

THE ARCHITECTS' JOURNAL



Standard contents

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

NEWS and COMMENT

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Wanted and Vacant

★ 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 I one week, Ie to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

IEE	Institution of Electrical Engineers. Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers. 1, Grosvenor Place, S.W.1.	Sloane 8606
IHVE	Institution of Heating and Ventilating Engineers. 75, Eaton Place, S.W.1.	Sloane 3158
IIBD	Incorporated Institute of British Decorators. Drayton House, Gordon Street, W.C.1.	Euston 2450
ILA	Institute of Landscape Architects. 12, Gower Street, W.C.1.	Museum 1783
I of Arb.	Institute of Arbitrators, 35/37, Hastings House, 10, Norfolk Street, Strand, W.C.2.	Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197
IR	Institute of Refrigeration. Empire House, St. Martin's-le-Grand, E.C.1.	Monarch 7391
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1.	Abbey 6172
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Sloane 7128-29
IWA	Inland Waterways Association. 11, Gower Street, W.C.1.	Museum 9200
LIDC	Lead Industries Development Council. Eagle House, Jermyn Street, S.W.1.	Whitehall 7264
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	Museum 3891
MARS	MARS Group (English Branch of CIAM). 34, Gordon Square, W.C.1.	Euston 2158-9
MOA	Ministry of Agriculture and Fisheries. 55, Whitehall, S.W.1.	Whitehall 3400
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1.	Mayfair 9400
MOH	Ministry of Health. Whitehall, S.W.1.	Whitehall 4300
MOLNS	Ministry of Labour and National Service. St. James's Square, S.W.1.	Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, Victoria Embankment, W.C.	Gerrard 6933
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1.	Abbey 7711
MOTCP	Ministry of Town and Country Planning. 32-33, St. James's Square, S.W.1.	Whitehall 8411
MOW	Ministry of Works. Lambeth Bridge House, S.E.1.	Reliance 7611
NAMMC	Natural Asphalt Mine-Owners and Manufacturers Council. 94, Petty France, S.W.1.	Abbey 1010
NAS	Nationa Association of Shopfitters. 9, Victoria Street, S.W.1.	Abbey 5277/8
NBR	National Buildings Record. 37, Onslow Gardens, S.W.7.	Kensington 8161
NCBMP	National Council of Building Material Producers. 2, Caxton Street, S.W.1.	Abbey 5111
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Langham 4041
NFBTO	National Federation of Building Trades Operatives, Federal House, Cedars Road, Clapham, S.W.4.	Macaulay 4451
NFHS	National Federation of Housing Societies. 13, Suffolk St., S.W.1.	Whitehall 2881/2/3
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1.	Langham 4041
NPL	National Physical Laboratory. Head Office, Teddington.	Molesey 1380
NSAS	National Smoke Abatement Society. Chandos House, Buckingham Gate, S.W.1.	Abbey 1339
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1.	Whitehall 0211/2
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1.	Whitehall 9936
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh.	Edinburgh 20396
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Langham 5721/7
RICS	Royal Institution of Chartered Surveyors. 12, Great George St., S.W.1.	Whitehall 5322
RFAC	Royal Fine Art Commission. 22A, Queen Anne's Gate, S.W.1.	Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1.	Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Temple Bar 8274
RSI	Royal Sanitary Institute. 90, Buckingham Palace Road, S.W.1.	Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19.	Wimbledon 5101
SBPM	Society of British Paint Manufacturers. 20, Piccadilly, London, W.1.	Regent 6347
SCR	Society for Cultural Relations with the USSR. 14, Kensington Square, London, W.8.	Western 1571
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1.	Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3.	Mansion House 3921
SIA	Structural Insulation Association. 14, Moorgate, London, E.C.2.	Central 4444
SIA	Society of Industrial Artists. Room 243, Empire House, St. Martin's-le-Grand, E.C.1.	Metropolitan 8344
SNHTPC	Scottish National Housing & Town Planning Council. Hon. sec., Robert Pollock, Town Clerk, Rutherglen.	
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2.	Temple Bar 5006
TDA	Timber Development Association. 75, Cannon Street, E.C.4.	City 4771 (6 lines)
TGC	The Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
TPI	Town Planning Institute. 18, Ashley Place, S.W.1.	Victoria 8815
TTF	Timber Trades Federation. 81, Cannon Street, E.C.4.	City 1476
WDC	War Damage Commission. Devonshire House, Mayfair Place, Piccadilly, W.1.	Mayfair 8866
WEDA	Welfare Equipment Development Association. 61, St. Paul's Churchyard, E.C.4.	City 4263/4
ZDA	Zinc Development Association. Lincoln House, Turl Street, Oxford.	Oxford 47988

No. 28711

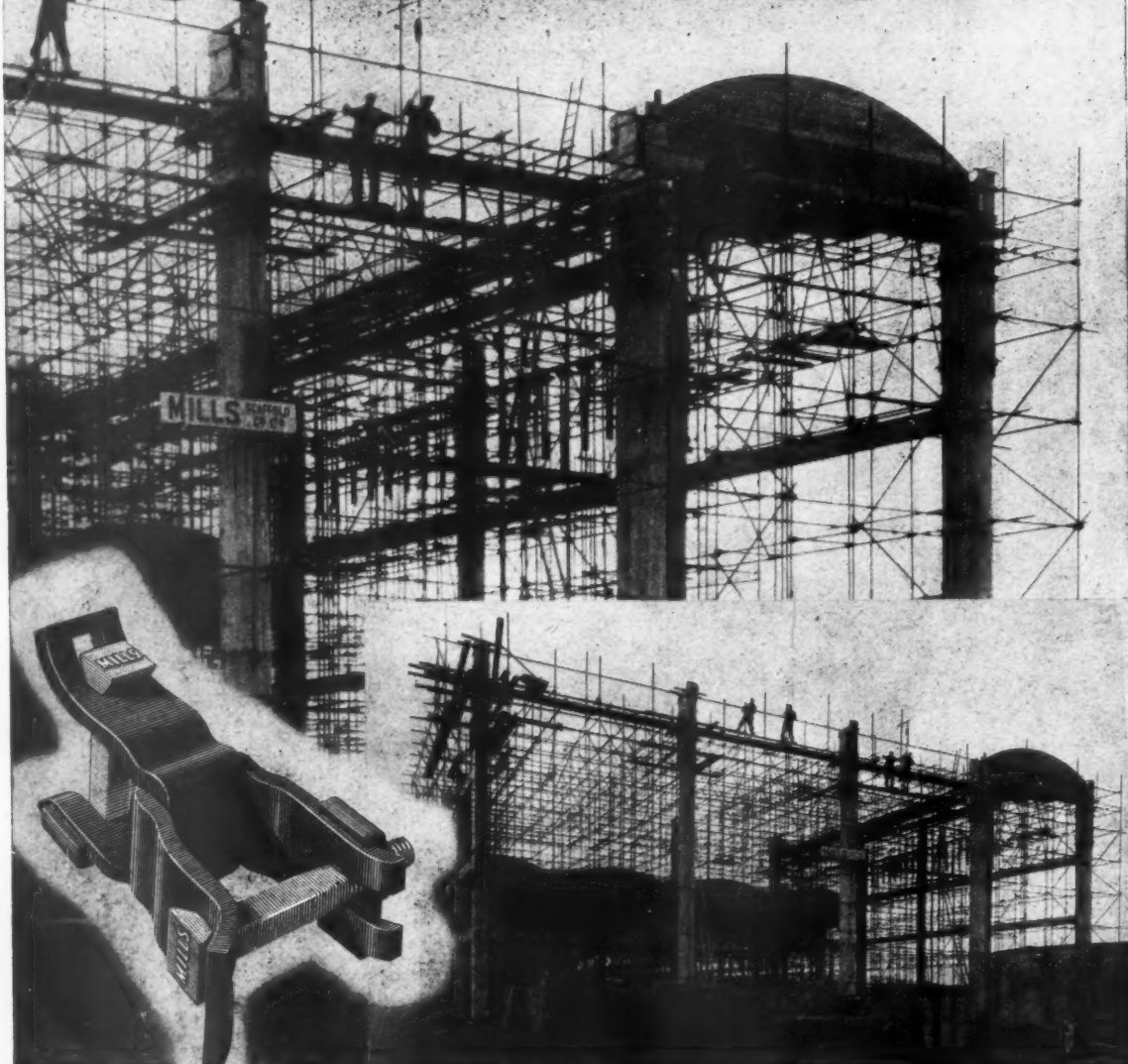
[Vol. 111]

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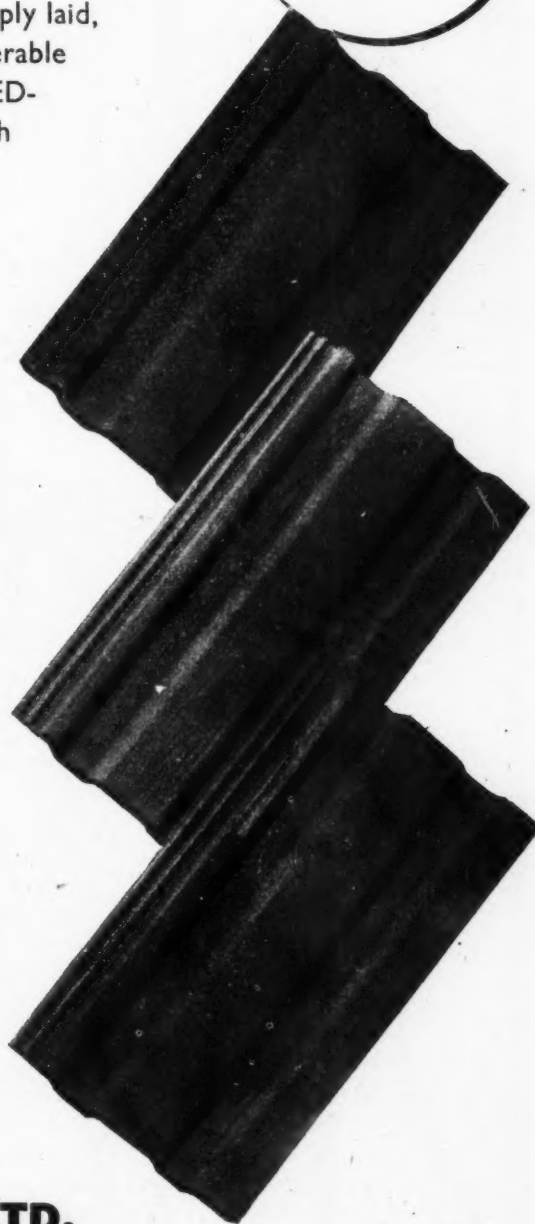


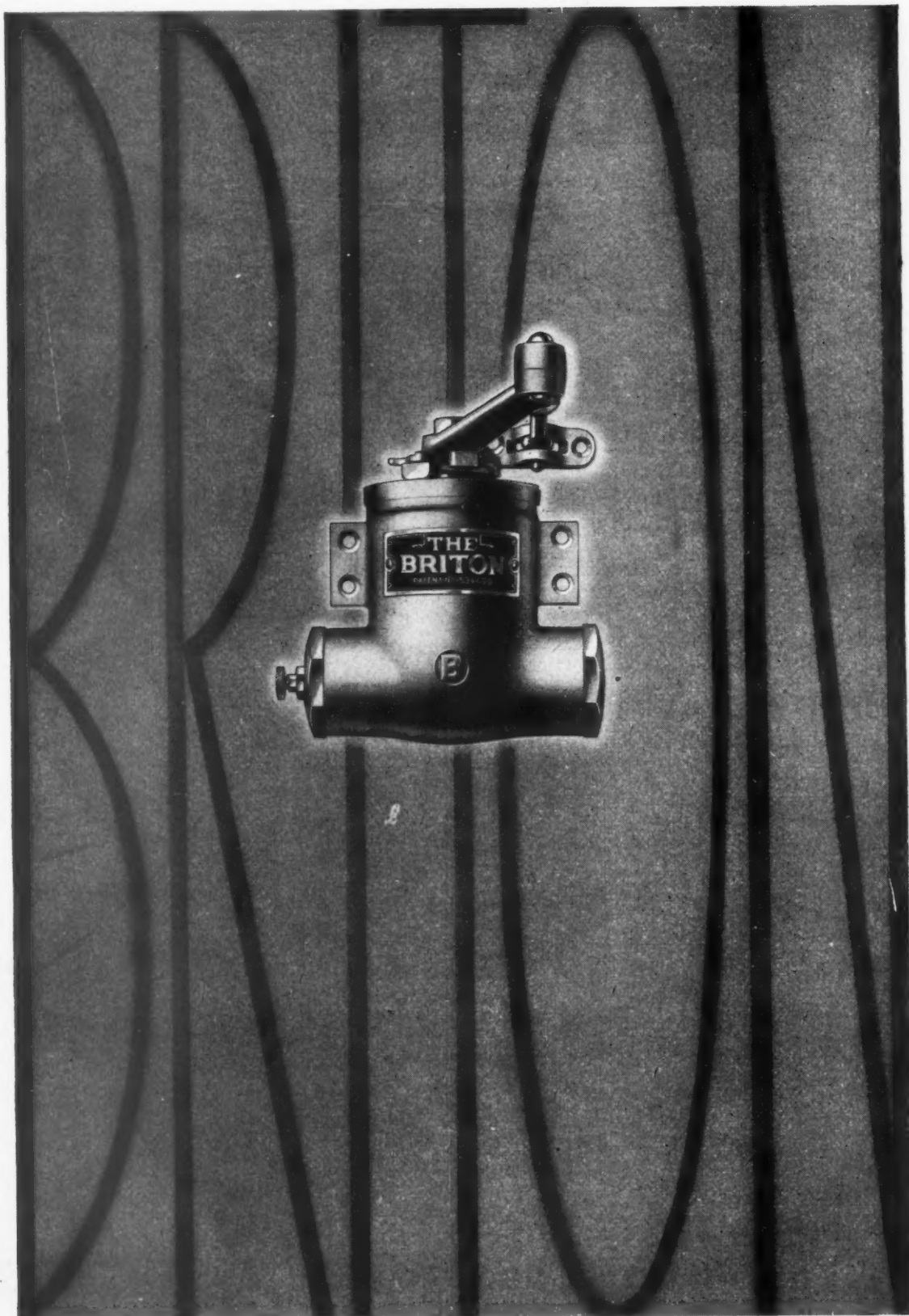
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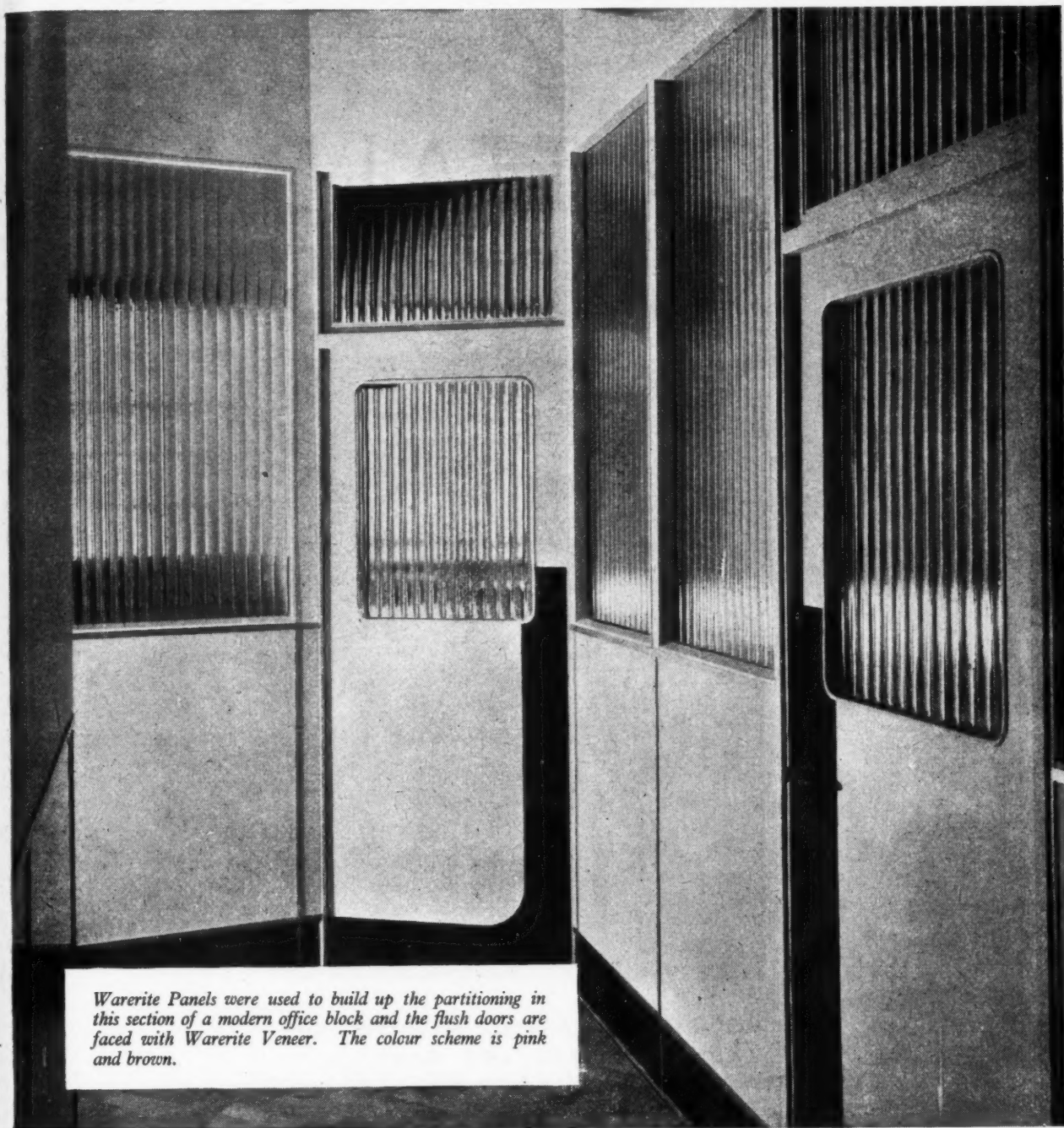
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Wm. Newman & Sons, Ltd., of Hospital Street, Birmingham, invite Architects to inspect their display of Door Springs, Floor Springs, etc., recently placed on view in the Building Centre, 9 Conduit Street, London, W.1.



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W.L.3

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MANTEL. Overall size, 45½ in. wide by 44½ in. high.

KERB. To suit 44 in. by 12 in. tile hearth.

Grate supplied in mottled fawn, mottled green, or black vitreous enamel. Mantel is supplied in mottled fawn, mottled brown (to tone with the mottled fawn grate), mottled green vitreous enamel or fine-cast and primed one coat. Kerb is supplied in mottled fawn, mottled green or black vitreous enamel. A bolster can be supplied to restrict heat losses from firebox in its closed position.

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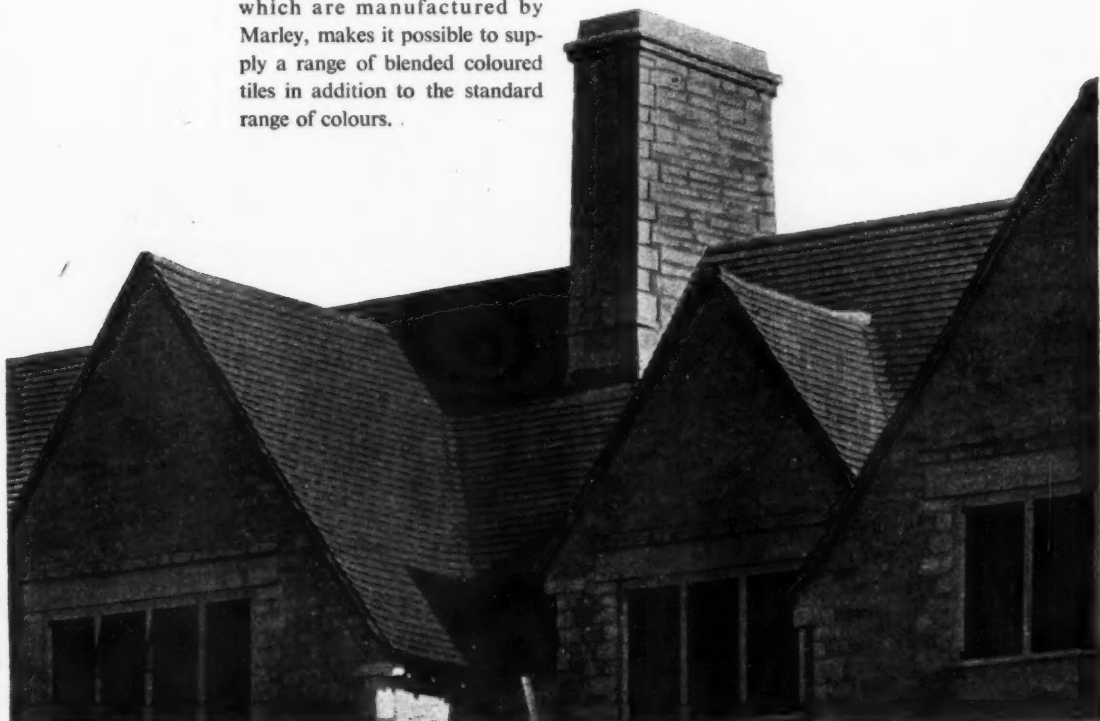
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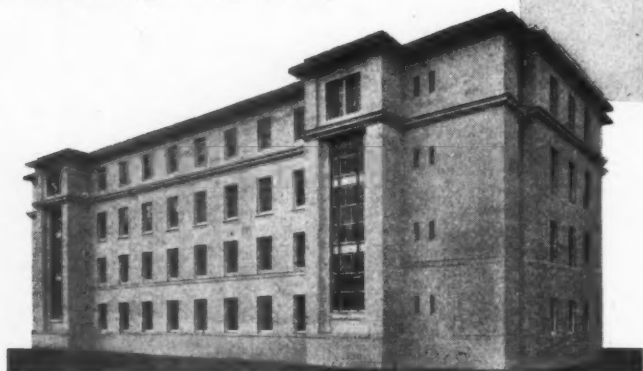
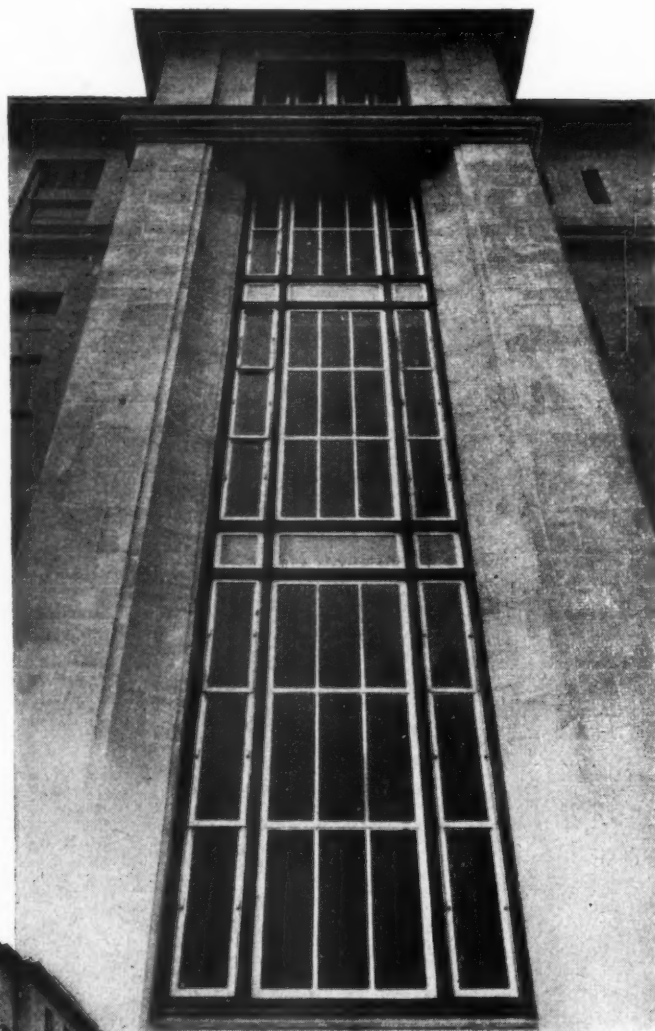
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*This advertisement
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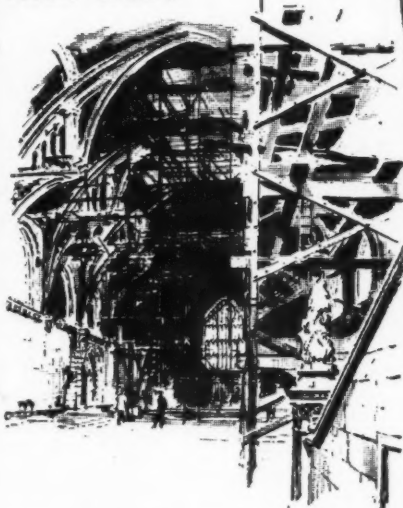
FACT NO. 5 BEETLE MAKES THE SPARKS FLY

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FACT NO. 7



BEETLE MAKES HISTORY

Beetle Adhesives have been used for constructional work in repairing war-damaged Westminster Hall.

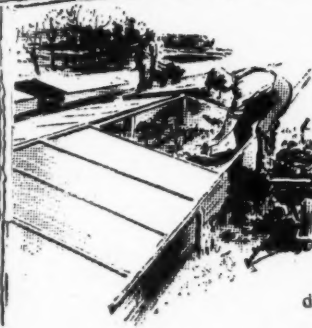
FACT NO. 6 BEETLE STICKS IT

Ice hockey sticks are constantly subjected to strain and damp conditions. All teams in the National League use spliced sticks, bonded with durable water-resistant Beetle Adhesive. The makers, J. W. Wood & Co. Ltd. claim improved performance for these sticks.



FACT NO. 8 BEETLE FRAME-UP

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This drawing by Leonard Willcock is the first of a series, "Window Makers at Work" by artists commissioned by Williams & Williams Ltd. It shows the first stage—the cutting and despatch to welders of rolled steel sections for frames.

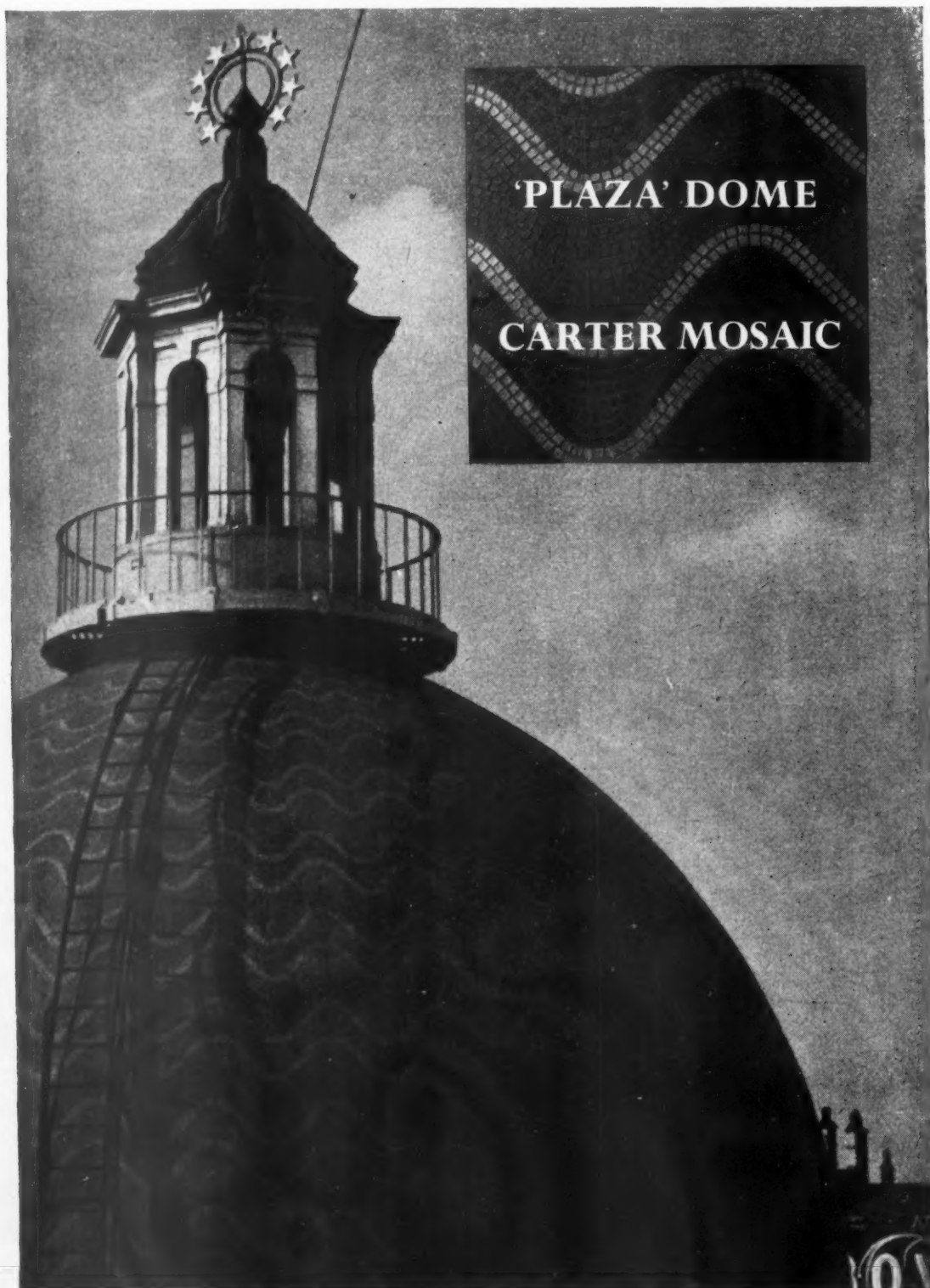
Window-making begins
with George Dickson. He is the foreman
(with twenty-five years in the trade)
who checks the steel as it comes from the rolling mills
and organizes the cutting and despatch
of the sections to the drillers and welders.
He and his fellow workers use the
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to make good windows. Their aim
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in the buildings and tells the
Williams & Williams representative
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WILLIAMS & WILLIAMS

Metal Window and Door Manufacturers

RELIANCE WORKS · CHESTER





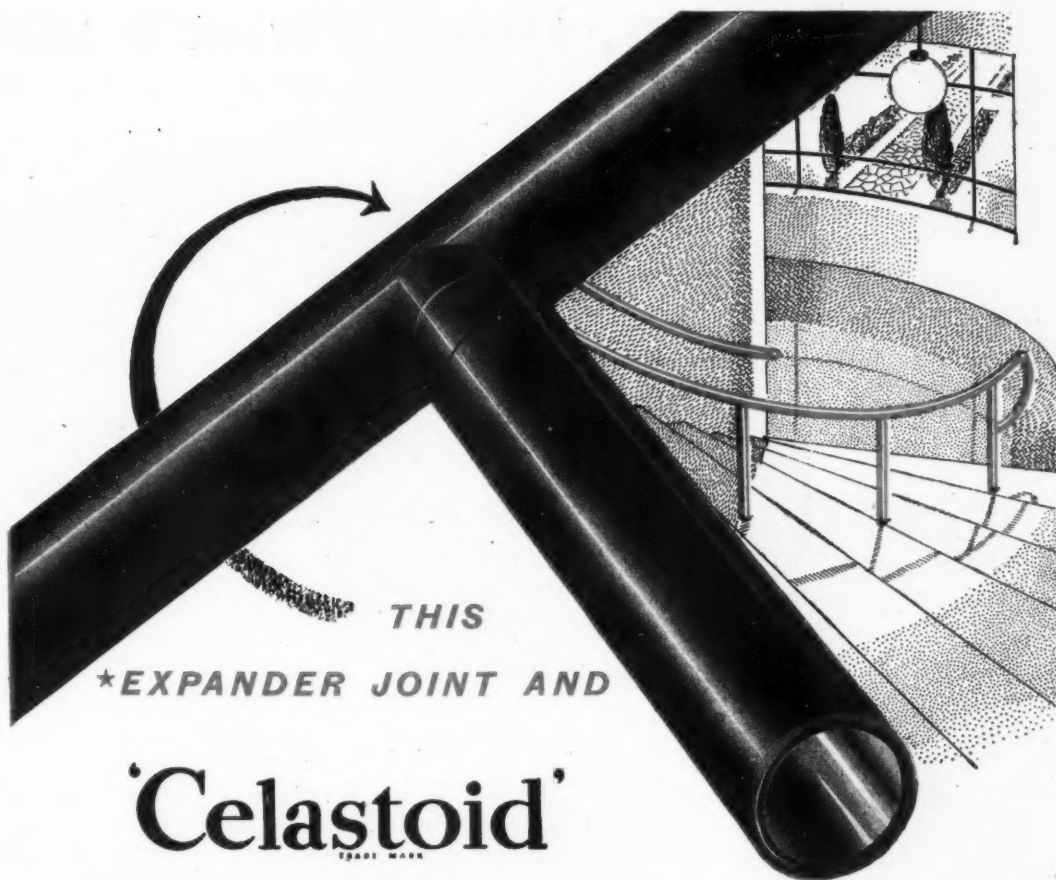
Architects: Frank Verity & Beverly, F.F.R.I.B.A.

Contractor: Thomas & Edge Ltd.

The unusualness of colour in London makes this dome worthy of special note. Following war damage it has just been resurfaced in Carter glazed mosaic.

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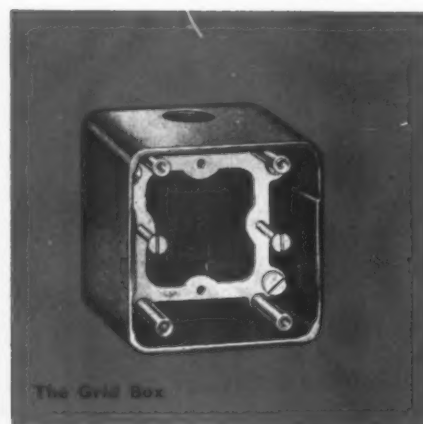
5 amp. flush switch units



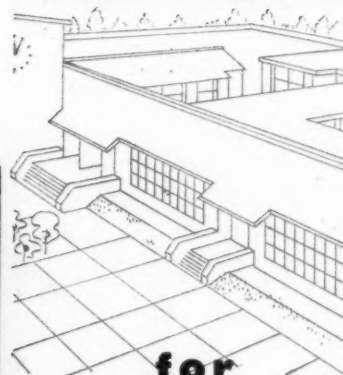
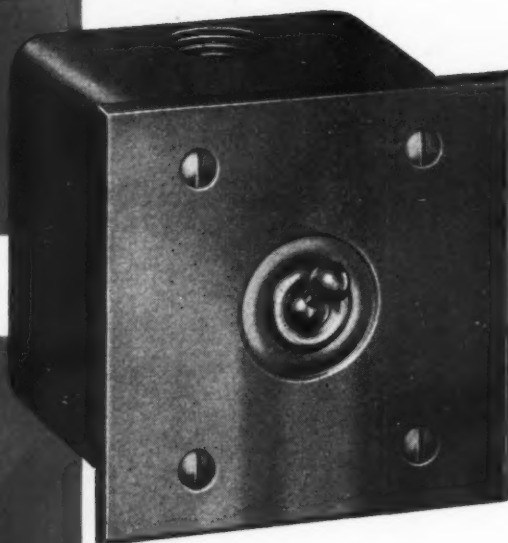
The Switch Plate



The Switch



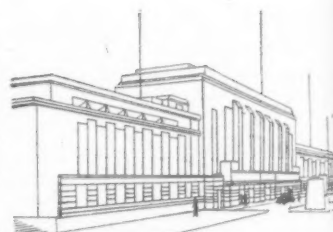
The Grid Box



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**for
hospitals**



**for
public
buildings**

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

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

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

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

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



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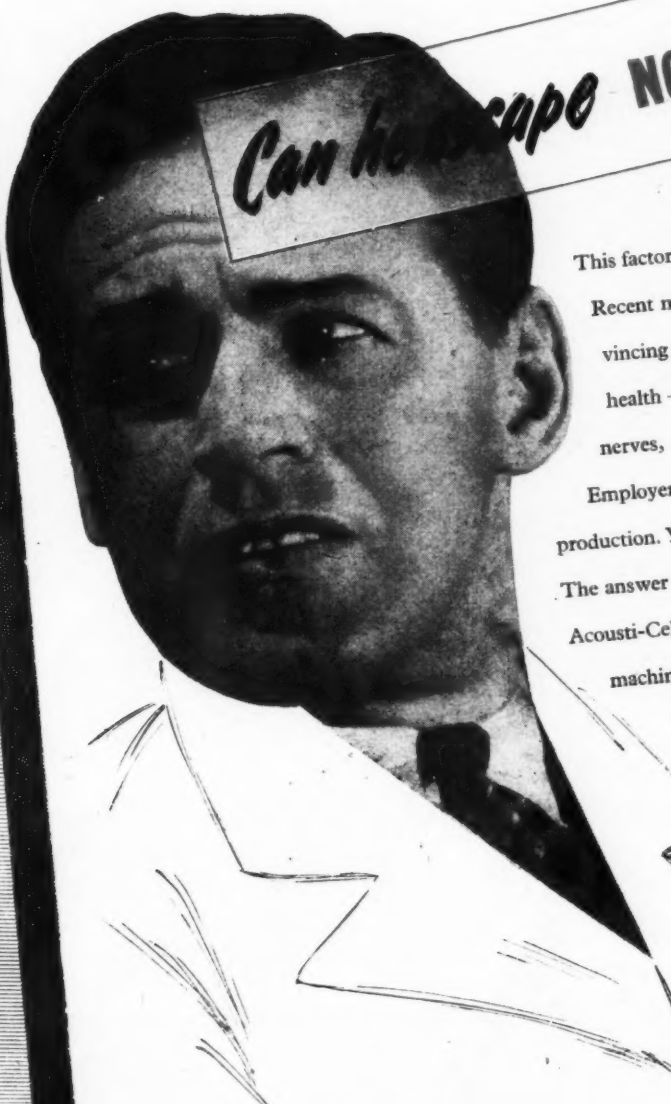
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In most factories sound-conditioning is as essential as air conditioning. The best time to tackle this problem is at the planning stage in collaboration with an Acoustics specialist.

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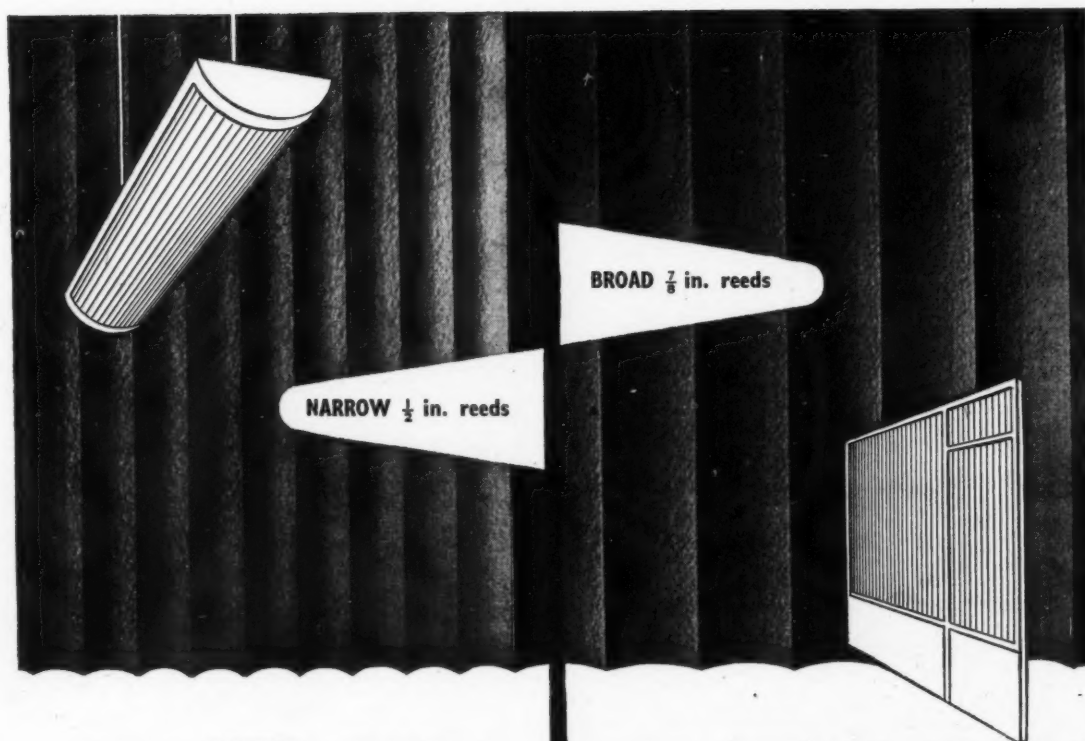


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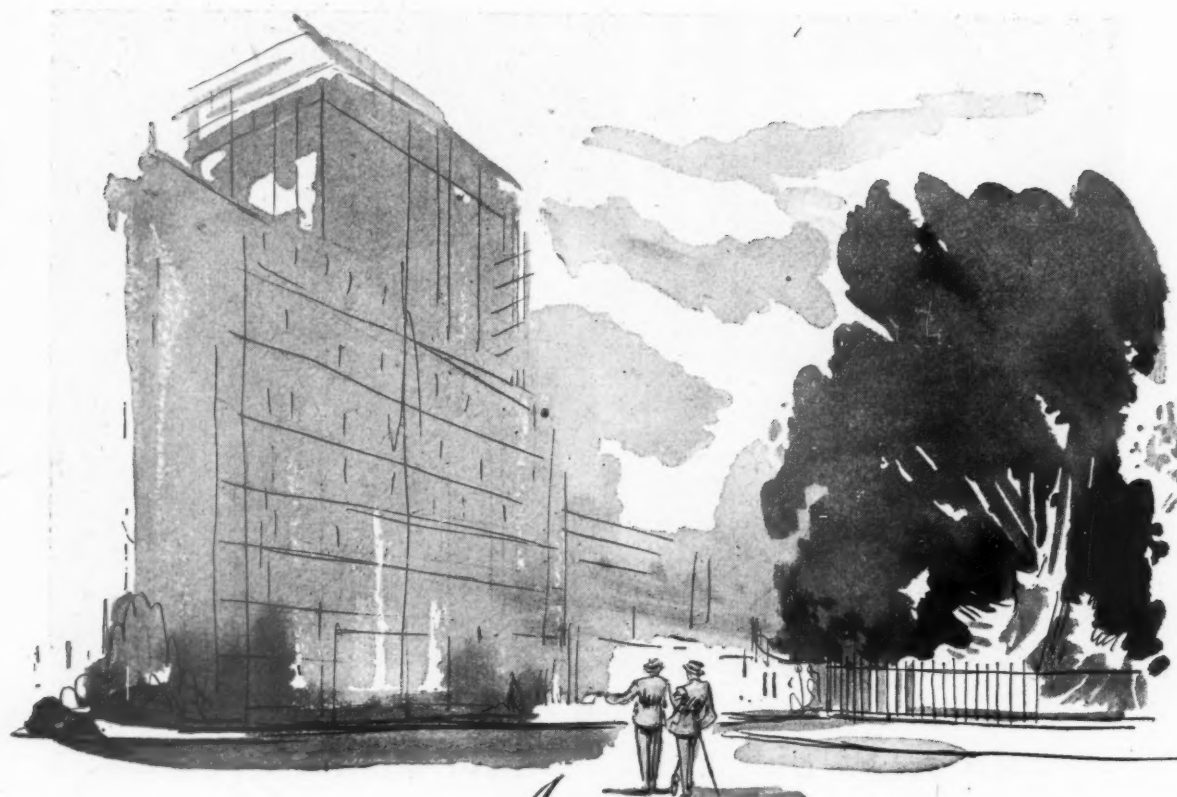
1. Greater obscuring power than the regular reeded glasses. Wherever privacy is the main consideration—in bathrooms, executive offices, etc.—Reedlyte is ideal.
2. Because one surface is smooth and flat, cutting is simple.
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4. Perfect for lighting fittings (particularly for fluorescent lighting), used either flat or bent into troughs.
5. Available in the same sizes and thickness as the Reeded Glasses, and at the same price.

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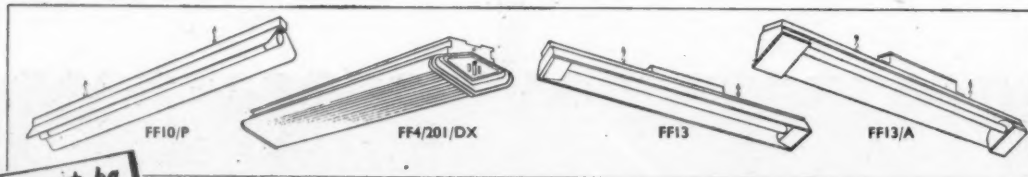
to the particular needs of factory, warehouse, workshop, retail store, restaurant, office, school, and public building. Whatever the lighting problem, Ekco Fluorescent Lighting provides the answer. Examples from a wide range of fittings are illustrated.

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POTTERY THROUGH THE AGES · NO. 21



Specially drawn by Gordon Nicoll, R.I.

ENGLISH TABLEWARES ACHIEVE WORLD FAME

Thomas Whieldon had a great influence upon English ceramic history; Josiah Wedgwood was his partner for five years, Josiah Spode and William Copeland were among his apprentices. In Whieldon's efforts to produce tableware that could compete with imported Chinese and European porcelain, he developed an improved lead-glazed earthenware "body".

Josiah Wedgwood had an unique combination of gifts. A far-seeing business man and pioneer of modern industrial methods of production, he was the first great potter to apply the scientific principles of physics and chemistry to all stages of manufacture—from the preparation of the raw clay to the final firing. He had, moreover, an innate appreciation of that aspect of good design now known as "fitness for purpose". Classical art and the work of the great Adams brothers influenced him greatly and his medallions, cameos, vases and other productions in the

classical tradition, many designed by Flaxman, are especially famous. His greatest contribution to English ceramics was, however, the introduction of a cream-glazed earthenware "body"—known as Queen's Ware. Unlike porcelain, it was not subject to frequent distortion and heavy losses in firing; and it was much less pervious than delftware. Within a few decades improved types of fine earthenware—made by a growing number of English potters—had driven delft from the market and were a serious rival to porcelain.

China clay and china stone were discovered in Cornwall in 1768 by a chemist named Cookworthy. The addition of these materials to the standard mix greatly improved the quality and appearance of English earthenware. A new economical method of printing designs on glazed earthenware led to a great increase in production. Underglaze printing also, especially underglaze blue—such as the

famous "Willow Pattern"—increased the popularity of English wares, especially in the United States; by 1850, Great Britain was the leading world supplier of high quality ceramic wares.

In the field of porcelain, Josiah Spode II perfected a new kind of china about the year 1799. This became known as "bone china", its distinctive feature being the addition of a large proportion of calcined bone-ash to the china clay and feldspar in the ceramic "body". It combined a delicate translucency, unmatched by any other material, with great strength and resistance to breakage; and it lent itself to the use of a range of delicate and subtle colours. Before long, English china—like English earthenware—had become supreme in its own field. In ordinary homes and in royal palaces throughout the world, British tablewares were henceforth recognised without question as the highest achievements of the potter's art.



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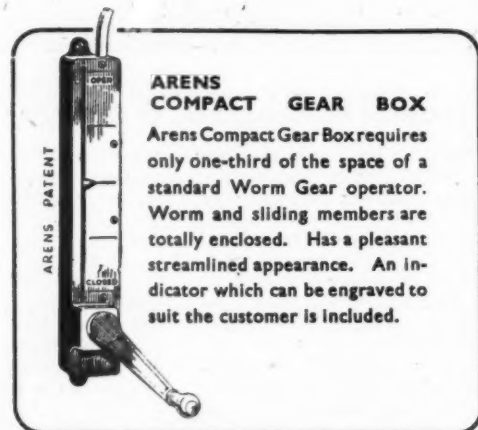
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The Arens system of window control is an important contribution to scientific building where the architect plans for generous natural lighting and ample ventilation.



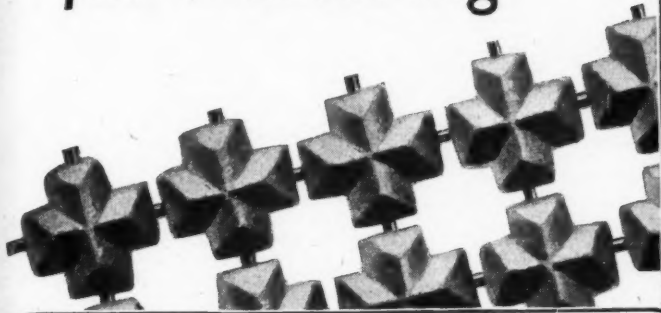
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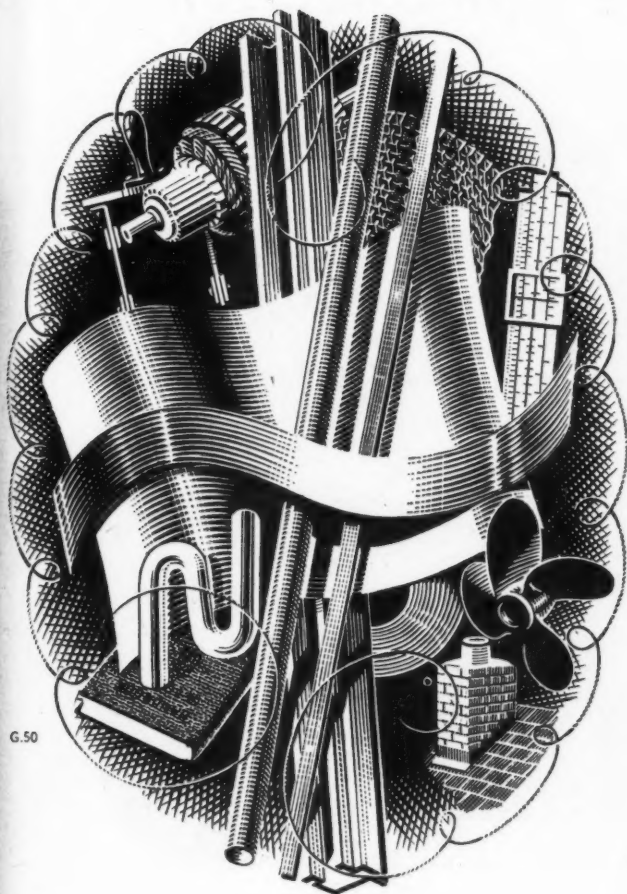
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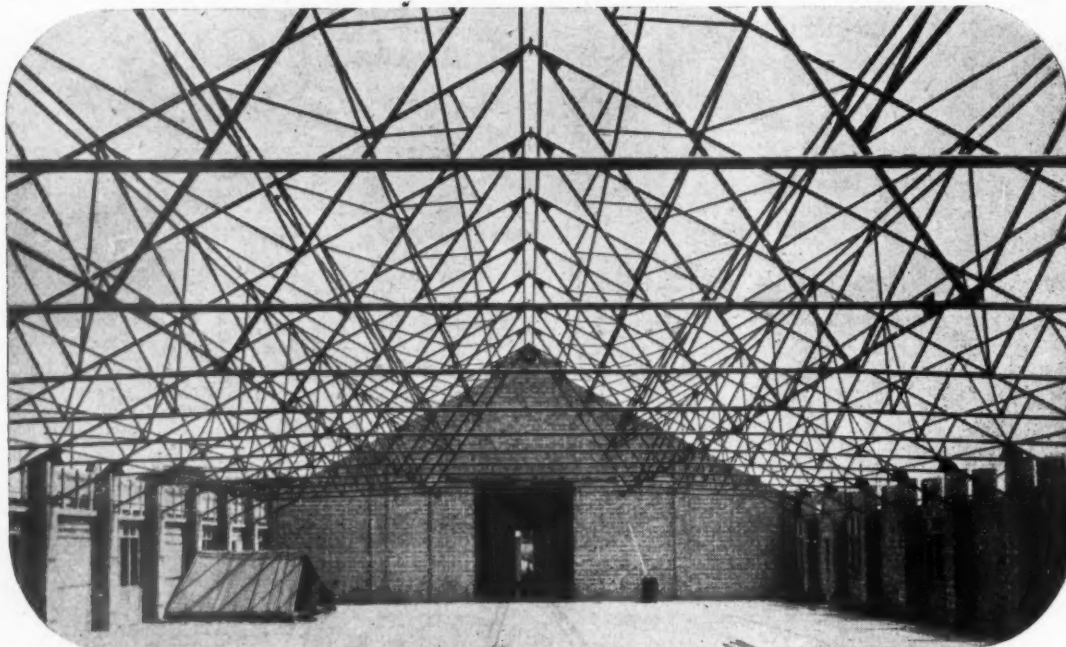
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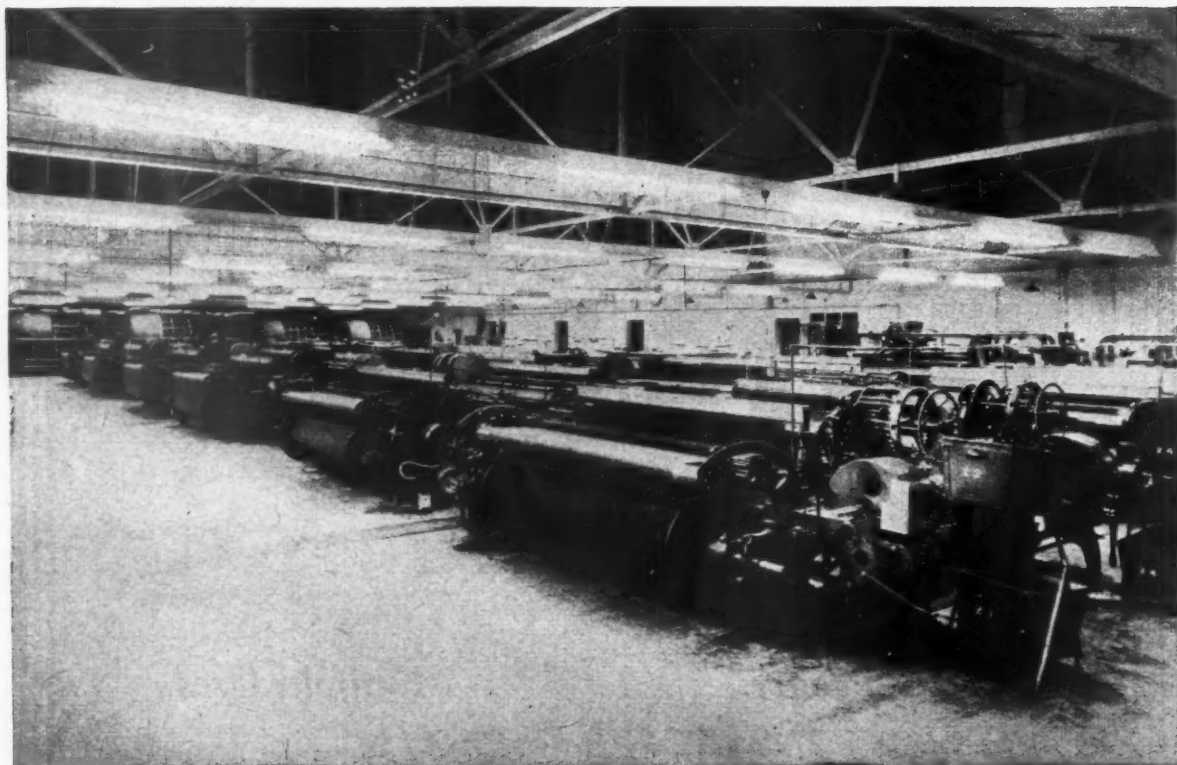
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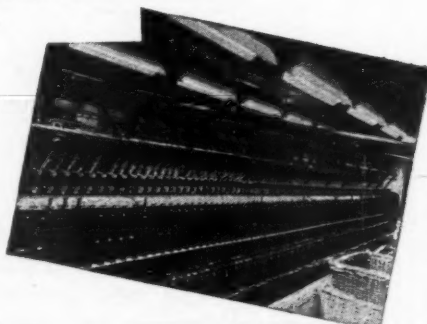
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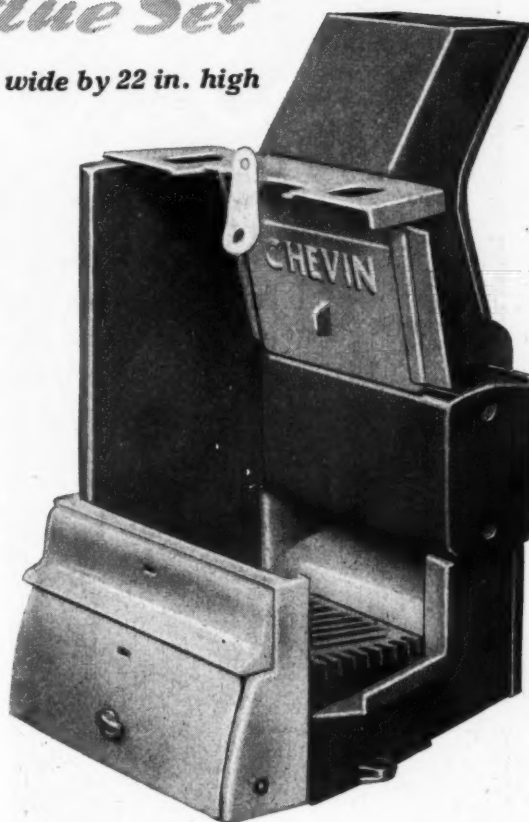
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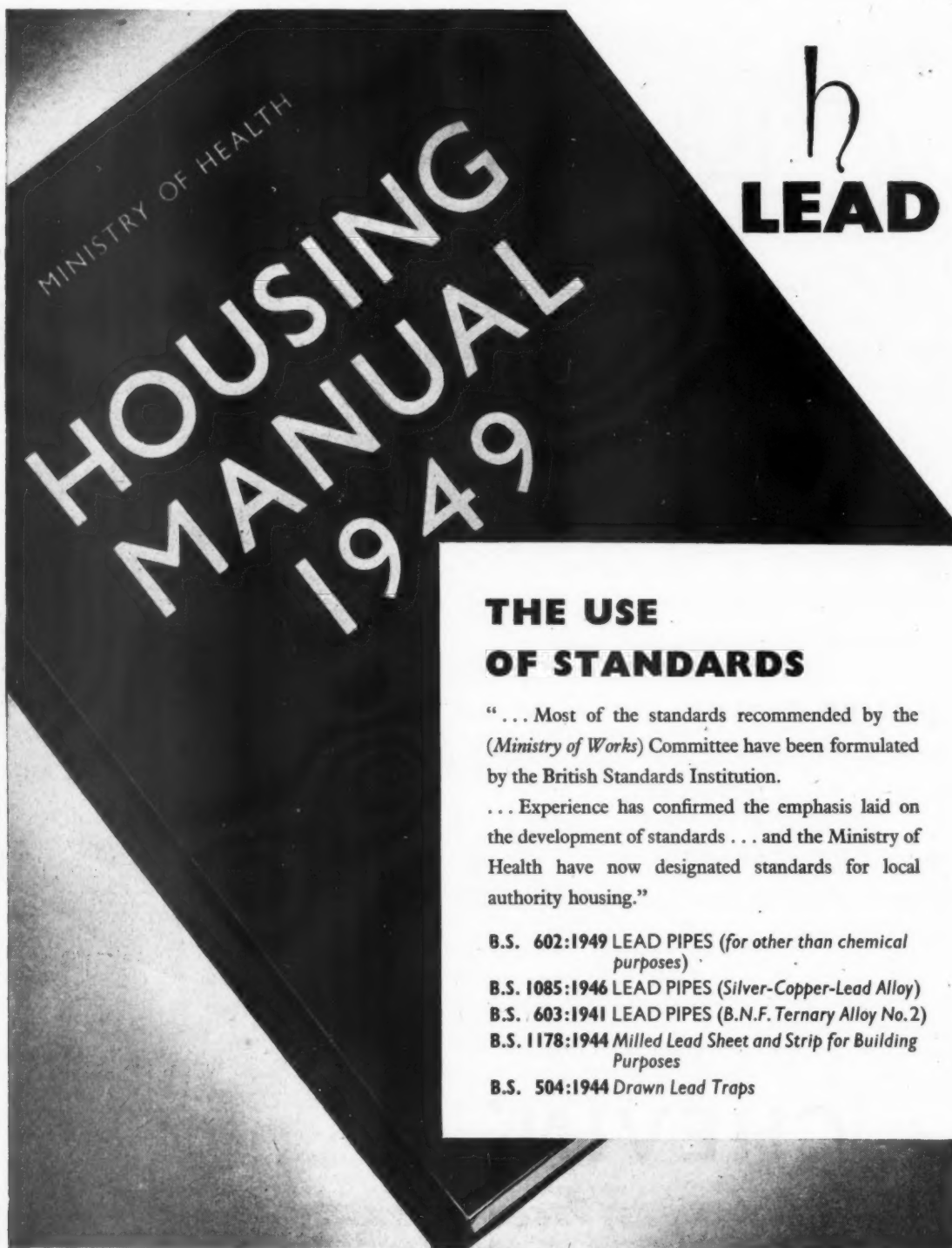
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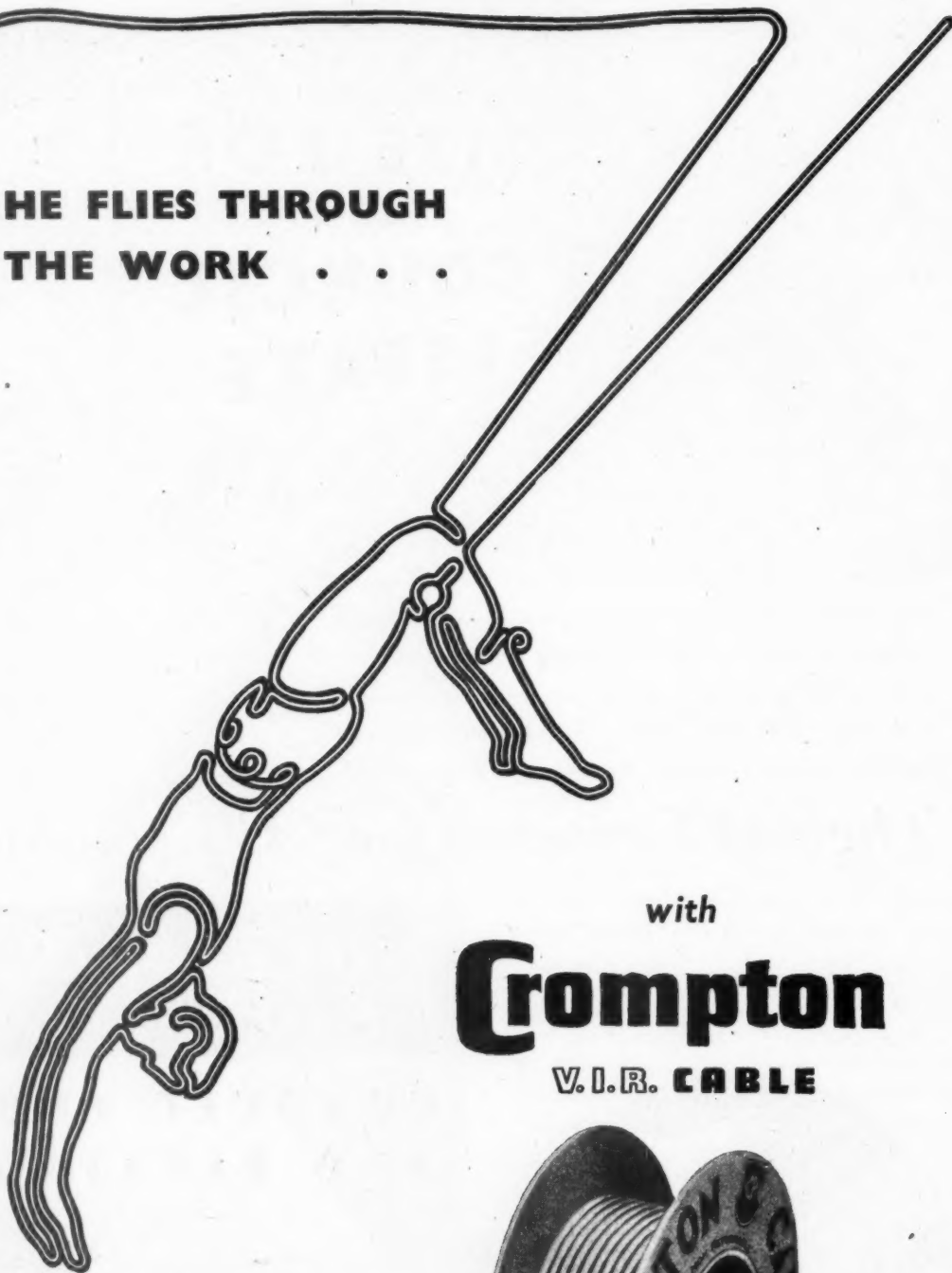
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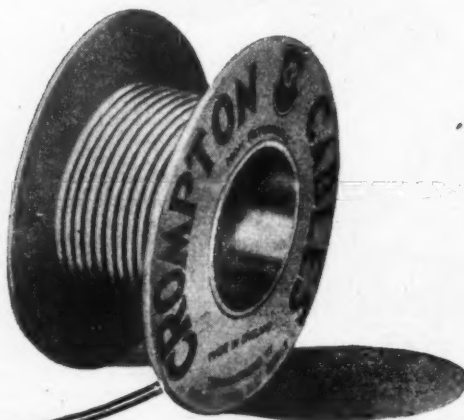


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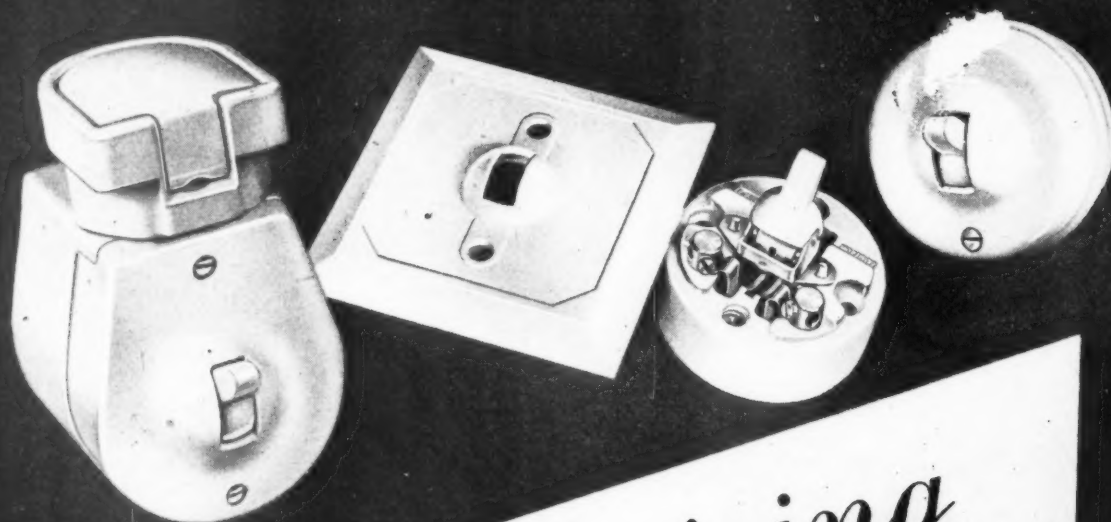


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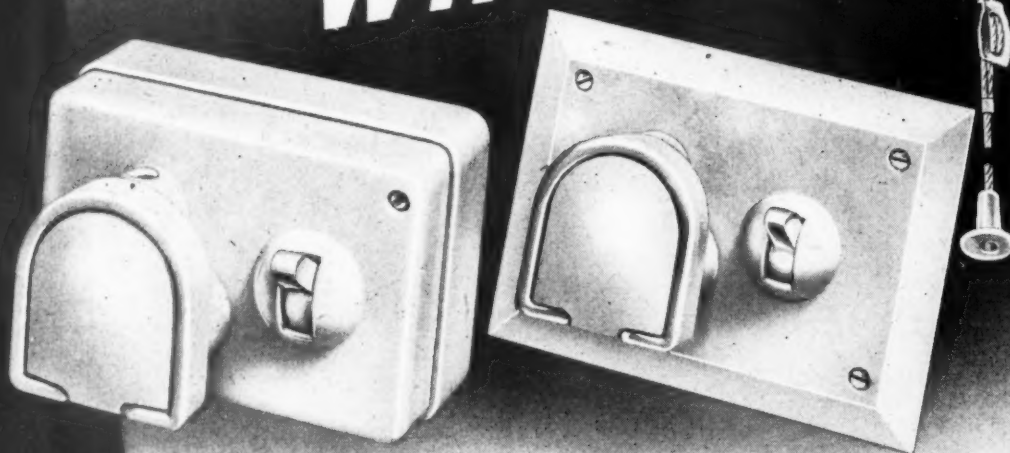
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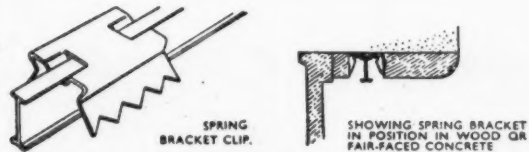
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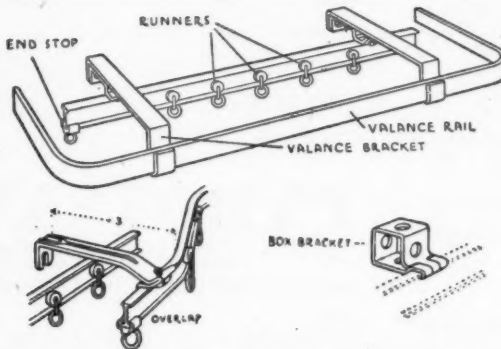
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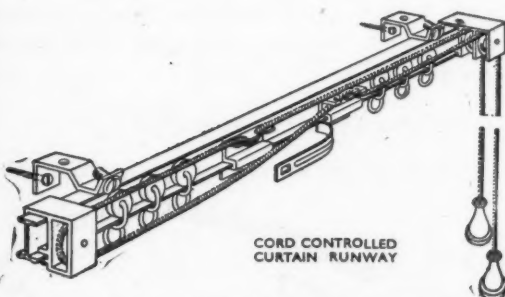
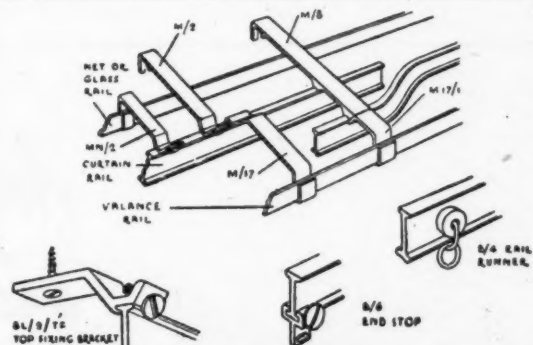


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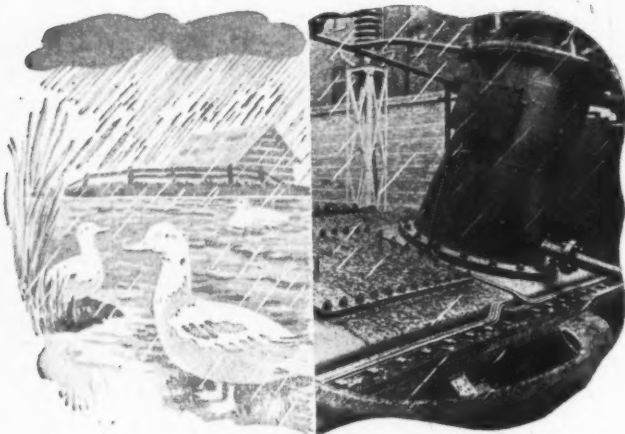
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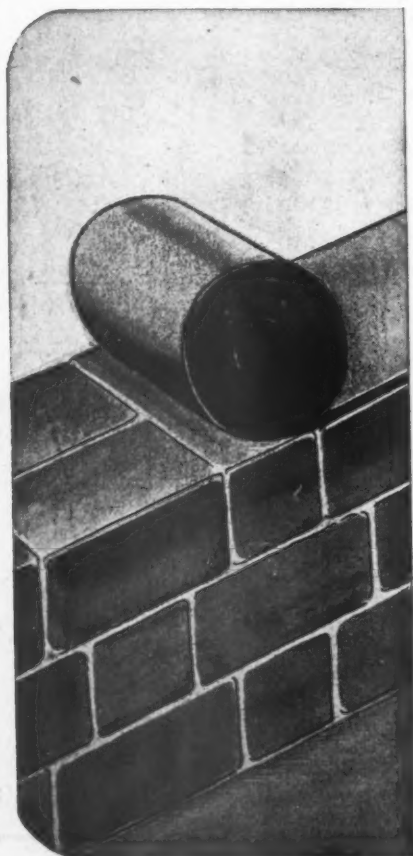
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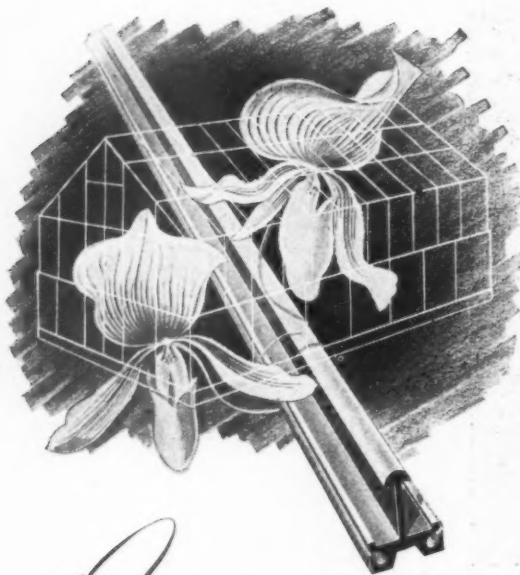
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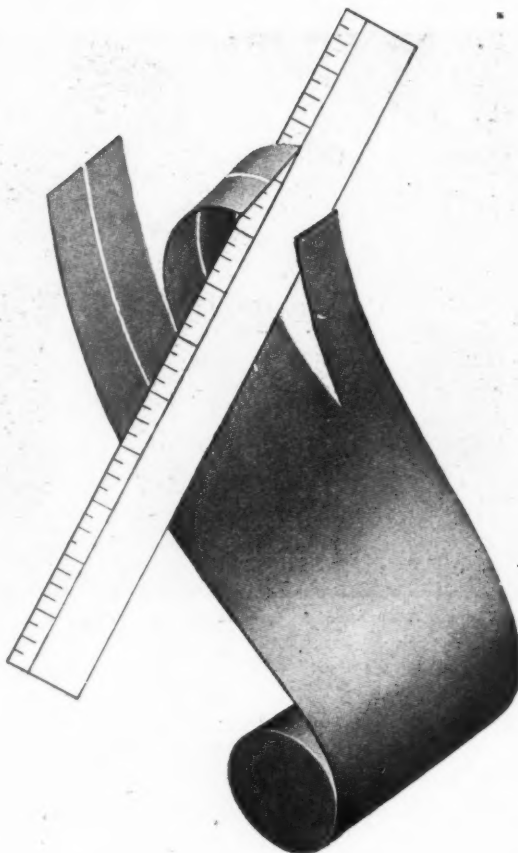


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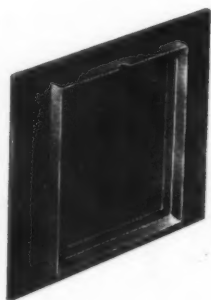
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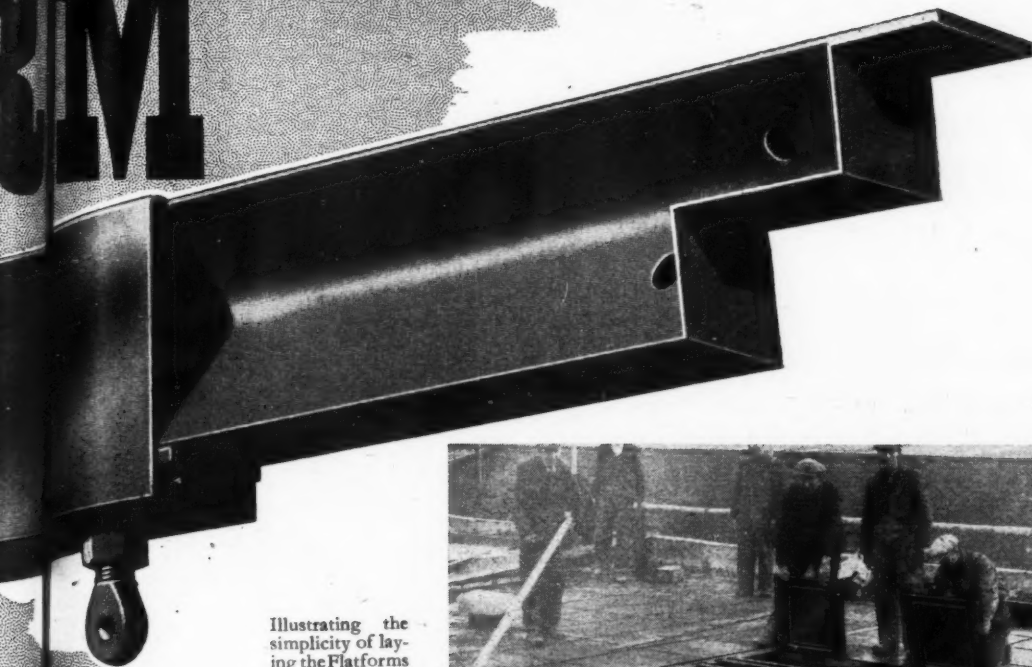
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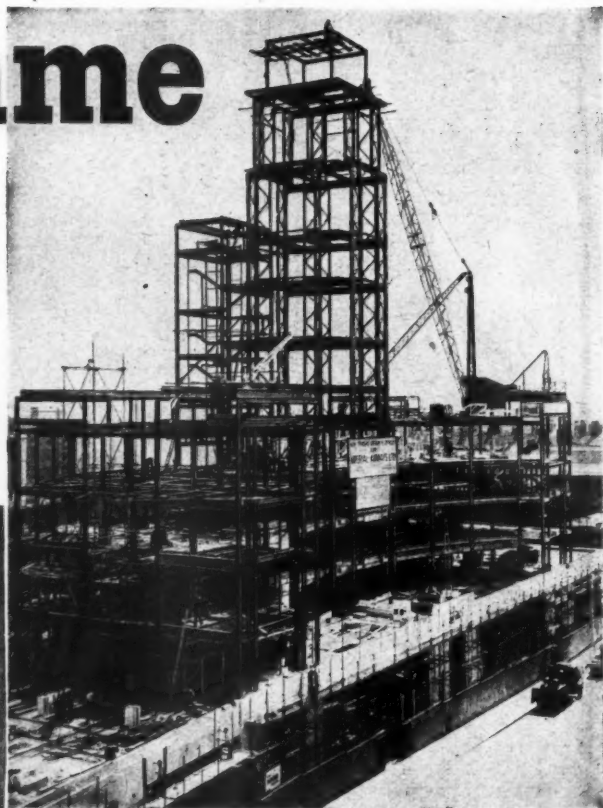
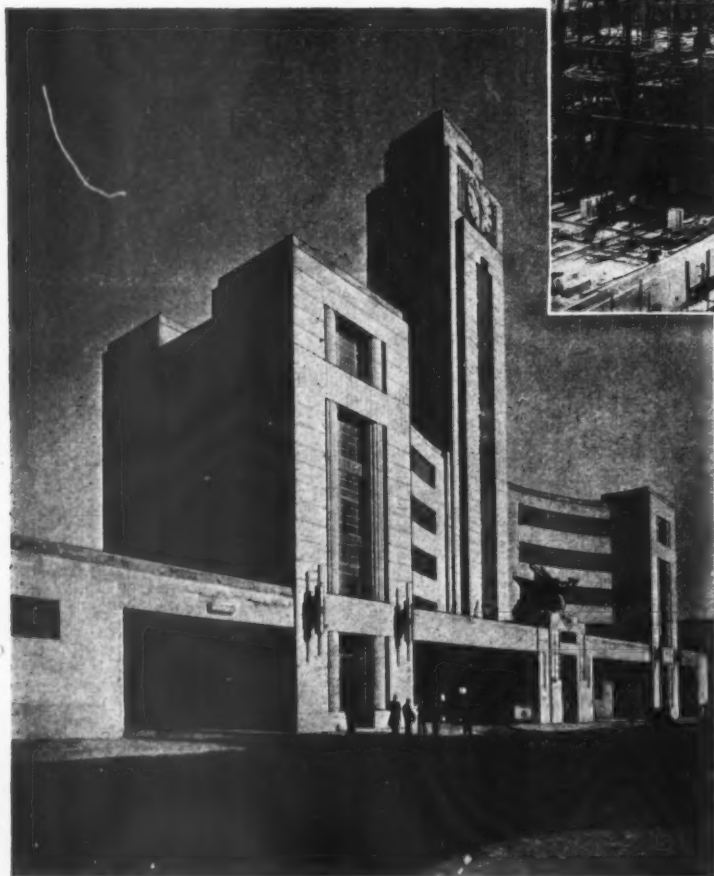
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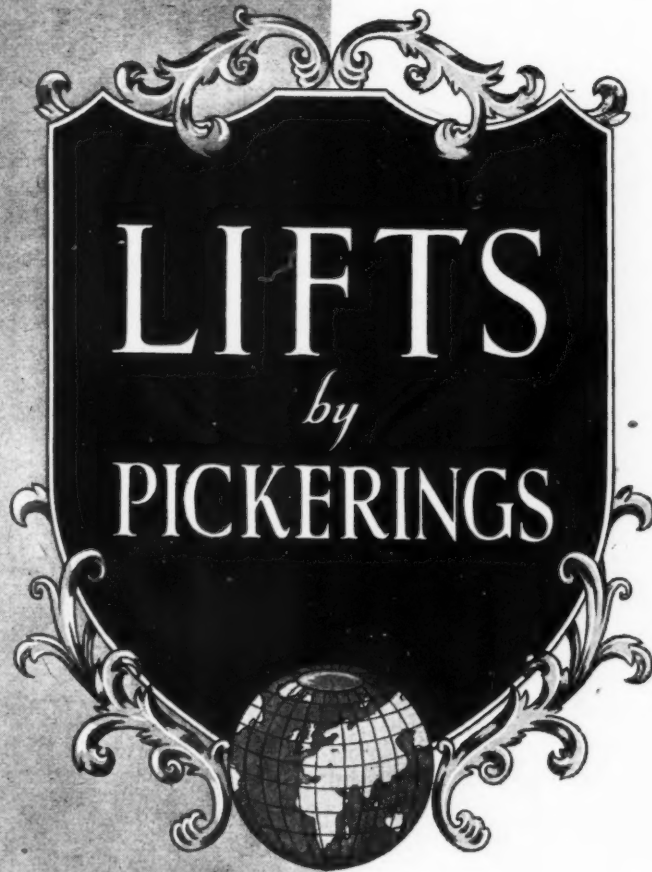
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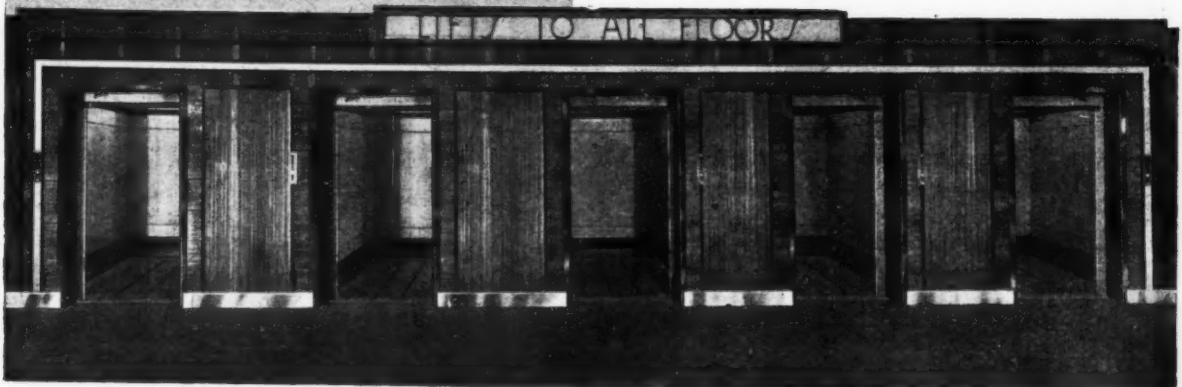


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THE ARCHITECTS' JOURNAL

No 2871 16 February 1950 VOL 111

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NEWS FROM CAMBRIDGE

Astragal found Cambridge more full of planners than usual the other week. It was being visited by members of the East Anglian branch of the TPI, who were investigating work done for the Cambridge plan, which will be published shortly. To these visitors, H. Myles Wright, one of the planners, explained the proposals, and the County Planning Officer, W. L. Waide, told how he and the Holford-Wright partnership had managed to work together on all aspects of planning without any hard words. He showed that he was keen on getting on with the statutory plan and not leaving it until the last day in 1951.

It was said at this meeting that between £10 m. and £20 m. of new development would take place in Cambridge before 1970. As a matter of

fact a good deal of new building* is already under way in the town in addition to new housing, for which Cambridge has a good record. Professor Richardson's building for Christ's College is nearing completion; Trinity and King's are building new hostels; St. Catharine's has a new wing under construction; Easton and Robertson's engineering buildings are partially complete, and in the near future another engineering and chemistry building will probably be started by the same firm. Buildings for nuclear research (Professor Basil Ward) and for a veterinary school are also in the offing.

THE OLD FAMILIAR PLACES

I have just finished the third number of the Architects' Year Book.* It is, as in previous years, just the sort of book to leave lying around if you want to impress non-architectural friends. There are good photographs, well laid out, and quite a number of them have captions in mock blank verse. That is to say the lines of type range on the left and end, willy-nilly, on the right. This is a brilliant trick, carefully calculated to put one's eyes out of joint.

The articles are clever enough, but too many of the subjects are over familiar to the average architect and little that is fresh is said about them in compensation. Frank Lloyd Wright's "Falling Waters," Neutra's house in the Colorado desert, and Gibberd's Harlow New Town should be well known to architects: to study the photographs again is an expensive pursuit unless the opportunity has been taken to provide a reassessment of their qualities. "... there is a common basis for our art (say editors Jane Drew and Trevor Dannatt). Let us work from this and eschew the merely new fashion. ..." I am afraid that this

luxurious book digs yet more fashionable pitfalls in the path of the architect than even the luxury periodicals; lovely pictures of a variety of objects coupled with high-sounding talk, despite the editors' cautionary remarks, are opiate to the profession today. Architects have lived too long on paper and printers' ink, photographs and plans.

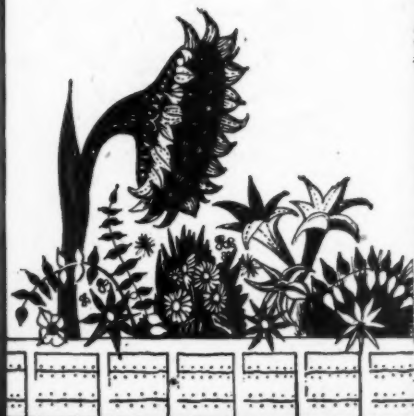
All of which is pretty rich coming from a columnist, says my conscience, as I settle down to dip into the book again.

UNHAPPY HAMPSTEAD

What would Leary (of the poem of our childhood) say if he were to suffer reincarnation and wander into Hampstead Garden Suburb today? He would still see plenty of those lamp-posts of traditional and almost hallowed form among which he used to ply his pole in those distant evenings. But standing between them, on the very same pavements and sometimes only five or six feet away, he would also see strange vertical features of concrete, much elaborated with divers ridges and mouldings, whose purpose would puzzle him not a little.

I'm afraid it wouldn't be much use explaining to him that they were new street lights, the addition of whose business end was a horror still to come; for Leary lived when it was not yet the ideal of local authorities that every Way should be a Pearly Way. And he would be more puzzled than ever when he saw the new standard at the Temple Fortune roundabout. For this has shot up ten feet higher than all the rest, in an obvious and understandable attempt to hide its head among the branches of a tree. Which is, you must admit, curiouser and curiouser.

* Published by Paul Elek. 35s.



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257 FAMILIES will live in the block of flats now being built at Cromer Street for the Borough of St. Pancras, London, using 1350 tons of steel. Architects: Robert Hening, M.B.E., Anthony M. Chitty, M.A., F.R.I.B.A., A.M.P.T.I., Town Planning Consultants. General Contractors: Stewart & Partners Ltd., London.

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INDEPENDENCE BLOSSOMS

Ceylonese independence has borne immediate fruit in the formation of a Ceylonese Institute of Architects in the new Dominion, with the immediate object of registration for all architects. Honorary secretary, Herbert Gonsal (ex-Liverpool), has started off with a well-prepared and well-supported attack on the proposed memorial to independence which he condemns for being on the wrong site and a mere piece of timid, period copying. Astragal's good wishes to the new Institute and its opening battle.

ABORIGINAL SYN-ONYMS

Sociologists tell us that women's fashions reflect the spirit of the age. When the waist line moves one way, the world disarms disarmingly; when it slides to the other extreme we may seek the bustle's reputation in the cannon's mouth.

Why do I mention this? Because I want the reader to take his eyes from the bottom of this page for a moment and to concentrate instead on the lady in the top right-hand corner. Is this anatomy of melancholy appearance a symbol of inconstant times? Or is she as Greek to my readers as her primitive companion from the Cycladic Isles? It is clear, of course, that she is the result of somebody's cosmic dilemma, but I wish George Hoellering had told us more about her and her rugged predecessor in his film *Shapes and Forms* (Academy Cinema), in which they are both featured.

The comparison of primitive and modern works of art, and the meta-physical attitudes that produce them makes a fascinating study. It is unfortunate, therefore, that the director of this film ignored the opportunities for providing an informative analogy between the ancient and modern, and tried instead to incorporate exhibits from the ICA's exhibition on "Forty Thousand Years of Modern Art," held last year, into a piece of highbrow "cinema."

Realistic photography of abstract works of art, accompanied by distracting music, has resulted in a film that is interesting but irritating. The

The Greeks, who were responsible for the aggressive looking figure on the right, would probably have had a word for her companion, designed by Jean Arp in 1938. (See Astragal's note on this page).



musical score is often inappropriate; the synchronization of Picasso's "Weeping Woman" with a brisk gay theme, and of Lam's "Annunciation" with what can only be described as "hurry" music is particularly unfortunate.

On two occasions I have accepted the director's invitation to "journey through an enchanted world where the human imagination blossoms out luxuriantly." Each time there were signs that the audience was interested in the abstract forms of modern art

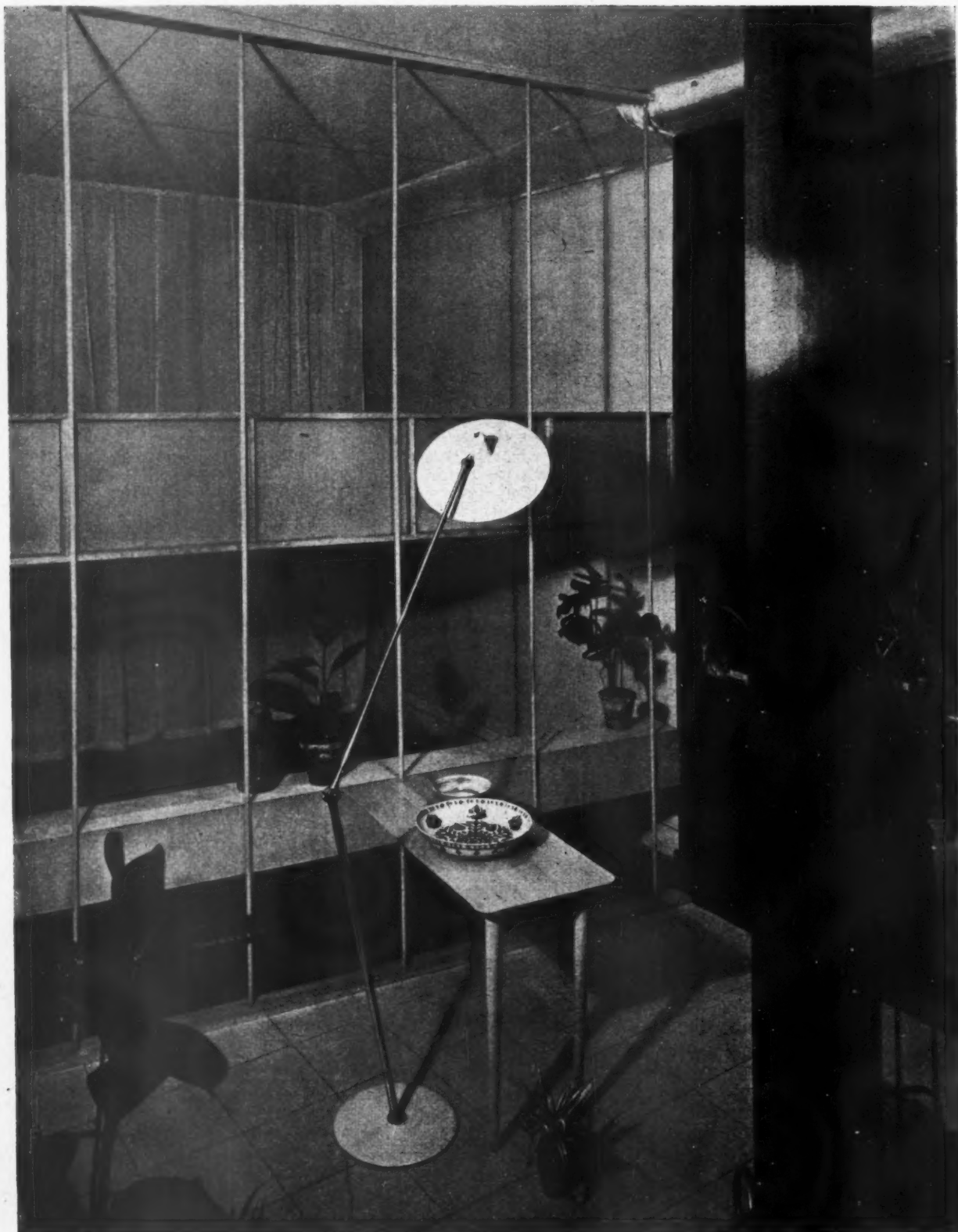
and their primitive synonyms, but were puzzled as to what the film was trying to prove. In fact, it was not trying to prove anything. And that is just as well, for it is foolish to be dogmatic about the relation between the modern artist and primæval man, whose motives often sprang from religious beliefs that we know little about. Nevertheless, a little guidance in the form of a commentary describing the origin of each work and its approximate date of execution would be useful, and it is to be hoped that in later films in his series, of which this is the first, Mr. Hoellering will be a little more helpful to the layman.



Miss Josephine Hogan would like to marry an architect. For full particulars see note, "Go South, Young Man."

GO SOUTH, YOUNG MAN

Number six in a series of young women asked by the Australian magazine "Glamor" to prepare a specification for her future husband is Josephine Hogan, "a vivid brunette with thick, coal-black, curling hair, big brown eyes, and an unusually fair fine skin that gives her a picturesque distinction." She thinks, poor girl, that an architect would be an ideal husband: "a secure profession . . . and he would be a citizen of some standing." She thinks she would have a nice, modern two-storey house (cream), and that her husband would be a homely type "who spends plenty of time round the house and garden."



Exhibition of European Lighting Fittings

Post-war designs in domestic lighting fittings from Italy, Sweden and Denmark, with a small selection of British products, were exhibited by the Scottish Committee of the Council of Industrial Design at Glasgow this week. The exhibition aimed to give new ideas to manufacturers of lighting fittings in Britain, to suggest new fields

of development for interested firms, and to show the general public some of the best lighting fittings from the continent. Above, a fitting in brass and white enamelled metal from Italy, designed by Gino Sarafatti, for Arteluce, of Milan. Designers for the exhibition were Robert and Roger Nicholson. (See also pages 216-219.)

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with not too many parties, and not too much sport. In reply, "a successful Sydney architect" shatters a few of Josephine's illusions, claiming that sport and entertainment are "indispensable for keeping contacts."

*

Do you meet her specification? "I see him," she says, "as 5 ft. 10 in. at least, with a good head of dark hair and dark eyes." She knows exactly what you should wear—"fawn light-weight summer suits, and lightly over-checked grey suits in winter, with pork-pie hats, possibly bow ties and suede shoes." Later on, you may graduate to a Homburg, and you may smoke and drink within reason because Josephine thinks it is manly.

*

I see, incidentally, that Orient and P & O are taking some of their liners off the Australian run this summer, so time seems to be the essence of this contract.

THE NORTH HAS ITS POINTS

Those of my readers who have not booked a ticket to the south since reading the last note may like to be reminded that the north offers new attractions. The tourist may now take as many pounds as he has got to Norway, Sweden or Denmark. We shall know next summer what difference this will make to the destination architects choose for their busmen's holidays. Will they swing north again, reviving the Scandinavian enthusiasms of before and after the war.

*

I suspect that the instinct to go south is determined by something deeper than currency shortage, but then I write as one to whom fifty pounds is quite enough to spend on a holiday anyhow. In fact I have always been puzzled at expressions of eagerness for the fifty-pound limit to be lifted, as though that would automatically put the money in one's pocket. If there is a sudden large-scale exodus to the crematorium at Stockholm and correspondingly smaller crowds at the Campo Santo at Pisa, I shall begin to listen less sympathetically to the grumbles about how difficult it is for architects to make ends meet.

ASTRAGAL

The Editors

PARTIES AND PLANNING

AS the twig is bent, so the tree grows. In 1945 the Labour Government began to shape the twig of post-war planning. Its growth was designed to give greater encouragement to the architectural profession, and 4,000,000 houses were to be built within ten years. But in trying to twist the twig to the required shape the administrators bent it too far and the sap flowed sluggishly. Now, after nearly five years, the architectural profession has had little encouragement, and the number of houses built is only a small proportion of the ten-year target.

The twig looks lifeless at the moment, but its roots are strong, for many planners have sowed their seeds with care. There is still a chance that it may grow rapidly within the next five years, provided that it does not have to bear the weight of controls and officialdom. But who is going to tend its growth?

On page 210 are tabulated the answers to a questionnaire specially prepared and issued to the three main political parties by the JOURNAL to determine their planning policies. No comment is made. The reader is left to judge for himself which party, if any, has the right approach to the problem of housing the nation adequately.

Whichever party is elected the profession may well have to fight an increasing reaction against planning. This reaction is, perhaps, to be expected at the end of an era in which little progress has been made in the architectural world. But the Government that comes into power shortly must be made to realise that the inefficient planning of the last few years has been largely due to inefficient methods of implementation. Planning principles remain the same. The alternative to unsuccessful planning is not non-planning, but better planning.

THE FUTURE OF THE PRIVATE PRACTICE

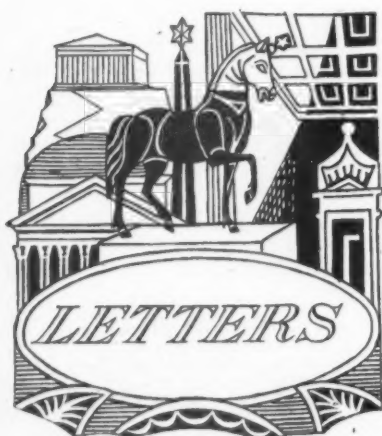
This week the JOURNAL publishes the first of Arcon's articles on the methods of organizing a contemporary architectural practice. This article deals specifically with the new conditions which have arisen during the last ten years or so, and indicates how these conditions have largely suggested the form and combination of the Arcon partnership.

Readers will notice on the next page, facing Arcon's article, a letter from John Adams, an Ipswich architect. He wonders whether the JOURNAL's editors are aware that "the small provincial architect is now beginning the last struggle for survival." The editors can state categorically that the problem of the future of the small private practice is one with which they are deeply concerned. The appointment of a practising architect as guest editor is only one of many steps which the editors are taking in order to attempt to foretell the trends which are becoming apparent in architectural practice today.

Obviously the position and scope of a profession, or any branch of a profession is never static in a democratic country. Changes are bound to come, and Arcon's articles will show how the changes of the last decade caused three comparatively unknown young men, who had been running small private practices, to combine into a rather unusual form of partnership. This was their solution to their problems. There are, of course, alternatives, and it is hoped that these will be brought to light by discussion engendered by the Arcon articles and by articles from other contributors.

New methods of building, new ways of living, and new ways of governing are only now having their effect on the profession. The effect was felt first by official architects; under urgent pressure to provide homes and schools for local authorities, and there are welcome signs that a method of practising is evolving whereby official architects will avoid the inherent cumbersomeness of over-grown offices. In the sphere of private practice, however, the effects of new techniques and conditions has been somewhat delayed, and it is the function of the technical press to act as a forum for the discussion of urgent and controversial issues, and to try and point out in advance the changes which will inevitably come in private practice.

Although no figures have been officially published, it can be assumed that eighty per cent. of the profession today are working in their own, or for, private practice. The future well-being of such a large proportion of the profession is of vital concern to the whole building industry today, and part and parcel with the practice of the art of architecture.



The Architectural Review

SIR,—The delightful photograph of the staff of your sister journal creeping on their stomachs to deliver an aesthetic assault on the stones of Lyme Regis makes one think while one laughs. It will, indeed, be a landmark when the *Architectural Review* publishes a number devoted to photographs of architecture as seen by vertical people in indifferent light. One cannot but feel that the *Review*, with its telephoto lenses trained on lichenous growths, has created an aesthetic hare which everyone else, being

Christopher Arnold

R. S. Wilshere, F.R.I.B.A.,
F.R.I.C.S.

R. M. Tyler, A.R.I.B.A.

John Adams, A.R.I.B.A.

A. L. N. Russell, F.R.I.B.A.

too busy with the problems of architecture, cannot entertain themselves with pursuing.

CHRISTOPHER ARNOLD.

Bartlett School of Architecture,
London.

SIR,—Like ASTRAGAL, after studying the current number of the *Architectural Review*, I, too, felt that it might well be regarded as a landmark.

It showed me clearly what is wrong with architectural treatments past and present, and how simple the solution is after all. Obviously we must avoid the use of architects or other persons who have been trained to design. What is needed is the truly unself-conscious whimsy functionalist.

Studying the excellent photos, I must admit I was somewhat puzzled by the picture of Stuart's Granolithic Paving, of which it was rightly suggested most persons

would pass without appreciating its beauty. Was this beauty due to its functionalism or to the fact that it would appear that this paving was gradually ceasing to be functional?

Could it be this is the perfect example of whimsy functionalism?

By the way, everybody tells me that one simply must visit Bournemouth this year.

R. S. WILSHERE.

Belfast.

SIR,—I am one of those countless readers for whom ASTRAGAL has a furious fascination. I am delighted to see him given the front pew under the new arrangements of the *JOURNAL*—but please, sir, could he be persuaded to stop "plugging" the *Architectural Review*?

When little notes began to appear, six months ago, about what the *JOURNAL*'s glamorous and expensive relation was doing, I thought it kind of right and proper. Then something got in every week extolling the lady's virtues—and now it's her moral worth that gets the build-up (the title of the latest remarks is "The Camera's Eye"—a misprint, surely, for "The Camel's Eye"?).

Does ASTRAGAL know that upon the very next page to his notes on February 2 the *Review* is reported as describing an old breakwater in Dorset as "The 20th Century Parthenon"? Sensitive man that he is, surely this will convince him that the lady is at heart what she has been telling us all for weeks herself—just a barmaid.

We may be only the ninepennies, sir, but even the pictures tell us the difference between the good old Pentelic and vulgar Lyme-stone (or cobb).

R. M. TYLER,

London.

Spineless Journalism

SIR,—I have been a reader of the *JOURNAL* for many years, but I regret to say that I am becoming increasingly irritated by the manner in which little or no consideration is being given to the interests of the backbone of the profession, namely the small provincial architect. Week after week I read of extracts from this lecture and that lecture, of what Mr. Wright has done or what Mr. Casson is going to do, followed by unlimited details of the latest satellite town. To some people these matters are intensely interesting, no doubt, and I recognize that they are concerned with the ideals of this profession, but the small provincial architect is much more concerned with building restrictions, the latest peculiar letter from the War Damage Commission, the shortage of bricks, etc. It is about these things that we talk when we meet.

I often wonder whether the people whose names figure in the *Architectural Journals* are aware of the fact that the small provincial architect is now beginning the last struggle for survival, and that the general election is to his business nothing short of a matter of life and death. Why not write of these things, or let us write of them, so that those in high places, the student designing his sculptor's retreat in the mountains, the Wrights and the Cassons may not forget that life can indeed be grim and earnest. Incidentally it would I think make more interesting reading.

JOHN ADAMS.

Ipswich.

Frank's Folly

SIR,—I freely accept your correspondent's description of my criticism of the Morris shop-front, as "ill-informed." We have only recently been told that it was designed to meet the very unusual requirements of the client, for which it has apparently proved most suitable.

As shown to us, it appeared to be illustrated merely as a new idea in shop-front

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design. As such, it seemed to be a very bad idea, in that it apparently sacrificed practical appropriateness to the roguish whim of a preconceived elevation.

In view of the importance of Lloyd Wright one may regret that so many of his buildings seem to be designed for conditions which are exotically removed from the sphere in which most architects have to work. Unless this is realised, both critics and disciples are apt to find themselves wide of the mark.

A. L. N. RUSSELL.

London.



Below is the first of a series of articles, prepared by Arcon, the JOURNAL's guest editors for 1950, giving the firm's views on the effect of prevailing conditions on the organization of a private practice.

ARCON

The Organization of a Contemporary Practice

LOOKING back over the first half of this century, one is struck by the very sweeping and very rapid changes that have taken place in the background against which architecture must be practised. These changes have brought with them many problems for the profession, not the least of which is that of organization.

We have been invited by the JOURNAL to act as Guest Editors for 1950 in order to stimulate thought as to how the contemporary architect can best organize himself to practise his profession. To assist the JOURNAL in this matter, we give below our views on the nature of the main problems and we also indicate how we have organized ourselves to deal with them. We should say, of course, at the outset, that our present form of organization is in no way rigid; it has developed out of the needs of our practice and will continue to be modified to meet changing conditions.

We do not in any way presume to think that our methods of organization will necessarily provide the answer to other architects' problems. We do intend, however, during the year, to suggest to the JOURNAL various ways and means of ventilating the subject—including, we hope, contributions from our professional colleagues.

Further, we would stress that we do not subscribe to the belief that efficient organization is the key to fine architecture. As an art, architecture is created by the individual. We do, however, believe that in this day and age efficient organization—if sufficiently unobtrusive—can help the individual to make his or her personal contribution more effective.

The subject, as we see it, can most usefully be considered under the following headings:—

- (1) The task.
- (2) Administration.
- (3) Relationship with staff.
- (4) Relationship with specialists.
- (5) Finance and accountancy.

It is with the first of these that we propose dealing this week.

THE TASK

The success of any professional firm arises from its ability to satisfy its clients. Quality of service rendered is the yardstick by which any client will ultimately judge his professional advisers. Unless that service is good there will be no clients and without clients there is no work.

To appreciate the services required by the architect today it is necessary to define the contemporary client and to understand the increased scope of the architect's work.

With regard to the client, for many years the small man in trade and commerce has been giving place to the large nation-wide or district-wide trading concern, and this trend has been apparent not only in trading in the shopkeeping sense, but in almost every aspect of life. The public house, the cinema, the restaurant, whatever it may be, have almost all seen this development under way. Add to this the enormous new nationalized undertakings, the public bodies in the shape of the regional hospital boards, the local educational authorities, and the housing authorities, and it will be seen that the client of the future is much more likely to be some large impersonal corporate body—either private or public—than the more traditional type of benevolent patron or business man.

Such corporate clients are apt to embrace many and varied activities within their sphere of interest. Consequently, the scope of services they will expect from their architects will also be many and varied.

Turning then to this increased scope, before the 1914-18 war and to a large extent in the inter-war period, it would

be true to say that the bulk of an architect's private practice consisted of the design and supervision of buildings carried out by a small number of long-established and comparatively easily understood crafts, which made up the traditional building industry. He might occasionally be asked to design a bit of furniture, prepare a layout for a small estate or give his advice in connection with a problem arising out of the comparatively simple legislation controlling building operations at the time, but these were the exceptions rather than the rule.

Today, however, he may be asked by a client to carry out anything from the styling of a complicated piece of modern machinery to the layout of a complete town in some far distant part of the world. He may be asked to design anything from a cathedral to a bio-chemical laboratory, from a large office building to a bus shelter. He may be asked to advise an industrialist on how to adapt his factory for the production of a prefabricated house, or to advise an estate developer on the wide and almost unpredictable implications of the 1947 Town and Country Planning Act.

In addition, the architect, like everyone else today, is faced with the ever-widening horizon of specialized knowledge. Not only have there been many scientific developments in acoustics, lighting, heating, soil mechanics and the like, but there is also the ever-increasing range of new materials and new techniques from which he must be able, with some knowledge, to select those most suited to his purpose. Finally, there is the constant flow of new legislation and statutory instructions with which he must keep up-to-date.

These, and many other considerations ranging from contract procedure and methods of measurement, to trade-union practices and payment by results, build up to a sum total of knowledge which it is well-nigh impossible for one single man to retain clearly in his mind. Yet it is imperative for the architect to master the main principles of all these matters if he is to retain his position as coordinator of the building team.

We, in Arcon, are a partnership of four with a backing of approximately 50 assistants. This organization has developed empirically rather than on the basis of a preconceived plan, and has arisen out of the problems we have encountered on our way. At the present moment it is arranged to suit the particular requirements of our immediate practice. It will no doubt change, grow or contract, according to circumstances, as time goes by.

With this team, however, we believe that we can better provide the answers to the problems we have outlined above and, consequently, better serve our clients than as separate entities working each on his own.

HOUSING AND PLANNING POLICIES of the three principal political parties

CONSERVATIVE

LIBERAL

LABOUR

TARGET

Number of houses required at any given moment depends very much on such factors as age composition of population, marriage rate, and relationship between incomes and housing costs. Replacement of houses as they grow obsolete and progressive raising of housing standards will be a continuing task for many years to come.

Object of sound housing policy is to provide maximum amount of decent dwelling space and not erection of particular type of house or employment of particular instrument for building it. A free market in building would achieve more housing units for the same expenditure of energy and materials. More houses for middle income groups and black-coated workers are desirable.

Labour will build houses as fast as country's resources allow until every family has separate decent home of its own. This does not mean, however, that Labour is prepared merely to set numerical target, and work towards it. Fixed targets are misleading because they presuppose that housing demand is fixed quantity.

NATIONAL PLANNING

Need for national housing survey. Present knowledge of housing conditions is defective. Lack of knowledge has led present government to providing many more three-bedroom houses in its programme than were warranted. Avoidance of bad planning and wrong use of land is essential in view of heavy and conflicting demands on land of Britain.

Statistical, consumer and technical research needed to get accurate, qualitative and statistical picture of housing problem, to co-ordinate a long term policy. There should be a department for research, with ample funds, in hands of men and women with scientific and practical experience, including of course, architects. Liberals would appoint Minister of Housing, to co-ordinate work of various ministries.

Labour agrees with need for national planning, e.g., survey of population movements, housing and industrial requirements, and need for New Towns.

CONTROLS

It is hoped that with better methods of purchasing and less bureaucracy, controls will become less necessary. A good many have gone, but a change in system will further ease the situation.

Liberals approve general guidance by Government of economic forces through the control of credit and currency, the use of budget as an instrument to influence production, and ownership of limited sector of industry employing considerable number of work people, and requiring considerable amount of capital. Strong objection to detailed control of operation of business in sector of industry left to private enterprise.

As long as there are shortages of vital materials such as timber, price control must continue. Otherwise luxury building would predominate at expense of house building. Nothing would injure building industry more than abandonment of controls at this stage. For a while there would be tremendous boom, which would inevitably be followed by falling off in demand. United States has recently proved this.

LAND

Opposed to nationalisation of land. But as war-time planning Acts including the Town and Country Planning

Liberals agree with the general object of legislation, but consider that main faults of Town and Country Planning

Town and Country Planning and Agriculture Acts and other statutes provide adequate means of making best

BUILD
DESIGN

HOUSE
FLAT

NEW
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BUILD

STATION
OF

CONSERVATIVE

LIBERAL

LABOUR

Act, 1944, showed, Conservatives do not wish local authorities trying to carry out redevelopment of towns to be held up for lack of land. Development Charge under Town and Country Planning Act, 1947, is proving both a deterrent to development and a discouragement to land being made available. New Towns are suffering from this particular piece of planning legislation. Development Charge is so slowing up acquisition of land that New Town Corporations have to enter into negotiations two years before they intend to acquire the land.

Bill are that :—(1) It imposes a charge on those who develop their land, therefore discouraging all developments by private owners. (2) Compensation for loss of development value is faulty in principle, being payment by community for values created by community and which should never have been in private hands ; it is too dependent on guesswork, and is based on 1939 values—an arbitrary standard whose use may involve grave injustice. (3) The Act, which is too complicated, involves a great deal of delegated legislation.

possible use of land in town and country. These measures allow private owners to develop property in any manner they choose, provided they do not spoil things for other people. There are bound to be clashes relating to different uses of limited supply of land. From time to time advocates of economics and advocates of aesthetics differ. Before the war the former won on almost every occasion. Now the decision is taken with greatest good of people as sole determining factor. Labour's Planning Act ensures that both sides of case are heard.

BUILDING DESIGN

Increasing use of private enterprise builders under Conservative government will leave scope for private architects.

Employment of qualified architects for all new building by local authorities, housing societies, and large building estate owners should be made compulsory.

Labour endorses the advice given in the Housing Manual for local authorities and others to make good use of services of architects in site planning and house designing.

HOUSES OR FLATS

It is not for a political party to lay down bureaucratically technical details. Standards should be best that can be afforded without excessively lavish use of land. As there is a greater fuel problem than before the war the standard of heat insulation of British housing should be improved.

No comment.

No comment.

NEW METHODS OF BUILDING

Practically none of post-war non-traditional methods have solved problem of cost. In present conditions they should only be used where their cost can be justified.

No comment.

Local authorities and others are encouraged to make use of non-traditional types of building. Terraced houses and a greater variety of design are welcomed.

STANDARDS OF BUILDING

In the private house standards are a matter for individual decision. In local authority housing there has been some criticism that the standard of the post-war house is

No comment.

Labour prefers to reduce costs. Building research sections trying to find cheaper and more efficient methods of construction and of producing materials.

CONSERVATIVE

LIBERAL

LABOUR

too lavish. Many of the improvements in post-war council houses incorporate recommendations of Coalition Government. Conservatives would be sorry to see genuine improvements go.

RECONDITIONING

Existing legislation for preserving old buildings must be continued. There is scope for reconditioning low standard housing pending its ultimate redevelopment.

SUBSIDIES

It is doubtful if nation could afford increase in subsidy as long as practically every house built is subsidised. But if bigger proportion of families were allowed to rehouse themselves at no expense to community, housing subsidies could be concentrated more effectively in aiding those who really need them. Restoration of private enterprise building by restoring competitive efficiency would also lower costs and hence rents.

RENTS

Present rent structure has many anomalies, but it has been accepted ever since 1915 that while there is shortage there is danger of position being exploited, and controls are needed. In inter-war years, as scarcity of houses disappeared at successive rent levels, control was removed. Situation can again be eased as shortage is overcome.

BUILDING INDUSTRY

Key to building industry's future depends on its productivity. Greatest safeguard of future of building industry for difficult economic days ahead is restoration of competitive efficiency and abolition of present wasteful and bureaucratic methods.

No comment.

The Liberals would make subsidies available to private builders prepared to build houses for owner-occupiers, on the same basis as subsidies to local authorities for the building of houses to let; they recommend that, without prejudice to housing subsidies already arranged, the amounts of housing subsidies to be granted in the future should be reviewed from time to time, with a view to their progressive reduction and elimination within a reasonable time.

Some form of Act to consolidate and simplify existing complex legislation on Rent Restriction is urgently required. Liberals want investigation into possibility of finding new basis for controlled rents, and think consideration should be given to permitting increase in controlled rents (except in the case of houses first let after May 6, 1945) conditional on the houseowner carrying out in full his obligations to repair.

No comment.

Provisions of Town and Country Planning Act for listing and preservation of buildings of special historic and architectural interest will be fully carried out. And many thousands of houses—structurally sound—could be improved.

Subsidies are necessary, especially at times of high costs, to ensure that families with greatest need can be adequately rehoused at rents they can afford to pay.

By same standards rent control is necessary, and will be continued. Law of leasehold will be reformed so as to do justice to householders, shopkeepers, and businessmen.

It is Labour's aim to see many things built and expanded in coming years. There will be plenty of work here for architects, town planners and all others in the industry.

RIBA EXHIBITION: WEBB AND LETHABY



HEMEL HEMPSTEAD

First Houses for New Town

The occupants of the first four houses in the New Town of Hemel Hempstead, who took up residence on February 8, were bricklayers engaged on the erection of houses in the new town. They were given priority under a temporary scheme. In the letting of further houses on the new estates, priority will be given to policemen, postmen, teachers, factory workers, and others coming from London to work in the new town. If there are houses still unlet, people who work in the factories of the old town of Hemel Hempstead, which are short of labour, will be offered an opportunity to occupy them. If employers or senior executives of factories in the new town are not satisfied with the houses built by the corporation they will be granted a site, and building licences will be obtained for them to erect their own houses.

The houses occupied are the first of two contracts on which work is proceeding. Two other contracts will be started in the summer. By the end of the year it is expected that 200 houses will be occupied, and by the end of next year a further 600 houses will have been completed. Work has already started on the first 36 flats, and 14 shops, part of the neighbourhood centre with 15 maisonnettes over, are due to be started this month.

The first housing project has been designed as a pilot housing scheme to test seven types of houses, including two-, three-, and four-bedroom semi-detached houses; three-bedroom terraced houses and four-bedroom, three-storey terraced houses. Rents of the first houses are £1 10s. and £1 11s. 6d., and they cost about £1,500 to build.

Lord Reith, the chairman, and members of the development corporation were present at the ceremony of handing the keys to the first tenants.

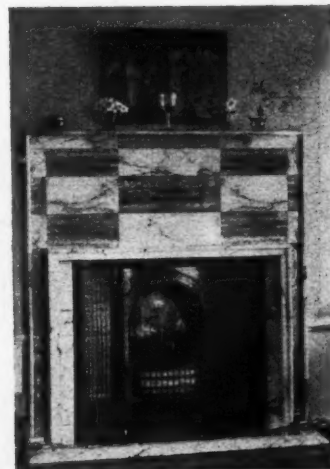
TPI

Planning and Agriculture

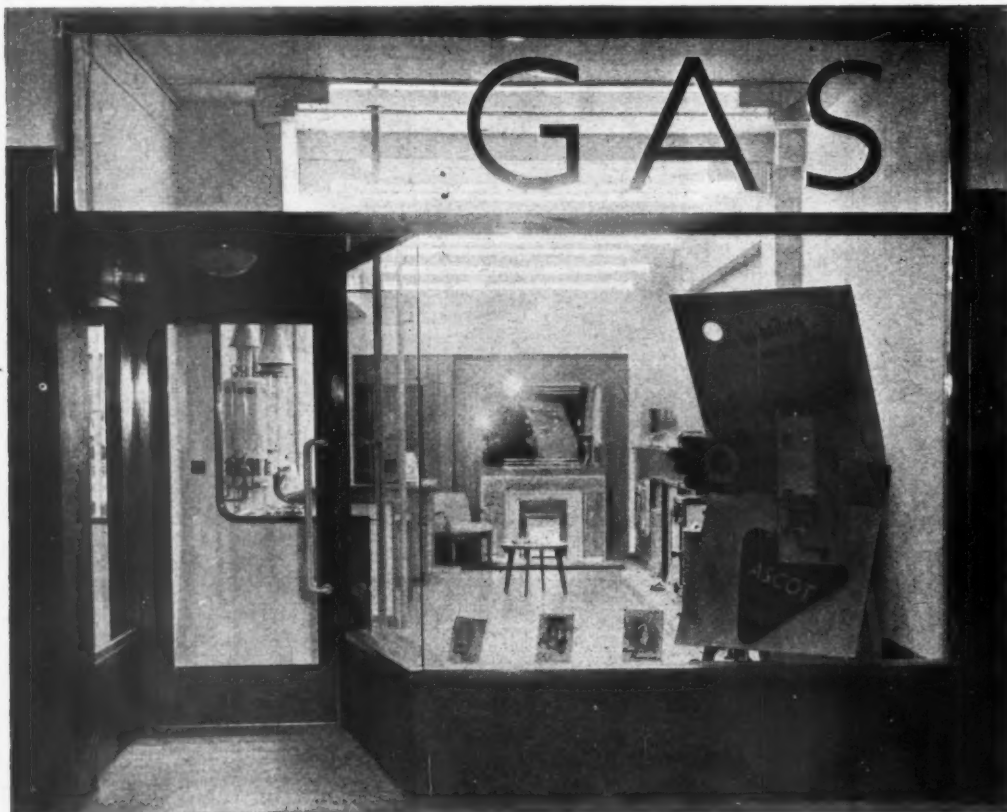
Although it is contended that the only solution to Britain's population problem is wholesale emigration, the trend is, in fact, in the opposite direction, said Professor L. Dudley Stamp, when talking to members of the TPI at Livingstone Hall, S.W.1, on February 2. The subject of his talk was



From today until February 21, the RIBA is holding an exhibition of the work of Lethaby, Webb and Morris. These illustrations, which are reproduced by permission of Country Life, are included in the exhibition. Above, Standen, East Grinstead, and left, Clouds, both by Webb. Below, two interior views of The Hurst, Four Oaks, by Lethaby.



SHOWROOM FOR THE SOUTH-EASTERN GAS BOARD AT



This showroom, designed by J. C. E. Fortey, of Bratt Colbran Ltd., was constructed within a shell under a block of flats built prior to the war. The party walls left a number of odd projections and uncovered pipes, conduits, etc., visible on the wall face, which accounts for the arbitrary position of some of the breaks in the wall surface.

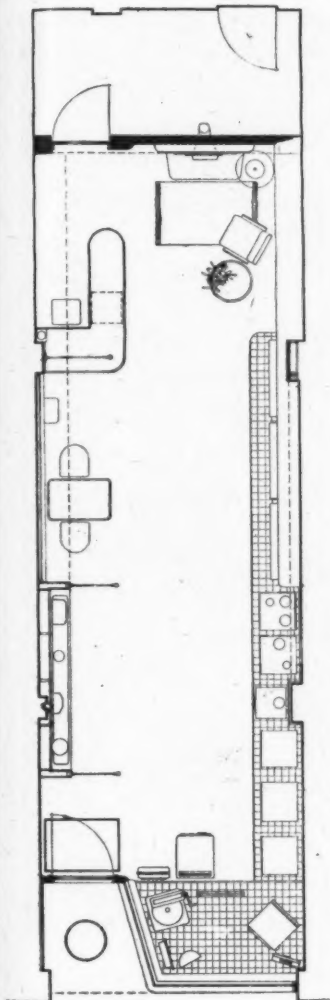
The shop was long and narrow, 48 ft. 8 in. by 12 ft. 6 in. The shop front, above, has a mahogany frame, terrazzo stallriser and forecourt, and a fascia of toughened glass with the word "gas" fixed direct to the glass. The hot water display, below, has projecting screens of clear plate glass at each end to shelter the



counter from the direct draught of the entrance. The heaters themselves are fixed on removable panels of anodised aluminium. The panels are pale gold in colour, in contrast to the white, chromium-plate, cream and other finishes of the heaters. There is a special blackboard type fluorescent fitting over the heaters. Between this display and the counter is a mirrored wall, below right, to give the illusion of width in the centre of the showroom. The counter top is of a heat-resisting plastic. There is a mirror beside the mahogany entrance door and a standard soffit light above. The recessed end wall is faced with Australian walnut and has a marble mantel.

The low wall fitment facing the counter houses panel and hearth fires, and has a heat-resisting plastic top. The gas cookers, etc., stand on a continuous plinth of buff quarry tiles; the window bed is also tiled. The floor is finished with 12 in. by 12 in. composition squares. Door handles are purpose-made, and covered with cream coloured plastic. All the live gas fires and the water heaters are flued through concealed asbestos piping to an outlet in the street at the back of the building. A motor driven fan behind the end partition supplies forced draught, and a solenoid-operated valve in the main gas line effectively cuts off the gas supply, in the event of electrical failure causing the fan to stop. For contractor and sub-contractors see page 232.

AT ST. LEONARDS



PLAN [Scale: 1"=10']



"Planning and Agriculture." Following are extracts from his remarks:—

"The official statement issued early in 1949 that the population of the United Kingdom now exceeds 50,000,000 indicated a very large increase on the prediction of the demographers. The very marked post-war rise in the birthrate and the increasing expectation of life are factors which have helped, but not to the same extent as immigration. So far as I know, we shall have to wait till the 1951 census for details, but I believe it is true that the number of political refugees, displaced persons and permitted workers admitted into this small country during and since the war far exceeds the total into the United States and all the Dominions combined.

"So we must look at land requirements to provide for this increased and increasing family. We are concerned in the main with England and Wales, so I will take figures throughout for this area—population approaching 44,000,000.

"Because agriculture can scarcely hope to add to its existing acreage, but only to work at the expensive business of upgrading, we are thrown back on the concept that every acre taken for other purposes increases the pressure on what is left.

"We have no accurate figures of the areas actually occupied by human settlement, but the calculations made on the maps of the Land Utilization Survey (1931-5 approximately) gave 1,564,613 acres of houses with gardens (12 to the acre or less) and 1,191,508 acres 'agriculturally unproductive'—mainly close housing, industrial yards, etc.—a total of roughly 2½ million acres. This is approximately 7 per cent. of the surface—or between 11 and 12 per cent. of the area still remaining under crops and grass.

"What are our modern space standards? Using the Ministry of Health's *Design of Dwellings* (1944), we get for residential neighbourhoods a gross density of between 21 persons (open development) and 60 persons (close central development) per acre. Combining these figures with other standards laid down in the Ministry of Town and Country Planning's *Residential Neighbourhood Handbook*, we get a special requirement of about 55 acres per 1,000 of population. Actually in the demarcation of areas for new towns the space standards are more nearly 100 acres per 1,000 population—6,000 acres for a projected town of 60,000.

"We must remember that the Land Utilization Survey's figure for houses with gardens includes many gardens and orchards attached to farms, large country house gardens, and new residential areas already with satisfactory space standards. If it is necessary to rehouse half the population, the land required would not, of course, be entirely, but certainly very largely, additional. 22,000,000 people at 10 to the acre represents 2,200,000 acres. Allowing for saving and re-use, 1½ million acres of additional land is not an impossible guess if the 'new towns' standard be adopted or three-quarters of a million acres at open residential density.

"The new standards laid down by the Ministry of Education are on a very generous scale when compared with the old, and the demand for new land is correspondingly large. There is first the horizontal layout of a single-storied or two-storied building in contrast with the old multi-storied town school. The minimum requirement of 15 acres for playing fields is vastly in excess of old standards. If we take 16 per cent. of the population of 45,000,000 as of school-going age we have 7,200,000 school-children—about 6½ million suburban. With 500 per school on 15 acres we get about 200,000 of flat and well-drained land."

After discussing other aspects of demands on land, Professor Stamp summed up by saying that we faced the loss of between eight and ten per cent. of our existing improved farm land—the grub stake of some four million people—in the next twenty years.

COMPETITION

RN Memorial at Lowestoft

The Imperial War Graves Commission invites architects who are registered under the Architects (Registration) Acts and who are ex-serving full time members of His Majesty's Forces, to submit designs in competition for a memorial which they propose to erect on a site in Bellevue Park, Lowestoft, to commemorate the names of officers and men of the Royal Naval Patrol Service fallen in the 1939-45 war who have no known graves. The assessor will be Edward Maufe. Premiums will be £100, £50 and £30. The last day for submitting designs is May 28 and the last day for questions is March 24.

Conditions may be obtained from the Secretary, Imperial War Graves Commission, 32, Grosvenor Gardens, S.W.1. The deposit is £1. Applicants for the conditions must state:—(a) Their Architects' registration number; (b) the branch of HM Forces in which they served.

LONDON

New Arts Centre

The London Arts Centre has opened at 77, Dean Street, W.1. This information bureau for all the arts—professional, amateur, educational and civil—is open daily (except Sundays) from 10.30 a.m. to 5.30 p.m.

OBITUARY

Edgar Quiggin

We regret to announce the death, on February 5, of Edgar Quiggin. For forty years he was in practice in Liverpool in partnership with Ernest Gee.

DIARY

Annual Young Contemporaries' Exhibition. RBA Galleries, Suffolk Street.

UNTIL FEB. 18

Exhibition of Work by Lethaby, Webb and Morris. 66, Portland Place, W.1. (Sponsor, RIBA.) Thursday, Friday, Monday and Tuesday, 10 a.m. to 7 p.m. Saturday, 10 a.m. to 5 p.m. FEB. 16-21

Exhibition of Modern Building Practice. The Municipal School of Art, All Saints, Manchester. (Sponsor, MOW.) 10 a.m. to 5.30 p.m. (10 a.m. to 12 noon on Saturdays).

UNTIL FEB. 18

Public Lighting. J. M. Waldron. At RSA, John Adam Street, Adelphi, W.C.2. (First of three Cantor lectures.) 8 p.m. FEB. 20

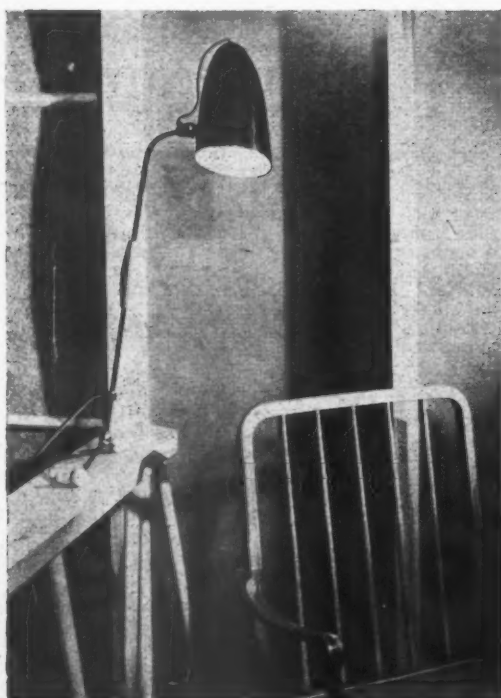
The Communist Party Policy on Housing. C. N. Craig. At 13, Suffolk Street, S.W.1. (Sponsor, HC.) 1.15 p.m. FEB. 21

The Work of Lethaby, Webb and Morris. Paper by Noel Rooke. 66, Portland Place, W.1. (Sponsor, RIBA.) 6 p.m. FEB. 21

The Linking of Technical and Art Education. Kenneth Holmes. RSA, John Adam Street, Adelphi, W.C.2. 2.30 p.m. FEB. 22

The Architect's Brief. Sir Thomas Bennett. At 34, Bedford Square, W.C.1. (Sponsor, AA.) 8 p.m. FEB. 22

EUROPEAN LIGHTING FITTINGS EXHIBITION AT GLASGOW



Above is a general view of part of the CID exhibition held in the showroom of Wylie & Lockhead, Ltd., 45, Buchanan Street, Glasgow. Fitting number 41 is by Nordiska Kompaniet of Stockholm. Left, a table standard designed by Robert and Roger Nicholson. The stem is of brass and the shade of copper. On the facing page :—Top: left, a fitting designed by Gino Sarafatti for Arteluce of Milan, with stem of brass covered with leather and shade of woven glass fibre; right, table lamp by Nordiska Kompaniet, with stem of lacquered brass, the shade and lower part of the stem is of white enamelled metal. Right, a wall fitting by Sarafatti in the form of a swinging jib, made of polished walnut and lacquered brass. The designers for the exhibition were Robert and Roger Nicholson of London. There were about eighty fittings from Italy, Sweden, Denmark and Britain. The exhibition was the most comprehensive of its kind to be held in Britain so far, and provided an opportunity for industrialists, designers and

SPONSORED BY THE SCOTTISH COMMITTEE OF THE CID



LIGHTING FITTINGS

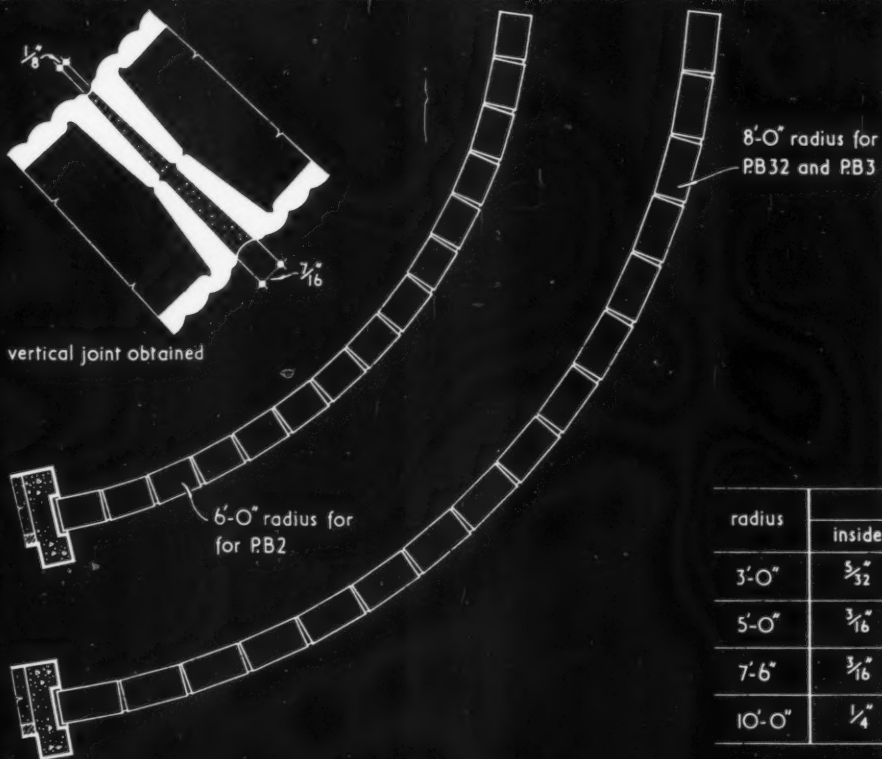


architects to see what has been achieved in this industry, particularly on the continent. In general the continental fittings are designed for lightness of weight, mobility and attractive appearance. The fittings are distinctive not only in the construction of bases and stems, but in the materials and shapes of the shades. While a few are frankly experimental, the majority are in current production. Above, a standard by Sarafatti, with a stem of brass pivoting on a white marble ball; the white enamelled metal shade pivots independently. Right, a table standard by Poulsen of Copenhagen with brass stem and white enamelled metal shade, set with a circular piece of frosted glass. On page 219:—top: left, a table standard from Italy with a brass stem, parchment shade and white marble base; right, a wall fitting in polished aluminium, produced by Merchant



BUILDING BLOCKS | GLASS | APPLICATIONS

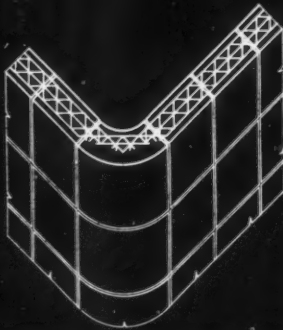
The Architects' Journal Library of Information Sheets 249. Editor: Cotterell Butler, A.R.I.B.A.



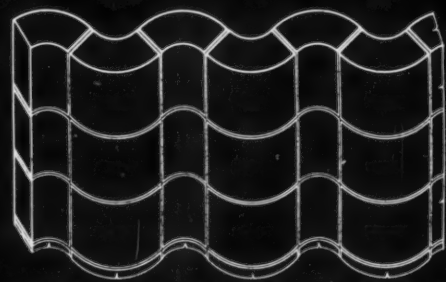
- RECOMMENDED MINIMUM RADII FOR PB2, PB3 AND PB32 STRAIGHT BLOCKS.

radius	PB2		PB3 and PB32	
	inside	outside	inside	outside
3'-0"	$\frac{5}{32}$ "	$\frac{3}{4}$ "	$\frac{5}{32}$ "	1"
5'-0"	$\frac{3}{16}$ "	$\frac{9}{16}$ "	$\frac{3}{16}$ "	$\frac{23}{32}$ "
7'-6"	$\frac{3}{16}$ "	$\frac{13}{32}$ "	$\frac{3}{16}$ "	$\frac{15}{32}$ "
10'-0"	$\frac{1}{4}$ "	$\frac{1}{2}$ "	$\frac{1}{4}$ "	$\frac{17}{32}$ "

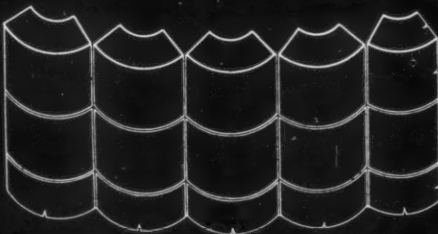
TABLE SHOWING VERTICAL JOINTS OBTAINED BY VARIOUS OTHER RADII.



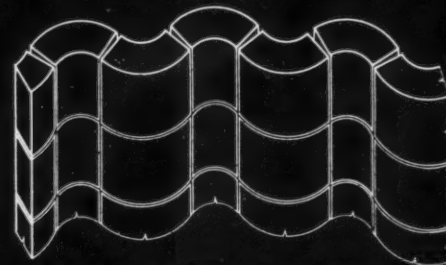
TYPICAL RIGHT-ANGLED RETURN FORMED WITH CORNER BLOCKS.



STRAIGHT WALL FORMED WITH CORNER BLOCKS FACING ALTERNATE WAYS.



OUTSIDE CURVE FORMED WITH CORNER BLOCKS.



INSIDE CURVE FORMED WITH CORNER BLOCKS FACING ALTERNATE WAYS.

14.N4 • INSULIGHT • HOLLOW GLASS BLOCKS : CURVED PANELS AND EXPEDIENTS

This Sheet describes the construction of both internal and external curved panels in hollow glass blocks, giving the recommended minimum radii for straight blocks and methods of forming curves by the use of corner blocks.

Construction

The transmission of any load from the building to the glass block panels must be avoided. Reinforcement and stiffeners must be inserted as described in previous Sheets, and panels of exceptional size should be referred to the manufacturers. The recommended radii for straight blocks gives a sound vertical joint which is not unsightly. Radii smaller than those recommended increase the outer width of joints and tend to reduce the strength of the panel. Curved panels formed with corner blocks are more suitable for internal use and for decorative features, and in the case of the outside curve it is usual to provide some form of vertical stiffening framework in the "V" shapes between the blocks.

A right-angled return formed with corner blocks (as shown on the face of this Sheet) illustrates the manner in which the horizontal reinforcement is folded over to a right angle, thereby forming a continuous strip tying the corner into the main walling.

Panel Sizes

• Insulight • hollow glass blocks are non-loadbearing units, and although they will carry their own weight safely up to a reasonable height it is necessary because of wind pressure and other stresses to put intermediate support in panels where the height is more than 20 ft., the width more than 20 ft. or the area more than 120 ft. super. These dimensions may be exceeded for internal panels in certain cases.

Fixing

Treatment at head and jambs : In all panels, the head and sides must be built free of the main structure—except for the reinforcement—to prevent panels being subjected to strains due to settlement, building load, or expansion. A $\frac{1}{2}$ in. clearance should be provided which must be kept free of mortar spillings, and filled with a non-hardening compound. In cases where intermediate support or structural dividing members are introduced into panels, the glass blocks must be insulated by clearance joints. In external panels, recesses into which the head and sides are built free of the main structure must be provided, except where the dimensions of the panel do not exceed 8 ft. high by 2 ft. wide, or 6 ft. high by 3 ft. wide. The recess should be $4\frac{1}{2}$ in. wide by 1 in. deep, allowing $\frac{1}{2}$ in. clearance and $\frac{1}{2}$ in. cover with $\frac{1}{8}$ in. play on either face ; the $\frac{1}{2}$ in. clearance should be filled with a non-hardening compound to provide a weatherproof joint.

In internal panels, rebate fixing is recommended : in certain cases butt fixing can be used.

Treatment at sill : Before the bottom course is laid, the sill should be coated with an asphalt emulsion or similar material, and the blocks then bedded with mortar as specified below, so as to allow for slight movement without disrupting the mortar bed and thereby preserving the weather-resistance of the panel.

Reinforcement : Reinforcing strips should be built into every third to every fifth course dependent on the size and position of the panel. The ends should pass through the clearance joint and be secured to the main structure. Any non-rusting type of open mesh brick reinforcement in strips not more than $2\frac{1}{2}$ in. wide is suitable.

Bedding and pointing : As glass blocks are non-absorbent a fairly dry and fatty mortar should be used. A suitable mix is one part Portland cement, one part hydrated lime (preferably lime putty) and four parts of sand by volume. Clean builders' sand free from gravel (not sea sand) should be used. The face of the joints may be struck back and smoothed during erection. If coloured joints are required they may either be picked out in colour by painting after the mortar is thoroughly dry or raked out at the time of erection and later pointed with coloured cement. The pointing may be of any form or finish ; a keyed joint formed with a curved jointing tool is the normal one.

Doorways, Windows and Ventilators

Small windows and ventilators may be set in a panel as insets. Doors and larger windows require clearance joints and special treatment. Doors and windows in internal panels are dealt with on Sheet 14.N7 and in external panels on Sheets 14.N8 and 14.N9.

Further Information

The Manufacturers maintain a Technical Research and Information Bureau which is available to answer questions and advise on technical problems dealing with this subject generally.

Trade Name

The word 'Insulight' is a registered trade mark.

Compiled from information supplied by :

Pilkington Brothers Ltd.

Head Office : St. Helens, Lancashire.

Telephone : St. Helens 4001.

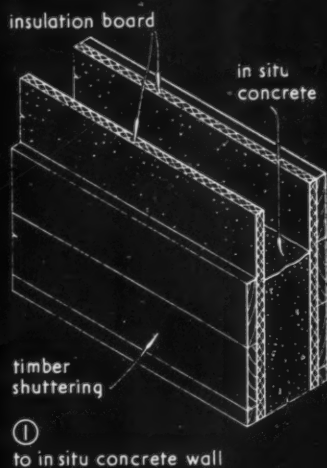
London Office : Selwyn House, Cleveland Row, St. James's, S.W.1.

Telephone : Whitehall 5672-5676.

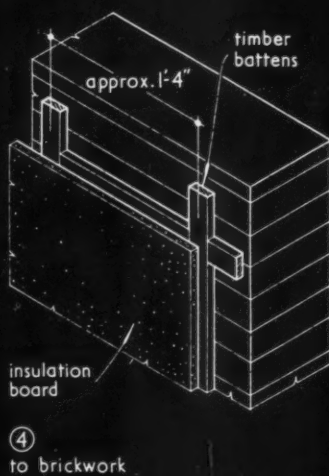
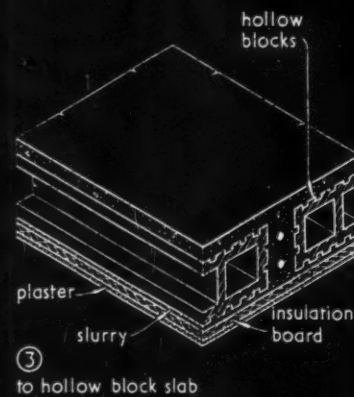
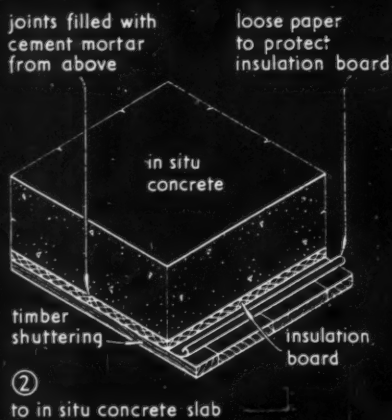
BUILDING BOARD APPLICATIONS

15.C2

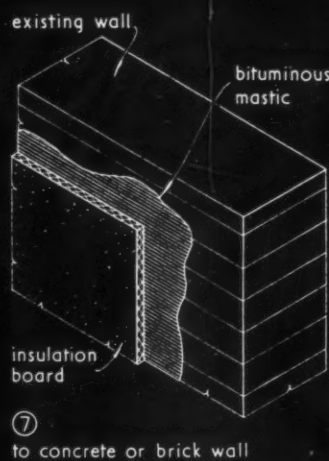
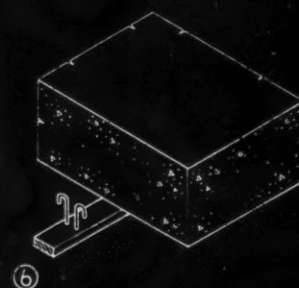
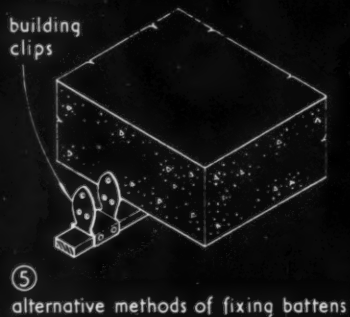
The Architects' Journal Library of Information Sheets 250. Editor: Cotterell Butler, A.R.I.B.A.



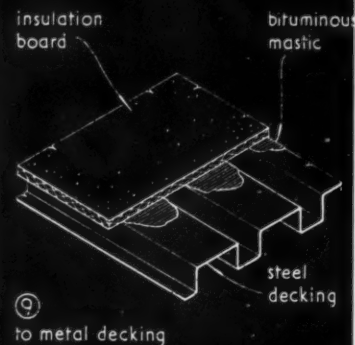
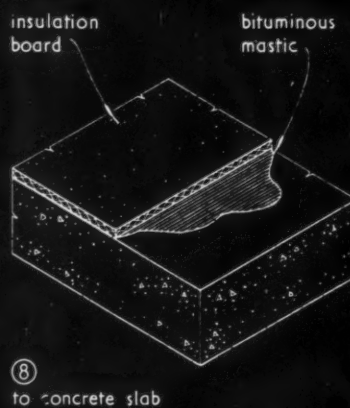
PERMANENT SHUTTERING.



FIXING TO BATTENS OR JOISTS.



FIXING WITH BITUMINOUS MASTIC.



15.C2 LLOYD INSULATION BOARDS : TYPICAL METHODS OF FIXING

This Sheet describes typical methods of fixing Lloyd insulation boards to walls, floors and ceilings other than by the patent fixing systems described on Sheets 22.D1, 22.D2 and 22.D3.

Permanent Shuttering

Owing to its fibrous and cellular nature Lloyd insulation board provides a mechanical and suction bond with poured concrete, and can thus be used very economically to eliminate condensation and pattern staining, to reduce heat loss, and to provide sound absorption and a better key for plaster than could be obtained by direct rendering of the concrete surface.

The use of insulation board as permanent shuttering is illustrated in diagrams 1, 2 and 3.

Specification notes : The temporary shuttering should be reasonably close boarded, level, rigidly supported, and cleaned before the insulation boards are laid in position. Lay boards on a layer of loose paper with edges in moderate contact and with textured surfaces exposed. Sprinkle with water, and raise fibres with a wire brush. Brush over boards with 1 : 1 sand/cement slurry or grout and pour concrete in the usual way while slurry is still wet. Where concreting is to be carried out in exposed positions, it should follow immediately after the laying of the boards: the boards should not be left exposed to the weather.

In order to prevent the slurry from seeping through the joints in the boards, and consequent staining of the face, the joints should be pointed up in cement mortar before the slurry is applied. The boards retard the drying out of the concrete and the temporary shuttering should be left in position as long as possible, particular care being taken not to damage the boards when the shuttering is struck. Boards can be held in vertical positions with distance pieces or fixed to the shuttering with a minimum number of fine panel pins, which can be extracted when the shuttering is struck.

Where hollow blocks are to be used the boards are prepared as for poured concrete. Blocks should be soaked in water and bedded on to the boards in at least $\frac{1}{4}$ in. cement/sand mortar before the reinforcing rods are fixed. The concrete must be poured while the mortar is still wet.

Joints : Where boards are to be left exposed, the edges of the boards should be chamfered.

Where the boards are to be plastered a priming coat of neat gypsum plaster, full width of trowel, should be applied along all joints and angles and a 4 in. wide strip of galvanised and annealed wire mesh or hessian laid down firmly into the priming coat. The plastering is then carried out in the normal way over the joints.

Form Lining

Where finished concrete work is to be left exposed, Lloyd Super Hardboard can be used to great advantage as lining in the moulds for poured concrete. Form oil should be applied to the surface of the boards before use. A smooth, and dense surface is automatically given to the concrete, thus obviating the hacking and rendering necessary to produce a

good finish on concrete where rough timber has been used for shuttering. This method also eliminates the knot and joint marks found even when wrought shuttering is used. Owing to its hard smooth surface, the Lloyd Super Hardboard strips cleanly from the concrete and may with ordinary care be used a number of times. Rough backing timber with packing to give an even bearing can be used for shuttering in this way and need not be close boarded, the spacing being controlled by the weight of the concrete and the thickness of the Super Hardboard used.

Fixing to Battens or Joists

Battens can be used for fixing insulation boards to walls, floors or ceilings and typical methods are shown in diagrams 4, 5 and 6.

Specification notes : A layout should be prepared so that framing can be fixed to suit boards. Framing should be straight and provide a true and even nailing base. Provide noggings to ensure support for boards on all edges, cornices, etc.

Nailing : In general, where nail heads are exposed, $1\frac{1}{4}$ in. to $1\frac{1}{2}$ in. panel pins, No. 6 brads or specially cut clasp nails suitably galvanised, cadmium plated, etc., should be used. Where nail heads are covered (e.g. with cover strip or plaster), shingle, roofing or slaters' nails should be used : in damp situations such as laundries, copper nails are recommended. Small headed nails should be driven at an angle of 60° in alternate directions and all nails should be spaced 6 in. to 8 in. apart and $\frac{1}{2}$ in. from the edge of the board.

For ceilings, boards should be held tightly to the joists with tee pieces which are moved outwards as nailing proceeds. Boards should be nailed first to intermediate joists, working outwards to the edges, which are nailed last.

Fixing with Bituminous Mastic

Lloyd boards may be fixed directly to smooth surfaces by means of a mastic applied in accordance with manufacturer's instructions. Examples are shown in diagrams 7, 8 and 9.

Under normal conditions Lloyd insulation board can be laid dry (lightly tacked) under membrane roofing and floors without using a mastic but, where damp and other special conditions prevail, the manufacturers should be consulted.

Conditioning of Boards Before Use

Hardboards should be exposed for at least 48 hours on site with a free current of air passing between the boards. Alternatively they may be moistened on the matt surface and stacked for 24 hours.

Exceptional Conditions

Where the boards are fixed under exceptional conditions, such as unusually high temperatures or humidities, special procedure may be necessary and the manufacturers should be consulted in all cases.

Compiled from information supplied by :

Bowaters Building Boards Limited.

Address : Harewood House, Hanover Square, W.1.
Telephone : Mayfair 9266

EXHIBITION AT GLASGOW

Adventurers Ltd. of London. Bottom, an Italian floor standard, with a partly flexible brass stem, a white marble base and a pivoting shade. In the background of the picture is a fitting by Haandarbejdets Fremme of Copenhagen. All fittings were displayed with contemporary furniture and furnishings.

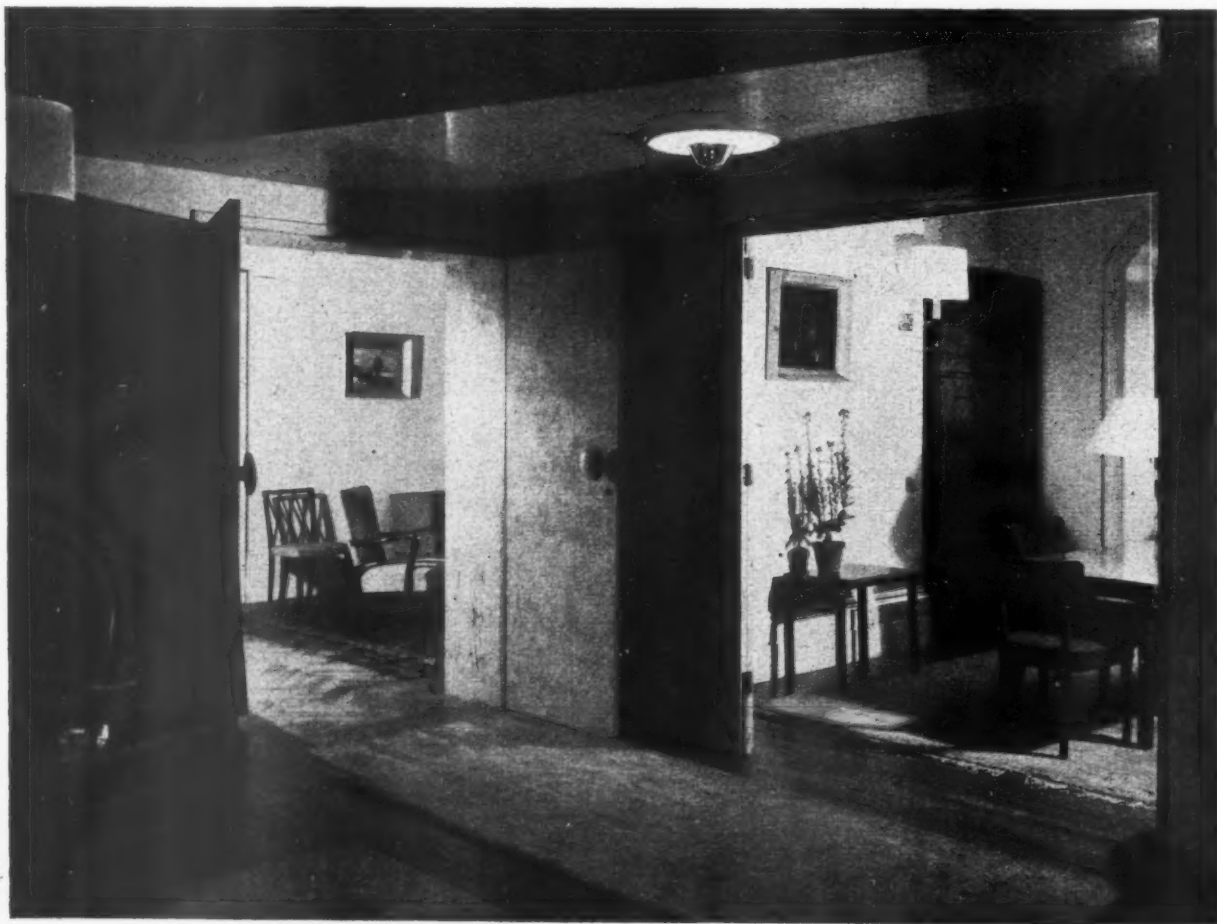


FINNISH LEGATION

at 65 and 66 CHESTER SQUARE, LONDON, S.W.1
converted by JUNE PARK

The Finnish Government required a minister's residence, legation offices and caretaker's flat in London. In the first place, two houses, next to each other, had to be found in order that they could be combined to provide the required accommodation. The houses had to be in a convenient and easily accessible position in central London, and in a street or square of a suitable character for a legation. 65 and 66, Chester Square, were the two houses finally chosen.

*The minister's study with parts of
the library and lounge.*



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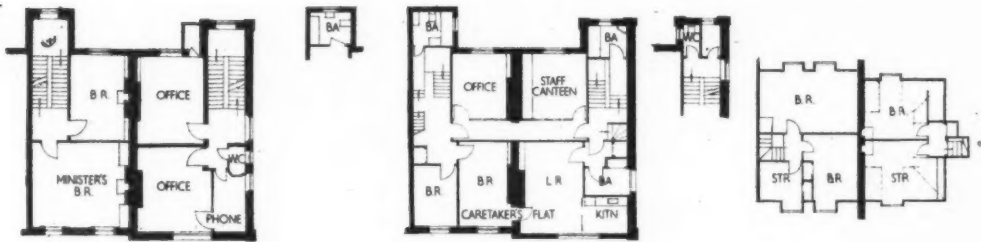
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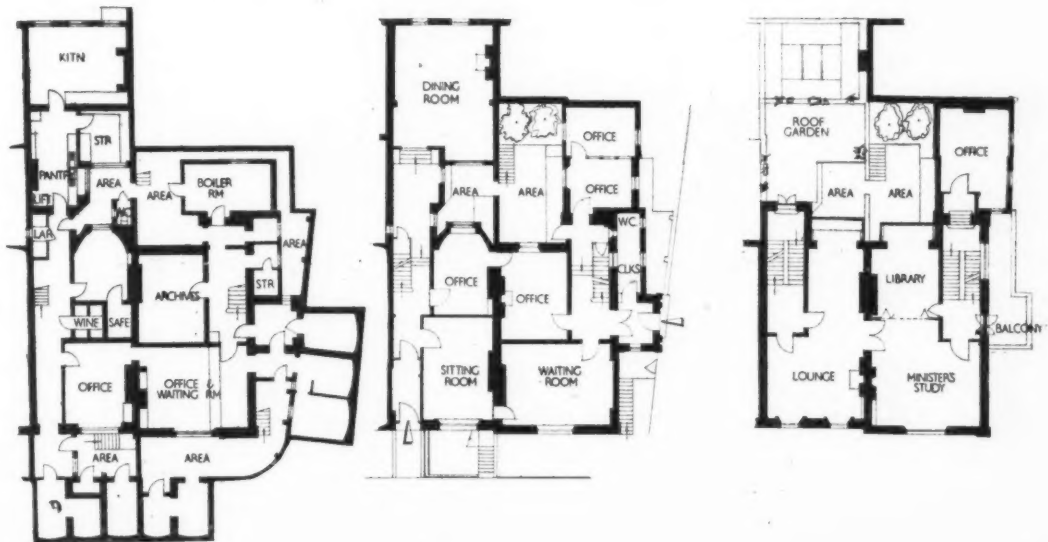
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Second, third and fourth floor plans.



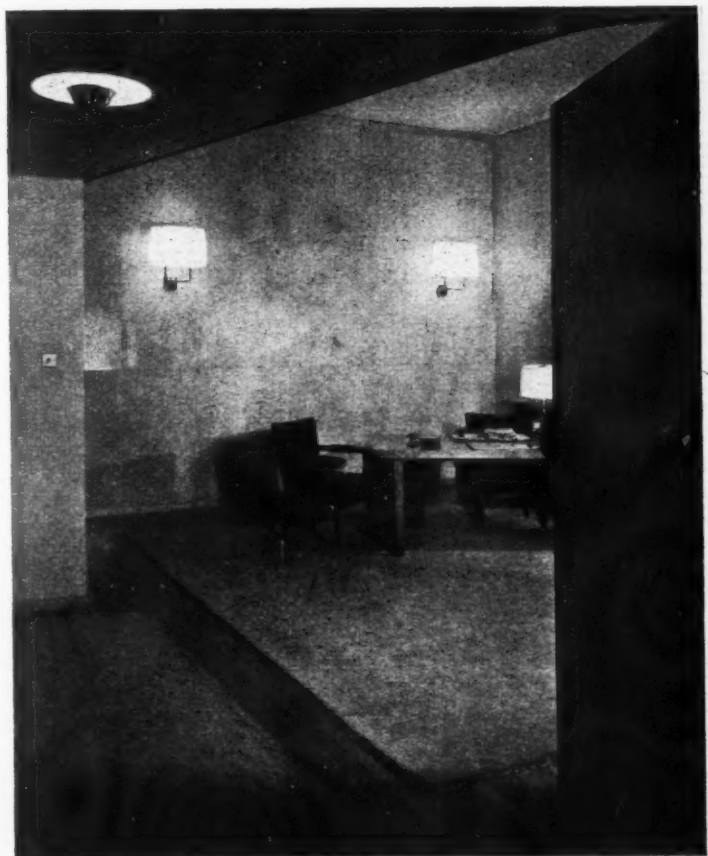
Basement, ground and first floor plans.

[Scale : $\frac{1}{8}'' = 1'0''$]*The minister's study.*

PLAN.—The minister's residence had to be private, but with easy access to the offices. This was done by making five openings in the party wall between the two houses, which also made it possible for some rooms to be used either as offices or bedrooms. The first floor was made into the main reception floor for special occasions. Part of the ground floor was also made available for this purpose. The third floor was made into the caretaker's flat as well as a canteen for office staff.

CONSTRUCTION.—In general, the construction of the existing houses was not altered.

EXTERIOR FINISHES.—Bombed railings and balconies were replaced and made to match those in the rest of the square. Copies of some of the balcony railings were impossible to obtain. They were omitted or replaced with railings of a very plain pattern.



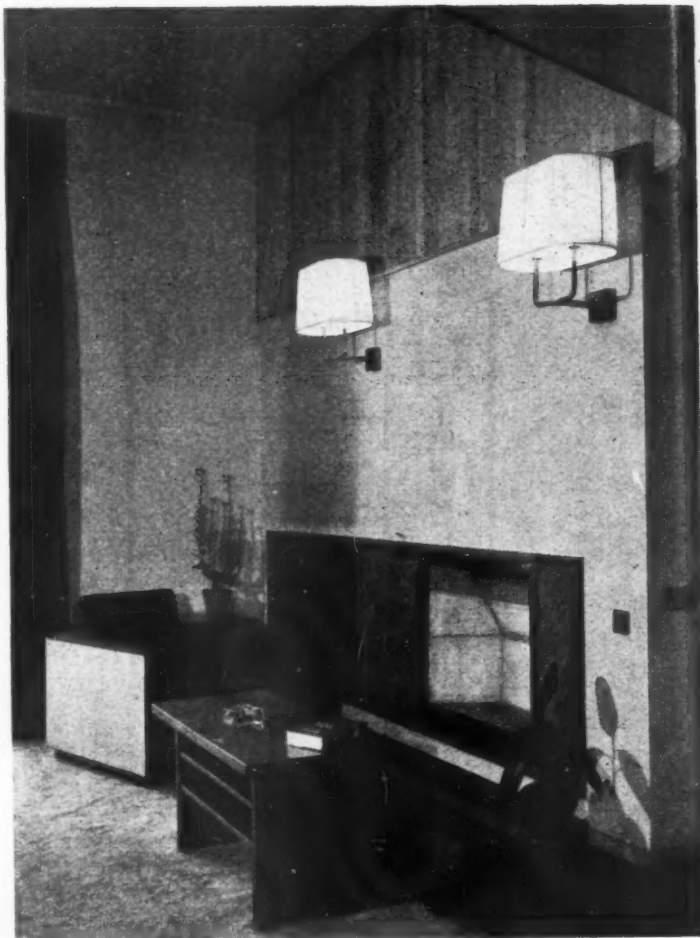
FINNISH LEGATION

at 65 and 66 CHESTER SQUARE, LONDON, S.W.1
converted by JUNE PARK

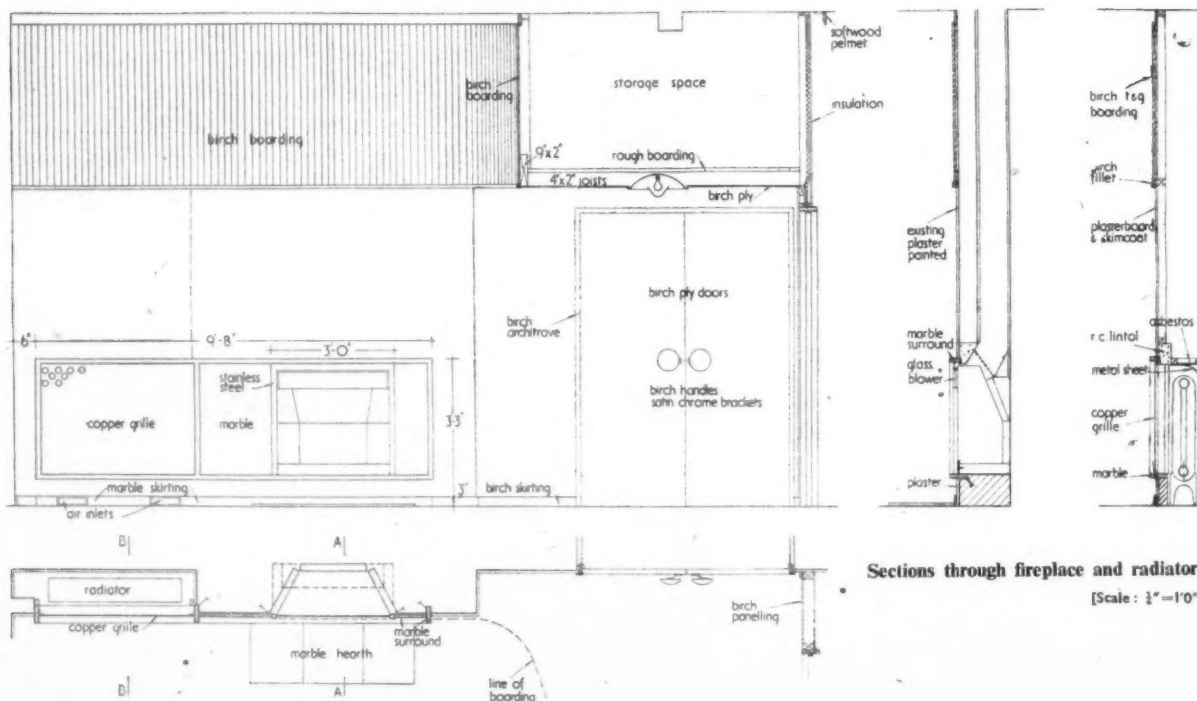
INTERIOR FINISHES.—All woods were specially obtained from Finland. The minister's study was panelled in birch, and the fireplace was replaced. In all other cases the existing character of the rooms was retained. The walls in the best bedrooms were papered. Walls in all other rooms were painted or distempered.

SERVICES.—Central heating was installed. Both houses were served by one oil-fired boiler. Only one or two coal fires were retained, as decorative features, and the flues were utilized for ventilation purposes. Where the construction of the house made it possible, heating pipes were concealed. Internal 'phones were installed. A hand lift serves to bring food from the kitchen to the minister's dining room.

The general contractors were Marshall Andrews & Co., Ltd. A list of sub-contractors appears on page 232.



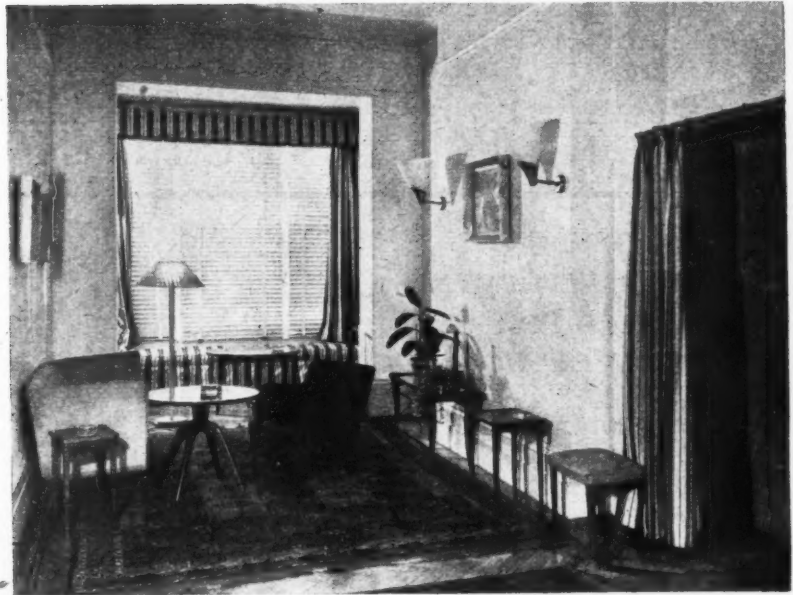
The fireplace wall in the minister's study.



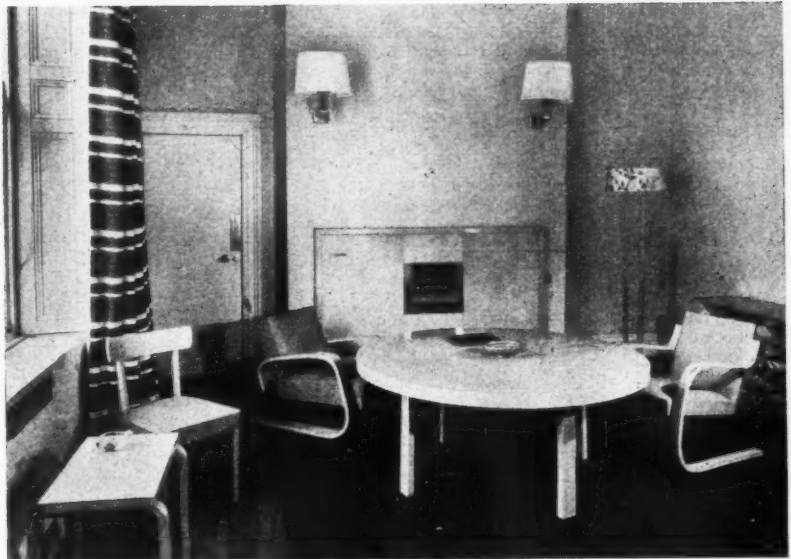
Sections through fireplace and radiator.
[Scale: 1/4" = 1'0"]

Elevation and plan of fireplace wall in minister's study.

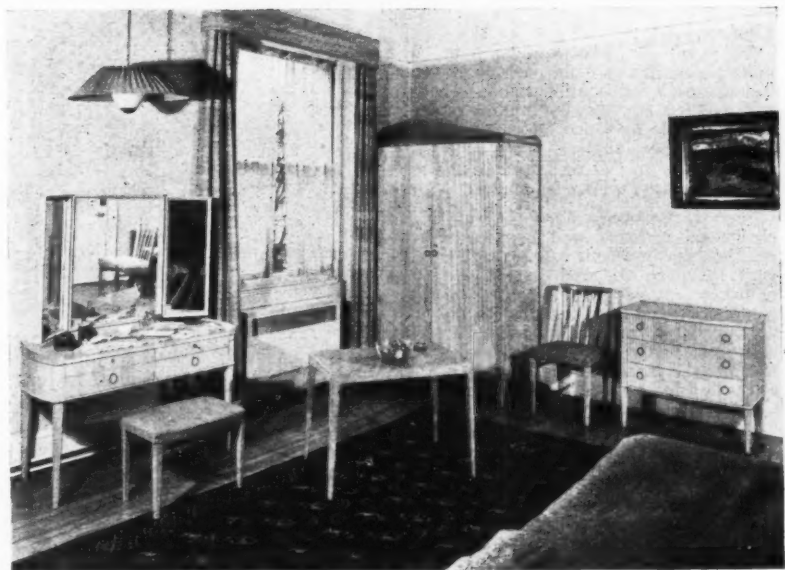
The lounge which is next to the minister's study. The window faces the area.



The waiting room, which is on the ground floor.



One of the bedrooms. Nearly all the furniture was brought over from Finland.



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

TECHNICAL SECTION

NOTES ON RECENT DEVELOPMENTS AT THE FIELD TEST UNIT, MINISTRY OF WORKS

By Rolt Hammond.

A visit to the Field Test Unit of the Ministry of Works, Thatched Barn, Barnet, is a stimulating experience.

In general, the Unit's main task can be described as operational research and the translation of the results of scientific work into practical building techniques; it is a branch of the Chief Scientific Adviser's Division of the Ministry of Works, and is closely linked with all Government Departments concerned with building research. Broadly speaking, prototypes of machines, devices and processes which are considered to have some reasonable prospect of practical success are tried out, followed by tests under simulated "average" site conditions, and if the results are satisfactory the machine or process is given a final test, under actual site conditions, on normal building work. The same applies to new materials, components and technical processes. This work culminates in some instances in a series of "experimental" building sites, in the sense that the design of the building and the methods of erection are determined at the outset, to the end that only a limited number of "variables" is permitted.

TIME AND MOTION STUDY

Time and motion study is the basis of all this work, the aim being to break down a house into a number of technical units on which individual study can be concentrated; thus, floors are costed as complete floors, roofs as complete roofs and so on. It is one of the functions of the Field Test Unit to give a clear picture of the possible saving that can be effected by adopting a particular form of construction.

The Unit is also collaborating with other departments in considering the wider aspects of housing, more especially with respect to the optimum size of a housing estate to which factory methods of building can be applied.

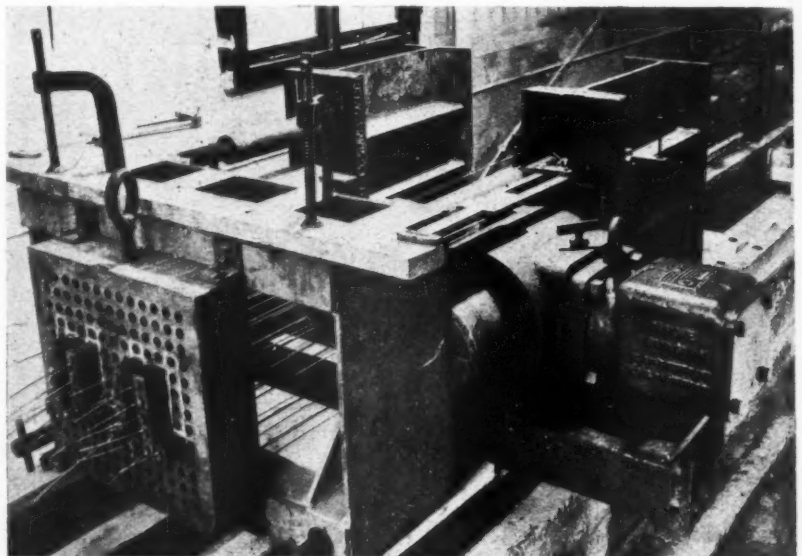
PRESTRESSED CONCRETE

Much work is being done on problems of prestressed concrete, and two methods of prestressing are being used: "pre-tensioning", in which the high tensile steel wire reinforcement is stressed before the concrete is cast and later anchored by the bond developed between the wire and the concrete when the latter sets, and "post-tensioning", in which the wire is stressed after the concrete has hardened and is kept taut by means of permanent anchorages. Many problems connected with straining the wires, casting the concrete, vibrating, compacting and curing have been encountered and some of them have been solved by inventing special appliances.

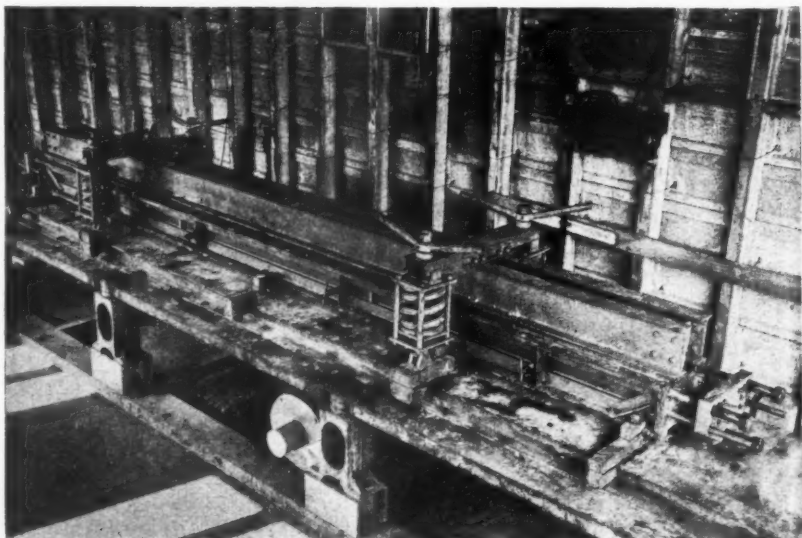
The straining bed is an important item in this work, consisting of a substantial structural steel frame, of which the extent can

be readily adjusted to make units of varying lengths; it is equipped with a powerful hydraulic jack for straining the wires. Normal length is 50 feet, but any lesser length can be provided for by intermediate brackets, and a smaller movable straining bed is another part of the equipment for casting prestressed components up to 15 feet in length.

Efficient gripping of the wire has been a major problem because of the very high load applied to this technique, so various types of grips have been devised. The photograph below shows the jacking end of the straining bed in action.



Set-up of tensioning bed showing jacks and anchorage.



Vibrating table for prestressed concrete unit showing complete assembly of mould and pressurizing gear.

VIBRATING EQUIPMENT

The concrete for prestressed work must be of very high quality, and much research is therefore being carried out on various types of vibrating equipment; but one difficulty has been to attain uniform vibration throughout the length of a mould in which a prestressed unit is being cast, and the main research problem is to find the optimum conditions of frequency and amplitude of the vibration. Another important problem arises from the dryness of the mix which necessitates very efficient vibration if satisfactory consolidation is to be obtained.

Static loading tests are being carried out on prestressed concrete floors, and it is interesting to see that a Swiss system of construction is being tested, in which the prestressed beams of the floor assembly are made up of burnt-clay units. A prestressed concrete floor suitable for houses is now under construction, so that architects and builders may see for themselves a practical example of one of the many applications of prestressed concrete.

PRESTRESSED CONCRETE

The concrete for prestressed work must be of very high quality, and much research is therefore being carried out on various types of vibrating equipment; but one difficulty has been to attain uniform vibration throughout the length of a mould in which a prestressed unit is being cast, and the main research problem is to find the optimum conditions of frequency and amplitude of the vibration. Another important problem arises from the dryness of the mix which necessitates very efficient vibration if satisfactory consolidation is to be obtained.

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PRESTRESSED CONCRETE FOR FLOORS AND ROOFS

The possibility of using prestressed concrete for floor joists is of considerable interest to architects. A special mould has been produced for casting simultaneously a pair of $5\frac{1}{2}$ in. by 2 in. prestressed concrete floor joists 12 ft. 9 in. long. In order to ease removal of the joists from the moulds after curing, they are cast with the stressed bottom flange uppermost. Thus, when the wires are released from the anchorages after curing, the tendency of the joists to arch assists in clearing them from the mould. Final compaction of these units is effected by applying pressure to the exposed face of the concrete immediately after pouring, and when this pressure has been applied, the mould is taken to a steam chamber for curing.

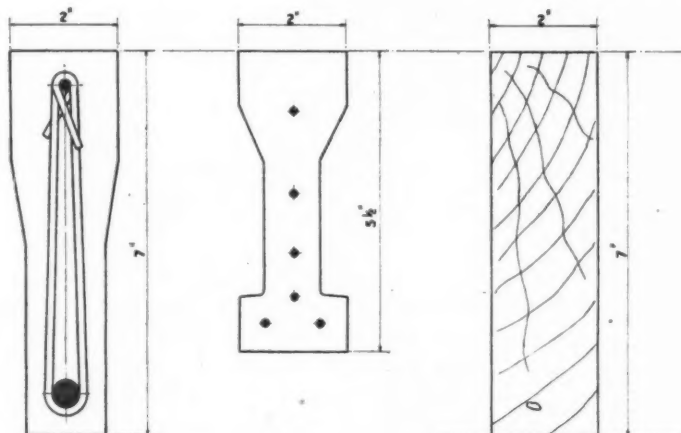
Two interesting recent developments in prestressed concrete construction for roof structures are illustrated here; one is a 15-ft. prestressed purlin designed for the Ministry of Agriculture standard farm buildings. The grooves at the top flange take the hookbolts for the roofing; and there are a suitable number of prestressed wires with a diameter of $\frac{1}{10}$ in. and having an ultimate tensile strength of from 140 to 150 tons per sq. in. The corresponding steel purlin to take the same load is a 4 in. by 3 in. by $\frac{1}{8}$ in. angle weighing 106 lb., whereas the weight of steel in the prestressed concrete purlin amounts to only 4 lb.; deflection of the steel angle under this load is 0.58 in., and of the prestressed concrete purlin is 0.36 in. The other recent development is an example of how prestressed concrete can be applied to roof construction; this unit has been designed for Government temporary office buildings to span 12 ft., the overall width being 15 in. and the depth 4 in. It has been designed to take a load of 57 lb. per sq. ft. and under test it failed at a load of 215 lb. per sq. ft., thus demonstrating that it had a factor of safety of nearly four.

NEW MACHINES FOR BUILDING

Very thorough testing and development work is being carried out on new machines for handling concrete and for excavation, and practical results of great economic value have been achieved. Observations on several building sites have proved that with a 10/7 or a 7/5 concrete mixer, teams of 9 to 12 men are employed in placing concrete by means of the conventional wheelbarrow. For a pair of houses this may take anything from 90 to 300 man-hours, according to ground conditions and to the general level of efficiency on the site. Although the wheelbarrow is a very simple device, it suffers from several disadvantages; it can take only $1\frac{1}{2}$ to $1\frac{1}{4}$ cu. ft. of concrete at a time and is therefore expensive in labour; discharge of a mixer batch into a series of wheelbarrows retards operation of the mixer. With a 10/7 mixer, duration of mixing cycle is increased by about 1½ minutes, possible output being thereby reduced by about 30 per cent. Moreover, concrete in the last barrow will be mixed for a much longer time than the concrete in the first barrow. Faced with this problem, certain equipments were developed: a tractor with concreting skip; a three-wheeled motorized barrow; and a concrete transporter boom. Details of all these machines were circulated to manufacturers; the three-wheeled barrow has been on the market for about a year, the tractor and the concreting boom for about three months.

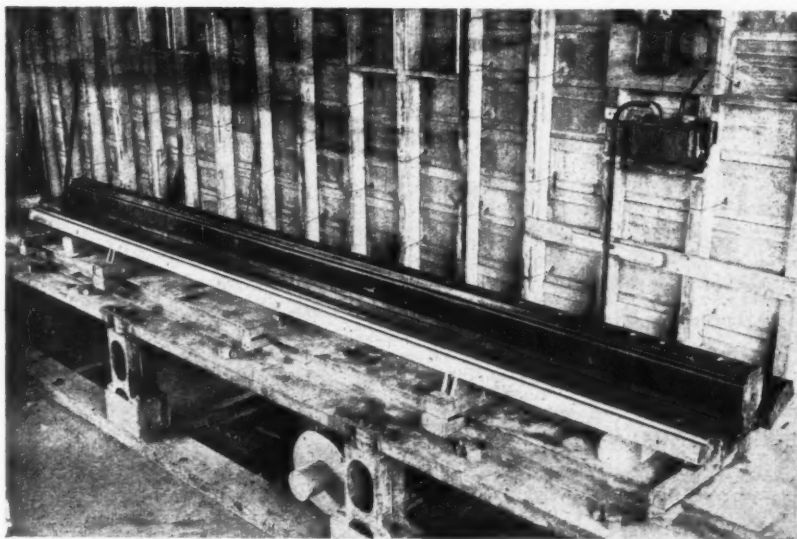
TRACTOR WITH CONCRETING SKIP

The prototype machine as illustrated working with a 10/7 mixer and a gang of six men concreting footings can place 36 cubic

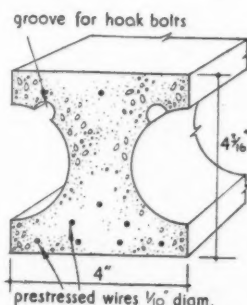


	NORMAL REINFORCED CONCRETE.	SAVING % P. C. OVER R.C.	PRESTRESSED CONCRETE	TIMBER.
WEIGHT OF BEAM.	157 LB.	32%	106 LB.	47 LB. (Q 37 LB./CU. FT.)
AREA OF CROSS SECTION.	11.87 SQ. INS.	32%	8.00 SQ. INS.	14 SQ. INS.
TOTAL WEIGHT OF STEEL.	15 LBS.	85%	2.21 LB.	—

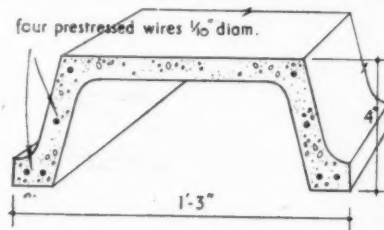
Comparison of 3 types of domestic floor joist for 12-ft. clear span.



Mould for joist with hinged sides open and end plates removed.



Left: 15-ft. prestressed purlin which weighs 170 lb. and is equivalent to a normal reinforced concrete purlin weighing 270 lb. Right: prestressed trough unit for floors and roofs.



yards of concrete in an 8-hour day at a plant and labour cost of 5s. 3d. per cubic yard. This is equivalent to a saving of

4s. to 5s. per cubic yard compared with the wheelbarrowing method. This cost is based on the capital cost of the tractor now on

the market, £445, interest on capital of 4 per cent. per annum, a life of five years, 20 per cent. maintenance per year and a working year of 1,000 hours.

The machine can be used for a number of other tasks such as carrying bags of cement, sand, ballast and moving mixers.

A light dozer blade has been fitted to the rear of the machine and has been found very useful for backfilling trenches and re-forming aggregate heaps near a mixer.

A trailer has also been made for transporting the machine from site to site. The tractor can also tow its own trailer.

MOTORIZED BARROW

The three-wheeled motorized barrow also has a skip of 7 cu. ft. capacity and is driven by a 3-h.p. air-cooled engine, being steered by the single driving wheel; the whole engine and transmission unit can be turned through a full circle. Although this equipment does not give as good a performance on bad ground as the tractor, it can be successfully used with a 10/7 mixer on hard level ground and on soft ground if runways of mesh or boards are provided. Concreting footings with a 10/7 mixer, a gang of six men, and a maximum run from mixer to placing point of 42 yards, the barrow can place 36 cubic yards per 8-hour day, at a plant and labour cost of approximately 5s. per cubic yard. The approximate saving over the wheelbarrowing method is 4s. to 5s. per cubic yard. Capital cost of this barrow is £120 and the output of concrete for an 8-hour day is 36.0 cubic yards, with an estimated life and usage for the equipment the same as for the tractor.

CONCRETING BOOM

The concreting boom, shown in the photograph, costs £120 and is used for transporting concrete from mixer to foundations. When concreting footings with 10/7 mixer, and a gang of six men, and allowing time to move and set up the mixer and boom, then 35 cubic yards can be placed in an 8-hour day. The plant and labour cost is approximately 5s. per cubic yard, and the approximate saving over the wheelbarrowing method is 4s. to 5s. per cubic yard. Costs are on the same basis as for the tractor.

BUCKET EXCAVATOR

Another machine which has just come on the market is the lightweight continuous bucket excavator for digging trenches; capital cost is £900 and with a driver and labourer the estimated hourly output is 6 cu. yds., as compared with a corresponding figure of $\frac{1}{2}$ cu. yd. for manual labour. The corresponding plant and labour cost per cubic yard for machine and manual work respectively is 2s. 4d. and 4s. 10d., cost being based on a life of seven years and an annual usage of 1,080 hours, giving a potential saving of 2s. 6d. per cubic yard.

BRICK HANDLING DEVICES

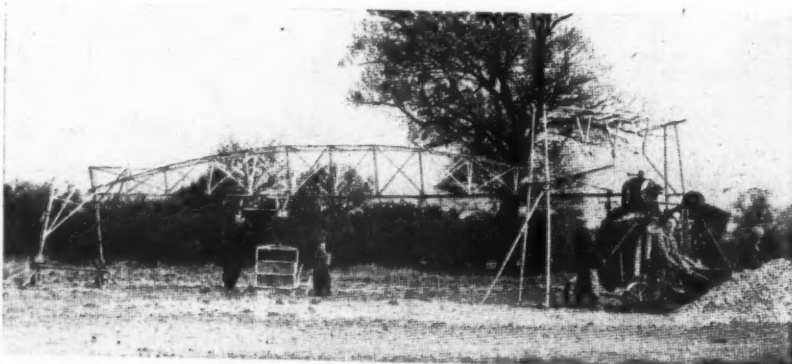
On all building work, handling of bricks has been an expensive item at the best of times, and many inventors have been stimulated to try their luck in evolving new and improved methods of doing such work, so far with surprisingly little success. The Field Test Unit, however, has developed a brick clamp barrow which costs £21 and has an all-in operating cost of 2d. an hour excluding overheads. With a team of three men, two clamp barrows and a platform hoist will handle 1,670 bricks per hour from the main stack to the scaffold, the potential saving being 2s. 1d. per thousand bricks. Cost is based on a life of three years, an



Modified horticultural tractor with aluminium alloy skip discharging concrete into a foundation trench.



MOW 3-wheeled motorized barrow discharging concrete into trench.



MOW concrete transporter boom concreting footings with a 10/7 mixer.

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annual usage of 1,080 hours, allowing 2s. 3d. per hour for cost of hoist.

In contrast, a team of three men with wheelbarrows and platform hoist will handle 1,350 bricks per hour from the main stack to the scaffold, at a plant and labour cost of 7s. 3d. per thousand bricks, showing a potential saving per thousand bricks of 9d. The same team, using hods will handle 900 bricks an hour from the main stack to the scaffold, at a labour cost per thousand bricks of 8s.

The Field Test Unit has also investigated a hinged-flap brick barrow, which costs £14 and has the same all-in operating cost as the brick clamp barrow and gives the same output. Another equipment tested is a slab barrow for handling precast concrete slabs, and although this does not show an appreciable saving in labour cost, it makes the task less tiring and prevents damage to the slabs; the capital cost is only £10.

The possible use of steel scaffold boards has also been investigated; although these cost 1s. 3½d. per ft. run, as compared with 11d. per ft. run for wooden scaffold boards 9 in. wide and 1½ in. thick, they cannot be sawn up for firewood and are expected to have double the life of the wooden boards.

RAIN COVERS FOR BUILDING SITES

Records kept in this country show that average loss of productive time on building sites owing to wet weather is about 7 per cent., and when allowance is made for stoppages exceeding the periods of rainfall, loss may be as much as 10 per cent. Research has therefore been undertaken on a temporary cover for house construction, in which roof fabric is carried by light tubular trusses and the whole assembly can be raised by scaffold jacks. In one case, the framework is a 2 in. diameter light alloy scaffold tube assembled at ground level, covered with canvas sheets and raised as required by improved scaffold jacks.

A covering with light alloy truss and a wire suspended type of covering have been tried out over several months, during which the fabric coverings have been subjected to winds up to 50 miles an hour and to frequent alternate wetting and drying. Present development has not advanced far enough for anything more than an approximate costing to be done, and both operating and maintenance costs have to be refined.

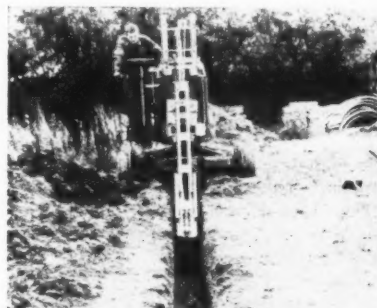
The work being done at The Thatched Barn makes one feel optimistic, but do



MOW back-acting excavator digging a 22-in. wide trench.

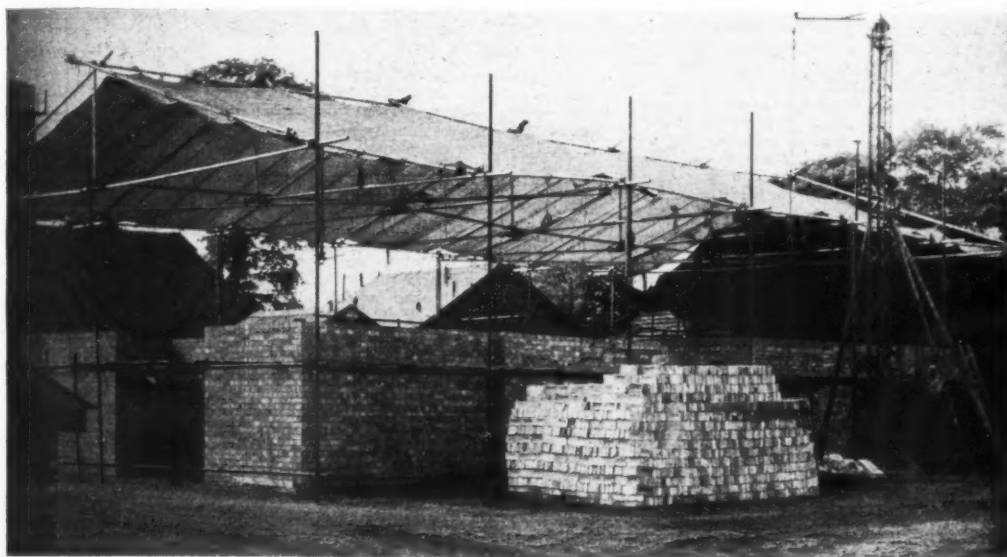
architects as a whole appreciate the scope and significance of well organized practical research? At least the Architectural Association and the Architectural Science Board arrange visits at intervals. But in spite of the valuable work being done at Barnet much greater facilities should be provided for carrying on this type of research.

As things are at the moment, the main objective of the Field Test Unit is to increase productivity in the building industry by time study analysis of important building operations. Although the practical research being carried out is extremely helpful to architects and builders in showing them improved building techniques, and in demonstrating the marked increase of efficiency which can be achieved by adopting mechanization, obviously more and greater facilities should be extended to the Unit as soon as possible. Perhaps, in the future, information centres at various points all over the country will be established to explain and illustrate to a greater number of architects the valuable field research which can be done there.



MOW back acting excavator digging a 12-in. wide trench.

Light alloy scaffold truss type of temporary covering for protecting buildings.



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

INFORMATION CENTRE

1 SOCIOLOGY. 2 PLANNING General. 3 PLANNING: Regional and National. 4 PLANNING: Urban and Rural. 5 PLANNING: Public Utilities. 6 PLANNING: Social and Recreational. 7 PRACTICE. 8 SURVEYING, SPECIFICATION. 9 DESIGN: General. 10 DESIGN: Building Types. 11 MATERIALS: General. 12 MATERIALS: Metal. 13 MATERIALS: Timber. 14 MATERIALS: Concrete. 15 MATERIALS: Applied Finishes, Treatments. 16 MATERIALS: Miscellaneous. 17 CONSTRUCTION: General. 18 CONSTRUCTION: Theory. 19 CONSTRUCTION: Details. 20 CONSTRUCTION: Complete Structures. 21 CONSTRUCTION: Miscellaneous. 22 SOUND INSULATION-ACOUSTICS. 23 HEATING, VENTILATION. 24 LIGHTING. 25 WATER SUPPLY, SANITATION. 26 SERVICES EQUIPMENT: Miscellaneous. 27 FURNITURE, FITTINGS. 28 MISCELLANEOUS.

2.105 planning: general SAMPLE SURVEYS

The Use of Sampling in Great Britain. C. A. Moser. (Journal of the American Statistical Association, June, 1949, pp. 231-259.)

Informative and useful article discussing use of statistical sampling methods in Great Britain. Notes on sample surveys undertaken by government departments, research organizations, and commercial agencies. Bibliographical references.

This article, which is confined to investigations concerned with population statistics in this country, has been written in order to provide information on a subject about which very little has been published so far. While American advances in techniques and applications of sampling have been most striking in recent years and have been fully described in professional papers, the situation in Great Britain is different, not only because the use of sampling is more limited, but also because the relevant surveys are rarely given publicity.

A short historical outline draws attention to the first proper use of sampling techniques by Prof. A. L. Bowley in connection with working-class households in Reading in 1912. Official information was first compiled by means of sampling methods in 1924, but only in 1937 was it adopted for any large-scale government investigations. Since then, and especially during the war years, major developments in the utilization of sampling techniques took place, resulting from the need for quick and cheap information.

Before describing various types of sample surveys the author notes the most important single difference between British and American sampling practices. It lies in the existence in this country of several lists covering the population. Nearly all of them have served as a basis for the major surveys undertaken, and in that fact can be found "the key to what may appear to be simply lack of enterprise—our failure, so far, to make more use of modern sampling developments, and particularly area sampling." A short description of the character of the various lists and the way in which they may serve as a basis for sampling is given. They include the *Maintenance Register*, started in

1939 when national registration came into force; the *Ministry of Food Files*; the *Rating Lists* kept by local authorities and listing all rateable units in the particular area; and the *Electoral Rolls*.

The article then goes on to give a fairly full account of official sample investigations covering surveys undertaken by the Ministries of Food, Labour, National Insurance and Works, and by the General Register Office. There are also notes on the National Farm Survey carried out during the war, and on the BBC Listener Research.

The use of sampling for social surveys conducted by semi-public bodies and research institutes is the next subject referred to, followed by some information on public opinion and market research.

In a final section the author compares British and American sampling practice, discusses deficiencies in British methods and submits suggestions for possible future developments.

5.36 planning: public utilities

LANCASHIRE ROAD PLAN

Road Plan for Lancashire: A Report on Existing and Proposed Road Communications within the Administrative County. J. Drake. (Lancashire County Council, County Offices, Preston. 1949. 25s.)

Important study, prepared by the Lancashire County Surveyor, including results of valuable original research work and providing a great deal of interesting factual information. Existing road communications. Recommendations for improvements in regard to expected future road traffic. Estimated cost of proposals. Appendices. Fully illustrated with maps, diagrams, tables and photographs.

In an introduction the chairman of the Lancashire Highways and Bridges Committee states that the road plan has been put forward in order to assist in the planning of a county which, though already highly industrialized, possesses great potentialities for further industrial development. He stresses the fact that the plan has not been prepared on idealistic lines, but takes due account of the prospects of manpower, materials and money during the next decade or so. "To site roads which could not, so far as can be foreseen, be possibly developed for very many years would . . . do a great disservice to the principle of planning, and, incidentally, sterilize valuable land."

The report is very clearly divided into various sections, of which the first discusses the county's need for an adequate road system. Such a system should be based on an evaluation of economic and social factors and of a combination of the two. Industrial traffic in the county represents the foremost economic factor. It implies safe traffic at its most economical speed without coming into conflict with the interests of other road users. Social factors to be considered include conditions for holiday traffic, amenity in connection with road layout, and freedom of movement with safety for social services depending on road transport facilities. Stress is laid on the economic-social factors which concern the time spent annually in travelling from home to place of work, which consists of both time needlessly spent and an unnecessary strain on the health of the population. Another most important factor to be dealt with adequately is the accident factor, and it is stated that "the reduction of avoidable accidents is an underlying object behind every road proposal made in this report and enters in every consideration of the adequacy of a road system." The reason for this

emphasis may be found in the fact that road casualties in the county for the period 1932-48 amounted to 82,060, well over the entire population for Warrington.

The next section of the report gives an outline of the evolution of Lancashire's road system from the times of the Roman occupation up to the present period, with notes on legislative measures affecting development. This is followed by a survey covering the physical features of the county and their influence on the road system; the diversity of traffic served; traffic density and its movement within the county; long-distance traffic moving through the county; traffic moving from centres whose origin is within and whose destination is without the county and vice versa; and traffic moving between points within the county.

The inadequacy of the present road system is the next step in the investigations, taking account of the economic and social factors enumerated above, and showing that the system is totally inadequate in regard to present-day requirements and still more so concerning the increased traffic of the future.

Before proceeding to deal with actual road proposals, the report first discusses, in three essential and informative chapters, the general approach to the whole problem of improvements. In order to be able to answer the basic questions concerning construction costs, time required for completion, and the future traffic volume, certain fundamental assumptions had to be adopted. It is stated that the expenditure on the roads of Lancashire should be an equitable proportion of the national expenditure on road-works. The basis of assessment of this proportion is set out in detail. Regarding the time factor, it is suggested that proposed improvement works and new construction should be completed in 30 years, taking account of the fact that (a) within that period the population of the country as a whole and the number of potential drivers within the appropriate age limits will have

INFORMATION CENTRE INDEX, 1949

An alphabetical index covering items published during the twelve months ended December 31, 1949, is being prepared. Readers who wish to have a copy—it is free of charge—should complete the form below and post it to the Technical Editor, THE ARCHITECTS' JOURNAL, not later than February 27, 1950.

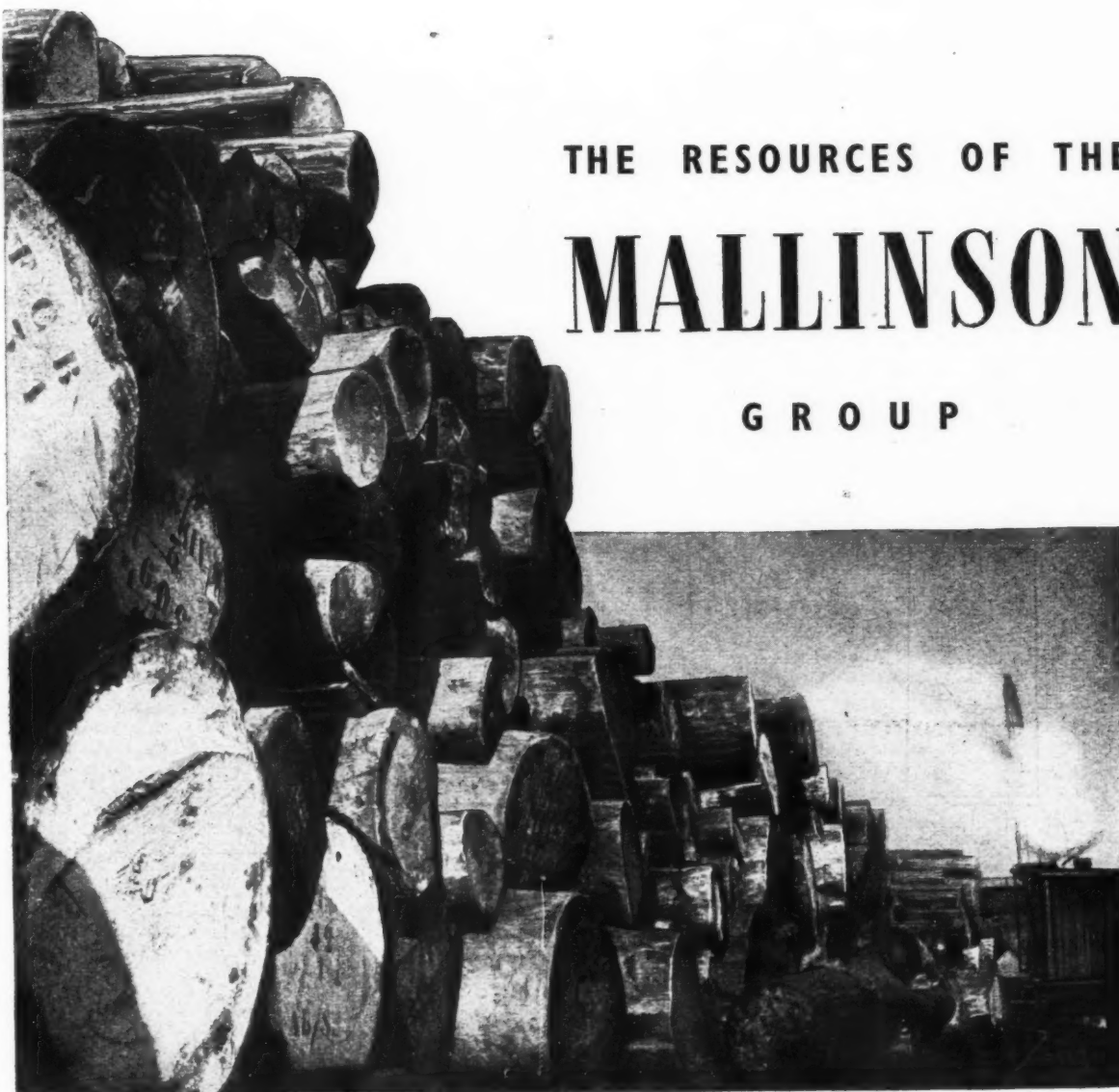
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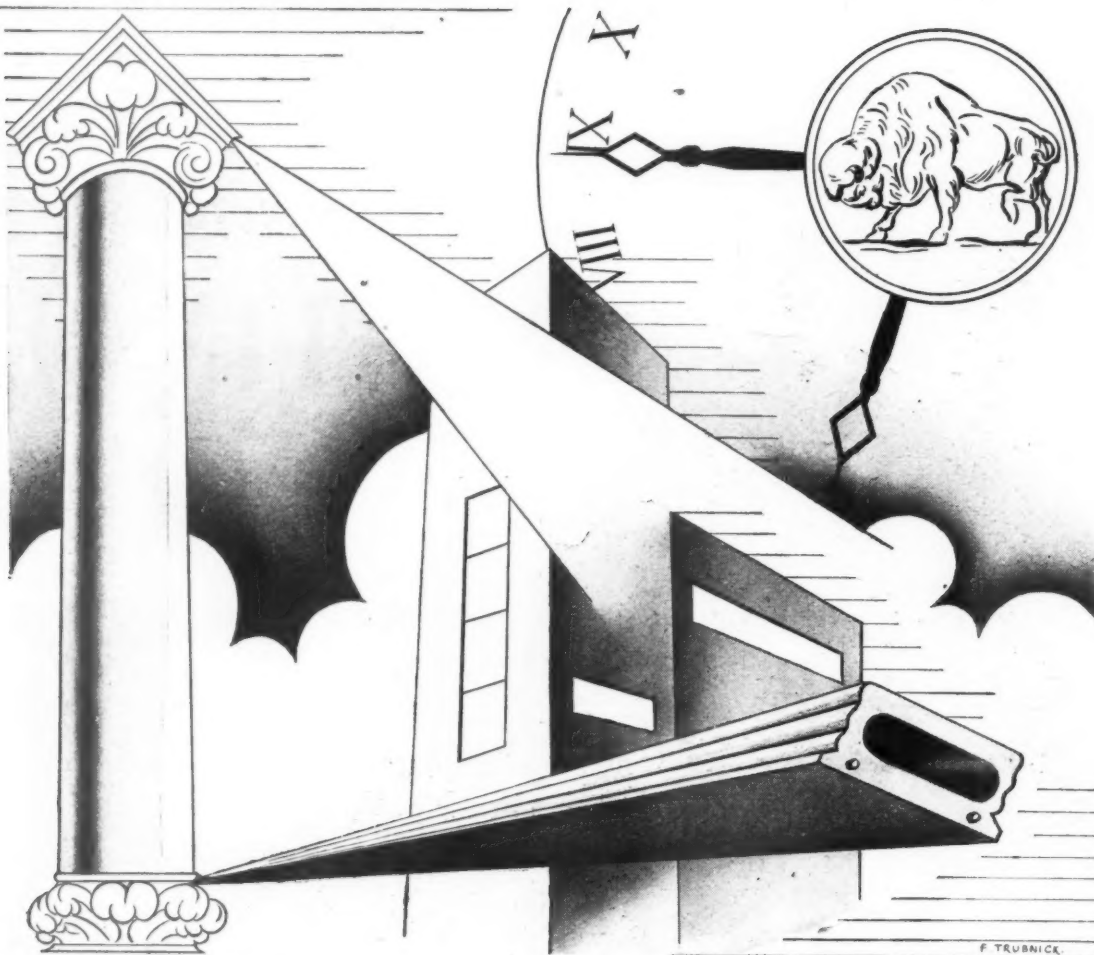
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passed the peak figures and have started to decline; (b) air transport will by then have an appreciable effect on road transport; (c) schemes proposed for commencement more than 30 years ahead will have little realistic value. Lastly, in connection with future traffic, it is assumed that the volume of the traffic in the whole country will reach its peak in 20 years' time and will then be approximately double the volume of 1938. It is supposed that traffic in Lancashire will increase proportionally to traffic in the country as a whole. The basis for this assumption is given.

Another essential aspect in relation to road improvements is the question of road layout standards to be adopted. Investigations were, therefore, undertaken "to assess, from a study of known traffic conditions, what standard could be considered adequate for the needs of the various classes of users." The methods adopted in these investigations are fully described, and the resulting recommendations are set out in detail, including an informative summary of conclusions from intensive accident research undertaken.

Subsequent chapters discuss the proposed road system and how it is intended to serve the various parts of the county, all the proposals taking account of the assumptions outlined above and the design standards to be adopted. Information is provided on how the proposed road pattern is to be built up, on ultimate traffic and traffic redistribution, and on road layout, mileage and total cost of roadworks. Finally, the report deals with the present position and recommended future policy in regard to road maintenance, with works in connection with bridges, and with the financial effect of the road plan.

The report concludes with a number of important appendices, of which the following should be noted in particular: Appendix E, dealing with the estimation of future traffic volumes on existing and proposed roads; Appendix F, describing the investigation undertaken to determine road traffic capacities; Appendix G, discussing the choice of the peak-hour traffic volume to be used to ascertain the carriageway width of a road; Appendix H, containing notes on sight lines on roads and intersections; and lastly, Appendix J, describing fully the investigations undertaken in connection with the county's road accidents.

Apart from the studies in regard to a particular county, this report contains so much valuable information of general interest in connection with road transport planning that it should prove particularly valuable to planning students.

18.39 construction: theory FIRE RISK

Fires Involving Dusts. D. J. Rashbash. (Technical Booklet No. 5. Fire Protection Association, 1949.)

Highly specialized but of importance to architects working for industries involving dust problems. Useful examination of cause and behaviour of dust explosions and fires. Conclusions on design of plant, maintenance of plant and elimination of sparks.

18.40 construction: theory BUILDING BOARDS: FIRE RISK

Building Boards in Relation to Fire Protection. R. C. Bevan. (FPA Journal Reprint No. 4. Fire Protection Association, 1949.)

Valuable summary of properties of various types of building board in relation

to fire risk with useful table giving results of BS 476 tests for incombustibility, rate of spread of flame and fire resistance of partitions for most types of building board. Note should be taken of effect of fixing methods and of value of various surface treatments.

18.41 construction: theory FIRE RESISTANCE

Fire Resistance Grading of Elements of Structure. (FPA Journal Reprint No. 5. Fire Protection Association, 1949.)

Explanation of method of Fire Grading to determine the class of risk involved.

Tables giving type and amount of protection for structural steel columns and beams and table of resistance of walls and partitions giving the various grades of protection. A most useful reference and a good basis for discussion where building authorities have to be approached on doubtful cases. This type of information is fairly new but is the beginning of a more scientific approach to fire protection of buildings.

20.169 construction: complete structures LAMINATED TIMBER ARCHES

Laminated Timber Arches in Glasshouse. (Building, December, 1949, pp. 436-437.)

Timber arches 32 ft. span for 100 ft. long glasshouse. No intermediate supports.

This glasshouse, designed by the TDA, is believed to be the first of its type in this country. The arches support glazing on a 60° slope on one side and on a 24° slope on the other, with a 5 ft. 3 in. wide continuous lantern on top. The arches have vertical tangents at both supports. They are glued together from 3½ in. wide laminations into tapering shapes varying in depth from 6 in. to 7½ in. The arches are at 12 ft. 5½ in. centres, with six bays of 2-ft.-wide glazing between them. Each arch is made in two parts, with a bolted metal splice at the crown. The adhesive is a synthetic resin, impervious to the moist and warm atmosphere.

20.170 construction: complete structures NEW BUILDINGS AT STOCKHOLM

New Building at Stockholm for the L. M. Ericsson Plant. (The Architect and Building News, Dec. 9, 1949, pp. 606-607.)

Reinforced concrete 8-floor laboratory block with 20-floor very slender Campanile type tower.

A new laboratory building has been erected at Stockholm as an extension to the original Ericsson plant completed five years ago. This modern 8-storey block built in reinforced concrete is surmounted by a slender radio tower, 240 ft. high, with 20 floors to be used as laboratories for short wave research. This tower is connected to the main building by short passages and fitted with an express lift. The concreting, using sliding formwork, took only three weeks.

20.171 construction: complete structures LARGE STEEL HANGARS

Port Authority Builds Huge Steel Hangars at New York International Airport. (Civil Engineering [USA], Nov., 1949, p. 71.)

Three steel hangars of 300 ft. clear span under construction. Arches of the 3-pin type.

These buildings, at present under construction and to be completed next May, are said to be the world's largest three-pin type hangars, each to accommodate four of the huge Boeing Stratocruisers. Each hangar has 18 of these 300 ft. span steel arches. Concrete piers 25 ft. high take the thrust from the 10-in. dia. abutment pins. The pins at the crown, 75 ft. above floor, are 8-in. dia. The hangars are 217 ft. deep and will provide about 200,000 sq. ft. additional floor area and another 50,000 sq. ft. for offices, etc.

This feature answers any question connected with building confidentially and free of charge. Questions to the Technical Editor, The Architects' Journal, 9, 11 and 13, Queen Anne's Gate, S.W.1.

QUESTIONS AND ANSWERS

3013 COLOUR: BIBLIOGRAPHY

Q Can you left me have a bibliography of reference books about developments in the use of colour in recent years, and particularly some reference which explains the theory and use of the Ostwald and Munsell systems?

A References for the Ostwald system are:—

(a) "Wilhelm Ostwald, Colour Science" (2 vols.), translated by J. Scott Taylor.

(b) "Colour Album," arranged by J. Scott Taylor. Both published by Winsor & Newton, Ltd., London, in 1931 and 1933, but now out of print and difficult to obtain.

(c) "Basic Colour, an interpretation of the Ostwald System," by Egbert Jacobson. Published in USA by Paul Theobald, Chicago, 1948. A copy of this book is now in the RIBA library. The Ostwald system has been adopted by the Container Corporation of America, 38, South Dearborn Street, Chicago 3, who publish excellently produced but expensive albums of colour charts.

Munsell references:—

The Munsell Colour Company Inc., 10, East Franklin Street, Baltimore 2, Maryland, USA, is the central source of information. They produce the books of charts, including a pocket edition, with explanatory booklet. They have been responsible for a considerable body of scientific information on this system, most of which has been published in the Journal of the Optical Society of America.

Production of both systems is confined, as far as is known, to the USA. Copies of both could be seen and explained at the Building Research Station, where their relative properties and uses are being studied, but where the opinion is already held that a properly conceived colour system has great potential usefulness to the architect, and that of the systems in existence Ostwald and Munsell are the two most worthy of consideration.

References on the use of colour: *Architectural Review*, 1937—five articles by Ozenfant. RIBA Journal, May, 1946—"Colour in Buildings," by William Allen. Council of Industrial Design—reprints of papers given by Dr. Hopkinson and William Allen at Colour Conference at RIBA, November, 1948.

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THE INDUSTRY

By Brian Grant

THE CASTING OF SMALL DUCTS

The casting of small ducts in concrete has always been something of a problem, the only answer, generally, being to pour the concrete round some comparatively light-weight duct in sheet metal or fibre, and to leave it in position.

The idea of using some form of inflatable rubber tube or bag is not new, but there has always been the difficulty of removing it after the concrete has set. A new type of tube, however, has been developed during the past few years in America, and is now being manufactured in this country, the marketing being in the hands of Wiggins Sankey.

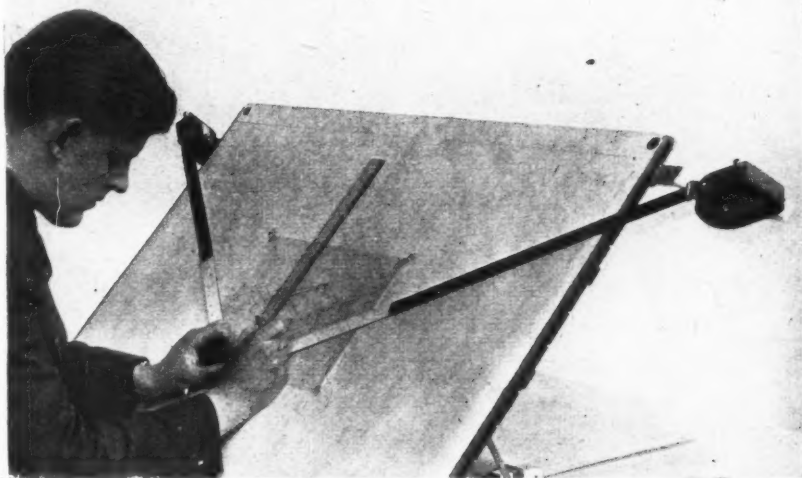
Known as Ductube, it can be used in any type of concrete, aerated, reinforced, plain or vibrated, for moulding ducts up to 3 in. diameter, straight, or in continuous or reversed curves, while larger-section ducts can be formed by wiring two or more tubes together.

In use, the tube is inflated to a pressure of from 50 to 70 lb., laid in the mould or shuttering, tied as necessary, and the concrete poured. As soon as the concrete has set the tube is deflated, and frees itself at once; it can then be pulled out and is available for re-use.

The ease with which the Ductube frees itself depends on the diagonally braided fabric core of the rubber tube, which is similar in principle to the sleeves which electricians use for pulling cables into conduit; when tension is applied the sleeves contract as they lengthen, and thus grip the wires. Conversely, in Ductube, when the diameter increases as the tube is inflated the core contracts endways, so that the length of the tube decreases uniformly by about 15 per cent. Also, since one set of the diagonal fibres in the fabric core is braided with a slightly greater tension, there is also produced a twisting movement over the whole length of the tube. (See photograph below.)

For forming the long holes necessary in beams designed for post-tensioning these tubes seem to be the obvious method. They are made in 60 ft. lengths, and two lengths can, if necessary, be poured together: sizes of finished ducts are 1, 1½, 2 and 3 in. diameter.

Other obvious uses are in precast work, where holes may be required in posts, partition blocks or floor beams, while it would quite probably be suitable for the high-voltage cable ducts so often required in factory floors. It has also been widely used in both North and South America as an alternative to conduit, the wiring being run direct in the concrete. (Wiggins Sankey, Lysia Street, Fulham, London, S.W.6.)



A perspective drawing machine. The horizon may be altered to give various perspectives. The pivots at the ends of the outriggers simulate vanishing points.

PERSPECTIVE DRAWING

The setting up of a true perspective with vanishing points well outside the drawing board is always a somewhat wearisome business, so much so that very many draughtsmen cannot be bothered with anything beyond axonometrics. On the other hand a reasonably priced drafting machine which will set up perspective rapidly and which at the same time has a series of scales which allow foreshortened dimensions to be plotted at any part of the board seems to have considerable advantages. The illustration on this page shows the Mollart Medigraph, which sells at £29 15s.

It has two adjustable horizon-bars, which can be extended from the sides of any conventional drawing board to support twin spools mounted on pivot pins fixed in the outer ends of the bars: these pivot pins form the positive left- and right-hand vanishing points for the perspective system.

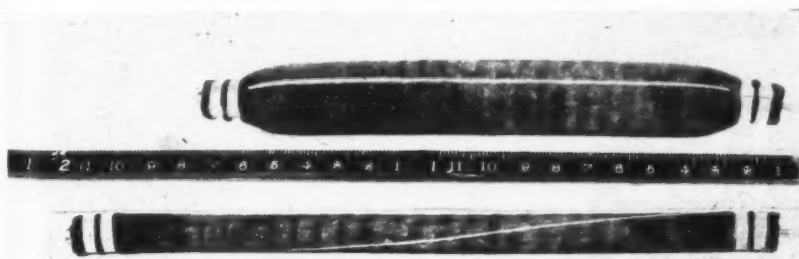
Each spool contains a steel ribbon, the free ends of which are extended to join at a circular plate carrying a Perspex rule. The rule can be moved to any part of the drawing and rotated through 360° by a plastic knob. When in use the ribbons lie flat on the drawing board, moving in and out of their spools to accommodate their length to the movement of the plastic knob about the drawing area, the ribbons being in tension under the action of an internal spring in the spool. As the ribbons always swing

about the pivot pins, they provide ruling edges continuously aligned from any point on the drawing to the left- and right-hand vanishing points, while the rule is always at hand for ruling vertical or other lines.

Each steel ribbon carries a plastic strip which is engraved on one face with two scales that give the correct foreshortening for all dimensions in the horizontal plane. Of these scales, one gives correct foreshortening for lines at 60° to the vertical centre-line and the other gives foreshortening for lines at 75° to the vertical centre-line. The angle in question is normally expressed as a compound angle (i.e. as the angle formed between both ribbons—which will equal 120° or 150° for 60° and 75° angles). The included angle formed by the ribbons at any position is indicated on a 90°–270° protractor scale engraved on the circular plate. The foreshortening scale for an angle of 120° is engraved on the opposite edge of the strip to that for the 150° angle, so that the appropriate ones are brought into action by merely reversing the strips on the ribbons.

On the reverse face of each plastic strip there are two further scales; one for foreshortening when drawing horizontal (i.e. with an included angle of 180° or when an object is at eye level) and the other for drawing an object positioned at 16.8 inches (or relative distance according to scale in use) on either side of the vertical centre-line. This latter is for use when it is required to emphasise one side of a building to show great detail without exaggerating perspective. When the protractor is moved 16.8 inches from the centre-line it will be found that the included angle formed by the ribbons is 110°, though, of course, each ribbon is not equal at 55° from the vertical.

The foreshortening scales on the strips are calculated to suit views made with the ribbons at 120° and 150° because these angles represent the two most vertical views for the general run of perspective drawings. In practice, however, foreshortened dimensions in the horizontal plane do not change greatly between the worm's-eye and the bird's-eye view, and one or the other of the two scales will give practical foreshortening over the full range of views at most eye levels, but additional scales, calculated for other angles, are obtainable. (The Mollart Engineering Co. Ltd., Kingston By-Pass, Surbiton, Surrey.)



An inflatable rubber tube for casting small ducts in concrete. The photograph shows the decrease in length as well as girth when the tube is deflated, which causes it to free itself from the concrete when set and thus be easily removed.

Buildings Illustrated

Showroom for the South-Eastern Gas Board at St. Leonards (pages 214-215.) Architect: J. C. E. Fortey. General contractor: Llewellyns (Hastings) Ltd. Sub-contractors: shop front, F. Sage & Co. Ltd.; hot water trough sink, Taylor Rustless Fitting Co.; metalwork, handles and glazed screen, J. D. Beardmore & Co.; electrical wiring, R. G. Robertson (Refrigeration) Ltd.; electrical fittings, Ionlite Ltd.; entrance soffit fitting and hot water display light fitting, Troughton & Young Ltd.; fireplaces, Bratt Colbran Ltd.; furniture, chairs, Ernest Race, and Parker Knoll Ltd.; tables, Llewellyns (Hastings) Ltd.; floor, Armstrong Cork Co.

Exhibition of European Lighting Fittings (Pages 206, 216-219.) Designers for the exhibition: Robert and Roger Nicholson. Fittings supplied by Arteluce, Milan; Malmsten, Ostberg, Nordiska Kompaniet and Svenskt Tenn, all of Stockholm; Klint, Poulsen, Den Permanente, Haandarbejtuets Fremme, and Ilums Belighus, all of Copenhagen; Robert and Roger Nicholson, Merchant Adventurers Ltd., and Troughton & Young Ltd., all of London. Furniture was loaned by Wylie & Lochhead Ltd., 45, Buchanan Street, Glasgow, C.2; Heal & Son Ltd., 195-199, Tottenham Court Road, London, W.1; Scottish Co-operative Wholesale Society Ltd., Furniture Factories, Hardgate Road, Shieldhall, Glasgow, S.W.1; H. Morris & Co. Ltd., 147, Milton Street, Glasgow, C.4; furnishing fabrics, The Rayon Industry Design Centre, 1, Upper Grosvenor Street, London, W.1; The Cotton Board Colour Design Style Centre, 19, York Street, Manchester, 2; Morton Sundour Fabrics Ltd., Dentonhill, Carlisle; Helios Ltd., Albert Mill, Bolton, Lancs.; Heal & Son Ltd., 195-199, Tottenham Court Road, London, W.1; pottery and

glass, The Royal Copenhagen Porcelain Co. Ltd., 5, Old Bond Street, London, W.1; Josiah Wedgwood & Sons, Ltd., Barlaston, Stoke-on-Trent; Heal & Son Ltd., 195-199, Tottenham Court Road, London, W.1; Pan Gift Shop, 255, Bath Street, Glasgow, C.2; Booth & Colclough Ltd., 35, Market Square, Hanley, Stoke-on-Trent; objets d'art, Corporation of Glasgow Art Galleries and Museum, Kelvingrove, Glasgow, C.3; rugs, mats, tweeds and woodenware, Highland Home Industries Ltd., 114a, George Street, Edinburgh, 2; Pan Gift Shop, 255, Bath Street, Glasgow, C.2; household effects, Wylie & Lochhead Ltd., 45, Buchanan Street, Glasgow, C.2; books, John Smith & Son (Glasgow) Ltd., 57, St. Vincent Street, Glasgow; gardening tools, Dobbie & Co. Ltd., 13, George Square, Glasgow; fibreglass hangings, Fibreglass Ltd., 136, Renfield Street, Glasgow, C.2.

The Finnish Legation (Pages 220-223.) Architect: Miss June Park, A.R.I.B.A. General contractor: Marshall Andrews & Co. Ltd. Sub-contractors: woodblock flooring, parquet and ply, Horsley Smith & Co.; patent flooring, Semtex Ltd.; central heating, The Hobbell Engineering Co. Ltd.; grates, electric fires, mantels, Bratt Colbran Ltd.; refrigerators, Electricalwork; gasfitting, Gas Light & Coke Co.; boilers, Ideal Boilers & Radiators, Ltd.; electric wiring, A. H. Cornwall & Sons, Ltd.; electric light fixtures, furniture, "Aertek," and Stockmans, Helsinki; sanitary fittings, Stilson's Sanitary Fittings Ltd., and W. N. Froy & Sons Ltd.; door furniture, S. Grahame Ross Ltd., and Dryad Metal Works Ltd.; window furniture, Comyn Ching & Co. Ltd.; bells, A. H. Cornwall & Sons Ltd.; telephones, G.P.O. and Reliance Telephone Co. Ltd.; metalwork, J. Starkie Gardiner Ltd., and Henry Greene; joinery, D. Burkle & Son Ltd., and Linden Doors Ltd.; textiles, Heal's Contracts Ltd.;

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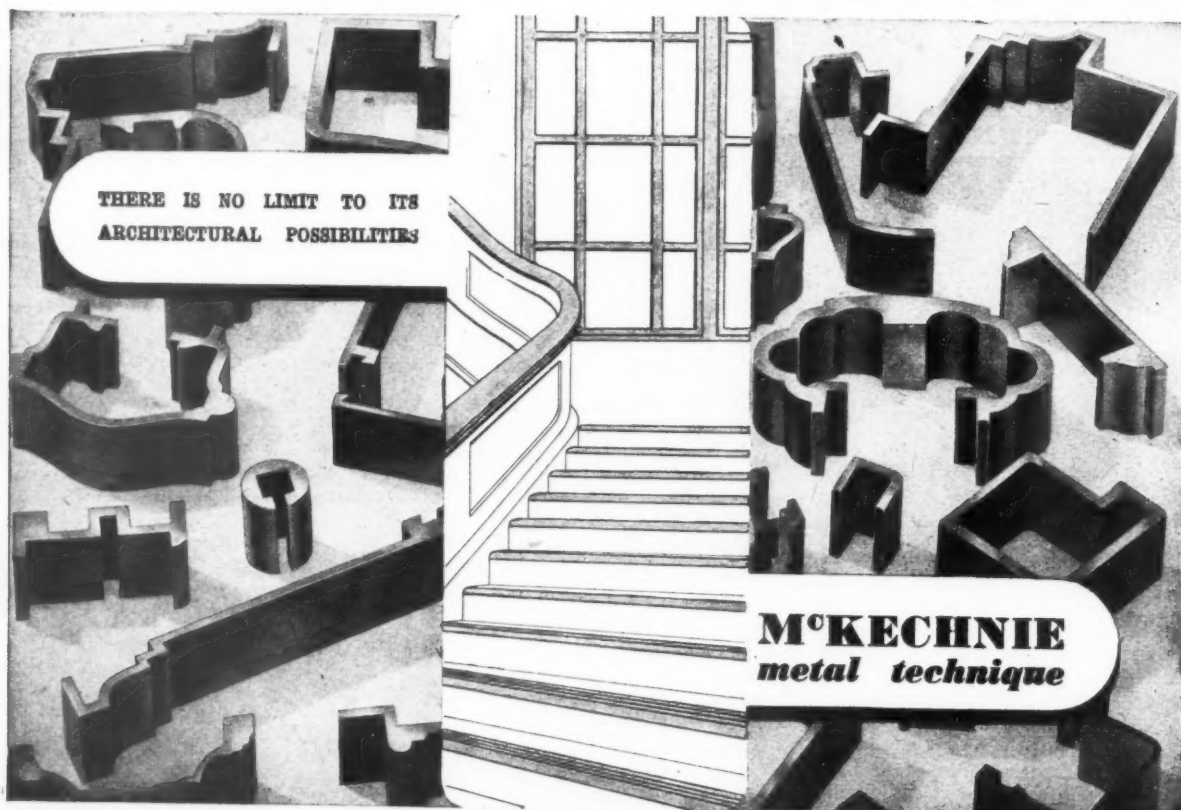
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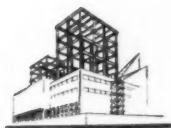
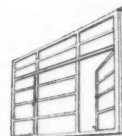
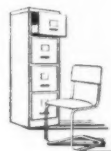
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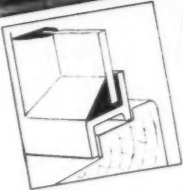
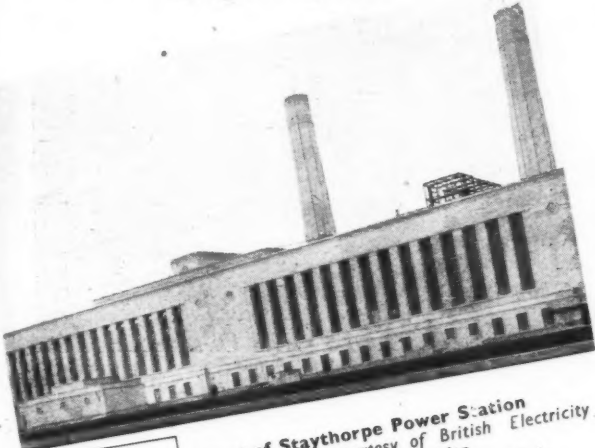
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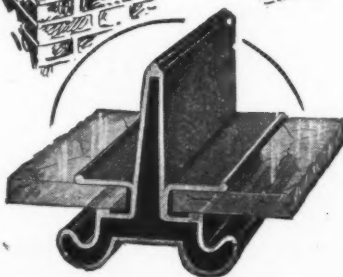
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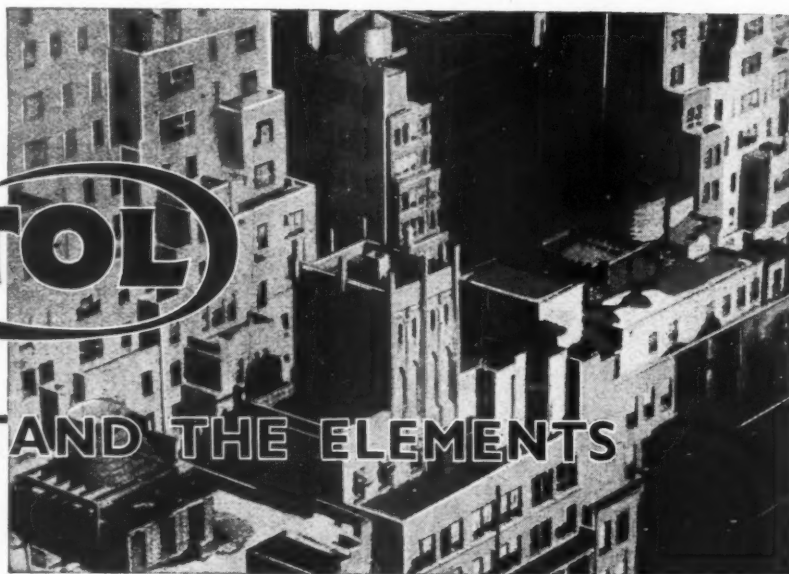
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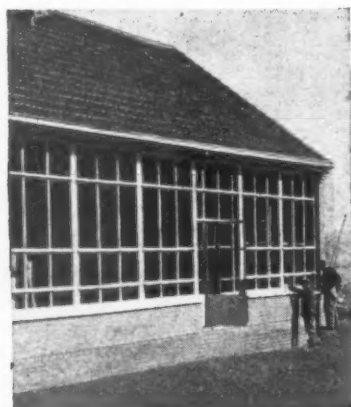
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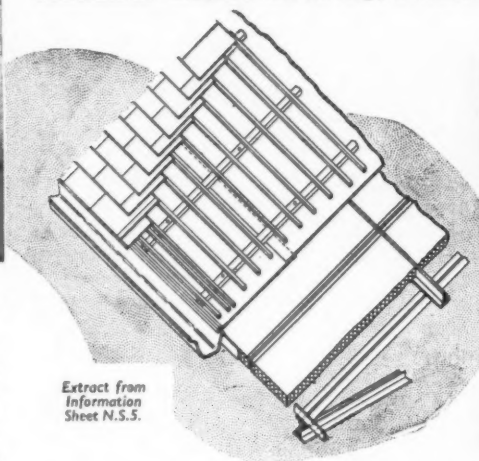
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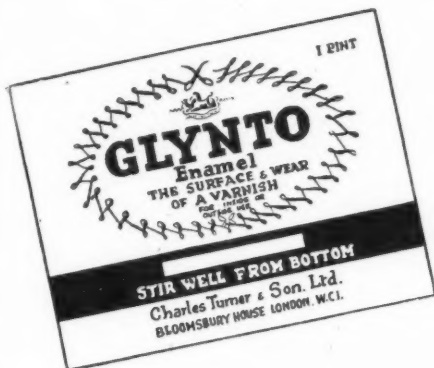
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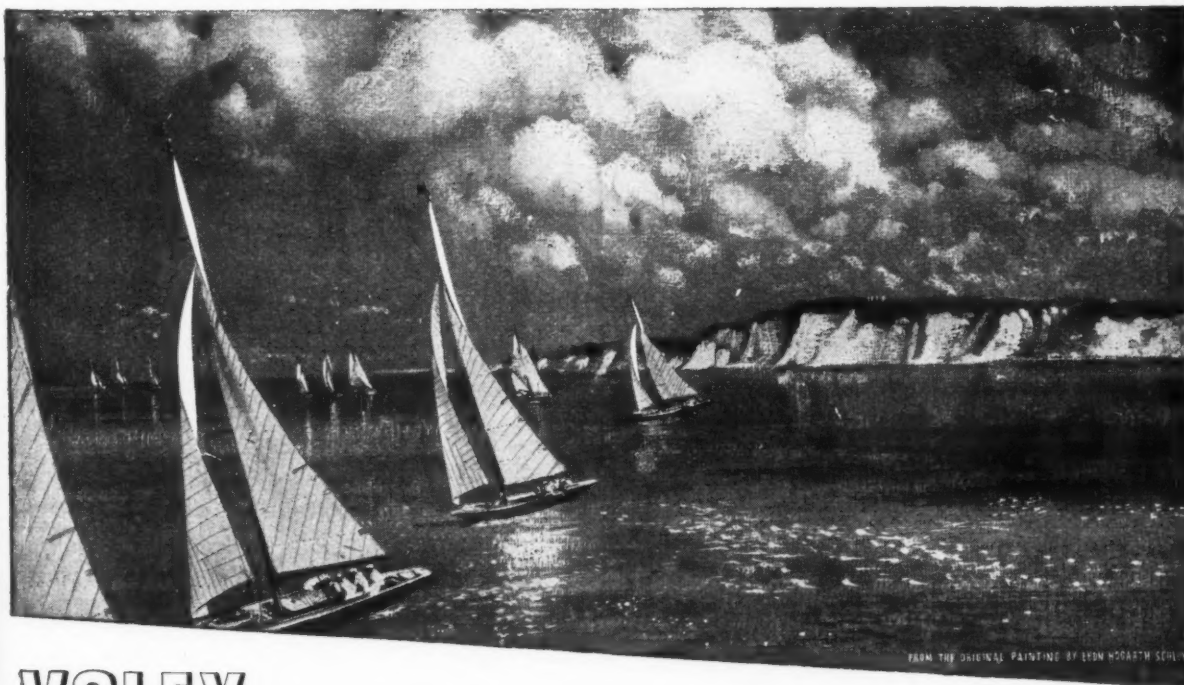
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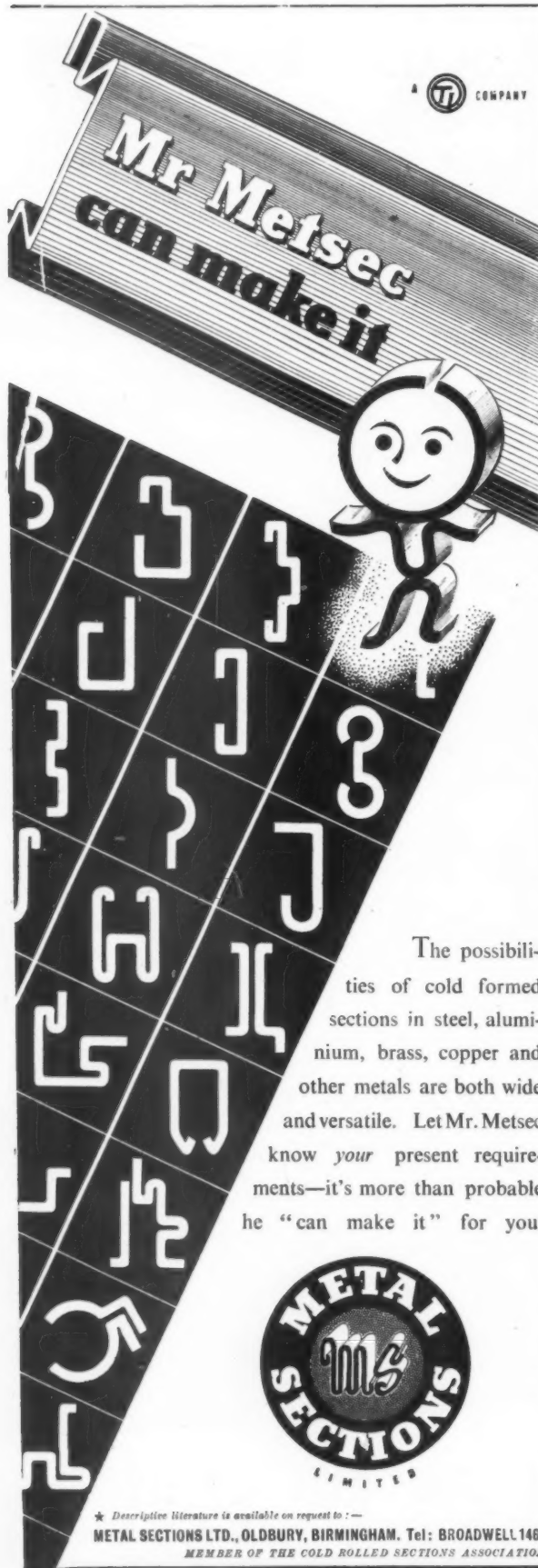


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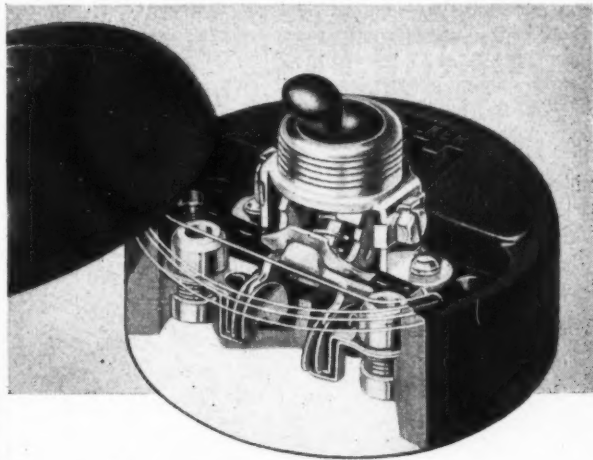


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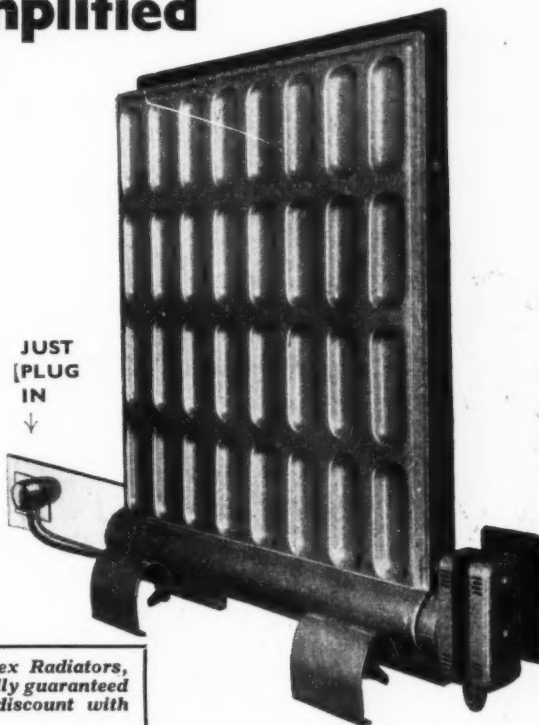
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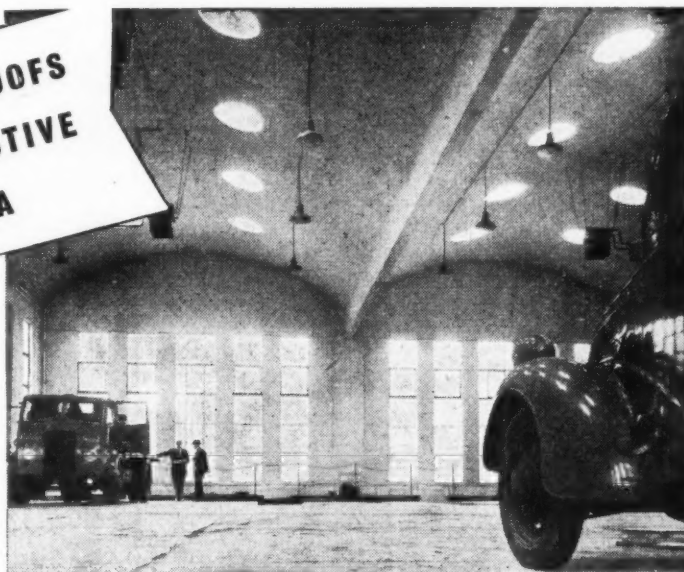


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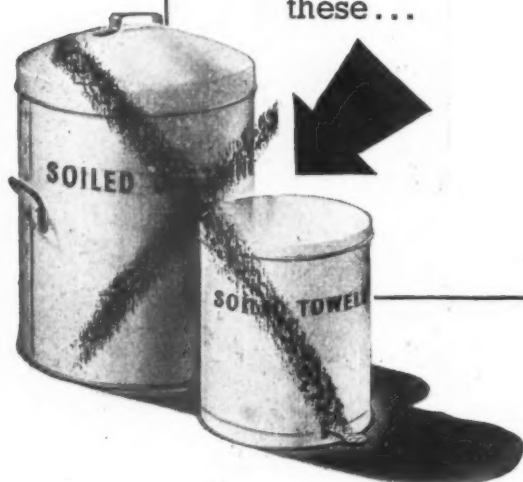
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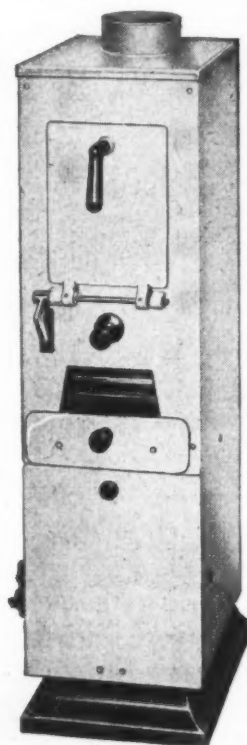
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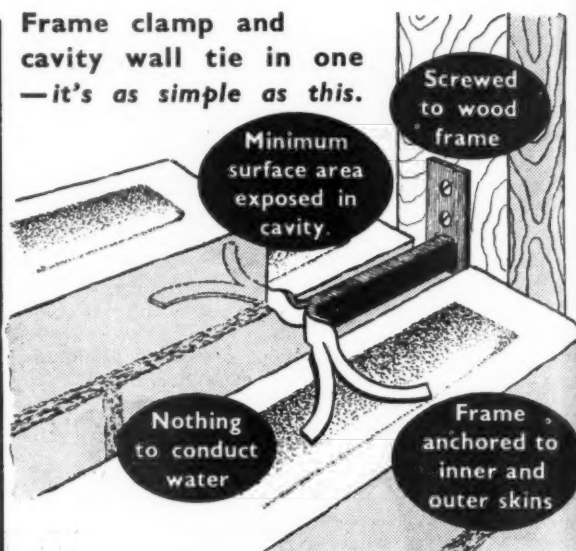
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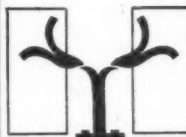


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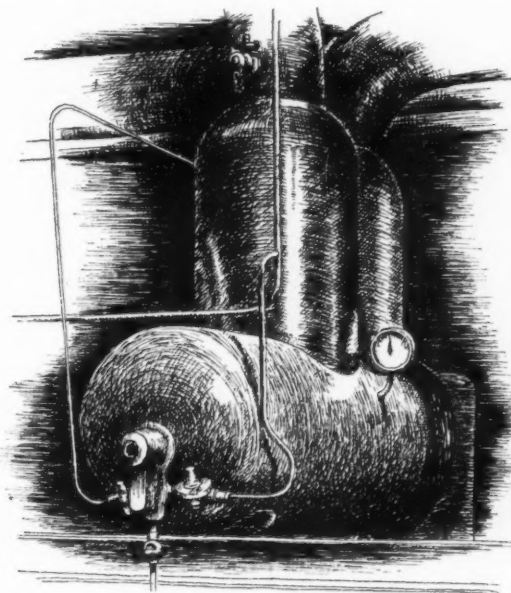
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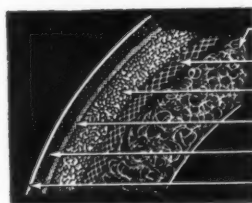
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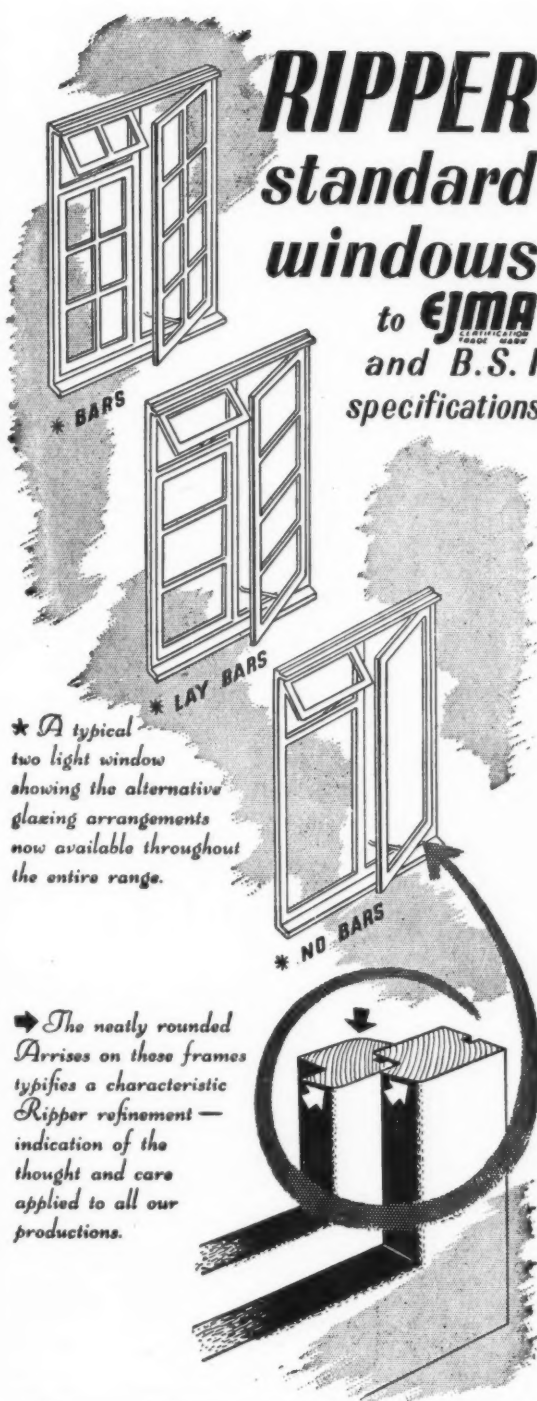
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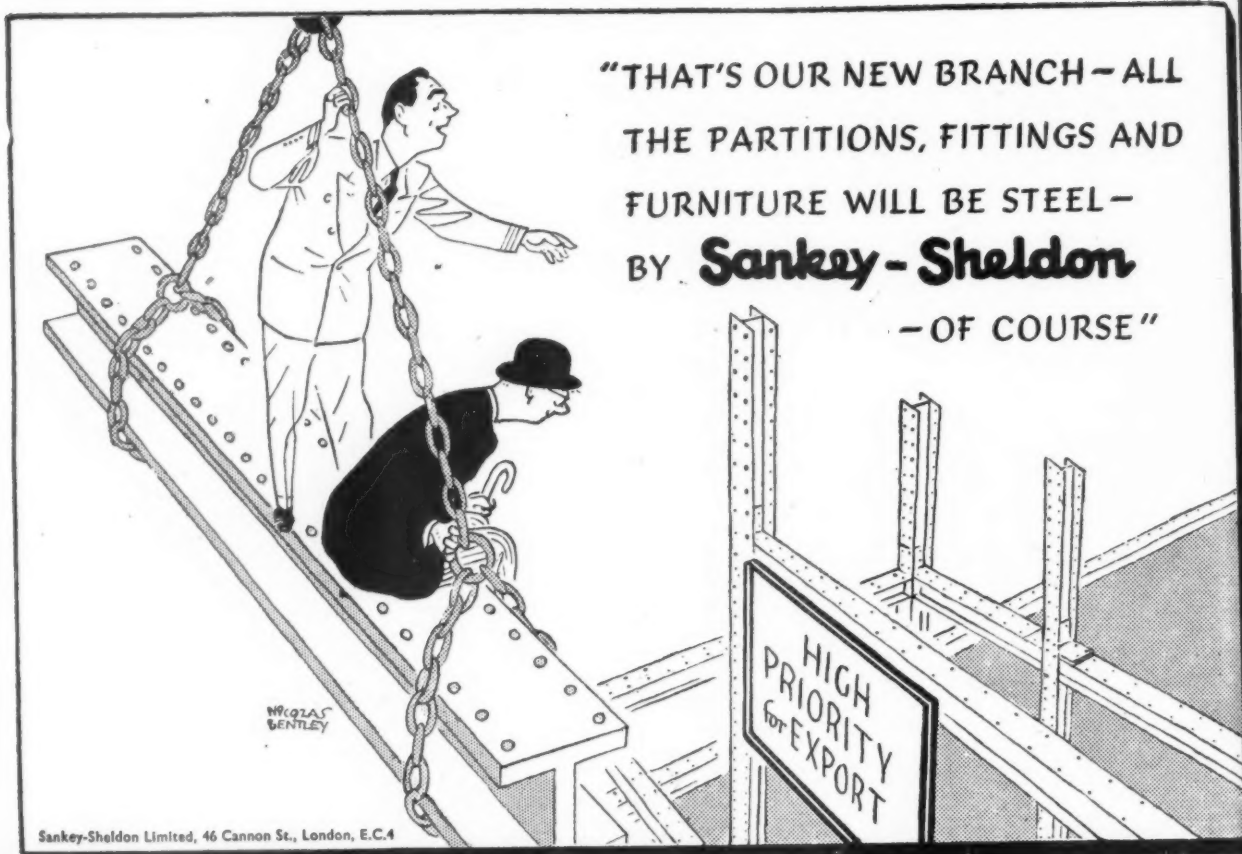


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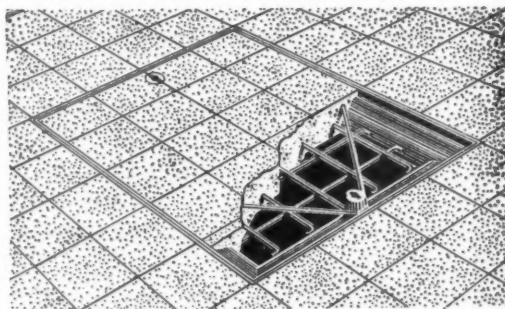
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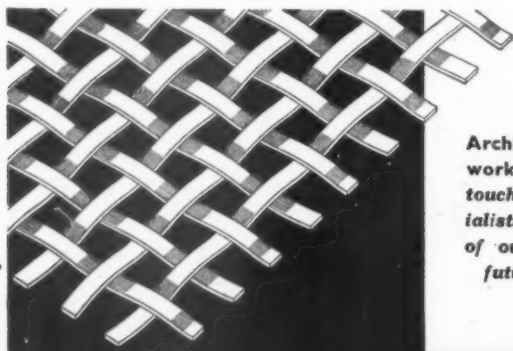
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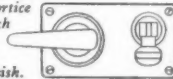
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CLASSIFIED ADVERTISEMENTS

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.

Available only to applicants excepted from the Control of Engagement Order, 1947.

Public and Official Announcements

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

THE INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS maintains a register of qualified architects and surveyors (including assistants) remaining posts, and invites applications from public authorities and private practitioners having staff vacancies. ADDRESS: EMPLOYMENT REGISTER, WARREN PARK, WHYTELAKE, Tel.: Uplands 0935. 991

MINISTRY OF WORKS.

There are vacancies in the Chief Architect's Division for ARCHITECTURAL ASSISTANTS, with recognized training and fair experience. Successful candidates will be employed in London and elsewhere on a wide variety of Public Buildings, including Atomic Energy and other Research Establishments, Telephone Exchanges, and Housing. Similar vacancies also exist for ASSISTANTS, with specialized knowledge and experience in stonemasonry, particularly in detailing and jointing of ashlar and carved stonework. Salary: Architectural Assistants, £300-£525 per annum; Leading Architectural Assistants, £500-£625, plus overtime. Starting pay will be assessed according to age, qualifications and experience. These rates are for London; a deduction is made in the Provinces.

Although these are not established posts, some of them have long-term possibilities, and competitions are held periodically to fill established vacancies. Apply in writing, stating age, nationality, full details of experience, and locality preferred, to: Chief Architect, W.C.10/T. Ministry of Works, Shell House, London, S.W.1. 2055

LONDON COUNTY COUNCIL.

Applications are invited for unestablished positions of (i) ARCHITECT, Grade III (salaries up to £700 a year) and (ii) ARCHITECTURAL ASSISTANTS (salaries up to £550 a year), in the Housing and Valuation Department. Commencing salaries in either grade will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Acts, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

Successful candidates will be required to undertake the design, layout and preparation of working drawings for housing schemes (cottages and multi-storey flats), and will be employed in the Housing Architect's Division. Preference will be given to candidates holding a recognized professional qualification.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope required, and quote Ref. G.R.3). Canvassing disqualifies. (2259) 1046

LONDON COUNTY COUNCIL.

ARCHITECTS' DEPARTMENT—PLANNING STAFF.

Applications are invited for positions of PLANNING OFFICER, Grade I (£240-£260), Grade II (£200-£240), and Grade III (£150-£200), and TECHNICAL ASSISTANT (up to £180). The positions are superannuable. Candidates for Grade I positions should have architectural and town planning qualifications, and will be engaged on Reconstruction Areas and Detailed Planning. Candidates for Grade II and III positions should have architectural or surveying qualifications with town planning qualification in addition, and will be engaged on Development Plan, Development Applications and Detailed Planning. Technical Assistants are required for work on Development Applications and Detailed Planning. Particulars and application forms from the Architect (AR/P/P), The County Hall, Westminster Bridge, S.E.1, enclosing stamped addressed foolscap envelope. Canvassing disqualifies. (11) 3154

CITY OF PORTSMOUTH.

CITY ARCHITECTS' DEPARTMENT.

Applications are invited for appointments of PRINCIPAL ASSISTANT ARCHITECTS, Grade VI, £595-£660. Applicants should be Associates R.I.B.A., with considerable experience in housing and/or schools work, but not necessarily with a local authority. A social subsistence allowance may be paid to a married applicant for a period of six months after taking up the appointment if he is unable to secure housing accommodation immediately. Applications, setting out in tabular form, name, age, qualifications, present post and salary, previous posts with dates, details of experience, with names of three referees, must be delivered to the undersigned not later than 10 a.m. on Monday, 6th March, 1950.

Canvassing will disqualify. V. BLANCHARD, Town Clerk.

City Council Chambers, 1, Clarence Parade, Southsea. 3469 6th February, 1950.

COUNTY BOROUGH OF GREAT YARMOUTH.

APPOINTMENT OF CHIEF ASSISTANT ARCHITECT.

Applications are invited for the appointment of Chief Assistant Architect, in the Borough Engineer's Department, at a salary in accordance with A.P.T., Grade VII (£635-£710 per annum) of the National Conditions of Service. A car allowance of £90 per annum will be paid in connection with this appointment.

Applicants should be Associates of the Royal Institute of British Architects, and must have had considerable experience of design and construction, particularly in relation to housing and public building.

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

Applications, stating age, qualifications and experience, together with the names of three persons to whom reference can be made, should reach me not later than 17th February, 1950.

Canvassing will be deemed a disqualification, and candidates must disclose any relationship to any member of or holder of any senior office under the Council. Candidates who fail to do so will be disqualified, and, if appointed, liable to dismissal without notice.

TARRA CONWAY.

Town Clerk. Town Hall, Great Yarmouth. 3346 27th January, 1950.

CITY AND COUNTY OF THE CITY OF LINCOLN.

CITY ARCHITECTS' DEPARTMENT.

Applications are invited for the appointment of an ARCHITECTURAL ASSISTANT, on A.P. and T. Division, Grade V, of the National Scale of Salaries (£520 to £570), on the established staff of the City Architect's Department.

Candidates should have passed the Intermediate Examination of the Royal Institute of British Architects, and preferably have a good knowledge and experience of Schools or Housing.

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

Applications, stating age and experience, together with the names of two persons to whom reference may be made, should be delivered to P. F. Burridge, F.R.I.B.A., City Architect, Stamp End, Lincoln, not later than 26th February, 1950.

Canvassing, either directly or indirectly, will disqualify.

J. HARPER SMITH.

Town Clerk's Office, Lincoln. 3366 January, 1950.

BOROUGH OF EALING.

BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

Applications are invited for the permanent appointment of two Architectural Assistants, in accordance with Grade VI of the A.P.T. Division of the National Joint Council's Scales, at a salary commencing at £595 per annum, and rising by annual increments to £660 per annum, plus £30 London weighting.

Applicants must either be Associate Members of the Royal Institute of British Architects or possess a recognised equivalent qualification. Preference will be given to candidates with Municipal experience.

The Council is unable to provide housing accommodation for the successful candidate.

Forms of application, together with conditions of appointment, may be obtained from the Borough Engineer and Surveyor, Town Hall, Ealing, W.5, and must be returned to me not later than the 27th February, 1950.

E. J. COPE-BROWN.

Town Clerk. Town Hall, Ealing, W.5. 3377

METROPOLITAN BOROUGH OF HAMPSTEAD.

Applications are invited for the appointment of an ARCHITECTURAL ASSISTANT, on the Temporary Staff of the Housing Architect's Section of the Borough Engineer and Surveyor's Department, at a salary in accordance with Grade V of A.P.T. Division, National Scales of Salaries, £520 to £570 per annum, plus London weighting. Age limit: 45 years of age on the 1st January, 1950.

Applicants should be suitably qualified, preferably Members of the Royal Institute of British Architects, and should have experience in general house planning and design, adaptations and conversions, and be able to prepare working drawings and specifications.

Applications, stating age, examination qualifications, present and past appointments, with dates and salaries, detailed particulars of experience, and accompanied by copies of three recent testimonials, or names of three referees, must be delivered to me in a sealed envelope endorsed "Architectural Assistant," not later than 12 noon on Friday, 24th February, 1950.

Applicants must disclose in writing whether they are, to their knowledge, related to any member or senior officer of the Council.

The Council is unable to provide housing accommodation.

Canvassing will disqualify.

P. H. HARROLD.

Town Clerk. Town Hall, Haverstock Hill, N.W.5. 3429 9th February, 1950.

COUNTY BOROUGH OF GATESHEAD.

APPOINTMENT OF TECHNICAL ASSISTANTS.

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

(a) ONE SENIOR TOWN PLANNING ASSISTANT—Grade VII (£635-£690)—who must be qualified by examination in Town Planning, and preference will be given where a recognised qualification in Civil Engineering or Architecture is also held. Good experience in Town Planning and redevelopment work in built-up areas is necessary.

(b) ONE TOWN PLANNING ASSISTANT—Grade VI (£595-£660)—who must be qualified by examination in Town Planning, and preference will be given where a recognised qualification in Civil Engineering or Architecture is also held. Experience in Town Planning and redevelopment work in built-up areas is necessary.

(c) THREE ENGINEERING ASSISTANTS—Grade VI (£595-£660)—who must be Associate Members of the Institution of Civil Engineers, and/or the Institution of Municipal Engineers, and have had experience in the design and construction of Roads, Bridges, and Sewerage Works, etc.

(d) ONE SURVEYOR-DRAUGHTSMAN—Grade II (£420-£465)—who must be a competent Surveyor and a neat and expeditious Draughtsman, capable of making large surveys, setting out, etc.

The above appointments, which are terminable by one month's notice on either side, are subject to the Local Government Superannuation Acts, and the successful candidates will be required to pass a medical examination.

Applications, stating age, qualifications, training, experience, present and past appointments, and accompanied by not more than three recent testimonials, must be sent to Mr. A. J. McGreor, Borough Surveyor, Municipal Buildings, Swinburn Street, Gateshead, 8, by Saturday, 11th March, 1950.

Candidates must declare their relationship, if any, with any member or senior official of the Council.

J. W. PORTER.

Town Clerk. Town Hall, Gateshead, 8. 3466

COUNTY BOROUGH OF EAST HAM.

APPOINTMENT OF JUNIOR ASSISTANT PLANNING OFFICER.

Applications are invited for the appointment of a Junior Assistant Planning Officer, Grade A.P.T. I (salary £390-£435 per annum), plus London weighting, in the Town Planning Section of the Borough Engineer's Department.

Candidates must be competent Draughtsmen, and have general knowledge and experience of Town Planning work.

Housing accommodation is not provided, but the Council will be prepared to consider an application for a subsistence allowance, in an appropriate case, from the person appointed who may be unable to obtain suitable accommodation.

Application forms, obtainable from the undersigned, must be returned not later than 1st March, 1950.

H. A. EDWARDS.

Town Clerk. Town Hall, East Ham, E.6. 3465 6th February, 1950.

THE NORTH-WESTERN ELECTRICITY BOARD, NO. 2 SUB AREA.

APPOINTMENT OF DRAUGHTSMEN—SUB AREA HEADQUARTERS.

Applications are invited for the following positions on the staff of the Drawing Office at the Headquarters of the No. 2 Sub Area, which are at present in Manchester, later to be at Bolton.

SENIOR DRAUGHTSMEN. Provisional salary and conditions within the Board's Scale of £525-£625 per annum.

ENGINEERING DRAUGHTSMEN. Provisional salary and conditions within the Board's Scale of £400-£500 per annum.

JUNIOR DRAUGHTSMEN AND TRACERS. Provisional salary and conditions within the Board's Scale of £275-£388 per annum.

PHOTOGRAPH ASSISTANTS. Provisional salary appropriate to age in accordance with the Interim General Clerical Scale, i.e., £135-£385 per annum.

These salaries are provisional and are subject to negotiation with the appropriate body. The posts are superannuable.

Applicants must have had a good general and technical education and training, and preferably hold an Ordinary National Certificate in electrical or mechanical engineering. They should be neat and expeditious draughtsmen, with experience in connection with electrical diagrams and design, layout and construction of substations, distribution systems, switchgear, protective gear, control circuits and mains records. A knowledge of overhead construction and details of pole fittings and the preparation of plans for wayleaves, notices, etc., is also required.

Applicants for the positions of Photoprint Assistants must have had experience, preferably with a printing firm, and be competent to produce prints by Ferro, Dye-line, or True to Scale processes, and have knowledge and practical experience of Photostat or Barograph Machines.

Applications, specifying appointment for which application is made, stating age, details of education, qualifications and experience, present position and salary, should be received by the Establishment Officer, The North-Western Electricity Board, Cheetwood Road, Manchester, 8, not later than Saturday, 25th February, 1950. 3419

**NOTTINGHAMSHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.**

Applications are invited for the following appointments, namely—

DEVELOPMENT CONTROL SECTION:
TWO SENIOR PLANNING ASSISTANTS—one at Nottingham, one at Mansfield Office. Salary £595 to £660 p.a. Applicants should have had considerable experience in the control of development and the general administrative work connected with a Local Authority Planning Office.

SURVEY AND DEVELOPMENT PLAN SECTION:

THREE PLANNING ASSISTANTS, at Nottingham. Salary £520 to £570 p.a. Applicants should have had experience in the execution of Factual Surveys, design and layout, and work required in connection with the preparation of a County Development Plan.

Applicants for the above posts should hold the qualification of Corporate Member of the Town Planning Institute. An additional qualification in engineering, surveying, or architecture will be an advantage.

Further particulars are obtainable from the County Director of Planning, Shire Hall, Nottingham, by whom completed applications must be received not later than 28th February, 1950. Canvassing will disqualify.

K. TWEEDALE MEABY,

Clerk of the County Council. 3447

**COUNTY BOROUGH OF HUDDERSFIELD
EDUCATION COMMITTEE.**

Applications are invited for the following appointments to the Staff of the Education Architect (Geo. Crossley, F.R.I.B.A.):—

TWO ARCHITECTURAL ASSISTANTS.

A.P.T. Grade III (£450-£495). Preference will be given to candidates with accepted professional qualifications and experience in the design and erection of modern school buildings.

The appointments will be subject to one month's written notice on either side, expiring on the last day of any month; to the successful applicants passing a medical examination; to the provisions of the Local Government Superannuation Act, 1937, and to the Conditions of Service of the National Joint Council.

Applications, stating age, qualifications, present appointment, experience, etc., together with copies of two recent testimonials, endorsed "Architectural Assistant," should be submitted to the undersigned not later than 10 a.m. Monday, the 28th February, 1950.

H. KAY,

Director of Education. Education Offices, Peel Street, Huddersfield. 3421

**HERTFORDSHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.**

Applications are invited for the appointment of **TWO PLANNING ASSISTANTS**, to be engaged upon the preparation of the County Development Plan (the County Survey having been largely completed). In the first instance both will be required to work at the West Herts. Divisional Planning Office at Watford.

Applicants should be Associate Members of the Town Planning Institute. Previous experience in the preparation of planning proposals and reports and skill in draughtsmanship is essential. Qualifications in Architecture, Engineering, Surveying or Landscape Design and ownership of a car will be an advantage.

Both appointments are on Grade VI (salary £595, rising to £660 per annum) upon the permanent staff, and subject to the provisions of the Local Government (Superannuation) Act, 1937. Forms of application from the County Planning Office, County Hall, Hertford. Closing date 7th March, 1950. 3461

**COUNTY BOROUGH OF HALIFAX.
BOROUGH ENGINEER'S DEPARTMENT.**

Applications are invited for the following appointments—

ARCHITECTURAL:

(1) **CHIEF ARCHITECTURAL ASSISTANT** (General). Salary in accordance with Scale VII, A.P.T. (£635-£710).

(2) **ARCHITECTURAL ASSISTANT** (General). Salary A.P.T. V (£520-£570).

(3) **ARCHITECTURAL ASSISTANT** (Schools). Salary A.P.T. V (£520-£570).

ENGINEERING:

(4) **ENGINEERING ASSISTANT**. Salary A.P.T. V (£520-£570).

TOWN PLANNING:

(5) **TOWN PLANNING ASSISTANT**. Salary A.P.T. IV (£480-£525).

(6) **TOWN PLANNING ASSISTANT**. Salary National Scale, Misc. I (£315-£360).

BUILDING INSPECTING:

(7) **BUILDING INSPECTOR**. Salary A.P.T. II (£420-£465).

Candidates should possess appropriate technical qualifications, and will be required to pass a medical examination. The appointments will be subject to the conditions of service adopted by the Corporation, and to the Local Government Superannuation Act, 1937.

Housing accommodation will, if necessary, be made available to candidates taking up the Architectural positions.

Applications, stating age, qualifications, present position, salary and experience, accompanied by copies of three recent testimonials, should be appropriately endorsed and delivered to the undersigned not later than Wednesday, 1st March, 1950.

RICHARD DE Z. HALL,

Town Clerk.

Town Hall, Halifax.

6th February, 1950.

3457

**COUNTY BOROUGH OF MERTHYR TYDFIL.
APPOINTMENT OF JUNIOR ARCHITECTURAL ASSISTANT.**

Applications are invited for the appointment of Junior Architectural Assistant in the Borough Engineer's Department. The salary will be in accordance with Grade A.P.T. IV (£450-£515 to £525 per annum) of the National Joint Council Scale of Salaries.

Candidates must have passed the Intermediate R.I.B.A. examination and have had at least two years' experience after attaining that qualification.

The appointment will be subject to the Scheme of Conditions of Service of the National Joint Council, the provision of the Local Government Superannuation Act, the passing of a satisfactory medical examination. The appointment will be terminable by one month's notice on either side.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should be delivered to the undersigned not later than Thursday, the 23rd day of February, 1950.

Canvassing in any form will be deemed a disqualification, and applicants must disclose in writing whether they are related to any member or senior officer of the Council.

EDWARD ROBERTS,

Town Clerk.

Town Hall, Merthyr Tydfil.

6th February, 1950.

3440

**FIFE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT,
CUPAR.**

Applications are invited for the following appointments:—

(a) **ARCHITECTURAL ASSISTANTS.** Candidates must be qualified Architects, under 45 years of age, with previous experience of local authority schemes, particularly housing and schools. Salary £520, rising by annual increments to £610 per annum, and a house may be made available for the successful applicant.

(b) **ARCHITECTURAL DRAUGHTSMEN (THREE).** Candidates must have had experience in an architectural drawing office, and be quick and accurate draughtsmen. Salary £350-£420 to £450 per annum. A house may be provided for the suitable applicants.

The foregoing appointments are superannuable, and successful candidates will be required to pass a medical test. Applications, stating age, experience, qualifications, and post applied for, accompanied by recent testimonials, to be lodged with the undersigned by 24th February, 1950. No canvassing.

J. M. MITCHELL,

County Clerk.

County Buildings, Cupar.

3rd February, 1950.

3427

**CORPORATION OF THE CITY OF
ABERDEEN.****TOWN PLANNING DEPARTMENT.**

Applications are invited for the following posts in the above department:—

(1) **DRAUGHTSMEN (TWO)**, at a salary scale of £395 per annum, rising by annual increments to a maximum of £440. Applicants must have had considerable drawing office experience.

(2) **DEVELOPMENT INSPECTOR**, at a salary scale of £375 per annum, rising by annual increments to a maximum of £420. Applicants should have a thorough knowledge of building construction, with experience in the examination of plans deposited under the Public General and Local Acts and the inspection of works in progress. Preference will be given to applicants holding the Junior Leaving Certificate, together with one or more of the appropriate technical Certificates.

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

Forms of application (which should be submitted in duplicate) may be obtained from The Director of Town Planning, 5, Bon-Accord Crescent, Aberdeen, to whom they should be returned on or before 23rd February, 1950.

J. C. RENNIE,

Town Clerk.

Town House, Aberdeen.

27th January, 1950.

3420

**ESSEX EDUCATION COMMITTEE.
SOUTH-WEST ESSEX TECHNICAL COLLEGE
AND SCHOOL OF ART, FOREST ROAD,
WALTHAMSTOW, E.17.**

Required permanent full-time **STUDIO MASTER AND LECTURER IN ARCHITECTURE.** The post is one of special responsibility in the Department of Architecture and Building, primarily for assisting with full-time day and evening courses for the Intermediate and Final examinations of the Royal Institute of British Architects. Previous teaching experience is not essential.

Salary scale: £300-£515-£555, with the addition of a London allowance of £36 or £48, according to age, plus allowances up to £45 for recognised full-time training and £30 for graduateship qualifications. In fixing the basic salary, up to twelve increments may be allowed for suitable professional and industrial experience. The allowance in respect of special responsibility may be up to £100 per annum.

Applications (no forms), giving full particulars of training, qualifications, and experience, should be submitted to the Clerk to the Governors, at the College, within two weeks of the appearance of this advertisement.

D. N. BUNGEY,

Acting Chief Education Officer.

3449

**EASTERN REGIONAL HOSPITAL BOARD.
REGIONAL ARCHITECTS' DEPARTMENT.**

Applications are invited for appointment as **ARCHITECTURAL ASSISTANT, A.P.T., Grade III.** Salary £450-£495. Applicants should have passed the Intermediate examination of the R.I.B.A., have had some experience in an architect's office, and be capable of undertaking surveys and preparing working drawings under supervision. The appointment is subject to the National Health Service (Scotland) (Superannuation) Regulations, 1948, and to the passing of a medical examination, and will be terminable by one month's notice on either side.

Canvassing in any form will disqualify.

Applications, with the names of three referees, should be addressed to the Secretary, Eastern Regional Hospital Board, "Bracknowe," 430, Blackness Road, Dundee, and lodged not later than 4th March, 1950. 3433

**WEST SUSSEX COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.**

Applications are invited for the following appointments, at salaries in accordance with the National Scales of Salaries (bonus consolidated):—

(a) **ASSISTANT QUANTITY SURVEYOR.** A.P.T. Division, Grade V (salary £520 to £570 per annum).

(b) **ASSISTANT MEASURING SURVEYOR AND CLERK OF WORKS, A.P.T. Division.** Grade III (salary £450 to £495 per annum).

(c) **ASSISTANT ARCHITECT, A.P.T. Division.** Grade II (salary £420 to £465 per annum).

(d) **JUNIOR DRAUGHTSMAN.** General Division (salary according to age—male, rising to £385 per annum at 32).

Further particulars should be obtained from the County Architect, County Hall, Chichester, to whom detailed applications must be submitted not later than the 24th February, 1950.

T. C. HAYWARD,

Clerk of the County Council.

County Hall, Chichester.

3rd February, 1950.

3416

**COUNTY BOROUGH OF SOUTH SHIELDS.
APPOINTMENT OF PLANNING ASSISTANTS.**

Applications are invited for the permanent appointment of **Planning Assistants** in the office of the Borough Engineer.

The appointment will be superannuable, and salary will be paid up to A.P.T. Grade VI, according to qualifications and experience, in accordance with the N.J.C. grading decisions.

Canvassing will be a disqualification, and applicants must disclose any relationship to members or senior officers of the Council.

Applications, on forms to be obtained from the Borough Engineer, Town Hall, South Shields, should be returned not later than Monday, the 27th February, 1950.

HAROLD ATREY,

Town Clerk.

Town Hall, South Shields.

28th January, 1950.

3365

**SURREY COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.**

Applications are invited for the appointments of **ARCHITECTURAL ASSISTANTS**, between the Grades of II, III and IV, with salaries ranging from £420-£525, plus London allowance of up to £30 per annum, according to age. Selection of candidates for individual grades will be in accordance with experience.

Applicants must be of good general training and give full details in their applications, and 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 the provisions of the Local Government Act, 1937, and the successful applicants will be required to pass a medical examination.

Applications, stating age, qualifications and experience, and accompanied by copies of three recent testimonials, should be sent to the County Architect, Surrey County Council, County Hall, Kingston-upon-Thames, not later than the 18th February, 1950.

Canvassing, either directly or indirectly, will disqualify a candidate from consideration.

The Council will be unable to provide any housing accommodation, and the successful applicants will be required to make their own arrangements in this direction.

DUDLEY AUKLAND,

Clerk of the Council.

County Hall, Kingston-upon-Thames.

3357

**BOROUGH OF SWINDON.
APPOINTMENT OF SENIOR ASSISTANT
ARCHITECT AND PLANNING OFFICER.**

Applications are invited for the above appointment in the Borough Architect and Planning Officer's Department, at a salary in accordance with A.P.T. Grade VII (£635-£710) of the National Scale of Salaries.

Applicants should have good planning experience and a recognised qualification in architecture, and preference will be given to those possessing a planning qualification.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, and to the passing of a medical examination, if required, and is terminable on one month's notice on either side.

Applications, on forms obtainable from me, must be returned not later than 25th February, 1950.

Canvassing in any form will be deemed a disqualification.

D. MURRAY JOHN,

Town Clerk.

Civic Offices, Swindon.

6th February, 1950.

3442

THE NORTH-WESTERN ELECTRICITY BOARD, NO. 2 SUB AREA.
APPOINTMENT OF DRAUGHTSMEN AND ASSISTANT DRAUGHTSMEN—DISTRICTS.
 Applications are invited for the positions of Draughtsmen, etc., in the following District Offices—

SENIOR DRAUGHTSMEN—WIGAN AND LEIGH DISTRICTS.
 Salary and conditions within the range of the Board's scale, i.e., £525-£625 per annum.

ENGINEERING DRAUGHTSMEN—WIGAN AND KEARSLEY DISTRICTS.

Salary and conditions within the range of the Board's scale, i.e., £400-£500 per annum.

JUNIOR DRAUGHTSMEN—BOLTON AND LEIGH DISTRICTS.

Salary and conditions within the range of the Board's scale, i.e., £75-£388 per annum.

These salaries are provisional and are subject to negotiation with the appropriate body. The posts are supernumerary.

Applicants must have had a good general and technical education and training, and preferably hold an Ordinary National Certificate in electrical or mechanical engineering. They should be neat and expeditious draughtsmen, with experience in connection with electrical diagrams and design, layout and construction of substations, distribution systems, switchgear, protective gear, control circuits and mains records. A knowledge of overhead construction and details of pole fittings and the preparation of plans for wayleaves, notices, etc., is also required.

Applications, stating age, education, qualifications and experience, present position and salary, should be received by the Establishment Officer, The North-Western Electricity Board, Cheetwood Road, Manchester, 8, not later than Saturday, 25th February, 1950.

3477

BOROUGH OF COLCHESTER.

BOROUGH ENGINEER'S DEPARTMENT. ARCHITECTURAL SECTION.

Applications are invited for the appointment of ARCHITECTURAL ASSISTANT, in the above-mentioned Department, at a salary in accordance with the recommendations of the National Joint Council for Local Authorities' Administrative, etc., Services (A.P.T., Grades II-III, according to qualifications and experience).

Applicants should have passed the Intermediate Examination of the R.I.B.A. or its equivalent, and experience in connection with Local Authority Housing Schemes will be an advantage. The appointment will be subject to the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

The appointment will be terminable by one month's notice on either side.

Applications, stating age, qualifications and experience, accompanied by copies of not more than two recent testimonials, must reach the Borough Engineer, 64, West Stockwell Street, Colchester, not later than Monday, 27th February, 1950.

Canvassing will disqualify, and candidates must state whether they are related to any member or senior officer of the Council.

N. CATCHPOLE.

Town Clerk.

Town Hall, Colchester.

10th February, 1950.

3439

BOROUGH OF BUXTON.

APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT.

Applications are invited for the above permanent appointment, at a salary in accordance with Grade V of the A.P.T. Division, namely, £520-£570 per annum.

Applicants must be registered Architects, and preference will be given to those who have passed all or part of the R.I.B.A. examinations.

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

Canvassing will disqualify, and an applicant who is related to any member or senior official must disclose the fact in his application.

Applications, enclosing copies of two recent testimonials, should be delivered to me not later than Saturday, 25th February, 1950.

A. C. W. RYLAND.

Borough Engineer.

Town Hall, Buxton, Derbs.

8th February, 1950.

3476

CITY OF ST. ALBANS.

ARCHITECTURAL ASSISTANT.

Applications are invited from suitable persons for the position of Temporary Architectural Assistant, in the Department of the City Engineer and Surveyor, at a salary in A.P.T., Grade III (i.e., £450-£515 to £495 per annum).

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

The appointment will be subject to the National Scheme of Conditions of Service, to one month's notice on either side, to the Local Government Superannuation Act, 1937, and to the successful candidate passing a medical examination. Applications, stating age, qualifications and experience, together with two recent testimonials, and the names of two referees, must reach the undersigned not later than Friday, 24th February, 1950.

The appointment is expected to last at least three years.

(Sgd.) W. B. MURGATROYD.

Town Clerk.

38, St. Peter's Street, St. Albans.

8th February, 1950.

3478

NATIONAL COAL BOARD—EAST MIDLANDS DIVISION.

Applications are invited for the following permanent and supernumerary posts in the Divisional Architect's Department in Nottingham.

(a) ARCHITECTS, Grade II. Salary £450 by £25 to £700 per annum.

Applicants should be Members of the R.I.B.A. and have had considerable experience in the preparation of sketch plans, working drawings, and specifications.

(b) ARCHITECTURAL ASSISTANTS, Grade I. Salary £410 by £20 to £550 per annum.

Applicants should have passed Inter. R.I.B.A. Examination and have had at least 5 years' office experience, with considerable experience of sketch plans and working drawings.

(c) ARCHITECTURAL ASSISTANTS, Grade II. Salary £300 by £20 to £440 per annum.

Applicants should have passed, or be working for, the Inter. Examination R.I.B.A., and be able to assist in the preparation of sketch plans and working drawings.

The point of entry into the relevant salary scales will depend on the qualifications and experience of the successful applicants.

Applications, stating age, education, qualifications, experience, present appointment and salary, should be submitted to the Secretary, N.C.B., East Midlands Division, Sherwood Lodge, Arnold, Notts. Applicants should state clearly the appointment for which application is made, both in the letter and on the envelope.

3474

COUNTY BOROUGH OF SUNDERLAND.

BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following vacancies on the permanent Staff of the Borough Architect's Department from persons of initiative and ability who wish to participate in the growth of a new Department having before it an extensive, interesting, and varied programme of new works.

(1) ASSISTANT ARCHITECTS, A.P.T., Grade VI (£595-£660). Candidates for the above positions to be Associates of the R.I.B.A. (or hold equivalent qualifications), and to have had considerable practical experience.

(2) SENIOR ARCHITECTURAL ASSISTANTS, A.P.T., Grade V (£520-£570). Candidates for the above positions to be Associates of the R.I.B.A. (or hold equivalent qualifications), and to have had adequate practical experience.

(3) JUNIOR ARCHITECTURAL ASSISTANTS (General Division). Candidates should have had some experience in a drawing office. Preference will be given to Probationers of the R.I.B.A.

(4) CHIEF ASSISTANT QUANTITY SURVEYOR, A.P.T., Grade VII (£575-£710). Candidates to be Associates of the R.I.C.S. and to have had considerable practical experience.

(5) SENIOR QUANTITY SURVEYING ASSISTANTS, A.P.T., Grade V (£520-£570). Candidates to be Associates of the R.I.C.S.

All appointments are permanent and are subject to the Scheme of Conditions of Service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services, and to the provisions of the Local Government Superannuation Act, 1937. They are subject also to one month's notice on either side given from the first day of any month. Successful candidates will be required to pass a medical examination.

Forms of application may be obtained from Mr. Harvey C. Bishop, A.R.I.B.A., Borough Architect, Grange House, Stockton Road, Sunderland, and applicants should state clearly for which post they are applying.

Applications, endorsed with the name of the particular post applied for, should be sent to the undersigned not later than Monday, 6th March, 1950.

Canvassing, directly or indirectly, will be deemed a disqualification.

G. S. MCINTIRE

Town Clerk.

Town Hall, Sunderland.

7th February, 1950.

3472

BRITISH ELECTRICITY AUTHORITY.

SOUTH WALES DIVISION.

Applications are invited for the appointment of CLERK OF WORKS, to supervise civil engineering contracts for the erection of Transmission Sub-Stations and lines in the above Division, at a salary of £480-£515-£525 per annum.

The above salary is provisional and subject to negotiation through the appropriate National machinery.

Applicants should have been engaged on civil engineering works involving pile driving, foundation, and reinforced concrete and building work.

The candidate appointed will be required to reside in the first instance near the proposed works at Trostre, near Llanelly, but this will be for a period probably not exceeding six months. Similar works in other parts of the South Wales Division will be started later, and subject to satisfactory service the successful candidate will be offered the opportunity of continuing as Clerk of Works for these. In this event he may be required from time to time to live at different centres appropriate.

Forms of application may be obtained from the Divisional Secretary at the address below, to whom completed applications should be returned not later than 27th February, 1950, in sealed envelope endorsed "Clerk of Works."

H. V. PUGH.

Divisional Controller.

Cardiff (Pengam Moors) Airport, Cardiff.

7th February, 1950.

3471

STEVENAGE NEW TOWN.

The Stevenage Development Corporation invite applications from suitably qualified persons for an appointment in the Department of Architecture and Planning in the following grade:

Corporation Grade III SENIOR ARCHITECT AND PLANNER. Salary £750-£1,000.

The initial salary will be fixed according to qualifications and experience.

The successful applicant will be required to contribute to a Local Government Superannuation Fund or an Insurance Scheme.

Housing accommodation for successful married applicants will be made available at a later date.

Relationship to any member of the Corporation or staff must be disclosed by applicants.

Canvassing directly or indirectly, of members or staff of the Corporation will disqualify.

Forms of application may be obtained from the Chief Administrative Officer, Stevenage Development Corporation, Aston House, Aston, near Stevenage, Herts., to whom completed forms should be returned not later than 6th March, 1950.

3462

EAST ANGLIAN REGIONAL HOSPITAL BOARD.

ASSISTANT QUANTITY SURVEYORS

(Salary Grade VI, A.P.T. Division (£595-£660)).

Applications are invited for the above appointments in the Architect's Department of the Headquarters Staff. Applicants must be fully experienced in taking-off, abstracting, billing, measuring up, and settling final accounts. The appointments will be subject to the National Health Service (Superannuation) Regulations, 1947-49, and the successful candidates will be required to pass a medical examination. Applications, stating age, qualifications, experience, present appointment and salary, together with the names of three referees, should reach the undersigned not later than 27th February, 1950.

K. V. F. MORTON.

Secretary.

117, Chesterton Road, Cambridge.

3446

METROPOLITAN BOROUGH OF PADDINGTON.

APPOINTMENT OF TWO QUANTITY SURVEYOR'S ASSISTANTS

on the permanent establishment of the Housing Department, Architectural Section (which also deals with all Council's building work).

The salaries will be within A.P.T., Grade II, viz., £420 per annum + £15-£465 per annum, plus London weighting, according to age, commencing at points within the Grade commensurate with experience and qualifications.

Applicants should have experience in all branches of building work, and should be familiar with a Quantity Surveyor's duties, including assisting in the preparing of estimates, working up, abstracting and billing, site measurement, and work up to final account stage. Preference will be given to candidates who have passed, or are at the standard of the Intermediate Examination of the R.I.C.S. (Quantities Sub-Division).

The appointments will be subject to one month's notice on either side, to the provisions of the Council's Superannuation Acts and Standing Orders, and to the National Joint Council's Scheme of Conditions of Service.

Applications for these appointments, stating age, qualifications, present and previous appointments, with salaries, and experience, together with the names of three authorities or persons to whom reference may be made, should be delivered to the undersigned, the envelope to be endorsed "Quantity Surveyor's Assistants," not later than noon on 27th February, 1950.

Candidates must state, in writing, whether, to their knowledge, they are related to any member or senior officer of the Council.

Canvassing, directly or indirectly, will disqualify.

W. H. BENTLEY.

Town Clerk.

Town Hall, Paddington, W.2.

16th February, 1950.

3460

Tenders for Contracts

NOBLE'S (I.O.M.) HOSPITAL AND DISPENSARY, DOUGLAS, ISLE OF MAN.

TO REGISTERED BUILDING CONTRACTORS.

Registered Building Contractors are invited to submit their names for consideration in connection with the Proposed Erection of a New Nurses' Home on the Hospital Site in Westmoreland Road, Douglas, Isle of Man, in accordance with Plans and Specifications prepared by their Architect, Mr. W. T. Quayle, F.R.I.C.S., F.I.A.A., of Douglas. Tenders will be based on Bills of Quantities.

As the size of the building and the work connected therewith is of considerable magnitude, only Contractors of repute and who have sufficient labour and resources to undertake such work need submit their names. The names of Architects to whom reference can be made in respect of works carried out by Contractors, must be submitted with their application. The names of Contractors will be given full consideration, and a selected list will then be asked to submit firm tenders.

Applications are to be submitted in the first instance to E. C. Kneale, Esq., Secretary, Noble's (I.O.M.) Hospital and Dispensary on or before Wednesday, 1st March, 1950.

E. C. KNEALE.

Secretary.

Noble's (I.O.M.) Hospital and Dispensary,

Douglas, Isle of Man.

3461

Partnership and Financial

6 lines or under, 10s.; each additional line, 1s. 6d.
A. R.I.B.A., aged 34, married, wishes to join flourishing practice with view to Partnership in Southern England (not London) or East Anglia. Box 3434.

Competitions

6 lines or under, 10s.; each additional line, 1s. 6d.
PROPOSED MEMORIAL TO THE ROYAL NAVAL PATROL SERVICE OF THE 1939-45 WAR AT LOWESTOFT.

The Imperial War Graves Commission invites Architects who are registered under the Architects (Registration) Acts and who are ex-servicing full time members of His Majesty's Forces to submit designs in competition for a Memorial which they propose to erect on a site in Bellevue Park, Lowestoft, to commemorate the names of officers and men of the Royal Naval Patrol Service fallen in the 1939-45 War who have no known graves. Assessor: Mr. Edward Maufe, R.A., F.R.I.B.A. Premiums: £100, £60 and £30. Last day for submitting designs: 26th May, 1950.

Last day for questions: 24th March, 1950. Conditions may be obtained from the Secretary, Imperial War Graves Commission, 32, Grosvenor Gardens, S.W.1. The deposit is £1. Applicants for the Conditions must state—
 (a) Their architect's registration number.
 (b) The branch of H.M. Forces in which they served. 3487

Architectural Appointments Vacant

6 lines or under, 5s.; each additional line, 1s. 6d.
ARCHITECTURAL ASSISTANT. Inter. R.I.B.A. standard; good prospects. Box 3324.

ILFORD, LIMITED.

ARCHITECTURAL ASSISTANTS.
CHIEF Staff Architect's Department require Architectural Assistants, to Intermediate standard of R.I.B.A. The work, which is concerned with factories, offices and laboratories in the Home Counties, is both varied and interesting. The Department is located in a country house at Havering, near Romford. A pension and life assurance scheme is in operation, and meal facilities are available. Suitable applicants may qualify for staff appointment.

Write, stating age, training, experience and salary required, to The Chief Staff Architect, Ilford, Limited, Romford, Essex. 3319

ARCHITECTURAL ASSISTANTS (Senior and Junior) required by Ronald Ward & Partners, 33, St. George's Drive, S.W.1. Telephone Victoria 5531, 0603, 5310. 3328

ILFORD, LIMITED.

ASSISTANT ARCHITECT.

CHIEF Staff Architect's Department require an Assistant Architect; preference given to Associates of the R.I.B.A.; the work, which is concerned with factories, offices and laboratories in the home counties, is both varied and interesting.

The Department is located in a Country House at Havering, near Romford. A pension and life assurance scheme is in operation and meal facilities are available.

Applications in writing, stating age, experience and salary required, to the Chief Staff Architect, Ilford, Limited, Romford, Essex. 3338

ARCHITECTURAL ASSISTANT required by Gollins, Melvin & Partners, A./A.R.I.B.A.; capable working drawings; salary £400-£500; office experience essential; five-day week. Telephone Museum 0883 for appointment. 3329

ASSISTANT required in busy Berkshire office. With work in all parts of the country; an opportunity for a man with initiative and drive to show his capabilities; good prospects for a capable man. Apply, with full particulars of experience and salary required, to Box 3342.

ARCHITECTURAL ASSISTANT required in Maidenhead for large Practice of London and Provincial work; applicants must be capable of supervising work and conversant with by-laws. Reply, with particulars of experience and salary required, to Box 3343.

FIRST-CLASS ASSISTANT required immediately in Cork, Ireland; salary £9-£14 per week, according to ability and experience; large varied practice, and possible permanency for the right type of man; pleasant working conditions and lower income tax. Apply Box 3395.

EDWARD ARMSTRONG & FREDERICK MACMANUS, F.R.I.B.A., of 19, Manchester Square, W.1. require SENIOR and INTERMEDIATE ARCHITECTURAL ASSISTANTS: office experience essential. 3353

MIDLANDS. — ARCHITECTURAL ASSISTANTS wanted for private office; one Senior or semi-Senior, with experience of Industrial Buildings; one Junior, preferably with same, but not essential; good salaries. Please write Box 3355.

ARCHITECTURAL ASSISTANTS required. Intermediate to Final standard, in busy office with all-round practice; very good prospects for suitable applicants. Send details of age, experience, training and present salary to Naylor, Sale & Widdows, St. Mary's Gate, Derby. 3367

ARCHITECTURAL ASSISTANT, recently qualified from wholtime school of architecture, required for permanent appointment, with opportunities for interesting experience. Harry S. Fairhurst & Son, 55, Brown Street, Manchester, 2. 3368

ARCHITECTURAL ASSISTANT, with about 3 years' experience, required to work under Senior in busy office; permanent post, with variety and interest for ambitious man. Harry S. Fairhurst & Son, 55, Brown Street, Manchester, 2. 3369

ARCHITECTURAL SENIOR ASSISTANT, with about 7 years' experience, required to take charge of Industrial, Commercial or Hospital jobs; interesting work in busy office, and plenty of scope for man with initiative. Harry S. Fairhurst & Son, 55, Brown Street, Manchester, 2. 3370

ARCHITECTURAL ASSISTANT, with previous office experience and up to Intermediate standard, required for an office with varied general practice; able to work up schemes and details under supervision; salary by arrangement. Apply Herbert Ward & Partners, Architects and Surveyors, 4, Bute Street, South Kensington, S.W.7. Telephone KENington 8826. 3379

ARCHITECTURAL ASSISTANT required for Bank Architect's office in Edinburgh; good training and sound knowledge in the preparation of working and detailed drawings essential; permanent situation. Apply, in writing, stating age, experience, etc., to Box No. 567, Keith & Co., Advertising Agents, Edinburgh. 2417

SENIOR and Intermediate ARCHITECTURAL ASSISTANTS required; interesting and varied work. Apply, stating age, experience, and salary required, to Farmer and Dork, Chartered Architects, Terminal House, Grosvenor Gardens, London, S.W.1. 3399

SIR JOHN BURNET, TAIT & PARTNERS require ASSISTANT ARCHITECTS, with sound experience in design and construction. Applicants must be capable of the preparation of working drawings and specifications, and be able to assume responsibility for all stages of the work.

Salary from £750 to £850, with special terms for men of outstanding ability. Address: 10, Bedford Square, London, W.C.1. 3453

AN opportunity occurs in a London Architect's office for one capable SENIOR ASSISTANT. Please send full details of capabilities to Box 3417.

WANTED, in a London Architect's office, a capable ASSISTANT of Intermediate standard. Please send full details of capabilities to Box 3418.

ASSISTANT required in small Private Practice in Hampshire; Intermediate or Final R.I.B.A.; capable of dealing with all types of work from start to finish; possibility of Partnership in future if found satisfactory, for which some capital would be required. Write in confidence to Box 3430.

ARCHITECTS' ASSISTANT required by Samuel Williams & Sons, Ltd., Dagenham Dock Industrial Estate, Essex, for varied work throughout the Greater London area; applicants must be good draughtsmen, with sound knowledge of construction, and preferably experience of industrial work; a good salary will be paid to suitable man, and the appointment is pensionable. Write, giving details of age, training and experience, with dates, to the Personnel Manager. 3431

ULSTER Architects require immediately, for General Practice, SENIOR ASSISTANT, sound in design and construction, capable of preparing working drawings for Hospitals, Housing Schemes and General Works. Indefinitely reply, stating age, experience, and salary required. Box 3432.

TWO JUNIOR ASSISTANTS; pre-Intermediate standard and two post-Intermediate standard; work includes school, hospitals, housing, laboratories, and industrial building; salary by arrangement. Telephone Langham 6217. 3425

ARCHITECTS require JUNIOR ASSISTANTS. Write H. Jackson and R. Edmonds, F.R.I.B.A., 65, New Street, Birmingham 2, stating qualifications, experience, and salary required. 3437

EXPERIENCED ARCHITECTURAL ASSISTANT required for City office; varied practice, chiefly offices and municipal housing; salary from £400-£500, according to ability. Lawrence M. Gotch & Partners, 21, Bunhill Row, E.C.1. 3428

ARCHITECT'S ASSISTANT required in Architect's office, West End; experienced preparation working drawings and details. Apply, stating age, experience, and salary required. Box 3468.

J. SAINSBURY, LTD., multiple food traders, require an additional qualified ARCHITECT to assist Manager of Building Development Department; work includes alterations and extensions in business and domestic premises; permanent, pensionable appointment; commencing salary £280 per annum. Applicants, who should be under 40, should apply in writing, giving details of education, qualifications, and of previous and present posts, to Personnel Manager (Q/A), J. Sainsbury, Ltd., Stamford House, Blackfriars, S.E.1. 3470

ARCHITECTURAL ASSISTANT required; a wide general knowledge of work in London an advantage. Good DRAUGHTSMAN also required; high scale of salary, according to ability and experience; five-day week. Apply to Ley, Colbeck & Partners, Chartered Architects and Surveyors. Telephone: London Wall 2917. 3422

SENIOR and JUNIOR ASSISTANTS required. Please give very brief details of experience, and state present salary. J. H. Martindale & Son, F./R.I.B.A., Architects, Cathedral Chambers, Castle Street, Carlisle. 3479

ARCHITECT'S Department. — ASSISTANT required for planning developments and maintenance of Ellison factories. Apply by letter to Personnel Manager, George Ellison, Ltd., Perry Barr, Birmingham, 22B. 3489

SENIOR ARCHITECTURAL ASSISTANTS required. Apply in writing, stating qualifications, experience and salary required. Lucas, Roberts & Brown, Architects and Surveyors, Barnfield Hill, Exeter, Devon. 3485

KITSON, PARISH, LEDGAR & PYMAN, Lloyds Bank Chambers, Vicar Lane, Leeds, 1, urgently require ASSISTANTS; state age, qualifications and experience; salary according to merit; five-day week. 3483

ARCHITECT'S ASSISTANT required immediately, with experience of industrial buildings and capable of preparing working drawings and details. Applicants are requested to state age, experience, and salary required. The Austin Motor Co., Ltd., P.O. Box 41, Birmingham. 3438

ARCHITECTURAL ASSISTANT (Intermediate standard) required in private office in Westminster area; must be quick and accurate draughtsman, capable of setting up sketch perspectives; permanent position, with good prospects of promotion. Reply, stating age, experience, and salary required, to Box 3441.

ARCHITECTURAL ASSISTANT, with good office experience, required for small London office with general practice; above Intermediate standard, but qualifications not necessary; salary between £300 and £500, according to experience. Box 3443.

ARCHITECT'S ASSISTANT required for permanent position; London office; competent preparation of working drawings for large schemes; open to Lady Assistant; good salary and prospects, those desiring change. Apply W. Braxton Sinclair & Partners, 45, Whitehall, S.W.1. 3467

REQUIRED, as SERVICE INSPECTOR, an active Structural or Civil Engineer, who has had considerable experience in responsible supervising capacity in the erection of reinforced concrete structures, preferably with some design experience; will be required to travel extensively in the British Isles, but must live in the London area; attributes required are agreeable personality, sound judgment on erection problems, and able to write concise factual reports. Write, giving full details and salary required, to Managing Director, The Trussed Concrete Steel Company, Limited, 35/41, Lower Marsh, S.W.1. 3396

SENIOR ARCHITECTURAL ASSISTANT'S required for Midlands office; A.R.I.B.A., experienced in design and preparation of all drawings for wide range of buildings; special consideration given to candidates experienced in housing, licensed premises, theatre and industrial work. State age, experience, and salary required, to Box 3444.

JUNIOR ARCHITECTURAL ASSISTANTS required for Midlands office; Intermediate R.I.B.A. standard; capable of executing working drawings and details from sketch schemes, and experienced in all forms of construction. State age, experience, and salary required to Box 3445.

ARCHITECTURAL ASSISTANT required; about Intermediate standard; experience of housing and schools an advantage; salary about £400 p.a. F. Greenwood, A.R.I.B.A., 25 Liverpool Road, Kingston-on-Thames. KIN. 0652 3451

EXPERIENCED ARCHITECTURAL ASSISTANTS required by Commercial Undertaking operating in Slough area; applicants should have good general knowledge of housing, schools, industrial buildings and contemporary design, together with experience in reinforced concrete structures. Write in first instance, stating experience, qualifications and salary required, to Box 3452.

FIRM of Architects in London require experienced ASSISTANT. Please reply, stating age, experience, and salary required, to Box 3458.

WANTED, in West End office, ARCHITECTURAL ASSISTANT; good practical drafter; preferably accustomed to school building. Experience, age, and salary to Box 3459.

MURRAY HARE & K. G. PERT, A./A.R.I.B.A., 1, Museum Street, Ipswich, require ASSISTANT of Intermediate standard; salary according to ability and experience. 3464

Architectural Appointments Wanted

SURVEYOR, Registered Architect, for many years both Secretary and Assistant to Ecclesiastical Surveyor, requires similar appointment with Estate Architect or Maintenance Surveyor. Box 469.

A.R.I.B.A., Inter. R.I.C.S., age 33, with 10 years' general office experience in various types of building, domestic hotel, agricultural, factory, etc.; capable of surveys, sketch plans, working drawings, details, specifications and supervision; particularly interested in building construction, but desires experience in design; car owner and driver; requires position of responsibility, with possibility of advancement; Southern Counties preferred; salary by arrangement. Box 461.

ARCHITECTURAL ASSISTANT, 3 years' experience with West End architects, passed Inter. November, requires position in or near London or West End; present salary £375 per annum. Box 462.

A.R.I.B.A., A.M.T.P.I. (31), varied experience, requires post in progressive London office, where scope for initiative is given. Box 463.

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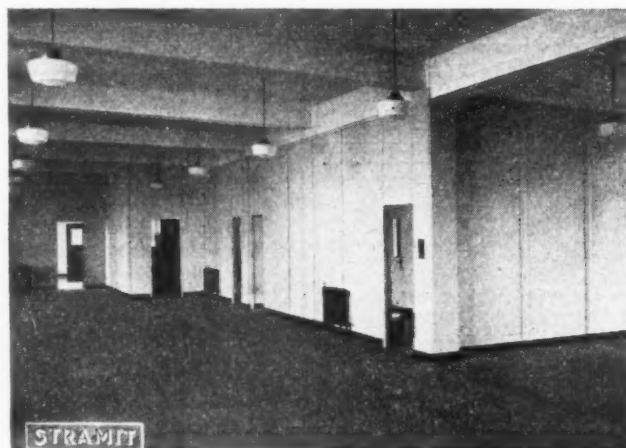
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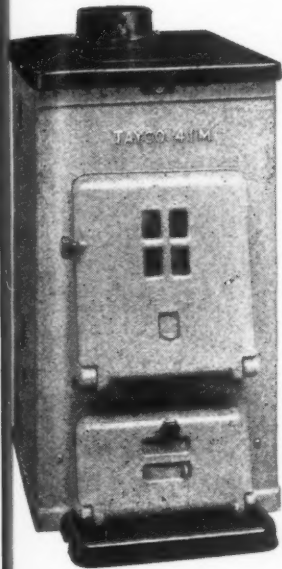
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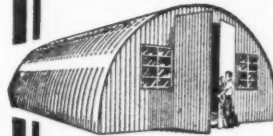
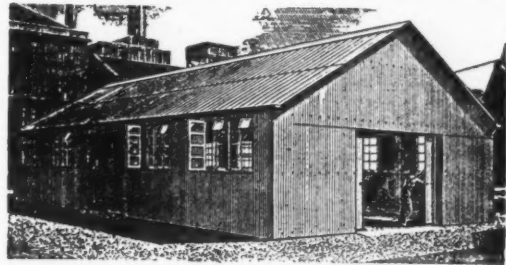
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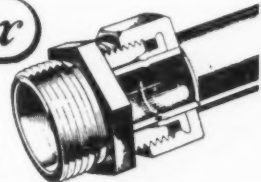
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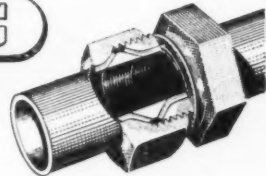
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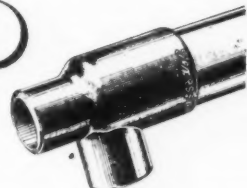
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U.G. A particularly well-designed joint of the belled or expanded type, robust, finely engineered with an accentuated flare. U.G. joints are made for the specific purpose of withstanding abnormal external strains and stresses, and may be used underground with tubes B.S.S. 1386.



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