THE ARCHITECTS' JOURNAL

standard contents

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

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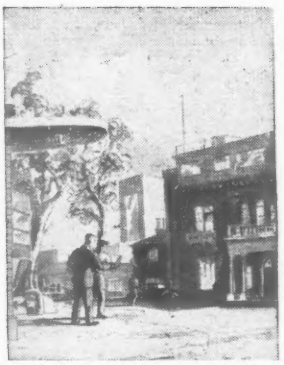
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ie one week, Ig to Z the next. In all cases where the town is not mentioned the word LONDON is implicit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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhampstead, Herts.	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 5, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
APRR	Association for Planning and Regional Reconstruction. 34, Gordon Square, W.C.1.	Euston 2158-9
ArchSA	Architectural Students' Association. 34 36, Bedford Square, W.C.1.	
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Welbeck 9738
ASB	Architectural Science Board of the Royal Institute of British Architects. 66, Portland Place, W.1.	Langham 5721
AScW	Association of Scientific Workers. 15, Half Moon Street, Piccadilly, W.1.	Grosvenor 4761
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre. 9, Conduit Street, W.1.	Mayfair 8641/6
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 17, Amherst Road, Ealing, W.13.	Perivale 6869
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Flaxman 7766
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BIAE	British Institute of Adult Education. 29, Tavistock Square, W.C.1.	Euston 5385
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Millbank, S.W.1.	Whitehall 5140
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 2246
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. 28, Victoria Street, S.W.1.	Abbey 3333
BTE	Building Trades Exhibition. 4, Vernon Place, W.C.1.	Holborn 8146/7
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Borough Architect, Town Hall, Newport, Mon.	Newport 3111
CAS	County Architects Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Chichester 3001
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611
CDA	Copper Development Association. Kendals Hall, Radlett, Herts.	Radlett 5616
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7, Zurich, Switzerland.	
COID	Council of Industrial Design. Tilbury House, Petty France, S.W.1.	Whitehall 6322
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.	Sloane 4280
CUJC	Coal Utilization Joint Council. 3, Upper Belgrave Street, London, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DOT	Department of Overseas Trade. 35, Old Queen Street, S.W.1.	Victoria 9040
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 8, Buckingham Palace Gdns., S.W.1.	Sloane 2837
FASSC	Federation of Association of Specialists and Sub-Contractors, 5, Arundel Street, Strand.	Temple Bar 6633
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FOB 1951	Festival of Britain 1951. 2, Savoy Court, Strand, W.C.2.	Waterloo 1951
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4041
FS (Eng.)	Faculty of Surveyors of England. Buckingham Palace Gdns., S.W.1.	Sloane 2837
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 27, Grosvenor Place, S.W.1.	Sloane 2844
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1.	Sloane 5615
ICA	Institute of Contemporary Arts. 17-18 Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. Great George Street, S.W.1.	Whitehall 4577
IFE	Institution of Electrical Engineers. Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215

Fo



David Cobb, R.O.I., made this drawing for the Williams and Williams series 'Window Makers at Work.'

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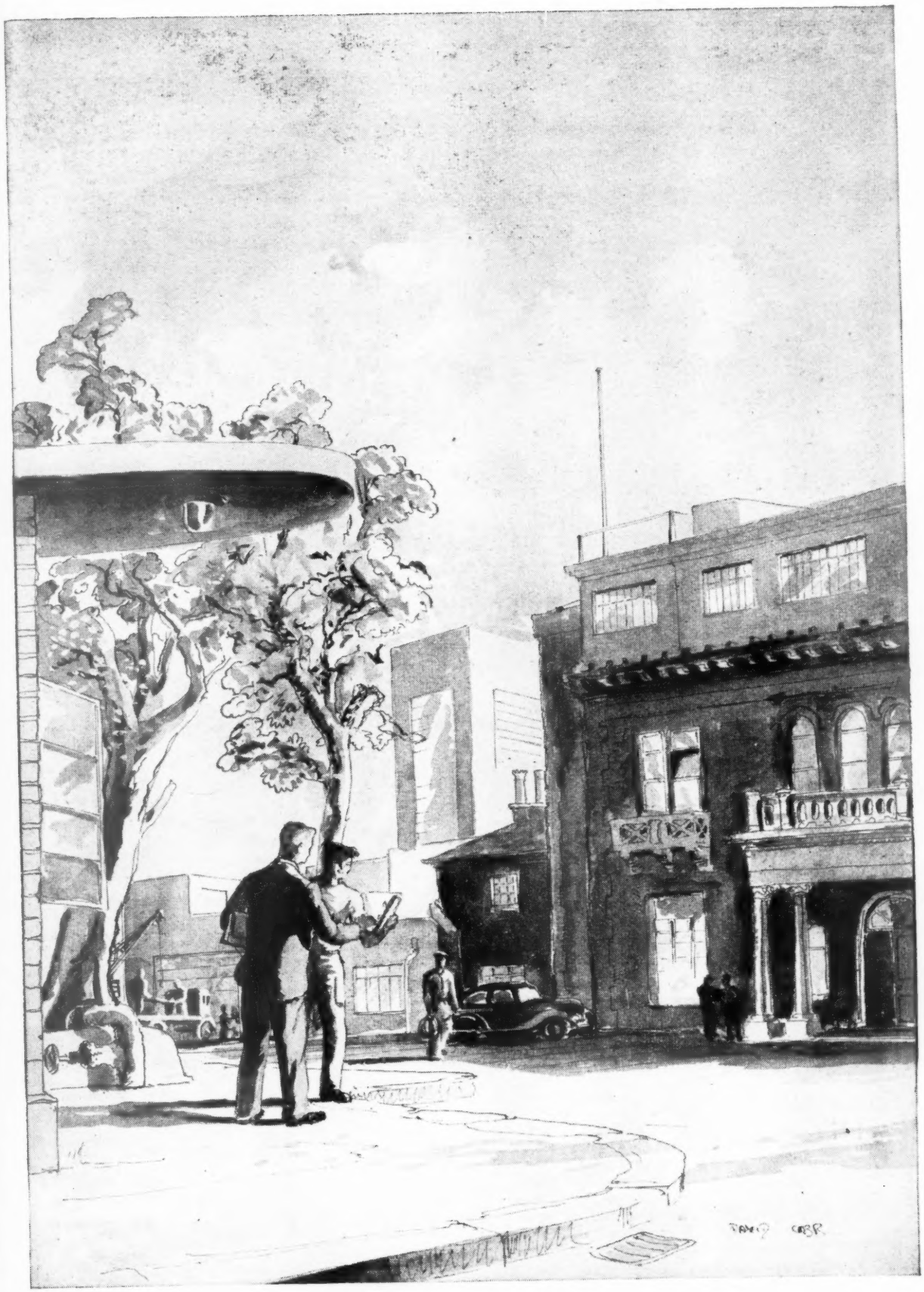

Wheatly Quarry Tile Floor in Generator Room, Shawinigan Water & Power Co., Quebec, Canada.

Wheatly 6″ x 6″ x ¾″ Red Quarries supplied by Webster & Sons Ltd., Montreal.

Specimens of Wheatly Tiling may be seen at the Building Centre, London. Wheatly products include Single-lap Roofing Tiles, Ridge Tiles (blue and red), Floor Quarries and Briquette Fireplaces.

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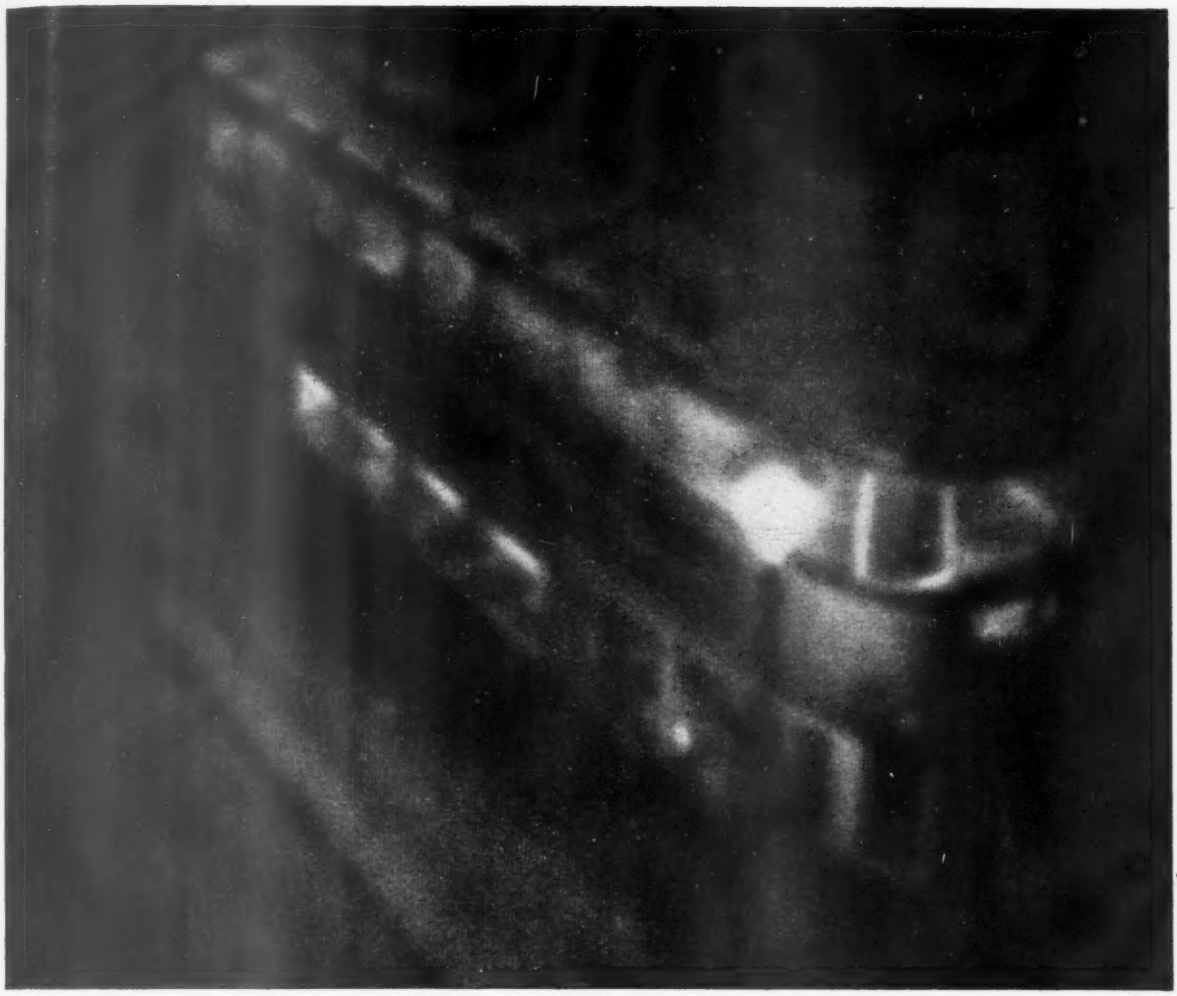

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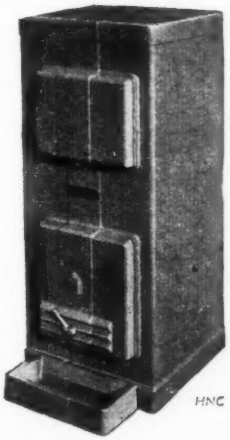

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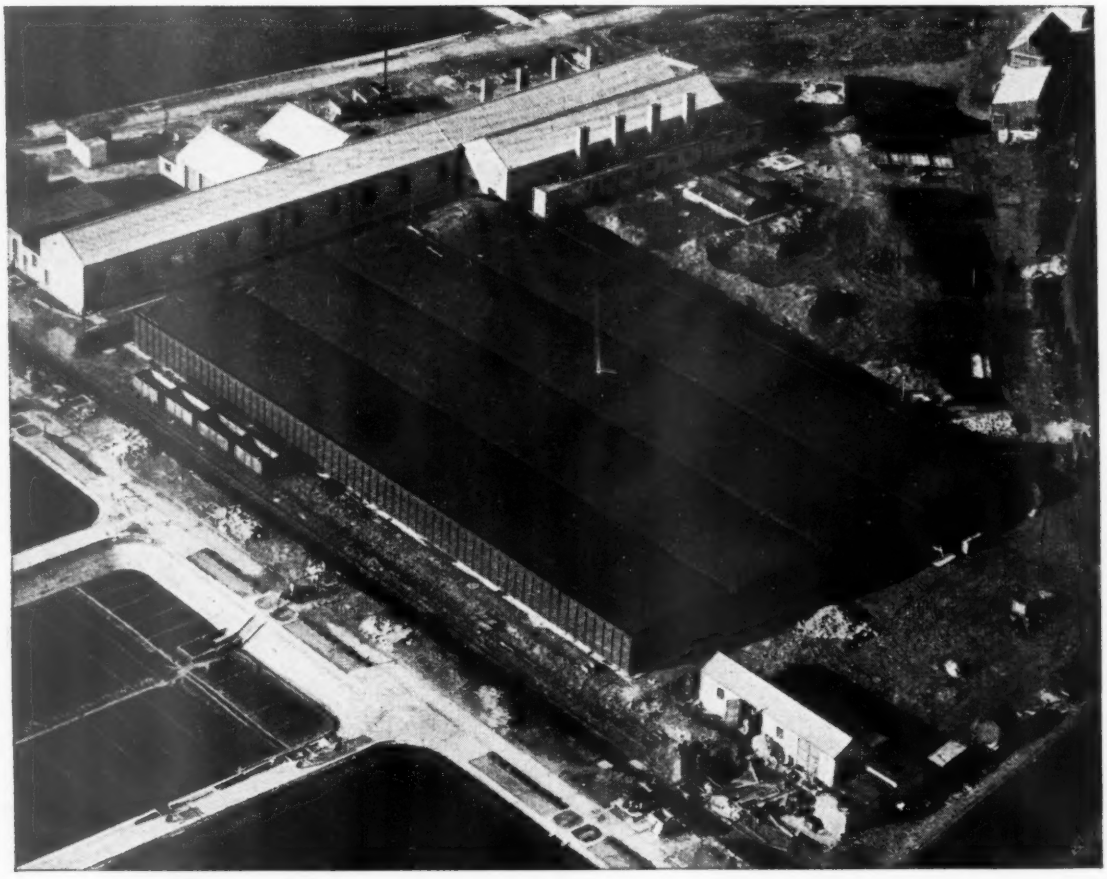

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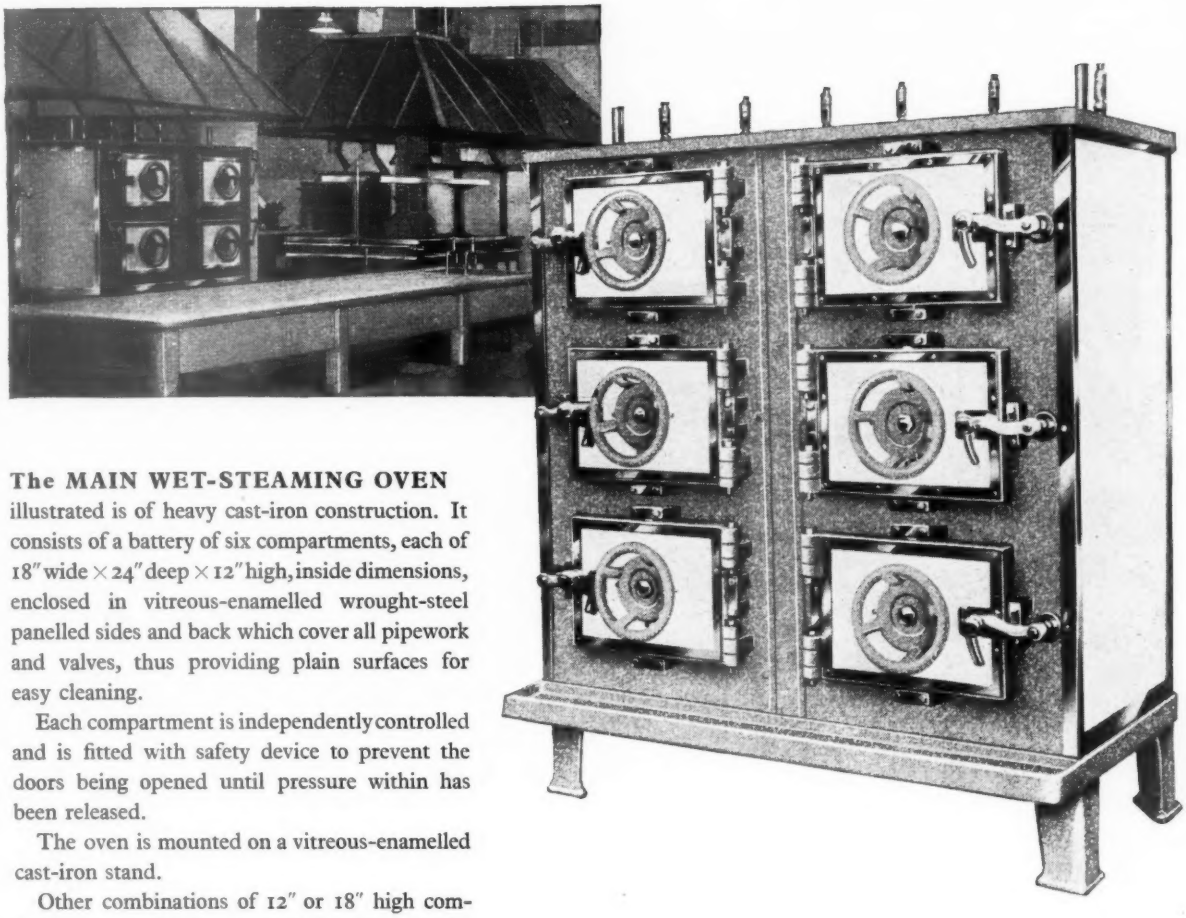

The MAIN WET-STEAMING OVEN illustrated is of heavy cast-iron construction. It consists of a battery of six compartments, each of 18″ wide × 24″ deep × 12″ high, inside dimensions, enclosed in vitreous-enamelled wrought-steel panelled sides and back which cover all pipework and valves, thus providing plain surfaces for easy cleaning.

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The oven is mounted on a vitreous-enamelled cast-iron stand.

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M.5

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Getting the best out of COPPER

Copper and copper alloys can be wasted as easily by wrong use as by extravagance. Any information about their use in building can be obtained free of charge or obligation from the C.D.A. The Association provides expert advice and technical data to enable the best and most efficient use to be made of these materials. It pays to consult the C.D.A. at an early stage of any project.

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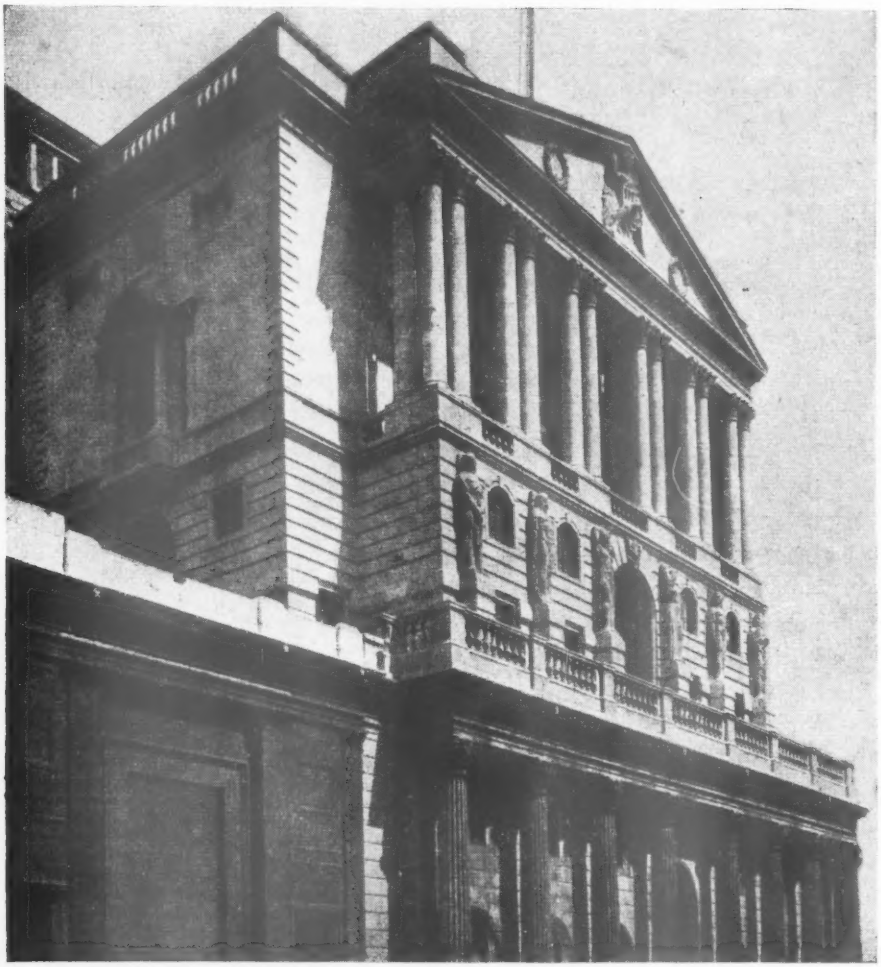

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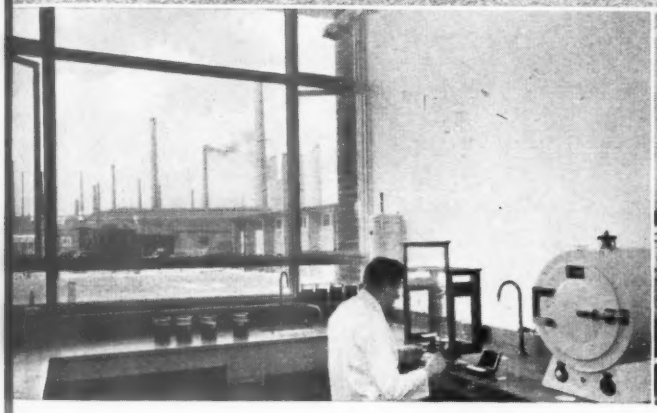
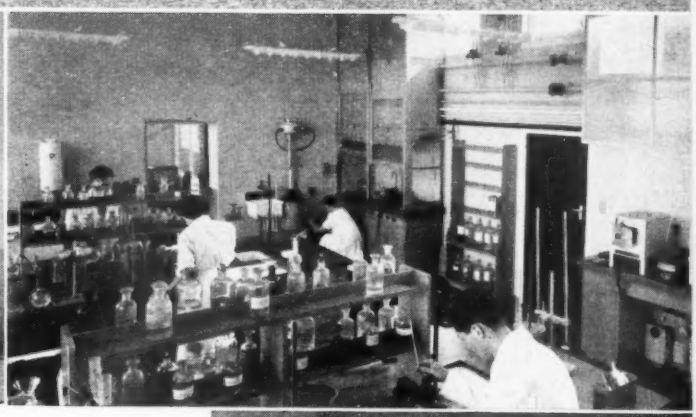
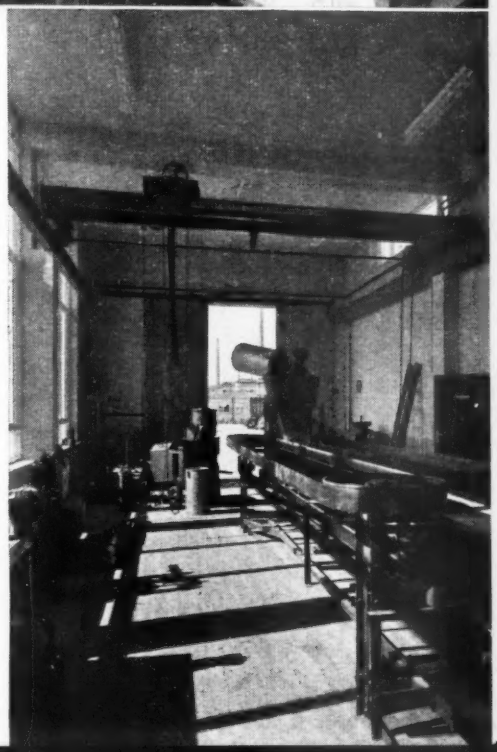




Architect: Cecil C. Handisyde, A.R.I.B.A. *Consulting Engineer: S. M. Cleator.*
General Contractors: Robert Marriott Limited.

Since 1922 Research has been a major activity of London Brick Company Limited. The new laboratories at the Stewartby works give some recognition of the work carried out there.



LONDON BRICK COMPANY LIMITED. *Head Office:* AFRICA HOUSE, KINGSWAY, LONDON, W.C.2. Telephone: Holborn 8282. *Midland District Office:* Prudential Buildings, St. Philip's Place, Birmingham, 3 Telephone: Colmore 4141. *South Western District Office:* 11 Orchard Street, Bristol, 1 Telephone: Bristol 23004/5. *Northern District Office:* Gascoigne Street, Boar Lane, Leeds 1 Telephone: Leeds 20771.

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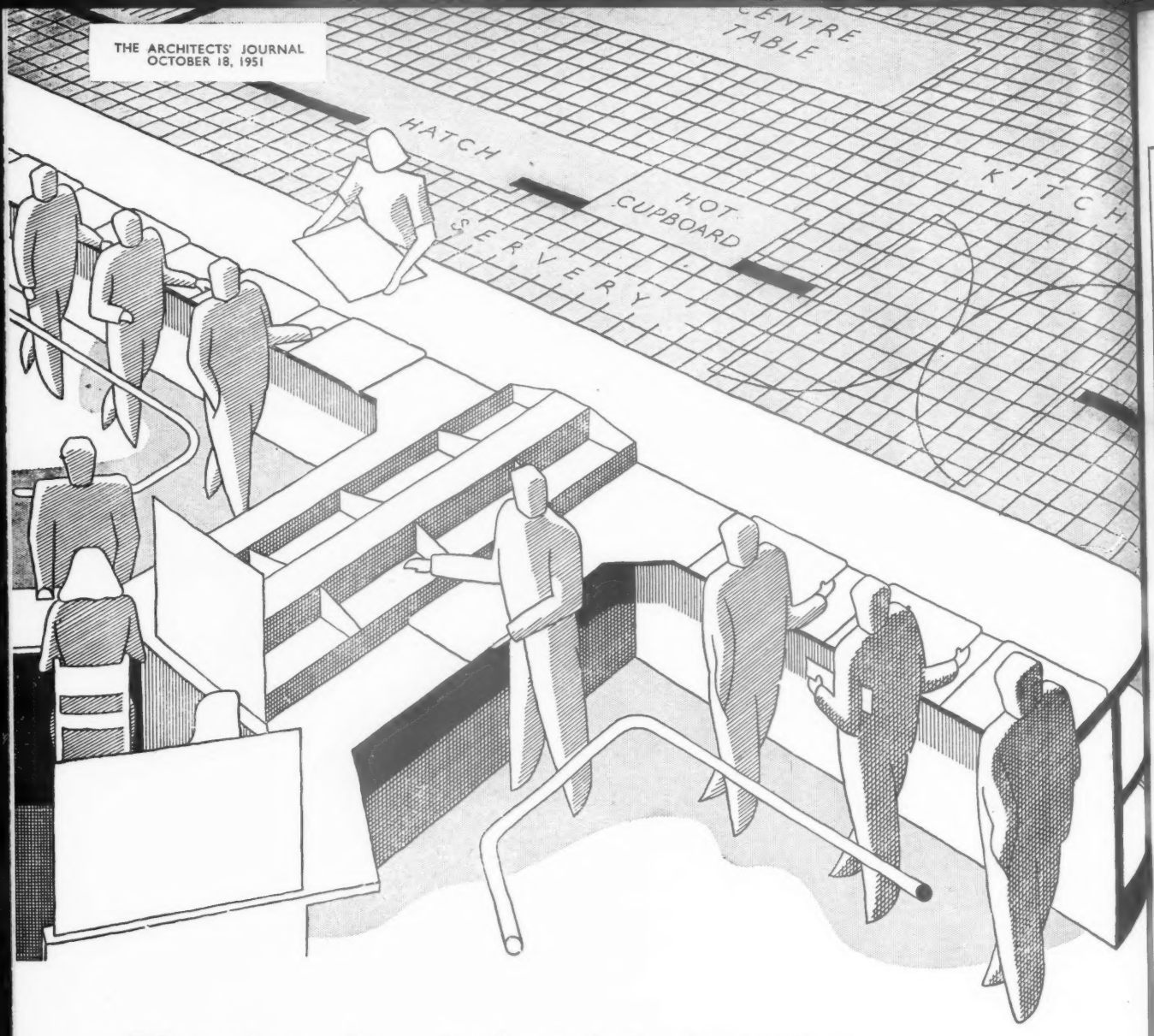
BRICKMAKERS TO
H.M. THE KING



Planning for Industrial Catering

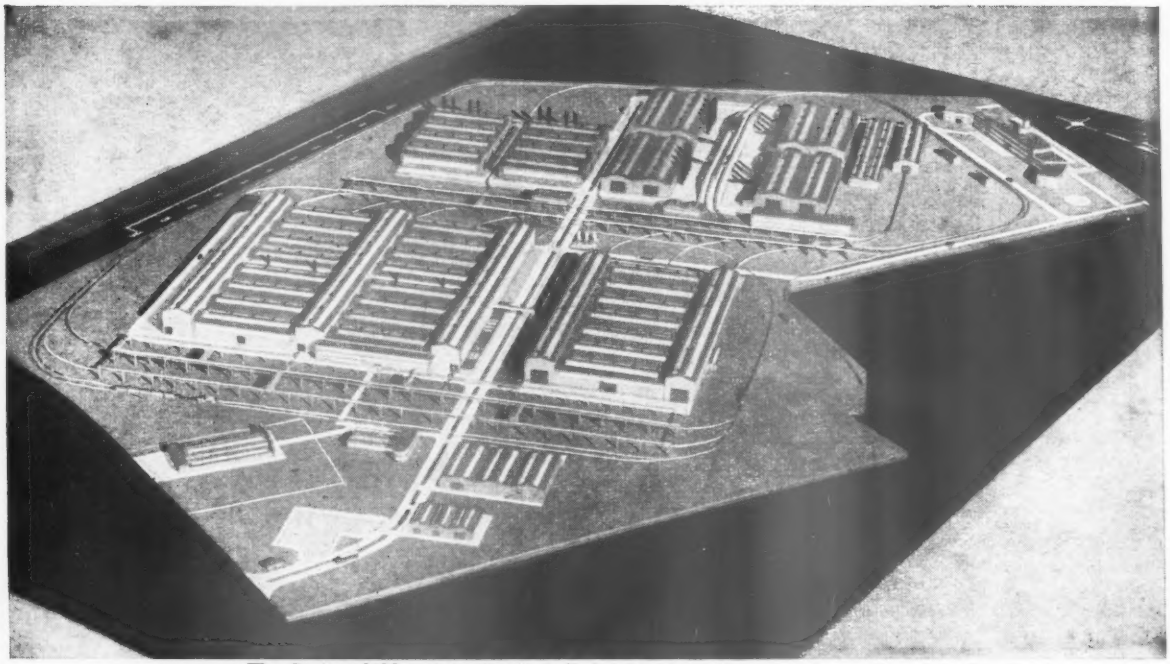
WHILST THE PLANNING of every kitchen or canteen will vary according to individual circumstances, there are many essential data, including dimensions, which are common to any such scheme. It is of great value, too, if the planner can have access to the knowledge which has been accumulated from past experience of similar problems.

The Gas Industry has collated a great deal of information on the subject of industrial catering. For instance, planning requirements to which consideration must be given; schedules of equipment required to produce a given number of meals in a given time; typical plans illustrating the possibilities of combining various types of equipment; and examples of kitchens which have been designed and installed to suit individual sites and conditions. This information is freely available to architects, and others in responsible positions, who are concerned with the planning and equipment of industrial kitchens and canteens.

The collation of this kind of information is one of many activities by which The Gas Council seeks to promote the development of gas services for cooking, hot water, space heating and refrigeration. In all cases where the use of gas is envisaged, early consultation with the Gas Undertaking is advisable.

GAS

ISSUED BY **THE GAS COUNCIL** · 1 GROSVENOR PLACE · SW1 · TELEPHONE: SLOANE 4554



The Projected New "South Works" for Messrs. Ashmore, Benson, Pease & Co., Stockton-on-Tees.
(Consulting Engineers: Messrs. F. R. Bullen and Partners, Dacre House, Dean Farrar Street, Westminster, S.W.1.)

STAGE I — *Constructional Shop with ancillary services and buildings.*

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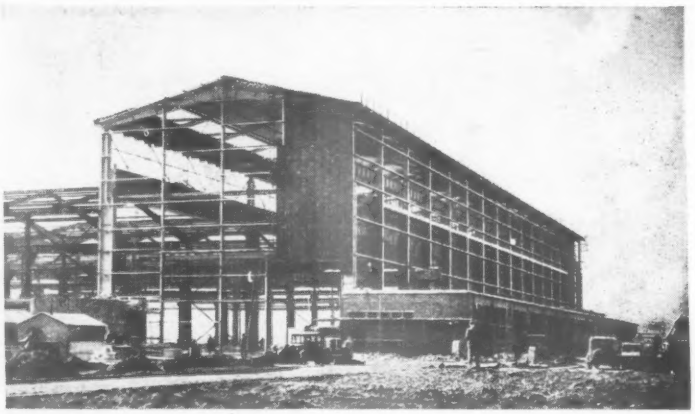
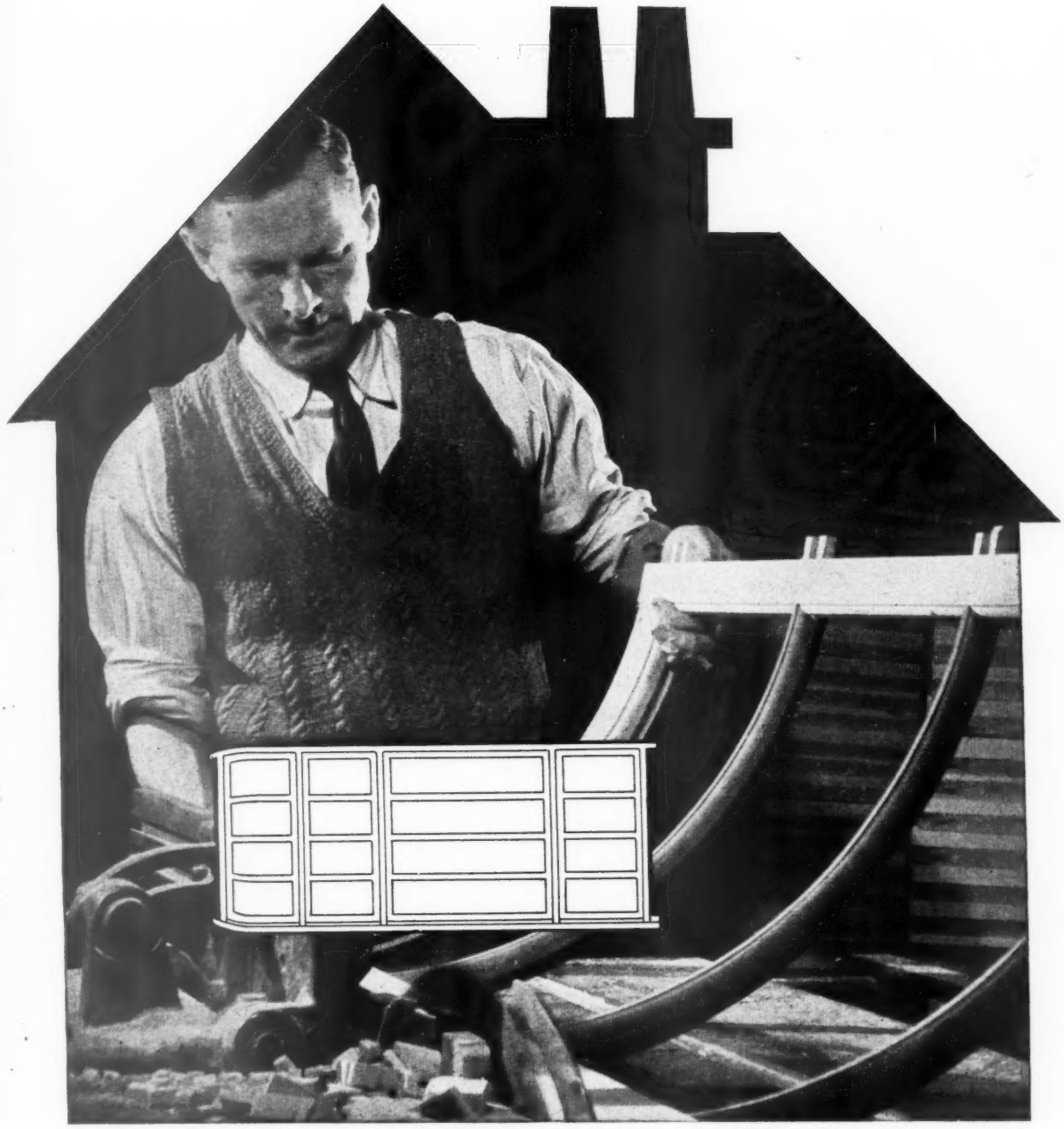
Stanchions of a transverse bay, 30 feet high to the crane track. Crane tracks of the low bays are cantilevered out beneath those of the high bays giving easy transfer of material from the high bays to the low bays and vice-versa.



The Shop consists of four transverse bays 85 feet wide by 250 feet long and 30 feet high to the crane tracks, and two longitudinal bays 65 feet wide by 340 feet long and 50 feet high to the crane tracks, served by twelve overhead cranes, the heaviest being 50 tons capacity.

CARGO FLEET IRON CO. LTD., Constructional Dept: Malleable Works, Stockton-on-Tees. Tel: Stockton-on-Tees 66117



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CRC 7

Tangible Proof

(*Photograph by courtesy of F. W. Winchester Ltd.*

The accompanying photograph shows one of the tiles recently removed during work on a Tunbridge Wells hotel. Its face is inscribed: "Thomas Rack his tile June the 21, 1777" and on the back it bears the name of the burner. The tiles were replaced for a further period of service.

In every town and village there is ample proof of the unrivalled durability of the Clay Roofing Tile. The picturesque old roofs of the English countryside are a constant reminder that the roofing tile tradition was founded on the unique physical properties of burnt clay.

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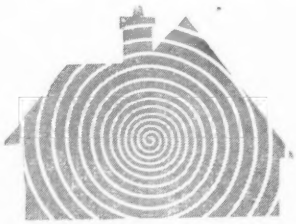

Whole-house Warming by Radiation ducted air

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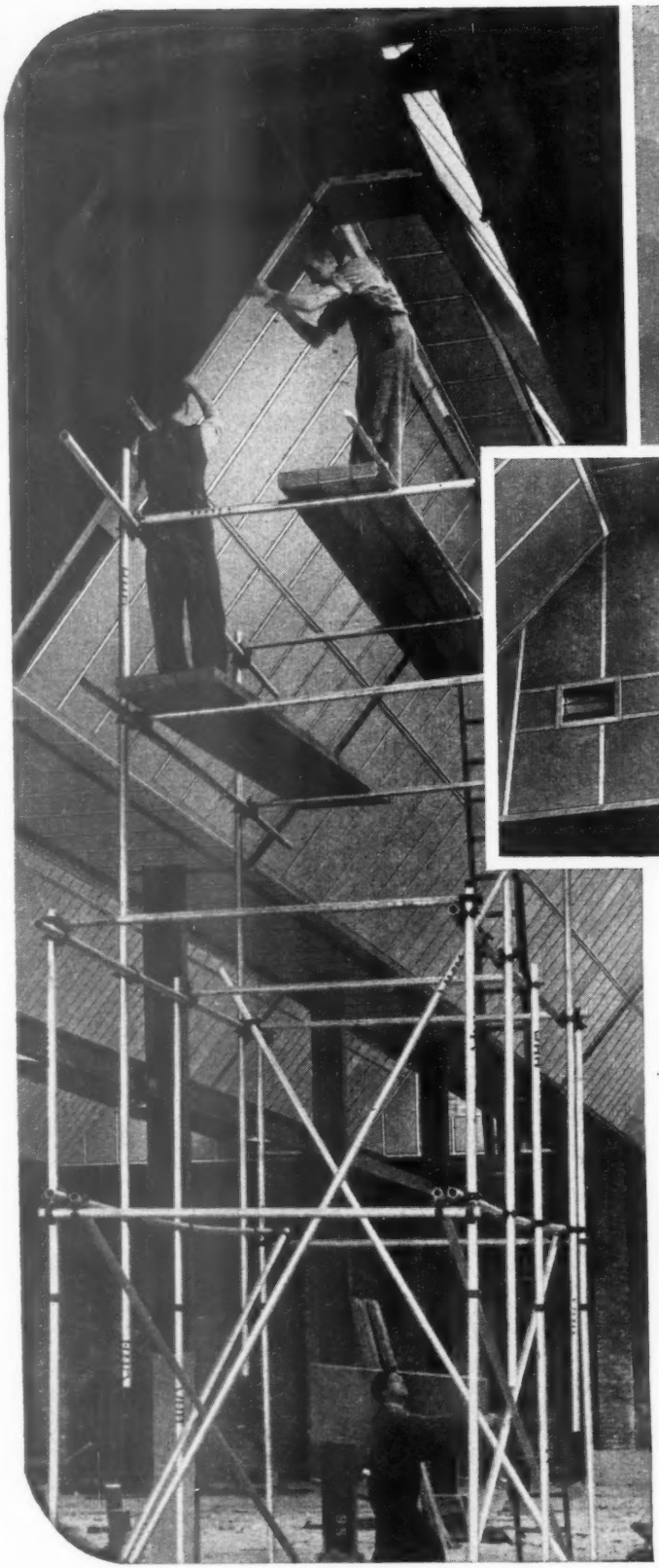
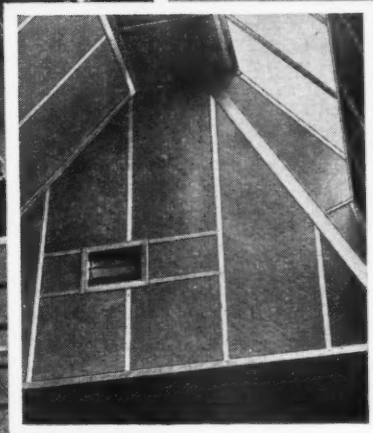
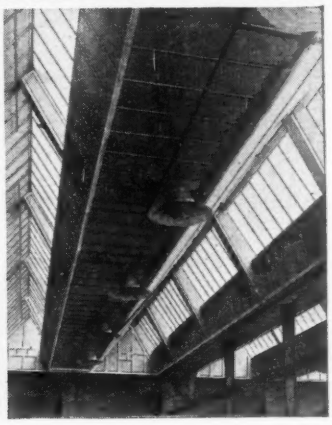


Keep the Heat Inside





Retain *all* the heat inside the building, cutting costs and fuel consumption. Heywood's system of patent insulation constructed by experts close-seals all roof surfaces at every junction—transforming "ice boxes" into warm, comfortable workshops, also keeping them cool in summer. Heywood's patent insulation needs no maintenance, and if incorporated in new buildings effects considerable economies in heating plant installation.

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Heywood's patent insulation being fitted at the Deanston Works of James Finlay & Co. Ltd., Doune. Architects: Messrs. Cullen Lochhead & Brown, 119 Cadzow Street, Hamilton, Lanarkshire.

n.d.h

About Aluminium . . . 8

THERMAL PROPERTIES

In this series of articles, some of the principal characteristics of aluminium and its structural alloys are briefly discussed for the interest of students and others.

Expansion

The dimensional change of aluminium and its alloys with change of temperature is roughly twice that of the ferrous metals, the average coefficient of linear expansion of commercially-pure metal, in the range 20—100°C, being 0.000024 (20—600°C: 0.0000285). That of the alloys is affected by the nature of their constituents: the presence of silicon and copper reduces expansion, and magnesium increases it.

This high expansion should be considered when aluminium is used with other materials, especially in a rigid structure. However, the stresses developed are moderated by the light metal's low elastic modulus, and there are countless examples of mixed construction, notably aircraft and other vehicles, in service in widely varying atmospheric temperatures. Only where dimensions are really great, as for example in a light alloy superstructure on a steel ship, or, in architecture, where large pieces of aluminium are set on a steel framework or in masonry, are slip-joints, plastic caulking, and other stress-relieving devices usually needed.

The outstanding instance of bi-metallic construction subjected to a severe temperature change is the aluminium internal combustion engine piston that works in an iron or steel cylinder. Here, where good fit is important, differential expansion is countered by the employment of low-expansion piston alloys, high-expansion iron cylinder linings, and such devices as split piston skirts and non-expanding struts cast into the piston, so as to permit very small "cold" clearances.

Another form of dimensional change, which does not directly affect the user of aluminium but is important in the production of castings, is the contraction of the metal on solidifying: linearly, this is 1—1.7% (comparative figures for iron, steel, and brass are, respectively, 1%, 2%, and 1.5%).

Thermal Conductivity

The quantity of heat that flows through a plate of commercially-pure aluminium 1 cm. thick is 0.52 calories/second/sq. cm. area/°C temperature difference between its faces (measured at 20°C; there is a small increase with temperature). This may be contrasted with 0.12 C.G.S. units for steel, and 0.92 C.G.S. units for copper.

Alloying, especially with manganese or magnesium, reduces thermal conductivity; in many structural alloys it lies between 0.3 and 0.5, while in an alloy containing 10% magnesium it may fall to 0.22. Although pure copper is more heat-conductive than aluminium, its engineering alloys, the brasses and bronzes, are generally inferior to the aluminium alloys in this respect.

The good heat transfer characteristics of aluminium are made use of in many fields, obvious examples being the cylinder-heads and pistons of internal combustion engines, and domestic pots and pans.

Specific & Latent Heats

The specific heat of aluminium (0.22 at normal temperatures) is higher than that of any common metal except magnesium (0.25), that of iron and steel being about 0.12, and of copper and brass 0.09. Volume for volume, however, the heat capacity of the aluminium is less than that of these heavy metals.

The latent heat required to change pure aluminium from the solid to the liquid state without increase of temperature is about 92 cal/gm. This again is high on the basis of weight, and nearly as much heat is required to raise a pound of aluminium from room temperature to the liquid state at 658°C as to raise a pound of iron past its melting point of 1500°C.

Reflection & Emission

A bright aluminium surface reflects about 85% of the light, and about 90% of the heat radiation, that fall on it. Thus buildings and containers made of aluminium keep their contents cool in hot weather without the need of elaborate insulation. Although the surfaces are most efficient as reflectors in their original bright state, the degree of dulling that occurs with the passage of time is not, in normal conditions, sufficient to interfere seriously with the reflection of radiant heat, so this property of aluminium buildings is, in effect, permanent.

Aluminium is also employed purely as a reflective insulating medium in the form of foil, which, arranged to form dead air spaces, offers an extremely efficient thermal barrier of very low weight; this system is increasingly used in building and in heating and cold storage engineering, and has the additional advantage of forming an effective vapour barrier. Aluminium paint provides a radiation screen as well as weather protection, and is used, for example, on storage tanks.

For optical reflectors it is usual to preserve the lustre of the polished, high-purity metal with a special transparent anodic film.

Emissivity, the readiness with which a substance radiates its own thermal energy, is closely allied to reflectivity, the best reflecting surface being the poorest emitter, and conversely. Thus the emissivity of aluminium is low (about 10% of that of the theoretical black body), and this contributes to its insulating properties. An interesting change is produced by anodic treatment, which can raise the emissivity of the surfaces considerably; this process is of value in the construction of heat exchangers.

Temperature & Strength

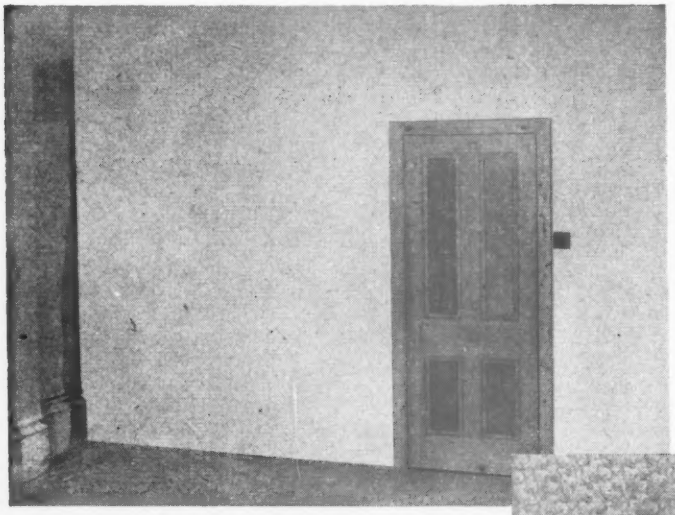
In general, aluminium and its alloys suffer a loss of strength at temperatures much above 100°C; the highest operating temperature for any alloy is about 350°C, and this is only compatible with low stresses, as in pistons. The original strength is in many cases not fully restored on cooling, as the effects of work-hardening or heat treatment have been removed by heating, and the structure permanently changed.

Time also plays a part, and some alloys may be damaged by prolonged exposure to temperatures that, for short periods, have a negligible or even, by causing precipitation, a beneficial effect on their strength. Another effect of subjection to prolonged elevated temperature when under stress is to encourage plastic flow, or creep, which was discussed in our sixth article.

A problem that is met with some structural metals, such as iron and steel, is embrittlement when subjected to low temperatures. The aluminium alloys, however, at the lowest temperatures that normally interest the engineer (those found at great heights and in polar regions) are slightly stronger and considerably more resistant to impact than in temperate conditions. This characteristic is valuable in aircraft engineering.

May we send you a copy of the Noral Data Sheet, giving physical and mechanical properties of our alloys? Please mention this journal when writing.

The next article is concerned with the electrical properties of aluminium.



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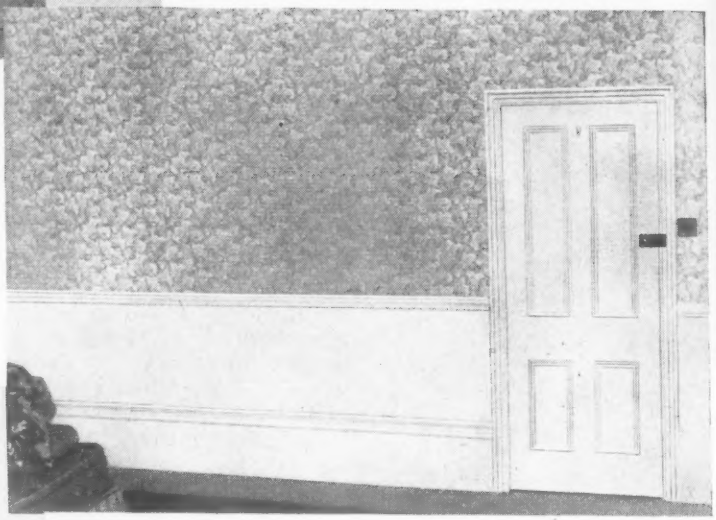

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The contract illustrated, Cadogan Court Hotel, Queen's Gate Gardens, S.W.7., Architect Leslie T. George, L.R.I.B.A., is typical of the many "Bellrock" conversion jobs now being carried out, and shows panels erected, wall papered and painted, and the skirting made from "White Heather" plaster, all executed by Subtrades Ltd., 44 Upper Berkeley Street, W.1.

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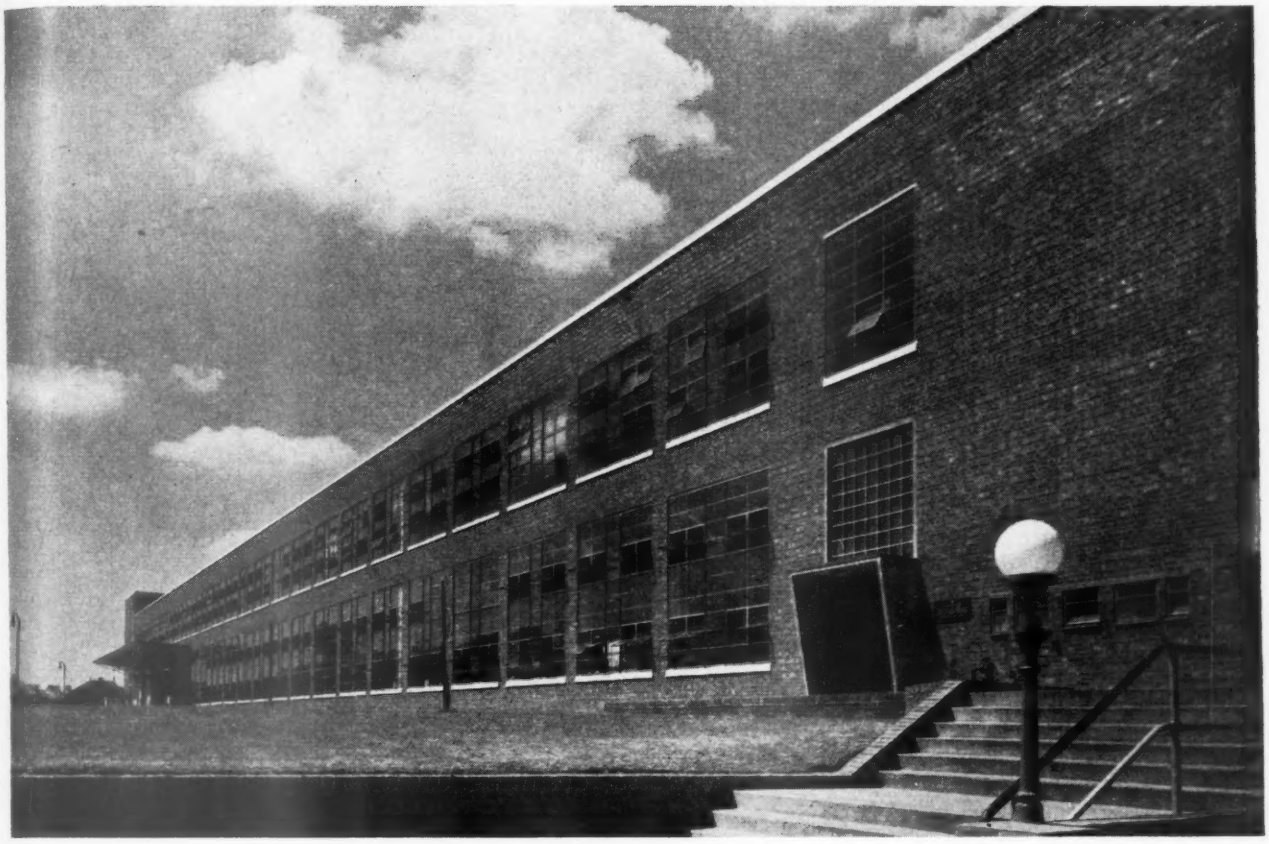

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AJ

THE ARCHITECTS' JOURNAL

No. 2955 18 OCTOBER, 1951 VOL 114

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"BOY! MY TAXI"

You may remember that when the return of steel priorities was first announced, the procedure for the building industry was "to be decided later." Do you know what has actually been arranged? I didn't until a few days ago, when my builder showed me MOW form 2065, sent out as long ago as September 15, to all *builders* on the register, but not to architects. For this really astonishing oversight the MOW Press Officer gives two rather naïve excuses. Sending the form to builders automatically covers all jobs, architect designed or not, and, more astonishing still, the Ministry has a list of builders but not of architects. Dear me; I admit that the current RIBA Kalendar is about a year old, but has the Ministry ever heard of an organization called the Registration Council, which publishes a list of registered architects? The vital facts are, briefly, as follows. No steel without licence after December 3 for any job now building; *applications to be in by October* 22. The operative word now is speed. If your builder has more than one job on hand he may have used his only form for the one that isn't yours. So hurry.

F. L. WRIGHT, PRESERVATIONIST—
OR, PIONEERS MEET

Thumbing through back numbers of the American *Journal of Architectural Historians*, I was brought up short by some extracts from a report on the American scene made by an Englishman fifty years ago, which the editor was handing on to his readers because it was always interesting to hear what the English thought of the United States. "We understand," he explained, "that our visitor, who died only recently, became well known as a scholar and writer on classical architecture."

*

The visitor, as you will hardly have guessed from that, was C. R. Ashbee. In the winter of 1900-01 Ashbee spent several months in the States on a lecture tour designed to promote an American organization on the lines of our National Trust. He addressed between fifty and sixty audiences, totalling (he reckoned) nearly 20,000 persons; his efforts seem to have had certain immediate results, but no permanent ones of importance. His report, "beautifully printed in black and red and limited to 350 copies," is not in the RIBA library; so you must look up the *J. of AH*, March, 1951 (which is) if you are interested. Here I can do no more than present you with a single tit-bit.

*

In Chicago ("the only American city I have seen where something absolutely distinctive in the æsthetic handling of material has evolved out of the industrial system") Ashbee addressed ten meetings, he tells us. He goes on: "Several ladies and gentlemen also joined the informal committee, and Mr. Frank Lloyd Wright, one of the leading spirits among the younger architects, and of whose work the city may well be proud, was appointed secretary." Astragal understands—though he is open to correction by the editor of the *J. of AH* on this point—that Mr. Wright, who is still alive, became well known as a lecturer and writer on architecture and has even acquired some reputation as a practising architect.

COMMONWEALTH RECEPTION

The annual reception given to students and young architects from the USA, the Dominions and the Colonies is one of the most worth-while of the RIBA's social activities. I call it an annual event in the hope that it is intended to make it so. Last week's reception was in fact the second, and seemed to me even more successful than the first, held a year ago.

*

It must have been quite an undertaking to track down over two hundred and fifty architects and students who are temporarily in London. They turned up at the RIBA from all over the world, in large and small contingents—nearly a hundred from Australia, seventy from South Africa, down to single individuals from Ceylon, Jamaica, Aden, Nigeria and Hong Kong. They were all provided with identification tags, which they wore much less self-consciously than the RIBA councillors and guests invited to meet them, wore theirs. But the tags served their purpose of making

introductions unnecessary, and one felt that the RIBA was really serving for some as the hub of Commonwealth architecture.

SCANDINAVIA IN FORM

You can actually buy the furniture, fabrics, light fittings, pottery and general bric-à-brac on show at Heal's *Scandinavian Design for Living* exhibition which is open until November 13, though prices are fairly steep. A simple table with two drawers in elm and birch from Stockholm's Nordiska Kompaniet is £36, a bureau dressing chest from Denmark is £58 and a small standard Swedish floor lamp in brass and mahogany is £14. But I suppose the prices are relatively not too bad, considering the duty, freight and craftsmanship.

*

There is nothing particularly startling or new in the designs, most of which are as simple and gracious as ever, dependent for effect largely on texture and colour. The oiled teak top of the Danish dining table by Hans Wegner, for instance, gives voluptuous pleasure. A notable achievement on the part of the manufacturer as it has a veneered finish. Norway and Finland have almost nothing to show, Sweden a good deal more, though nothing that one might not have seen before the war. Denmark comes off best in the furniture with its subtle refinements of form. The fascinating pleated paper lamp shades from Copenhagen are there, of course, doomed to early extinction by London soot, but one looks in vain for a chair by Finn Juhl to prove that chair design is the highest form of sculpture. One also misses the Swedish package furniture and the new pottery from Gustavsberg.

U.S. OFF FORM

By way of contrast with this faintly arid good taste, my illustration this week is of some furniture designed and made in America. It appears in one of the Studio's lushly produced *Decorative Art* series and is, I think, sufficiently coarse to make one feel grateful that our designers and manufacturers are still looking east rather than west for inspiration.

*

The manufacturers of these particular pieces of furniture are also the producers of a coy little booklet titled "Everything in it is you—a handbook for homemakers." I was shown a copy by a representative of the firm of Hille (makers of Robin Day's furniture), who was just back from the States and much impressed by the high moral tone of American salesmanship—"selling on a real ethical basis . . . giving the customer a feeling of uplift." The booklet was a perfect example of this—sprinkled with quotations from the Bible and with the friendly warmth of phrase of an æsthetic Buchmanite. "What is to be the theme within your home?" it coos, "The note (like the piccolo phrase in Richard Strauss' Till Eulenspiegel) that repeats . . ." I can't go on.

A FIG FOR YOUR FILES

When I was growing up in New Guinea or Coming of Age in Bedford Square or whatever it was, one used to do a good deal of what was called Research—mostly, in those days, consisting of tracing cathedral plans out of Banister Fletcher and circulation diagrams from a book on Planning published by that green-and-white weekly you occasionally see on the news stands. A particularly popular exercise for some reason was the kitchen, and I wish I had a bacon rasher for every time I pursued raw food from its entry (larder and frig.) through preparation (sink-table-cooker) to its final disappearance in

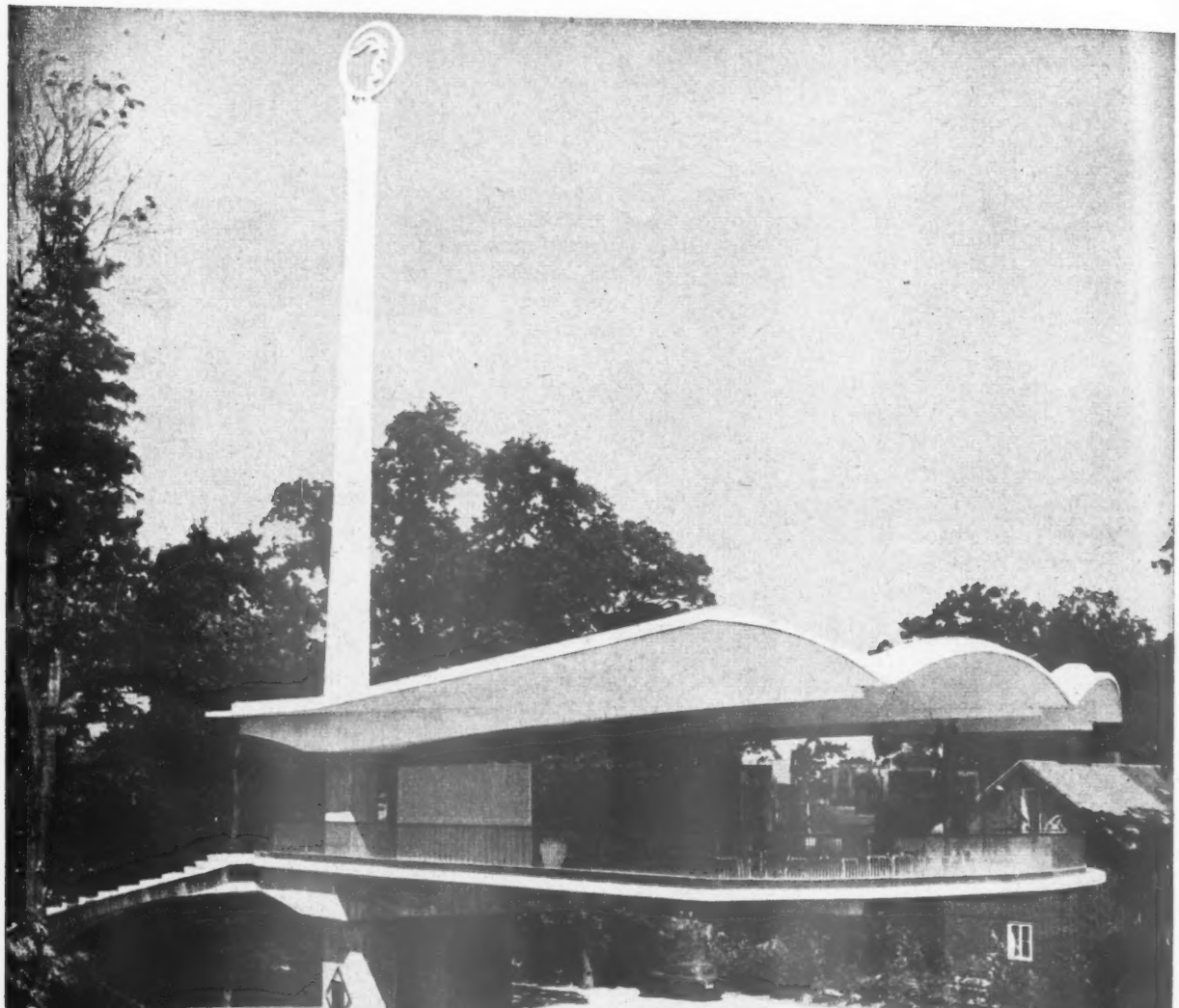
"I wish they'd duplicate these development plans—one for us and one for the salvage drive."

the Dining Recess (8 ft. 6 in. minimum width). It was not perhaps such a silly exercise as it sounds. It taught us to think on paper about a human activity, it improved our tracing, and it dropped a few more gold pieces into the needy pockets of that green-and-white architectural weekly.

*

The real trouble was twofold. First it usually meant we never ob-

Buffet, table and chairs in saffron walnut. An example of American furniture designed by T. H. Robsjohn Gibbings, and manufactured by the Widdicomb Furniture Co. This illustration is from Decorative Art, *published by the Studio, Ltd., price 30s. See Astragal's comment.*



German Vertical Feature

When the buildings for the South Bank Exhibition were being designed, great emphasis was laid on their necessarily short life and the temporary nature of their construction. It is to be regretted, however, that architecture has not yet developed into so exact a science that the effective life of building materials can be judged very precisely. Visitors to the South Bank today cannot, then, expect to see the collapse, or hear the thud of steadily disintegrating materials which have reached the end of their designed life. Even more regrettable, though, is the instance where an exhibition building, put up as a permanent structure has to be taken down at the close of the exhibition because it is unsafe. This was the case with the building shown above. It was one of the most exciting exhibits in a German building exhibition held recently in Hanover and it took the form of the actual stand for the German Cement and Concrete Federation. Intended to be permanent and used after the exhibition as a café it was of prestressed concrete construction. Unfortunately, however, under extremes of loading the deflection of the fifty-foot cantilevered platform proved excessive and it has to be taken down. Designed by architect Gutshow, of Hamburg, the floor is nearly twenty feet above the ground, and is supported, as is the roof, by three beams cantilevered from three columns. Further photographs of this exhibition are shown on page 465.

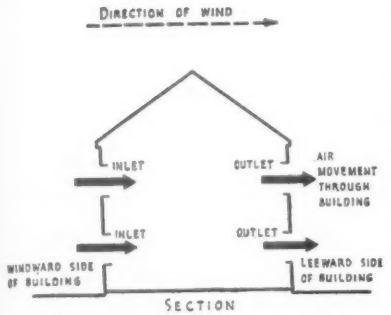


Fig. 1, from a BRS Digest. See below.

served anything directly for ourselves (how many of us ever went into the kitchens of our homes except when driven there to help) actually to watch the preparation of a meal? Secondly, in many of us was bred a slightly cynical attitude to research which in my case has lasted to this day—a feeling encouraged by hardening arteries, a growing resistance to tracing and a strengthening resolve to do nothing which furthers the welfare of that green-and-white . . . etc.

*

Anyway, like most architects I suppose,—I do read, and carefully file, those admirably short and informative BRS Digests issued monthly in *The RIBA Journal*. This month, however, as I looked at Fig 1 (Digest No. 34 on Natural Ventilation) and reproduced in its splendid entirety on this page, I felt once more surge within me that familiar suspicion that the scientists were getting at me. This feeling was reinforced by the swinging prose which describes Fig. 1. Here goes: "On the windward side of the building the outside pressure will normally be higher than the inside pressure. This pressure difference results in the movement of air from the outside through any apertures to the inside. Conversely on the leeward side of the building the pressure outside will be less than that inside and the inside air will thus tend to pass through any apertures to the outside. It may be said, therefore, that a positive pressure exists on the windward side and a negative pressure on the leeward side of the building." Well, it's gone into the file with the rest of them, but it's a long time before I shall feel quite the same about the Digest. Something to do with a negative pressure on the leeward side of my scientific approach perhaps.

ASTRAGAL

The Editors

BUT NOT LYING DOWN

SOME day someone was bound to say it. Nevertheless, to hear such a well-known architectural personality as Osbert Lancaster giving a talk on: "The End of the Modern Movement in Architecture" comes somewhat as a surprise to those supporters of modern architecture who imagined that, in this Festival year, the movement was at last gaining both in strength and popularity. However, a study of Mr. Lancaster's talk, broadcast on the BBC's Third Programme on October 7 and printed in part on pages 465-8 of this issue, shows that Mr. Lancaster is describing the end of a "modern movement" which faded away, at least, as far as the *avant garde* were concerned, in the 'thirties. "The failure of the Modern Movement," he said, "to get clear of the coterie stage was in very large measure due to the fact that the best they could produce in the way of cliches was a window that turned a corner and a couple of pavement lights." Such a sentence vividly conjures up a mental picture of a certain kind of architecture, and his description of the "modern girl" is of the kind of person who would inhabit it: "a tubular siren showing acres of shiny pink-silk stockings rhythmically jigging to the strains of 'Yes, Sir, that's my baby'." Two such descriptions neatly elucidate the title of the talk. Mr. Lancaster, somewhat belatedly, is saying goodbye to the gay 'twenties.

With that we have no quarrel. We also agree that "the inhibiting fear of the cliche must . . . be overcome" as must "the frenzied rejection of the past." Once it is quite clear what Mr. Lancaster is saying goodbye to, his talk can be enjoyed for its stimulating, amusing and erudite qualities. There is, however, one point to be made. It is surely unfortunate that so well known an architectural personality should give a talk to the public under such a misleading title. As a subject for debate amongst architects and students it could hardly be bettered. As a subject for a popular talk by an authority on modern architecture, however, it seems a strangely irresponsible choice. The position of modern architecture in this country today is not so strong that its advocates can risk creating yet more opposition to it through avoidable misunderstandings. There are many traditionalists who would be only too ready to misread and misuse such material, and there are also, unfortunately, many intellectuals who, in their search for bright topics and smart catch-words, may, thus encouraged, continue to write of the death of one or other of the several fledglings rapidly growing up in the nest labelled "The Modern Movement."

No. 5: Technical Editor

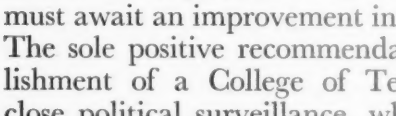
HIGHER TECHNOLOGICAL EDUCATION

A white paper has just been issued setting forth the Government's policy for the development of higher technological education in Great Britain. The problem of technological

education in this country is so vital to every industry that we make no apology in referring to it here. There is more than a possibility that we in this country are falling behind other nations, both in the facilities afforded for higher technological education and in the numbers of suitably trained men for industry. Our economic survival depends on our being able to keep well to the forefront in technological development, and it is only recently that we have come to accept the position that in certain fields of technology we no longer hold the leading position.

The conclusions set out in the white paper represent a council of despair. Expansion of technology within the Universities is limited by buildings and qualified staff. To build a new technological university, or to expand an existing institution, would involve heavy capital outlay and no rapid return. The white paper considers that to proceed directly with any such project would not be in the national interest at the present time, but the matter will be reconsidered on its merits when the situation improves. Vast building projects for housing armies of controllers? Yes! But technological education must await an improvement in the situation.

The sole positive recommendation in this paper is the establishment of a College of Technologists, presumably under close political surveillance, which will make awards to technical college students who qualify for higher awards; and will approve courses where they give improved financial assistance to selected colleges of technology. In effect there will be no extensions to Universities or colleges but a considerable increase in consumption of paper and administrative labour.



Howard Frobisher

W. Pritchard

Aditya Prakash

"Building Methodologist"

Some Rake-off

SIR,—A very great deal of quite unnecessary fuss seems to have been caused by Alderman W. E. Power's recent speech at the Institute of Housing Conference in which he condemned the architects "rake-off."

Either the gentleman was perfectly correct in his allegations, or he was wrong. If he *was* right, then every available inch of every architectural journal in the world, covered with every possible form of denial architects can think up wouldn't make the slightest difference.

If he was wrong, then his outburst should have been treated with the contempt it would have then deserved and the architectural fraternity's cold indifference would have sufficed. People have very short memories, you know. The loud and somewhat panic-stricken yells for the worthy Alderman's blood only helped to keep his speech in the limelight a little longer.

Mind you, my own opinion, for what it is worth, is that some architects ask for this sort of trouble; far too many, in fact. They fail to realise that as far as people inside the building industry itself are concerned, for instance, that there is a very great deal of difference between theory and practice, and that this is probably the only country in the world in which a man can become a fully qualified architect without going near a building site.

So, you see, all the carefully cultivated mystery and supposed detachment that surrounds the activities of the average architect only serves to infuriate the very people with whom he comes into contact most; and when he holds his hand out for his money, few of them are quite certain how he *earned* it.

The layman, of course, including most aldermen, knowing even less about these things than the people who work on building sites, merely questions the value of architects as such.

HOWARD FROBISHER

Bacup

Wanted: Church Plans

SIR,—It is proposed to build a new church in stone or brick in the village of Bangor in the near future. The present church, which is nearly eighty years old, is built of corrugated iron and wood, and cannot last much longer.

Our problem is that of finance. We have created a small building fund and hope to augment this by donations and voluntary efforts.

On the matter of church plans, including the usual elevations, material, quantities, and especially an estimate of cost; would it be possible, in order to reduce expenditure, to borrow these from some kind hearted architect or church authority, either free of charge, or at a nominal charge? The new church should accommodate some 150-200.

We cannot hope to proceed without help of this kind. There may be plans which would suit us lying dormant somewhere. We would be most grateful for the assistance indicated.

W. PRITCHARD,
Church Secretary

Bangor

[We publish this appeal, confident that while no reader of the JOURNAL will offer plans for a church which are already in existence, it is possible that some architect will undertake the task of designing a church for Bangor at a nominal charge.—ED.]

Factory Made Beauty

SIR,—It is so interesting to see a roof placed on a house like a hat on a man's head. (AJ, August 16.) Even the chimney stacks can be seen flying in the air. How revolutionary! But when we are told that the finished product "doesn't look like a factory-made house," it is reminiscent of the nineteenth century advent of iron and steel into the building industry with the architects trying to make "i" look like the "good old." May I, with due respects to the traditional say,—and I am sure many will agree with me—there is boundless scope for beauty in all fields, and that a "factory made look" can be made much better than the traditional.

ADITYA PRAKASH

London

Another Satisfied Readerman

SIR,—As a keen scienceman (and also an architect of unquestioned competence), I followed the reports in your JOURNAL of the discussions on design research, with much appreciation. I would, however, join issue with W. Allen, if he intends to suggest that the approach of R. L. Davies' organization to hospitalization is a new departure. I, personally, was conscious of the bearing of bedding-density upon space utilization as long ago as 1925.

With regard to the education of architects in relation to sciencemanship (later referred to by M. Shaffer and R. L. Davies), I would commend the high level of remoteness and magnificence occasionally attained in the discussion. Architects still have something to learn in this sphere.

BUILDING METHODOLOGIST.

Chiswick

ENGINEERS

Architects' Hospital Maintenance Criticized

In a presidential address to the Institution of Engineers-in-Charge at St. Bride's Institute, London, on October 10, Robert Chalmers, president of the Engineers' Guild, criticized the practice of hospital boards in putting an architect in charge of the maintenance of hospital premises. The architect's distinctive function concerned with planning and æsthetics of buildings had practically no application to maintenance. The system whereby an engineer was required to report to the regional board on proposals estimated to cost more than £1,000 were stultified and frustrated when the most senior engineer available at regional headquarters was a comparatively junior assistant in the architect's department.

The educational standards for qualification as an architect did not require any grounding in the elements of natural science without which no comprehension of the nature of engineering was possible. Supervision of the engineer by an architect was purely nominal and might have a faint administrative flavour, but it could add nothing to the value of the engineer's work. Although at the passing of the National Hospital Act the Minister of Health advized regional boards about appointing medical officers, secretaries and architects it was not until 20 months had gone by that he gave any advice about employing engineers.

SCOTLAND

Prototype Terrace Houses

An experiment in the erection of prototype terrace houses with no hall and fewer fittings to Department of Health experimental plans at Sighthill, Edinburgh, and Toryglen, Glasgow, was described by R. J. Gardner-Medwin, chief architect and planning officer of the Department of Health, in an address on "Low Cost Housing" to delegates at the annual meeting in Largs recently of the Scottish National Housing and Town Planning Council.

He explained that in building the prototypes the department were trying to modify existing standards in order to produce houses more cheaply and make available materials go further. There were eight houses in the terrace. They did not expect the prototypes to be copied slavishly, but hoped the ideas in them might start a fresh line of approach by Local Authorities.

The four-apartment houses would cost £130 less than the present average, and the three-apartments £100 less, and they hoped to get the same results from less space.

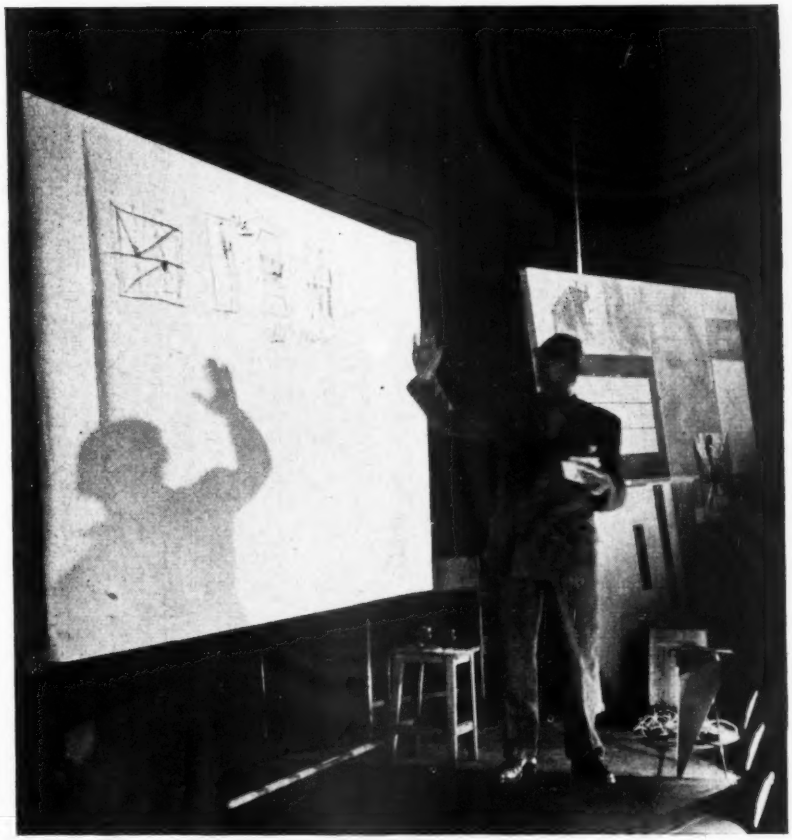
Mr. Gardner-Medwin emphasised that the department did not suggest that the experiment was the answer to low cost building. It was one answer among many others, and he hoped that it would be seriously considered by Local Authorities.

Mr. J. C. Hill, Edinburgh, representative of the National Federation of Building Trade Operatives, said he did not see how they could make progress by going backward.

Bailie W. R. Ingram, Housing Convener, Dundee, said Mr. Hill was living in the Victorian era. They had to meet the needs of the times. They had the problem of people without homes of any kind, people living in houses that were a disgrace to civilization. "Here is an attempt to give these people a chance in life, and I do not think it would be a serious loss to do away with some of the fittings.

Bailie Gilmour, Peebles, declared that the department were shooting at the wrong target. "The gun," he said, "should be turned on monopolies controlling the cost of building materials. The supply of steel windows, for instance, is a closely cartelized industry, and steel windows are a very expensive item, costing as much as £5,000 in schools and hospitals. There is a ring in the industry, and any job over a certain figure is immediately reported to the secretary of that association in London. The secretary allocates the job to one firm. The price to be quoted by the firm is told to every other member of the association, and each member is told how much higher percentage to quote and also the delivery dates to quote." "As a result," went on Bailie Gilmour, "building trade contractors are forced to take the lowest offer, whether or not they want to deal with that particular firm. What applies to steel windows applies to other materials in the building trade. This thing should be broken. The Government knows it goes on and does nothing."

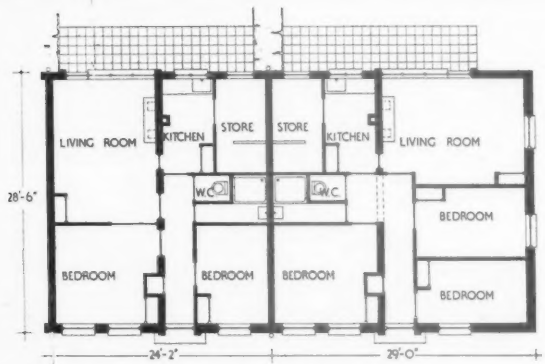
D



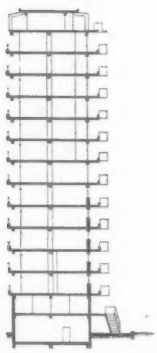
Many well-known architects, artists and sculptors attended and spoke at the "De Divina Proportione" Congress held recently in Milan. Top, Le Corbusier, giving his lecture. Right, Le Corbusier in conversation with architect and painter Max Bill, on left. Also attending: Ernesto Rogers, Alfred Roth, and Siegfried Gieldion.

POST-WAR FLATS AND HOUSES IN THE CITY OF

At an informal reception at the Housing Centre on September 25 for the Alderman and Directors of Public Works, Town Planning and Housing of the city of Rotterdam, C. van Traa, Director of Town Planning and Reconstruction and A. Bos, Director of Housing, spoke on post-war housing in the bomb damaged city, and lantern slides were shown. During the bombardments in 1940 and later in the war there was a loss of 27,546 dwellings, but this included many dwellings that had become sub-standard. On the left is a photograph of a 14-storey block of flats designed by W. van Tyen, which is financed by the municipality and is man-



Typical plans of semi-permanent bungalows

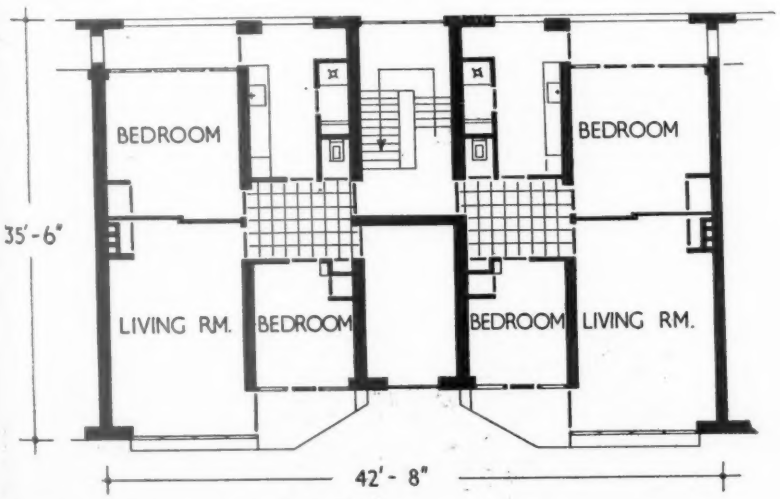


Section and typical flat plans

aged by a committee. This block has a reinforced concrete frame with brick in-filling and pile foundations. Piles are needed for most buildings due to the soft, peaty soil and it was a temporary shortage of piles which led to the building of the semi-permanent bungalows, seen in the photographs, left, which could be constructed without their use. Cavity brick walls, prefabricated blocks for partitions and wood window frames are used. These houses are designed by the Housing Department. The flats at Kralingen, a district of Rotterdam, seen on the opposite page, are designed by Brinkman and van der Broek. As in most Dutch flats there is a basement floor for pram and cycle storage, laundry and heating plant. The flats are

OF ROTTERDAM, HOLLAND

standard on the ground, first and second floors, and smaller flats for young people are provided on the third floor. In these flats the walls are load bearing.



Typical flat plans on ground to second floors

ABS

Competition, Annual Ball and Stand at Building Exhibition

The Architects' Benevolent Society is organizing three events to add to the £7,000 subscribed following their Centenary Appeal for money to build a home for old people. At the *Building Exhibition* they will have a stand (due to the courtesy of Hugh Montgomery) at which they will sell Christmas cards (designed by architects E. B. Musman, Frank Hoar, Norah Glover, and Peter Shepheard) and pictures. Architects and students are asked to present oil paintings, water colours, line drawings, etc., framed or unframed. Those presenting pictures should notify the Secretary at 66, Portland Place so that the collection of pictures can be arranged.

The Annual Ball, on December 12, at the Dorchester Hotel. Tickets are two guineas each and include supper. Last year's successful side shows will be repeated, the Regent Street Polytechnic School of Architecture helping, and the AA School of Architecture have been asked to stage a cabaret.

An *Architectural Competition* for a "Monument to Commemorate the Passing of the Good Old Days of Architecture," this, the conditions state, "will on no account be erected on a site in the middle of Portland Place." H. S. Goodhart-Rendel, Osbert Lancaster and John Summerson are the assessors. Premiums: first, £10; second, £5; third, £2 10s.; and four awards of £1. Copy of conditions on payment of a minimum non-returnable deposit of ten shillings. The designs will be exhibited and the results announced at the Annual Ball.

DIARY

The 1951 *Census.* Mark Abrams. At 28, King Street, Covent Garden, W.C.2. (Sponsor, Students' Planning Group.) 6.15 p.m. OCTOBER 18

Concrete Finishes. J. G. Wilson. At 66, Portland Place, W.1. (Sponsor, RIBA.) 6 p.m. OCTOBER 23

Some New Developments in Prestressed Concrete. A paper to be read by Dr. P. W. Abeles before the ISE, 11, Upper Belgrave Street, S.W.1, at 5.55 p.m.. OCTOBER 24

The Quantity Surveyor and the Building Contract. A lecture by Arthur J. Willis. (Sponsor, IQS.) At 98, Gloucester Place, W.1. 6.45 p.m. OCTOBER 24

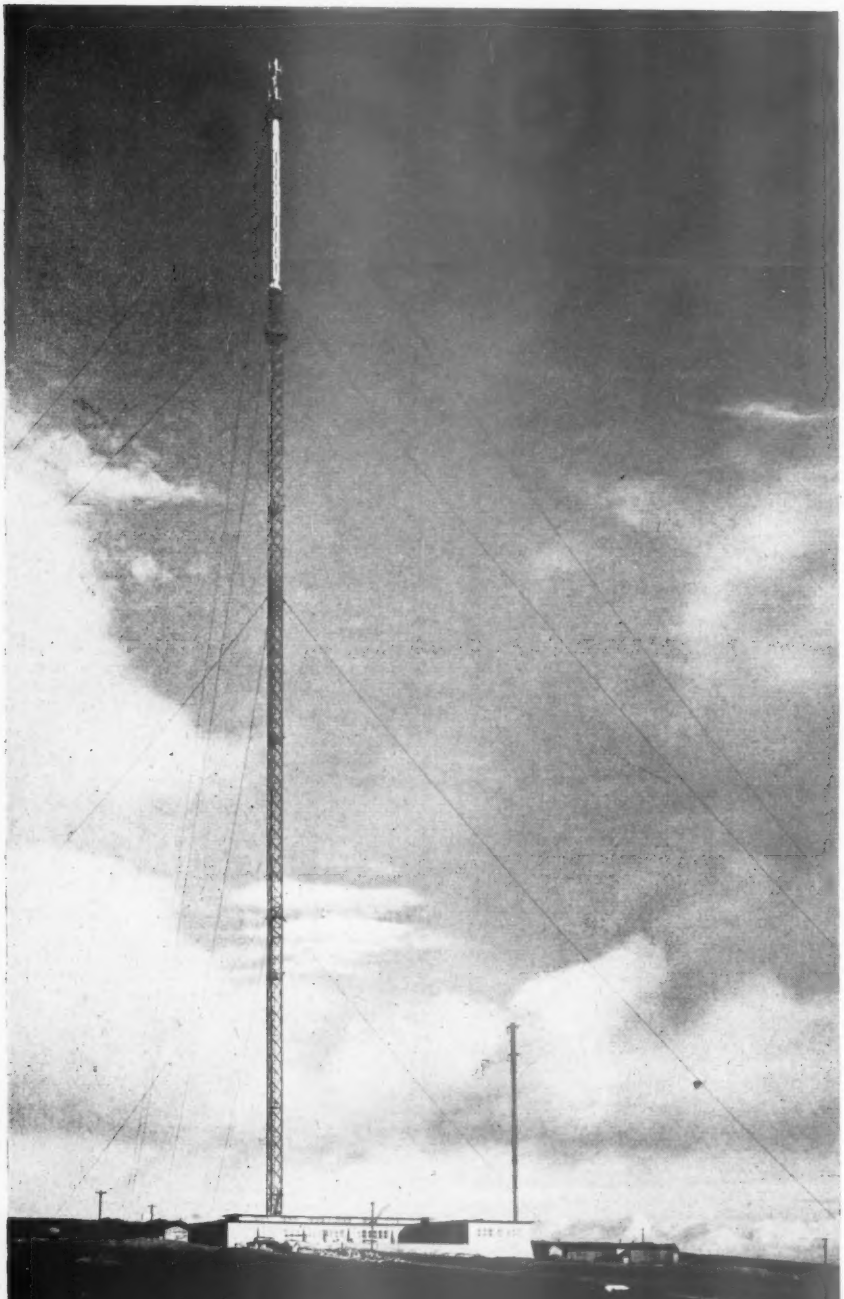
Is Planning Incompatible with Democracy? Discussion at 28 King Street, Covent Garden, W.C.2. (Sponsor, Students' Planning Group.) 6.15 p.m. OCTOBER 25

RIBA President's Inaugural Address. Presentation of the London Architecture bronze medal to A. J. P. Powell and J. H. Moya, for the Westminster City Council's Housing Scheme at Pimlico. At the RIBA. at 6.0 p.m. NOVEMBER 6

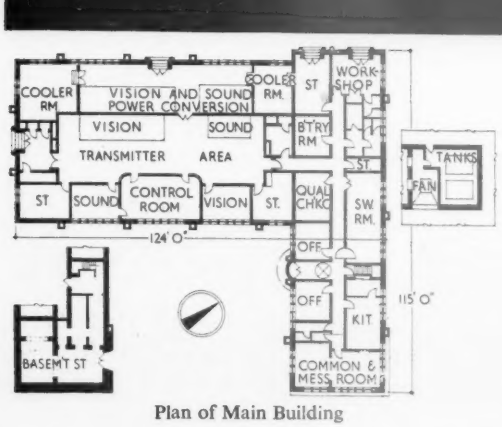
The Design and Planning of Colleges for Further Education. Symposium at the Architectural Association, 34 Bedford Square, W.C.1. Entrance fee, one guinea. 9.30 a.m. until 6 p.m. NOVEMBER 14

Course of Three Lectures. The Cathedral of Chartres, by Jean Maunoury. (Sponsor, the University of London.) At University College (Architecture Theatre), Gower Street, W.C.1, at 5.30 p.m. DECEMBER 5, 6 & 7

TELEVISION STATION AT HOLME MOSS, HUDDERSFIELD



Holme Moss, near Huddersfield, is the second high-power transmitting station to be completed under the BBC's post-war plan for extending the television service and will reach a further 11 million people. The station comprises a 750-ft. mast and a 150-ft. reserve mast, both seen in the photograph on the left, and two buildings, one for the two main transmitters and the other for two reserve transmitters. The layout and planning of the buildings is by C. P. Williams of the BBC architects' department, and Wimperis, Simpson, Guthrie & Fyffe designed the elevations. A view of the main L-shaped building looking north is seen below. The site is 1,750 ft. above sea level and in order to be in keeping with the wild moorland character the external walls of the buildings are faced with hammer block random rubble grit stone. These walls are of cavity construction with the inner skin of 9-in. brickwork. The floor level of the buildings has been kept high above ground level as a precaution against heavy snow drifts, and the voids beneath the floor accommodate ventilation ducts, wiring and storage space. The mast, which has a weight of 140 tons, has a maximum downward thrust of 350 tons under severe conditions and at the base there is a 2-in. diameter steel ball in a socket to allow for movement in a high wind. The general contractors for roads and buildings were John Laing & Son, Ltd., and for the mast, British Insulated Callender's Construction Co., Ltd.



Plan of Main Building

SOCIETIES AND INSTITUTIONS

The following is an extract from a talk by Osbert Lancaster given on the BBC's Third Programme on Sunday, October 7. *See page 459 for editorial comment.*

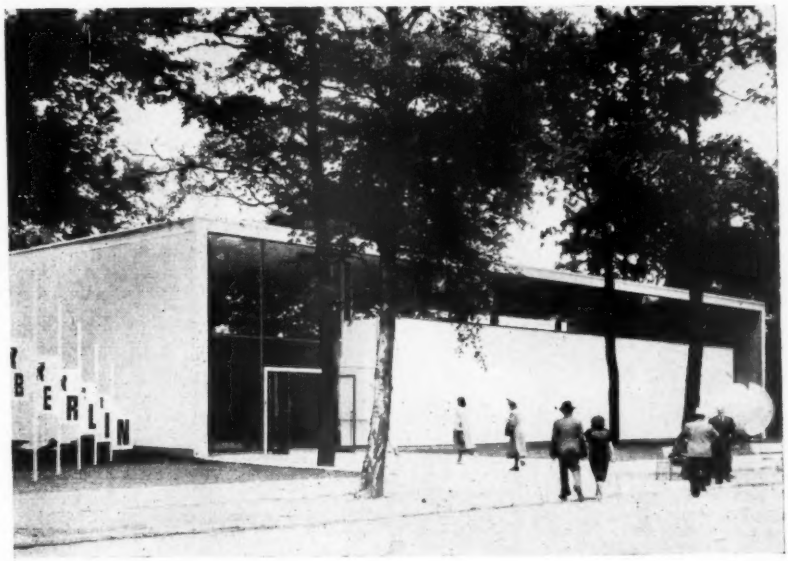
OSBERT LANCASTER

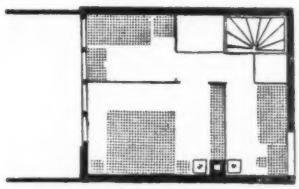
The End of the Modern Movement in Architecture.

Modern is probably one of the most ambiguous and certainly one of the most variously employed words in the English language. Unlike most adjectives, so far from defining or expanding the meaning of the substantive to which it is attached, its own meaning is entirely governed by that word which follows it. Thus when we speak of "the modern woman" we summon up a vision of some South Kensington Hedda Gabbler of the 90's all shirt-waist and pince-nez, peddling madly round Battersea Park thinking about Mrs. Sydney Webb. If, on the other hand, we say "modern girl" this vision is replaced by a tubular siren showing acres of very shiny pink-silk stockings rhythmically jigging to the strains of "Yes, Sir, that's my baby." When employed in connection with art or architecture, modern retains all its period flavour and may mean anything except contemporary. In ordinary usage the phrase "modern art" is now practically confined to works produced in Paris between the emergence of Van Gogh and the coming of Surrealism. While "Modern Style," particularly pronounced in a slight foreign accent, refers to those tendencies in design which flourished in Vienna and Munich at the turn of the century. So overburdened has this unfortunate adjective become, that we have been forced to invent derivatives such as "modernistic" a term of contempt correctly employed to describe a type of all too popular decoration out of early Cubism by Metro-Goldwyn-Mayer; or borrowing from abroad, to acclimatize a word such as "Modernismus" in an effort to distinguish English works which display a perhaps imperfect understanding of the principles enunciated at the Bauhaus. But to what precisely do we refer when we speak of the "Modern Movement"?

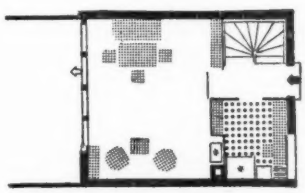
Thanks largely to the exhaustive researches of Mr. Morton Shand and Professor Pevsner, we know quite well when and how the modern movement started, and can follow the course of its early development. What, however, remains in doubt is exactly where we, and it, stand today. Does 1951

BUILDING EXHIBITION IN GERMANY





First floor plan



Ground floor plan

In August a large building exhibition was held in Hanover. Only moderately attended it closed after five weeks. The exhibition was an international one, and eight foreign countries exhibited. Eight huge exhibition halls and an adjacent open showground contained every aspect of town planning, architecture and building techniques. While, on the whole, the standard was acceptable but unexceptional, some exhibits were outstanding. Two of these are shown here. Above, the Berlin Pavilion by Wassili Luckhardt. Below and left, rear view and plans of small terrace houses by Werner Hebebrand. *See also page 458.*

SCANDINAVIAN DESIGN FOR LIVING: AN EXHIBITION OF

Import restrictions since the war have prevented the British public seeing or being able to purchase much work of contemporary design from foreign countries, but Messrs. Heal are now displaying in their Mansard Gallery a new collection of Danish furniture, Swedish glass and Norwegian hand crafts. In the photograph above left is seen a group of Danish furniture in teak and beech for a bed-sitting room; from left to right is a bureau-dressing chest with concealed mirror, a storage unit, the doors of which are held by small magnets, a small storage unit and a bookcase, all designed by Borge Mogensen. The writing chair in teak and beech with cord seat and the arm chair in beech are by Hans J. Wegner. On the floor is a Swedish cotton rug. Above right is a dining table also by Wegner, which has drop ends fixed by satin brass rods and is 7 ft. 9 in. long when extended. In the background is a printed linen called "ceramic." Below is an easy chair in laminated mahogany and beech designed by Peter Hvidt and O. Mølgaard Nielsen of Denmark; the settee in laminated walnut with beech frame is by Hans Wegner; the satin brass adjustable table lamp by Le Klint can also be used as a wall bracket; the curtain is

OF IMPORTED FURNITURE AND FABRICS

"Dockleaf." a printed sateen by Arne Jacobsen. Above is a nest of utility tables designed by Andre Tuck in mahogany and beech and a chair in beech with teak inlay designed by Wegner. Below is a mahogany writing desk, a beech chair, a flower pot stand in natural pine and a printed linen designed by Miss Brit Bredstrom of Sweden.

mark the final triumphant flowering, or just a further stage on the upward march, or the end of the whole thing and the beginning of something quite new? Is Mr. Hugh Casson, for example, an Alberti or a Bernini? The rest of my remarks this evening will be largely directed towards encouraging the last assumption.

THE GOTHIC REVIVAL PARALLEL

It was generally proclaimed by the fathers of the modern movement, that it represented a complete break with the past and in so far as it was directed towards the abolition of "style," as generally understood, it could not possibly be compared with any other historical architectural school. This contention, which is of course commonly made by all artistic pioneers at all periods, we will treat with the contempt it deserves and draw, what I hope may be a helpful parallel with the history of the Gothic Revival. I choose the Gothic Revival not in order deliberately to infuriate such supporters of the Modern Movement as may be listening to-night, or still less the rather smaller circle of Gothic Revivalists, but because not only has it a clearly defined beginning, middle and end, but, thanks to Mr. Betjeman and Sir Kenneth Clark, its history is now generally familiar. And, moreover, the moment one begins to make the comparison one is immediately struck by a curious parallelism. Both movements started with what one may perhaps describe as a romantic fun-and-games stage, represented in the case of the Gothic Revival by Strawberry Hill and Fonthill, and in the case of the Modern Movement by such works as the interior of Maxims Restaurant in Paris and Horta's house in the Rue de Tournai.

Then after a short period of settling down, when the early exuberance had slightly diminished, represented in the one case by the Commissioner's Churches and in the other by the buildings of Voysey or Berlage, comes the doctrinaire period, all manifestos and witch-hunts. Pugin dismisses all the work of his contemporaries and predecessors as trivial, worthless and based on a complete misunderstanding of the principles, and, assisted by the Camden Society lays down the new law; Gropius does the same for Art Nouveau, and the Jugendstil and such men as Van de Velde. And in both cases it is at this moment that the movement, hitherto purely architectural, tends to become involved in extra-curricular activities—in the one case tractarianism, in the other Social Planning. Then comes the high summer in both cases marked by the emergence of the twin figures of the Prophet and the Publicist. There, however, there ensues a curious reversal of roles, for in the one case the Prophet exerted his influence through the medium of words and in the other chiefly by practical example, but nevertheless, the points in common between Ruskin and Frank Lloyd Wright are fundamental, the differences largely superficial. Both men, it seems to me, tower head and shoulders above all their fellows; the thought and outlook of both is deeply coloured by an evangelical background; and both it must be admitted, exhibit aspects, at which it is possible for trivial minds (which at some time or other includes most of us) to laugh. The similarity between the roles played by Sir Gilbert Scott and Le Corbusier although perhaps less immediately striking is none the less considerable. Sir Gilbert, it is true, built a great deal more than Le Corbusier and wrote a good deal less, but both men were in their own ways superb showmen. And probably did more than any of their contemporaries not only to put their respective movements in the limelight, but keep them there.

To all intents and purposes the Gothic Revival was over by the seventies. Dozens more Gothic buildings were erected after that

decade, but either they were largely hack work, or if of merit, exhibited features which had little to do with 19th century Gothicism and heralded a coming change. The event which may be held definitely to mark the end was Norman Shaw's experiment with Queen Anne; a deviation all the more important in that Shaw came from the Street stable, and in the history of the later Gothic Revival the office of G. E. Street played a role comparable to that of the Bauhaus in the Modern Movement. This heresy, of course, provoked a storm of criticism from the stern unbending Goths and the curious thing is that the slight note of hysteria there detectable strangely resembles that which characterizes the weighty condemnation in strong, if recently acquired, American accents delivered against that recent deviation from the Modern Movement known, for reasons that are not immediately obvious, as the New Empiricism.

THE INVERTED SNOB

But similarities in the course of the development of two movements are not themselves, even if convincing, sufficient to indicate that they will necessarily end at the same stage or in the same way. For that it is necessary to examine rather more closely the fundamental doctrines on which each were based. There one is at once struck by a strange fact; it is not surprising that they should be totally different but it is curious that they should be so neatly antithetical.

At all times and in all places the role of the architect lies between that of the plumber and the sculptor; but seldom midway. If, like the majority of nineteenth century architects, he is an æsthetic snob he will get as close to the sculptor as he can; if like most contemporary architects he is an inverted snob, he will suck up to the plumber. Thus, roughly speaking, most Gothic Revivalists and Modern Movement boys are equidistant from the centre which makes their conflicting theories almost exactly complementary, and, in my view, equally suspect.

But the most striking fact in common between the two movements was the true reason for their failure, totally dissimilar as were its products. This lay in an ineradicable tendency to give a general validity to theories that were by their very nature particular. Thus the Goths maintained, perfectly correctly, given the liturgical requirements of the Catholic faith and the prevailing intellectual climate of their time, that Gothic was the only style for churches. Where they went wildly wrong was to advance from this premise the untenable proposition that Gothic was the only style for railway stations. Similarly the Moderns were one hundred per cent. correct in maintaining that crenellations and lancets were out of place on power stations in which true beauty was only to be obtained by the revelation of function through form. When they went on to apply this theory to all architecture they were still perfectly justified on paper, but almost never in practice, for the very good reason that whereas the function of a factory, or a power-station, or a hospital is exactly ascertainable, there exists a whole class of buildings, including domestic, where this is only partially true, and in all monumental architecture function can only be defined in the very vaguest terms.

COVENTRY CATHEDRAL

It is in the varying reactions to this last awkward fact that the leaders of the Movement reveal the existence of a schism. If one may judge from the results of the symposium on monumentality recently held by the *Architectural Review*—which is not altogether easy as the gift of clear literary expression seems, with the exception of Mr. Le Corbusier and Mr. Mumford, to be but grudgingly extended to modern architectural writers—the Purists side-step the whole question by taking refuge in sociology and saying that the whole idea of monumental architecture is ridiculous, uncontemporary, and not to be encouraged. An attitude which in view of the fact that a very large proportion of the world public, including, to judge from all one can see, that not inconsiderable section that lies east of the Elbe, is still crazy for monuments, and whopping big ones, is not helpful. Far more praiseworthy is the reaction of those who admit the need and go gallantly ahead in an effort to meet it; even though, as at Coventry, that effort ends in almost total failure. Let me say at once that this failure is not in my view to be laid at the door of Mr. Basil Spence. Rather is it attributable to those responsible for organizing the competition, who seemed to have but the vaguest idea of what they really wanted or what a cathedral is, an ignorance the more astonishing as the purpose and nature of a cathedral have so recently been admirably defined by the highest authority in the Archbishop of York's book on the Church of England. If they wanted a building which would combine the advantages of a parish hall blown up to meet diocesan requirements, with the popular appeal of a brand-new Odeon, they should have said so and not called it a cathedral. But to call in an architect trained in the functional tradition and not to have made it clear that, in so far as cathedrals are concerned, function is liturgy, and liturgy is function, was to invite disaster. In this bland denial of the very tenets of the functional faith the wheel has come full circle, and Coventry Cathedral seems likely to be the St. Pancras Railway Station of the Modern Movement.

But it is in their respective attitudes to the machine that both movements proved finally inadequate.

The Goths invited disaster through fear which so inhibited them that they were quite unable to take advantage of the mechanical revolution of their time, and finally led them into the cosy wilderness of Arts and Crafts. The attitude of their successors was more complicated. On the surface it was coloured by a mystique of the Machine which found its earliest and dottiest expression in Marinetti and the Futurist manifesto and was later rationalized by such men as Professor Giedion. But underneath, deep down in the collective subconscious of the Movement, there remained—inherited from William Morris who, it is important to remember, was a Janus figure standing exactly at the cross-roads—a profound misgiving lest the price to be paid for all the manifest advantages to the consumer of "mechanization taking command" prove disastrously high in terms of the spiritual well-being of the producer. However, further to expand this statement with all its inevitable sociological implications, might well involve me in expressions of opinion to which, in this tense pre-electoral atmosphere, vile minds might attach a partisan significance.

SOUTH BANK TRIUMPHS

Moreover, to speak solely of failure is unjust and unhelpful, for the end of artistic movements is not commonly marked by failure but by the achievement of unintended success, which provides a springboard for fresh leaps. An extreme example of what I have in mind, drawn from modern painting, is afforded by le Douanier Rousseau. He, as we know from his correspondence, aimed at painting like Bougereau, but happily came nowhere near his avowed intention. But in the process produced a number of masterpieces of a quite different kind. Without for one moment attributing to Hugh Casson and his colleagues a comparable degree of naïveté, the view that the Modern Movement has now reached its term is far more plausibly supported by the triumphs of the South Bank than by the inadequacies of Coventry.

Here a hand-picked selection of the younger exponents of the Modern Movement were given a free hand to do what they liked without the necessity of making even a formal observance of theory. Indeed it would have been impossible for them to do so even had they so wished, for the purpose for which exhibition buildings must, one supposes, be fit is to exhibit, and one of the most enjoyable things about the South Bank Exhibition was that there was virtually nothing of the smallest interest *to* exhibit. Thus one could enjoy the wonderful Piranesi-like drama of the interior of the Dome of Discovery without bothering one's head, any more than one suspects did Mr. Tubbs, as to whether this imposing arrangement of ramps and moving staircases was in fact the best or most functional method displaying all the pseudo-scientific bric-à-brac with which it appeared rather hurriedly to have been filled. Similarly in other pavilions where the exhibits ranged in exotic fantasy from a row of cows being milked to a London omnibus, one was able undistracted to concentrate on the architectural qualities of the buildings themselves. As one did so one gradually became aware that in many individual cases, but not all, and in the general effect of the whole ensemble of something quite new—of a quickening wind stirring the grim bare branches of modernism—and a wind, moreover, that was certainly not blowing from the direction either of Mr. Bauhaus or the Rue Mallet-Stevens.

FUNCTIONAL IVORY TOWERS

Is this new spirit, which I shall not attempt to define, for definition and analysis have been the curse of modern architecture, the first swallow of a new summer, or just a belated straggler from the old autumn of the picturesque as certain of the most austere upholders of the International Style would have us believe? It is at this stage quite impossible to say, but one thing is certain. If a really live and profitable movement is to develop from this beginning, then many of the most cherished illusions of the Modern Movement will have to go overboard. That frenzied rejection of the past, for instance, that ridiculous attitude of having absolutely no connection with the period next door, which has had such disastrous effects on architectural education. That inhibiting fear of the cliché must at all costs be overcome and it must be realized that a good supply of sound, generally acceptable, clichés is one of modern architectures' most urgent requirements. That whereas the success of eighteenth century architecture, for example, as of eighteenth century poetry, lay very largely in just this invention of clichés, that could safely be entrusted to local builders to exploit without becoming wearisome, the failure of the Modern Movement wholly to get clear of the coterie stage was in a very large measure due to the fact that the best they could produce in the way of clichés was a window that turned a corner and a couple of pavement lights. Above all, the modern architect must at all costs come down from his functional tower of reinforced ivory and realize that a public which has for years been asking for half-timbered bread is not going suddenly to be satisfied with a cantilevered stone.

If, in fact, we are witnessing a new departure, then it would be churlish to conclude without paying a tribute to the stern, and sometimes inhibiting discipline which the Modern Movement imposed. If one thinks, as I do, that it always remained inextricably confused between ends and means, it nevertheless fulfilled an essential task. As with abstract painting, it was not a blind alley, as some might think, but a necessary diversion, and those who passed through it are likely to travel considerably farther than those who stuck to the main road.

FACTORY EXTENSION

in STAG LANE, KINGSBURY, LONDON, N.W.9

designed by HOWARD, SOUSTER and PARTNERS

architect-in-charge, R. R. FAIRBAIRN

The new warehouse, office and reception building for the Frigidaire Division of General Motors was sited to link up with the conveyor system of the large existing factory and had to be planned on a somewhat restricted area. The block form is virtually controlled by the fact that the steelwork was purchased and shipped from the USA from a cancelled scheme and was replanned to give a shape at ground-floor level to accommodate conveyorized production and despatch of refrigerator equipment.

The extension, looking east.

PLAN.—The most important factors affecting the plan form were the necessity for access at both ends of the building for works personnel in one case and administrative staff in the other, and for the best possible light for the first floor offices. The ground floor was arranged so that partly completed goods are conveyed into the east end and despatched as finished products at the west end, where the reception and display rooms are situated.

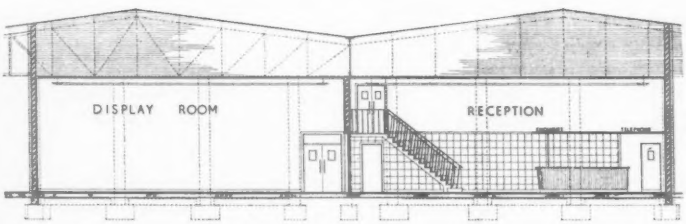
CONSTRUCTION.—The building is steel framed and has 9-in. brick walls and fireproof hollow tile floors. The roof over the office block and the low level ground floor roof is of steel decking.

FINISHES.—Most of the internal partitions are steel, glazed above 4 ft. height to give maximum visibility throughout the interior. The ground floor is finished with hard wearing granolithic. Staircases are pre-cast with terrazzo finish and aluminium balustrades. The main office on the first floor has a ceiling finished with acoustic tiles for sound deadening.

Left, the reception room. Below left, the display room, both in the west corner of the ground floor.

FACTORY EXTENSION

in STAG LANE, KINGSBURY, LONDON, N.W.9
designed by HOWARD, SOUSTER AND PARTNERS



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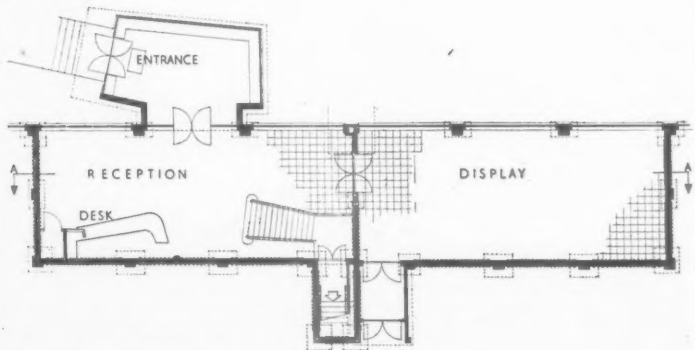
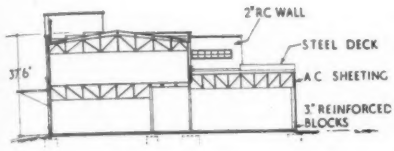
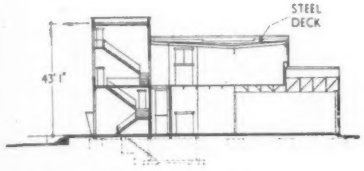


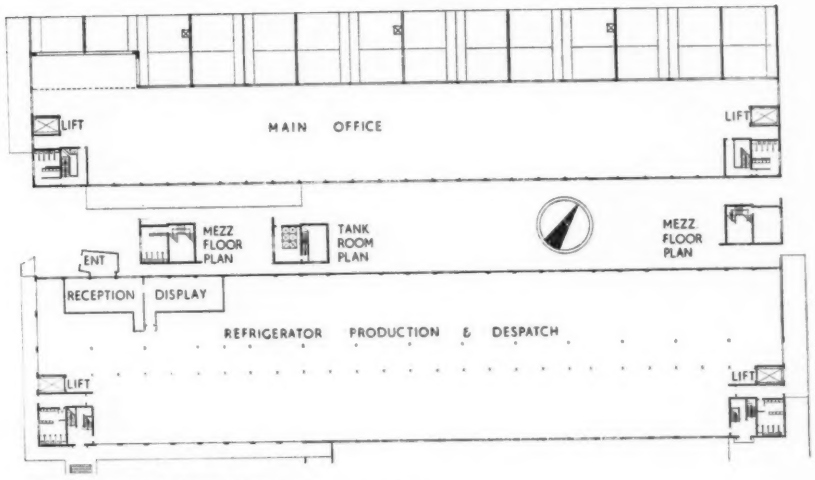
Plan of reception and display rooms [Scale : $\frac{1}{24}$" = 1' 0"]



Typical cross section [Scale : $\frac{1}{64}$" = 1' 0"]



Cross section through west end



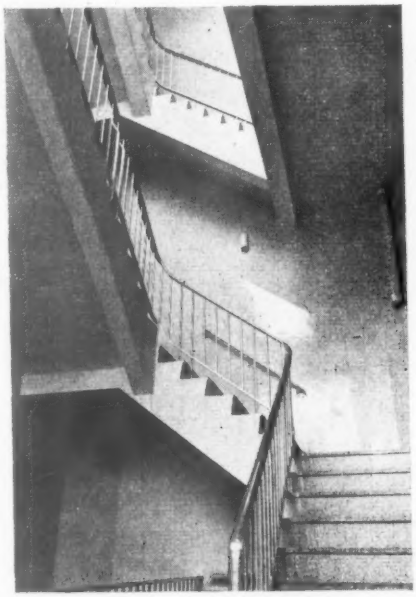
Ground and first floor plans [Scale : $\frac{1}{64}$" = 1' 0"]

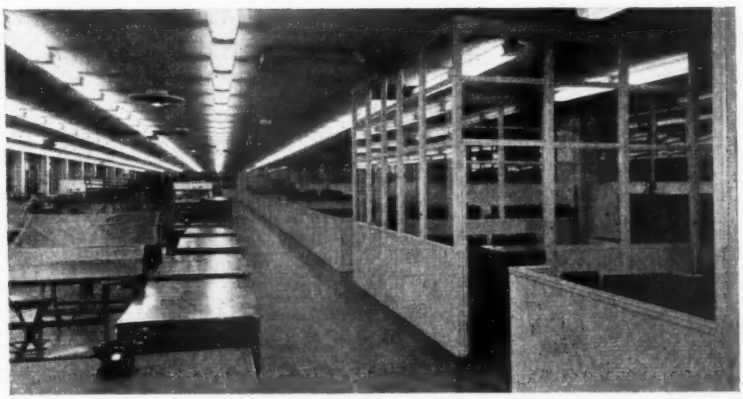
SERVICES.—Heavy goods lifts are provided at both ends of the building for moving office equipment and to allow for possible change of use of the first floor space. Telephone cables are run in floor ducts and wherever possible pipes been have concealed.

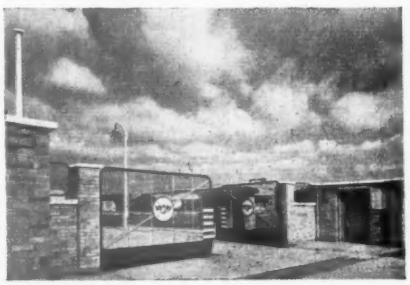
The general contractors were W. J. Marston & Son Ltd. For sub-contractors, see page 484.

Below, main staircase in the tank tower. Bottom left, the main entrance gates.

Below, the main office on the first floor. Bottom right, the south facade, looking west.







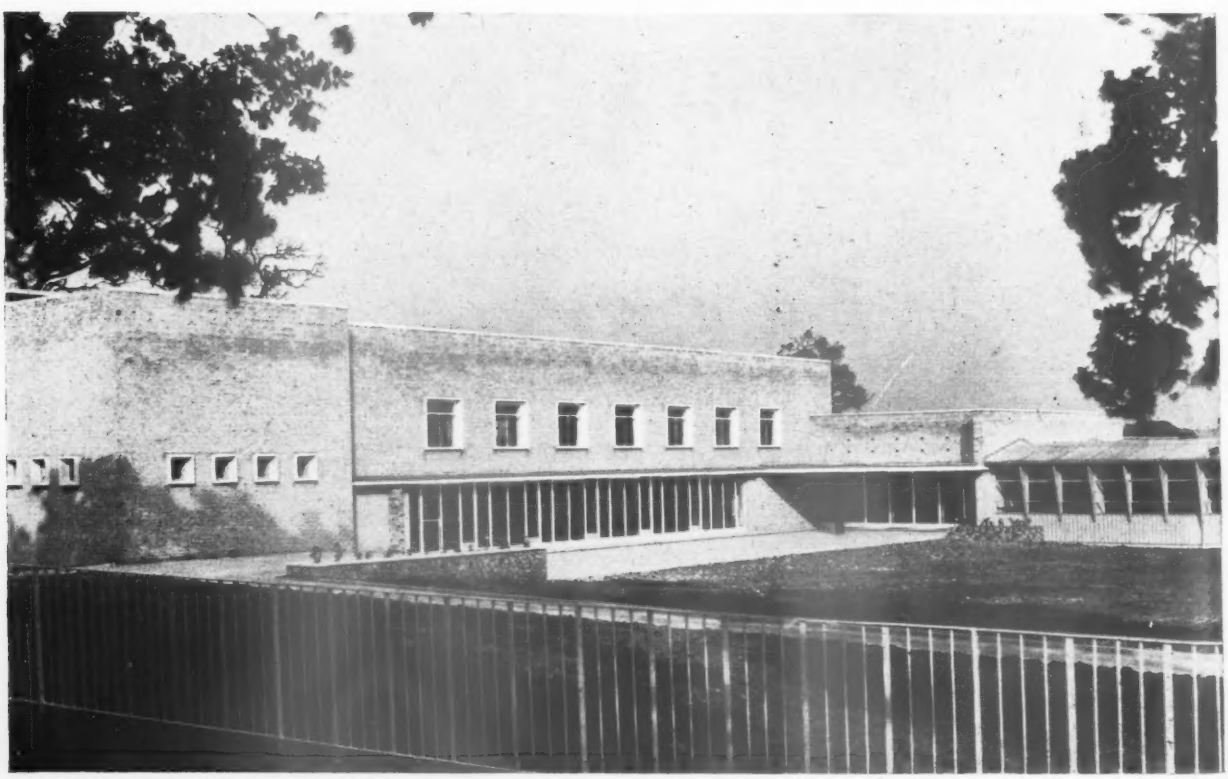
SECONDARY SCHOOL

in PYRLES LANE, LOUGHTON, ESSEX

designed by H. CONOLLY, COUNTY ARCHITECT

The Fairmead Secondary School on the LCC Debden Estate at Loughton was designed for 450 pupils of both sexes and with dining accommodation for 336. The site, which covers 11·4 acres, slopes from north-east to south-west and is surrounded, except on the north, by new housing development. Because speed of erection was essential to contend with the rapid growth of the estate, it was decided to build all teaching rooms, sanitary offices and staff block in prefabricated aluminium construction.

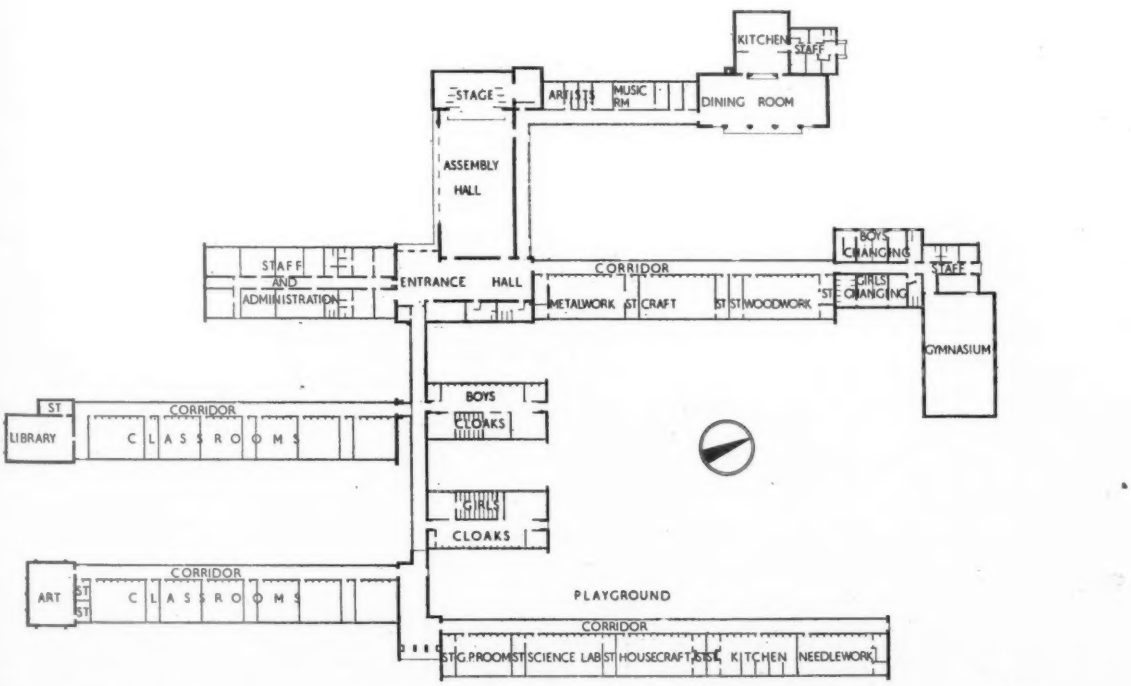
The assembly hall and main entrance looking east.



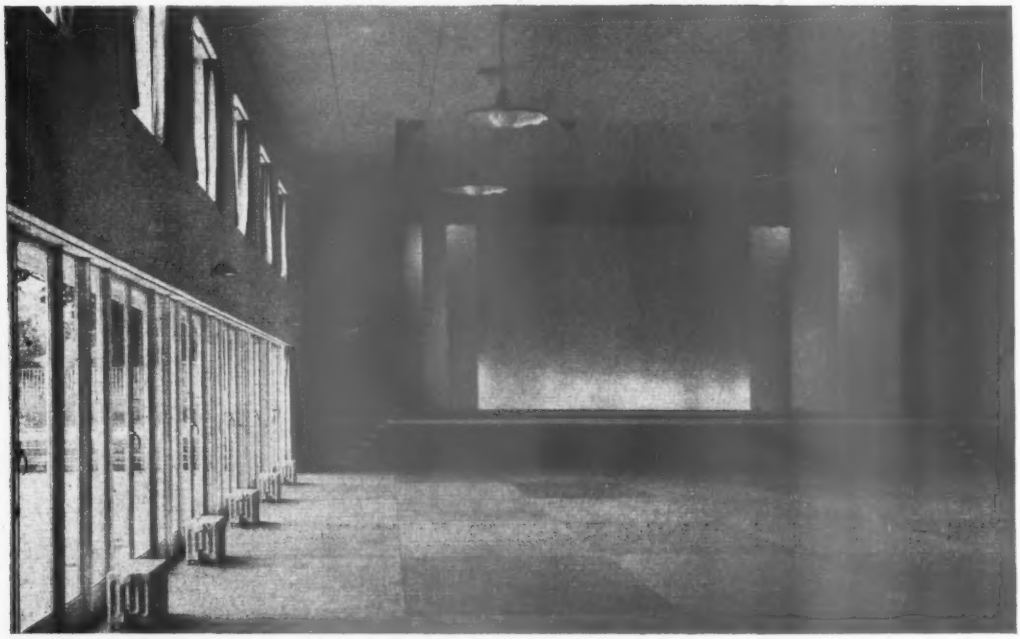
The dining room, looking west.

PLAN.—The school has an irregular open plan which gives south-east aspect to teaching and dining rooms. The layout and the use of single-storey construction was largely dictated by the priority order of building and the necessity of segregating occupied portions from work still in progress. The project was initiated in February, 1949, and classroom accommodation for 400 was required for use by September of the same year.

CONSTRUCTION.—Teaching accommodation, sanitary offices and the staff block are of prefabricated aluminium construction and the remainder of the school is built of traditional load-bearing brick construction. Steel trusses are used for a light-weight roof over the assembly hall, gymnasium and dining room. Roofs elsewhere : precast concrete.



Plan [Scale : $\frac{1}{96}$" = 1' 0"]



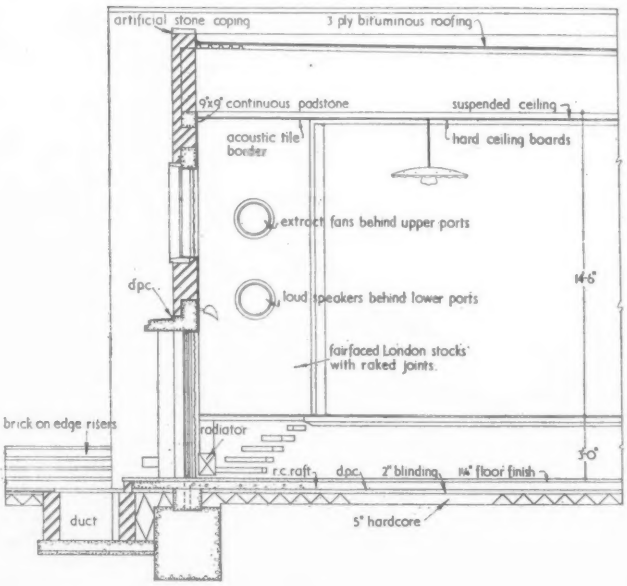
Left, the assembly hall looking towards the stage. Below left, the steps on the left of the stage.

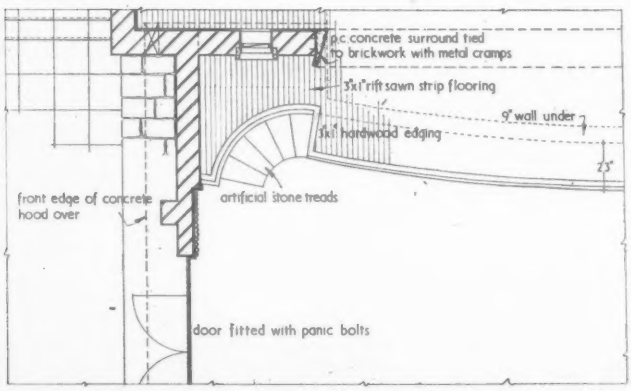
SECONDARY SCHOOL

IN PYRLES LANE, LOUGHTON, ESSEX

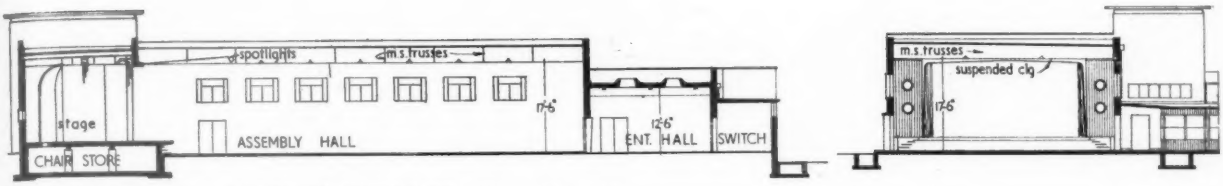
designed by H. CONOLLY, COUNTY ARCHITECT

FINISHES.—External brickwork is of London stocks with trims of white artificial stone or reinforced concrete finished with cement paint. The aluminium is painted a warm buff colour externally with wind-braces and gutters light blue. The polished aluminium windows have been left untreated. In the brick portions of the building, windows and rain-water goods are painted ivory. Internally, the walls are painted in a variety of colours, but many of the fibre board and asbestos spray ceilings are left unpainted. The assembly hall is equipped for

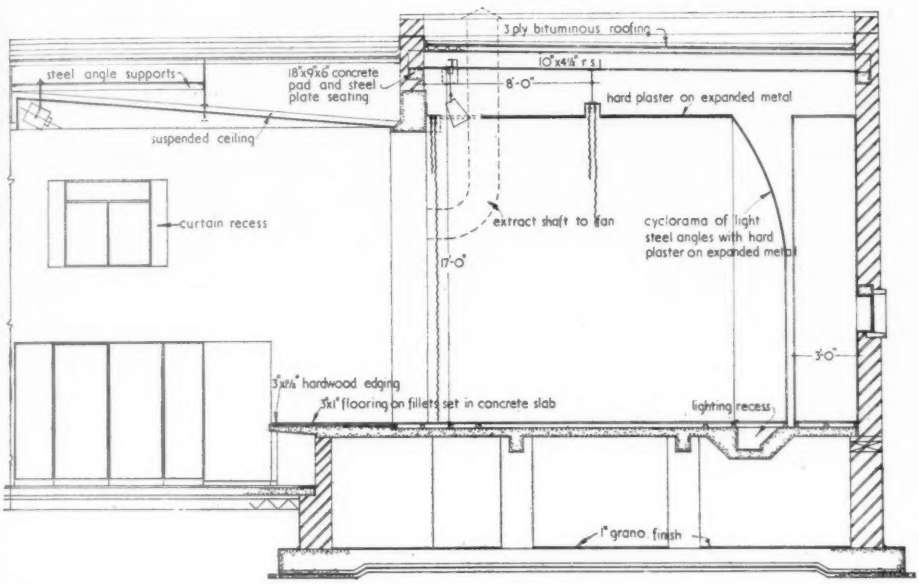




Part plan of stage and part section through assembly hall [Scale : ¼" = 1'-0"]

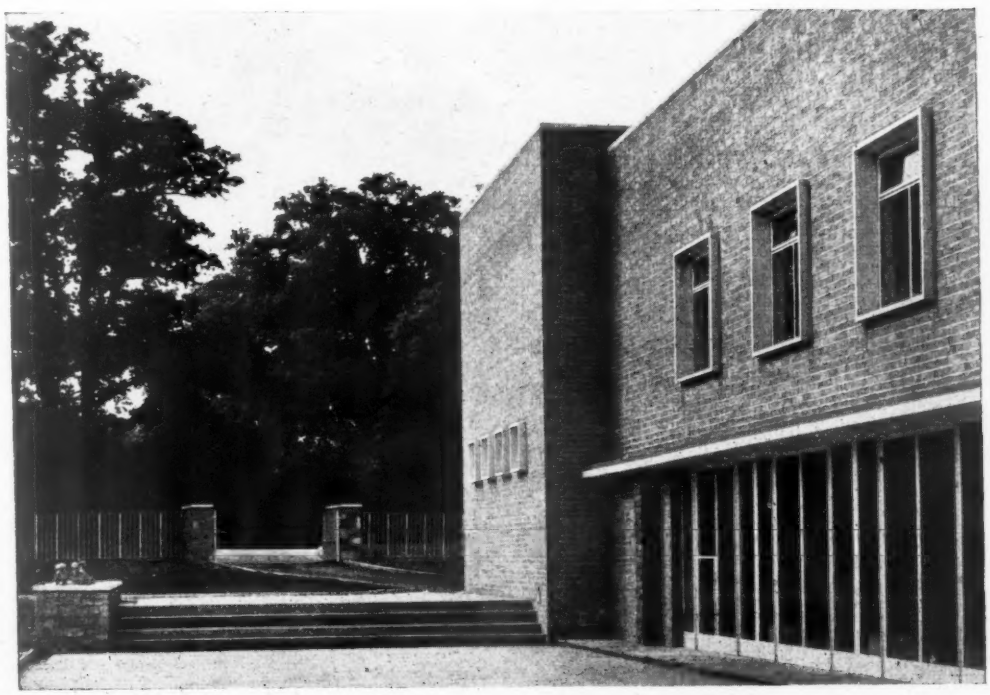


Longitudinal and cross section through assembly hall [Scale : $\frac{1}{32}$" = 1' 0"]

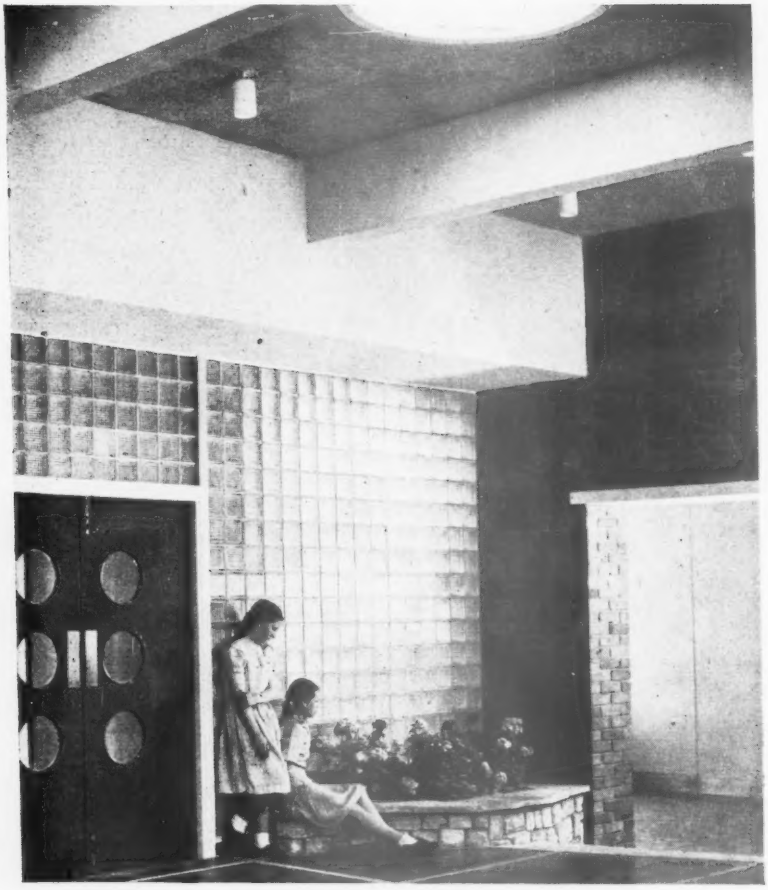


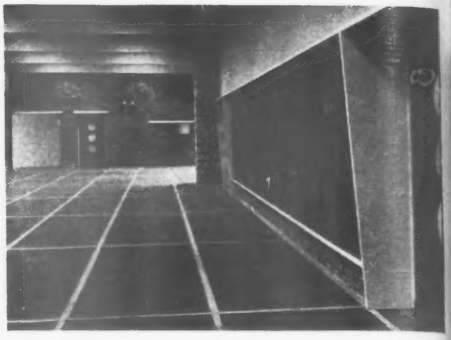
Section through stage and chair store [Scale : $\frac{1}{4}$" = 1' 0"]

entertainments and has a cyclorama and full lighting equipment for the stage, which is designed for music or drama. A low ceiling is used, which, together with the cyclorama, gives maximum sound direction. The stage size can be adjusted or sound reflection assisted by the flats, which are hung on a central overhead pivot to a sliding track, and are therefore capable of movement either rotary or across the stage. The central portion of the fibre board ceiling is treated with a hard, dense paint for reflection



Above right, the assembly hall from the stage. Right, the main entrance from Pyrles Lane and the assembly hall windows on the right.





Views of the main entrance hall. Left, the opening on the right, leads to the waiting room. Top, the door on the right is to the assembly hall. Above, the window to the secretary's room.

SECONDARY SCHOOL

in PYRLES LANE, LOUGHTON, ESSEX

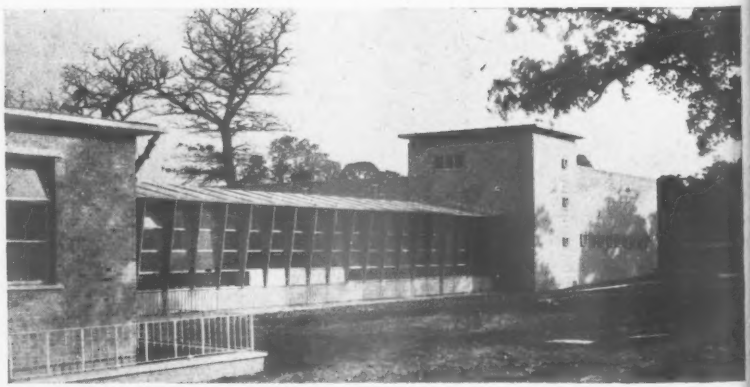
designed by H. CONOLLY, COUNTY ARCHITECT

and there are acoustic tiles on the rear wall to control reverberation.

SERVICES.—Heating is by a low pressure hot water system. Service pipes are laid in external ducts below the footpaths. The heating and lighting installations were designed by the County Architect's Department under the direction of G. E. Slade, Chief Engineer.

The general contractors were Gilber-Ash Ltd. and the Bristol Aeroplane Co. (Housing) Ltd. For sub-contractors see page 484.

Below, the gymnasium. Below, right, from left to right, the kitchen, dressing rooms, music room, scenery tower and back wall of stage.



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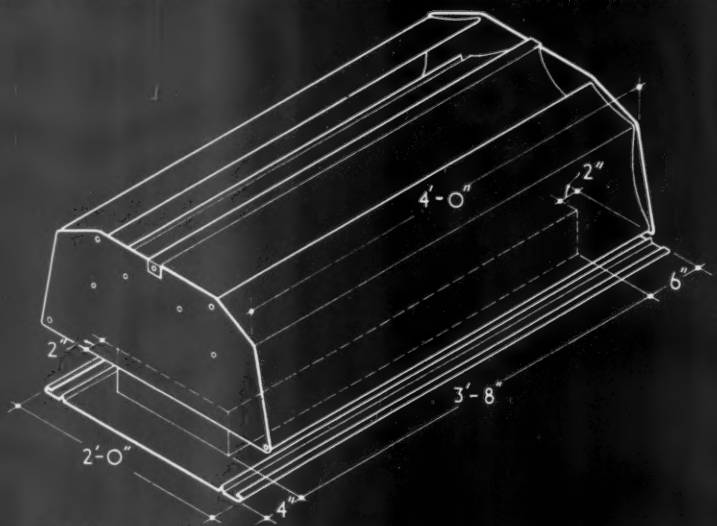
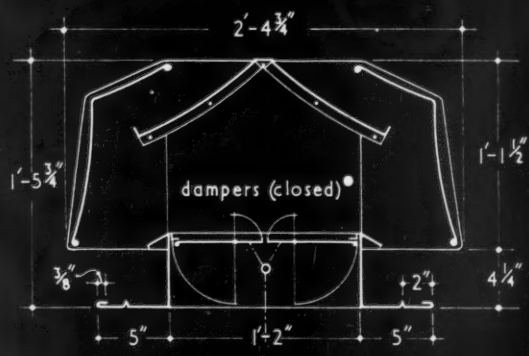
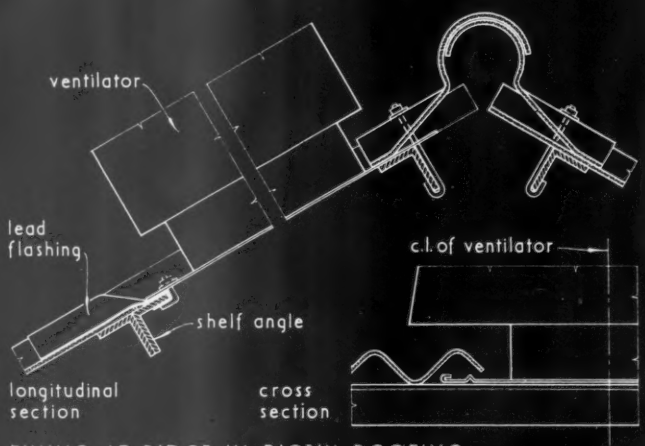


ISOMETRIC VIEW OF VENTILATOR.

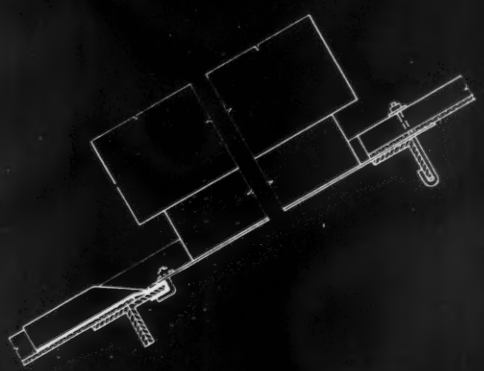
• ventilator can be supplied with or without cord-or chain-operated dampers



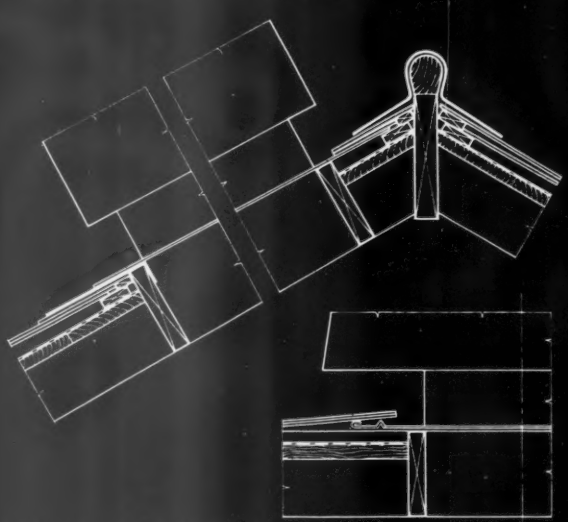
CROSS SECTION THRO' VENTILATOR.



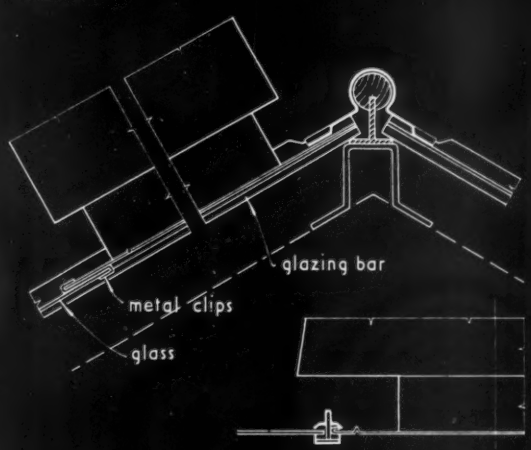
FIXING AT RIDGE IN BIGSIX ROOFING.



FIXING CLEAR OF RIDGE IN BIGSIX ROOFING.



FIXING IN SLATED ROOF.



FIXING IN GLAZED ROOF.

COLT S.R. 2046 EXTRACT VENTILATOR. Manufacturer: Colt Ventilation Ltd.

30.D10 COLT S.R.2046 EXTRACT VENTILATOR

This Sheet the first of a series dealing with Colt ventilators, describes the Colt S.R.2046 extract ventilator. The ventilator can be fixed in any type of roofing, including glazing, and the drawings on the face of the Sheet give a general view and cross section of the ventilator, together with details of typical fixings.

General

The ventilator is designed on aero-dynamic principles using aero-foil curves which control the wind and roof eddies from any direction : this creates a suction which produces an air extraction equal to that produced by mechanical means without the drawbacks of noise, wearing parts or operation and maintenance costs. The design gives a flat curve of extraction which eliminates any tendency to excessive extraction in high winds.

Sizes

The sizes of the S.R.2046 ventilator are given on the face of the Sheet. A larger model of the same type, S.R.3080, is also available and measures 3 ft. wide by 8 ft. long overall by 2 ft. 4 in. deep with 6-in. side, top and bottom flanges. For very large factories or where extremely large areas of extraction are required over concentrated positions, the Colt continuous S.R. ventilator is recommended. This ventilator is of the same design but measures 9 ft. wide by 6 ft. deep and is built up in sections to any required length (average 20 to 30 ft.).

Material

The material used is anti-corrosive hardened aluminium, steel (galvanised after the ventilator is made) or asbestos cement. The choice of material used for the ventilator to be fitted is dependent on the purpose for which the building is designed and also on the type of roofing used.

Controls

Both ventilators can be supplied with or without control dampers for manual operation by cord or chain : motorised or manually-operated gearing can be incorporated with ventilators arranged in batteries. These give control over the different amounts of ventilation required for varying atmospheric conditions.

Air Inlets

For the ventilators to work efficiently adequate fresh air inlets are essential and the total free area of inlets should be approximately double that of the extracts.

Fixing

Owing to their light weight the ventilators can be fixed in any part of the roof without additional roof reinforcement. Typical fixing details are shown on the face of this Sheet.

Applications

The ventilators are recommended for foundries, laundries and other works where large quantities of hot or foul air, fumes, etc., have to be removed quickly.

Fixing Service

A service is available for fixing Colt ventilators in any part of the country.

Further Information

The manufacturers maintain a technical department and testing laboratory together with an outside technical staff, resident in all the main centres throughout the country, who are available to answer questions and advise on technical problems and carry out site surveys.

The manufacturers also supply a comprehensive manual giving full technical details and containing nomograms from which the requisite number of ventilators can be calculated for any particular problem.

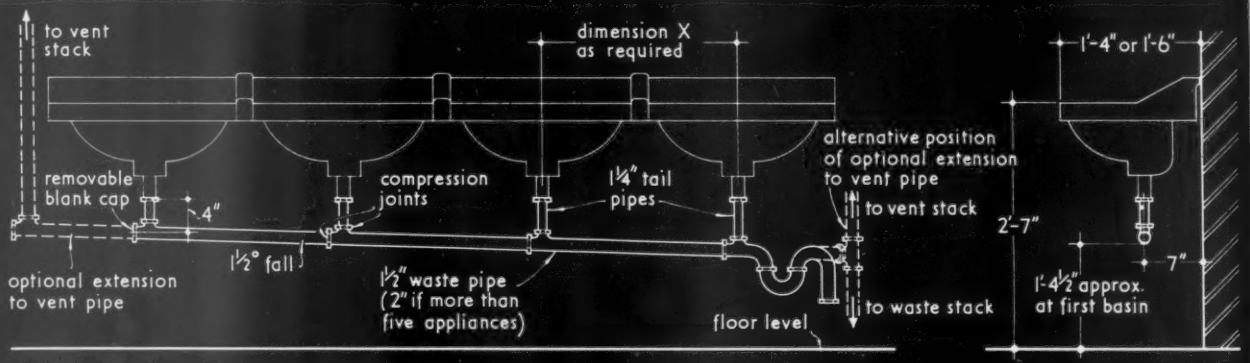
Compiled from information supplied by :

Colt Ventilation Limited
Address : Surbiton, Surrey.
Telephone : Elmbridge 6511-5.
Telegrams : Coltile, Phone, London.

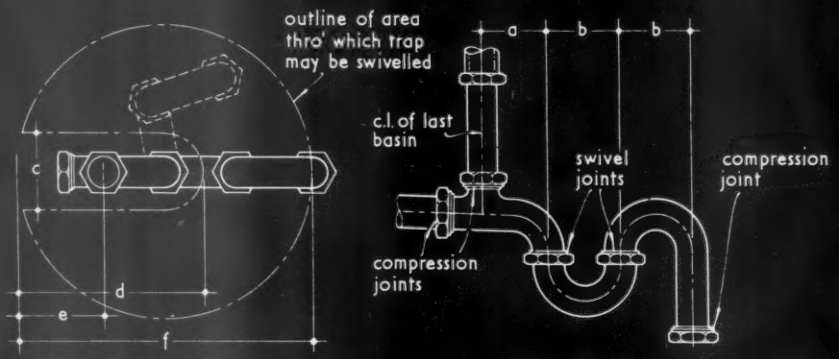
SANITATION | DETAILS | COPPER

33.B2

The Architects Journal Library of Information Sheets 334. Editor: Cotterell Butler, A.R.I.B.A.

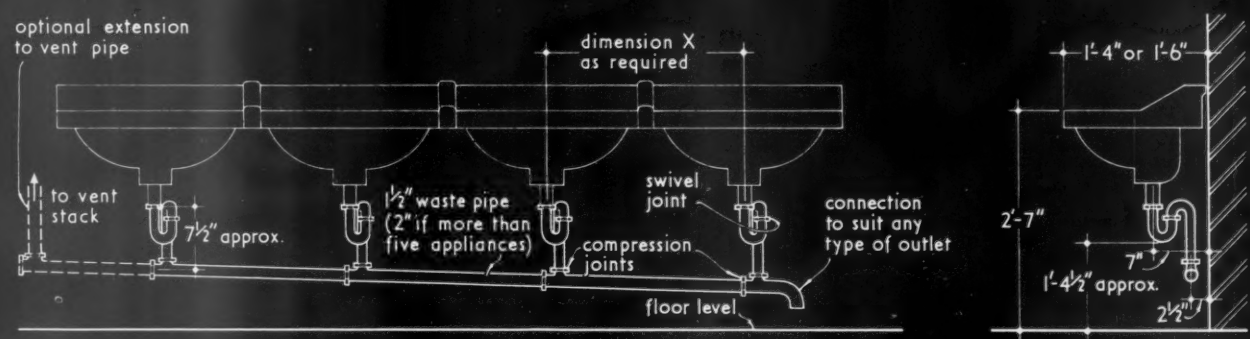


BASINS CONNECTED TO COMMON TRAP.

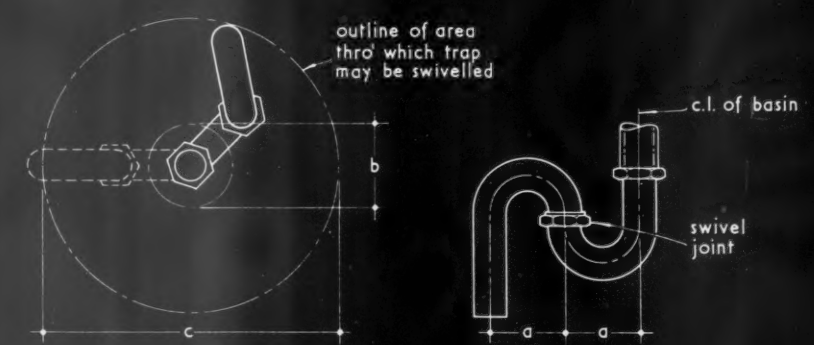


trap size	a	b	c	d	e	f
1½"	3"	3½"	3¾"	8⅞"	4"	1'-2"
2"	5"	4¾"	5"	1'-0"	4½"	1'-7"

DETAILS OF TRAP.



SEPARATE TRAP TO EACH BASIN.



trap size	a	b	c
1½"	3½"	3¾"	1'-2"
2"	4¾"	5"	1'-7"

DETAILS OF TRAP.

·ECONA· COPPER PLUMBING TO RANGES OF LAVATORY BASINS: UNVENTED SYSTEM.

Manufacturer: Econa Modern Products Ltd.

33.B2 · ECONA · COPPER PLUMBING TO RANGES OF LAVATORY BASINS : UNVENTED SYSTEM

This Sheet deals with the unvented system of Econa copper plumbing to lavatory basins. The drawing at the top of the Sheet shows a single range of basins connected to a common trap and the drawing on the lower part of the Sheet shows a single range with a separate trap to each basin. Enlarged details of the traps themselves are given with each arrangement. It is often convenient to include a drinking fountain at one end of the range. Where this is done it is essential that the fountain be individually trapped.

Material

Traps, waste and vent pipes are constructed from copper tube to B.S. 659 : 1944, *Light gauge copper tubes for water, gas and sanitation.*

Design and Construction

Pipework generally : Pipes and fittings are designed to provide an even bore throughout their length, there being no restrictions at the various joints. Since no castings are used, there are no rough internal surfaces on which hair or fibre can begin to form a blockage. The sections of waste pipe between the basins and all the tail pipes, except the first, are supplied slightly longer than necessary so that they can be cut to the correct length on the site. The tee junctions are formed integral with the waste pipe sections so that only two joints instead of three are required at each junction.

Joints : Two types of joint are employed, a coupling union and an Econa compression joint. The coupling unions allow the traps to lie in the most convenient line and, therefore, permit the installation of the unit even if the waste fitting on the basin or sink is not the standard distance away from the wall exactly. The compression joints are supplied brazed into position on the fitting concerned. They employ a patent split ring which compresses the copper and makes a sound joint. This ring can be easily removed, without being destroyed, thus enabling the joint to be unmade and remade without damage to itself, the nut or pipe.

Traps : Cleaning eyes are not necessary as the coupling unions may be readily disconnected and the outlet elbow removed for cleaning when required.

Compiled from information supplied by :

Econa Modern Products, Ltd.
Address : Aqua Works, Warwick Road, Tyseley, Birmingham, 11.
Telephone : Acocks Green 2211/2.
Telegrams : Acocks Green 2211/2 Birmingham.

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

TECHNICAL SECTION

The recent symposium on "Prestressed Concrete Statically Indeterminate Structures," organized by CCA, was attended by over 200 engineers and research workers. Below are extracts from the address given by F. G. Thomas (Senior Principal Scientific Officer, BRS) in which he summarized and commented on the two days proceedings. This is followed by a report, by AJ Specialist Editor No. 13 (Structural Engineering), on the paper by Prof. Magnel.

PRESTRESSED CONCRETE SYMPOSIUM

Final summing up by F. G. Thomas

I shall assume that we must have continuous structures and try to sum up what we have learnt about them in the last two days and, perhaps more important, what should be the course of our future study in order that we may design them more efficiently and economically.

FRICTION

There has been much "friction" at this Symposium, particularly in terms of cap cables, where the friction is accompanied by another apparent defect—the slip in the anchorages. Apart from the practical difficulties that have been mentioned with regard to cap cables, it is quite evident from the discussion that we want to know quite a lot more about the friction developed with such cables—or indeed with any cables in which there is curvature. We have, in fact, been told that even in straight cables there may be appreciable friction. There does not seem to be complete agreement with this, and we certainly want to know more about it. It is quite clear that we ought to find out more about the coefficient of friction for a wide variety of conditions—different types of wires, with various surface conditions, working in different types of sheathing or holes in concrete. Moreover, there should be research or development work designed to reduce the value of the coefficient of friction, by suitable sheathing or other means.

It has been suggested that these difficulties can be overcome by avoiding the curvature that induces friction losses; but again it has been pointed out that to work on such lines is to lose the desirable flexibility of such structural systems. In many cases it is a great advantage to use curved cables, but much of this advantage may be lost unless this friction loss is kept to a minimum. If we have the data—the coefficient of friction and the losses at anchorages—then we can make the necessary allowance. This kind of data can be obtained from tests in the laboratory and occasionally on full-scale structures, and must be obtained in order to obtain more economical designs.

ULTIMATE LOADS

We have had practically no direct data concerning ultimate loads, apart from the results of some tests which have been started at London University. However, from what data we have on steel or reinforced concrete structures, and from our knowledge of the deformation characteristics of simply supported prestressed concrete beams, it certainly does appear at this stage—though again further data will be required—that the redistribution before failure is likely to be smaller with prestressed concrete than with ordinary reinforced concrete. As was mentioned during the Symposium, the approximations that we are accustomed to make with ordinary reinforced concrete frame design—which to some extent rely upon the ability of ordinary reinforced concrete to accommodate itself to moment conditions for which it was not designed—may not be applicable to prestressed concrete. We may need to be very much more careful about our estimation of the moments throughout continuous frameworks. The same applies to the possibility of differential settlement of foundations or abutments; the effects with prestressed concrete may be more serious than with ordinary reinforced concrete.

Most of what we have heard about this particular subject is based upon opinion or on some theoretical treatment, but that is not sufficient for us to be satisfied that we have the right load factor for our structures, and it may well be that in considerations of the load factor we should allow more for the possibility of differential settlement than we do with ordinary reinforced concrete. The type of failure of prestressed concrete members has an important bearing on this, and Mr. Morice's film showed that a very sudden failure may sometimes occur with prestressed concrete. Such a failure is very much rarer with ordinary reinforced concrete. Again we have not very much information on this; the ultimate strength and the behaviour at failure of even simply supported prestressed

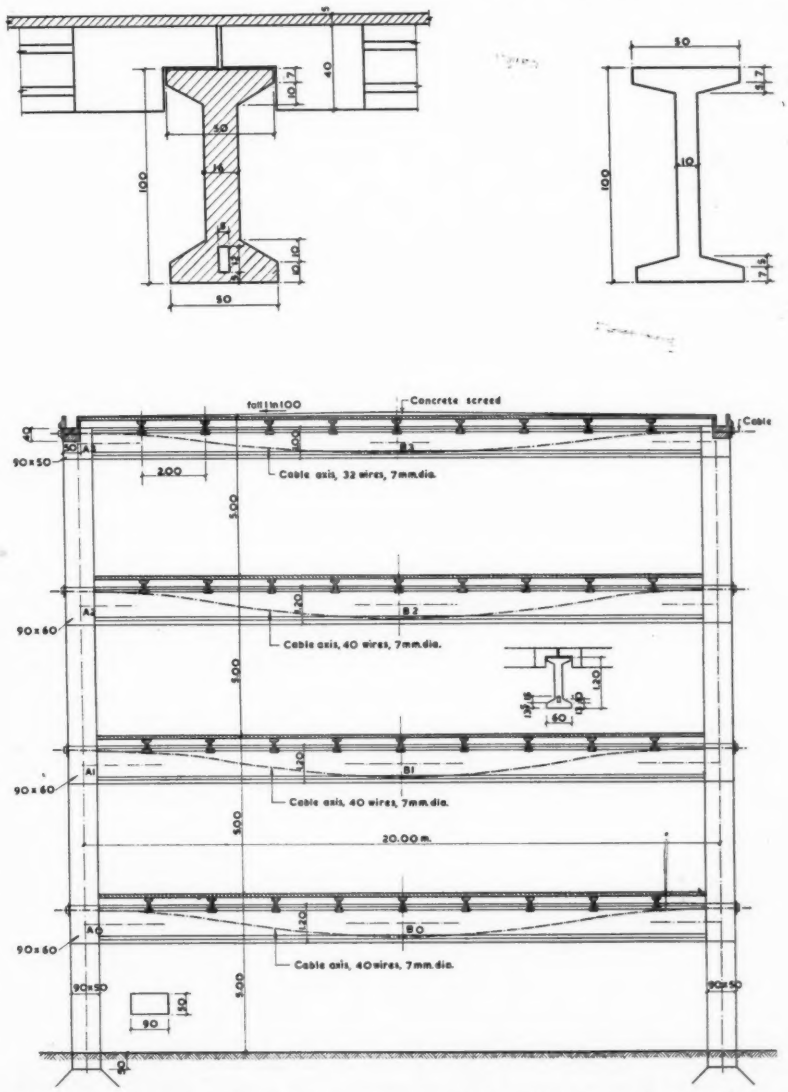


Fig. 1 (See page 478). Simple frame, span 66ft., with prestressed concrete beams. Top left, section of monolithic beam; top right, beam of precast blocks.

concrete beams is a subject on which we know very little indeed.

With regard to redistribution of stress it appears that this would be of some value, particularly for lower strength concretes. The point has been made that our factor of safety or load factor should take account of the possibility of using poorer concrete than that assumed in the design; the fact that there is more creep, or what has been called "plasticity," with lower strength concrete may help to reduce the loss in strength of the structure.

THEORY

One of the important features for consideration in the theoretical study is that of the secondary moments, and in this connection variation in cable position has been shown to be of some importance. Contractors in this country are, on the whole, very good but, nevertheless, it is difficult, as Professor Evans said, to keep the reinforcement or prestressing element exactly where it is shown on the working drawings, and it was shown in one paper that small variations in the cable position would have an important effect on the secondary moments.

The positioning of the cable in design is possible in two primary ways; one is to use the concordant cable about which we heard from M. Guyon, or we can adopt a more or less arbitrary position deduced by previous experience, or intuition, or some rule of thumb method such as following the bending moment diagram.

With regard to ultimate load, it is clear we know very little in connection with prestressed concrete continuous structures. The relationship between stresses and loads has been discussed, and it has been pointed out that to work to certain design stresses may give little or no indication of what margin of safety we have against collapse. Here obviously is a field for study, again particularly experimental.

Another point which has not been agreed upon here is the use of subsidiary non-prestressed reinforcement. Some members have advocated it and said that it was necessary, but others have said that to mix ordinary reinforced concrete and prestressed concrete is impossible, or, at any rate, illogical. The use of such additional steel may be of value in controlling cracking or in increasing ultimate strength. We have no scientific data for judging the real value for this subsidiary reinforcement.

PRACTICE

The final section with which I want to deal is that of practice, and here I need say very little. Although, for ultimate economy and full efficiency, it is necessary to develop theories and to obtain the parameters of these theories from experiment, progress in prestressed concrete work will, in general, come from the fact that structures have been built in it. Many people have very little faith in laboratory tests; many more have little or no faith in mathematical juggling. But to see a structure actually erected is a comforting thing.

The practical difficulties of friction of curved cables, of anchorages, particularly for short cables, and expansion joints have all been overcome in important structures; none has yet fallen down, as far as I know. It is likely—as some of our designing friends have agreed—that the load factor in many of these structures is much too high, but the reduction of this factor is mainly dependent on further data—particularly experimental data—being obtained.

CONTINUITY IN PRESTRESSED CONCRETE

By Professor G. Magnel

Professor Magnel's contribution to the Symposium consisted of a general review of the problem of achieving continuity in prestressed members. He described several methods of construction using straight cables in a beam of varying section, cables of several curvatures in a continuous beam and short cables placed in the beam over the internal supports with ends protruding from the underside of the beam close to the column. The first case is considered to be the best solution as the loss in friction is no more than in that of the simple-span, prestressed beam. The second case produces high friction, due to the various changes in curvature, resulting in a loss in prestress for the same applied jacking force. The use of short cables over the support should not be applied in cases where the spans are small, as it is impossible to prestress short cables with sufficient accuracy. For example, a cable 15 ft. long stressed up to 140,000 lb./sq. in. would have an elongation of 0·9 in. and, using two jacks to decrease friction losses, the elongation at each jack would be 0·45 in. Due to wire slip while wedging up a loss of 0·1 in. is possible, which would mean an inaccuracy of 22 per cent., in addition to frictional loss. The only other means of establishing continuity by means of short elements over the support, at our present state of development, appears to be by the use of high-tensile steel rods, the fixing device being some sort of nut.

The positioning of the cables in the systems described above is of great importance; a small accidental displacement would produce a considerable variation in the external moments due to prestressing.

Special arrangements have to be developed to allow prestress to be applied in structures incorporating expansion or contraction joints. Three spans can be made continuous, with a cantilever extending to one fifth of the next span. The centre three-fifths of this span can be bridged by a prefabricated, prestressed beam supported on these cantilever ends. Alternatively, dowel bars can be placed in the ends of the cantilevers and the span completed in ordinary reinforced concrete. A similar arrangement is going to be used in Belgium for mushroom slabs. It is intended to build the mushroom panel above the columns prestressed in two directions; the remaining parts of the slab will be in ordinary reinforced concrete.

Despite the obvious difficulties of achieving continuity in prestressed concrete, Prof. Magnel takes an optimistic view. He believes that, rather than concentrating on developing methods of calculation to increase accuracy, concrete making itself and prestressing operations should be carried out in the best possible manner.

EXAMPLES

Fig. 1 shows a simple frame of 66 ft. span; the beam can be monolithic, with the cable hidden in it, or it can be made of prestressed blocks, with cables on each side of the beam. In each case the tops of the columns serve as end blocks for the beam. The columns can be either of ordinary reinforced concrete or of prestressed concrete. A two-storey building has been built on the latter principle at Machelen. Fig. 2 shows a four-storey office building at Leopoldville in the Belgian Congo. The span is about 46 ft. and the height from floor to floor 15 ft. 9in. The beam is made up of blocks, about 5 ft. 6 in. long, between *in situ* columns and beam-stubs. The cables were placed on each side of the web.

Another good example of the use of prestressed concrete, described by Prof. Magnel, is the Sclayn Bridge over the Meuse. It has two spans, each of 206·72 ft.; the roadway being 23 ft. wide, with two footpaths each 5 ft. in width. The structure is a box girder having a total depth of only 6·36 ft. at midspan and 15·58 ft. above the central support. The cables are straight in each span, their mid-point above the central support being 2·84 ft. higher than their ends above the end supports.

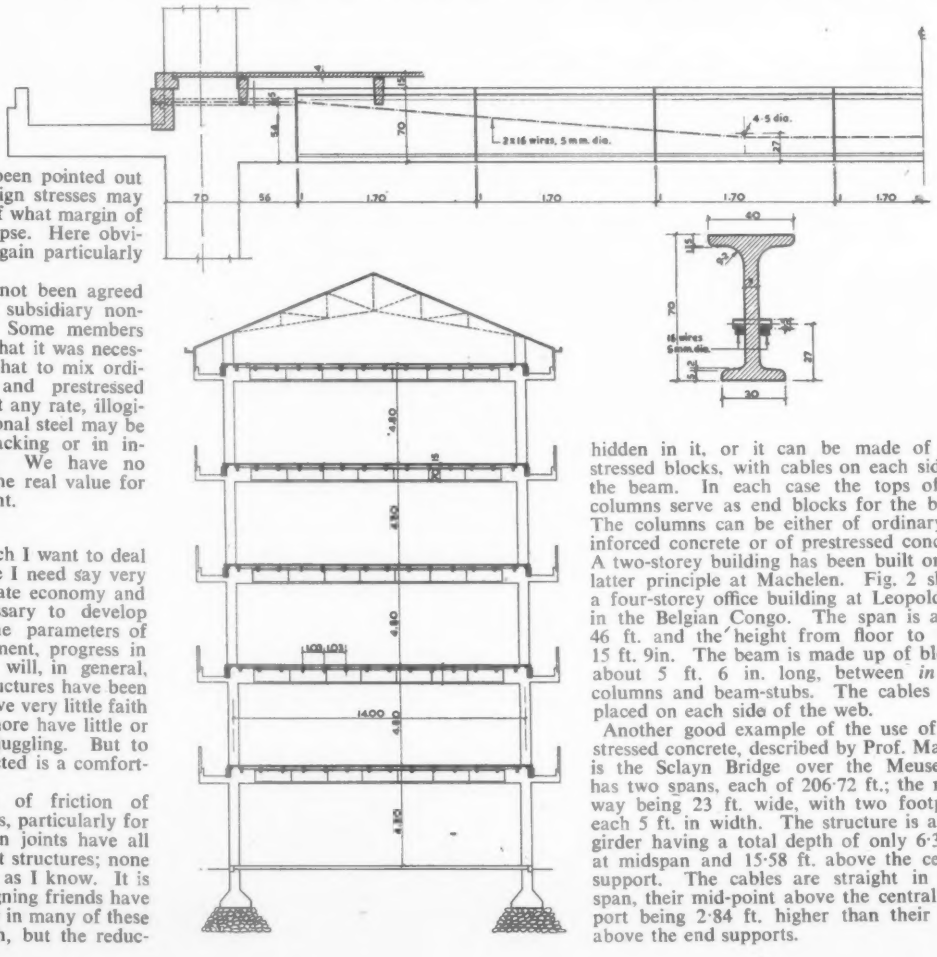
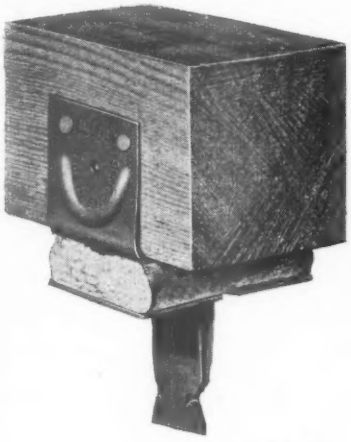


Fig. 2. A 4-storey office building at Leopoldville in the Belgian Congo. Span approx. 46ft.

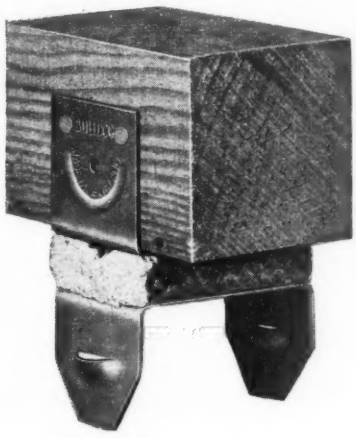
THE "BULL DOG" ACOUSTIC FLOOR CLIP

for MAXIMUM INSULATION *against impact noises*



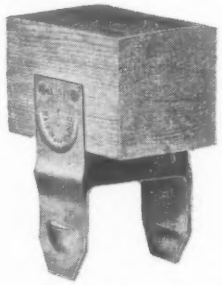
2" Single Leg "Bull Dog" Acoustic Floor Clip.

2" Short Leg "Bull Dog" Acoustic Floor Clip.

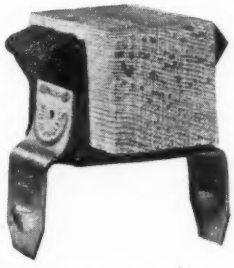


These clips are fitted with an Asbestos type insulating pad, held in position by countersunk rivets. There is thus no metal-to-metal contact even when the floor is fully loaded.

BUT **If it is purely a question of cost and not maximum efficiency we can still supply the SEMI-ACOUSTIC "BULL DOG" FLOOR CLIPS padded with felt.**



Type A Semi-Acoustic "Bull Dog" Floor Clip.



Type B Semi-Acoustic "Bull Dog" Floor Clip

For details and N.P.L. Tests, please write to me

Cecil Kahn

The Adamite Company Ltd., Manfield House, Strand, W.C.2

TEMPLE BAR 6233-6

CURRENT MARKET PRICES OF MATERIALS

BY DAVIS, BELFIELD AND EVEREST, Chartered Quantity Surveyors

Rates of Wages last rose on March 5, 1951, and are now as follows :—

	Craftsmen.	Labourers.
LONDON DISTRICT		
Within 12 miles radius	3s. 3d.	2s. 9½d.
From 12-15 „ „	3s. 2½d.	2s. 9d.
LIVERPOOL and DISTRICT	3s. 3d.	2s. 9½d.

GRADE CLASSIFICATIONS	A	A¹	A²	A³
Craftsmen ..	3s. 1½d.	3s. 1d.	3s. 0½d.	3s. 0d.
Labourers ..	2s. 8d.	2s. 7½d.	2s. 7d.	2s. 6½d.

F.R.I.C.S., F.I.Arb.

Prices vary according to quality and the quantity ordered.

Those given below are average market prices and include delivery in the London area, except where otherwise stated, but do not include overhead charges and profit for the General Contractor.

CONCRETOR

Cements

		6 tons and over.
Portland to B.S. 12	per ton	95/3
Rapid hardening to B.S. 12	„	103/3
Aquacrete water repellant	„	127/9

Above prices include for delivery to Charing Cross in non-returnable paper bags or cotton sacks.

For other packages, deduct 20/3 per ton from above prices and add : Returnable jute sacks : 35/6 per ton of cement or 1/9½ per sack. Credit on return at 1/6 per sack.

Returnable cotton sacks : 66/8 per ton of cement or 3/4 per sack. Credit on return at 3/- per sack.

Snowcrete (minimum 1-ton lots), per ton, 252/9 (including bags).

Aggregate and Sands, etc. (Full Loads)

¾″ (Down) Washed, crushed and graded shingle to B.S. 882, Table 2	per yard cube	16/3
1½″ Ditto	per yard cube	15/3
¼″ Sharp washed sand to B.S. 882, Table 3	per yard cube	18/10
Brick hardcore	per yard cube	8/-

(For Sands for Bricklaying and Plastering, *see* respective trades)

Reinforcement

Home trade maximum basis price for mild steel rods to B.S. 785, ¼″ diameter and upwards, ex mills delivered to station or siding	per ton	£27 12 0
Extras for :—		
Under ⅜″ to ⅞″ diameter	per ton	15 0
Ditto ⅞″ and over ¾″ diameter	per ton	£1 2 6
¾″ and over 1¼″ diameter	per ton	£1 10 0
1¼″ and over 1⅝″ diameter	per ton	£1 17 6
1⅝″ and over 2½″ diameter	per ton	£2 5 0
2½″ and over 2¾″ diameter	per ton	£2 12 6
2¾″ diameter	per ton	£3 0 0
Under ½″ to ⅜″ diameter	per ton	£4 10 0

Fabric Reinforcement

	16.35 lb.	9.32 lb.	4.71 lb.	1.83 lb.
Steel wire mesh fabric to B.S. 1221, Part A per yd. super.	7/-½	4/1	2/1	1/4½

BRICKLAYER

Common Bricks

Third stocks	per 1,000	118/10
Rough stocks	per 1,000	150/4
Mild stocks	per 1,000	202/4
Sand limes	per 1,000	97/-
Phorpres pressed Flettons	per 1,000	100/9

Facing Bricks

Hand-selected sand limes	per 1,000	132/9
Phorpres rustic Flettons	per 1,000	125/9
Stocks, first hard	per 1,000	237/4
Stocks, second hard	per 1,000	227/4
Southwater pressed sandfaced reds	per 1,000	257/6
Dorking pressed sandfaced multicoloured facings	per 1,000	218/6

BRICKLAYER—(*continued*)

Engineering Bricks

Lingfield engineering wirecuts	per 1,000	182/6
Southwater engineering No. 2 (second quality red pressed)	per 1,000	255/-
*Blue pressed bricks to B.S. 1301	per 1,000	362/-

* Haulage extra

Glazed Bricks

		Best quality £ s. d.	Seconds £ s. d.
White, Ivory or Brown, 9″ × 2½″ × 4½″			
Headers	per 1,000	39 10 0	37 10 0
Stretchers	per 1,000	40 0 0	38 0 0

Prices for glazed bricks + 45%, seconds. + 50%, bests.

Plus delivery charge in London area of 30/- per 1,000

Limes and Sands

		1 ton lots.
†Lime, greystone, to B.S. 890	per ton	99/-
†Lime, chalk, ditto	per ton	99/-
*Lime, hydrated, ditto	per ton	121/6
Washed pit sand to B.S. 1200	per yard cube	18/10

* Including paper bags.

†Hire of jute sacks charged at 1/6 and credited at 1/6. If left, charged at 1/9.

Sundries

10 s.w. gauge galvanized butterfly type wall ties to B.S. 1243	per 1,000	101/6
Wall ties, galvanized, 8″ × ¾″ × ¼″, to B.S. 1243	per cwt.	100/6

Damp proof course slates :	Imported	Welsh
Size 14″ × 9″ .... per 100	43/6	71/3
„ 14″ × 4½″ .... per 100	21/-	33/6

Hessian base bitumen damp course to B.S. 743	per yard super			5/9
		9″ × 3″	9″ × 6″	9″ × 9″
Terra-cotta airbricks	each	1/2	2/4	5/9
Galvanized cast-iron airbricks	each	3/1	5/2	8/-
Galvanized cast-iron hit-and-miss ventilators	each	3/-	5/10	7/6

Buff terra-cotta chimney pots	each	1′ 0″ 6/8	1′ 6″ 8/3	2′ 0″ 11/9	2′ 6″ 15/6	3′ 6″ 34/2	5′ 0″ 57/8

Wall reinforcement supplied in standard rolls containing 25 yards lineal

‡2″ wide black japanned	per roll	3/2½
‡2½″ wide black japanned	per roll	4/-

‡ Greater widths pro rata 2½″ price, carriage paid on orders of £7.

Discount for quantities.

Partitions, etc.

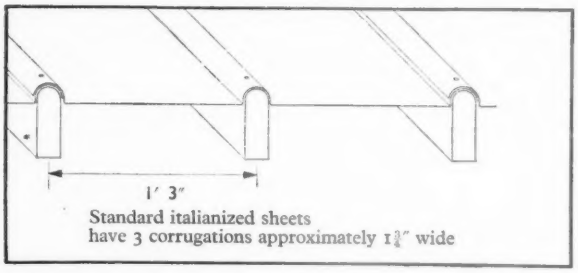
		2″	2½″	3″	4½″
Breeze to B.S. 492	per yard super	3/8	4/3½	4/11	6/5
Hollow clay to B.S. 1190 (keyed)	per yard super	3/11	4/2	4/8	
Ditto, smooth	per yard super	4/3	4/6	5/-	6/1
Moler (keyed)	per yard super	8/5	10/6	11/9	13/2 (4″)

PAVIOR

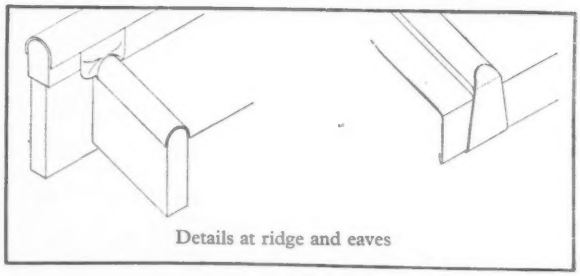
2″ coarse gravel for paths	per yard cube	18/3
¾″ fine ditto	per yard cube	19/9
Clean granite chippings to B.S. 1201, Table 4 (in 5-ton loads)	per ton	42/9
Red quarry tiles, 6″ × 6″ × ¾″, to B.S. 1286	per yard super	12/-
Ditto 6″ × 6″ × ½″, to B.S. 1286	per yard super	10/3
Buff quarry tiles, 6″ × 6″ × ¾″, to B.S. 1286	per yard super	15/-
Ditto 6″ × 6″ × ½″, to B.S. 1286	per yard super	12/6
Hard red paving bricks, 2″	per 1,000	357/6
Ditto 1½″	per 1,000	340/-

DATA SHEET FOR ARCHITECTS No. 8

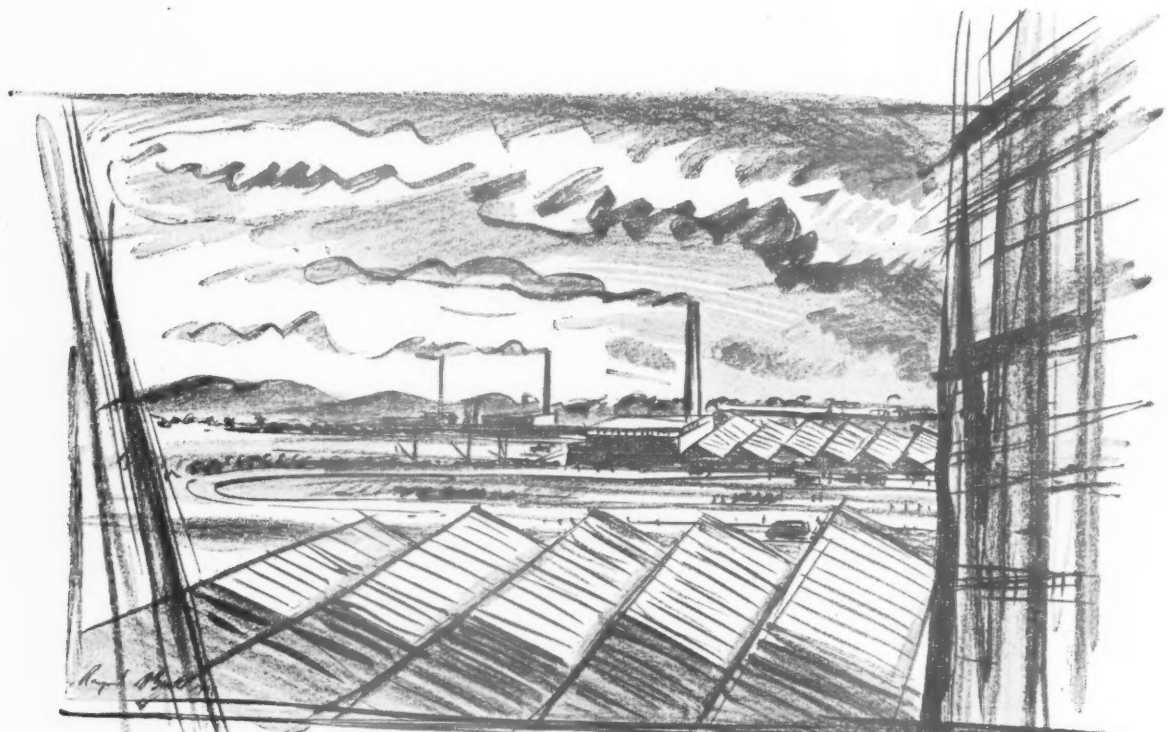
ITALIANIZED ZINC ROOFING



Standard italianized sheets have 3 corrugations approximately 1¾″ wide



Details at ridge and eaves



Italianized zinc roofing enables zinc roofs to be laid directly on to rafters or purlins without the use of boarding. It is thus both cheaper and easier to lay than other systems, since the sheets are factory-formed; and it is especially suitable for large buildings, such as warehouses, railway stations, etc. It can be adapted to housing, if used with a decking material to provide sound proofing and thermal insulation. The standard italianized sheet of Z.G.16 (19 I.S.W.G.) measures 8′ long by 2′ 8″ wide, the rolls being spaced at 1′ 3″ centres. The sheets are fixed by galvanized screws directly to the rafters or purlins. Further information on roofing systems and other uses of zinc in building can be had from the Association, together with a list of publications.

ZINC DEVELOPMENT ASSOCIATION

LINCOLN HOUSE TURL STREET OXFORD TELEPHONE OXFORD 47988

DRAINLAYER

Clay Land Drain Pipes to B.S. 1196

	3″	4″	6″
Pipes in 12″ lengths .... per 1,000	159/6	206/6	428/–

Salt Glazed Stoneware Pipes and Fittings

	Orders for 2 tons and over	Standard List + Orders under 2 tons 100 pieces upwards	Standard List + Orders under 2 tons less than 100 pieces
Seconds Quality	47½% less 15%	67½% less 15%	77½% less 15%
Best Quality	47½%	67½%	77½%
British Standard Quality	47½% + 10%	67½% + 10%	77½% + 10%
Tested Quality....	47½% + 37½%	67½% + 37½%	77½% + 37½%
British Standard Tested	47½% + 47½%	67½% + 47½%	77½% + 47½%

Cast Iron Drain Pipes and Fittings

Socket and spigot pipes to B.S. 437 :—

Weight per 9 ft			Size	9 fts. per yd.	6 fts. per yd.	4 fts. each	3 fts. each	2 fts. each
1	1	17	4″	17/4	19/1	30/4	23/2	18/8
2	0	1	6″	25/11	30/5	48/6	38/11	29/2
3	3	21	9″	46/10	60/8	104/–	79/6	

Tonnage Allowances :—
Orders up to 2 tons nett.

		4″	6″	9″
*Bends (short radius) as Fig. No. 4	each	6/3	13/–	40/–
*Single junctions as Fig. No. 18	each	11/–	22/6	69/–
Intercepting traps as Fig. No. 33	each	30/–	50/–	123/–
*Gullies ordinary trapped "P"	each	14/6		
*Extra for 4″ vertical back inlet	each	4/3		
*Grease gully trap	each	121/–		

* These prices are subject to 91½% plusage.

Channels in Brown Glazed Ware.

Standard list + same discounts as "Best" quality salt-glazed Stoneware pipes.

White Glazed Channels

Orders under 20 pieces. Standard list +32½%

Manhole covers and frames

		Size of load	Unit price
C.I. coated double triangular manhole cover and frame, 22″ dia. clear opening to B.S 497, Grade A	each	35 tons	134/9
C.I. coated circular manhole cover and frame, 22″ dia. clear opening to B.S. 497. Grade B.	each	5 tons	73/6

		Size of load	Single seal Flat type	Double seal Flat type
Coated manhole cover and frame to B.S. 497, Grade C, 24″ × 18″	each	1 ton	35/1	58/6
Galvanised ditto, 24″ × 18″	each	1 ton	63/–	90/–
Coated manhole cover and frame, to B.S. 497, Grade C, 24″ × 24″	each	1 ton	50/1	76/1
Galvanised ditto, 24″ × 24″	each	1 ton	93/–	134/3

MASON

Yorkstone

Building quality Robin Hood and Woodkirk Blue Stone.

Blocks scrappled, random sizes	per foot cube	10/8
Add for blocks to dimension sizes	per foot cube	1/3 (each dimension)
Templates with sawn beds, edges rough (up to 4 ft. super and not over 2′ 6″ long)	per foot cube	11/11
Templates with sawn beds, sawn one edge,	per foot cube	13/9
Price f.o.r. Yorkshire, railway rate to London Station per ton. (Minimum 4-ton loads)		49 6

Bath Stone in random blocks

Monk's Park	per foot cube	6/2
St. Aldhelm Box Ground	per foot cube	7/2

Delivered on rail at South Lambeth station.

Portland Stone in random blocks, average 20 feet

Whitbed	per foot cube	6/11

Delivered on rail at Nine Elms Station.

MASON—(*continued*)

Artificial Stone to B.S. 1217

4½″ × 4″ Sill, sunk, weathered, throated and grooved	per foot run	3/6
9″ × 3″ Ditto	per foot run	4/9
2″ × 12″ Coping, weathered and twice throated	per foot run	4/3
3″ × 12″ Ditto....	per foot run	6/3
5″ × 12″ Saddleback coping, twice throated	per foot run	9/6
6″ × 12″ Ditto....	per foot run	11/9

SLATER, TILER AND ROOFER

Slates

		£	s.	d.
16″ × 10″ Best Bangor Slates to B.S. 680	per 1,000 actual	47	18	6
20″ × 10″ Ditto	per 1,000 actual	69	15	0

Tiles

Hand-made sandfaced 10½″ × 6½″ red roofing tiles	per 1,000	311/6
Machine-made sandfaced best red tiles with continuous nibs, 10½″ × 6½″	per 1,000	281/9
Berkshire hand-made red Pantiles, 14½″ × 10″	per 100	93/–
Concrete plain tiles, 10½″ × 6½″	per 1,000	160/9
Ditto interlocking tiles, 15″ × 9″	per 1,000	490/–

Asbestos-cement

*6″ corrugated sheets, grey	per yard super	5/6½

*Prices are for minimum two-ton loads, and are subject to 2½% discount.

Felt

Reinforced roofing felt to B.S. 747	per yard sup.	1/11½
Roofing felt (1-ply bitumen) to B.S. 747, Part I	per yard sup.	1/5½
Bituminous hair felt to B.S. 747, Part II	per yard sup.	2/4¾

CARPENTER AND JOINER

Wall boards

½″ Imported Fibre board (per 100 sq. ft.)	5,000 to 15,000 sq. ft. 50/–
¼″ Imported Hardboard (per 100 sq. ft.)	59/6
3/16″ Imported Hardboard (per 100 sq. ft.)	82/3
* 3/16″ Semi compressed asbestos cement flat building sheets, grey....	per yard super 2/3
* ¼″ Ditto	per yard super 3/2

* Prices are for orders of 2 tons and over. Subject to 5% trade discount.

Sundries

"Sisalkraft" standard grade	per yard sup.	1/–¾
"Sisalkraft" subsoil grade	per yard sup.	–/8½
* Bitumen bonded fibre glass	per yard sup.	1/8½

* Price is for orders value £5 and over.

Timber

Softwood for Carpentry (average price)	per std.	£115
Softwood for Joinery (ditto)	per std.	£120
Tongued and Grooved Softwood Flooring (ditto)	per std.	£120
First Quality English Oak (ditto)	per ft. cube	25/–
Teak (ditto)	per ft. cube	45/–

Standard Panelled and Glazed Wood Doors to B.S. 459, Pt. I

Type 4	size 2′ 6″ × 6′ 6″ × 1¾″	each	48/9
Type 2 × G	size 2′ 6″ × 6′ 6″ × 2″	each	54/9
Type 4 × G	size 2′ 6″ × 6′ 6″ × 2″	each	60/10

In lots of from 1 to 11 inclusive.

Wood Windows

INP 26	size 2′ 6″ × 1′ 5½″	each	30/5
4V 36	size 3′ 6″ × 7′ 9½″	each	134/8
IV 40	size 4′ 0″ × 2′ 1⅛″	each	40/9
3T 46	size 4′ 6″ × 5′ 10⅞″	each	131/11
4T 50	size 5′ 0″ × 7′ 9¾″	each	160/6

In lots of from 1 to 20 inclusive.

Kitchen Units

No. 1	size 3′ 6″ × 2′ 8″ × 1′ 7″	each	156/–
No. 2	size 3′ 6″ × 2′ 8″ × 1′ 7″	each	100/7
No. 4	size 2′ 8″ × 1′ 9″ × 1′ 7″	each	95/4
No. 5	size 3′ 10″ × 1′ 9″ × 1′ 7″	each	76/11
No. 7	size 6′ 6″ × 1′ 9″ × 1′ 7″	each	142/3

In lots of from 1 to 15 inclusive.

STEEL AND IRONWORKER

		£	s.	d.
Basis price for rolled steel joist sections, in 10 ft. to 50 ft. lengths	ex mills per ton	24	12	0
Extra for sizes :—				
9″ × 7″	Add per ton		5	0
3½″ × 3½″, 5″ × 4½″, 6″ × 4½″, 10″ × 8″, 12″ × 8″, 14″ × 8″, 16″ × 8″, 18″ × 6″, 18″ × 7″, 18″ × 8″, 20″ × 6½″, 20″ × 7½″	„ „		10	0
10″ × 4½″, 12″ × 5″	„ „		15	0
4″ × 2½″, 5″ × 3″, 22″ × 7″	„ „	1	0	0
3″ × 3″, 4″ × 3″, 5″ × 2½″	„ „	1	5	0
4″ × 4″, 6″ × 3″	„ „	1	10	0
4½″ × 1½″, 24″ × 7½″	„ „	2	0	0
4″ × 1½″	„ „	3	0	0
3″ × 1½″	„ „	3	10	0
Basis price for angles	ex mills per ton	24	5	6
„ „ „ tees	„ „	24	5	6
„ „ „ solid steel columns	„ „	26	5	6

All delivered Station or Siding.

PLASTERER

Plaster and Cement

		1-ton loads	6-ton loads
Thistle (browning) to B.S. 1191, Class B	per ton	141/6	117/–
Gypstone to B.S. 1191, Class B	per ton	93/6	ex Works, Kent.
Paristone (haired) to B.S. 1191, Class B	per ton	96/–	ex Works, Kent.
Ditto (unhaired)	per ton	93/6	ex Works, Kent.
Sirapite (coarse) to B.S. 1191, Class C	per ton	138/–	113/6
Ditto (fine) to B.S. 1191, Class C	per ton	146/–	121/6
Keene's Pink to B.S. 1191, Class D	per ton	184/-	
Keene's White to B.S. 1191, Class D	per ton	189/–	
Cullamix (Tyrolean Finish), 1-ton lots and upwards	per ton from	174/3 to 207/ 9	

Sundries

Sharp washed sand to B.S. 1198	per yard cube	18/10		
Cow Hair	per cwt.	97/6		
Expanded metal lathing, 9′ 0″ × 2′ 0″ × ½″ mesh × 24 gauge	per sheet	5/9		
	Up to 149 yards	150-299 yards	300-599 yards	Over 600 yards
⅜″ Plasterboard (base board) per yard super	2/8¾	2/4¾	2/3¾	2/2¾
Galvanized lath nails 14 G	per cwt.	137/–		
Hessian Scrim cloth in 100-yard rolls, 3½″ wide	per roll	10/–		

Wall Tiles

The following prices are subject to 17½ per cent. addition :

Standard quality white glazed 6″ × 6″ × ¼″	per yard super	18/6
Cream glazed 6″ × 6″ × ¼″	per yard super	20/6
Eggshell or glossy glazed 6″ × 6″ × ¼″	per yard super	26/3

PLUMBER

Lead and Copper

3½ lb. and upwards milled sheet lead in quantities of 5 cwts. to 1 ton in sheets to B.S. 1178		per cwt.	206/3
Allowance for old lead delivered to merchant or manufacturer		per cwt.	171/–
Hot rolled copper sheeting in 5-cwt. lots (4′× 2′ sheets), to B.S. 899	23 wire gauge	per cwt.	302/9
Ditto	24 wire gauge	per cwt.	305/9
Zinc sheeting in 2-cwt. lots	14 gauge	per cwt.	210/6

Cast Iron Goods

Percentage Adjustment on List No. 3100 A.B. 13/8/51.

Rainwater Goods (painted or unpainted)	*Plus* 81%
Soil goods (coated or uncoated)	*Plus* 81%

Mild Steel Rainwater Goods

		Standard List
Gutters	(under 100 lengths)	Less 17½% + 27½%
Pipes and Fittings	(„ „)	Less 17½% + 27½%

Asbestos-Cement Rainwater Goods

The following prices are subject to 12½% trade discount.

Orders over £30 are subject to 17½% trade discount.

PLUMBER—(*continued*)

Rainwater Pipes.

	Diameter 2″	2½″	3″	4″	6″
2′ 0″ lengths	2/11	3/4	3/11	5/5	11/2 each
3′ 0″ „	3/11	4/6	5/3	7/4	15/– „
4′ 0″ „	5/–	5/6	6/4	8/11	18/6 „
6′ 0″ „	5/10	6/7	7/10	10/10	22/4 „
8′ 0″ „	7/9	8/9	10/5	14/6	29/9 „
10′ 0″ „	9/9	11/–	13/–	18/–	37/3 „

Gutters.

Short lengths of gutter up to 2′ 0″ charged as 1 yard ; from 2′ 0″ to 4′ 0″ as 1½ yards, and over 4′ 0″ as 2 yards.

Half round gutters per yard run	3″	4″	4½″	5″	6″	8″
	2/1	2/6	2/7	3/–	4/3	5/3

INTERNAL PLUMBER

Lead pipe in coils, 5 cwts. and upwards, to B.S. 602	per cwt.	207/6			
Lead soil pipe	per cwt.	210/6			
Drawn lead trap with brass screw eye, 6 lb., to B.S. 504	1″	1¼″	1½″	2″	
S. trap	each	7/7	8/10	11/–	15/10
P. trap	each	6/8	7/4	9/2	12/9
Extra for 3″ deep seal " S " trap	each	1/10	2/2	2/5	3/1
Extra for 3″ deep seal " P " trap	each	1/3	1/6	1/6	2/2

Screwed and Socketed Steel Tubes and Fittings for Gas, Water and Steam, etc.

Fittings and flanges and tubes ordered in long random lengths are subject to the following trade discounts :—

Tubes :	¼″ to 4″	Fittings :	
Class B	24½%	Lightweight	4¼%
„ C	13¼%	Heavyweight	plus 3¼%
Galvanized Class B	plus 8%		
„ „ C	plus 23%		

Flanges :

	¼″ to 2″	2½″	3″ to 4″
Lightweight (Table D) Plus	9½%	less 29½%	less 44%
Heavyweight (Table E) Plus	30¾%	less 17¾%	less 33½%

Copper tubing to B.S. 659 and 1386 Basic price per lb. 2/2

GLAZIER

Sheet Glass, cut to size (ordinary glazing quality), to B.S. 952, Section A.

For quantities exceeding 500 ft. super.

18 oz.	per foot super	4½d.
24 oz.	per foot super	5½d.
32 oz.	per foot super	9½d.

Polished Plate glass, ordinary substance, approximately ¼″, to B.S. 952, Section A.

In plates not exceeding :		Glazing quality	Selected glazing	Silvering quality
2 ft. super	per foot super	2/8	2/10	3/4
3 ft. super	per foot super	3/–	3/5	4/1
5 ft. super	per foot super	3/2	3/10	4/7
*45 ft. super	per foot super	3/9	4/1	5/7
*100 ft. super	per foot super	4/5	5/7	7/2

* Extra sizes, i.e., plates exceeding 100 ft. super or 160 in. long, or 96 in. wide, at higher prices.

⅛″ figured rolled and cathedral, to B.S. 952, Section B—untinted	per foot super	7½d.
3/16″ or ¼″ rolled plate, „ „	per foot super	8½d.
3/16″ or ¼″ rough cast, „ „	per foot super	8½d.
¼″ Georgian wired cast, „ Section D	per foot super	10d.
¼″ Georgian wired polished plate „	per foot super	3/10d.
¼″ wired cast „	per foot super	9½d.

PAINTER

White ceiling distemper	per cwt.	27/9
Washable distemper	per cwt. from	112/–
Ready mixed white lead paint (best), semi-gloss, per 32 lb.	per gallon	70/–
Aluminium paint (best quality)	per gallon	38/–
White enamel paint	per gallon	55/–
Oil stain (scumble)	per lb.	4/1
Varnish (outside quality), copal oak	per gallon	36/–
„ „ „ general oak	per gallon	34/–

REEDED

Reeded glass is available in four patterns, Narrow, Broad, Cross and Major. The glass itself is exceptionally white and clear and its surface bright and lustrous. The light transmissions of all the patterns are about the same, but the narrower reeds give greater obscuration. They are excellent glasses for partitioning, for borrowed lights and for windows where some obscuration is required. The reeding is completely in key with the tendency of so much contemporary architecture to emphasize either vertical or horizontal motifs. Two new developments of Reeded glass, Narrow and Broad Reedlyte, offer greater obscuration and are more suitable where a high degree of privacy is necessary. Besides their normal architectural uses they are employed in lighting fittings, diffused lighting panels and decorative lighting schemes. Special lighting glasses such as Luminating (which has a very narrow reeded pattern) are also available.

TECHNICAL DETAILS FOR REEDED GLASSES

Width of Reeds: Narrow-$\frac{1}{2}$ in., Broad-$\frac{7}{8}$ in., Cross $\frac{1}{2}$ in., and Major-$1\frac{3}{4}$ in.

Light Transmission: 85 per cent.

Thickness and Weight: $\frac{1}{8}$ in. (36 oz./sq. ft.), $\frac{3}{16}$ in. (44 oz./sq ft.).

Maximum size of Sheet: 100 x 42 in.

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Election or no election, the changed conditions of supply of, and demand for, houses demand a new, rational housing policy. As a first step towards this, Prof. Bowen recommends the formation of a commission of experts to advise whatever government next has to tackle this far-from-declining problem.

HOUSING AND THE ELECTION

By Ian Bowen

Even without an election this would have been a year in which housing policy might well have been reviewed and adjusted. This month, indeed, can be said to mark the end of the post-war period of reconstruction—a period of six years which began in wrangling but ended in something approaching harmony. The next government, whatever its political complexion, will have to look at its policy in relation to, firstly, rearmament, secondly, the large achievement that has already been recorded and, thirdly, the changing requirements of the country.

THE PRESENT POSITION AND FUTURE DEMAND

By the end of August, 1951, 1,390,172 families had been re-housed in Great Britain since 1945 (apart from those accommodated temporarily in service camps and requisitioned properties). By the end of 1951 the total will not be far short of 1½ millions, and will provide, therefore, for the estimated increase in newly-formed families since 1939, as well as for those who lost their houses as a result of demolition or war destruction. These "newly-formed families" are not, however, the only source of housing demand. Quite apart from slums and "condemned" properties, which, it is hoped, will be cleared eventually, there are always numerous "suppressed" families, sharing dwellings or occupying rooms as lodgers, who, under favourable economic circumstances, will demand dwellings of their own. How great this demand may be at any given time is difficult to assess, but the history of the housing lists of local authorities—which rarely get shorter—shows that, with full employment, rising wages and controlled rents, this kind of demand is far from satisfied.

Moreover, there has been, and, no doubt, there will continue to be, a shift of population towards more prosperous areas, such as the Midlands, at the expense of other parts of the country, so that the current economic demand for new dwellings is not satisfied by the mere provision of a number of houses equal to the number of new families coming into existence annually.

Wherever the immediate short-term problem has been solved, there is to be solved, also, the problem of slum clearance. This turning-point has already been reached. Slum clearance, on a small scale, has begun in London and in a few provincial towns.

The time is ripe, then, for a review of policy and, certainly, such a review should be made in an open-minded way. Conclusions should be faced, even if they are unlikely to please some people, and likely to enrage others; it is unfortunate that there are so many vested political, as well as economic, interests involved. It would be tedious, perhaps, to repeat at length the arguments for reform which have been made so often on this page. The setting-up of regional housing authorities, the provision of more small dwellings, and the rationalization of the building industry by deliberate official encouragement of the more efficient medium-sized and large firms—such sweeping changes are unlikely to be effected until sheer necessity forces a government to act. However, less drastic, but important adjustments may be made, for the next few years of re-armament will hardly permit any extensive waste of available resources to continue.

With only 227,000 men employed on housing work and a limited supply of materials available, resources will have to be deployed very carefully. The number of new houses being completed each month is falling, and will, doubtless, fall further in 1952. It will be difficult to maintain even the figure of 200,000 house per year; yet the economic demand will not diminish, unless rents are allowed to rise steeply, and social demand will become ever more pressing as old properties continue to decay.

UNDER-OCCUPANCY

The apparently insoluble housing problem does not, in Great Britain, result in large numbers of homeless persons and families occupying the streets at nights, as occurs in the less fortunate countries of the world. It is always as well to remember that, if one person/one room is taken as a reasonable standard of occupancy, there are enough rooms in existence for all the 50 million persons in the British Isle. The shortage arises from under-occupancy, which, in turn, causes overcrowding. Economic pressure on some sections of the middle class has already reduced under-occupancy in some districts; for instance, the typical Victorian-built family homes of many towns have been converted into flats or are shared, with varying degrees of comfort, by several families. The Housing Act of 1949, with its clauses for financial assistance for conversion work, was a notable official attempt to speed up this process, but inquiries suggest that perhaps this Act is not being implemented vigorously enough. The responsibility lies with the local authorities; under the Act they may advance half the cost of any conversion, provided that the owner of a property accepts certain restrictions on the rent he charges. However, the process has not gone far enough; some form of graduated taxation on unoccupied premises, or under-occupied premises, would probably yield far better results than some people seem to imagine, and it should not be administratively difficult (so long as no one person was allowed to reserve himself two "houses") to prevent false claims to occupancy being used to defeat the object of the tax.

THE DANGER TO FAMILY LIFE OF HIGH RENTS

The question of rent policy will, no doubt, also have to be considered. So much has been written about it in the last twelve months that it might seem unnecessary to review the present muddle. There has been much tinkering with this intricate problem, but one point seems to have been forgotten, especially by those who cheerfully argue that most "economic" housing problems would be solved, or at least alleviated, by the simple abolition of all rent restriction; that is, that the original purpose of the Act was to secure some *protection* for tenants. However incompletely the Act operates, the less fortunate family has been protected. The status of the family, as such, in modern society is precarious enough—a fact which is seldom recognized—and even if rent policies create some absurd anomalies, they do prevent the greater anomaly of trying to maintain the family as an institution without making it economically feasible. Those who would rationalize rent restriction must propose alternative remedies for the problem of making the young family a tolerable economic burden to the working father and mother, whatever their social status. Family life depends, very directly, on good housing. A slight, or even substantial, increase in family allowances would not be sufficient to replace the existing housing subsidy and rent restriction policy. Any rent policy must give some recognition to the altruistic institution upon which society depends.

This is not to suggest that the small one- or two-person "family" should not be catered for as well, but only that the original pressures which led to rent restriction cannot yet be ignored.

NEW DESIGNS AND NEW METHODS

Evidently 1951 is a turning-point in yet another sense. The South Bank exhibition has stimulated architectural awareness among many thousands of people, and made them, in varying degrees, alive to the possibilities of design and of the use of new materials. The efforts of a public event of this kind are bound to be felt for several years. In future, complaisant acceptance of traditional designs and methods may not go unchallenged so easily on the housing committees of our city councils, and there will be less resistance to the consideration of new methods of construction and skilful, if unconventional, designs. Housing design may be affected as has been school design, and may take a bolder and more experimental direction, giving greater scrope to the application of new techniques.

Other economic reasons why this may happen are, firstly, the growing demand for housing in all other parts of the world and, secondly, the rising cost of skilled labour. Higher real wages must be justified by more productive techniques, which are unattainable unless actual methods of construction are constantly adapted to new needs. Already the export of houses overseas has become an economic proposition, and methods of factory production of transportable units for construction overseas may be encouraged. This development will in turn stimulate operational research and turn some of the bright ideas of our scientists into practical production jobs.

A further economic reason why new designs and new methods are likely to need encouragement is the persistent fuel shortage, which should have resulted, long ago, in a campaign to improve domestic heating and to encourage those methods of construction which are most economical in fuel requirements.

The existence of these economic tendencies does not mean, of course, that housing policy will, necessarily, be framed on national principles, or vigorously prosecuted; instead, our politicians may be content to think of a number, double it, and present it as a bait to the electors. In reality, the requirements of a sound policy are very few and very simple, and the very least that can be expected of whatever government is returned is that a commission of enquiry be set up soon after the election—not on the basis of a wide representation, but a small working committee of full-time men, all of wide experience in the diverse fields connected with housing and certainly including a practising architect.

Announcements

Messrs. A. H. Davis & Partner, chartered quantity surveyors, of Newburn Chambers, 107, New Bridge Street, Newcastle-upon-Tyne, have opened a branch office at 14, Finkle Street, Kendal, Westmorland (Tel.: Kendal 1446).

Richard Kauffmann, architect and town planner, of 9, Hachavazeleth Street, Jerusalem, announces that he would be grateful to receive trade catalogues and samples, with particular reference to the building of a large girls' orphanage in Jerusalem. Communications with Mr. Kauffmann should be by air mail.

Arthur S. Cripps, F.I.A.A. & S., M.B.SAN.I., Architect & Surveyor, of 6, Shooter's Hill, Cowes, Isle of Wight, has taken in partnership Hedley C. Farrow, A.R.I.B.A. The firm's name is now Arthur Cripps and Farrow.

Ernest A. Smalley, A.R.I.B.A., has relinquished his appointment as architect to the Lunesdale Rural District Council and has commenced in private practice at Lowlands Road, Morecambe (Morecambe 166) and at "Greycroft," Hornby, Nr. Lancaster (Hornby 336) and will be pleased to receive trade catalogues, etc.

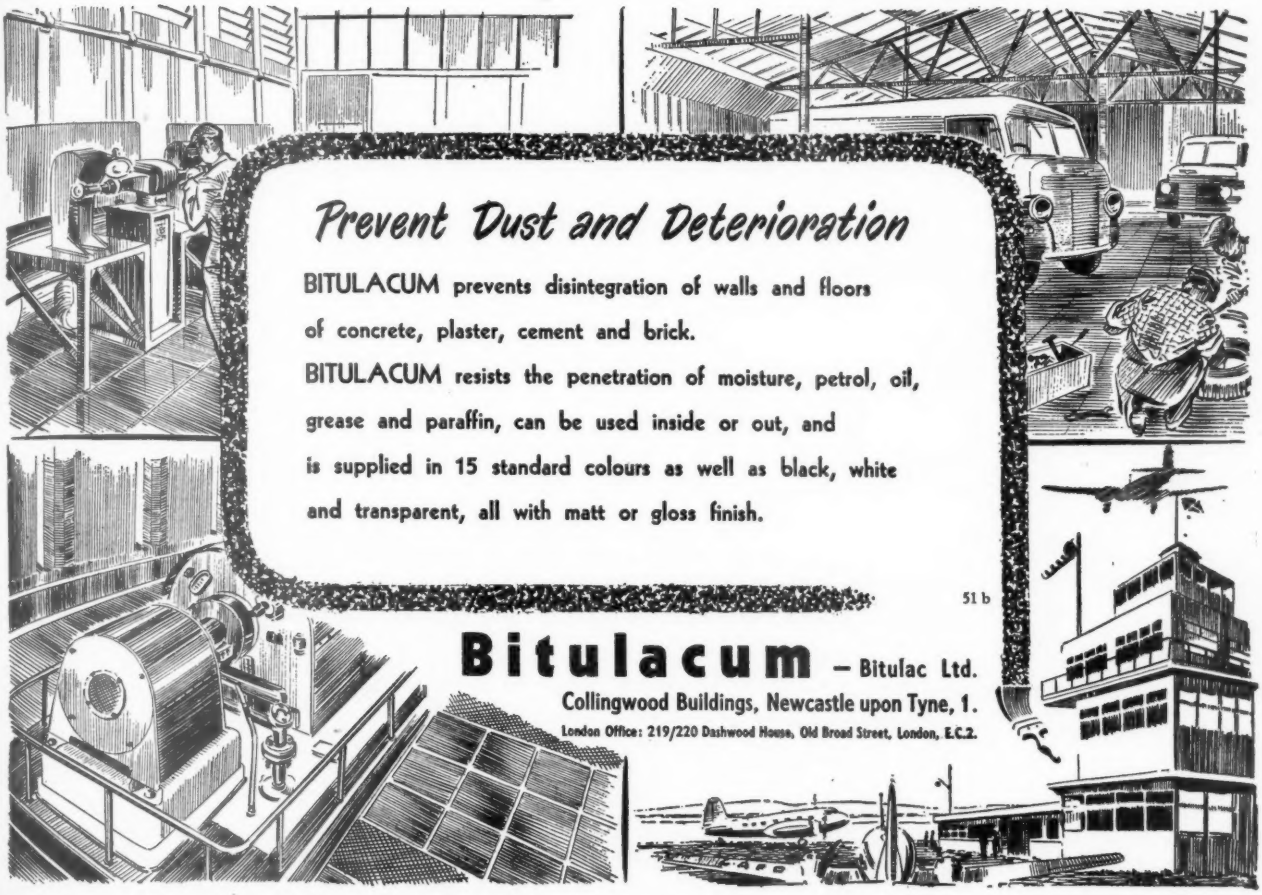
Buildings Illustrated

New Warehouse, Office & Reception Building for Frigidaire, Division of General Motors Ltd., Stag Lane, Kingsbury, London, N.W.9. (Page 469-471.) Architect: Howard, Souster & Partners. Architect-in-charge: R. R. Fairbairn, M.C., A.R.I.B.A. Consultants: G. A. Dodd & Partners. Quantity Surveyors: W. E. T. Hoggarth, F.R.I.C.S., A.M.I.STRUCT.E. General Contractor: W. J. Marston & Son Ltd. Clerk of Works: W. J. Brooks. General Foreman: A. E. Beaton. Sub-contractors: Dampcourses, asphalt, Faldo Asphalte Co. Ltd.; bricks, London Brick Co. Ltd.; artificial stone, Empire Stone Co. Ltd.; structural steel, Redpath Brown & Co. Ltd.; asbestos, Asbestos Cement Roofings Ltd.; special roofings, The Ruberoid Co. Ltd.; partitions, Holoplast Ltd., and Art Metal Construction Co.; glass, Aygee Ltd.; patent glazing, Lenscrete Ltd.; woodblock flooring, The Phillip Flooring Co. Ltd.; patent flooring (cork), Insulation & Asbestos Co. Ltd., (terrazzo) Brookes Ltd., (granolithic) Johnson Floor Co. Ltd.; (fireproof construction) Caxton Floors Ltd.; central heating, ventilation, Carrier Engineering Co. Ltd.; acoustic ceilings, Horace W. Cullum & Co. Ltd.; electric wiring, London Electricity Board (Contracting Dept.); electric light fixtures, C. W. C. (Equipment) Ltd.; sanitary fittings, W. N. Froy & Sons Ltd., and Valbania Ltd.; stair-treads, Brooks Ltd.; door furniture, Yannedis & Co. Ltd.; casements, W. James & Co. Ltd.; metal entrance gates, A. J. Binns Ltd.; rolling shutters, Mather & Platt Ltd.; sunblinds, J. Avery & Co.; decorative plaster, Haskins; metalwork, W. J. Marston & Son Ltd.; shrubs and trees, Belsize Nurseries Ltd., and J. B. Gates; lifts, W. J. Furse & Co. Ltd.; signs, Boro' New Electric Signs Ltd.; public address system, Phillips Electrical Ltd.; master and slave clock system, Magneta Time Co.; conveyors, Geo. W. King Ltd.; patent underfloor telephone and power distribution, Key Engineering Co. Ltd., installed by London Electricity Board.

Fairmead County Secondary School, Pyrles Lane, Loughton, Essex. (Pages 472-476.) Architect: H. Conolly, F.R.I.B.A., County Architect; Deputy County Architect, D. Senior, F.R.I.B.A.; Assistant County Architect, E .T. Ashley Smith, A.R.I.B.A.; Assistant Architects, J. T. Bell and J. Sorrell A/A.R.I.B.A. Structural Engineer: B. J. Nicholls. Quantity Surveyors: E. C. Harris & Partners. Clerks of Works: H. Lunn and D. King. General Contractors: Gilbert-Ash Ltd.; Prefabricated Aluminium Units, Bristol Aeroplane Co. (Housing) Ltd. Sub-Contractors: heating installation, J. E. Heath & Son; electrical installation, Read & Partners Ltd.; cloakroom fittings, Clark Hunt & Co. Ltd.; sanitary ware, B. Finch & Co. Ltd.; artificial stone, W. C. Richardson; cork lino floors, Korkoid Decorative Floors, Cellulin Flooring Co. Ltd.; accolite floors, Prodorite Ltd.; parquetry flooring, Onsite Flooring Co.; wall and floor tiling, Summers & Co.; felt roofing and tanking, William Briggs & Sons Ltd.; structural steelwork, Dawnays Ltd.; metal windows, Rustproof Metal Window Co. Ltd.; asphalte floors, Durable Asphalte Co. Ltd.; marquetone flooring, Chittenden & Simmons; wood block flooring, Hollis Bros. Ltd.; flush doors, Dean & Son Ltd., Walter Lawrence & Son Ltd.; joinery, Gallenkamp & Co. Ltd.; door furniture, Nettlefold & Sons Ltd.; curtains, R. C. Twitchett; precast concrete floors and roofs, Rokcrete Units Co. Ltd., Concrete Ltd.; glaziers, Faulkner Greene & Co. Ltd.; fibre board ceilings, Structural Insulation Ltd.; acoustic tiles, May Acoustics Ltd.; special lighting fittings, Frederick Thomas & Co. Ltd.; stage lighting, Major Equipment Co. Ltd.; terrazzo W.C. partitions, Mosaic and Terrazzo Precast Co. Ltd.; clocks, The Synchronome Co. Ltd.; railings and gates, Bayliss, Jones & Bayliss Ltd.

Correction

W. H. Colt (London) Ltd., have drawn our attention to the fact that in the Working Detail of the staircase at the Lion and Unicorn Pavilion, published on September 13, we incorrectly referred to the construction of the underside of the staircase as ¼-in. plaster on expanded metal. The actual construction was ¾-in. plaster on electrically kilned clay-on-wire lath.



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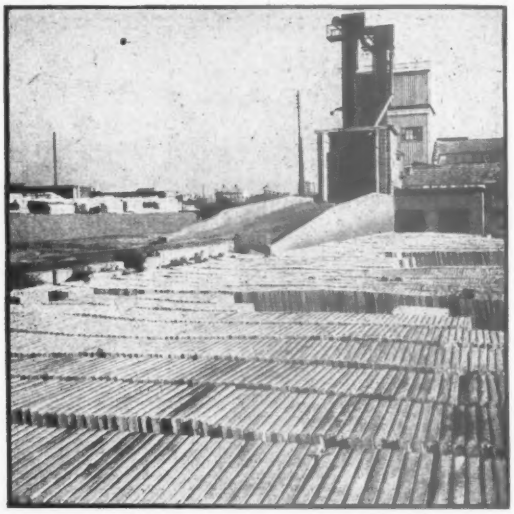

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3′ 0″ × 2′ 0″ × 2″	..	15½		
2′ 6″ × 2′ 0″ × 2″	..	18½		
2′ 0″ × 2′ 0″ × 2″	..	23	2″ thick ..	10 yds. super
1′ 6″ × 2′ 0″ × 2″	..	31		
2′ 6″ × 2′ 0″ × 1½″	..	25		
2′ 0″ × 2′ 0″ × 1½″	..	31	1½″ thick ..	13½ yds. super
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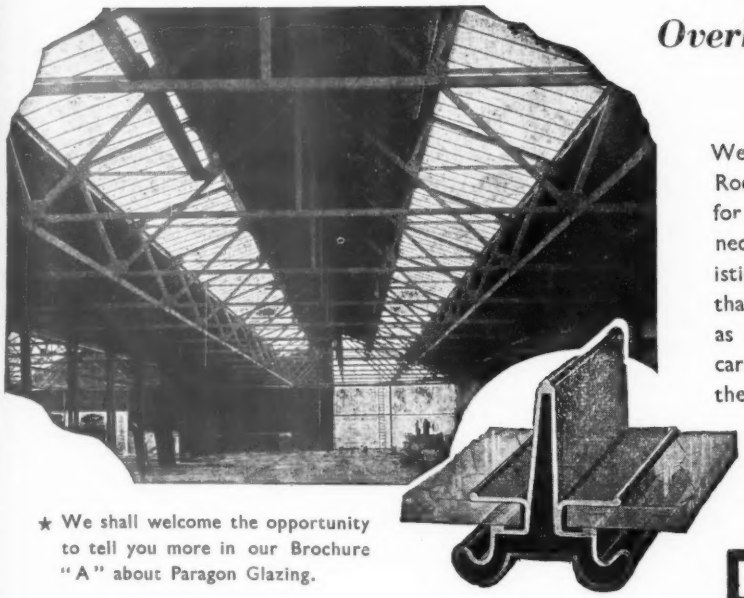

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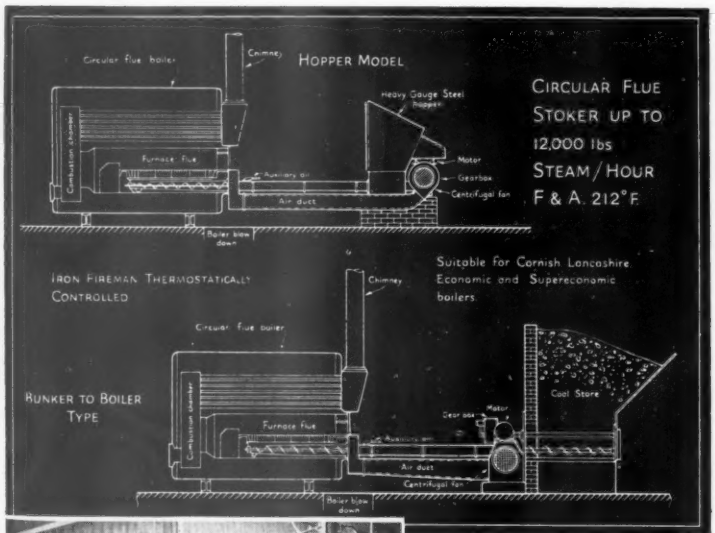

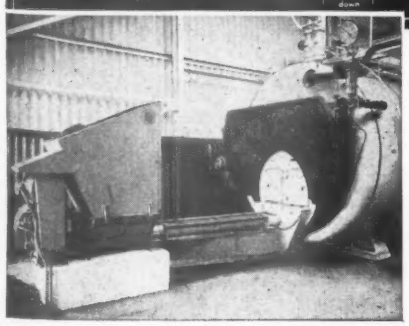

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THIS IS THE ONLY BOOK ever published in English recording the development and contribution of one of the chief sources of authentic contemporary architecture. Sixty pages are devoted to a fascinating survey of native types, the simple functional quality of which is in complete sympathy with the contemporary forms that follow. In the design of churches Switzerland stands alone; in her philosophy and building of schools, foremost in Europe; and the public buildings generally rank with the world's finest since the war. Mr. Kidder Smith is 'amongst other things, a photographer of genius' says THE ARCHITECTURAL REVIEW. *Bound in full cloth boards. Size* 11¼ *ins. by* 8½ *ins.; 234 pages; 40,000 words; 6 pages in full colour; nearly 500 monochrome illustrations. Price 42s., postage 1s. 1d.*

Sweden Builds: Its Modern Architecture and Land Policy, Background Development and Contribution. *By G. E. Kidder Smith. With an introductory chapter on Land Usage by Sven Markelius.*

THIS BOOK BEGINS with a description of the Swedish native building types and the Swedish wood tradition. This serves as an introduction to a comprehensive and beautifully illustrated survey of contemporary Swedish architecture. Every aspect of this new movement is examined, from housing to the latest aeroplane hangars, from site-planning of the new suburbs to tram and bus shelters. Houses (prefabricated and otherwise), schools, churches, hospitals, concert halls, cinemas, public buildings, sports buildings, museums, shops, restaurants and factories are magnificently illustrated and fully discussed. The book ends with some hitherto unpublished illustrations of recent Swedish bridge architecture. *Bound in full cloth boards. Size* 11¾ *ins. by* 8¼ *ins.; 280 pages; 7 pages in full colour and nearly 700 monochrome illustrations from photographs and drawings. Price 45s. net, postage 1s. 1d.*

London Night and Day: a guide to where the other books don't take you. *Illustrated by Osbert Lancaster. Edited by Sam Lambert.*

THIS UNUSUAL GUIDE BOOK covers a wider range in its 100 closeset pages than any comparable volume. It reveals the hidden, secret, underthe-surface London by taking the reader round the 24 hours of the clock with suggestions where to go, what to do, for each hour. Osbert Lancaster's witty, evocative drawings support the text. *Size* 5½ *ins. by* 8½ *ins. Bound in stiff card. 100 pages with over 40 drawings and a cover by Osbert Lancaster. Price 3s. 6d. net, postage 3d.*

The City of London: a record of Destruction and Survival. *With a report on Reconstruction by the planning consultants: C. H. Holden and W. G. Holford.*

THIS BOOK PRESENTS THE STORY of the development of the City of London from Roman Times to the present day and includes a series of brilliant photographs providing the first comprehensive record of the 1940-45 bomb damage. The consultants' proposals for reconstruction are shown in full detail. An attempt is also made to portray that complicated and diverse character which is peculiar to the city, that strange agglomeration of the monumental and the intimate compressed into an area so small that a pedestrian can encompass it in a morning. What he is likely to see after reconstruction, when new buildings mingle with ancient landmarks is visualized in a series of drawings by Gordon Cullen. *Bound in heavy buckram boards, gold blocked. Size* 9½ *ins. by* 7½ *ins.; 341 pages; over 360 photographs, engravings and maps, 40 of which are in colour. Price 25s. net, postage 11d.*

A Pocket Guide to Modern Buildings in London. *By Ian McCallum.*

THIS IS A NEW GUIDE BOOK intended for all interested in modern architecture. After outlining the development of architecture over the past century Mr. McCallum illustrates and describes the most significant modern buildings within 7 miles of Charing Cross, and gives full directions for finding them. *Bound in stiff board cover. Size* 5⅝ *ins. by* 4¾ *ins. 128 pages with 36 illustrations, 5 maps, a bibliography and 3 indexes. Price 3s. 6d. net, postage 2d.*

High Victorian Design: a Study of the Exhibits of 1851. *By Nikolaus Pevsner.*

DR. PEVSNER here examines the problems of the critics' *volte-face* and of the change in taste since 1851. Then the Crystal Palace itself was disliked by critics such as Ruskin, the exhibits praised and admired by critics and public alike. Now the exhibits are scorned but the building itself is highly praised. Dr. Pevsner seeks to explain the reasons for the taste of 100 years ago by a study of 120 exhibits (all illustrated) from the 1851 exhibition. *Size, crown 8vo., bound in full cloth boards, with 162 pages containing over 120 illustrations. Jacket designed by Gordon Cullen. Price 12s. 6d. net, postage 4d.*

Parliament House: the Chambers of the House of Commons. *By Maurice Hastings, Ph.D.*

TO UNDERSTAND the traditional plan adopted for the new Chamber of the House of Commons we have to go back to 1547 when the King's chapel of St. Stephen's became the home of the Commons. Dr. Hastings makes a brilliant and learned reconstruction of this place where so many high events and great Parliamentarians moved; he also describes Barry's Chamber and that opened in 1950, designed by Sir Giles Gilbert Scott, showing how the choir-stall seating plan has continued unchanged through the centuries. *Bound in full cloth boards. Size* 8½ *ins. by* 5½ *ins. 200 pages with 78 illustrations. Price 12s. 6d. net, postage 6d.*

English Panorama. *By Thomas Sharp, M.A., D.Litt.*

THE FIRST carefully studied and original account of the evolution down the centuries of the English scene in town and countryside, this book ends with a penetrating analysis of the problems of town and country planning which now confront us. First published in 1936, it has now been revised with much new material and is almost entirely newly illustrated. *Bound in full cloth boards. Size* 8½ *ins. by* 5½ *ins. 148 pages, with over fifty half-tone and line illustrations. Price 12s. 6d. net, postage 6d.*

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The Modern House. *By F. R. S. Yorke, F.R.I.B.A.*

OUTLINES THE REQUIREMENTS of the new type of home, and discusses at length its several parts in the following sections: The Plan—Walls and Windows—The Roof—Experimental Houses. *Bound in full cloth boards. Size 10 ins. by* 7½ *ins. 232 pages with over 500 illustrations. Seventh, revised, edition. Price 30s. net, postage 11d.*

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CLASSIFIED ADVERTISEMENTS

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

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

Public and Official Announcements

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LONDON COUNTY COUNCIL.

Applications are invited for a post of ARCHITECT (Grade II, £700 to £840 basic) in Historic Records Section of Architect's Department. Position requires special knowledge of period architecture and decorative styles; experience in maintenance and preservation of ancient buildings and objects; preparation of material for records and publication; technical advice on corporate property. Superannuable. Salary subject to addition of 10 per cent. on first £600 and 7½ per cent. on remainder.

Application forms, to be returned by 31st October, 1951, obtainable from Architect, The County Hall, S.E.1, enclosing stamped addressed foolscap envelope and quoting AR/EK/HR. (1186) 4495

BOROUGH OF ILKESTON.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.
BOROUGH SURVEYOR'S DEPARTMENT.

Applications are invited for the appointment of an Architectural Assistant, at a salary in accordance with Grade VI (£645-£710) of the A.P.T. Division of the National Scales.

The appointment is subject to one month's notice on either side, and the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Candidates for the appointment must be registered architects with good experience in the design of houses and estate development. Previous Municipal experience will be an advantage.

Candidates must disclose in writing whether or not they are related to any member or senior officer of the Council. Canvassing will disqualify.

No housing accommodation can be offered.

Forms of application, conditions of appointment and any other information can be obtained from A. O. Marshall, M.I.Mun.E., M.I.Struct.E., F.I.A.A., Borough Surveyor & Water Engineer, Town Hall, Ilkeston, to whom the applications are to be submitted by Monday 12th November, 1951.

J. YATES,
Town Clerk.

Town Hall, Ilkeston.
4th October, 1951. 4524

BOROUGH OF ROYAL TUNBRIDGE WELLS.
BOROUGH SURVEYOR AND WATER ENGINEER'S DEPARTMENT.
APPOINTMENT OF CHIEF ARCHITECTURAL ASSISTANT.

The Council invite applications for the above appointment at a salary in accordance with the National Scale A.P.T. VIII (£735×£25—£810). Candidates must be A.R.I.B.A. or hold an equivalent qualification, and should have had considerable experience of Municipal Housing.

The appointment will be subject to the provisions of the Local Government Superannuation Act and to the successful candidate passing a satisfactory medical examination.

Candidates when making application must state whether to their knowledge they are related to any member or senior officer of the Council.

Applications in candidate's own handwriting, together with the names of two persons to whom reference may be made, stating experience, to be submitted to the Borough Surveyor and Water Engineer, Town Hall, Tunbridge Wells, not later than Saturday, 27th October, 1951.

JOHN WHITEHEAD,
Town Clerk.

Town Hall, Tunbridge Wells.
October, 1951. 4522

URBAN DISTRICT COUNCIL OF PONTYPOOL.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the post of Architectural Assistant on the staff of the Council's Architect, at a salary in accordance with the National Scale, Grade A.P.T., VI, *i.e.*, £645-£710.

Preference will be given to members of the R.I.B.A. particularly those who have had experience of Council Housing Estates. A knowledge of Quantities is desirable.

Housing accommodation, if necessary, will be provided for the successful applicant.

The post will be subject to the provisions of the Local Government Superannuation Act, 1937, and the National Conditions of Service. The successful applicant will be required to pass a medical examination. The appointment will be subject to one month's notice on either side.

Applications, stating age, qualifications and experience, accompanied by copies of two recent testimonials, should be delivered to the Council's Architect, Mr. W. H. C. Dawkes, Market Buildings, Pontypool, Mon., not later than Tuesday, the 30th October, 1951.

H. COOK,
Clerk of the Council.

Town Hall, Pontypool. 4547

BOROUGH OF ILFORD.
APPOINTMENT OF
TEMPORARY ARCHITECTURAL ASSISTANT GRADE IV.

Applications are invited for the position of Temporary Architectural Assistant on the staff of the Borough Engineer's Department.

Salary in accordance with Grade IV of the A.P.T. Division, *viz.*, £530×£15—£575 plus London Weighting.

Candidates should possess approved qualifications and have general architectural experience in Municipal Buildings, particularly with regard to the preparation of contracts and of working drawings.

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

Forms of application obtainable from the Town Clerk, Town Hall, Ilford, should be returned not later than the 5th November, 1951. 4527

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Applications are invited for positions of ARCHITECT, Grade III (£550-£700) and TECHNICAL ASSISTANT (up to £580) for architectural work on new housing, schools and other public buildings. The positions are superannuable, and the above rates are subject to an addition of 10 per cent. on the first £600 and 7½ per cent. on any remainders. Application forms from the Architect, The County Hall, S.E.1, enclosing stamped addressed foolscap envelope and quoting AR/EK/A. Canvassing disqualifies. (514) 3914

AMENDED ADVERTISEMENT.
CHESHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.
APPOINTMENT OF FORESTRY AND LANDSCAPE ASSISTANT.

Applications are invited for the above appointment which is on the headquarters staff of the County Planning Department, at Chester.

Applicants must be members of the Institute of Landscape Architects or the Royal Institute of Chartered Surveyors (Land Agency Sub-Division), or hold a degree or certificate in Forestry. The salary payable will be in accordance with A.P.T. VIII, *i.e.*, £735-£810 per annum, and the commencing salary will be £735 per annum.

The appointment is a permanent one and the successful candidate will be required to submit a satisfactory medical certificate.

Application forms together with full details and conditions attaching to the appointment, may be obtained from me on the receipt of a stamped and addressed foolscap envelope.

The last date for the receipt of completed applications is Saturday, 10th November, 1951.

KENNETH O. MALE,
County Planning Officer.

Bridgegate House,
Lower Bridge Street, Chester. 4553

WEST SUSSEX COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of an ASSISTANT ARCHITECT, at a salary in accordance with Grade IV, A.P.T. Division (£530 to £575 per annum), of the National Scales of Salaries.

Further particulars should be obtained from the County Architect, County Hall, Chichester, to whom detailed applications must be submitted not later than the 25th October, 1951.

T. C. HAYWARD,
Clerk of the County Council.

County Hall, Chichester.
5th October, 1951. 4538

COUNTY BOROUGH OF ROCHDALE.
APPOINTMENT OF SENIOR ASSISTANT QUANTITY SURVEYOR.

Applications are invited for the appointment of SENIOR ASSISTANT QUANTITY SURVEYOR, in the Department of the Borough Surveyor, at a salary of £600-£660 per annum (Grade A.P.T., Va).

Applicants must have passed the Final Examination of the R.I.C.S. (Quantities Section), and should have had considerable experience in the preparation of Bills of Quantities, measurement of site works, and the preparation of Statements for Interim and Final Payments.

Applications will be considered from candidates who may not be so fully qualified, the grade and salary of the position being in accordance with qualifications and varying as follows:—Grade II (£470-£515) for a candidate with some experience, but not having passed the Intermediate Examination of the R.I.C.S.; Grade III or IV (£500-£545 or £530-£575) for candidates who have passed the Intermediate Examination, and Grade V (£570-£620) if the Final Examination of the R.I.C.S. has been passed.

The appointment will be subject to the provision of the Local Government Superannuation Acts, and to the selected candidate passing a medical examination. Canvassing is prohibited and candidates must disclose whether to their knowledge they are related to any member or senior officer of the Council.

Applications, stating position applied for, age, qualifications, and full particulars of experience, together with the names and addresses of two persons to whom reference may be made, and endorsed "Quantity Surveyor," must be delivered to the Borough Surveyor, Town Hall, Rochdale, not later than 9 a.m. on Thursday, 1st November, 1951.

K. B. MOORE,
Town Clerk.
4537

CITY OF BIRMINGHAM EDUCATION COMMITTEE.
APPOINTMENT OF STAFF TO ARCHITECT'S BRANCH.

Applications are invited for the following appointments in the Architect's Branch of the Birmingham Education Department (Architect to the Committee: Mr. Alex Steele, A.R.I.B.A.).

(i) ASSISTANT ARCHITECT. Salary: A.P.T. VII (£685×£25—£760). The branch is engaged on a large building programme part of which consists of multi-storey school construction. Applicants will be responsible for the design, working drawings, supervision, as well as administrative work in connection with one or more such schemes. They must be Registered Architects or Chartered Architects.

(ii) ASSISTANT ARCHITECT. Salary: A.P.T. V (£570-£620). Applicants must be Registered or Chartered Architects and should have had good general experience in the preparation of schemes and working drawings for educational buildings.

(iii) ARCHITECTURAL ASSISTANT. Salary: A.P.T. IV (£830×£15—£575). Applicants should have passed the R.I.B.A. Intermediate Examination or its equivalent at one of the recognised Schools of Architecture and worked in an architectural office for a period of two years. They should be capable of preparing working details for major contracts.

(iv) ARCHITECTURAL ASSISTANT. Salary: A.P.T. III (£500×£15—£545). Applicants should either (i) have attended a full-time course in Architecture, passed the R.I.B.A. Intermediate Examination or its equivalent and subsequently worked one year in an architectural office; or (ii) have served or be serving articles of pupilage or worked in an architectural office for three years and have passed the R.I.B.A. Intermediate Examination or its equivalent. They will be expected to prepare working drawing details under supervision.

Application forms, which may be obtained from the undersigned on receipt of a stamped, addressed envelope, must be returned not later than 31st October, 1951.

E. L. RUSSELL,
Chief Education Officer.

Education Office,
General Purposes Branch,
Margaret Street, Birmingham, 3. 4543

SUDAN GOVERNMENT.

The Public Works Department requires a DISTRICT ENGINEER, aged 26-34, for service in the Sudan, for the organisation and control of construction and maintenance of buildings, roads and other works.

Candidates should be Corporate Members of the Institution of Civil Engineers or hold qualifications exempting them from Parts A and B of this Institution's associate membership examination or be Associate of the Royal Institute of British Architects.

Appointment will be on a Short Term Contract for a period of two years, with or without eligibility for bonus as may be agreed. Salary ranges between £E.771 and £E.1,438 if contract provides for a bonus and £E.822 and £E.1,533 if it does not.

Starting rate would be determined according to age, qualifications and experience.

A cost-of-living allowance is at present payable from £E.142 to £E.352 per annum, according to the number of dependents.

An outfit allowance of £E.60 is payable when the contract is signed provided salary does not exceed £E.1,012 per annum on Short Term Contract.

No income tax it at present payable in the Sudan.

Further information and application form may be obtained on written application to the Sudan Agent in London, Wellington House, Buckingham Gate, London, S.W.1. Please mark envelopes "District Engineer 4/19 S.T." 4536

COUNTY COUNCIL OF ESSEX.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments on the Established Staff:—

(*a*) SECTIONAL ASSISTANT ARCHITECT, Grade X, A.P.T.D., to be in charge of a group of other assistant architects in the School Buildings Section. Salary at a rate of not exceeding £1,000 a year. Candidates should be members of the Royal Institute of British Architects. Work projected includes Primary and Secondary Schools, Colleges and any other buildings required for education purposes.

(*b*) ASSISTANT ARCHITECT, Grade V, A.P.T.D. Salary at a rate of not exceeding £620 a year. Candidates should have had experience in the planning, designing and construction of public buildings.

In fixing the commencing salary in each case regard will be had to the experience and qualifications of the successful candidate.

Applications must be made on a form obtainable from the County Architect, Mr. H. Conolly, F.R.I.B.A., at the address stated below (please state post for which form is required) and when completed the form, accompanied by copies of not more than three recent testimonials, should be returned to reach him not later than 1st November, 1951.

Canvassing either directly or indirectly is forbidden.

JOHN E. LIGHBURN,
Clerk of the County Council.

County Hall, Chelmsford,
Essex.
5th October, 1951. 4539

LONDON ELECTRICITY BOARD.
ARCHITECTURAL ASSISTANTS, ARCHITECTURAL DRAUGHTSMEN.

Applications are invited for the above positions in the Architect's Section of the Chief Engineer's Department in Central London.

Applicants for positions as Architectural Assistants should be studying for or have passed the Intermediate Examination of the R.I.B.A., be capable draughtsmen and have had several years experience in an Architect's office.

Applicants for positions as Architectural Draughtsmen should be neat draughtsmen and preferably have had several years experience in an Architect's office.

The posts have been graded under Schedule "D" of the National Joint Board agreement as follows :—

(*a*) Architectural Assistants. Grade V, £574 7s. to £683 11s. per annum, inclusive of London Area Allowance.

(*b*) Architectural Draughtsmen. Grade VI, £438 to £574 7s. per annum, inclusive of London Area Allowance.

Application forms obtainable from Establishments Officer, 46, New Broad Street, E.C.2, to be returned duly completed and stating grade applied for, by 10th November, 1951. Please enclose addressed foolscap envelope and quote reference V/1256/66/A on all correspondence. 4546

BOROUGH OF SCUNTHORPE.
BOROUGH SURVEYOR'S DEPARTMENT.
TECHNICAL STAFF.

Applications are invited for the following permanent appointment :—

ASSISTANT ARCHITECT, Grade V (£570-£620). Housing accommodation will be provided if necessary.

Applicants for the appointment should be Chartered or Registered Architects, and preference will be given to Associates of the R.I.B.A. with experience in Municipal Housing work, shops, preparation of specifications, estimates and working drawings.

The appointment will be subject to the Local Government Superannuation Acts, and the successful applicant will be required to pass a medical examination.

Applications, stating age, present appointment, qualifications and experience, and giving names of two persons to whom reference may be made, should be delivered, suitably endorsed, to reach the undersigned not later than Friday, 2nd November, 1951.

W. P. ERRINGTON,
Town Clerk.

Municipal Offices,
34, High Street, Scunthorpe.
9th October, 1951. 4558

NATIONAL COAL BOARD.

Applications are invited for the following posts in the Architect's Branch of the Northern (N. & C.) Divisional Coal Board :—

SENIOR ARCHITECT (£850 × £35 — £1,150). Qualifications required : Associateship R.I.B.A.; recent experience in the design and supervision of large modern buildings. The successful applicant will act as Deputy to the Chief Architect and must have had experience in the administration and organisation of an office.

ARCHITECT GRADE I (£700×£25—£875). Qualifications required : Associateship R.I.B.A.; ability to design, organise and supervise modern building schemes, and to take charge of a section of the office.

ARCHITECT GRADE II (£450×£25—£700). Qualifications required : Final Examination R.I.B.A.; good experience in preparation of sketch and working drawings for large schemes and arrangement of sub-contracts.

ARCHITECTURAL ASSISTANT GRADE I £410 × £20 — £550). Qualifications required : Student R.I.B.A., with experience in preparation of working drawings under supervision.

Starting salaries according to qualifications and experience.

These posts offer excellent opportunities in a new office to keen and capable Architects.

Applications stating age, training, experience, present appointment and salary, clearly indicating for which post application is made, should be submitted not later than Thursday, 8th November, 1951, to :—

THE ESTABLISHMENT OFFICER,
National Coal Board,
Northern (N. & C.) Division,
Ellison Buildings, Ellison Place,
Newcastle-upon-Tyne. 4557

CORPORATION OF LONDON.
APPOINTMENT OF ARCHITECTURAL ASSISTANT—AUXILIARY STAFF.

Applications are invited for the appointment of an Assistant within the range of Higher Grade I (£400×£25—£625). Commencing salary to be subject to age, experience and qualifications. The first £400 of the salary is subject to 15 per cent. and the remainder to 7½ per cent. cost-of-living bonus.

Applicants should have had good office experience and have passed or be preparing for Intermediate R.I.B.A. or R.I.C.S. Examination.

The appointed officer will require to pass a medical examination and to contribute to the Corporation's Superannuation Fund as maintained under the City of London (Various Powers) Acts, 1931 and 1950.

Applications, giving full personal details, particulars of qualifications, experience, age, past and present appointments and the names of two persons to whom reference may be made, should be sent to the City Surveyor, Corporation of London, 55/61, Moorgate, London, E.C.2, not later than the 31st October, 1951. 4562

HUNTINGDONSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.
ARCHITECTURAL ASSISTANT, GRADE II, A.P.T.

Applications are invited for the appointment of an Architectural Assistant. Salary: Grade II, A.P.T., £470×£15 to £515 per annum.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937.

Applications should be submitted to S. J. Hands, A.R.I.B.A., County Architect, County Buildings, Huntingdon, by not later than Wednesday, 31st October, 1951, with copies of two recent testimonials or the names of two referees.

JOHN KELLY,
Clerk of the County Council.

County Buildings, Huntingdon.
18th October, 1951. 4554

METROPOLITAN BOROUGH OF STEPNEY.
APPOINTMENT OF TWO ARCHITECTURAL ASSISTANTS (UNESTABLISHED) IN THE BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT.

Applications are invited from persons qualified for the above-mentioned appointments.

Preference will be given to candidates having experience in the preparation of design, layout, working drawings, detailed specifications for housing schemes, etc., and who hold appropriate recognised professional qualifications.

Salary payable will be in accordance with Grade A.P.T., VI of the National Scheme of Conditions of Service (£645-£710, plus appropriate London Weighting Allowance).

The appointments will be subject to the Council's Bye-laws and Standing Orders, and to the above National Scheme as adopted by the Council and applied to its staff.

Application should be made direct to the Borough Engineer and Surveyor at these offices.

Canvassing, either directly or indirectly, will disqualify.

J. E. ARNOLD JAMES,
Town Clerk.

Municipal Offices,
London Fruit Exchange,
Duval Street, E.1.
8th October, 1951. 4545

MERIONETH COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

The Merioneth County Council invite applications for the following appointments :—

(*a*) ASSISTANT ARCHITECT at a salary in accordance with Grade VI A.P.T. Division of the National Joint Council Scale commencing at £645 per annum and rising to £710 per annum, together with travelling allowance in accordance with the Council's Scale.

(*b*) ARCHITECTURAL ASSISTANT at a salary in accordance with Grade II A.P.T. Division of the National Joint Council Scale commencing at £470 per annum and rising to £515 per annum.

With regard to appointment (*a*) applicants should be registered architects and Associates of the Royal Institute of British Architects, with experience in preparation of surveys; design of buildings; preparation of working drawings, particularly school buildings, and supervision of buildings in course of erection.

With regard to appointment (*b*) preference will be given to applicants who have passed the Intermediate Examination of the Royal Institute of British Architects.

The appointments will be subject to :—

(*a*) one month's notice on either side;
(*b*) the Local Government Superannuation Acts, 1937-39;
(*c*) the Council's Sick Pay Regulations;
(*d*) the successful candidate satisfactorily passing a medical examination by the County Medical Officer of Health.

Applications endorsed "Assistant Architect" or "Architectural Assistant" as the case may be, stating age, and present position, also giving particulars of qualifications, experience and accompanied by copies of not more than two recent testimonials must be forwarded so as to reach the undersigned not later than Wednesday the 31st day of October, 1951.

HUGH J. OWEN,
Clerk of the County Council.

County Offices, Dolgelley,
N. Wales.
8th October, 1951. 4544

BOROUGH OF SOUTHGATE.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of an Architectural Assistant in the Department of the Borough Engineer and Surveyor. The post is permanent and superannuated, and is graded A.P.T., IV-V, plus "London weighting," and the starting salary will be in accordance with qualifications and experience.

Preference will be given to applicants who are in possession of the Intermediate examination of the Royal Institute of British Architects, although applications from persons who are undergoing a regular course of study for that examination will be considered.

Forms of application may be obtained from the Borough Engineer and Surveyor, and should be returned to the undersigned not later than 9 a.m. on Monday, the 12th November, 1951.

Canvassing, directly or indirectly, will be a disqualification.

GORDON H. TAYLOR,
Town Clerk.

Town Hall, Palmers Green, N.13.
10th October, 1951. 4565

CITY OF PLYMOUTH.
CITY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments on the established staff, subject to the Conditions of Service of the National Joint Council for Local Authorities, Administrative, Professional, Technical and Clerical Services; the Local Government Superannuation Act, 1937, and one month's notice on either side for termination :—

(*a*) SENIOR ASSISTANT ARCHITECT. Grade VI (£645 to £710).

(*b*) ASSISTANT ARCHITECT. Grade III (£500 to £545).

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