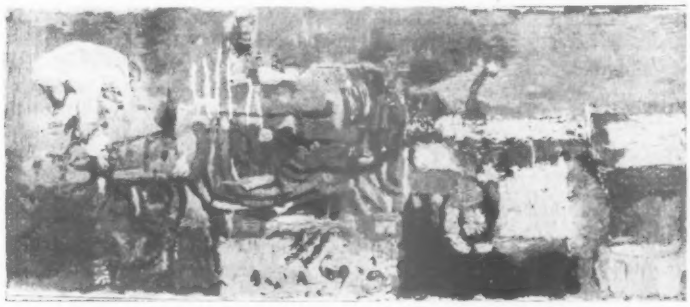
*

The design is reproduced below How splendid it is that the architects resisted the temptation to commission an Aubusson tapestry and instead employed English girls to sew the artist's slaps and swirls of pigment. Even the unpainted bits at the edges of the white canvas have been precisely reproduced, and thin dark lines of stitches painstakingly indicate the texture of the paint. ASTRAGAL has heard of no display of industry more impressive since he read of Mrs. Dade's bouquet of lilies of the valley composed entirely of fish bones (*circa* 1801).

ON THE AIR

The popular Press ignored the Press conference on the design of motorways which was given last week at the RIBA by Basil Spence and Lionel Brett. But the "serious" papers all gave a good show both to this conference and to the Royal Fine Art Commission's statement, which was published the day before. The conference was also reported on radio newsreel and television news, and Cliff Michelmore interviewed Lionel Brett most sympathetically in BBC television's *Tonight*. The same evening, J. M. Richards spoke very critically about the design of motorways on sound radio. By its persistence the RIBA is making itself heard, on the subject of motorways, by more and more people. Let's hope some of them are councillors and aldermen who will be persuaded to take useful action.

Above, Charles Eames at the RIBA when he gave the Annual Discourse. Below, embroidered wall hanging by Geoffrey Clarke.



OUT OF STEPNEY

At an exhibition last week Stepney Borough Council showed that its 1,377 post-war houses are badly designed and laid out with no regard for landscaping and planting. They also showed that the LCC, which has built about twice as many houses (far better, if not perfect) in the borough, is prepared to spend money on such things as play sculpture and landscaping. But the most promising things shown were some projects from the borough's reorganized architect's department, which is also using private architects. These schemes are a great improvement.

OPEN GAMESMANSHIP

Charles Eames's Discourse at the RIBA provided, as such things should, a view into a distinguished and lively mind, setting out a basic approach that might have served for any number of discourses. He drew attention to what he called the new *circumstance* in which we have to work, and the new *tools* for dealing with it. The circumstance is that only current information is meaningful, and accumulated, traditional information isn't. The tools are new mental techniques and the machinery (*e.g.*, computers) that go with them—and here he must have

delighted the authors of the first BASA supplement by making free with words like feedback, linear programming, queuing theory, system simulation.

*

All these were subjects on which I, for one, would have liked to hear much more. The theory of games, for instance—Mr. Eames described the present "circumstance" as an Open Game, one in which you had to find the optimum strategy to use against an opponent also looking for an optimum strategy, a situation which could be handled mathematically by assigning quantitative values to the factors involved, even when (like acoustics and heat) they were factors earlier regarded as immeasurable. Fine—but what quantitative values are we to assign to Councillor Smith and the Borough Engineer in the game of Aesthetic Control?

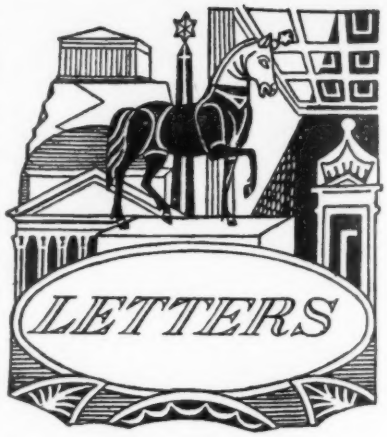
*

I suppose that the mere fact that one raises these points show that the discourse had done its work, in suggesting to us that these new mental disciplines *do* have a relevance to architecture that we hadn't considered before. It is a great pity, however, that Charles Eames had not prepared his discourse more carefully. His) arguments, delivered in a relaxed, rambling manner, were not easy to follow. This is the second discourse given by an American, and it supports Reyner Banham's argument that the RIBA could do with an interpreting service. Maybe American should be treated as a foreign language anyway.

*

And, of course, I mustn't forget the Eames's films, shown on the previous evening to an even fuller house. Most of them have been referred to, and praised, before in this column, but three of the eight shown were new to me: *Day of the Dead*, a very colourful study of Mexican joyful funeral rites, a cartoon on computers called *The Informative Machine*, and a brief brilliant *rapportage* of the de Gaulle crisis. They are all well worth seeing, though Eames's continuous, if clever, use of stills can be irritating, particularly in a study of a baroque church which so obviously invites camera movement. Is it due to a desire to use up holiday snaps, or lack of a ciné camera?

ASTRAGAL



Lord Esher

Richard N. Darlington,
Student R.I.B.A.

A. G. Paton, L.R.I.B.A.

L. T. J. McArthur,
Director, Stewart and Gray, Ltd.

Michael Brawne, A.R.I.B.A.

Planners and Vandals

SIR: As I have a son who is vice-president of the RIBA it would indeed be "unwarranted" if I were to make "jibes" at modern architecture. I have never done so, and did not do so at the meeting of the Victorian Society to which you refer. Planners are another story. The *Manchester Guardian* of yesterday draws attention to a typical case. A Tudor house in Weymouth stands in the way of a Civic Centre. The Ministry of Housing, the CPRE, the SPAB and the Pilgrim Trust are all in favour of preserving this house. More than £5,000 has been raised to turn the house into an old people's club. But the town council of Weymouth have a "plan," and to preserve this Tudor house would "hamstring" their plan, under which no doubt a car-park will take the place of the Tudor house. I am surprised to find THE ARCHITECTS' JOURNAL on the side of such behaviour.

Henley-on-Thames ESHER

ASTRAGAL replies: I apologize to Lord Esher for having either mis-heard or misconstrued his attitude to modern architecture, but on the other matter I remain unrepentant. The phrase "Commercial developers, vandals and town-planners can be lumped together in this context," still seems to me an unwarrantable attack, irrespective of the merits of individual cases such as that mentioned in Lord Esher's letter, and to believe this to be an unwarranted attack on planners in general does not mean that THE ARCHITECTS' JOURNAL is necessarily "on the side of this sort of behaviour" in the instance cited.

Rugby Town Hall

SIR: Does Mr. Press (AJ, April 2), an architect and borough councillor, really like the design for Rugby Town Hall? I suggest he takes some lessons from its critic, the Sewage Disposal Plant Expert, or does he think Peter Scott is muddling the design up with one of his own buildings!

Full credit to my friend, Peter Scott, for trying to save Rugby from this unfortunate design which *looks* 20 years old. A former employee of Rugby Corporation, I weep for my native town; for I consider this design out of character with Rugby and of touch wits its site.

Congratulations to ASTRAGAL for bringing to our notice the dismal designs for our town halls (AJ, March 12).

Reading RICHARD N. DARLINGTON

Wrong Use of Colour?

SIR: It comes as a great shock to me to find that my ideas upon colour, design and general good taste have apparently been at fault for many years and I am grateful to Mr. Richards for being the first and only person who has ever noticed the deficiency. I am sure the London County Council must also be very concerned since in the past we have always worked out the details and colours of the elevations together and have never had a cross word.

It so happens that I have several other jobs on the stocks just now and perhaps it would be more sensible for me to submit my ideas to the ARCHITECTS' JOURNAL for approval before going too far. This would save a lot of your time in criticism and produce the degree of mediocrity which has always eluded me in the past. Alternatively, perhaps it would be easier for Mr. Richards to use dark glasses when in Mayfair. This gay district positively flaunts the pale blue to which he objects. Even the sky and the Westminster City Council lamp-posts have copied my Dover Street colour whilst in Berkeley Street, believe it or not, there is an exact replica of the whole façade!

London A. G. PATON

The building designed by Mr. Paton, whose bright blue glass panels Mr. Richards criticized, is Camp Bird House, Dover Street.—EDS.

SIR: In connection with J. M. Richards' article "A Wrong Use of Colour," I should like to point out that he infers that the curtain wall infill panels used on the new *Daily Mirror* building are of coloured glass. I feel that it might be of some interest to the readers of this article to know that the coloured infill panels are porcelain enamelled steel, and this building is one of the largest in Europe incorporating the use of this type of infill panel.

London T. J. MCARTHUR

A Misprint

SIR: Printers obviously delight in impish omissions—particularly presumably when there is no indication that this sense of humour is being exercised. The last but one sentence of my review of tropical architecture at the AA should of course have read ". . . under the *guidance* of Otto Koenigsberger's ubiquitous knowledge of the Tropical belt. . . ." "Guise" was particularly unfortunate, but I hope no one took offence.

London MICHAEL BRAWNE

NEWS

OBITUARY

Charles Herbert Aslin

Charles Herbert Aslin, President of the RIBA in 1954-5 and county architect of Hertfordshire until a few months ago, died on Saturday at the age of 65. He studied architecture at Sheffield University, and was successively borough architect at Rotherham, deputy county architect of Hampshire, and borough architect at Derby before moving to Hertfordshire where he made one of the greatest contributions to contemporary British architecture as leader of the team that developed the world-famous Herts schools. He was from 1945 onwards an energetic member of the Council of the RIBA. An appreciation by ASTRAGAL appears on page 610.

Sir George Pepler

Sir George Pepler, the Hon. Secretary of the Town Planning Institute since its inception, has died at the age of 77. A colleague in the TPI writes:

Sir George Pepler was a man of such vitality that it is difficult to realise he is no longer with us. This great enthusiasm for what became known as town and country planning was deeply admired and appreciated both in this country and abroad. His two greatest achievements were the organizing of statutory planning as a system throughout the country and the development of the Town Planning Institute as a professional body. That both of these are giving rise to considerable concern today in no way detracts from his great efforts.

In 1914 he succeeded Thomas Adams, the first town planning inspector, at the Local Government Board, and remained as technical head from 1919 to his retirement in 1946. It was here that his skill as a diplomat became apparent, particularly in the difficult task of persuading local authorities to prepare plans themselves or to come together in joint boards for the purpose of preparing advisory plans over a larger area. During World War II he helped to bring into existence the then Ministry of Town and Country Planning's Regional Planning Offices, an extremely important development which has since unfortunately withered away.

As Honorary Secretary of the Town Planning Institute since its inception in 1913 he has dominated its entire life story, guiding its difficult course skilfully and keeping a close eye on its educational standards and requirements. One of his great contributions has been to act as President and father of the annual Town and Country Planning Summer School.

Although many of the younger planners did not see eye to eye with him, and some indeed have felt that the whole direction of planning today is in need of fundamental re-examination, yet he should be given full praise for his tremendous enthusiasm for planning.

The Royal Fine Art Commision and the RIBA both issued statements to the press last week on the planning and design of motorways, The RIBA also held a press conference, at which Basil Spence, the President, made a short statement and Lionel Brett, Vice-President, answered questions in the course of which he made important statements of RIBA policy on the architect's role in local government and planning. We publish below a report of the press conference and the two statements.

RIBA AND MOTORWAYS

"Architects Must Lead The Team"

Some highly significant statements on the town planning set-up, and the architect's place in it, were made by Lionel Brett, a vice-president, at the RIBA's press conference on motorways last week. The purpose of the press conference was to present the RIBA statement (printed above) on motorways. Mr. Brett, who emphasized that he was speaking for the RIBA and not personally, agreed, in reply to a questioner, that he was asking for "a radical change in the town planning set-up." The principal changes of which Mr. Brett spoke were these:

1. Every town and city of any size should have a City Architect.
2. Ultimately that City Architect should be responsible for city planning. Mr. Brett explained that he used the word "ultimately" for two reasons: one was that the RIBA was not seeking to oust the distinguished engineers who were in these jobs at the moment; another was that the right kind of architect did not grow on every tree. But, he added, it was only on the basis of architectural training that the right kind of man would ever be produced.
3. Immediately, in the urban motor road study groups the City Architect should be brought in, and where there was no City Architect an architectural consultant should be brought in.
4. The architect should lead the planning team in the location and design of urban motorways.
5. In the national motorways landscape consultants should be employed from the start on the location and alignment of the roads, and not merely to furnish the road with trees and shrubs.

Mr. Brett was pressed to give examples of the "monstrous" mistakes (referred to in the RIBA statement) to be avoided, and cited the cutting up of South London by the railways into meaningless segments (the new motor roads, he emphasized, would be on a much greater scale). He disclaimed the use of the word "monstrous" to describe anything now being done in this country, although he criticized the London-Yorkshire motor road because "it was far more rigid than it might hive been" and "does not bow to the landscape as it should have done." From America he took the example of Los Angeles, which was "just one big mistake—no longer a human environment to live in."

Mr. Brett repeatedly urged that the real point was to get the architect in at the beginning. For example, when asked if he would be prepared to leave the actual design of the motorway to surveyors and engineers, he said "I wouldn't leave the design of any three-dimensional structure to engineers alone because I think architectural advice is essential at every stage." The essential difference between the engineer's and the architect's approach was that the engineer solved the problem, but it was not his business to consider whether the solution was going to be happily related to the environment. The architect was trained as a student—though he did not say that every architect necessarily did this—to see everything he did in its setting, to consider the whole environment into which he put his building.

Mr. Brett also recognized, however, that the correct location and design of motorways was far from being the whole solution to the problem. The Americans hadn't solved it. They had made it possible to get to the town, but not to dispose of oneself when one got there. He saw it as a tremendous opportunity to make a fresh start, particularly in the worst cities, on urban renewal, and urged the need for leadership in Whitehall, pointing to the need for research by the Ministry of Housing and Local Government into town building for the 20th century. The Ministry of Transport, too, should be far stronger on design: it did not exercise anything like the powers of censorship, encouragement, suggestion, or imagination in transport that the MOE exercised in schools.

RIBA Council Statement

The Royal Fine Art Commission has just published a statement on Motorways, which the RIBA supports wholeheartedly. It is a vindication, from an uncommitted body, of the RIBA's contention that architectural advice from the very beginning is essential in the planning and design of motorways.

The problems

The RIBA welcomes the opportunity that new motorways give for imaginative design. However, they also raise many new problems, social, æsthetic and psycho-

logical, apart from the economic ones they seek to solve. And it is when they meet and have to feed their traffic into a city or town that the motorways give rise to the most complex three-dimensional problems.

The effects of the urban motorway

The urban motorway has to have the capacity to carry enormous traffic loads (about three times anything known in this country today) into and through our ancient and complex urban areas. It must inevitably involve the demolition of large numbers of buildings, the cutting of existing communications and the appearance of an entirely new scale in our townscapes. Some parts of cities can absorb these changes to visual advantage; in others they would be a visual disaster. Thus the location of urban motorways (and not merely their design) is inseparable from the problems of three-dimensional planning and civic design as a whole, and must be studied by those best qualified in such matters.

Raised motorways

Where, as must often happen, high-level motorways are the only economic solution, all these problems are aggravated. If insensitively sited and clumsily designed, such roads will destroy the appearance of the town completely, stabbing like a sword into its very heart, as so many of the American motorways havs already done. If well designed, they may be majestic and exciting and open up new possibilities for urban renewal.

They can be symbols of inhuman scale, establishing tyranny over the economic life of the town; or they can enhance its scale and dignity, and be things of grace and beauty in themselves.

The architect's place

The root of the architect's argument is that no benefit will come from calling him in merely to design the bridges and service buildings along the motorway. His advice is necessary from the very moment when it is decided to investigate the problem, for he is trained to think in terms of the total human environment. It is the RIBA's contention that such an approach is absolutely essential if we are to be the masters and not the servants of our own inventions.

What can be done now?

Certain local authorities are at the moment setting up joint committees to consider the future development of urban motorways and feeder roads. The RIBA is deeply concerned that none of these committees have so far decided to include architects.

If, as we have shown, the architect is not only concerned with the design of road accessories, but also has a vital part to play in the fundamental planning of the roads, then it would be tragic if these committees continued to ignore his contribution.

It is only by making use of the best possible advice from all quarters that our towns and cities can avoid the monstrous mistakes of the past.

RFAC

Motorways Statement

Since the programme of new motorways was initiated in 1954, the Royal Fine Art Commission has been anxious that everything possible shall be done to ensure that the relationship of the motorways to the landscape through which they pass, and their appearance in every other way are really satisfactory. In the Commission's view they should not only be laid out and designed in such a way as to preserve existing amenities, whether in town or country; they should create opportunities for landscape improvement and urban renewal, and should in themselves be first-class examples of design. For this reason it is essential, in the Commission's view, that landscape consultants should be appointed to work with the engineers from the outset. Good landscape design consists of more than the judicious planting of trees and shrubs after the motorway has been built.

It was therefore with satisfaction that the Commission learned of the decision taken by the Minister of Transport and Civil Aviation in 1955 to appoint a special committee to advise him on the landscape treatment of trunk roads in England and Wales. Unfortunately this committee was not appointed in time to advise from the beginning on the first section of the London-Yorkshire motorway. Here the care with which the technical engineering aspects of the project have been studied has not been matched by similar care in relating the road to the landscape through which it passes. The Commission understands that the committee has been consulted on subsequent projects, though not hitherto before major decisions on alignment have been taken. The Commission hopes that the committee will be consulted in future at the earliest possible stage, and that steps will be taken with their advice to ensure specialist collaboration from the outset on individual projects.

No less important in the Commission's view is the treatment of the new urban motorways. American experience shows that if they are conceived solely in engineering terms they can be destructive on an enormous scale of urban values, both financial and æsthetic. On the other hand if imaginatively integrated with urban renewal they can greatly enhance those values. But for this to be achieved, collaboration from the start with architect-planners is vital.

The Minister has recently taken the initiative in setting up study groups in the more densely populated areas, to plan local road improvements, including motorways, and to suggest priorities for carrying out the work. In the Commission's view it is important that these groups should include suitably qualified architect-planners, and it has supported the Royal Institute of British Architects in their recent approach to the Minister. Similar views on the need for architectural collaboration from the outset have been expressed by the Town Planning Institute, by the Central Council of Civic Societies and by the Civic Trust. The choice of interests to be represented was to be left entirely to the local authority, and the Commission feared that this might not lead to the highest quality of civic design being either envisaged or achieved. The Commission understands, however, that the Minister of Transport and the Ministry of Housing and Local Government are reminding local authorities concerned of the importance of including architectural representation.

The Commission is convinced that these are matters on which a clear lead should be given. The outlook and achievements of this country in this generation will be judged in no small measure by its major engineering works. It would be a grave indictment of the way the present opportunity is being handled if our new motorways fell short in any respect of the highest standards of which we are capable, standards which in other industrially developed countries are accepted as a matter of course.

MANCHESTER SCHOOL'S EXPERIMENT

A New Approach to Architectural Education

On April 8 a meeting of architects in the Manchester area was convened in the Regional College of Art, to enlist their co-operation in a new experiment in architectural education. The proposers of the scheme were represented by the Principal of the Regional College, J. Holden, who took the chair, G. Grenfell Baines, Chairman of the Architects' Advisory Panel and Cecil Stewart, Head of the School of Architecture.

The Combined or Sandwich Course is, as Grenfell Baines pointed out in his explanation of its aims, no revolutionary idea. School/office relationships have existed for many years; what the new course aimed to do was to bring the office into a formal and much more intimate relationship with the school of architecture. The phrase "part time" must be eliminated and work, in the office and the school, closely interwoven so that the student gets a comprehensive training in architecture. Such a course of training could provide a satisfactory and even desirable alternative to the Universities which had, by and large, failed in their task of producing students at the end of their five years who have any real grasp of the practice of architecture.

Mr. Baines was careful to stress that the course was very much in an experimental stage. The syllabus had been arrived at after much careful thought, but it was intended to modify it as soon as the need arose. What was required now was a "parent/teacher" subcommittee of architects and lecturers, to watch the progress of the course and to recommend improvements. Cecil Stewart then outlined the course and suggested that it was now possible to come

to some interim assessment of the first year's work. Briefly, the course will extend over seven years, the first and the fifth to be full time, the remainder to be spent in the office, with one full day and one (or possibly two) evenings at school. It is hoped that the RIBA will recognize this course as the equivalent of the more usual five full time years and two years of office practice (tentative blessing has already been given by the Institute).

It was apparent that the first year programme had been deliberately contrived as a breakaway from the traditional University first year with its emphasis on draughtsmanship, which sows the seeds of a five-year preoccupation with the merits of calligraphy that take private offices the whole of the two years' office practice to break down.

The aim of the first year was to find out if the student had an aptitude for architecture: on the very first day they went out to look at a building together and discussed it. Traditional first years, it was felt, had the weakness that a good draughtsman could do well, only to discover subsequently that he had more affinity with another of the graphic arts.

From the selection of drawings on the wall, illustrating the work done so far, it was apparent that a little of everything had been tried—measured work, surveying, lettering, studies of the human figure in relation to the use of furniture, colour-studies, researches into the texture of materials, a simple planning problem, proportional studies, a historical study, a treasure hunt for interesting buildings near the student's home (with quite harrowing results) and their first design—a clerk of works' hut.

From this widely scattered syllabus, Cecil Stewart said he had already discovered a certain number of students who were obviously not cut out for the profession and, just as important, the students themselves were already beginning to recognise this. It had been a most valuable year and the staff had carefully watched the students' reaction to the course and certain modifications would be made to the curriculum in future.

The proposed course was then thrown open to discussion and beneath the quiet warmth of its reception, it quickly became apparent that the major question in many architects' minds concerned the full year away from the office in the fifth year. This was a disturbing reaction because it would seem to imply that the architect's primary concern was the disruption of office organization, rather than with the welfare of the student and a keen appreciation of the crucial necessity of the architect being a vital link in the student's education. Grenfell Baines argued forcibly that the prospect of co-operating in the student's training was surely to be looked at as an investment in the future. Furthermore, offices all over the country continually coped with changing staff on a one month's notice basis, whereas the architect would have three years' notice of this temporary absence. He also found that students from his office on the old system returned in the holidays and seemed never to be away for long.

To the onlooker, the salient question arising from this discussion is the quality of the office in which the student is going to receive his education. The most vigorous protagonist of the scheme must concede that there is a fantastic variation in the work and attitude toward architecture between one office and another. In the one, he will gain a full, rounded and vital approach to his profession; in the other—well, look around you! And yet the RIBA can justifiably demand a uniform standard of education to be attained before awarding a student its membership. How is this to be attained? The meeting did not get around to this.

There would appear to be no grant difficulty for students in fifth year, for they would all be old enough to be entitled to assessment on their own means, which would probably be slender enough to enable the students to claim the full amount. This would in most cases be better than assessment of the parent's means, even though the parents could then claim a dependant's Income Tax rebate.

There was the inevitable disagreement over the disposition of the full time tuition in the seven years, but Grenfell Baines stressed the importance of giving the scheme a try and letting the amendments arise logically from exposed weaknesses. There seems little doubt that the Architects' Advisory Panel has justifiable reasons for believing that a scheme of this kind could offer a satisfactory education for future architects. The difficulty seems to be that of ensuring that the architects into whose hands the student is delivered have the same awareness of the student's need, the same willingness to subjugate office requirements to the education programme agreed between school and office and perhaps, most of all, the same burning enthusiasm for architecture as the Panel's Chairman.

N. KEITH SCOTT

SALARIES

JCC Award

Architects in Local Government will share in the recent salary increases taking effect as from April 1, 1959 (writes a correspondent). The APT Scales are to be revised as follows:

	Old	*New*
Grade I	575	610
	605	640
	635	670
	665	700
	695	730
	725	765
Grade II	725	765
	755	790
	785	820
	815	850
	845	880
Grade III	845	880
	880	915
	915	955
	950	990
	985	1025
	1025	1065
Grade IV	1025	1065
	1075	1120
	1125	1170
	1175	1220
Grade V	1175	1220
	1225	1275
	1275	1325
	1325	1375

Certain questions have been referred to the Executive Committee of the National Joint Council; these include the "plusages" paid by certain local authorities—for example, London weighting—and the salary increases for those on the Special Grade. However it can be assumed that any agreed increase for the Special Grade will also be back-dated to April 1.

The increases given are roughly on a par with other salary increases which have been received recently in comparable fields of employment. NALGO had claimed increases ranging from 7 to 9 per cent. and the new scales represent increases varying from about 4 to 6 per cent.

The opportunity to iron out the anomalies existing between the top of the APT scales and the new lettered grades has unfortunately not been taken. The relationship between APT V and lettered grade A is now even more ridiculous than it was in February, when new scales for the higher grades and chief officers were announced. It is now possible for an officer on the top of APT V with £30 London weighting added to his salary, to be earning a higher salary than his superior on lettered Grade A even though his superior may be on the top of his grade. This underlines the point made by the Editors of the ARCHITECTS' JOURNAL at the time of the salary award to chief and senior officers (AJ, February 26, 1959) that the case is now overwhelming for a common salary scale and negotiating machinery for both the lettered and the APT grades.

It is a sad fact that many professional local government officers are lumped together on the Special Grades whose salary increase has not yet been decided upon. As far as architects are concerned it might well be argued that they would be better off without the Special Grade altogether. Whilst theoretically it may be regarded as the preliminary grade after qualification in practice it has become a sort of technical pool in which non-qualified and qualified are intermingled with wide variations in status and responsibility. The anomalies created can only be ironed out by making APT IV the basic grade for a qualified architect with the possible exceptions that newly qualified architects with no office experience should start in the middle of APT III but with automatic progression on to APT IV. It is to be hoped that the Executive of the NJC will now abolish the Special Grade as there is a perfectly adequate salary structure into which those on the existing Special Grade could quite easily be fitted.

COST CONTROL

Bristol Conference

A further conference on methods of the control of building costs at the design stage is to be held at Wills Hall, Bristol, from July 2 to 4, 1959, under the sponsorship of the Cost Research Liaison Committee of the RIBA and the RICS. The conference will be on the same lines as the Cost Control Conference held at Great Missenden in January, 1959, with most of the original speakers. The conference arrangements are being made jointly by the RIBA and the Bristol and Somerset Society of Architects.

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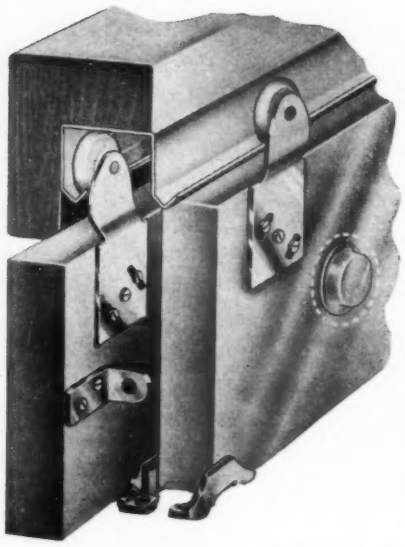

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H.131

Applicants for the Missenden Conference who were unable to obtain a place there are being given priority of booking.

Applicants are asked to write to either the Secretary of the Cost Research Committee at the RIBA, 66, Portland Place, London, W.1, or R. Towning Hill at 18, Orchard Street, Bristol 1. Details should be given of their age, professional or other qualifications, where they work and in what capacity and what, if any, experience they have in the application of cost control methods, and whether they will require a residential or non-residential place. Applications should be received by May 11, 1959. The conference fee will be £10 for a residential place or £7 for non-residents (to include all meals other than breakfast).

Similar conferences will be held at York (October 9 to 11, 1959), Manchester (January 2 to 4, 1960) and Nottingham (date not yet fixed). Details of these will be announced later.

MOE

Technical Education

A new capital investment programme planned to cost £54 million for technical education in the three years after 1961 has been announced by Geoffrey Lloyd, Minister of Education. In a circular to local education authorities Mr. Lloyd says that in order to maintain the momentum of the advance in technical education a building programme of £15 million will be approved for 1961-62 and that programmes for 1962-63 and 1963-64 will be provisionally set at the same figure. This total programme of £45 million is expected to involve consequential expenditure of £9 million on equipment.

The £70 million building programme for the five-year period covered by the 1956 White Paper up to 1961 is progressing steadily. Building projects under this plan for new colleges or major extensions now number 359, and in 1958 the amount of work started amounted to £15 million. Local education authorities will now be able to continue to plan their building work two years in advance.

The new three-year programme will provide for: 1. Further increases in the output of advanced students in science and technology beyond the White Paper's level of 15,000 a year. 2. Further expansion in educational provision for technicians and craftsmen. 3. Improving existing facilities in the colleges not only for teaching but also for social and recreational purposes, including hostels.

In the later two years of the programme it is proposed to give special priority to building proposals for commercial education. There will also be some capital expenditure on art education.

BUILDING CENTRE

Modular Society and the EPA Programme

Last week, speaking to a surprisingly small audience at the Modular Society, Bruce Martin of BSI gave what he called a "preliminary canter" before the second report of the EPA modular co-ordination studies programme.

The eleven member countries banded together and in 1954 started the first phase of the work—theoretical studies. Canada and the USA acted as observers and Great Britain as the technical secretariat. The fruits of the first phase—analysis of the theoretical problems, nomenclature and definition of terms appeared in 1956.* Phase two—the design and erection of test buildings—then began, each country being asked to make its own contribution on the basis of three main points: First, to work for the establishment of a modular system. Second, to give particular consideration of the 4-in./10-centimetre module and thirdly, to consider the selection of preferred sizes (a size pattern). The aim of Phase two was to discover how the practical application of the theoretical work would relate to national variations in local conditions—climate, bye-laws, social determinants, building techniques and so forth. The European coal and steel community also conducted a practical modular test, although not a member of the EPA group.

At this point in his lecture Bruce Martin showed slides of some of the buildings in course of construction—mostly houses and flats—and commented on them. It appears that not all countries have yet sent in reports of their work to the technical secretariat. The British contribution is houses in Herts built by BRS, and an aluminium-framed building at Hemel Hempstead by the BSI. The Greek contribution is the rebuilding of 600 dwellings on an earthquake devastated island; the Swedish, a small brick clad timber-framed bungalow; the Norwegian, two-storey timber houses; the Italian, high flats with storey height concrete wall panels. Bruce Martin reported that only two of the countries had made use of the size pattern. One of these was Italy, where the component dimensions conformed to the size pattern, but added up to planning sizes which were not in the pattern. He pointed out that it was not necessary to plan on a grid and then went on to his main preoccupation—whether to decide for components to be made to a limited number of preferred dimensions or to a full range of dimensions conforming to the 4 in. module. His own feeling was for the full range, perhaps in "clusters" of sizes about a functional mean—3, 4, 5, etc. He thought that limitation to a size pattern might reduce the additivity and fail to meet some functional requirements. Selection of a full range would still reduce the number of different sizes of components made at present.

The ensuing discussion revealed that the paper had been rather indigestibly theoretical for some and too controversial for others. Cyril Carter, referring to the meeting points of groups of sizes, said he wanted to know what happened to the building materials, not what happened to the arithmetic! William Allen and T. L. Carhart-Harriss defended the claims of factorizability of figures in the size pattern; M. H. Hartland-Thomas asked for a plus and a minus on either side of a standard component dimension and Anthony Williams asked about sizes below the module.

J. C.

* EPA Report on Modular Co-ordination in Buildings. H MSO. 9s.

YERBURY LECTURE

By Jorgen Varming

The Danish engineer Jorgen Varming will give the first Yerbury Foundation Lecture in London on May 20 at the TUC building, Great Russell Street. His subject is "mechanical services and architecture," and his theme will be the need for a closer understanding between the architect and the mechanical services consultant.

TIMBER

Sub-Committe Formed

A sub-committee of the Timber Building Manufacturers' Association has been formed to act with the TDA as an Advisory Research Panel for the timber building industry. It will suggest subjects for future TDA programmes of research and development.

DIARY

Men and the Landscape. ILA Symposiur ıt the RIBA, 66, Portland Place, W.1. Speakers include Edward Hyams and H. F. Clark. 6.15 p.m. APRIL 23

The Engineering Aspects of the Development of Gatwick Airport. Talk by F. S. Snow and E. V. Finn at the ISE, 11, Upper Belgrave Street, S.W.1. 6 p.m. APRIL 23

Colour Photography. Talk by Margaret Hasker at the AA, 34/36, Bedford Square, W.C.1. 6.15 p.m. APRIL 23

The Incorporated Association of Architects and Surveyors AGM. At 29, Belgrave Square, S.W.1. 10.30 a.m. APRIL 25

Corrosion Exhibition. At the Royal Horticultural Society's New Hall, Westminster, S.W.1. APRIL 27 TO 30

Wren's Drawings for St. Paul's: A Re-Assessment. Lecture by Sir John Summerson at the RIBA Library Group Meeting, 66, Portland Place, W.1. 6 p.m. APRIL 27

The Better Utilization of Wood Through Use of Improved Fasteners. Institute of Wood Science. Lecture by Dr. E. George Stern at the RSA, 6, John Adam Street, W.C.2. 2.30 p.m. APRIL 27

The Building Industry. Talk at the AA, 34/36, Bedford Square, W.C.1. Speakers include H. S. Oddie, D. E. Woodbine Parish and Peter Trench. 8 p.m. APRIL 29

USA Close-up. Ian McCallum's photographic exhibit at the USIS Art Gallery, 41, Grosvenor Square, London, W.1. UNTIL APRIL 30

THE INDUSTRY

Brian Grant describes a new standardized factory building, a wash basin, asbestos cement roofing and an ash box for solid fuel fires.

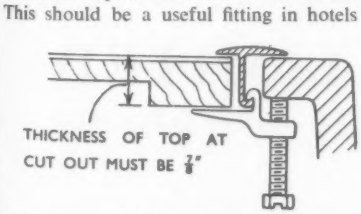
Prefabricated buildings

Coseley standardized factory buildings have now been in production for ten years or more, and are based on portal frames in spans from 10 to 100 ft. Eaves heights of all buildings can be anything from 10 to 25 ft., in 30-in. increments, while their length is unlimited. A modified form of building has been introduced recently in which the steelwork consists of heavy latticed gantry stanchions with compound girders to carry electric overhead cranes with lifting capacities up to 10 tons. In all the buildings there is a choice of sheeting materials, which may be asbestos cement, steel or aluminium, and there is also a choice of insulating materials, windows and doors can be provided as necessary: forced or natural ventilating units are also available.

The group also produces a number of aluminium buildings for export all of which are crated for transport and supplied with the tools necessary for erection. Standard units are 10-ft. span and form the basic unit for house construction; verandahs can be fixed on one or both sides. (*Coseley Buildings Ltd., Lanesfield, Wolverhampton.*)

Sanitary fittings

Twyfords have just introduced a wash basin which has been designed for building into a counter top with the aid of a metal frame. This should be a useful fitting in hotels or



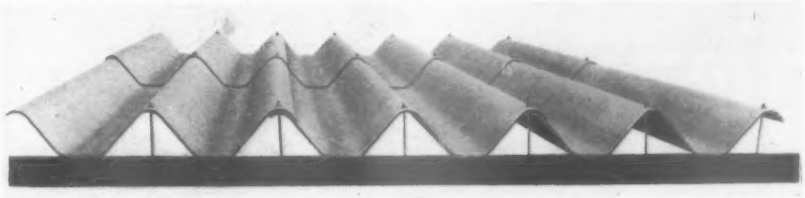
Section through the Twyfords wash basin.

other places where a range of basins must be reasonably spaced. As the section shows, the counter top is cut to provide a half-inch clearance all round the basin, and the metal frame is a tee section with a lip at the foot of the stem. This is held down by a series of clips and set screws below the basin. Apart from the fact that the thickness of the counter top must be ⅞-in. at the cut out there are no special points to note about installation. (*Twyfords Ltd., Cliffe Vale Potteries, Stoke-on-Trent.*)

Asbestos cement roofing

A new design of asbestos cement roofing sheet for use with purlins at up to 9-ft. 6-in. centres has just been announced by Universal. Up till now maximum spans for asbestos cement sheets, apart from decking systems, have been 6 ft. or 7 ft., but the larger span is made possible by the 7-in. depth of corrugation, which has considerable strength and a bold profile suitable for large areas of industrial building. The sheets, which are known as Magnum pattern, are ⅜ in. thick, and the spacing of the corrugations is 18 in., giving three corrugations in an overall sheet width of 40 in. and a net cover of 36 in. Side laps are 4 in. and the minimum end lap is 6 in., the joints being made with a new butyl Foamjoint strip. Minimum roof pitch is four degrees, and the sheets are made in lengths up to 10 ft. Cost is 12s. 3d. per square yard, with a weight, including normal fixings, of about 47 lb.

Moulded underlining sheets will be available to provide a double skin insulation, and Unilux translucent sheets are made to the same profile. (*The Universal Asbestos Manufacturing Co., Ltd., Tolpits, Watford, Herts.*)



Above, Universal's new asbestos cement roofing. Below, the Baxi rotary ash box.

Solid fuel fires

Many of the usual continuous burning fires have ash pans which are large enough to need emptying only once a week, but in nearly all instances it is necessary to let the fire go out in order to remove the ash container. This difficulty has now been overcome in the new Baxi rotary ash box, in which two boxes, semicircular on plan, rotate beneath the fire, one being underneath the grate when the other is being emptied. Access to the full box is through a removable cover plate in the hearth. The depth from the top of the hearth to the bottom of the ash box unit is 18½ in., and the price, with grate, is £18 5s.

Where a chimney is on an outside wall, and in spite of the Egerton report quite a number of them still are, there is an outside ashpit fire, in which the fire box has been reduced in depth and has no back. Instead, a brick chamber is built through the wall and ends in a cast iron frame with an airtight door through which the ashbox is removed. In 16-in. sizes the extra cost is £3 12s. 6d. (*Richard Baxendale & Sons Ltd., Chorley, Lancs.*)

technical section

However necessary "Cost Analysis" in the strict sense may be, it is not the only method for checking the implications of design on cost; and even when full use is made of it, it must still be backed by a humbler, more ready, if less precise, order of cost information relating to what we might call the commonplaces of drawing office work. In order to supply this need, Handisyde and Taylor, with the help of Arthur J. Willis and Thompson, quantity surveyors, have carried out a series of studies of common items in design, listing as many variations of each as seemed practicable and quoting the percentage cost difference which each variation would imply. This kind of exercise has its limitations. In the first place, not all the possible variations can be included. In the second, the cost figures can only be approximate. It is for this reason that they are given, not as prices, but as a percentage of the basic solution.

8 SURVEYING & SPECIFICATION

cost variations in common building items 1, wood windows

A comparison of the cost analyses of twelve small houses published in the JOURNAL shows that the cost of windows in this class of work varies between 4·4 per cent. and 12 per cent. of the total cost of the job, the average figure being 6·6 per cent. Though hardly of decisive importance in the total cost picture, windows *are* decisive in a building's appearance. For this reason our authors* begin their review of cost variations by considering the wood casement.

This is the first article in a series designed to give some guidance on cost of things which occur commonly in buildings and deals with wood windows.

The basic assumption made here is that the architect will design windows which are adequate in size to light the job satisfactorily and, at the same time, arranged so that the appearance of the building from both outside and inside is satisfactory.

Once the size is settled, he then has to decide on the detailed design of the windows. It is at this stage that various solutions become possible and decisions of detail are made which may appreciably affect the cost of the required area of windows.

This article investigates some of the factors affecting the cost of the commoner types of wood window only. The factors which seem worth consideration are:

(*i*) The effect of choice of wood and its finish, *i.e.* softwood painted compared to various hardwoods.

(*ii*) The effect of types of glass and sizes of pane.

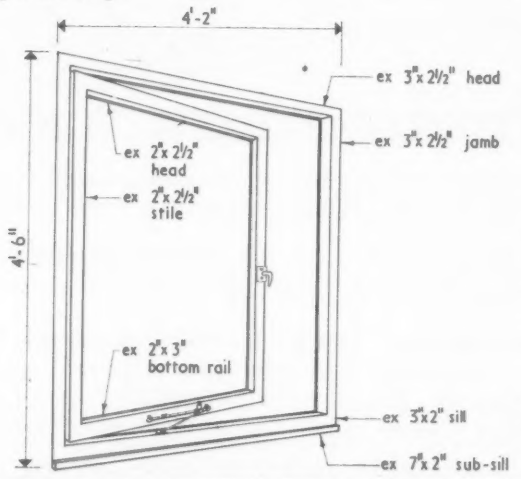
(*iii*) The comparison of glazing beads and putty glazing.

(*iv*) The effect of the design of the window as regards opening portions, *e.g.*, fixed light, side hung, pivoted, etc.

It must be emphasized that the object of this investigation is only to give a broad indication of the effect of these various details of design. For this purpose a window of approximately square shape has been taken and one that is thought to be a fair average size. The answers would clearly be different for other shapes and sizes but it is believed that for many normal cases the present analysis gives a fair indication of the financial implications involved in day-to-day drawing board decisions.

The results of the investigation are all shown as related to one basic design, which is for a 2 in. thick fixed sash in one pane with a surrounding 3 in. × 2½ in. frame. Glazing is 32-oz. O.Q. sheet glass in putty. The overall size is 4 ft. 2 in. wide × 4 ft. 6 in. high. The figures ignore costs of cramps or other means of fixing and any cover fillets.

Fig. 1. The basic window (1a) which provides the datum for this study.



1. Effect and type of finish of sash and frame materials

Assuming 2 in. fixed sash in one pane with 3 in. × 2½ in. frame, 3 in. × 2 in. sill and 7 in. × 2 in. sub-sill, glazed with 32-oz. O.Q. glass, overall size of frame 4 ft. 2 in. wide × 4 ft. 6 in. high (excluding fixing cramps and cover fillets).

	%
(*a*) Softwood primed and painted two undercoats and one finishing coat, internally and externally	100
(*a*) (i) Ditto, the glass fixed direct to frame, with glazing beads bradded in and the sash omitted	75
(*b*) Hardwood at 20s. per foot cube, untreated	165
(*b*) (i) Ditto glazed direct to frame without sash as above	115
(*c*) Hardwood at 20s. per foot cube, twice oiled externally and wax polished internally	175
(*c*) (i) Ditto, glazed direct to frame without sash as above	125
(*d*) Hardwood at 35s. per foot cube, untreated	200
(*d*) (i) Ditto, glazed direct to frame without sash as above	130
(*e*) Hardwood at 35s. per foot cube, twice oiled externally and wax polished internally	210

* Handisyde and Taylor, and Arthur J. Willis and Thompson.

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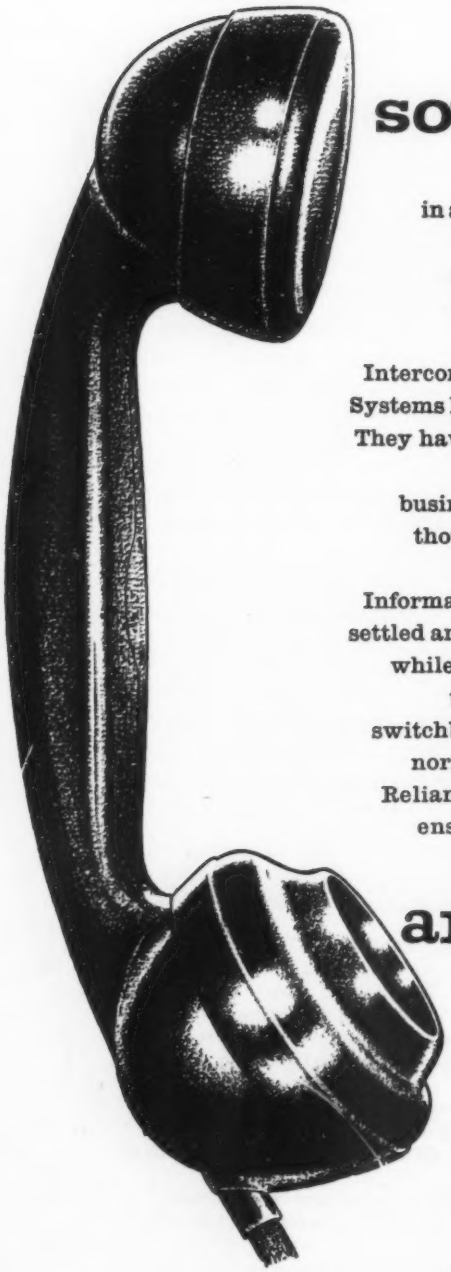

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technical section

	%
(*e*) (i) Hardwood as last, glazed direct to frame without sash as above	140
(*f*) Hardwood at 75s. per foot cube, untreated	265
(*f*) (i) Ditto, glazed direct to frame without sash as above	175
(*g*) Hardwood at 75s. per foot cube, twice oiled externally and wax polished internally	275
(*g*) (i) Ditto, glazed direct to frame without sash as above	185

2. The effect of dividing the sash in the above into smaller pane sizes combined with the cost of various types of glass

(*a*) Fixed sash in one pane glazed 32-oz. O.Q. sheet glass (*i.e.* as 1(*a*) above)	100
(*b*) Ditto, glazed 24-oz. O.Q. sheet glass. (Note: this weight of glass is too thin for a pane of this size but is included to indicate effect of glass weight upon cost)	95
(*c*) Ditto, glazed ¼ in. G.G. polished plate glass	155
(*d*) Ditto, glazed ¼ in. hexagonal or Georgian wired cast glass	102
(*e*) Ditto, glazed ¼ in. polished wired glass (hexagonal or Georgian)	150
(*f*) Fixed sash divided into four panes and glazed with:	
(i) 24-oz. O.Q. sheet glass	105
(ii) ¼ in. G.G. polished plate glass	155
(Note: the costs of (ii) and (*c*) above are virtually the same due to the extra cost of glazing bars and painting being offset by the reduction in price of plate glass for smaller size panes.)	
(*g*) Fixed sash in one pane (increased in thickness to 2½ in.) glazed with patent double glazing units of two thicknesses of 32-oz. S.Q. sheet glass with sealed air space between, bedded in non-setting putty and fixed with softwood glazing beads bradded in	180
(*h*) Ditto, divided into four panes and glazed with 26-oz. S.Q. double glazing units bedded, etc., as last	235
(Note: double glazing units increase sharply in price per foot super as the size is reduced and are not therefore economical for use in the smaller size panes.)	

3. The effect of using glazing beads instead of putty with normal single glazing

(*a*) Fixed sash in one pane glazed 32-oz. O.Q. sheet glass in putty	100
(*b*) Ditto, but glass back puttied and fixed with softwood beads bradded in	105
(*c*) Ditto, but glass back puttied and fixed with hardwood beads and recessed type brass cups and screws	115
(*d*) Sash divided into four panes, back puttied and fixed with softwood beads bradded in	115
(*e*) Ditto, but glass back puttied and fixed with hardwood beads and recessed type brass cups and screws	135

4. The effect of opening lights, including cost of ironmongery

(Overall size of window as 1 above.)

	Softwood painted %	*Hardwood at 35s. f.c. oiled externally and wax polished internally* %
(*a*) 2-in. fixed sash in one pane glazed with 32-oz. O.Q. sheet glass	100	215
(*b*) Glazing direct to frame, the glass fixed with glazing beads bradded in, sash omitted	75	140
(*c*) Two 2-in. side-hung opening sashes each in one pane glazed with 26-oz. O.Q. sheet glass, including P.C. Sum of £1 19s. for butts, fastener and stays	135	255
(*d*) Single 2½-in. horizontally pivoted opening sash glazed with 32-oz. O.Q. sheet glass, including P.C. Sum of £1 4s. for friction pivots and fanlight catch	130	255
(*e*) Single 2½-in. vertically pivoted ditto, including P.C. Sum of £1 6s. 6d. for friction pivots and casement fastener	130	255
(*f*) Two 2-in. side-hung opening sashes 4 in. × 2 in. transome and 2-in. top-hung opening sash above all glazed with 26-oz. O.Q. sheet glass and including P.C. Sum of £2 14s. for butts, casement, fastener and stays	160	285

Conclusions

A. The choice of material and finish has a vital effect on cost and even the cheapest type of hardwood is likely to be something between one and a half and twice the cost of painted softwood. It must, however, be recognized that maintenance cost will be lower for the hardwood window.

B. A change from sheet to plate glass involves a very considerable extra, but the difference in cost of different weights of sheet glass is very small, and economy here, at the risk of subsequent easy breakage, would not be worth while.

C. The alteration in pane size by the addition of glazing bars makes very little difference except in the case of patent double glazing units when price rises sharply if *small* panes are used, but if the change in pane size carried with it a change from plate to sheet glass, there is a very appreciable reduction in cost.

E. Change from putty to bead fixing involves very little, except in the case of hardwood beads and small panes.

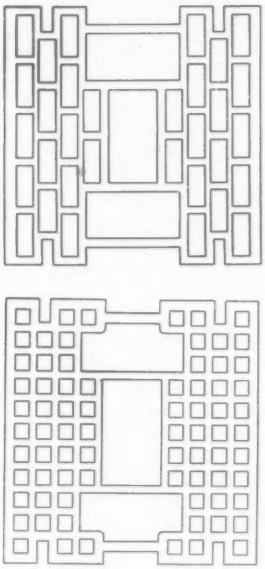
F. The increase of opening lights over fixed sashes varies. Windows with 50 per cent. of the simplest type of opening lights give an increase in cost of about one-eighth over fixed lights, but the type of opening light does not matter much unless transomes and top lights are introduced.

It will be seen that there is a good deal of cost control readily available to anyone grasping the above few facts.

It must be stated that the above figures are based on a "made to measure" window. These windows will, of course, be greater in cost than standard ones of similar design, but it must be remembered that to get standard window prices no variations can be made from the standard. In the case of special windows, the advantage in price to be obtained by repetition will probably vary according to the size and type of joinery works where they are made. Generally, however, it is more important to standardize on the timber sections than on the number of windows of identical size.

structure study

BRS HOLLOW CLAY BRICKS



Two vertically perforated hollow bricks developed by the BRS. top, V.5; above, V.6. Below, laying V.5 bricks at Aylesbury.

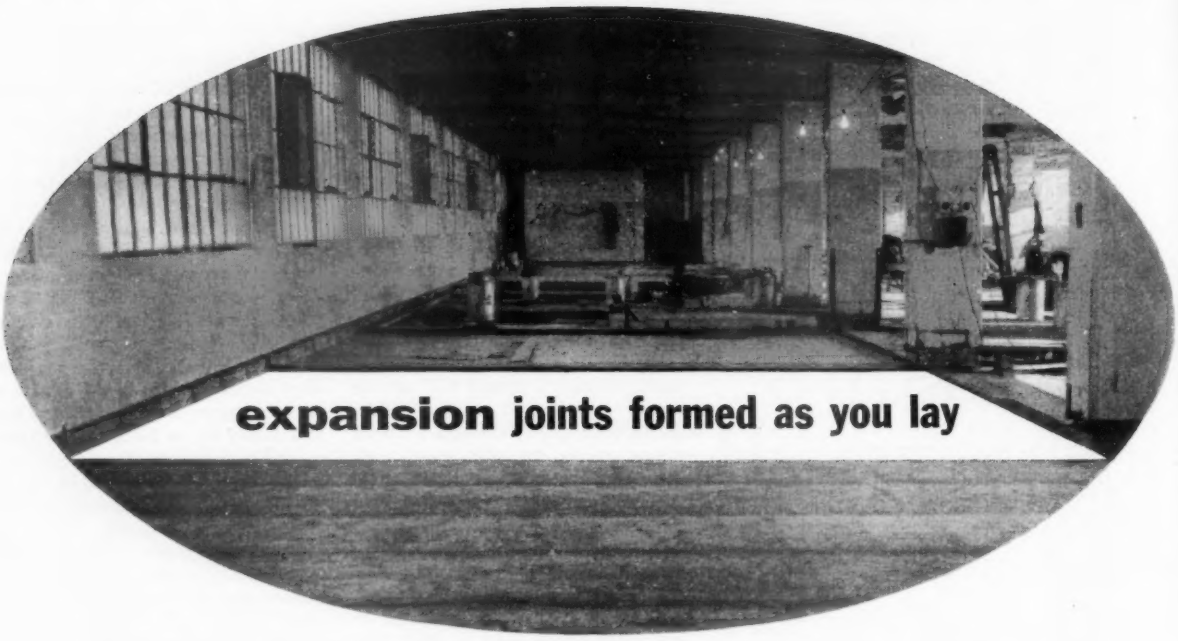
The Building Research Station has been experimenting with hollow clay bricks for external use and has designed a facing brick which forms a cavity wall in one unit, doing away with the traditional two skins of brickwork and wall ties. This brick, known as V.5, is in two sizes, $8\frac{5}{8} \times 8\frac{5}{8} \times 2\frac{5}{8}$ in. and $8\frac{5}{8} \times 8\frac{5}{8} \times 4\frac{1}{2}$ in., so that with $\frac{3}{8}$-in. bed and vertical joints the building sizes are, respectively $9 \times 8\frac{5}{8} \times 3$ in. and $9 \times 8\frac{5}{8} \times 4\frac{1}{2}$ in. This compares with standard brick dimensions and enables bonding with walls, such as party walls, in standard bricks.

The bricks are being used at Aylesbury in the construction of four single-storey houses for the Aylesbury Borough Council, designed by F. B. Pooley, Buckinghamshire County Architect. They are vertically perforated and were specially manufactured by the Sussex and Dorking Brick Company Limited to the BRS design. The type V.6, also illustrated, is a later development designed to have a greater load bearing capacity than V.5. At present the BRS are conducting tests to produce a brick strong enough for multi-storey construction.

Hollow bricks for external walls are a common feature of building on parts of the Continent. In countries, such as Switzerland and Germany, they have been used for years. Generally they are rendered externally to resist rain penetration. This presented the BRS with one of its first research problems as there is a tradition of facing brickwork in this country. The designers are satisfied that this and other problems such as fire resistance and a comparable strength with cavity wall construction have been resolved in the brick used at Aylesbury. The new brick has several advantages. Because of the vertical perforations, it is the same weight as a standard brick though twice the volume. Whilst figures have not been released, it is claimed that the thermal insulation quality is better than that of an 11-in. cavity wall in standard bricks. The use of one unit in place of two reduces the laying time considerably, the builder at Aylesbury claiming a reduction of approximately one-third in normal bricklaying time. From the manufacturer's viewpoint the perforated construction facilitates firing and drying and lends itself to mechanical production.

One or two shortcomings have to be either accepted or overcome. Despite the use of an ingenious mortar-laying guide for bed joints at Aylesbury, a certain amount of mortar was observed to have been squeezed over the bridging in the cavity. The possibility of capillary attraction of damp by way of mortar in the cavity seems to be regarded as less of a danger by the BRS than by many practising architects. The cutting of a brick is more or less limited to cutting through the web or bridge connecting the two halves of a unit. This need not be a serious problem where the brick module is conscientiously observed at the design stage. The handling of a perforated brick requires greater care and the BRS are studying methods of brick-packaging.

To those who ask why BRS did not take the opportunity of designing their new hollow bricks to the 4-in. module recommended by the Modular Society, there is at least one good answer. At this stage it is essential to provide a unit which may be used in conjunction with a standard brick and any subsequent acceptance of the 4-in. module in standard brickwork could easily be extended to the BRS hollow bricks. At Aylesbury, for example, it was found that the hollow bricks were unsuitable for the party walls as they did not provide sufficient sound insulation and standard bricks were used.



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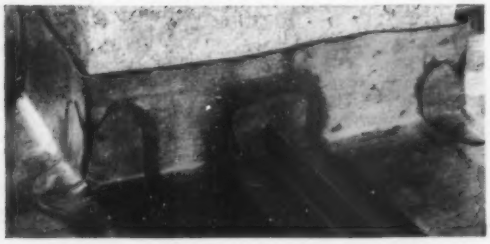

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planning study

CHANGING MANCHESTER'S SKYLINE

In their design for Albert Bridge House, a new 18-storey block to house Manchester's tax officials, it would appear that the Ministry of Works (Chief Architects' Division of the MOW; senior architect in charge, E. H. Banks) is making a long overdue effort to lift itself from the architectural doldrums. The building (designed by E. H. Banks, senior architect in charge; assistant in charge, J. H. Turnbull) towers high above the slimy River Irwell on a 1¾ acre plot of land reserved on the Manchester Development Plan for "buildings of a major cultural and civic character." The block stands askew to Bridge Street and it should be borne in mind that further blocks six and three

"..... *clad entirely with slabs of Portland stone and glass.*"

planning study

CHANGING MANCHESTER'S SKYLINE: THE 18-STOREY AL

storeys high are to house the Ministry of Labour and the Ministry of Pensions respectively when the second phase is completed in two years time.

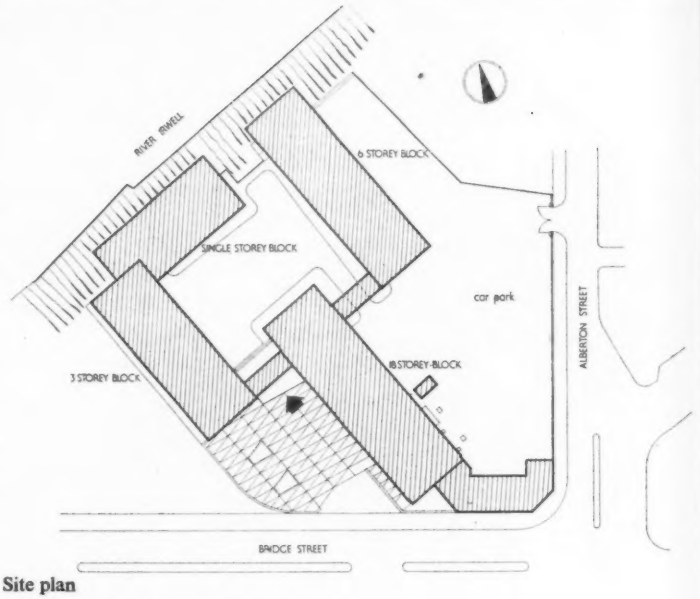
The present building provides accommodation for 900 of the total 1,200 complement of staff and was finished in exactly two years on the largest fixed price contract let by the MOW since the war. The contract price was £615,000, and in spite of a 5½d. an hour rise in labour rates during the contract period, the contractors have gone on record as saying that they have no regrets over the fixed price.

The elevations of the block were approved by the Fine Art Commission —a task which cannot have exercised the Commission for very long since in all truth there is little to disagree with. As a mass, the building is well proportioned and clad entirely with slabs of Portland stone and glass. This combination of materials is responsible for its "dead-pan" look because the creamy stone and the pearl-grey glass spandrel panels below the windows have no tonal contrast. The yellow paint applied to the slender metal sections of the centre pivot opening lights does nothing to help. (It is perhaps time that architects faced up to the fact that yellow oil paint is little better than a fugitive dye when used in exposed conditions. It is practically certain to go cream in 12 months).

The building is built on a reinforced concrete frame and at 18 storeys is at about the economic limit for this material. The bay size is 13 ft. 6 in. × 20 ft. 6 in. with twin columns down either side of the corridor and although the block is 194 ft. high the columns are kept down to 24 in. × 15 in. at the bottom. This is partly due to the solid end walls at each end of the block which take the wind loads.

These walls are faced with 2-in. stone used as permanent shuttering to the solid reinforced concrete, and are textured with a 3-in. × ¾-in. recess 3 ft. 9 in. long forming a staggered pattern up the wall. It will be interesting to see how this recess, with its chamfered bottom edge, weathers in the Manchester grime. At the moment it looks too frail. Another debatable question is the wisdom of the use of Portland stone as a facing material. It has demonstrably poor weathering qualities and already there are dirty streaks along each floor beam which make the stone appear to be ordinary concrete.

The only other notable points on the exterior concern the roof and the ground floor. The former is finished with a purely decorative pergola which masks the lift motor room and tank rooms. (The lifts stop on the 17th floor to avoid a high projection). This feature is very successful in both fulfilling its purpose and giving a welcome note of lightness to the block. It is also a change from the Brazilian free-form silhouettes that have become so popular in recent years. On the ground floor to the west elevation the bays are filled with curved glass brick screens. The bays have a disturbingly small radius and one's first



Site plan

". . . . . the perennial aesthetic problem of the glass brick."

ALBERT BRIDGE HOUSE: continued

KEY

Inland Revenue

1. Entrance hall
2. Messengers and Enquiries
3. Cleaner
4. Motor room
5. Document stamping section
6. Public space
7. Distributor
8. Superintendent
9. Telling out
10. Clerical space
11. Store
12. Store
13. Goods in
14. Goods out
15. Deputy Superintendent
16. Hand operated document stamping room
17. Mess room
18. Examiners and tellers
19. Lavatory (women)
20. Lavatory (men)
21. First aid
22. Water pressurisation plant room
23. Cycle store
24. Electricity sub-station
25. Engineers' store

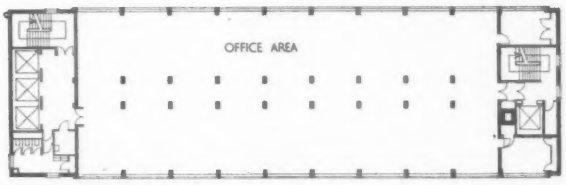
Ministry of Pensions and National Insurance

26. Doctors' common room
27. Medical Boarding Centre
28. Pneumoconiosis Medical Centre
29. Pathological laboratory
30. Senior Medical Officer—Pneumoconiosis Medical Centre
31. Public waiting space
32. Medical Board assistant
33. Urine testing laboratory
34. Reception
35. Pneumoconiosis Medical Panel clerical staff
36. Radiologist
37. Radiographer
38. Dark room
39. X-ray
40. Changing room
41. Waiting room

Ministry of Labour and National Service

42. General Registry
43. Stationery store
44. Clerical office
45. Clerical office
46. General reception office
47. Interview room
48. Clerical office
49. Clerical office
50. Typing pool
51. Stair to oil fuel store below

"You step into the lift from the terrazzo floored entrance hall . . ."



Typical upper floor plan

Ground floor plan [Scale 1/16" = 1' 0"]

planning study

ALBERT BRIDGE HOUSE, MANCHESTER continued

". . . . . with the luxury of the lift, it is a shock to be turned out onto shabby granolithic landings."

" The offices themselves are pleasant and well lit . . . The colour scheme throughout is " safe " and therefore depressingly dull."

impression is that the ground line sags. It looks as though it will take more than the Ministry of Works to solve the perennial aesthetic problem of the glass brick.

Internally there is little of note. Quite the most impressive features are the lifts —beautifully smooth 700 ft. a minute jobs worked on the " grouped collective " control system. An electronic device stores push button calls so that as the flow of traffic varies, the direction of the cycle varies, thereby catering for an *up* peak preponderance of traffic at, say, 9 a.m., and a *down* peak at 5 p.m. With an equal flow of traffic an *off* peak cycle prevails. The system must be one of the best in the country.

You step into the lift from the terrazzo floored entrance hall and, together with the luxury of the lift, it is a shock to be turned out onto shabby granolithic landings on each floor. The granolithic persists into the lavatories and it is difficult to appreciate the logic of this cheeseparing attitude towards finishes on this most important and long-suffering architectural element of a building. The walls of all the public circulation areas to landings and lavatories are in speckled cold glaze, which though cheap looks clean and efficient and serves only to highlight the dirty-looking floor. It is only fair to mention that there is good quality 6·7 mm. lino in corridors and 4·5 mm. lino in offices.

The question of finishes, of course, brings us to cost considerations. Architects for this sort of building are on the horns of a dilemma from the start, because any suggestion of luxury in a building to house the staff of HM Inspector of Taxes would bring forth from the public a howl of protest sufficient to make strong men quail. Judgment must therefore be based on a consideration of how the available money was distributed.

Any such judgment is unfortunately thwarted by the Ministry's coy attitude towards the publication of a cost analysis and one can only divide the published cost of £615,000 by the gross area (138,880 sq. ft.) and ask oneself whether something better than granolithic floors in landings and lavatories and cold glaze walls could not have been provided for 88s. 5d. per sq. ft.

The offices themselves are pleasant and well lit. The east-west orientation protects staff from the noonday heat of a Manchester sun and the 10-ft. floor to floor height ensures a comforting scale to the rooms. The flush slab construction (whose simple repetition enabled the contractors to complete a floor a fortnight) gives a flat ceiling to all rooms and the offices themselves are divided up with dry, lightweight plaster partitions. The colour scheme throughout is " safe " and therefore depressingly dull. The only colours are white on ceilings and paintwork and grey walls. Where the spine columns appear in rooms they are sometimes painted yellow, but not always.

An interesting plumbing economy was made in the lavatories by the use of the relatively new " spray taps." No chain and plug is provided in the basins and this together with the comparatively low water consumption has the twofold advantage that antisiphonage pipes can be eliminated even though the runs are continuously connected through 18 floors, and small waste pipes can be used throughout the system.

To sum up, Albert Bridge House shows signs of blowing some of the cobwebs away, but they have been there a long, long time and it looks as if a howling gale will be required finally to dislodge them.

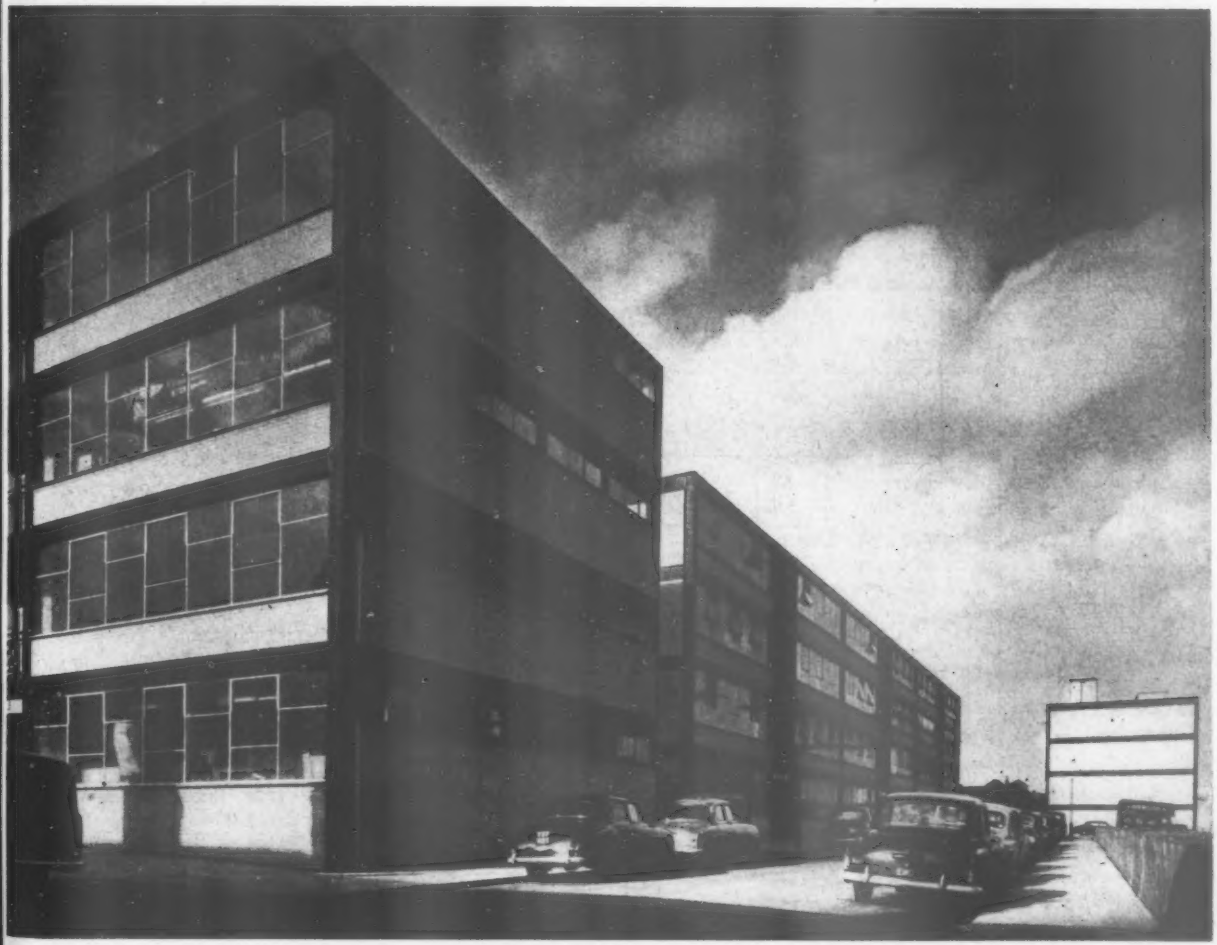
Quantity surveyor, W. B. Armstrong. General contractors, J. Gerrard and Sons Ltd. For sub-contractors see page 642.

FLATTED FACTORIES

in LONG STREET, SHOREDITCH, LONDON; designed by HUBERT BENNETT (architect to the London County Council); deputy architect F. G. WEST; senior architect, general division, DAVID JENKIN; assistant architect PETER JONES; architect-in-charge C. W. HAMLYN; quantity surveyors LCC Q.S. division

These workshops, a number of which are already let to various small firms carrying on light industries long associated with the East End of London, are the first of a series which the LCC proposes to build in the course of redeveloping the area.

The three blocks forming the scheme, seen from the south-east.



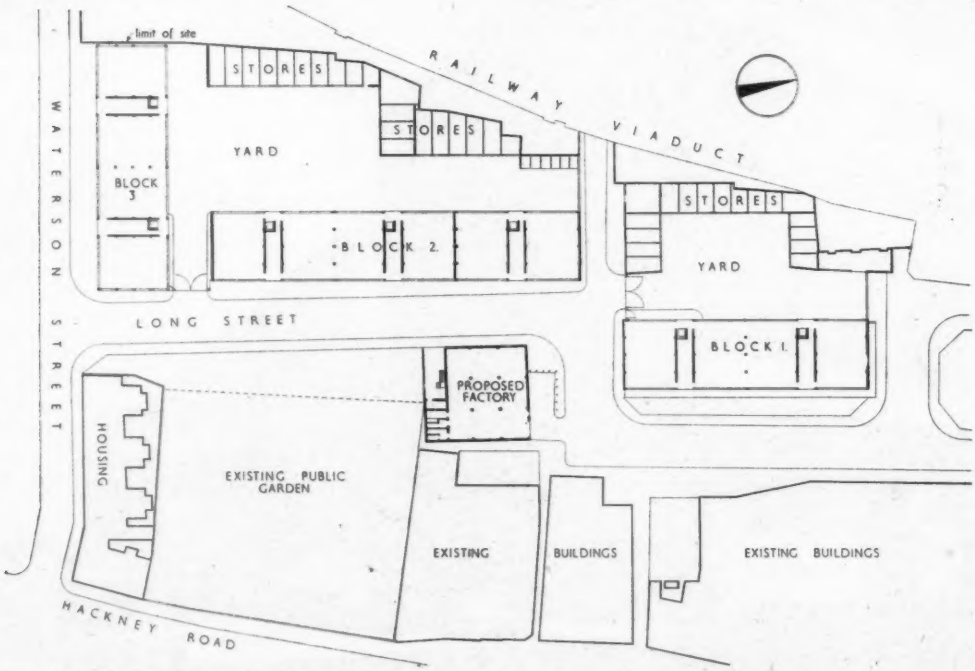
building illustrated

Most of the small-scale industry in the East End is housed in decaying substandard buildings, above left being quite typical. Some attempts have, however, been made in the past to provide suitable accommodation for such firms, above right being a nineteenth century workshop block a few hundred yards from the Long Street scheme.

APPRAISAL: One of the problems to be faced in the redevelopment of many sections of tha East End of London is the displacement of small-scale industry, often groups of craftsmen or one-man businesses employing less than a dozen workers. These are usually engaged in such trades as cabinet-making, leather goods, tailoring and light engineering, and are mostly housed in converted dwellings, stables and other old, substandard accommodation. They are often marginal producers, relying on low overheads to be able to stay in business in competition with large manufacturers. Faced with removal, many of these firms are really too small to undertake building their own workshops, even if they could raise the necessary capital. At the same time, if they could find new sites in areas zoned for industry, such development would probably be at too low a density and too sporadic to be acceptable from a planning point of view.

The LCC, although it has no statutory obligation to do so, has decided that a whole series of workshops should be built to rehouse such firms, by developing a design of unit workshop capable of being used for a whole series of small-scale industrial estates. The accommodation had to be adaptable to a wide variety of different trades, and provide a range of different floor areas. The cost would have to be strictly controlled so that the rents, which could not be subsidized, would be within the economic limits of the typical firm.

This scheme at Long Street, Shoreditch, is the first in the programme to be completed, most of the tenants being moved from Newling Street, Bethnal Green, a nearby area being redeveloped for housing. After a survey, the LCC arrived at a basic unit of 1,200 sq. ft., which could be subdivided into workshops of 300, 600 and 900 sq. ft., or by throwing two units together, increased to 2,400 sq. ft. At the same time, a



Site plan with ground floor plans [Scale: $\frac{1}{16}$" = 1' 0"]

The site is set in an area at present a mixture of housing and factories, but now zoned for industry, and is approached from the Kingsland Road by Waterson Street.

maximum floor loading of 150 lb. per sq. ft. was adopted for the upper floors. Other design requirements which came from this study of the various industries likely to inhabit the workshops including the provision of lifts big enough to take large uncut sheets particularly for the furniture trade, and external stores for keeping materials in bulk.

The structure is entirely precast concrete. The blocks are each 40 ft. deep, with precast floor slabs spanning 30 ft. longitudinally. By this means each unit has been kept free of internal columns, and it has been possible to carry up the external windows to the soffit of the slab above. The structure is exposed externally and finished with black rubberized paint. Infilling is with white sand-lime bricks, which have been silicone-treated in the hope that they will not discolour.

The great virtue of this scheme is, of course, that a large number of these small firms having diverse activities can be housed together at a high density in a unified environment which is visually tidy. It is perhaps a little surprising that the blocks, while being furnished with lifts at the rate of one per two workshop units for each floor level, should have been limited to four storeys. This is apparently due to the fact that the scheme was originally envisaged without them, but with hoists for the handling of goods to the upper floor. Under these conditions the limiting factor of height was to avoid the necessity for twin escape stairs, and this became the basis for the height of the scheme. Once having adopted lifts, of course, much taller blocks at a higher density become feasible, and different forms of planning perhaps desirable to increase the number of units served from one lift at each floor level. This matter of lifts and the number of storeys is not raised here in order to criticize the project; on the contrary, the fact that there are features of the design which have not, when the post-mortem is made, been carried to their logical and ultimate conclusion, is the best possible proof of the value of such a pilot project. Lessons are being learnt which can be applied to future schemes.

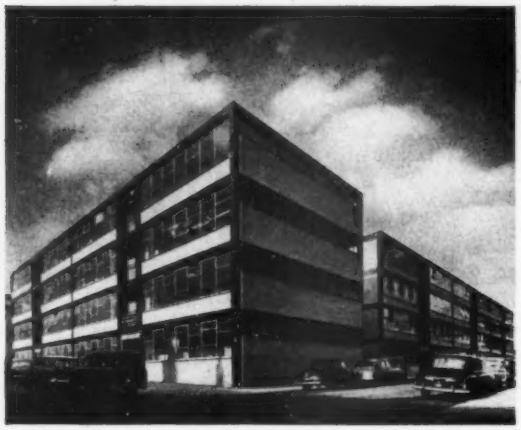
There is another cardinal virtue in this scheme. This is the way in which the structure has been carefully thought out so as to achieve in the most economical way the clear working column and floor loadings required. The infilling has been carried out in the simplest and most unfussy way. It is a slight pity that one or two minor details are not in keeping with this general character. The balcony railings, for instance, are curiously foreign in their design, having much more of a domestic flavour than would be expected for a block of workshops. The same thing is repeated inside with such minor things as the choice of fittings and ironmongery, which seem too domestic and insufficiently robust for their situation.

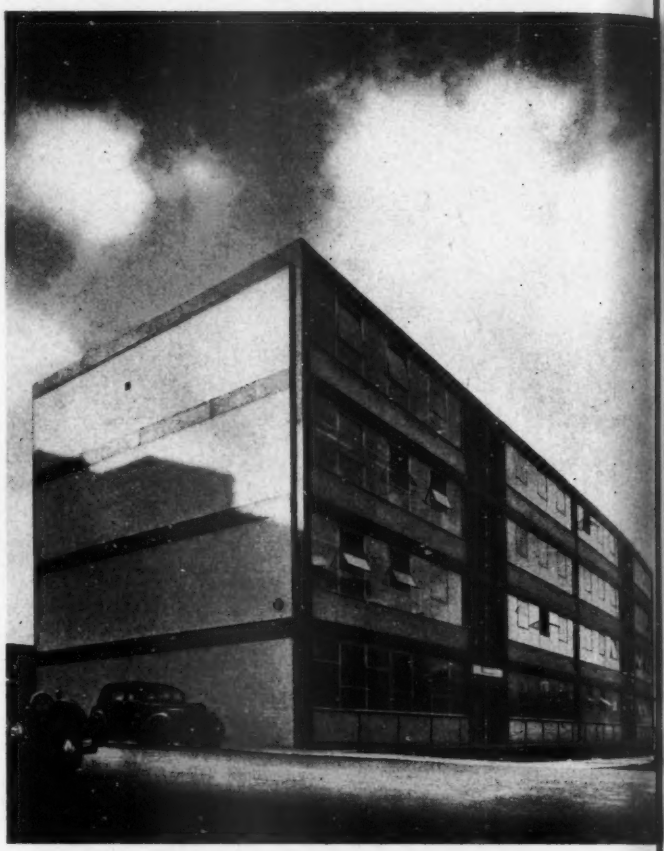
The black and white colouring of the exterior is, of course, derived by way of Mies from Mondrian and the *De Stijl* group. One of the essential features of Mies's black structure and white infilling is the emaculate crispness of the detailing. Such refinement would not have been possible with these buildings, because of severe cost limits, and might well have been considered in any case inappropriate. But the result is that the nearer you get to them, the more unhappy does this choice of colour seem. Every slight unevenness in the concrete is emphasized by the black, which is also showing marks at the ground floor entrances. At the same time streaks are beginning to show on the brickwork, despite their silicone sea This technique, which is quite a useful one in most situations, and which might well have hidden staining on darker bricks, is nevertheless rather optimistic in view of the heavy pollution in the area and the absence of anything to throw off the water down the building. Another failing is the fact that the black and white run straight into the pavement. There is therefore a sort of scum rim for the first six inches off the ground beginning to appear all round the building. The total effect, close to, instead of being crisp and exciting, is just rather sad. Better surely, to have relied on the traditional method of "collar and cuffing," that is to accept that the building will be bound to go off with time, and to rely on the regular repainting of thin trim, such as door and window frames, so that for a minimum of outlay on maintenance the outside can be kept looking fresh and sparkling.

This scheme is a much more modest one than the flatted factories in Birmingham (AJ, February 20, 1958), which provided a range of factories from 1,400 sq. ft. to about 4,000 sq. ft., and it is interesting to compare the costs of the buildings and the rentals charged per square foot. The Birmingham flatted factories had a net cost per square foot of 44s 6½d and an average rental of 5s 6d per sq. ft. per annum. In the case of unit workshops, the net cost is 42s 6d per sq. ft. and the rent varies from 7s per sq. ft. p.a. on the ground floor to 5s 3d for the fourth floor. Neither rent includes payments for any services.

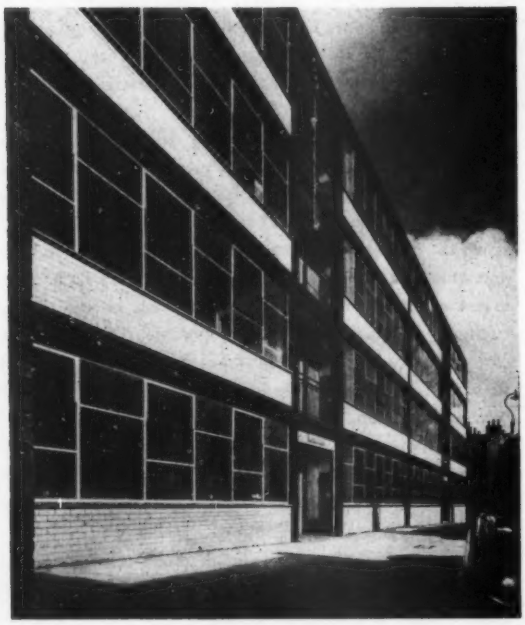
building illustrated

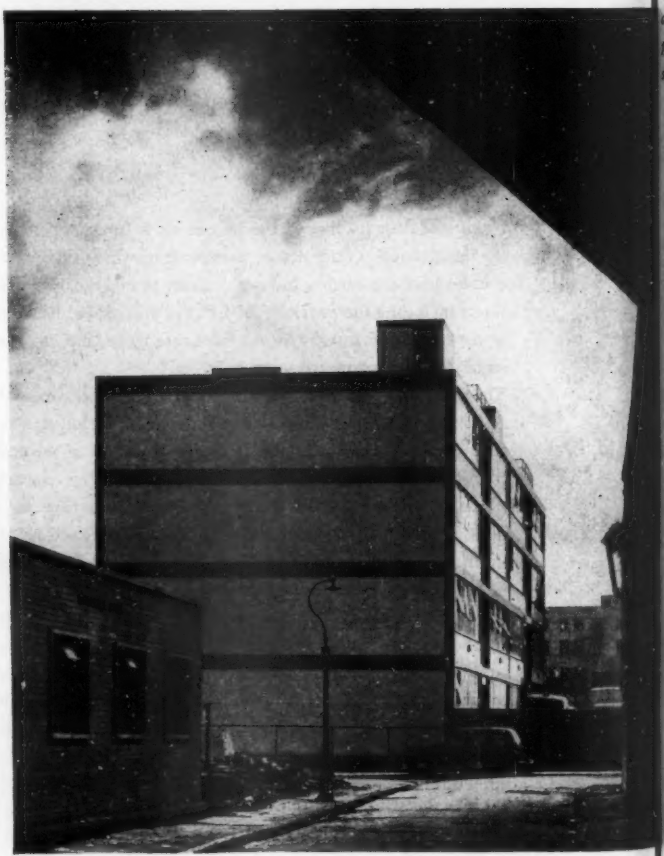
The scheme consists of three blocks, providing a total of 56 workshops. The largest, containing 24 units, is sited parallel to Long Street, on the right in the picture below, with the block on Waterson Street at right angles to it to the south.



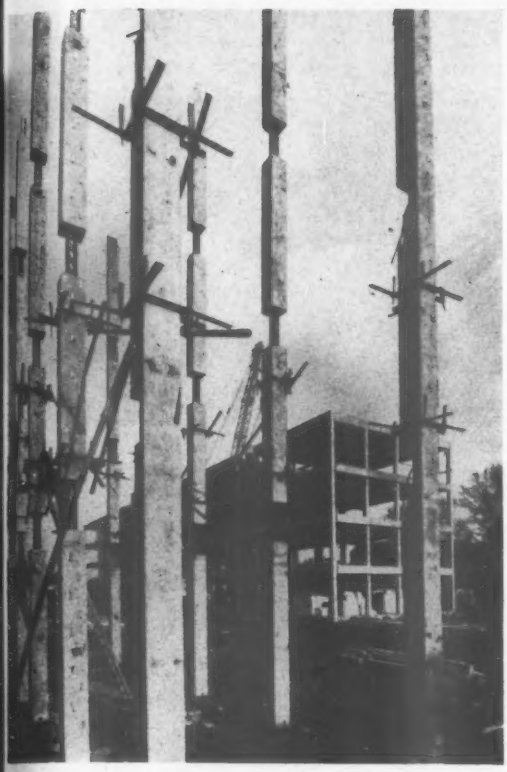


There is a further block at the north end of the site, shown above right, identical to that on Waterson Street. A further small block, consisting of a single, slightly larger factory on one floor with a caretaker's flat over it is planned to be sited on the opposite side of Long Street.





The units are clad externally with an infilling of sand-lime bricks, the end walls of each block being usually solid, as shown right. The windows on the sides of each block, above, are fitted directly into the structure, with brick infilling below sill level.



The main structure, seen during erection above, consists of precast concrete members. The columns, 12 in. square and about 40 ft. long, were made and delivered complete. To meet the heavier loads at lower levels, a stronger mix of concrete was used than for the upper storeys. Timber plugs for window fixing, and wall ties for attachment to the brickwork were cast in as required. Prestressed precast units, 10½ in. deep, span 30 ft. between the beams. The structure is carried on piles, with ground beams between.

analysis

CLIENT'S REQUIREMENTS

Many small firms in the East End of London, essential to the industries in the area, are being displaced by the London County Council's redevelopment programme, and to meet their needs these workshops, letting space in units, were required.

SITE

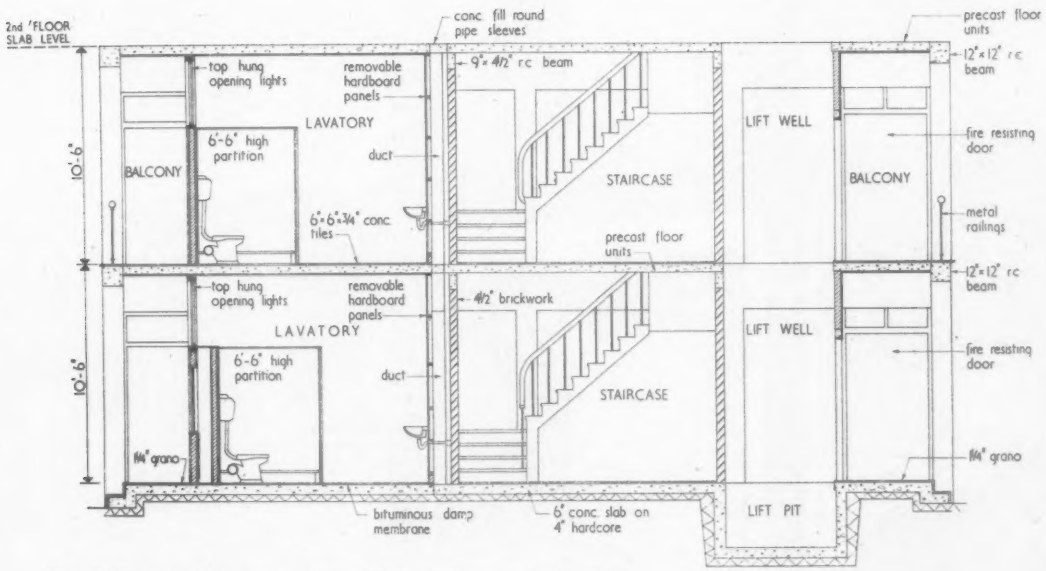
The site is part of a larger area zoned for industry, bounded by Cremer Street, Waterson Street, the railway viaduct and Hackney Road. This area was formerly residential, and its development for industrial use was closely bound up with the original road layout, to which improvements are now being made.

PLANNING AIMS

The scheme comprises three four-storey blocks of unit workshops with access yards and stores. There are 56 basic units of 1,200 sq. ft. each, which may be divided or combined in various ways to give a range of workshop sizes from 300 sq. ft. to 2,400 sq. ft. The workshops are approached from a central core containing staircase, goods and passenger lift, lavatories and duct.

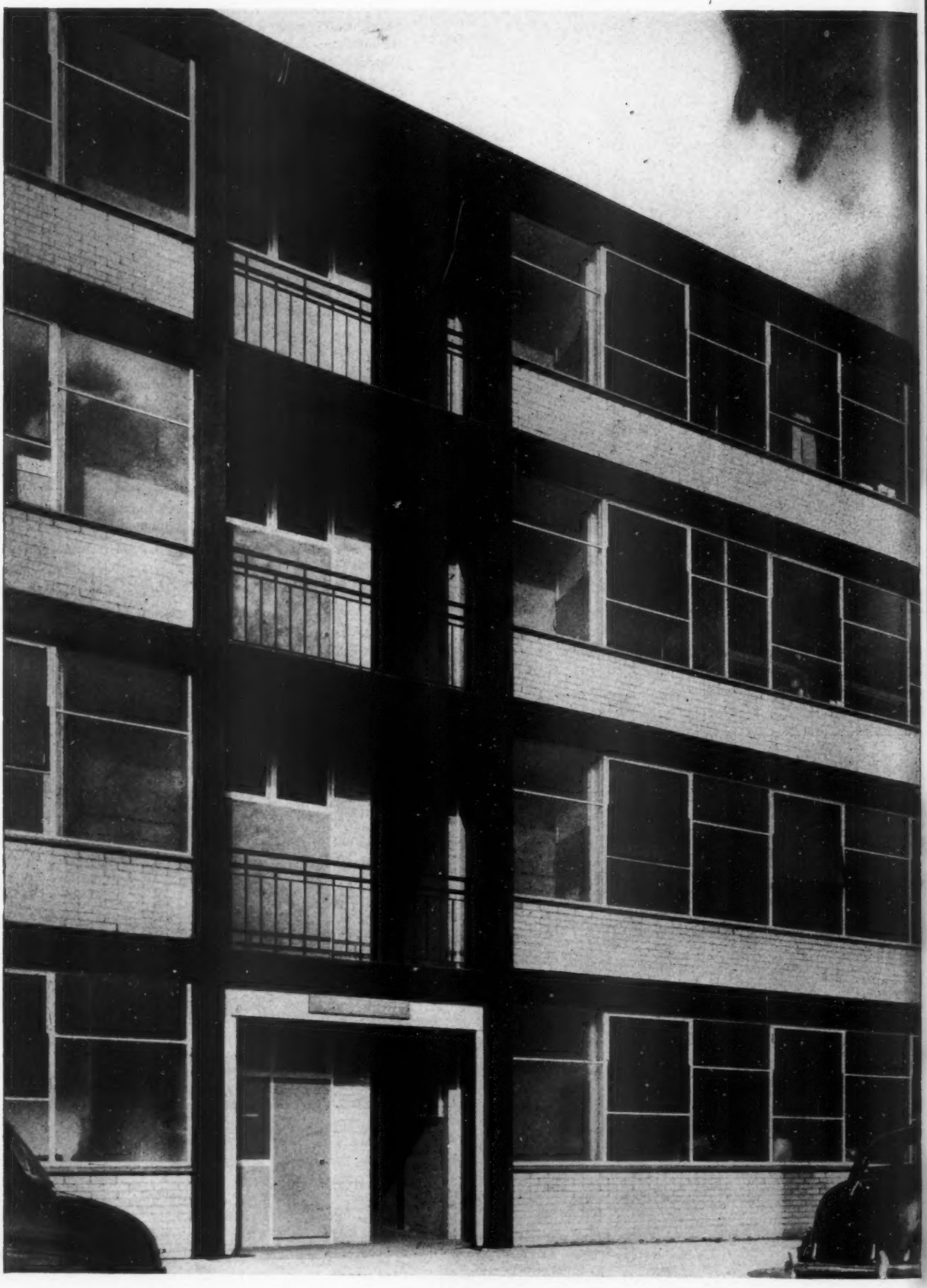
SUMMARY

Ground floor area: 19,358 sq. ft. } excluding transformer
Total floor area: 78,549 sq. ft. } house and stores.
Type of contract: LCC.
Tender date: March 12, 1956.
Work began: piling contract, January 5, 1956; main contract, May 25, 1956.
Work finished: May 12, 1958.
Tender price of foundations (including piling), superstructure, installations, and finishes: £166,872 15s. 7d.
Tender price of external works and ancillary buildings: £18,849 4s. 5d.
Total: £185,722.

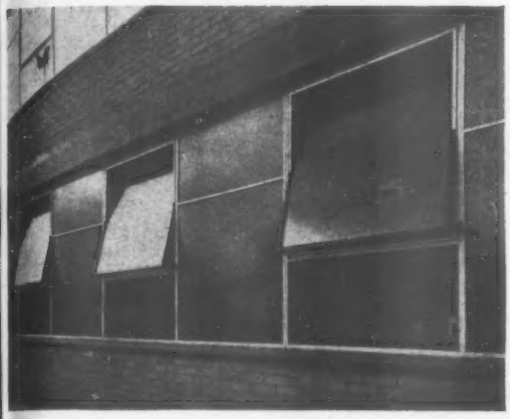


Detailed cross section through lower half of block [Scale: ½" = 1' 0"

building illustrated

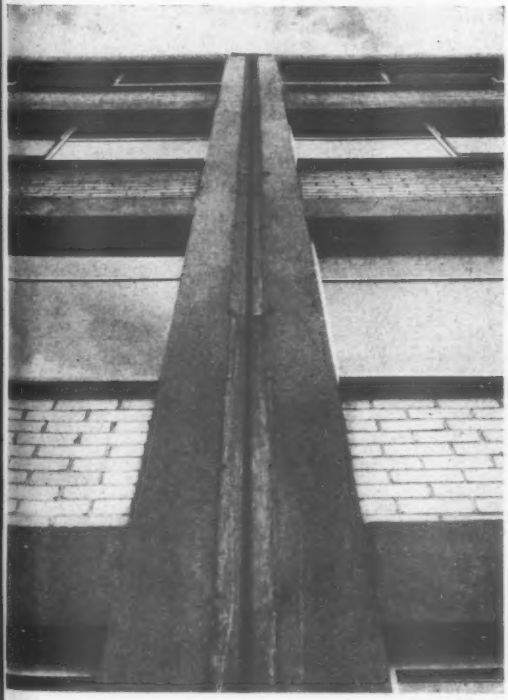


Opposite page: the units are in groups of eight, each one around a vertical service core, consisting of lift, stairs and w.c.s for both sexes. The entrance to each group of units is from the pavement into this core, through a roller-shuttered opening. This entrance seems rather tight and mean, the circulation being a repeat of that on the upper floors, but is presumably acceptable for this exercise in low cost building. This tightness also results partly from the aesthetic the architects have set themselves and partly from the fact that the blocks have been sited directly onto the pavement. This latter decision was presumably based on the need to make the utmost use of the site for yards on the opposite side of the blocks.



One minor mistake that has resulted from this siting is that, owing to the change of level, at the north end of Block 2 the opening lights swing out less than five feet above the pavement, as seen above. Small wrought iron brackets have been fixed onto the frames to try to limit the swing of the frames, but they have now been bent back out of the way. There has been a certain amount of broken glass; hence the need for a resident caretaker.

There is an expansion joint in the middle of Block 2, which is longer than the others (below). This detail also shows how the black paint is drawing attention to the places where pointing up and making good has been carried out to the concrete frame.



analysis

	cost per sq. ft.	s	d
Preliminaries and insurances			10½
Contingencies		1	4
Work below ground floor level		5	5¾
Separate piling contract amounting to £12,622.			

STRUCTURAL ELEMENTS

Frame or loadbearing element — 12 5½
Reinforced-concrete columns or beams. Precast concrete floor and roof slabs.

External walls — 1 10½
11-in. cavity brick walls—sand lime facings.
Ratio: solid wall / floor area = 0·24 / 1

Windows — 1 11½
Steel windows in softwood frames.
Ratio: windows / floor area = 0·27 / 1

External doors — 2½
9 roller shutters, 9 ft. 6 in. × 9 ft. 6 in.

Upper floors
Span of each type: 30 ft.
Super loads: 150 lb. per sq. ft.
Cost included in frame element.

Staircases — 8¼
Number of staircases: 7.
Width: 3 ft. 3 in.
Total rise: 31 ft. 6 in.
Precast concrete, steel balustrade. Including roof access ladder and hatch.

Roof construction
Included in frame element.

Rooflights — 2½
Lenscrete lights.
Total area: 837 sq. ft.

Glazing — 9½
32-oz. clear sheet. ¼-in. Georgian wired cast. ¼-in. Georgian wired polished plate.

Total of structural elements: 18s 1¾d

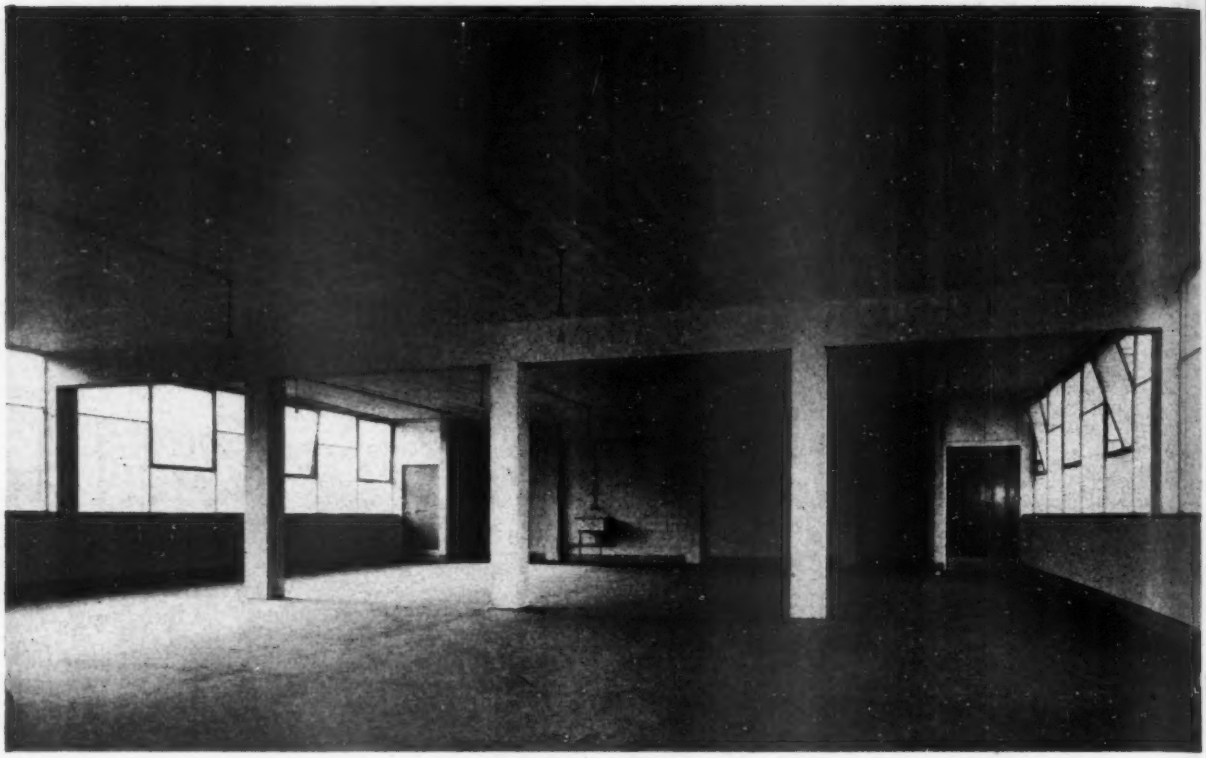
PARTITIONS AND FITTINGS

Internal Partitions — 2 2
Mainly 9-in. brick. Some 3-in. concrete block.
Ratio: partitions / floor area = 0·53 / 1

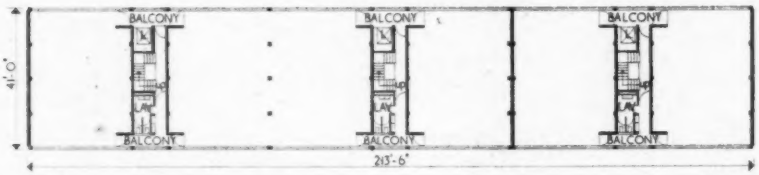
Internal doors — 1 2¼
No. of single: 210.
No. of double: 7.
1¾-in. flush doors, half-hour fire resistance.

Ironmongery
Cost included with doors.

building illustrated



Each unit provides 1,200 sq. ft. of floor space free of stanchions. If a larger area is required two units may be thrown together to provide up to 2,400 sq. ft., as shown above. At the same time, the planning and structure have been designed to allow the standard unit to be broken down into two workshops of 600 sq. ft., or one of 900 sq. ft. and the other of 300 sq. ft., by inserting partitions parallel to the windows in the centre of the building. The services provided for tenants are deliberately minimal, consisting of eight ceiling outlet points and one sink for each standard unit. The tenants provide their own light fittings and heating.



Upper floor plan, block 2 [Scale: $\frac{1}{16}$" = 1' 0"]

An important feature of the layout is that lock-up service yards are provided at the rear of the blocks, a large one being shared by Blocks 2 and 3 (as shown left) and a smaller one for Block 1. These are paved with exposed aggregate concrete in 20 ft. × 10 ft. panels, joints being formed by single lines of paving bricks.

Opening onto the service yards, and sited along the west boundary of the site, are 34 small lock-up stores for the use of tenants, together with a transformer house and an office for the caretaker. The irregularity of this boundary has been turned into a virtue, the stores being planned to provide a wide variety of different sizes of floor area.

The entrance for goods into the units is from the service yards, with direct access to the lifts serving the upper floors. No special precautions have been taken to protect the exposed concrete framework round this opening, which is beginning to suffer as a result, as well as becoming slightly scruffy where the black paint has been marked.

analysis

	s	d
Fittings		0½
Notice boards, shelving, cupboards, fire extinguishers.		
Total of partitions and fittings:	3s	8d

FINISHINGS

Floor finishes			2	1½
Type of finish.	*Area in sq. ft.*	*Price per sq. yd.*		
Black granolithic and hardener	67,616	11s 6d.		
Clay tile	4,185	37s 9d. (excluding skirtings)		
Wall finishes				4½
Sealer on fair-faced brickwork to staircase and landing walls.				
861 yds. super plastering.				
Ceiling finishes				
Fair-faced concrete soffits. 757 yds. super plastering.				0½
Roof finishes				9½
Asphalt on lightweight screed.				
Area: 19,358 sq. ft..				
Decorations			1	7½
To walls and ceilings of factories—one coat sprayed paint. Enamel paint to lavatories.				
Total of finishes:	5s	0½d		

SERVICES

External plumbing			1
Cast iron r.w.p.s.			
Cold water installation		1	1
14,350-gallon c.w. cisterns. Steel distribution pipes.			
Lead wastes. (Hot water by electric immersion heater, see electrical installation.)			
Sanitary fittings			5½
Type of fitting	*No. of each type*		
Lavatory basins	56		
W.c. suites	56		
Steel sinks	70		
Mirrors	28		
Heating and ventilation			
No central heating provided—tenants install own unit heater to desired temperatures.			
Electrical installation		1	3
General lighting provided to each workshop (8 pendants to area of 1,200 sq. ft.). Power installation by tenant to suit own requirements.			
General heating to common circulation areas.			
Electric immersion heaters.			

building illustrated

There are notice boards inside the entrances, showing the location of individual firms. The doors to each workshop are set back into the unit, so as to be free of the general circulation.

analysis

	s	d
Lifts	4	0
7 electric lifts.		
Total of services: 6s 10¾d		
Drainage		10½
Iron pipes, brick manholes (included in total cost per sq. ft.)		
Other elements not shown above		5½
Tank rooms, 7. Lift motor rooms, 7.		

Total per sq. ft. of floor area:
£166,872 15s. 7d. (net cost excluding external works and ancillary buildings) = **42 6**
78,549 sq. ft. (floor area measured inside external walls)

COST COMMENTS

The similarity between this scheme and the flatted factory at Birmingham is very noticeable, for example: (*a*) use of self-finished concrete structural frame and floors; (*b*) utilitarian finishes for floors and infill walling to workshop areas; (*c*) minimum engineering services.
These are shown below in terms of cost:

	LCC	*Birmingham*
Structural elements	18s 9d	21s 9¾d
Finishes	4s 2¾d	2s 4¼d
Services	6s 10¾d	8s 4d
	29s 10½d	32s 6d

The main differences of cost in these sections are to be explained by:
Structural elements: (*a*) reduction of floor to ceiling height in LCC. (*b*) curtain walling technique in Birmingham against infill treatment by LCC.
Finishes: Decorations to exposed external concrete frame by LCC are included here.
Services: Birmingham scheme includes a form of heating to all tenancies, which is not included in LCC.
Although the overall size of the LCC scheme is only half that of the Birmingham project the ultimate costs are very similar, being 42s 6d and 44s 5¾d per sq. ft. respectively.
In this building type it is very difficult to see where any other form of construction could be used to such good advantage, to give value for money compatible with external appearances.

CONTRACTORS

General contractors: W. J. Marston and Son. *Sub-contractors: Structural frame and floors:* Concrete Ltd. *Lifts and installation:* Express Lift Co. Ltd. *Rooflights:* Girlings Ferro-Concrete. *Metal Windows:* Crittall Manufacturing Co. Ltd. *Metalwork:* Singer and James. *Roller shutters:* G. Brady Ltd. *Electrical installation:* A. Tindall & Sons. *Asphalt:* Excel Ltd.

STUDENT SECTION: BASA

CAMBRIDGE: THE FUNCTION OF THE ARCHITECT IN SOCIETY

For many years it has been obvious that the education of all those responsible for building was in need of radical reform. The number of proposals for this has been building up steadily since the war. Such proposals must, of course, be founded upon some idea of how building is carried out and by whom, together with some idea of the social and technological context of building.

The Cambridge Conference, was intended to define those premises upon which an educational policy could be built. However it was evidently naive to expect that a definition of " the architect " could emerge from the heterogeneous group of people who attended the conference. Moreover hardly anybody could talk about Society or Architecture without lapsing into such meaningless platitudes as " Society is 50 million Englishmen " or " Beauty is Balance."

So the conference talked of something it knew about: it talked about the systems of employment open to architects and enumerated professional postures. But it was evident that this was only part of the main problem: the appraisal of the essential contributions that architects can make in building.

Students approaching this problem have certain ideas about the position of the architect in society. For instance: the idea that he is the " creator " of the whole built-environment. It is assumed that environment conditions society and therefore that the architect is an arbiter of social change.

These kinds of ideas perhaps reflect the situation of the student: with his 12-week design exercise he tries to produce something which he thinks of as being a " good design," whereas the practitioner is involved with other problems—the economics of central area development the research and perfection of building techniques, office organisation, information services—and so the nature of design changes.

It was through a realisation of this situation that BASA invited practitioners at the conference to help define the architect's new functions so that these could be assimilated into the disciplines of education. The conference failed to do this.

Our conclusions are that it will be impossible to define the new objectives of architectural education without some definite facts to decide the conflict of opinion. While we believe that the RIBA is collecting valuable information on the structure of the profession we feel that—

(*a*) It may not be investigating just those areas which are most disturbing, e.g., package deals.
(*b*) Its investigation is primarily concerned with professional status.

We, as students, however, are not yet involved in the struggle for professional existence. We suspect, in fact, that the struggle for professional power can even be detrimental to the production of well designed buildings.

We therefore feel that by virtue of our freedom our purpose should be to discover the way, in which good buildings are produced. That is, the relationship between the best architecture that the country can produce or has produced and its production—which we may conveniently paraphrase as " work method."

The next conference will be concerned with this investigation.

BASA. All enquiries to Wynne C. Perrin, Permanent Secretary, BASA, The Building Centre, Store Street, London, W.C.1. **CONTRIBUTORS.** Dr. Reyner Banham. Historian and Critic, is Literary editor of the Architectural Review and teaches at the Central School of Arts and Crafts and the A.A. His book on early Twentieth-century architectural theory is appearing shortly. Professor Nicolaus Pevsner. Historian and critic is a directing editor of the Architectural Review and of the King Penguin Series on Art History and is producing the exhaustive Penguin Survey of the Buildings of England. He is head of the department of History of Art at Birkbeck College, London University. Sir John Summerson: historian and critic, is curator of Sir John Soanes' museum and Lectures at the A.A. John Voelcker architect in private practice, was a member of Team X in CIAM and teaches at the A.A. **EDITORS** George Kassaboff with John Outram. Paul Power, Ian McKechnie. Layout by Michael Helm. The editors would be pleased to consider student material for publication in this feature, letters are also welcome.

THE VALUE OF HISTORY TO STUDENTS OF ARCHITECTURE

Dr. Reyner Banham

Professor Nicolaus Pevsner

Sir John Summerson

John Voelcker

compiled and edited by George Kassaboff

Architectural history has a very prominent place on the curriculum of every school of architecture. Yet its role is often ambiguous. Is it only of general cultural value or can it have a more specific relevance to architectural education?

In the first of the four statements which make up this article, *Sir John Summerson* begins by exploring the reasons for this ambiguity.

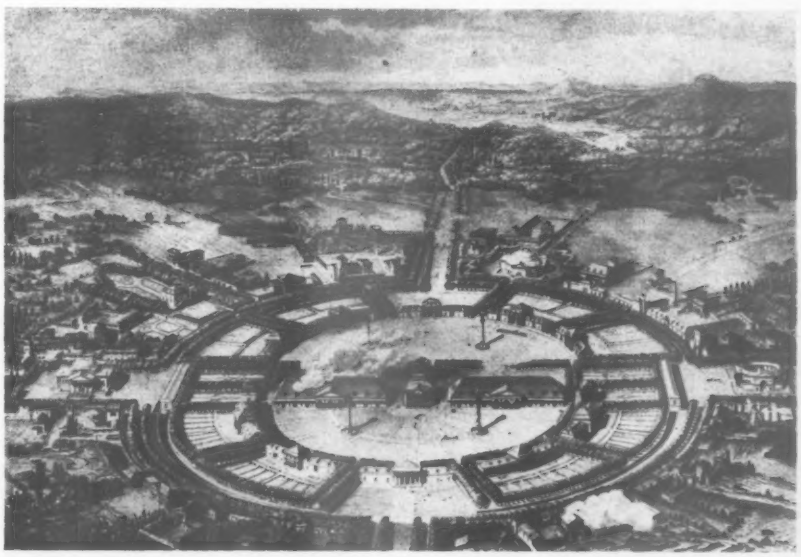
In the last thirty years a curious thing has happened to architectural history. With the almost universal acceptance of the "modern movement," the purpose of historical study in an architect's education has become far from obvious; on the other hand, architectural history, having been "legitimised" as art-history, has entered a phase of intensity and productivity never before equalled. The paradox before us is that at a moment when such works as Wittkower on Italian Baroque and Hitchcock on the 19th century are fresh from the press, the question is being asked whether the teaching of history in schools of architecture has any relevance!

Well, has it? What use is the old plod, plod from Brunelleschi to Bernini, from Wren to Soane? Why not scrap most of this and replace it with a course beginning with the rationalist theories of the 18th century, going on to neo-classicism and 19th century engineering and concluding with a study of the modern masters? This is the logical way of bringing history into an architectural course today, and I am sure that something on these lines is a basic necessity. It gives the student his bearings in the space-time of his art and that is something. But is it enough?

It is enough if we are in search of *minima*. But if it is presumed that a five-year course should give people rather more than bare necessities we must ask what value there may be in lectures on say, Italian Gothic, Chartres, Florentine Mannerism, or the English Palladians. The value can, I think, be explicitly stated—it is the value of *experience*. The student who has had his attention fixed (if only for an hour) on the contortions of Giulio Romano or the ultimate sophistications of Francois Mansart is better equipped than the student who has not. He is aware of the world, alive to the magic of form, in a way that the other is not. It may be argued that this sort of experience the student gets for himself in books and travel. But in practice I am pretty sure that the average student needs in addition the discipline of lecture courses, if not of examinations.

Briefly then, my beliefs are these. (1) That a thorough knowledge of the history of the modern movement, in theory and practice, is a basic essential of architectural education. The student should really know the stuff and be tested by examination. (2) That a general course (the old plod plod) is highly desirable as a means of giving a framework of experience; though its value will inevitably vary with the capacity both of the student and the teacher.

Ville de Choux. C. N. Ledoux 1775.8.



Museum of Science and Art. Young and Son. 1856.

Next, *John Voelcker* examines the problem from the point of view of the architect, as distinct from the art historian.

Today, when one is searching desperately for some sense of continuity and hoping for development and not destruction, some knowledge of our position in time, as well as in space, is essential. Therefore I consider that the learning of history in an academic or systematic way is necessary. It probably seemed unimportant 25 years ago, in so far as the polemical desire of architects was to break free from the past: architectural history has become an impediment for those who were seeking the new architecture and a sanctuary for those who were not.

However, today, the boundaries which separate our direct experience from past knowledge and future possibility are indistinct. For example we feel a part of the modern movement, yet we can criticise it and see it as a distinct historical force affecting the ways in which we build.

It has been written that ". . . if a man of seventy is considered wise because of his experience how much wiser is he who's life fills a span of a thousand years or three thousand years, for indeed a man may be said to have lived as many millenna as are embraced by his knowledge of history . . .".[1] In this way history becomes an indispensable extension of experience. But it is necessary to ask what sort of history should be learnt. There can be no objective history, for we know that, even in scientific observation, the *dynamic connection* between the observer and the thing observed is more significant to us than the *appearance* of the thing observed. Any interpretation of historical material is affected not only by our position in time now, but also by the fact that we are architects.

For the social historian the constitutional forms of government may be his primary material, deduced from a mass of secondary material, which may well include buildings and records of their construction.[2] For the art historian a group of pictures, of buildings, or of sculpture may be primary material, but for the architect the primary material is space (L'espace indecible of Le Corbusier) and this is because an architect's banal, practical and everyday purpose is to make spaces; spaces which will be comprehensible to the people who use them now and will use them for some time to come.

Max Jammer wrote ". . . . it is the history of scientific thought in its broadest perspective, against the cultural background of the period which has decisive importance for the modern mind . . . The concept of space, in spite of its fundamental role in physics and philosophy, has never been treated from such an historical point of view ".[3] This summarises for me the present difficulty in teaching history to architects. Sometimes, in conversation amongst historians and architects, a building or group of buildings is discussed in terms of space organisation. The significance that is attached to these spaces is examined. For example, Smithson on Greek space, Banham on Antonio Saint'Elia, Colin Rowe and John White on perspective; or a generation earlier, Wittkower on the Centralised Church, Panowsky on the connection between the logic of scholasticism and the construction of Gothic space. I suggest that such studies provide the primary material around which secondary material (the primary material of other historians) may be woven.

A group of lectures and seminars centred around such spatial experiences might provide the first islands in a history of space. Little by little these might connect up with one another so that architects could experience the continuity of time and space, and should therefore be able to design with increased certainty and precision.

1. Letter from Marcilio Ficino to a friend. Opera Omnia, Layden, 1676.

2. For a discussion of the nature of historical material and its interpretation see: Meaning in the Visual Arts; Erwin Panowski. Doubleday & Company. New York. 1957.

3. Concepts of Space, The History of the theories of Space in Physics; Max Jammer, Cambridge Mass. 1954.

In contrast to John Voelcker's approach, *Professor Nicolaus Pevsner* insists that architectural history can only be taught as a self-contained academic discipline.

The first question I wish to answer is: Why history for everybody? Three answers in rising order: 1. Because any intelligent person wants to know of their antecedents. 2. Because it is enlightening and exciting to know about the behaviour of outstanding people. 3. Because it is enlightening and exciting to see events fall into place and form a comprehensible pattern. This pattern is the *Zeitgeist* (the spirit of the age). In visual terms it is style. These three answers can be summed up in a fourth: because history helps one to understand oneself and one's own age.

History evidently selects those who are outstanding, but what criteria of selection (other than accidental survival) exist? First: greatness of mind and spirit (according to our own lights). Second: the acceptance of greatness by many generations. Third: the power to set significant processes in motion. However, what processes are significant, and are they to be significant (*a*) to us now, or (*b*) to the age to which they belonged? Here two approaches become apparent. Those who want to please you students plump for (*a*). For instance, Professor Giedion wrote Space, Time and Architecture in order to be topical. On the other hand, Professor Wittkower, with his Architectural Principles in the Age of Humanism, never knew that he would be topical and therefore his work belongs to the (*b*) school. I too stand squarely for (*b*). (The difference between my Pioneers of Modern Architecture and Space, Time and Architecture is that my book frankly picks out one trend, Professor Giedion's appears under the assumption that it is the whole significant history of certain ages.)

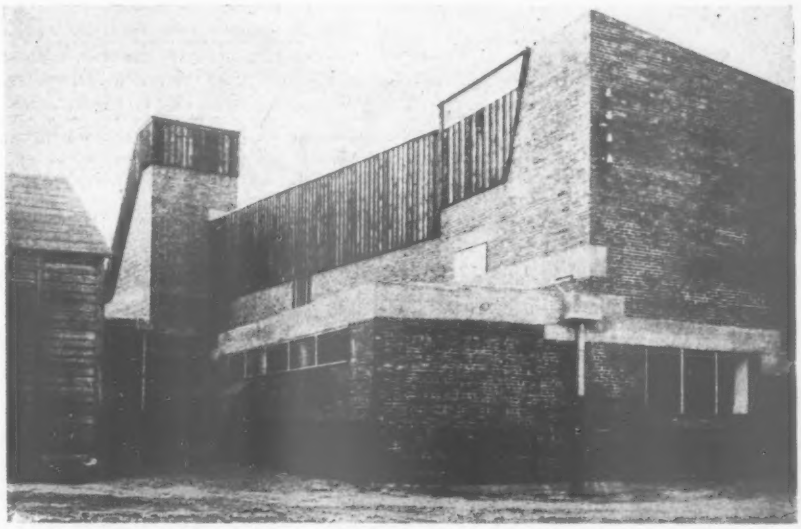
As it is philosophically impossible to be objective in selecting and presenting, you may ask: why should one not be frankly biased? Professor Wittkower's and my answer is that the historian's one and only duty is to be faithful to the facts as he finds them. He must pretend to himself that objectivity might be achieved.

But why art-history for everybody; even for him who is not as wholly unvisual as some people are unmusical? Because the exploring eye takes in evidence of character and style more vividly and directly than the reading eye.

For the same reason there must be architectural history for everybody and, in addition, because the monument of architecture combines together with those values that are visual (that is, aesthetic), other values that are social (including functional).

So history is important to the student of architecture for all these reasons and not, I need hardly add, because one wants the student to know past styles in order to imitate them. That notion belongs to the past.[4]

Finally, architectural history is of the highest value for one more reason. It makes the student of architecture understand his own age. But—most emphatically—it does not do that by pretending that other ages have been like ours.[5] The aim should be to train him to take his past neat, to train him to consider concurrently and with equal zest what is applicable and what is alien today. Help him to find that by a true, unbiased understanding of the conditions of a particular past moment, and the alien is no longer alien. That kind of schooling will result—not in a forced way but as naturally as it happened in the case of Professor Wittkower's Principles—in a richer and deeper understanding of our own age.



Garkau Farm, near Lubeck. Hugo Haring. c. 1925. *(courtesy of Studio, London.)*

On the strength of all this, how should architectural history be taught to students of architecture? My answer is: the hard way, and with no desire to please you in the field of selection. Where the teacher ought to endeavour to please his students is, on the one hand, by knowing his subject profoundly and not superficially and, on the other, by preserving through every hour of teaching his own enthusiasm for his subject. If you, teachers of architectural history, cannot be absorbedly interested in Anglo-Saxon church plans you cannot hope to create interest in your students.

If you are unable for an hour to consider Hawksmoor churches the most fascinating thing in the world, then leave the platform to another. But if this other is fascinated but ignorant, then —perhaps—you ought to return and replace him. Fortunately the alternatives are not truthful boredom and demagogic enthusiasm. There are some who represent truthful enthusiasm. There are, in my experience, half a dozen at least. There ought to be more.

4. Historically speaking it belongs to historicism; the frame of mind which characterises the 19th century in its architectural styles, as clearly, for example, as its more historical than systematic approach to philosophy. I wish it did not entirely belong to the past; for churches and houses are in constant need of supervision, repairs, restoration and people are getting rare who know, in minute enough detail, about the possible and impossible mouldings at a particular moment in the development of the Gothic style, or possible and impossible frieze patterns in a drawing room of about 1775.

5. The use of 20th century catch-phrases to apply to Imperial Rome or the English wool trade in the 15th century or, on a larger scale, a biased account of the 19th century to make it appear a tentative and thwarted 20th does no more than blur the student's vision.

Finally, *Doctor Reyner Banham* suggests some ways in which the relationship between history and architectural teaching can be improved.

The humane, or non-technical education of architectural students rests upon three legs: (*a*) the study of theory, including aesthetics, (*b*) the study of the close cultural background of present architecture, (*c*) the study of professional comportment, of architecture as a vocation and way of life.

(*a*) Any proposal to ride theory on the back of history is a sign of gross mental negligence. The theory of a live architecture in a fast-moving technological society must be pegged to the probable future, not the unrepeatable past. History serves here to present rare comparative examples, not guiding principles.

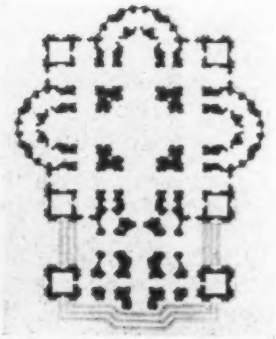
(*b*) The close cultural background, including the pedigree of ideas and movements currently effective in architecture, is a field where the trained historian is peculiarly fitted to make a live contribution to education, together with the psychologist, sociologist, communications expert, art critic, economist and so forth.

(*c*) In the study of professional comportment, the historian is normally the one expert who can give a holistic picture of the three-way relationship between architects, techniques and social pressures at various times, and put them into comparative relationship. To know Michaelangelo, his brief on assuming control of the completion of St. Peter's and the immediate planning decisions he had to make, is to have a picture of a genius squaring up to the actualities of his environment, and to have this picture is to have enlarged one's purely professional culture as an architect.

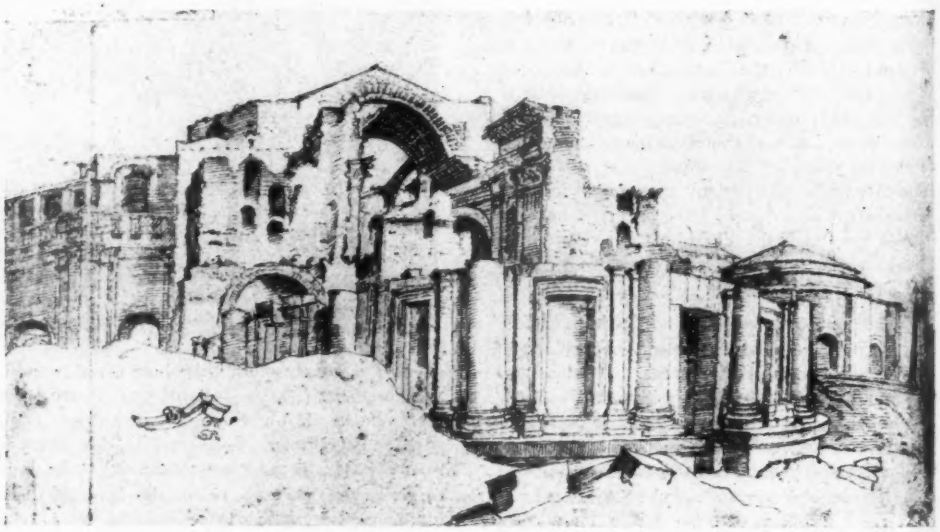
One thing however I will say—history is not an absolute, it is to be used according to the needs of the students. On the other hand, the integrity of the historian must be beyond question; he must never become, like Giedion, the servant of a faction. Moreover, I would suggest two immediate reforms:

The teaching of history by unqualified historians must stop.

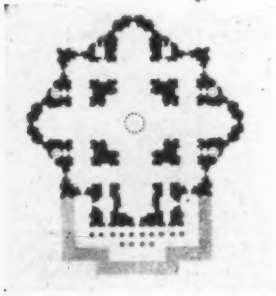
The teaching of history as an academic discipline to students who are not going to practice that discipline must stop.



Two plans of St. Peter's to the same scale: **San Gallo** (above). **Michaelangelo** (below).



(Right). View of St. Peter's when Michaelangelo assumed responsibility for the building. Drawing by **Heemskerk.**



What then are the conclusions that emerge from this discussion? There are three and, although the contributors differ as to their validity, they probably include almost all that is relevant to this subject:

1. It is essential that the history of the modern movement should be taught thoroughly in every architectural school.

2. It is highly desirable that the teaching of history in an academic or systematic way should continue (what Sir John called " the old plod, plod ").

3. It is important that a specifically architectonic interpretation of history should be produced more often. This would subordinate and relate other historical material to the particular concept of space manifested in the architecture of each age.

On the first of these points there can be no disagreement. However, it is apparent that the last two points are, to some extent, contradictory. The interest that the art-historian has in history is different from that of the professional architect and therefore a distinction should be made. Often, it seems, the architect looks mistakenly to the historian for an interpretation of history that is alien to the disciplines of art-history. If the intention behind every history source were to be stated much of this confusion would be overcome.

·TANALITH·C AND ·PYROLITH· TREATMENTS FOR PRESERVATION AND FLAMEPROOFING OF TIMBER

In the table below the figures given in lb./cu. ft. represent the net retention of dry salts per cu. ft. of timber etc., in accordance with the following specifications:
0·25 lb./cu. ft. Tanalith C for decay- and insect-proofing: timbers not in contact with the ground.
0·33 lb./cu. ft. Tanalith C for decay- and insect-proofing: timbers in contact with the ground or in wet conditions (including fencing).
0·4 lb./cu. ft. Tanalith C for proofing against decay and insects (including termites): timbers exposed to tropical conditions (houses for export, etc.).
2·5 lb./cu. ft. Pyrolith for flameproofing and decay- and insect-proofing.
The specifications apply to building timbers in the British Isles. Higher retentions are specified for more hazardous uses, e.g. cooling tower fills, sea defence works. Specifications for other countries can be supplied on application.

Type of building	Specification	Notes
Conventional houses, i.e. brick loadbearing walls, timber floors and flooring, timber roofs with tile cladding, timber staircases, windows, doors, cupboards, etc. Timber buildings not intended as dwellings, e.g., farm buildings, storage sheds and industrial buildings housing activities offering no special fire hazard. Buildings of "fireproof" construction in which timber is used mainly in grounds, in joinery, as decoration or as flooring on concrete decks, e.g. office blocks, schools, public buildings, factories, shops.	*Timber:* Tanalith C 0·25 to 0·33 lb./cu. ft.	Net retention to be specified in accordance with the notes above.
	Plywood: ⅜ in. and over: Tanalith C 0·25 to 0·33 lb./cu. ft. ¼ in. and under: Pyrolith 2·5 lb./cu. ft.	The choice of treatments to be made with reference to its potential hazard and to the fact that the same material in thin sheet form represents a higher fire hazard than in thick sheet form
	Hardboard and Partitions:* Pyrolith 2·5 lb./cu. ft.	In the case of hardboard, the net retention is varied according to the brand of board and the required spread of flame classifications, i.e. Class 1 or Class 2, B.S. 476.
	Insulation: Pyrestos board.	Pyrestos is fibre insulating board pressure-treated with Pyrolith to give complete penetration to achieve a spread of flame rating throughout of Class 1, B.S. 476.
Timber houses or houses built largely of timber having timber frames and large areas of plywood, hardboard, matchboarding, etc., not more than two storeys high. Timber schools, office blocks and similar buildings, having high occupancy or housing industrial activities employing a large number of people; not more than one storey high. Timber engineered structures (trusses, posts, box-beams, laminated arches, etc.).	*Timber:* Sizes equal to or greater than 27 sq. in. cross section (smallest dimension not less than 3 in.): Tanalith C 0·25 lb./cu. ft. Smaller sizes: Pyrolith 2·5 lb./cu. ft.	Members of large cross-sectional area are considerably less affected by fire than those of small section. Tanalith treatment does not increase the fire susceptibility of timber.
	Plywood and Partitions:* Pyrolith 2·5 lb./cu. ft.	See note on plywood above.
	Hardboard: Pyrolith 2·5 lb./cu.ft.	See note on hardboard above.
	Insulation: Pyrestos board.	See note on Pyrestos above.
Timber buildings used as offices, hostels, etc., two or more storeys high. Timber schools not more than two storeys high.	*Timber:* Pyrolith 2·5 lb./cu. ft.	Pyrolith treatment, which is essential throughout such buildings, also incorporates preservatives which protect the timber from decay and insects.
	Plywood and Partitions:* Pyrolith 2·5 lb./cu. ft.	
	Hardboard: Pyrolith 2·5 lb./cu.ft.	See note on hardboard above.
	Insulation: Pyrestos board.	See note on Pyrestos above.
Exterior structures, e.g. gantries, lighting poles, transmission poles, fencing and other cases where timber is used in contact with the ground.	*Timber:* Tanalith C 0·33 to 0·65 lb./cu. ft. according to manufacturer's specific recommendations	Flameproofing is not often demanded for such structures but timber impregnated with Pyrolith has been successfully used for a number of outdoor installations.
	Plywood: Tanalith C 0·33 to 0·65 lb./cu. ft. according to manufacturer's specific recommendations.	

* Partitions represent a special fire hazard and it is recommended that their solid timber content, in addition to panelling, should be flameproofed.

40.A2 ·TANALITH·C AND ·PYROLITH· TREATMENTS FOR PRESERVATION AND FLAME-PROOFING OF TIMBER

This Sheet deals with the treatment of timber by vacuum/pressure impregnation, with Tanalith C timber preservative or Pyrolith flame-retardant timber preservative. Both treatments protect timber from decay and insects, though Pyrolith is primarily a flame-retardant.

Types of Preservative

Tanalith C: This is a non-oily, water-borne timber preservative. It is toxic to wood-destroying fungi and insects, including marine borers and termites. It is applied by vacuum/pressure impregnation and timber thus treated is known as Tanalised.

Pyrolith: This treatment prevents flaming and continuous burning in solid timbers and greatly reduces the rate of spread of flame over thin materials, such as plywood, hardboard and insulating board. It also preserves against fungi and insects. It is non-oily and non-corrosive. It is applied by vacuum/pressure impregnation.

Wolmanol: This is a highly-concentrated preservative solution for end-grain treatment for dry rot in repair work and in the treatment of cross-cut ends of Tanalised timber. It is applied by brushing or dipping and is coloured red for identification on the site.

Pyrolith Concentrate: Similar to Wolmanol, this is a highly-concentrated end-grain flame retardant timber preservative used for the treatment of cross-cut ends of Pyrolith treated timber. Applied by brush or by dipping.

Treatable Materials

Solid timber: Virtually all the timbers commonly used as building materials can be accepted for treatment with either Tanalith C or Pyrolith.

Plywood: Plywood may be treated with either Tanalith C or Pyrolith. Exterior grades only can be accepted for treatment as the glue of interior grades will fail during treatment. Plywood manufactured with synthetic resin adhesives to B.S. 1203: 1954, types MR, BR, and WBP can be treated. Normal commercial treatment does not guarantee full penetration and where this is required, "through and through" treatment should be specified. It is obtainable in plywood of certain species of timber up to 1 in. thick and has the advantage that cutting, drilling and shaping does not expose untreated wood. Plywood can be treated in veneer form before gluing (Tanaply); in this case there is no limit to the thickness.

Hardboard: Most grades are suitable for treatment. The main hazard with hardboard being fire, the demand is for treatment with Pyrolith.

Fibre insulating board: Flameproofed fibre insulating board, pressure-impregnated with Pyrolith is obtainable under the name Pyrestos. Treatment is carried out in specialised plants and the treated board is available from stockists.

Properties of Treated Timbers

Tanalised timber has a greenish colour which mellows to pale grey-green. However, this varies considerably according to the species of timber, the colour of the darker hardwoods being scarcely affected by treatment. The treatment is permanent and will not wash out under any conditions. It has no odour, the characteristic smell of the timber being unchanged. Treated timber will not discolour plaster provided the timber is dry before plastering is undertaken. Dry treated timber can be painted in the same way as dry untreated timber. Gluing may be successfully carried out by reference to glue manufacturers' instructions.

Pyrolith-treated timber has the same general characteristics as Tanalised timber. The colour is less pronounced and has a pale grey hue. The degree of flame retardancy may be somewhat reduced if the timber is exposed to prolonged wetting as the treatment is not so completely fixed as is the case with Tanalith C.

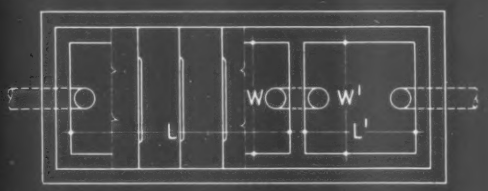
Further Information

In addition to manufacturing preservatives, the manufacturer designs and supplies vacuum/pressure plants and also maintains or advises on treatment plants in many parts of the world. Timber technologists, chemists, engineers, bio-physicists and mycologists are employed and have accumulated extensive data relating to preservation problems. A list of treatment plants in the British Isles, South Africa, New Zealand, Australia and elsewhere is available from the manufacturer.

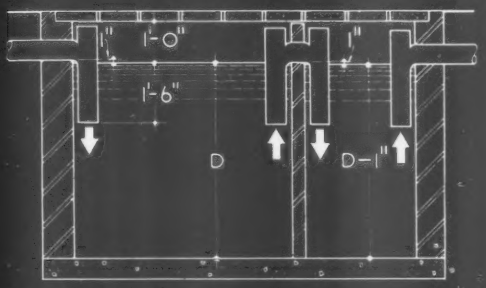
Compiled from information supplied by:
Hickson's Timber Impregnation Co. (G.B.) Ltd.
Head Office: Castleford, Yorkshire.
Telephone: Castleford 2607-9.
London Office: 8, Buckingham Palace Gardens, London, S.W.1.
Telephone: Sloane 0636-8.

SANITATION DISPOSAL UNITS SOIL AND WASTE

The Architects' Journal Library of Information Sheets 719. Editor: Cotterell Butler, A.R.I.B.A.



plan

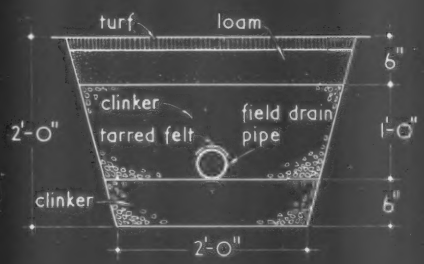


longitudinal section

SEPTIC TANK.

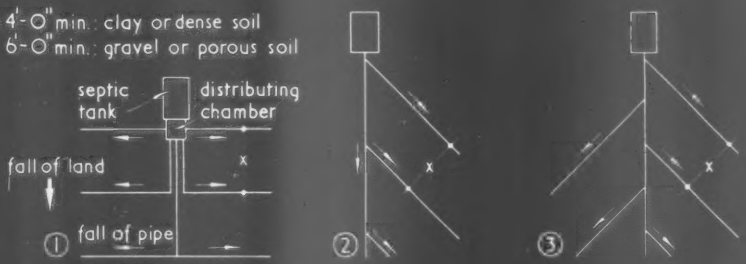
no. of persons served		first compartment length L	first compartment width W	first compartment depth D	second compartment length L'	second compartment width W'	second compartment depth D-1"
6 monthly desludging	5	5'-0"	2'-6"	5'-0"	2'-6"	2'-6"	4'-11"
	10	5'-6"	2'-9"	5'-0"	2'-9"	2'-9"	4'-11"
	15	6'-0"	3'-0"	5'-0"	3'-0"	3'-0"	4'-11"
	20	6'-0"	3'-0"	6'-0"	3'-0"	3'-0"	5'-11"
	25	6'-6"	3'-3"	6'-0"	3'-3"	3'-3"	5'-11"
	30	7'-0"	3'-6"	6'-0"	3'-6"	3'-6"	5'-11"
12 monthly desludging	5	5'-6"	2'-9"	5'-0"	2'-9"	2'-9"	4'-11"
	10	6'-0"	3'-0"	5'-0"	3'-0"	3'-0"	4'-11"
	15	7'-6"	3'-9"	5'-0"	3'-9"	3'-9"	4'-11"
	20	7'-6"	3'-9"	6'-0"	3'-9"	3'-9"	5'-11"
	25	7'-6"	3'-9"	6'-0"	3'-9"	3'-9"	5'-11"
	30	8'-0"	4'-0"	6'-0"	4'-0"	4'-0"	5'-11"

table of sizes

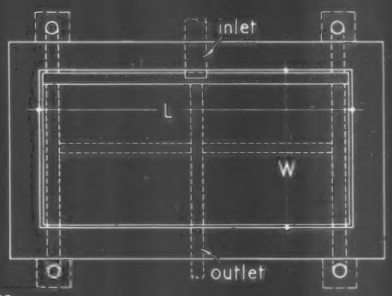


section

SUB-SURFACE IRRIGATION.



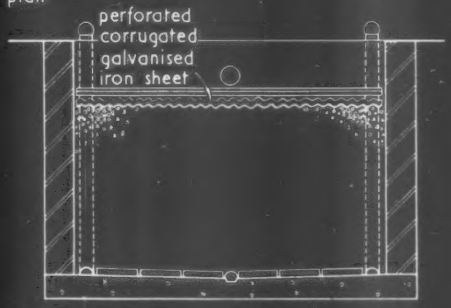
typical layouts



plan

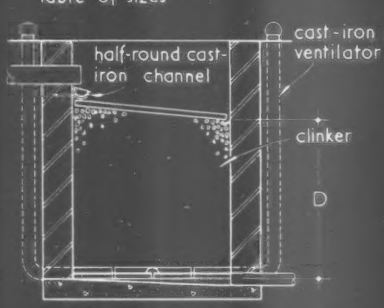
no. of persons served	length L	width W	depth D
5	8'-0"	4'-0"	4'-0"
10	10'-6"	5'-3"	5'-0"
15	10'-6"	5'-3"	5'-0"
20	11'-0"	5'-6"	6'-0"
25	13'-0"	6'-3"	6'-0"
30	13'-6"	6'-9"	6'-0"

table of sizes

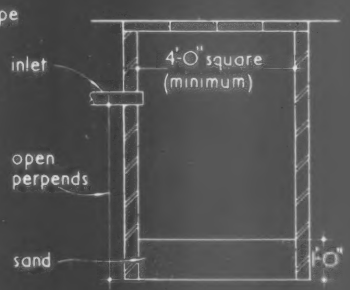


longitudinal section

BIOLOGICAL FILTER.



cross section



section

SOAKAWAY PIT.

33.L2. DOMESTIC SEWAGE TREATMENT: 1

This Sheet, together with Sheet 33.L3, deals with the design and construction of sewage treatment works for the individual house or group of houses. They are based on B.S. Code of Practice C.P. 302.100:1956 *Small Domestic Sewage Treatment Works.* The notes below and those on Sheet 33.L3 should be read in conjunction with the drawings on the face of this Sheet.

General

Basically there are two stages in the disposal of sewage from normal sanitary appliances in a house:—
1. Separation of the solid matter and its liquefaction by bacterial action. This process takes place in a septic tank.
2. Oxidisation of the resultant liquid (effluent) by bacterial action. This process takes place either in a biological filter or by sub-surface irrigation. Where a filter is used the resultant effluent has to be finally disposed of.

Opinion amongst experts is divided as to the respective merits of the two alternative methods of secondary treatment suitable for small works. The Code of Practice is strongly in favour of a biological filter. However, it has the following obvious disadvantages in a small installation:

a. Unlike sub-surface irrigation, it does not finally dispose of the effluent: thus the extra cost of this is involved.

b. On flat sites it is impracticable where there is a high water table, as a head of from 4 to 6 ft. is required between inlet and outlet.

c. On flat sites it involves very deep trenches for the pipe from the biological filter to the point of final disposal. The alternative necessitates pumping the effluent from the outlet of the filter to ground level.

d. It involves the use of dosing equipment which, however simple in principle and construction, is liable to damage and requires regular maintenance.

The final decision rests with the Local Authority, but unless it insists on a biological filter, sub-surface irrigation should be employed.

Local Byelaws

A domestic sewage disposal works installed by the private individual or developer comes under the jurisdiction of the Local Authority who must first grant permission for the installation of a works and is entitled to impose particular conditions concerning siting, construction and functioning over and above the broad requirements of the Public Health Act and the Building Byelaws.

The Chief Public Health Inspector of the Local Authority should be approached to ascertain these conditions before formal application is made. If requested he may send one of his officers to inspect the site and advise on layout and construction. As a general rule the following information should be obtained before designing a works:

a. Permissible method of secondary treatment of septic tank effluent.

b. Permissible method of final disposal of effluent (if answer to *a* is a biological filter).

c. Whether the Authority provides a service for the regular removal of sludge from the septic tank.

d. If provided, the charge for this service, its frequency and the means of access required for the cleansing vehicle.

e. Requirements concerning siting with particular reference to minimum distance of the works from the nearest habitable building, highway, well or water-course, etc.

Design Considerations

Pumping: Wherever possible pumping should be avoided by locating the works downhill from the dwelling house, but always above local flood level. For the purpose of these Sheets it is assumed that the works will operate by gravity.

Desludging: The solid matter associated with water in the form of a slurry and known as sludge, must be removed regularly from the septic tank. Most Local Authorities provide a service to do this and will come when requested. However, there is no need to have the sludge removed more often than at, for example, six-monthly periods (as recommended by the Code of Practice), provided the capacity of the tank takes this into account. At each emptying about 20 per cent of the sludge should be left in the tank for seeding purposes. If no service is provided the sludge may be discharged by pumping to trenches on the site: in the latter case, when dried out, it may be used as garden manure.

Design: It is essential that surface and sub-soil water should be excluded from the works and separate provision must be made for their disposal. Refuse grinders impose an extra load on the functioning of the septic tank and must be allowed for in calculating tank capacities by increasing the calculated capacity by 50 per cent.

For the size of treatment works considered in these Sheets, a 4-in. pipe will be quite adequate for all drains. The gradient of pipe linking the house fittings with the septic tank should be not less than 1 in 40 and not more than 1 in 60.

The pipe connecting the septic tank with the filter should be at the same gradients as above.

Compiled by G. C. A. Tanner, A.R.I.B.A.

working detail

DOORS: 41

WROUGHT IRON GATE: COLLEGE IN OXFORD

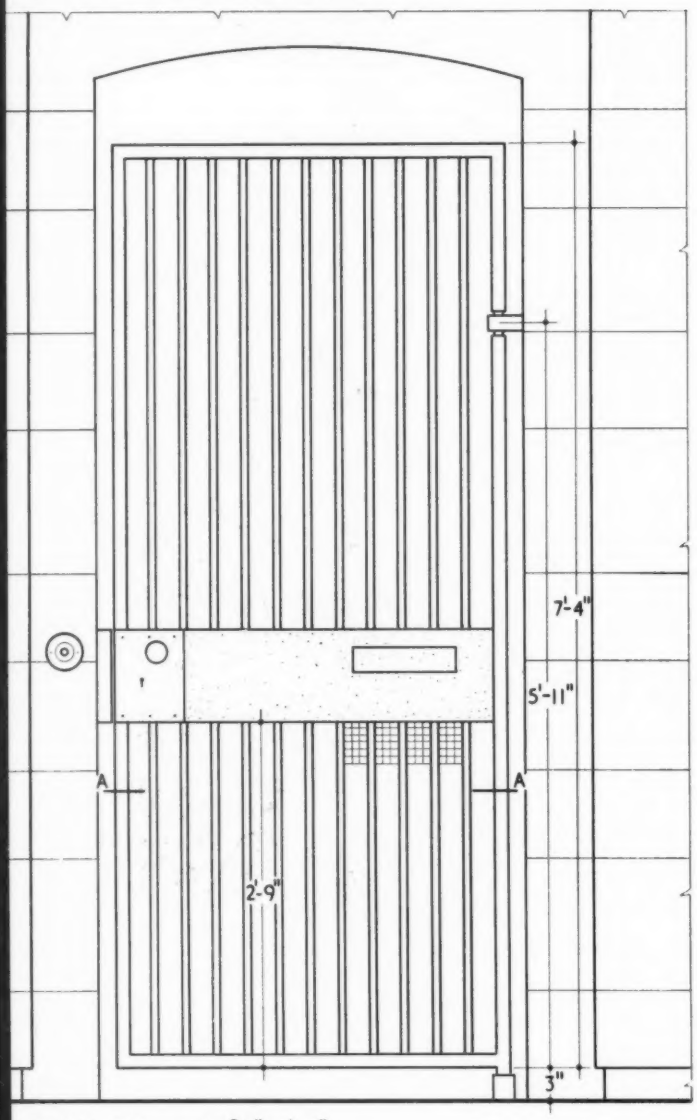
Architects' Co-Partnership, architects

This adaptation of traditional wrought ironwork has a number of points of detail which deserve study. Note the "journal" hanging used in conjunction with a self-closing socket at the base; the avoidance of visible fixing to the brass plate; and, of course, the careful alignment of nameplate, middle rail and striking plate.

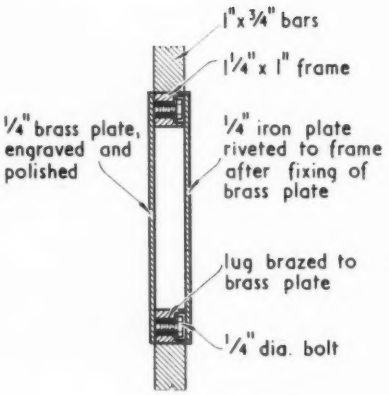
working detail

WROUGHT IRON GATE: COLLEGE IN OXFORD

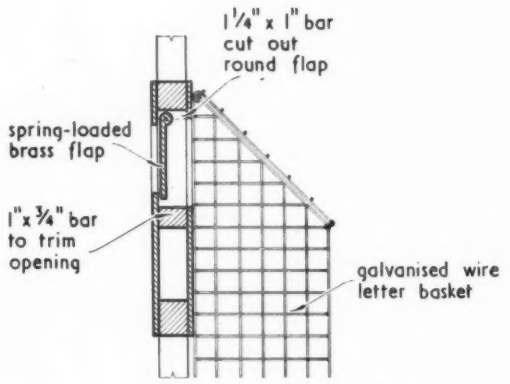
Architects' Co-Partnership, architects



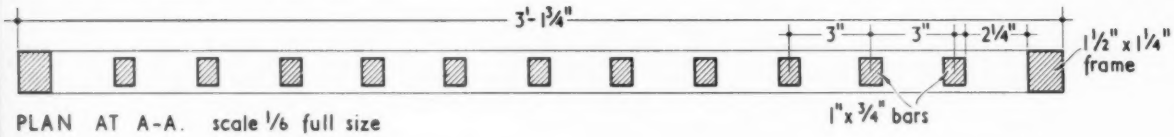
ELEVATION. scale ¾"=1'-0"



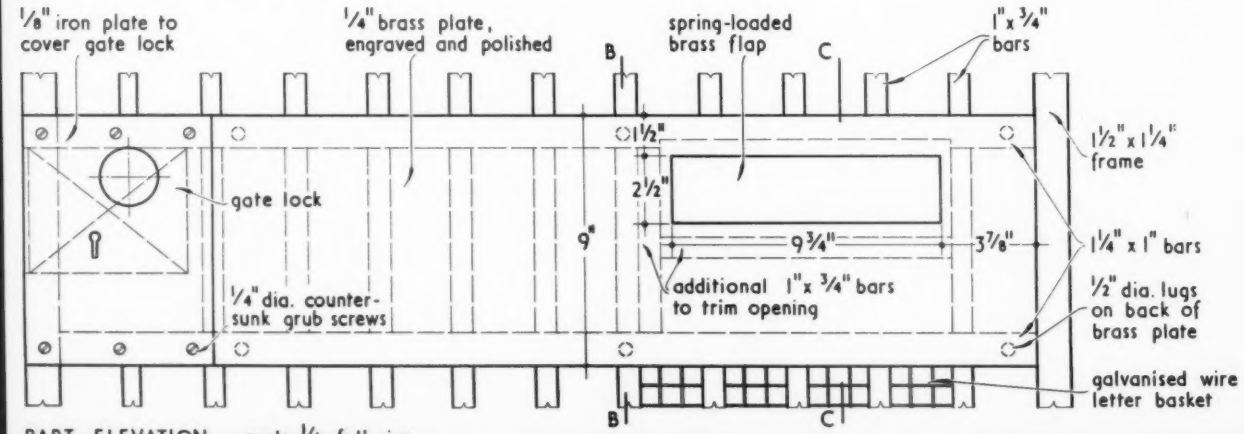
SECTION B-B.



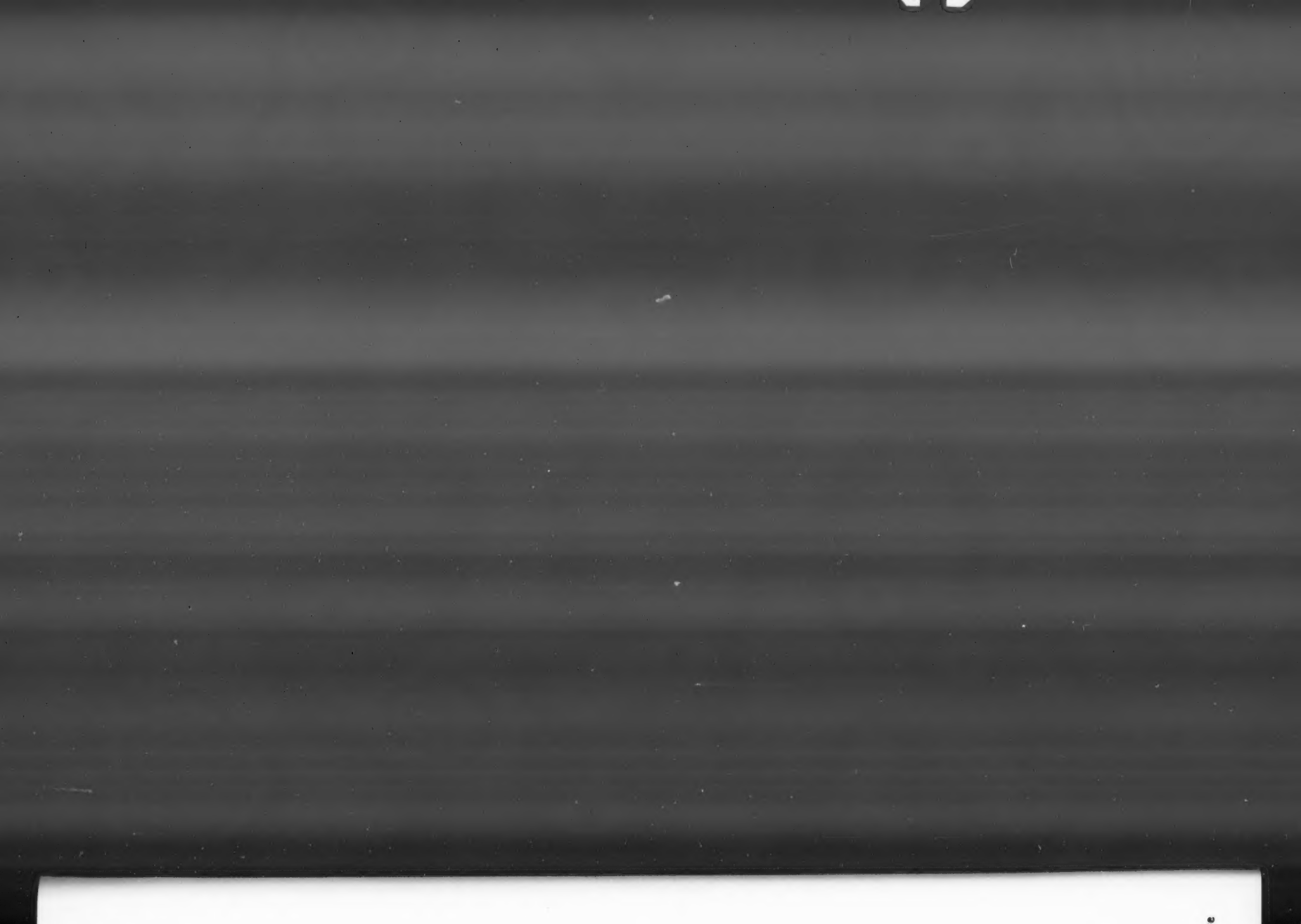
SECTION C-C. scale 1/6 full size



PLAN AT A-A. scale 1/6 full size



PART ELEVATION. scale 1/6 full size



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PROPOSED FLATS AT HAYWARDS HEATH

This is a model of a design by Owen Luder for fifteen two-storey blocks of flats at Haywards Heath, Sussex. The site was at one time a sandstone quarry and in the centre was a deep cutting formed by the old workings. An objective of the scheme was to provide as many garages as possible and in any event a minimum of twenty. An intelligent use of the existing cutting has resulted in the achievement of this aim. The flats are divided into two main blocks, one fronting an existing road and the other sweeping round another road at the rear. The reason for the "dogs tooth" placing of the blocks although adding to the amount of shadow falling on the windows is to give them some individuality and to provide privacy for the tenants. The construction of the flats is traditional and they consist of three living rooms and a kitchen and bathroom. They are arranged on the sloping site to give views of the coast to the south-east on clear days. The quantity surveyor for the scheme was C. R. Wheeler and the contract for their construction has been signed with Eagle Construction Co. Ltd.

Contractors

Albert Bridge House, Bridge Street, Manchester (pages 621-624). *Architects:* Chief Architect's Division of the Ministry of Works. *Senior architect in charge:* E. H. Banks F.R.I.B.A., F.R.S.A. *Senior engineer:* C. W. Crook A.M.I.Mech.E. *Senior structural engineer:* R. W. Pearson M.SC., A.M.I.C.E. *Senior public health engineer:* R. T. Gillet B.SC., A.M.I.C.E. *Consulting engineers:* Travers, Morgan & Partners. *Quantity surveyors:* W. B. Armstrong, F.R.I.C.S. *General contractors:* J. Gerrard & Sons Ltd. *Sub-contractors: Ready-mixed concrete:* Trumix Concrete Co. Ltd. *Portland stone:* South Western Stone Co. *Steelwork:* H. Peers & Co. Ltd. *Asphalt floors:* Davies Bros. Ltd. *Marble and slate work:* J. H. Patterson Ltd. *Felt roofing:* Limmer and Trinidad Lake Asphalte Co. *Reinforcement (fix only):* R. Smith (Horley) Ltd. *Wall tiling and terrazzo:* Hulme & Potts Ltd. *Metal windows:* Geo. Wragge Ltd. *Vitrolite panels and glazing:* Williams & Watson Ltd. *Plastering:* W. T. Roberts & Son Ltd. *Painting:* W. Winstanley & Co. Ltd. *Cold glaze:* Proderite Ltd. *Heating, hot and cold water installation:* G. Dawson & Sons Ltd. *Electrical installations:* Grierson Ltd. *Lightning protection:* W. J. Furse & Co. Ltd. *Lifts:* Otis-Elevator Co. Ltd. *Boilers:* Bonellat Eng. Ltd.

Announcements

PROFESSIONAL

Tooley and Foster, Chartered Architects, have opened an office at 38, Great Portland Street, London, W.1 (telephone Museum 3414). Representatives will be seen only at their main office at Midland Bank Chambers, Buckhurst Hill, Essex.

Charles Blake, A.R.I.B.A., Chartered Architect, has commenced private practice in association with J. E. Knapman, L.A.M.T.P.I., Town Planning Consultant, and S. Jampel, M.SC., D.I.C., A.M.I.C.E., Consulting Civil Engineer, at Phoenix Chambers, 553, Babbacombe Road, Torquay, Devon (telephone Torquay 25666/7) and will be pleased to receive trade literature and samples.

Manning and Clamp announce that the address of their Richmond office is now 19, The Green, Richmond, Surrey (telephone Richmond 2341/2), where they would be pleased to receive future correspondence.

C. Wycliffe Noble & Partners will be continuing their practice in London from 273, Kings Road, Chelsea (telephone Flaxman 2006), eventually returning to new offices in Cadogan Place. Clients may consult Mr. Wycliffe Noble in an extension of the practice established in The William & Mary House, 106, French Street, Sunbury-on-Thames.

Borys, Rigby, Childs and Glover, Architects and Town Planners, have now moved their office to 6, Welbeck Street, London, W.1 (telephone Welbeck 1681/3).

TRADE

J. O. de M. Hopper, Overseas Representative of Expandite Ltd., Chase Road, London, N.W.10, has left this country to visit USA, Mexico, Guatamala, Brazil, Venezuela, Costa Rica, Panama and other countries.

The Asphalt Roads Association Ltd. has appointed L. G. Watkins as Director. Mr. Watkins will also continue to be the Director of The Natural Asphalte Mine-Owners & Manufacturers Council.

Simplex Electric Co. Ltd. have appointed T. D. Shillcock as manager of their Bristol branch.

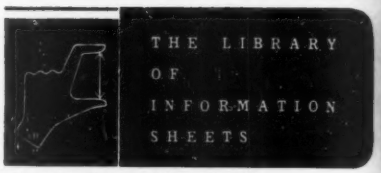
British Resin Products Ltd. have appointed G. E. H. Smock as Sales Manager for Rigidex Polyethylene. Also R. Hayes has been appointed Technical Service Manager for Rigidex Polyethylene in place of P. Brown, who has taken over as Sales Manager for Cellomold, Rockite and Styron materials.

The Wimpey Organization has appointed Derek Selby as Press Officer to help newspapers and technical journals obtain information about the activities of the company.

Allied Ironfounders Ltd. have created a new Division called the Domestic Appliance Division, and all Solid Fuel and Oil-Fired products will be marketed through this. The Sales Director of the new Division will be Charles Insch who will also retain his appointment as Managing Director of Aga Heat Ltd.

Obituary

Sir Ashley S. Ward, LL.D., the well-known Sheffield industrialist, died on March 26 at the age of 81, after a short illness in a London hospital.



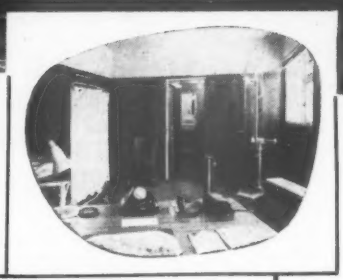
19.F11. *REFERENCE BACK:*

CORRECTION

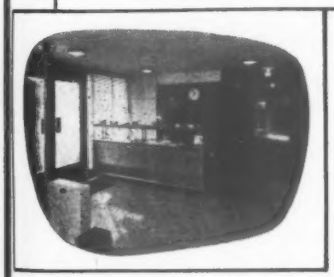
In the issue of 16.4.59 *Sheet* 19.F11 (*manufacturer: Semtex Limited*) *was incorrectly referred to as* 19.F1.

NEW DEVELOPMENTS NEED NEW DEPARTURE BUILDINGS

B.R. Recruitment Centre, Euston Station.



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



Main foyer and corridor

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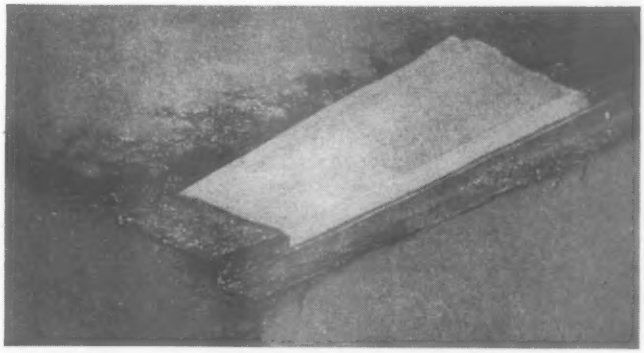

PROOF! Photograph of a ceiling partly painted with Fungi-Chek. Test shows heavy mould growth, but the Fungi-Chek is completely free of growth.

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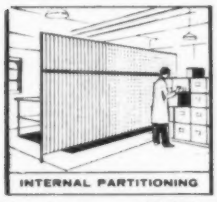
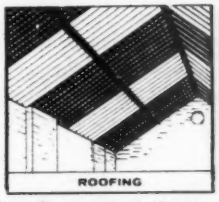
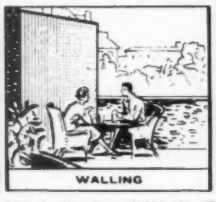

INTERNAL PARTITIONING


ROOFING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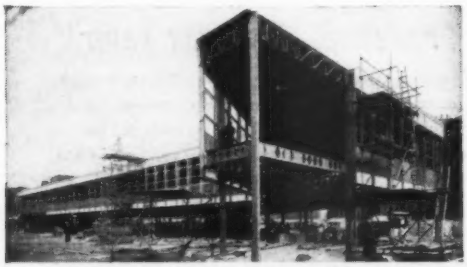
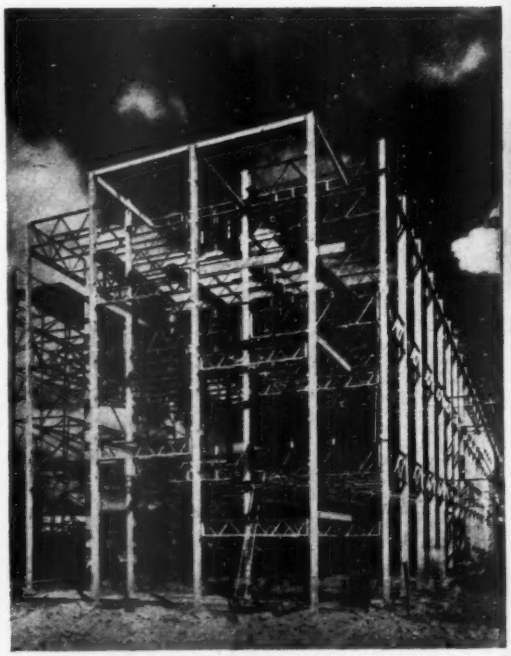


New Air Terminus buildings in Kensington for B.E.A. Photograph taken 16 days after commencement of steel deliveries. Main Contractors: Messrs' Richard Costain Limited.

The Architects for the Bowater Paper Corporation Limited's new Office Blocks at both Northfleet and Mersey required Lattice Steelwork on a 3ft. 4in. module. This allowed complete flexibility of internal arrangements and all service lines are easily run between floor and ceiling.



Part of a new Office Block for The Bowater Paper Corporation Limited. *Architects:* Messrs. Farmer and Dark.

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

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LONDON COUNTY COUNCIL
ARCHITECTS required for interesting and varied work which provides excellent experience in alterations and extensions to a variety of buildings. Candidates should be able to carry jobs through all stages—surveys, schemes, working drawings specifications and supervising contracts. Up to £1,090 according to qualifications and experience. Application form and particulars from Hubert Bennett, F.R.I.B.A., Architect to Council (AR/EK/31/59), County Hall, S.E.1. (652.) 3693

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT
Vacancies for ARCHITECTURAL ASSISTANTS, starting salary up to £860. Full and interesting programme of houses, flats, schools and general buildings.
Application form and particulars from The Architect to the Council, County Hall, S.E.1, quoting AR/EK/14/59 (256). 3040

COUNTY BOROUGH OF MERTHYR TYDFIL
APPOINTMENT OF DEPUTY BOROUGH ARCHITECT
Applications are invited from Associates of the R.I.B.A. with appropriate experience for the above post, at a salary in accordance with a scale based on two-thirds of the Borough Architect's salary, namely, £1,930 × £70 (1) × £65 (3) to £2,195.
Application forms may be obtained from the undersigned and must be returned with copies of three recent testimonials by 9th May, 1959.
The appointment is subject to the provision of the Local Government Superannuation Acts and to the passing of a medical examination and is terminable by three months' notice on either side.
Canvassing in any form will disqualify.
T. S. EVANS,
Town Clerk.
3790

CITY OF WINCHESTER
Applications are invited for the post of ARCHITECTURAL ASSISTANT in the City Engineer's office (C. C. Steptoe, A.R.I.B.A., Chief Assistant Architect). It is essential that the applicant should be a neat and accurate draughtsman and have had previous experience in an architect's office. Salary, according to experience, will be within Grade I of the National Scales, and the appointment is subject to the Local Government Superannuation Act.
Applications, stating age and details of experience, together with the names and addresses of two referees, should be addressed to the City Engineer, Guildhall, Winchester, and should reach his office not later than Monday, 4th May, 1959.
Canvassing, either directly or indirectly, will disqualify.
R. H. McCALL,
Town Clerk.
3830

SOUTHAMPTON COUNTY BOROUGH COUNCIL requires under N.J.C. conditions of service:
ASSISTANT QUANTITY SURVEYOR—salary within Special Grade (£750/£1,030 p.a.).
Applicants must be Chartered Quantity Surveyors, preferably with experience in municipal housing, including multi-storey flats and shopping centres.
Apply on application form obtainable from the Borough Engineer and Surveyor, Civic Centre, Southampton, as soon as possible. 3816

ISLE OF ELY COUNTY COUNCIL
SENIOR PLANNING ASSISTANT
Applications are invited from suitably qualified persons for the above appointment. Salary within Special Grade (£750—£1,030). Work in Development Plan Section on preparation of Town Maps and County Map Review; village plans; layouts, etc. Applicants should be A.M.T.P.I. or hold equivalent qualification. National conditions. Consideration given in appropriate cases to assistance towards removal expenses.
Forms of application and further particulars obtainable from the County Planning Officer to whom they must be returned by 2nd May, 1959.
R. F. G. THURLOW,
Clerk of the County Council.
3814

BUCKINGHAMSHIRE EDUCATION COMMITTEE
HIGH WYCOMBE COLLEGE OF FURTHER EDUCATION
(Principal: W. J. DAVIES, J.P., B.Sc.)
Required for 1st September, 1959, Grade B ASSISTANT (man) for Graphic Design in the Art Department to teach general drawing subjects from Intermediate to N.D.D. standards. Appropriate full-time teaching experience in a School of Art is essential. Experience of Commercial Art Studio work and knowledge of Typography or Photography or Display an advantage. A.R.C.A., A.T.D. or equivalent qualifications essential.
Salary will be paid in accordance with the Burnham Report, *i.e.*, £650 × £25 to £1,025 per annum plus additions for qualifications and training with increments on the scale for previous teaching and industrial experience where appropriate. The five per cent Special Addition to Salary (1959) will also apply.
Forms of application may be obtained by forwarding a stamped addressed envelope to the Principal at Queen Alexandra Road, High Wycombe, to whom completed application forms should be returned as soon as possible. 3913

WARWICKSHIRE COUNTY COUNCIL
ARCHITECT'S DEPARTMENT
Applications are invited for the following appointments:—
(A) SENIOR HEATING ENGINEER.
GRADE APT III-IV — £845—£1,175.
(B) ASSISTANT HEATING ENGINEER.
GRADE APT III — £845—£1,025.
(C) ASSISTANT ELECTRICAL ENGINEER.
GRADE APT III — £845—£1,025.
(D) ASSISTANT ARCHITECTS—Special Grade—£750—£1,030. (See (2) below)
(1) The commencing salary for all appointments can be within the grades and would be settled having regard to the applicants' ability and experience.
(2) Applicants for appointment as *Assistant Architect* should have passed Parts I and II of the R.I.B.A. Final or Special Examination or their equivalent at one of the recognised schools of architecture. The successful applicants will work in teams on large projects but opportunity will be given to men with enthusiasm and ability to design and carry out smaller projects under a Group Architect.
(3) The appointments are on the established staff and subject to the Scheme and Conditions of Service of the National Joint Council for Local Authorities and the Local Government Superannuation Acts, 1937-1953. The Council is unable to offer housing accommodation but consideration will be given to the granting of financial assistance towards the payment of removal expenses. The successful applicants will be required to submit a satisfactory medical certificate.
(4) Applications are to be on forms which can be obtained from G. R. Barnsley, F.R.I.B.A., County Architect, Shire Hall, Warwick.
L. EDGAR STEPHENS,
Clerk of the Council.
Shire Hall,
Warwick. 3912

CARSHALTON URBAN DISTRICT COUNCIL
ARCHITECTURAL ASSISTANT, ENGINEER & SURVEYOR'S DEPARTMENT. Must hold Final Examination Certificate of the R.I.B.A., and be a Registered Architect. Must also be competent in design and construction and have had a full and varied practical experience, preferably in the architectural work of a local authority.
Carshalton is a large urban district of 62,000 population with a development programme which includes multi-storey flats and other building works.
Salary will be within the APT Special Scale (£750 to £1,030) per annum plus London "Weighting."
Applications on forms obtainable from the undersigned must be returned with names of three referees not later than the 18th May, 1959. Canvassing will disqualify.
C. H. DURRANT,
Clerk of the Council.
District Council Offices,
The Grove,
Carshalton, Surrey. 3920

SURREY COUNTY COUNCIL
Applications are invited for the following appointments on Grade IV (£1,025—£1,175 p.a., plus £30 p.a. London allowance):—
ARCHITECTS. Must have, after qualifying as Assoc. Mem. R.I.B.A., 10 years' experience in preparation of drawings and specifications, and capable of assuming responsibility for medium to large scale contracts.
BUILDING SURVEYORS. Must have, after qualifying as Assoc. Mem. R.I.C.S., 10 years' experience in drafting specifications in all trades, preparation of schedules of dilapidations, detailed estimates for general maintenance works and surveys of properties.
Full details, present salary and three copy testimonials to County Architect, County Hall, Kingston, by 1st May, 1959.
The County Council have adopted a five-day week. 3824

LONDON COUNTY COUNCIL
PARKS DEPARTMENT
ARCHITECTURAL ASSISTANTS. Good Draughtsmen with experience of preparation of working drawings and specifications and supervision of contract work. Salary up to £860. Apply Chief Officer, Parks Department (AI/A), County Hall, London, S.E.1. (WATerloo 5000, Ext. 8076.) (473.) 3587

COUNTY BOROUGH OF EAST HAM
BOROUGH ENGINEER'S DEPARTMENT
Applications are invited for the following temporary appointments:—
SENIOR ASSISTANT ARCHITECT, Grade IV (£1,025—£1,175).
ARCHITECTURAL ASSISTANT, Grade II (£725—£845).
London weighting is paid in addition, and salaries in excess of the minima may be paid according to qualifications and experience. The appointments are for work on a new Technical College and are expected to be for a period of not less than three years.
Further details and application forms returnable by 1st May, 1959, from the Town Clerk, Town Hall, East Ham, E.6. 3840

BOROUGH OF ENFIELD
BOROUGH ENGINEER'S DEPARTMENT
Applications are invited for established posts within the Grades shown:—
(*a*) ARCHITECTURAL ASSISTANT—
A.P.T. I & II (£575—£845 per annum).
(*b*) ARCHITECTURAL ASSISTANT (MAINTENANCE)—A.P.T. I (£575—£725 per annum).
A London Weighting allowance of £10—£30 per annum, according to age, will be paid in addition to the above salaries. The commencing salary will be in accordance with qualifications and experience.
Saturday mornings are normally free of duty.
Application forms, returnable by the 13th May, 1959, to be obtained from H. Deryck Peake, M.Sc.(Eng.), M.I.C.E., Borough Engineer & Surveyor, "Percy House," 7 Little Park Gdns., Enfield, Middx.
CYRIL E. C. R. PLATTEN, LL.B.,
Town Clerk.
Public Offices,
Enfield, Middx. 3899

CAERNARVONSHIRE COUNTY COUNCIL
COUNTY PLANNING DEPARTMENT
Applications are invited for the following posts:
(*a*) CHIEF PLANNING ASSISTANT.
Commencing salary within Grade A.P.T. IV (£1,025—£1,175) according to qualifications and experience.
Applicants should be corporate members of the Town Planning Institute or hold an equivalent qualification. Full experience is required in the preparation of development plans, particularly town maps and preferably including comprehensive development areas.
Housing accommodation available, if required.
(*b*) SENIOR PLANNING ASSISTANT.
Commencing salary within the Special Grade (£750—£1,030) according to qualifications and experience.
Applicants should have passed the final examination of the Town Planning Institute or the Royal Institute of British Architects, or the equivalent examination of one of the recognised schools of planning or architecture. Experience is required in development control including the preparation of layouts and amendments of elevations.
It may be possible to offer housing accommodation, if required.
(*c*) PLANNING ASSISTANT.
Commencing salary within Grade A.P.T. II (£725—£845) according to qualifications and experience.
It may be possible to offer housing accommodation, if required.
Further particulars and application forms from Clerk of the County Council, Caernarvon. Closing date for applications: 2nd May, 1959. 3883

COUNTY BOROUGH OF OLDHAM
BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT
APPOINTMENT OF
SENIOR ARCHITECTURAL ASSISTANT
Applications are invited from qualified persons for the above appointment which involves the design and carrying out of architectural works of major importance in the town, and the successful candidate will be offered a salary in the upper limits of the Special Classes Grade (£750—£1,030), in accordance with experience.
The National Conditions of Service and Local Government Superannuation Acts will apply and the appointment will be subject to a satisfactory medical examination.
Housing accommodation is available if required.
Applications endorsed "Senior Architectural Assistant," together with the names of two referees, should reach me not later than Friday, the 8th May, 1959.
A. L. HOBSON,
Borough Engineer and Surveyor.
Municipal Buildings,
75, Union Street,
Oldham. 3915

GEORGE WIMPEY & CO., LIMITED
The Architects Department's current work covers all types of technical, industrial and domestic projects.
Appointments are available for a wide range of experience, particularly for assistants who appreciate the contribution good design can make towards efficient construction and are interested in applying cost knowledge to detailing.
Appointments, on a permanent basis, are immediately available at Head Office for ASSISTANT ARCHITECTS and ARCHITECTURAL ASSISTANTS.
Salaries will match qualifications and experience and, following a probationary period, there is a Pension Scheme available.
Applicants should write to E. V. Collins, A.R.I.B.A., 27, Hammersmith Grove, London, W.6. 3767

NEWCASTLE REGIONAL HOSPITAL BOARD
REGIONAL ARCHITECT'S DEPARTMENT

During the next two years the Board plans to spend several millions on hospital developments and larger programmes are being planned to follow. The present building programme includes a wide variety of projects, ranging from houses to hospitals, and (since a large hospital resembles a small town) affords ample opportunity for gaining both general and hospital experience simultaneously.

The following posts in the Regional Architect's Department are at present open to applicants. The salary-scales quoted include interim increases pending completion of a current Health Service review of salaries.

(i) ASSISTANT ARCHITECTS (4). Salary £730 × £25(2) × £30(2) × £35(5) × £40(1) — £1,055.

Applicants should be registered architects and have had experience of the planning and construction of public buildings. The commencing salary will be fixed within the Grade by reference to relevant experience and to age.

(ii) ARCHITECTURAL ASSISTANT. Salary £545 at age 21 × £20(3) × £25(4) × £30(2) to £765.

Applicants should have passed the Intermediate Examination of the R.I.B.A., or an examination recognised by the Institute as equivalent, and some practical experience is desirable.

The commencing salary within the grade will depend upon the applicant's age and practical experience, but will not exceed £605.

(iii) ARCHITECTURAL DRAUGHTSMAN. Salary £445 × £25(5) × £30(3) — £660.

Applicants should have had previous experience in an architect's drawing office and be neat and quick draughtsmen.

Evening study facilities are available at King's College of Durham University in Newcastle.

Applications, stating age, qualifications, past and present appointments, present salary and details of experience and training, together with the names of three referees (of whom at least two should be architects), should be forwarded to the Secretary to the Board, Benfield Road, Newcastle upon Tyne, 6, not later than 7th May, 1959. 3917

DENBIGHSHIRE COUNTY COUNCIL

Applications are invited for the following appointments in the County Architect's Department, Wrexham, *viz.*:—

(a) ARCHITECTURAL ASSISTANT, Special Scale (£750—£1,030 per annum).
(b) ARCHITECTURAL ASSISTANT, A.P.T. Grade I (£575—£725 per annum).
(c) ARCHITECTURAL ASSISTANT, Misc. Div. Grade I (£405—£445 per annum).

Further particulars with form of application may be obtained from me. Completed forms to be returned by 9th May, 1959.

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

County Offices,
Ruthin. 3845

PONTYPRIDD URBAN DISTRICT COUNCIL
APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited for the appointment of ARCHITECTURAL ASSISTANT at a salary in accordance with the Special Grade (£750 × £40—£1,030 per annum) the incremental stage to be determined according to the experience of the applicant.

Candidates must be Associate Members of the Royal Institute of British Architects.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937; a satisfactory Medical Examination, and one month's notice on either side for termination. Housing accommodation (if required) will be provided.

Form of application and further particulars may be obtained from Mr. W. Cecil Evans, Architect and Surveyor, Municipal Buildings, Pontypridd.

Applications must be delivered to the undersigned not later than Thursday, 30th April, 1959.

BERNARD M. MURPHY,
Clerk of the Council.

Municipal Buildings,
Pontypridd.
15th April, 1959. 3850

BOROUGH OF BEXLEY
ASSISTANT ARCHITECT

Applications are invited for this appointment at a salary within the Special Scale (£750 to £1,030 per annum) plus London weighting.

Candidates should have experience in school and housing projects and must have passed the R.I.B.A. Final.

Form of application and conditions of appointment are obtainable from the Borough Engineer, West Lodge, Broadway, Bexleyheath, Kent, to whom completed applications must be returned by 4th May, 1959. The Council may be prepared to assist in the provision of housing accommodation.

Canvassing will disqualify.

ARTHUR GOLDFINCH,
Town Clerk.
3847

NORTHUMBERLAND COUNTY COUNCIL
APPOINTMENT OF SENIOR OFFICERS

(a) AREA PLANNING OFFICER, Scale A (£1,225—£1,390), A.M.T.P.I. essential. Additional qualification in Architecture, Surveying or Engineering an advantage.

(b) CHIEF ASSISTANT ARCHITECT (Head of Architectural Section). A.P.T. V (£1,175—£1,325). A.R.I.B.A. essential. Additional qualification in Town and Country Planning desirable.

Application forms and further information from County Planning Officer, County Hall, Newcastle upon Tyne, 1. Closing date 4th May, 1959. 3856

EXETER CITY COUNCIL

Applications are invited for the following appointments:

(a) JUNIOR ARCHITECTURAL ASSISTANT. Salary within A.P.T. Grade I (£575 to £725 per annum). Applicants must have passed the Intermediate Examination of the Royal Institute of British Architects.

(b) ARCHITECTURAL DRAUGHTSMAN. Salary within Miscellaneous Division 4/5 (£565 to £685 per annum).

The appointments which are on the temporary staff are subject to one month's notice on either side and to the passing of a medical examination. Canvassing will disqualify.

Applications in writing, stating age, experience, qualifications and appointments held should reach the City Architect, Municipal Offices, Exeter, not later than the 7th May, 1959. 3926

MONMOUTHSHIRE COUNTY COUNCIL
APPOINTMENT OF ARCHITECTURAL STAFF

Applications are invited for a post as ARCHITECTURAL ASSISTANT in the County Architect's Department under the N.J.C. Conditions as follows:—

One Architectural Assistant on the Special Grade, salary £750—£1,030 per annum. The person appointed will be placed on the appropriate salary on the scale according to ability.

Forms of application, particulars of post and conditions of service can be obtained from the under-signed. Applications, together with three testimonials, must be forwarded to Sydney Leyshon, A.R.I.B.A., County Architect, Queen's Hill, Newport, not later than Friday, 1st May, 1959.

VERNON LAWRENCE,
Clerk of the Council.

County Hall,
Newport,
Mon. 3855

CWMBRAN DEVELOPMENT CORPORATION
APPOINTMENT OF ASSISTANT QUANTITY SURVEYOR

A Quantity Surveyor is required for varied and interesting work in connection with the development of Cwmbran New Town. On the salary scale £934—£1,146, the point of entry being in accordance with qualifications and experience.

Candidates should be experienced in taking off, billing and abstracting, site measurements, valuation of work and the preparation of final accounts.

The post is superannuable and housing accommodation will be made available in suitable cases.

Applications stating age, experience, details of present and former employment (together with applicable salaries) and the names and addresses of two referees must reach the undersigned by first post on Monday, 11th May, 1959.

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

Victoria Street,
Cwmbran,
Mon. 3853

CITY OF WAKEFIELD
CITY ENGINEER'S DEPARTMENT

Applications are invited for the following superannuable appointments:—

(A) SENIOR ASSISTANT ARCHITECTS (Posts Nos. 7 & 9). Grade A.P.T. IV (£1,025 × £50 — £1,175).

Applicants must be A.R.I.B.A., and preference will be given to those having municipal experience.

(B) SENIOR ASSISTANT ENGINEERS (Posts Nos. 17 and 18). Grade A.P.T. IV (£1,025 × £50 — £1,175).

Applicants must hold the Testamur of the Inst. Mun. E., and/or A.M.I.C.E., and must be experienced in the various branches of municipal engineering.

(C) JUNIOR ENGINEERING ASSISTANT (Post No. 21). Grade A.P.T. I (£575 × £30 — £725).

Applicants must have completed a recognised period of training in a Municipal Engineer's Office; the appointed person will be allowed one day off per week if necessary for following a recognised course of study.

(D) ASSISTANT HEATING ENGINEER (Post No. 24). Special Grade (£750 × £40 — £1,030).

Applicants should have had experience in the design and supervision of the various Heating installations for Schools and other Public Buildings, and preference will be given to holders of the Higher National Certificate.

(E) SENIOR TOWN PLANNING ASSISTANT (Post No. 29). Special Grade (£750 × £40 — £1,030).

Applicants must be A.M.T.P.I. or hold an equivalent qualification, and must be experienced in Development Plan procedure and Redevelopment Schemes.

(F) TOWN PLANNING ASSISTANT (Post No. 29A). Grade A.P.T. II, III or Special.

Applicants must have had experience in a Town Planning office, and salary will depend on qualifications and experience.

(G) QUANTITY SURVEYING ASSISTANTS (Posts Nos. 35 and 36). Grade A.P.T. I (£575 × £30 — £725).

Applicants must have had experience in a Quantity Surveyor's office, and preference will be given to those who are studying for the Intermediate Examination of the R.I.C.S. or equivalent. Persons appointed will be allowed up to one day off per week if necessary for following a recognised course of study.

Housing accommodation will be provided in respect of appointments (A), (B), (D) and (E).

Applications stating No. of position applied for, age, training, qualifications, experience, and the names of two referees, should be sent to the City Engineer, Town Hall, Wakefield, by Wednesday, the 6th May, 1959. 3923

KUMASI COLLEGE OF TECHNOLOGY
(*Principal:* W. E. DUNCANSON, Ph.D., D.Sc., F.Inst.P., A.M.I.E.E.)

Applications are invited for the post of:—
LECTURERS IN TOWN PLANNING
in the School of Architecture, Town Planning and Building.

The School prepares students for Intermediate Examinations of the R.I.B.A. and of the T.P.I., and negotiations are at present in progress between the School and various bodies in London concerning the Building Technology course for which it is hoped to make similar arrangements.

Qualifications: A.M.T.P.I., at least 3 years' practical experience and preferably at least 1 year's teaching experience.

Appointment accepted on contract for 5 years or on pension or the College will be prepared to take over and maintain employers' contributions to former F.S.S.U. policies.

Contract salary scale: £1,230 × £60—£1,950 p.a. plus gratuity payable at end of contract at the rate of £12 10s. for each month of satisfactory service. Pensionable and F.S.S.U. salary scale: £925 × £50—£1,625. Point of entry according to experience.

Children's allowances up to a maximum of three at rate of £50 p.a. per child up to 10 years and £100 p.a. per child over 10 years in full-time education up to 21 years. Annual leave with free return first-class passages for member of staff, his wife and up to three children under 17 years. Bungalows with basic furniture at low rental provided. Income tax low.

Applications (6 copies) giving age, qualifications, experience and the names of 3 referees should be sent to the Council for Overseas Colleges, 12 Lincoln's Inn Fields, London, W.C.2. Closing date 14th May, 1959. 3858

COUNTY BOROUGH OF OLDHAM
BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT
APPOINTMENT OF ARCHITECTURAL DRAUGHTSMAN

Applications are invited for the appointment of Architectural Draughtsman at a salary within Grade Miscellaneous V (£625 × £20 — £685), commencing salary according to experience.

The successful applicant will be engaged in the Architectural section of my Department and should be a competent draughtsman, capable of working up detail drawings and carrying out the measurement of land and buildings.

The National Conditions of Service and the Local Government Superannuation Acts will apply, and the successful candidate will be expected to pass a medical examination.

Applications endorsed "Architectural Draughtsman," together with the names of two referees, should reach me not later than Friday, the 8th May, 1959.

A. L. HOBSON,
Borough Engineer and Surveyor.

Municipal Buildings,
75, Union Street, Oldham. 3916

BOROUGH OF NEWCASTLE-UNDER-LYME requires a SENIOR ASSISTANT QUANTITY SURVEYOR in the Borough Engineer and Surveyor's Department. Salary in A.P.T. III according to qualifications and experience (£845—£1,025).

Applicants will be required in connection with taking off for new Schools and Housing contracts. Favourable consideration will be given to the provision of housing accommodation in suitable cases.

Application forms and conditions of appointment may be obtained from the Borough Surveyor, Lancaster Building, High Street, Newcastle, Staffordshire, and must be returned to him not later than Wednesday, 6th May, 1959.

C. J. MORTON,
Town Clerk.
3922

GLOUCESTERSHIRE COUNTY COUNCIL
EDUCATION COMMITTEE
CHELTENHAM COLLEGE OF ART
ST. MARGARET'S ROAD, CHELTENHAM

Principal: R. S. G. DENT, R.E., A.R.C.A., R.W.A.
School of Architecture, Head of School:
IAN H. ABBOTT, Dip.Arch.(Birm.), A.R.I.B.A

Applications are invited for the full time post of STUDIO INSTRUCTOR in the School of Architecture, Pittville Pump Room, commencing on 1st September, 1959. Applicants should be qualified with a minimum of three years' office experience. Salary will be in accordance with the Burnham (Further Educational) Scale (Grade B), £650 × £25 to £1,025, plus allowances for training, qualification, and office experience, plus 5 per cent.

Forms of application may be obtained from the Principal. Closing date 7th May, 1959. 3863

ARGYLL COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

Applications are invited from Members of the Royal Institute of British Architects for the post of CHIEF ASSISTANT ARCHITECT at a salary of £1,200 per annum. Applicants should have had considerable experience of architectural practice and in particular knowledge of modern school building with experience in organising large building projects and be capable of supervising assistant staff. Housing accommodation will be made available if necessary.

Applications stating age, present salary, present and previous appointments, details of training and experience, together with the names and addresses of two referees sould be lodged with the County Architect, County Offices, Dunoon, on or before 27th April, 1959.

A. D. JACKSON,
County Clerk.
3872

HARLOW DEVELOPMENT CORPORATION
Three posts of ASSISTANT ARCHITECT, £679—£811 per annum.
Applications invited for short term appointments from candidates who wish to make a contribution and gain experience in a wide field of Architectural work.
One of the posts is for a candidate having planning experience.
Housing accommodation may be made available in suitable cases.
Applications giving full details to be submitted with the names of two referees to the General Manager, Terlings, Harlow, Essex, within ten days. 3805

WESTMORLAND COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT
Applications are invited for the following appointments:—
(*a*) SENIOR ASSISTANT ARCHITECT, A.P.T. IV (£1,025—£1,175).
(*b*) ASSISTANT ARCHITECT, Special Grade (£750—£1,030).
(*c*) ARCHITECTURAL ASSISTANT, A.P.T. II (£725—£845).
(*d*) BUILDING INSPECTOR, A.P.T. II (£725—£845).
(*e*) BUILDING INSPECTOR, A.P.T. I (£575—£725).
Candidates for appointments (*a*) and (*b*) must be Associates of the R.I.B.A. and for (*c*) must have passed the Intermediate Examination or equivalent. The successful applicants for (*d*) and (*e*) will be required to provide a car for which the Council's scheme of allowances will apply.
Previous local authority experience will be an advantage.
Applications stating age, technical training, qualifications, experience, previous and present appointments with salary, and the names of two referees, to County Architect, County Hall, Kendal, by Friday, 1st May, 1959. 3833

BOROUGH OF WIDNES
BOROUGH ARCHITECT'S DEPARTMENT
ARCHITECTURAL ASSISTANT
Applications are invited from registered Architects with A.R.I.B.A. and Planning qualifications mainly for work in connection with new Public Baths. Salary within Special Grade (£750 × £40 to £1,030) according to qualifications and experience. Housing accommodation if needed.
N.J.C. Conditions. Superannuation scheme. Applications quoting two referees to Borough Architect, Brendan House, Widnes Road, Widnes, by April 30, 1959. Canvassing disqualifies.
FRANK HOWARTH,
Town Clerk.
Town Hall,
Widnes.
8th April, 1959. 3807

YORKSHIRE ELECTRICITY BOARD
HEAD OFFICE
ARCHITECTURAL DRAUGHTSMEN
Applications are invited for the above posts in the Chief Engineer's Department.
The duties include the preparation of working drawings and details of operational and non-operational buildings. Applicants should have a sound knowledge of Industrial and Commercial Building construction.
Salary—N.J.B. Schedule D Grade 5, £790/£20/£890 per annum.
Applications, giving full details of age, qualifications and experience, together with the names of two referees, should be forwarded to The Secretary, Yorkshire Electricity Board, Wetherby Road, Scarcroft, Nr. Leeds, not later than 8th May, 1959. 3935

CITY OF SHEFFIELD
CITY ARCHITECT'S DEPARTMENT
Applications are invited for the following appointments on the Staff of the City Architect, Mr. J. L. Womersley:
(*a*) GROUP LEADER ARCHITECTS. Grade A.P.T. V (£1,175—£1,325).
(*b*) SENIOR ASSISTANT ARCHITECTS. Grade A.P.T. IV (£1,025—£1,175).
(*c*) ASSISTANT ARCHITECTS. Grade S.C. (£750—£1,030).
Architects with enthusiasm and determination are required to help rebuild this industrial hill city.
The above vacancies are for work in connection with large scale redevelopment schemes on which building work will commence early in 1960. There are excellent prospects of further work on interesting schemes of urban renewal.
Commencing salaries within the above grades according to qualifications and experience.
Applications from students completing full time courses this year will be considered for posts (*c*).
Applications stating post applied for, age, education and training, qualifications, present and past appointments (with dates and salaries), experience and the names of two persons to whom reference may be made should reach me not later than Tuesday, 5th May, 1959.
JOHN HEYS,
Town Clerk.
Town Hall,
Sheffield, 1. 3933

LONDON COUNTY COUNCIL
ARCHITECTS, Grade III, required for Housing, Schools and General Divisions. Full and varied programme of new work including schools, multi-storey flats and Town Development. Up to £1,090 according to qualifications and experience. Particulars and application form from Hubert Bennett, F.R.I.B.A., Architect to Council, AR/EK/25/29, County Hall, S.E.1. (441) 3310

CIVIL SERVICE. QUANTITY SURVEYORS and ASSISTANT QUANTITY SURVEYORS required by Admiralty, War Office, Air Ministry, Ministry of Works, Ministry of Education and Department of Scientific and Industrial Research, in most parts of United Kingdom and occasionally overseas. Although unestablished, these posts have long term possibilities. London salaries for those suitably qualified and experienced over 25 years of age, range from £830 to £1,300 per annum. Vacancies also exist for QUANTITY SURVEYING ASSISTANTS and others having some experience in Quantity Surveying, at salaries ranging from £350 per annum upwards. Write quoting reference J.Q.S. to Room 403, M.L.N.S., Technical and Scientific Register (J), 26, King Street, London, S.W.1. 3887

CARMARTHENSHIRE COUNTY COUNCIL
ARCHITECT'S DEPARTMENT
Applications are invited for the following appointments:—
(*a*) ASSISTANT ARCHITECT.
Salary Grade Special Scale £750—£1,030 per annum.
(*b*) ARCHITECTURAL ASSISTANT.
Salary Grade A.P.T.I., £575—£725 per annum.
Candidates for post (*a*) must be A.R.I.B.A., and those for post (*b*) must have passed the Intermediate Examination of the R.I.B.A.
Details of qualifications, experience and present salary, with copies of three recent testimonials, to County Architect, County Hall, Carmarthen, not later than Saturday, 2nd May, 1959.
W. S. THOMAS,
Clerk of the County Council.
County Hall,
Carmarthen. 3891

COUNTY COUNCIL OF ROSS AND CROMARTY
COUNTY ARCHITECT'S DEPARTMENT
Applications are invited from qualified Architects for appointments as SENIOR ASSISTANT ARCHITECTS in the Dingwall Office of the County Architect on a salary scale £1,005—£1,200.
Applicants must be Associates of the Royal Institute of British Architects with experience in school design.
Applications giving details of training and experience with attached copies of three recent testimonials should be lodged with THE COUNTY ARCHITECT, PETER S. LEASK, A.R.I.B.A., A.M.T.P.I., TULLOCH STREET, DINGWALL, not later than Saturday, 9th May, 1959.
W. D. ROSS,
County Clerk.
County Buildings,
Dingwall. 3894

CITY AND COUNTY OF NEWCASTLE UPON TYNE
CITY ARCHITECT'S DEPARTMENT
The City Architect will be pleased to receive applications from suitably qualified persons for the following ARCHITECTURAL vacancies in his Department:
GENERAL & NEW TOWN HALL SECTION: A.P.T. V; A.P.T. IV: Special Class and A.P.T. II.
EDUCATION SECTION: A.P.T. V; A.P.T. IV; and A.P.T. II.
HOUSING SECTION: A.P.T. IV and Special Class.
RE-HOUSING SECTION: A.P.T. IV and A.P.T. II.
The salaries applicable to the above grades, which are subject to the implementation of the recent award of the National Joint Council, are at present:—

A.P.T. V	—	£1,175—£1,325 per annum.
A.P.T. IV	—	£1,025—£1,175 per annum.
Special Class	—	£750—£1,030 per annum.
A.P.T. II	—	£725—£845 per annum.

The Department is engaged upon an interesting and varied programme of work, including Multi-storey Flats, Redevelopment Schemes, Further Education projects, New Town Hall, and a variety of General building works.
The appointments will be subject to the provisions of the Local Government Superannuation Acts, 1937-1953, and to one month's notice on either side. Successful candidates will be required to pass a medical examination.
Application forms and full particulars may be obtained from George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle upon Tyne, 1. Applicants must state the Section and Grade applied for when requesting particulars.
Closing date for receipt of completed applications: SATURDAY 16th MAY, 1959.
JOHN ATKINSON,
Town Clerk.
Town Hall, Newcastle upon Tyne, 1. 3898

ADMINISTRATIVE COUNTY OF LEICESTER
ASSISTANT ARCHITECTS £750—£1,030 according to experience. Candidates must have passed parts I and II of the R.I.B.A. Examination, have had office experience and be capable of taking charge of small contracts. Lodging allowance and removal expenses may be paid to a married man. Apply on forms obtainable from County Architect, 123 London Road, Leicester. 3911

BIRMINGHAM REGIONAL HOSPITAL BOARD
ARCHITECTURAL ASSISTANTS required. Salary scale £545—£765 p.a. Point of entry according to experience. Intermediate R.I.B.A. essential. Superannuable. Apply naming two referees to Secretary, R.H.B., 10, Augustus Road, Birmingham 15, by 8th May, 1959. 3871

HORNCHURCH URBAN DISTRICT COUNCIL
CLERK OF WORKS (BUILDING)
Applications are invited from suitably qualified persons for the above temporary appointment. Applicants must have had considerable experience in the supervision of housing construction, have a sound knowledge of all the trades in connection therewith, including the setting out and measurement of all works on the site, and the keeping of the necessary records.
The salary to be paid is within the range of the Miscellaneous Division Grade VI, £685—£745 per annum, and in addition, an amount equivalent to London Weighting will be paid.
The post is subject to the appropriate N.J.C. Conditions of Service, the normal hours worked in the building trade, a medical examination and termination by one month's notice on either side.
Applications, on the forms provided by the undersigned, stating qualifications, experience and the names of two referees, must be returned not later than Saturday, 2nd May, 1959.
P. L. COX,
Clerk of the Council.
Council Offices,
Billet Lane,
Hornchurch. 3909

BOROUGH OF BASINGSTOKE
ARCHITECT'S DEPARTMENT
Interesting work offered in a rapidly expanding town to an Associate R.I.B.A. as a SENIOR ASSISTANT. Salary Range £750 × £40 — £1,030 according to experience. Housing accommodation available. N.J.C. conditions; post pensionable; medical examination. Applications giving details of age, training, experience, etc., and two referees, to Town Clerk, Municipal Buildings, Basingstoke, by 11th May, 1959. Enthusiasts only. Canvassing disqualifies. 3874

CAERNARVONSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT
Applications invited for post of ASSISTANT ARCHITECT, A.P.T. II/III (£725—£1,025) from candidates who have passed the Final or Special Final Examination of the R.I.B.A. or their equivalent at a recognised school of Architecture. Commencing salary according to qualifications and experience. Further particulars and application forms from Clerk of County Council, Caernarvon. Closing date 9th May. 3883

METROPOLITAN BOROUGH OF WANDSWORTH
SENIOR ASSISTANT ARCHITECT
Applications invited for this post. Grade A.P.T. IV—£1,055 rising to £1,205. Applicants must be Associates of the R.I.B.A. with experience in design and planning of multi-storey blocks of flats and supervision of their erection. Forms obtainable from the Borough Engineer must reach me by 6th May.
J. NOEL MARTIN,
Town Clerk.
Municipal Buildings,
Wandsworth, S.W.18. 3902

BIRMINGHAM REGIONAL HOSPITAL BOARD
SENIOR ASSISTANT ARCHITECTS required—£1,050 to £1,245 per annum. Applicants must be registered architects having passed the requisite examinations. Experience of hospital planning and construction an advantage. Ability to control drawing-office staff essential. Superannuable. Apply giving details of training, present appointment and previous experience and naming three referees, to Secretary, 10 Augustus Road, Birmingham 15, by 11th May. 3914

COUNTY BOROUGH OF WOLVERHAMPTON
APPOINTMENT OF PLANNING ASSISTANT
Applications are invited for the appointment of Planning Assistant in the Planning Section of the Borough Engineer and Planning Officer's Department. Salary in accordance with APT Grade 1 (£575—£725 per annum), commencing salary in accordance with qualifications and experience. Candidates should be good draughtsmen preferably with the experience in a planning office.
N.J.C. Conditions of Service. One month's notice on either side. Medical Examination. Superannuable Post.
Applications stating age, training and experience, naming two referees, to the Borough Engineer, Town Hall, Wolverhampton, by the 28th April. 3906

DEPARTMENT OF HEALTH FOR SCOTLAND
The Architectural Division which covers work on housing, hospitals, schools, local authority buildings, agricultural colleges and State institutions and includes development work, has vacancy in Edinburgh for an ASSISTANT ARCHITECT (non-pensionable post). Salary range £805—£1,260. Write Establishment Officer, Department of Health for Scotland, Room 30, St. Andrew's House, Edinburgh, 1, for application form. Closing date Friday, 15th May, 1959. 3884

ROYAL INFIRMARY OF EDINBURGH AND ASSOCIATED HOSPITALS
ARCHITECTURAL ASSISTANT
Applications are invited for the above appointment. Candidates should preferably hold the Intermediate certificate of the R.I.B.A., and must be experienced. Starting salary £525—£605 per annum, according to age and experience. Applications, giving details of age, qualifications and experience, together with the names of two referees, should be addressed to the Personnel Officer, Royal Infirmary, Edinburgh, 3. 3754

CITY OF PLYMOUTH
CITY ARCHITECT'S DEPARTMENT

Applications are invited for the appointment of:—

(a) TWO ASSISTANT ARCHITECTS (Special Scales £750 × £40—£1,030).

(b) THREE ASSISTANT ARCHITECTS, Grade A.P.T. I (£575—£725).

Applicants for (a) must be Registered Architects, and (b) must have passed the intermediate R.I.B.A. examination and preference will be given to members of the R.I.B.A.

Application forms obtainable from the City Architect, Seymour Road, Plymouth, accompanied by copies of not more than three recent testimonials and/or names of persons to whom reference may be made, returnable not later than the 27th April, 1959. 3726

COUNTY BOROUGH OF NORTHAMPTON
ARCHITECTURAL ASSISTANT, A.P.T. II
£725—£845)

Application forms, returnable by 5th May, and full details may be obtained from Borough Architect, Guildhall, Northampton.

C. E. VIVIAN ROWE,
Town Clerk.
3882

Architectural Appointments Vacant

4 lines or under, 9s. 6d.; each additional line, 2s. 6d. Box Number, including forwarding replies, 2s. extra

ARCHITECTURAL firm in Home Counties with varied practice, require ASSISTANTS. Intermediate, qualified, or at that standard. State experience and salary required to Box 3089.

ARCHITECTS' co-partnership require ASSISTANTS for working drawings and detailed design. Salary according to experience. Write 44 Charlotte Street, London, W.1, or telephone Langham 5791. 3265

W. H. WATKINS, GRAY & PARTNERS require ASSISTANT for interesting hospital work, pension scheme in operation. Write or phone, 57, Catherine Place, S.W.1. Victoria 7761. 3200

ARCHITECTURAL ASSISTANTS required. Starting salary £915 per annum. Glasgow office, five-day week. Schools, Offices, etc. State experience. D. Harvey & A. Scott, 2, Lynedoch Place, Glasgow, C.3. 3368

ARCHITECTURAL ASSISTANTS required. Starting salary £760 per annum. Glasgow office, five-day week. State experience. D. Harvey & A. Scott, 2, Lynedoch Place, Glasgow, C.3. 3369

ARCHITECTURAL ASSISTANTS required about Intermediate standard. Opportunities for good all round experience. Please write stating age, experience and Salary required. Box 3386.

ARCHITECT'S ASSISTANTS required. Intermediate and Final standard, also Surveyors. Salaries from £600 to £1,000 per annum. Offices in Stroud and Dursley, and site office in Bristol. Write giving details of qualifications and experience to Ellery Anderson, Roiser & Falconer, Imperial House, Stroud, Gloucestershire. 3463

LLEWELLYN SMITH & WATERS require SENIOR and JUNIOR ASSISTANTS for a widely varied programme of work. Salary according to experience. Please write stating qualifications, experience and age to 103 Old Brompton Road, S.W.7. 3719

EXPERIENCED SENIOR MEN required for interesting commercial projects in London. Holiday arrangements will be recognised. Five-day week. Salary according to experience. Phone City 8811. 3694

LONDON Building Surveyors' Architectural Department require JUNIOR for general duties. Age 17-18. Good prospects for advancement. Write Box 3665, or ring MET. 8001 for appointment.

ASSISTANT of Intermediate/Final standard required in Croydon office. Varied and interesting work. Five-day week, holiday this year. Apply by letter to Hugh Macintosh & Partners, 33/35, High Street, Croydon. 3683

A DESIGNER with Architectural experience, imagination and progressive ideas required. Apply Trehearne & Norman, Preston & Partners, Architects & Surveyors, 83, Kingsway, W.C.2. HOL. 4071. 3659

J. W. POLTOCK & ASSOCIATES require Intermediate standard ASSISTANT with office experience. Phone Victoria 6100. 3820

ARCHITECTURAL MODELS of highest standard speedily executed. Competitive quotes on application. Phone Mountview 0902. 3819

BOURNVILLE VILLAGE TRUST have vacancy for keen and energetic ASSISTANT, Intermediate or Finalist, with practical experience, capable of preparing working drawings and specifications, varied work; pleasant working conditions and pension scheme. Good salary according to experience, possibility of house. Apply Selby J. Clewer, F.R.I.B.A., Bournville Village Trust, Birmingham 30. 3808

SIR ROBERT TASKER & PARTNERS immediately require ARCHITECTURAL ASSISTANTS (Final and Intermediate) in office with varied practice. Write to No. 3 Field Court, Gray's Inn, W.C.1, or telephone Chancery 5957 stating salary required. 3803

WELLS, HICKMAN & PARTNERS need a keen ARCHITECTURAL ASSISTANT capable of working without supervision. Several years' experience, sound knowledge of construction and very good draughtsmanship are vital. Salary £750—£850. Please ring TER 1404 for appointment. 3801

ASSISTANTS required, Intermediate to Final standard, for interesting Commercial and Industrial work. Salary commensurate with ability and enthusiasm. Good office conditions, lunch facilities. Apply in writing to Alan A. Briggs, F.R.I.B.A., 10, Fleet Street, London, E.C.4. 3792

KATZ AND VAUGHAN have vacancies for one Senior and one Intermediate ASSISTANT. 208a, Regent Street, W.1. REGent 5401. 3785

GUILDFORD. Expanding firm of Architects urgently require ARCHITECTURAL ASSISTANTS for their Guildford Office. Salaries £500—£800 are envisaged according to experience. Applications in writing to Scott, Brownrigg & Turner, 32 London Road, Guildford. 3747

SENIOR ARCHITECTURAL ASSISTANT required to work in large Contractor's Head Office. Must be fully conversant with Housing and Flat Development. Apply Architectural Department, Sir Lindsay Parkinson & Co. Ltd., 6 Lambeth Road, St. George's Circus, London, S.E.1. 3704

ENTHUSIASTIC ASSISTANT urgently required in small modern practice. Salary by arrangement. Apply in writing stating present salary to Messrs. Godsmark & Miller-Williams, 37a, Tubwell Row, Darlington. 3793

ARCHITECTURAL ASSISTANTS required for small London office. High standard of draughtsmanship required. Salary by arrangement. Write to Box 3739.

ARCHITECTURAL ASSISTANTS required for small St. Albans office. High standard of draughtsmanship required. Salary by arrangement. Write to Box 3740.

JUNIOR ARCHITECTURAL ASSISTANT required by a world-wide organisation with Head Office in London. Applicants must be probationers of the R.I.B.A. approaching Intermediate standard, and have had at least three years' experience in the preparation of working drawings and details. Apply in writing giving full information to Personnel Officer, Cable and Wireless Limited, Mercury House, Theobalds Road, London, W.C.1. 3733

WANTED, ARCHITECTURAL ASSISTANTS, qualified and Intermediate standard, for posts in Huddersfield or Shrewsbury Offices. Interesting responsible work—Schools, Factories, Hospitals, Churches, etc. Pension scheme. Abbey & Hanson, 11, Cloth Hall Street, Huddersfield. Tel. 225. 3757

ARCHITECTS' ASSISTANT required immediately for varied and interesting work in busy London Office. Intermediate to Final standard required. Salary according to ability. Apply: George Baines & Syborn, Chartered Architects, 121, Victoria Street, Westminster, S.W.1. 3752

FIRM of private architects in the Bahamas require two male or female JUNIOR ASSISTANTS on three-year Colonial-Office-type contracts. Applicants must be single, preferably Student Members of the R.I.B.A., should be good draughtsmen and must have a good general knowledge of construction and office procedure. Return passage to Bahamas would be paid and the salary is £1,200 per year. Applicants will be interviewed in London during the third week in May and should be prepared to take up employment not later than July. Please reply to Box 3771.

SENIOR (1) and INTERMEDIATE (3) ARCHITECTURAL ASSISTANTS required for work on Schools, Industrial, Commercial, Office and Church, projects. Scope and opportunities for suitable men with initiative. Please write or telephone: Dawe, Carter & Partners, 33, Clarendon Road, Watford, Herts. Telephone: Watford 27296/7/8. 3775

TEN ASSISTANTS are required by Pite Son & Fairweather. There are vacancies for all grades from Intermediate standard. Applicants should write to 6, Queen Anne's Gate, Westminster, S.W.1, giving details of qualifications, experience and salary required. 3776

SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS required for varied range of contemporary work. Write with full details of previous experience, age, nationality and salary required to: Michael Lyell, A.R.I.B.A., 16, Yeoman's Row, London, S.W.3. 3826

THE Lincoln office of Denis Clarke Hall, Sam Scorer and Roy Bright require an ASSISTANT for about a year. He or she must be qualified, school trained with a minimum of 3-5 years' office experience. Salary £1,250 p.a. Apply 200 High Street, Lincoln or ring 10734. 3829

TWO ARCHITECTURAL ASSISTANTS, Intermediate standard, required for very large scheme. Considerable office experience is essential. Office West End. Good salary and bonus. Box 3869.

ARCHITECTURAL ASSISTANTS, Final and Intermediate, required by progressive firm of Birmingham architects. Work involves preparation of designs, working drawings, site supervision, etc., on numerous types of work. Salary by arrangement. Box 3834.

ARCHITECTURAL ASSISTANT qualified with some experience. ARCHITECTURAL ASSISTANT, Intermediate standard, for varied contemporary work in medium sized office. Salary by arrangement. State full particulars to Hadfield, Cawkwell & Davidson, 17, Broomgrove Road, Sheffield, 10. 3835

ASSISTANT required, R.I.B.A. Intermediate standard, for varied and interesting work. Successful candidate will frequently visit work upon which he is engaged, in and out of London. Salary to £750 according to ability. Poulton and Freeman, F./F.R.I.B.A., 6a, Wyndham Place, W.1. Phone: Ambassador 2211. 3836

ARCHITECTURAL ASSISTANTS of Final and Intermediate standard, with good industrial experience, required for work on Atomic Power Stations. Excellent opportunities in an expanding London office. Apply stating age, experience and salary range to The Secretary, Nuclear Civil Constructors, 52/55, Carnaby Street, London, W.1. 3837

QUALIFIED ASSISTANT required for varied and interesting work in small Westminster branch office of Provincial Architects. Salary according to age and experience. Box 3821.

ARCHITECTURAL ASSISTANT of Intermediate/Final standard required immediately for expanding practice in Stratford-upon-Avon. Please write giving details of qualifications, experience and salary required. A. Cave-Browne-Cave, A.R.I.B.A., 17, Greenhill Street, Stratford-upon-Avon. 3904

SENIOR ASSISTANT required of Intermediate/Final standard. Sound training, experience private practice. Accommodation difficult, single man therefore preferred. Busy private practice, Jersey, Channel Islands. Apply, stating salary required, when free, etc., to Box 3895.

AN interesting SALES POSITION for young man with drive and ability who has knowledge of the Building Trade, particularly in regard to contacting Architects. Position vacant Birmingham/Manchester area. Own car advantageous. Please write, giving full details of experience, to Box 3905.

SENIOR and INTERMEDIATE ASSISTANTS invited to join an expanding Architect's practice in Edgbaston, Birmingham, which offers exceptional prospects. Box 3906.

IN connection with interesting redevelopment, Oxford University, JUNIOR ASSISTANT, Intermediate standard, required. Starting May. Small private firm, west central London. Apply Box 3831.

ASSISTANT ARCHITECTS with one to three years' office experience required. Apply with full particulars to: Farmer and Dark, Romney House, Tufton Street, Westminster, S.W.1. 3903

QUALIFIED ASSISTANT ARCHITECTS required, minimum three years' office experience, preferably in London. Salary according to ability and experience. Theo. H. Birks, 38, Portland Place, W.1. LAN. 7236. 3900

INTERMEDIATE standard ASSISTANTS required, minimum two years' office experience. Salary according to ability. Theo. H. Birks, 38, Portland Place, W.1. LAN. 7236. 3899

EXPERIENCED ARCHITECTURAL ASSISTANT required for general and commercial practice. Must be capable of preparing working drawings and specifications. Apply, stating age, experience, qualifications and salary required, to Duncan Clark & Beckett, L.L/A.R.I.B.A., F.R.I.C.S., Architects and Surveyors, 7, West Stockwell Street, Colchester. 3896

ASSISTANT about Intermediate standard to work directly with Architect of Development Company in London on new projects. The position carries responsibility and opportunity to gain sound knowledge of all aspects of an architect's practice. Box 3907.

QUALIFIED SENIOR ASSISTANTS and ARCHITECTURAL ASSISTANTS of Intermediate standard required for contemporary practice in the London, Leeds and Chatham offices. Apply in writing, stating age, experience and salary required, to H. A. Halpern, A.R.I.B.A., 26a, High Street, Chatham, Kent. 3893

PLAYNE & LACEY immediately require ARCHITECTURAL ASSISTANTS (Final and Intermediate) in office with varied practice. Write 19, Queen Anne's Gate, Westminster, S.W.1, or telephone WHI. 2552, stating salary required. 3892

PETER DUNHAM, WIDDUP & HARRISON require ASSISTANT of about Final stage. Please write to 29, Bedford Square, W.C.1. JUNIOR ASSISTANT also required at 2, Union Street, Luton, Beds. 3885

ARCHITECTURAL ASSISTANT required. Age 25—35. Full qualifications not an essential as experience in an architect's office and ability to produce working drawings. Apply in writing, stating qualifications, to Oliver Law & Partners, F/F.R.I.B.A., 36, Ebury Street, S.W.1. 3890

ARCHITECTURAL ASSISTANT required. Intermediate standard and about two years' office experience. Progressive office with interesting and varied work. Salary according to ability. Write or telephone Joseph Mendleson & Partners, 71, Wimpole Street, W.1. (Hunter 0361.) 3888

ARCHITECTURAL ASSISTANT required for North Devon Office. Box 3886.

ARCHITECTURAL ASSISTANT of Intermediate/Final standard required for interesting general practice; good light offices; holiday arrangements with pay will stand. Salary according to ability and experience. Full details to Bowden Son & Partners, 3, Adelaide Terrace, N.1. 3881

JAMES A. ROBERTS, Chartered Architect, Chanelle House, 86, New Street, Birmingham. 2 (MIDland 4315/6), requires Intermediate and Final standard ASSISTANTS. 3880

WANTED immediately—sensible, sole ASSISTANT for small office in Gray's Inn, W.C.1. Box 3879.

SENIOR ASSISTANT (Final standard) with experience or interest in commercial building and shop design required by Staff Architect's Department, Saxone Shoe Company, Ltd. Commencing salary around £1,000 according to experience. Flat accommodation available on reasonable terms. Five-day week; superannuation after probationary period. Full particulars to T. J. McDowall, D.F.C., A.R.I.B.A., Saxone Shoe Co. Ltd., 192-208, Pentonville Road, N.1. 3...

ROWNTREE & CO. LTD., have a vacancy in their Architects' Department for an ARCHITECTURAL ASSISTANT. Applications are invited from men of Final R.I.B.A. standard, who are preferably under 30 years of age and have experience and knowledge of factory construction and alteration. Please write for further details and application form to The Staff Officer (Men), Rowntree & Co. Ltd., The Cocoa Works, York. 3877

DRAUGHTSMAN, capable of preparing working drawings, details, etc., with minimum supervision, for rapidly expanding estate developers. Full details of age, experience and salary required, to Prowting Ltd., 127, High Street, Ruislip, Middlesex. 3876

OSCAR GARRY & PARTNERS require ASSISTANTS, minimum five years' office experience. Varied work—industrial, commercial and domestic buildings. Telephone: WELbeck 2507 for an appointment. 3929

GLOUCESTER.—Brian S. Tait, A.R.I.B.A., has vacancy for Senior or Intermediate ASSISTANTS. Salary is dependent upon experience and ability. Five-day week, interesting work, pleasant surroundings. 19, College Green, Gloucester. 3875

ARCHITECTURAL AND SURVEYING ASSISTANT—Croydon and West Kent Headquarters, at Croydon, South Eastern Electricity Board. Salary £640—£700 per annum plus London weighting under N.J.C. Agreement, Grade 2. Superannuable. Applications quoting AJ and naming two referees on forms from Croydon and West Kent Manager, Seeboard, Wellesley Road, Croydon, by 6th May, 1959. 3873

MARTINS BANK LIMITED

THE Bank wishes to engage a fully qualified ARCHITECT for service in Head Office in Liverpool.

Commencing salary will be appropriate to qualifications and experience. There is a contributory pension scheme and house purchase assistance will be available.

Applicants, who must be in the 30—40 age group, should write, in confidence, giving personal details and full information regarding qualifications and experience to the Chief General Manager, Martins Bank Limited, 4, Water Street, Liverpool, 2. 3864

NORMAN & DAWBARN require keen young ASSISTANT, man or woman, to work in their Technical Information Library. Knowledge of materials not essential, but should be interested in building. Tidy and methodical and knowledge of typing would be useful. Salary up to £500 p.a. for the right person. Write, giving particulars, to 7, Portland Place, London, W.1, or telephone LANgham 8011. 3936

JACK GODFREY-GILBERT, F.R.I.B.A., requires ASSISTANT able to take responsibility to help in small but busy private office with general practice. Apply in writing to: 3, The Broadway, Wimbledon, S.W.19. 3930

JUNIOR ARCHITECTURAL ASSISTANT required in Manchester for Bank Architect's Department to work on extensive programme of modernisation and new construction. Apply, giving details of age, experience and salary required, to Box 3931.

BASIL SPENCE & PARTNERS require QUALIFIED MEN with at least three years' experience to work on university buildings. Write to 48, Queen Anne Street, W.1, stating experience and also salary required. 3932

£1,250 p.a. according to experience. Qualified ASSISTANT ARCHITECT required in medium sized expanding private practice. Permanent position with varied projects mainly commercial. Also Intermediate grade ASSISTANTS required. Telephone MAYfair 6408. C. Edmund Wilford & Son, F/A.R.I.B.A., 2, Green Street, W.1. 3934

LARGE Building/Civil Engineering Organization invites applications from qualified Architects for the position of DEPUTY TO DEVELOPMENT GROUP ARCHITECT operating from office in London. Must have a desire for responsibility and be experienced in all levels of Design, Construction, Negotiation and Administration. An excellent opportunity for a man with initiative, energy and enterprise. Attractive salary and conditions, superannuation scheme. ARCHITECTURAL ASSISTANTS of about Intermediate stage are also invited to apply for other appointments within the same Organization, and should be capable of handling projects from sketch plan stage onwards. In this category there is a possibility of an overseas appointment. All these posts offer opportunity of research into existing and original building techniques. Write Box 3927.

PARTNERSHIP will be offered after trial period as assistant to optimistic young architect with initiative. Must be outstanding designer, have an understanding of structures and be a first class draughtsman. Reply fully enclosing small selection of drawings, photograph, and state minimum salary acceptable now in view of considerable prospects. Eric Heaf, 6 Edgebrook Road, Sheffield, 7. 3921

ARCHITECT with experience, preferably qualified, required to run a job. Please write, stating age, experience and salary desired, to Architects' Co-Partnership, 44 Charlotte Street, W.1. 3919

SALES PROMOTION ASSISTANT required as technical correspondent by leading manufacturer of prefabricated buildings (Home Counties). Essential characteristics are architectural or building trade background, flair for selling, sound executive sense with ability to write concise and fluent technical sales letters of a high standard. Send full details of education, career, salary, etc., to Box 3852.

SENIOR ASSISTANT requires change. 13 yrs. experience including management large Commercial Contracts. Taking Final shortly. (Not London.) Box 3925.

REQUIRED immediately, SENIOR ARCHITECT, salary about £1,000 depending on experience. Apply: Fitzroy Robinson & Partners, 1, Gray's Inn Square, W.C.1. CHAncery 7751. 3857

HARRY S. FAIRHURST & SON have a vacancy for a SENIOR ARCHITECT in their Manchester office. The work is interesting and varied including academic, scientific, commercial and domestic buildings. Applicants should be experienced and able to take responsibility. There is also a vacancy for an ASSISTANT ARCHITECT; a qualified graduate, not necessarily with extensive experience. Please write, giving the usual details, to 55, Brown Street, Manchester, 2. 3859

URGENTLY required, ASSISTANT capable of taking responsibility. Salary according to ability and experience. F. C. Levitt, F.R.I.B.A., Biggleswade, Bedfordshire. 3860

FIRST class opportunity offered in terms of salary, work and responsibility to ARCHITECTURAL ASSISTANTS with at least five years' practical experience, keen to assist in the preparation of working drawings, and supervision of a large project on the South Coast. Please write, stating age, experience, salary required, to Box 3861.

THE manufacturers of "Middlesex" Timber Prefabricated Buildings require an Intermediate R.I.B.A. ASSISTANT. Apply to Architect's Department, J. E. Lesser & Sons, Ltd., Green Lane, Hounslow, Middlesex (HOU. 7281-7). 3862

ASSISTANT required, Intermediate standard, for small progressive office on the West Side of London; opportunity to gain sound all round experience. Hammond J. Harvey, 8-10, King Street, W.6. 3865

ARCHITECTURAL ASSISTANTS required by Messrs. L. A. Culliford & Partners, F/F/A.R.I.B.A., 47, Essex Street, Strand, London, W.C.2. Salaries £500—£800 according to qualifications and experience. Good prospects in varied practice including large commercial and industrial buildings. 3868

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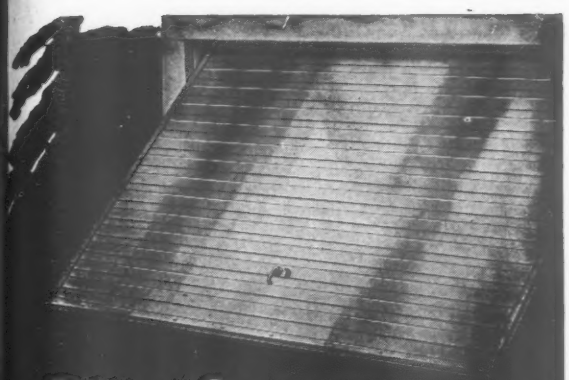

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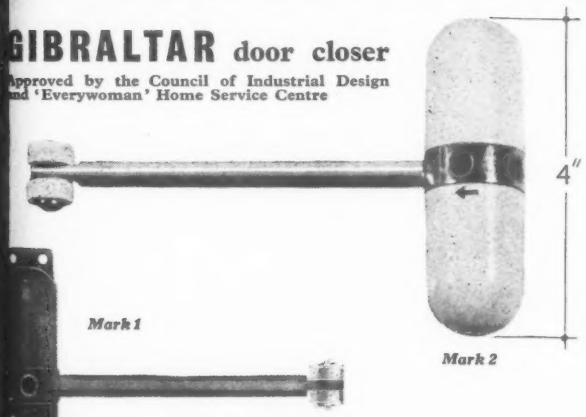

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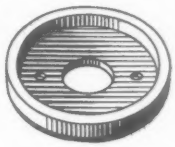

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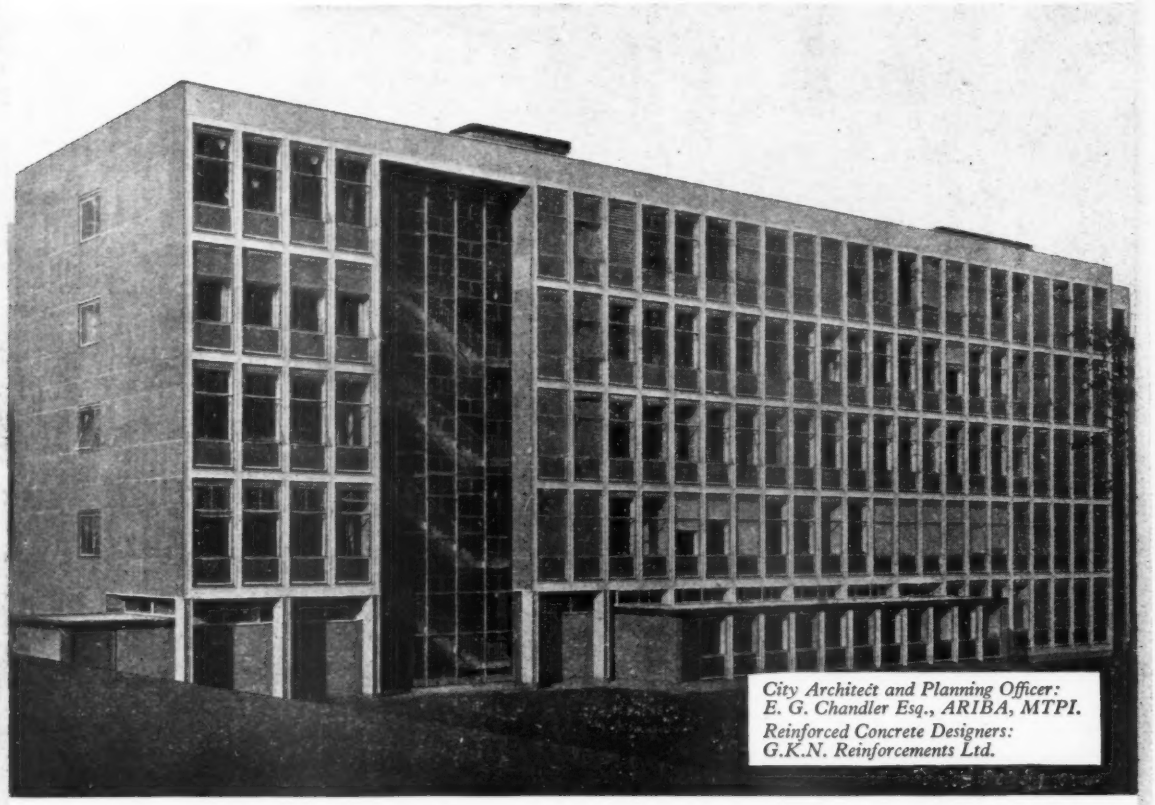

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