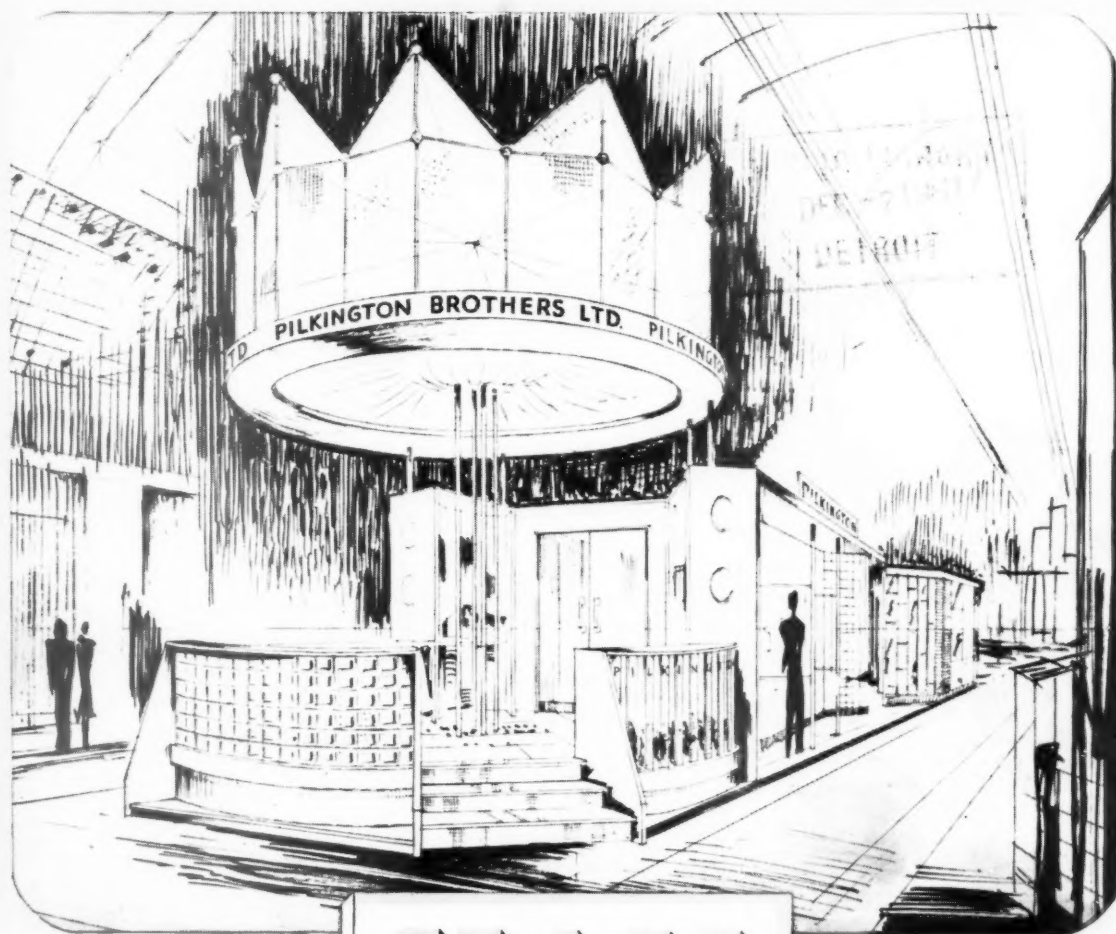


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## BUILDING EXHIBITION NUMBER PRICE ONE SHILLING



# GLASS

at the Building Trades Exhibition, Olympia, Nov. 14-28th, 1951

STAND 144-5 ROW G

ST. HELENS, LANCs.



ST. HELENS 4001

**BUILDING  
EXHIBITION  
NOV 14-NOV 28  
OLYMPIA**

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FRIENDS WILL  
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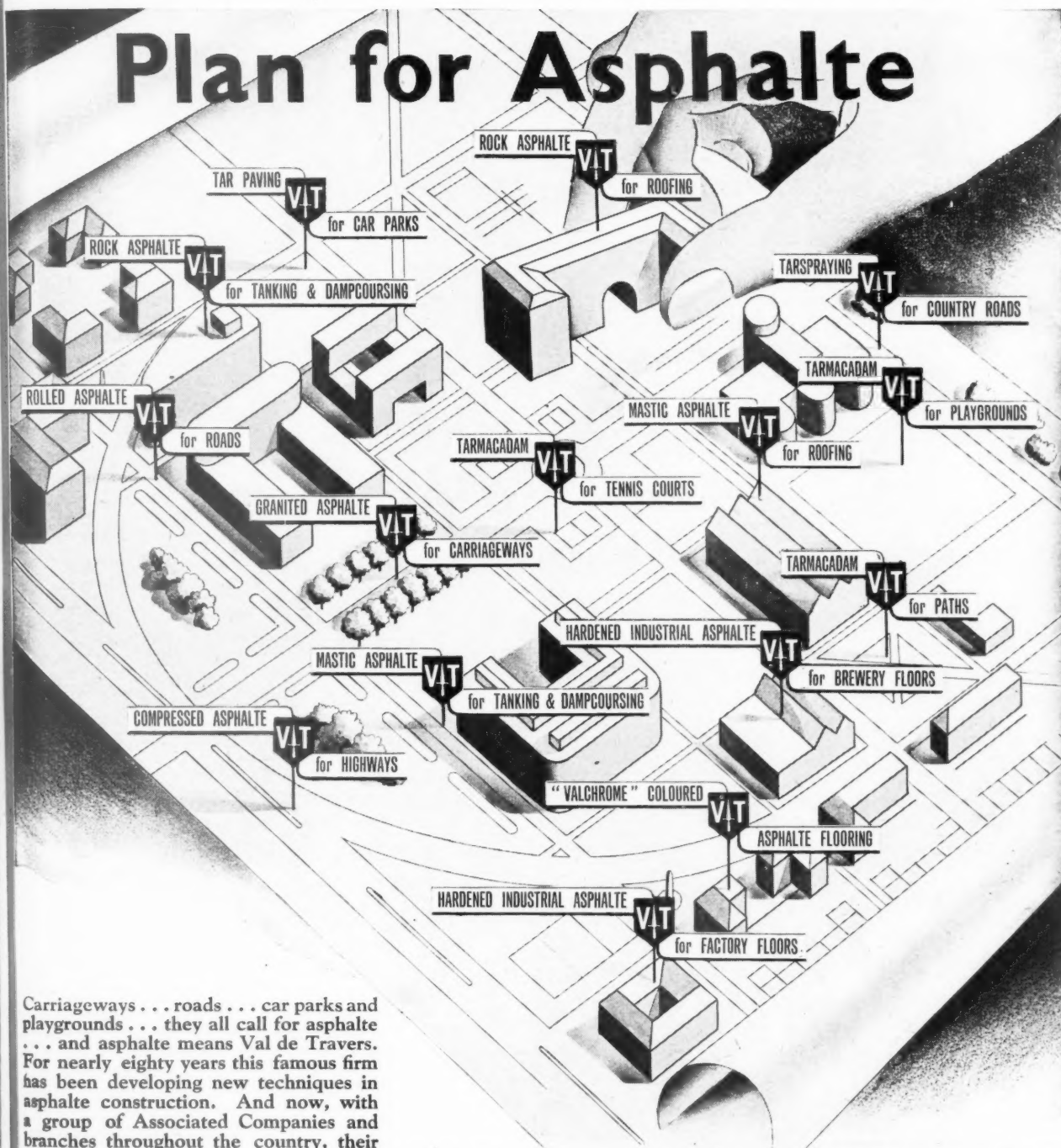


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# Plan for Asphalte



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

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of the Company and its Associates

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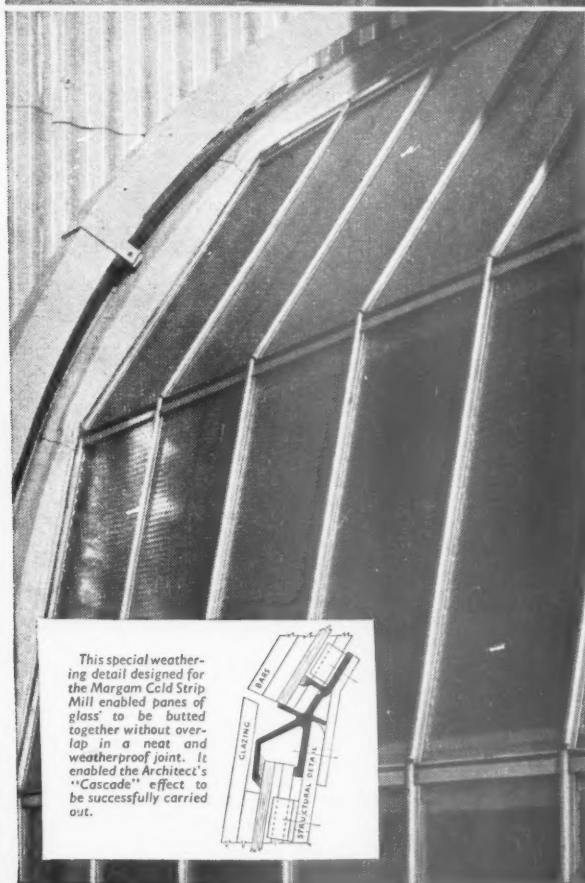
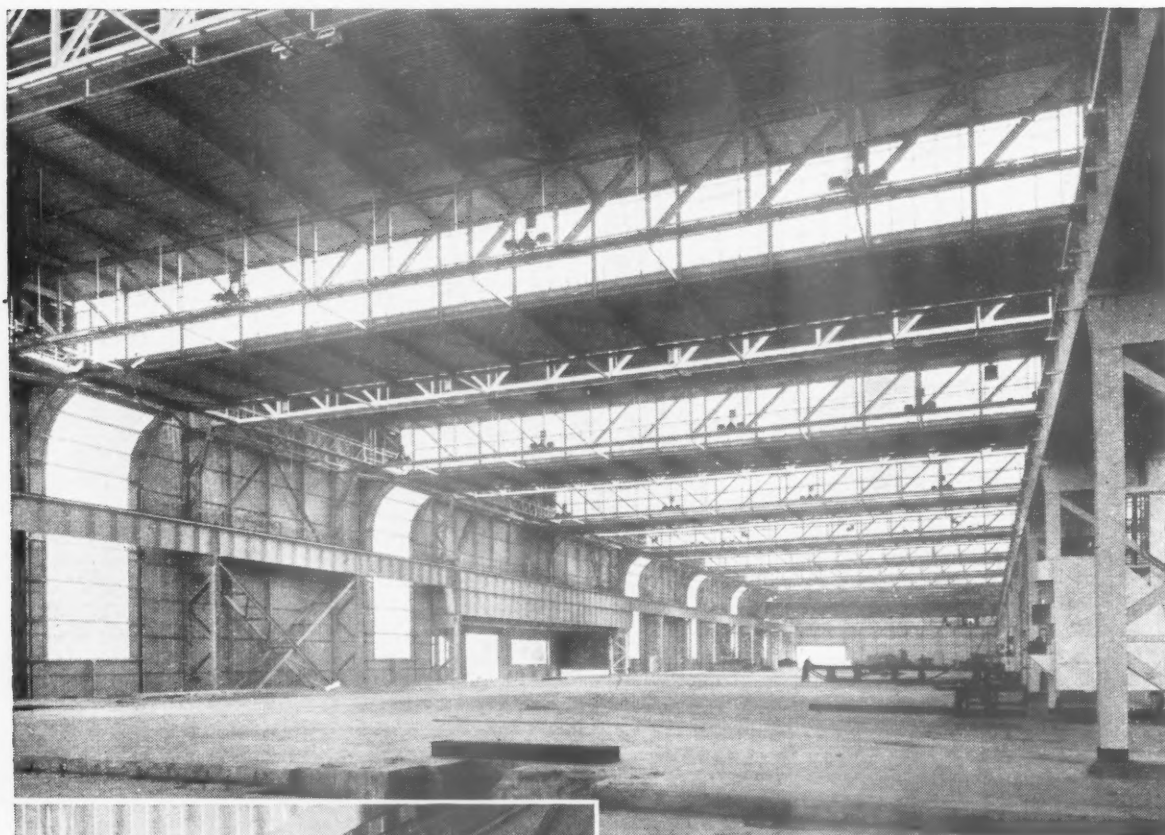
Telephone : City 7001 (10 lines) • Telegrams : Traversable, Telex, London

## ASSOCIATED COMPANIES

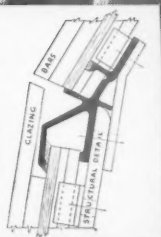
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 LIVERPOOL • MANCHESTER • NEWCASTLE-ON-TYNE



This special weathering detail designed for the Margam Cold Strip Mill enabled panes of glass to be butted together without overlap in a neat and weatherproof joint. It enabled the Architect's "Cascade" effect to be successfully carried out.



## WILLIAMS AND WILLIAMS at MARGAM

### Further examples of the versatility of Aluminex Patent Glazing

The Abbey Works of the Steel Company of Wales, is the largest rolling mill in Europe and is one of the most outstanding engineering plants designed since the war. Working in conjunction with the Consulting Engineers, Messrs. W. S. Atkins & Partners, and the Architects, Sir Percy Thomas & Sons, Williams and Williams were able to produce glazing of a unique and impressive character, examples of which are shown in these pages. The cascade sidewall lights are of particular interest, being expressly designed to meet the exacting lighting requirements.

**CASCADE GLAZING** When it had been decided that Aluminex Patent Glazing provided all the features required for the sidewall glazing of the Steel Mills at Margam, certain technical difficulties were discovered. In order to produce even daylighting throughout the building it was necessary that the panels of sidewall glazing should curve inwards at the head. It was inadmissible to break the line of the curve by allowing the panes to overlap in a "lobster-back" fashion and curved glass was out of the question because of cost and difficulty of replacement. The effect had to be achieved by using flat panes of glass set out in a series of chords, and this arrangement presented special weathering problems, as also did the very flat pitch near the top of the cascade.



To overcome these the Aluminex engineers designed a new weathering detail which is shown in the drawing and in the photograph at the bottom of the opposite page, and is a development of the standard Aluminex "Z" weathering extrusion which is one of the special features of the Aluminex Glazing system. The remarkable effect achieved resembled cascades of glass and is vividly illustrated in the photographs. The cascades are each fourteen feet wide and range from fifteen feet to fifty-five feet high. The fifty-five foot cascades are composed of seven vertical tiers with a further curved portion of three tiers on a 9' 9" radius. The cascades were glazed in some instances with specially toughened glass in order to resist the thermal shock caused by hot ingots passing within a few feet of them.

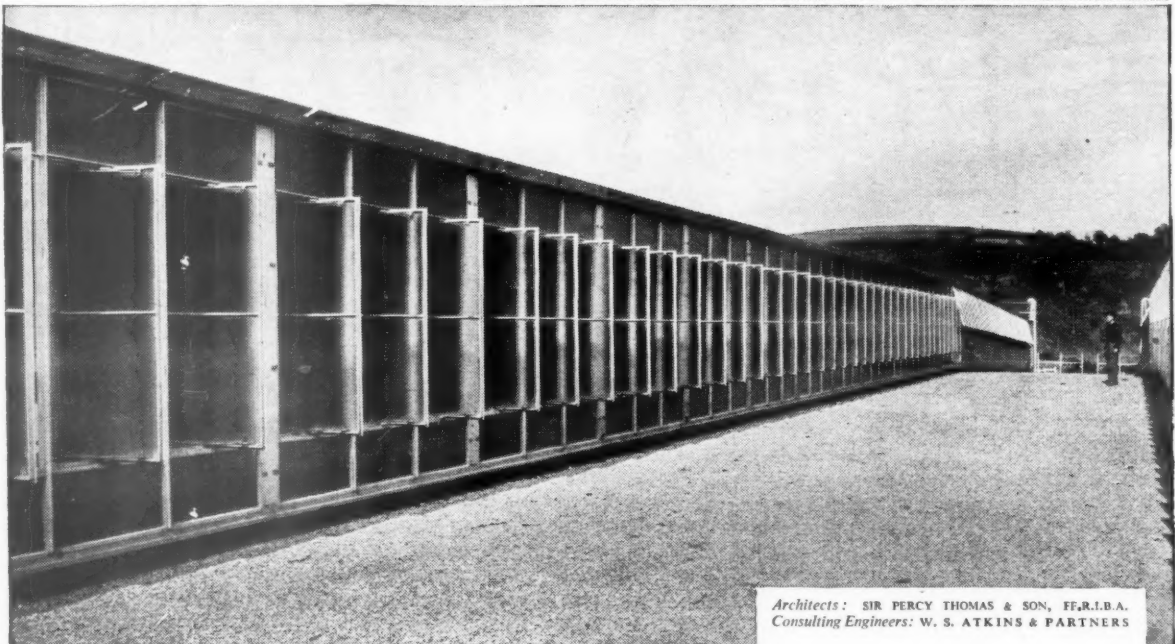
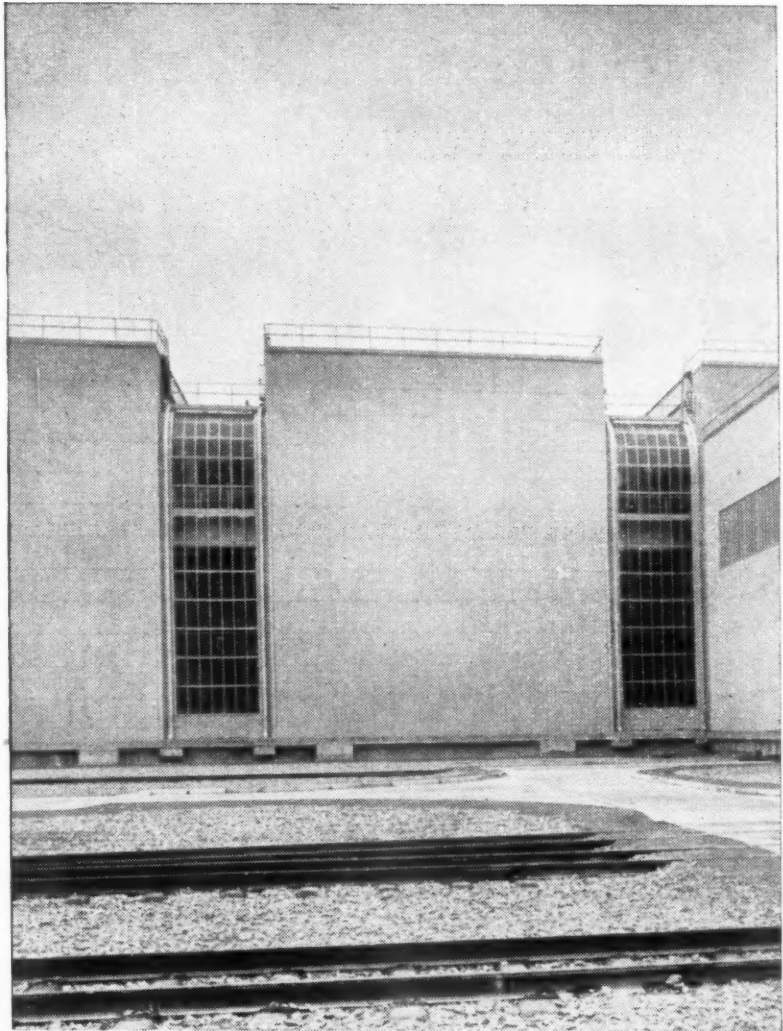
#### HIGH/LOW ROOF CONSTRUCTION

To provide controlled ventilation together with even distribution of light, the monitors in the Cold Mill Building are glazed partly with continuous top-hung Aluminex opening lights and partly with aluminium vertical pivot-hung windows made by the Reliance Division of Williams and Williams. Both are operated by Teleflex Gear with hand-operators placed so that they can be manipulated from walkways on the crane gantry. The vertical pivot-hung windows are arranged to open 135 degrees and are coupled together in ranges so that one gear operation opens the complete range. Thus ventilation can be controlled quickly to very fine degrees in accordance with either temperature or changes in wind direction.

#### Williams and Williams Ltd

Makers of Metal Windows, Doors and Aluminex Patent Glazing.

RELIANCE WORKS • CHESTER

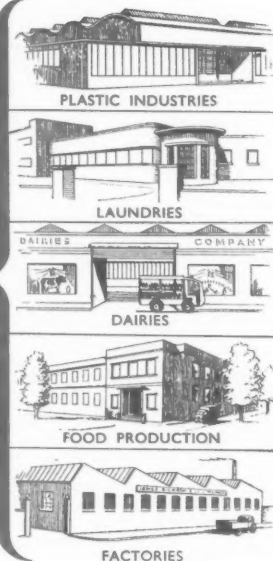
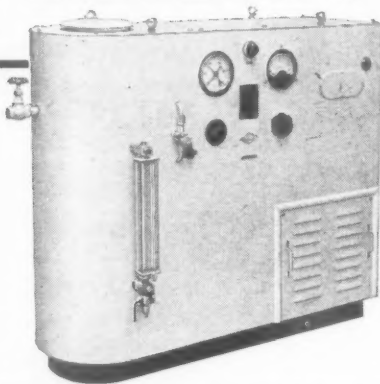


Architects: SIR PERCY THOMAS & SON, F.F.R.I.B.A.  
Consulting Engineers: W. S. ATKINS & PARTNERS

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*—the easy way*

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M-W.297



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## THE SNOWCEM CASE BOOK

SPILLER'S SILO · NEWCASTLE-ON-TYNE



The mill and the second of the silos belonging to Messrs. Spillers Ltd. scheduled for external treatment with Snowcem and Cemprover has now been completed and is illustrated above.

The reinforced concrete surface was first brushed to remove loose dust etc. and a priming coat of Cemprover No. 1 and water, mixed in equal parts was applied. This was followed by two coats of Duck Egg Green Snowcem brushed on. The area treated was 20,750 sq. yds.

Painting Contractors: Messrs. A. Bagnall & Co., Shipley, under the supervision of the Consulting Engineers: Messrs. Oscar Faber & Partners.

**SNOWCEM** is easily applied to concrete, stone or suitable brickwork by brush or spray. It is available in seven colours: White, Cream, Deep Cream, Buff, Pink, Silver-Grey and Duck-Egg Green.

**CEMPROVER NO. 1** is a liquid for use in conjunction with Snowcem. Our Technical and Advisory Department is at your service.

# SNOWCEM

WATERPROOF CEMENT PAINT

**DECORATES and PROTECTS — at low cost**

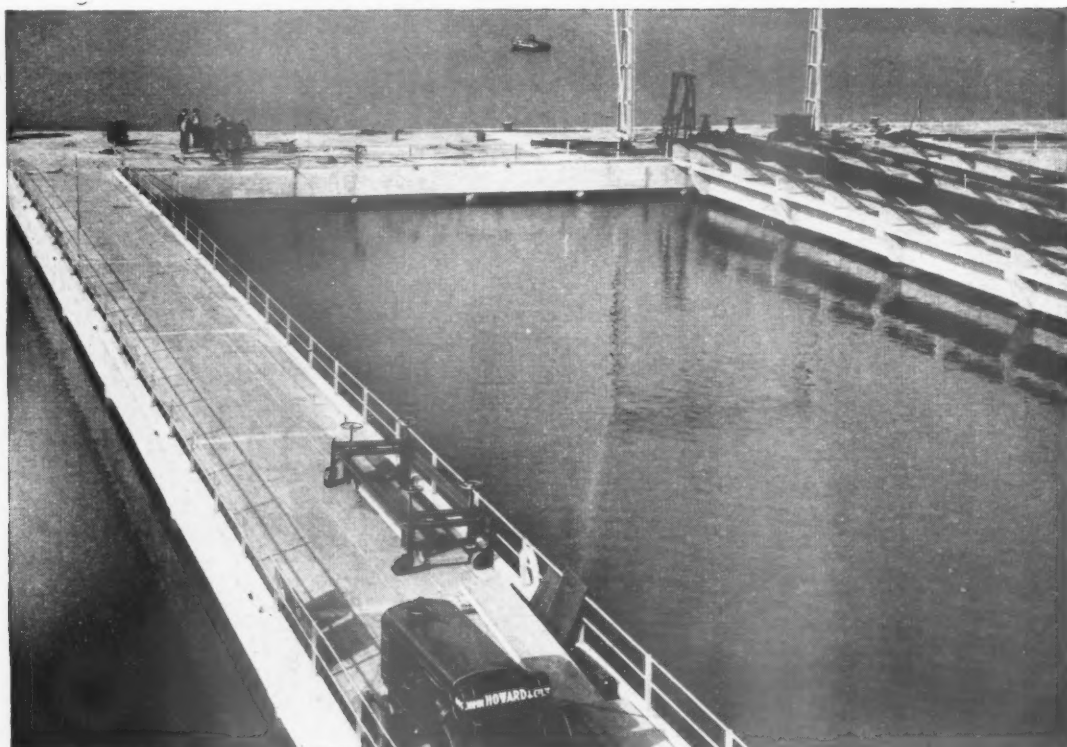


THE CEMENT MARKETING COMPANY LIMITED,  
Portland House, Tothill Street, London, S.W.1.

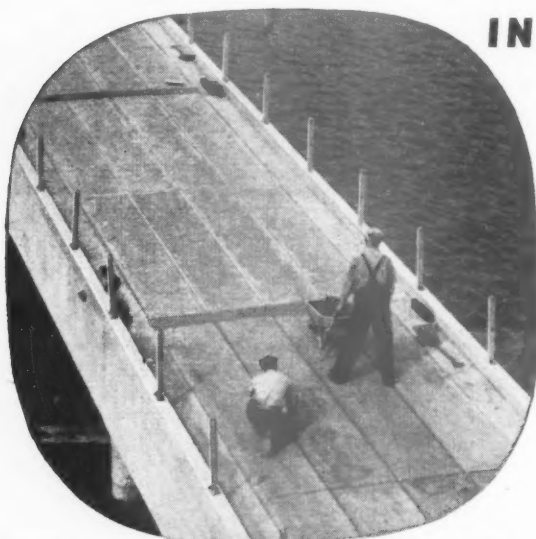
or G. & T. EARLE LTD., Cement Manufacturers, Hull.

THE SOUTH WALES PORTLAND CEMENT & LIME CO. LTD., Penarth, Glam.





## Prestressed Concrete



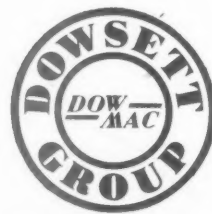
Dow-Mac prestressed concrete decking slabs were used in the reconstruction of this jetty at Queen's Dock, Swansea, for Anglo-Iranian Oil Co. Ltd. (Messrs. Rendel, Palmer & Tritton—Consulting Engineers, John Howard & Co. Ltd.,—Contractors). Photographs by courtesy of National Oil Refineries Ltd.

### **DOW-MAC PRESTRESSED CONCRETE UNITS INCLUDE—**

Bridge beams, decking slabs, piles, walings and railway sleepers.

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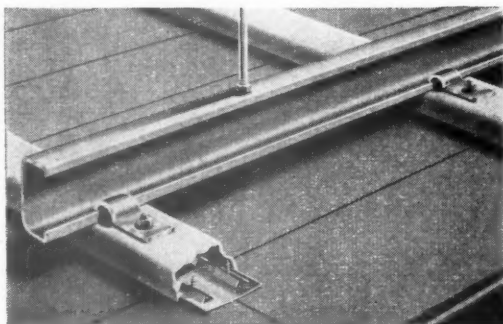
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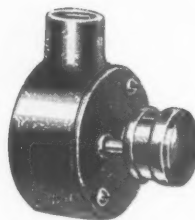
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It is *inevitable* with  
Metallic quality and  
consistent accuracy.



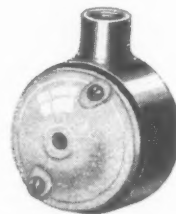
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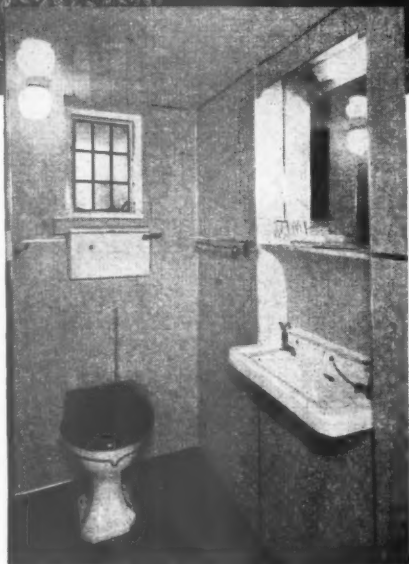


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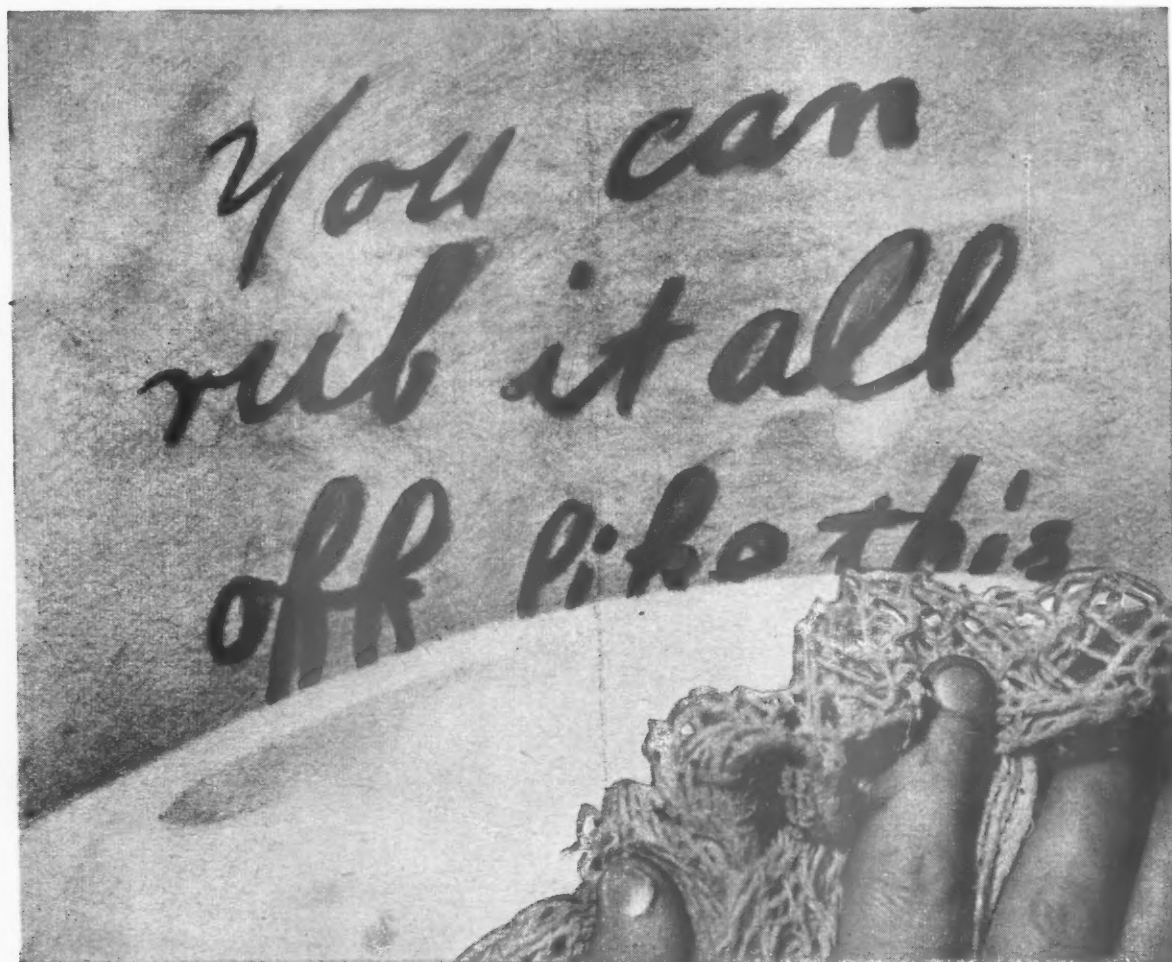
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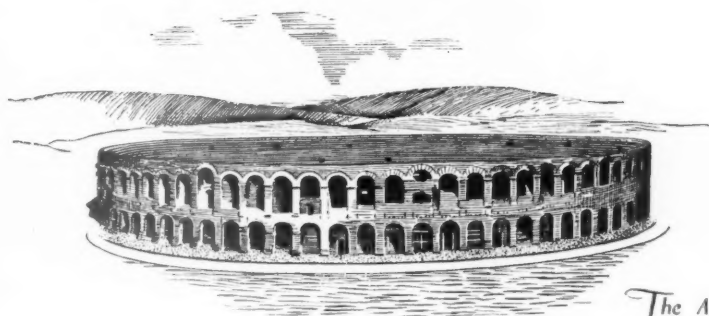


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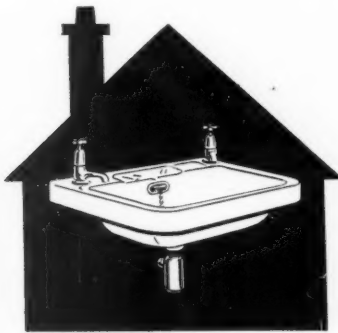
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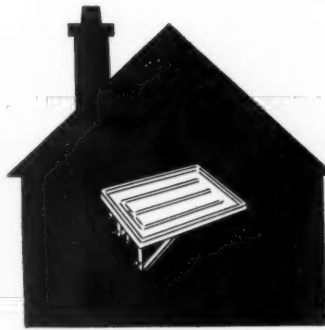
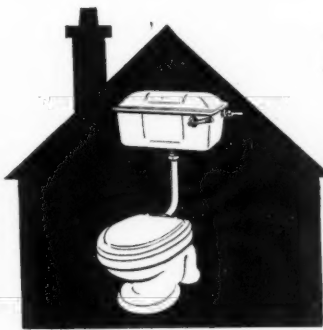
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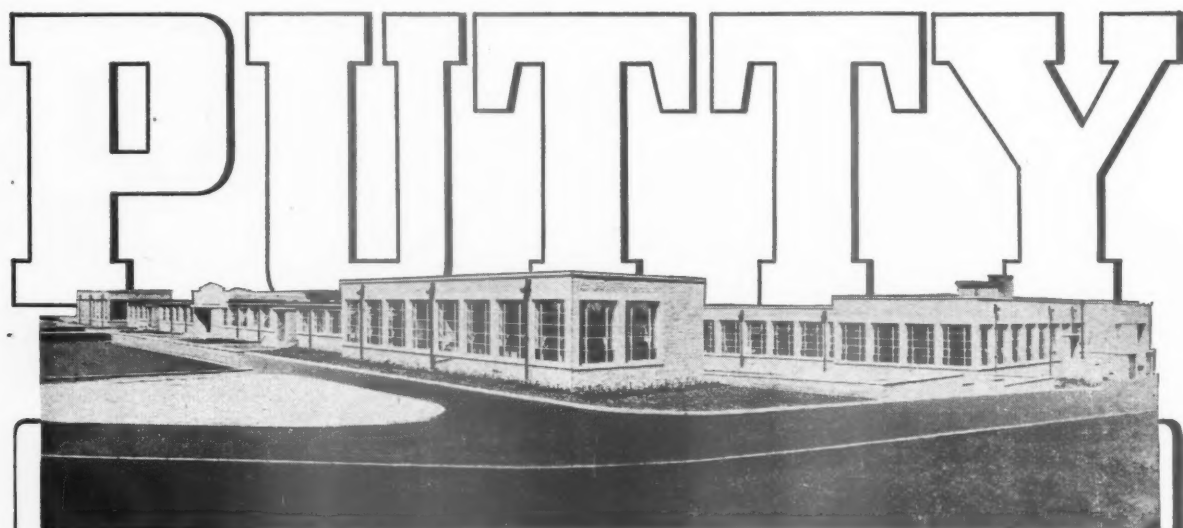


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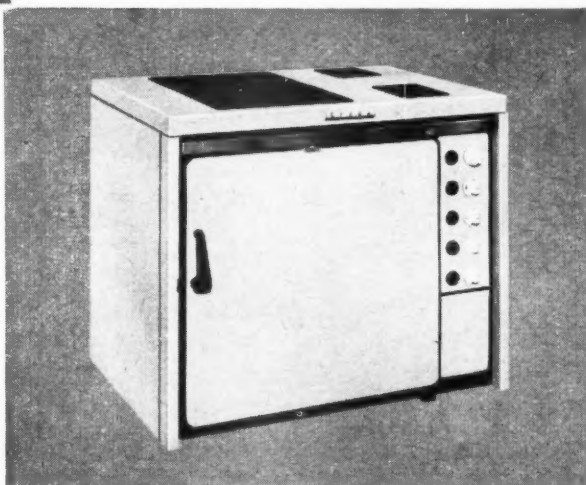
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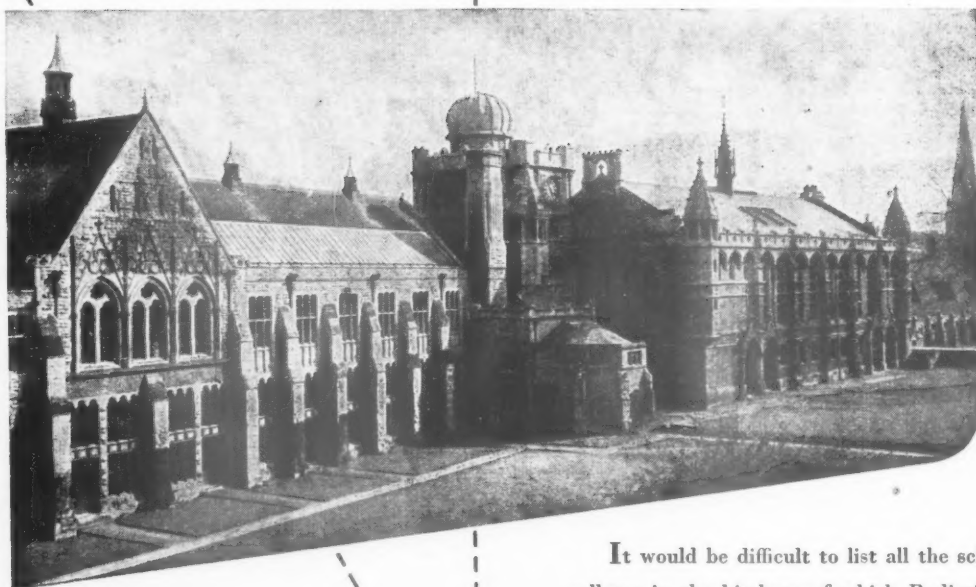
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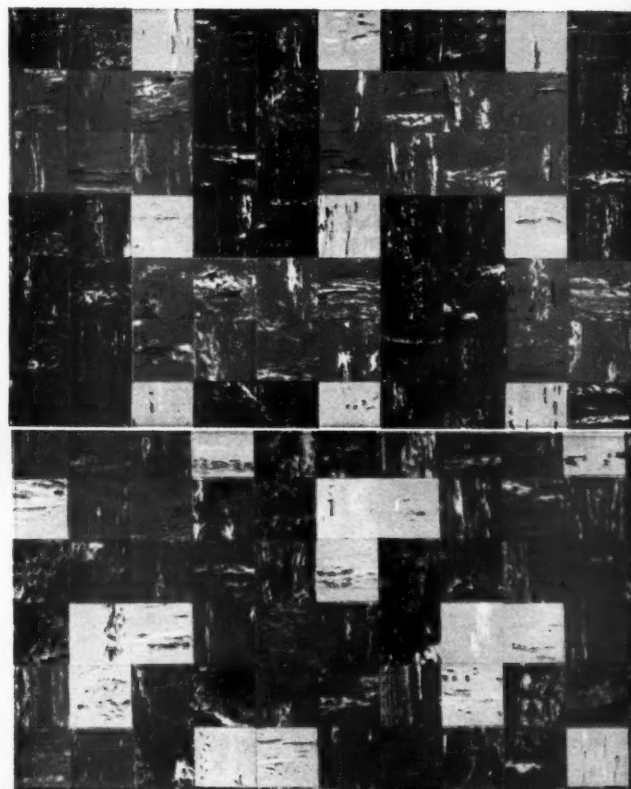
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**BUILDING EXHIBITION**  
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ROOFING TILES  
and **MARLEY**  
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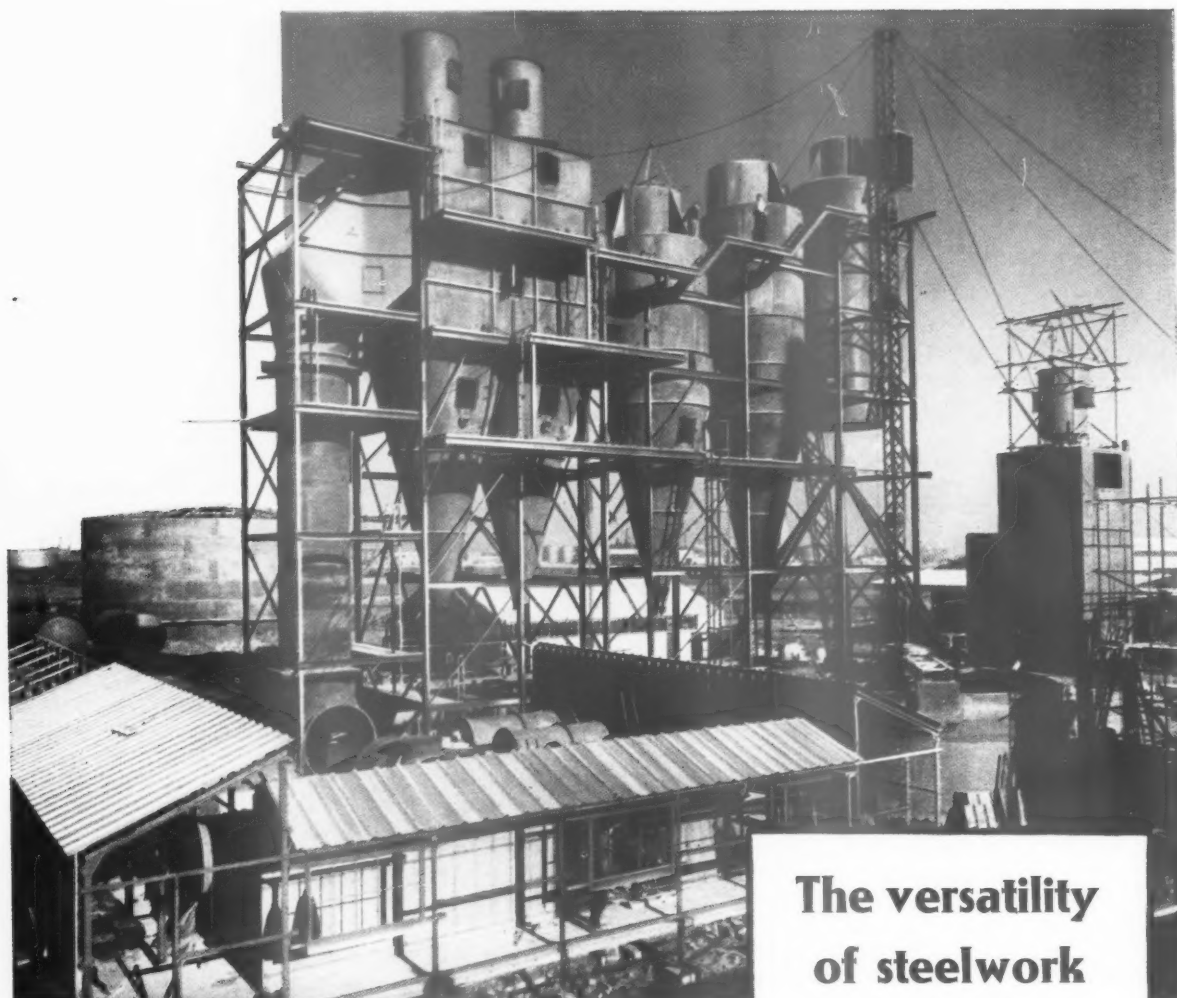


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ARTILLERY HOUSE, WESTMINSTER, S.W.1



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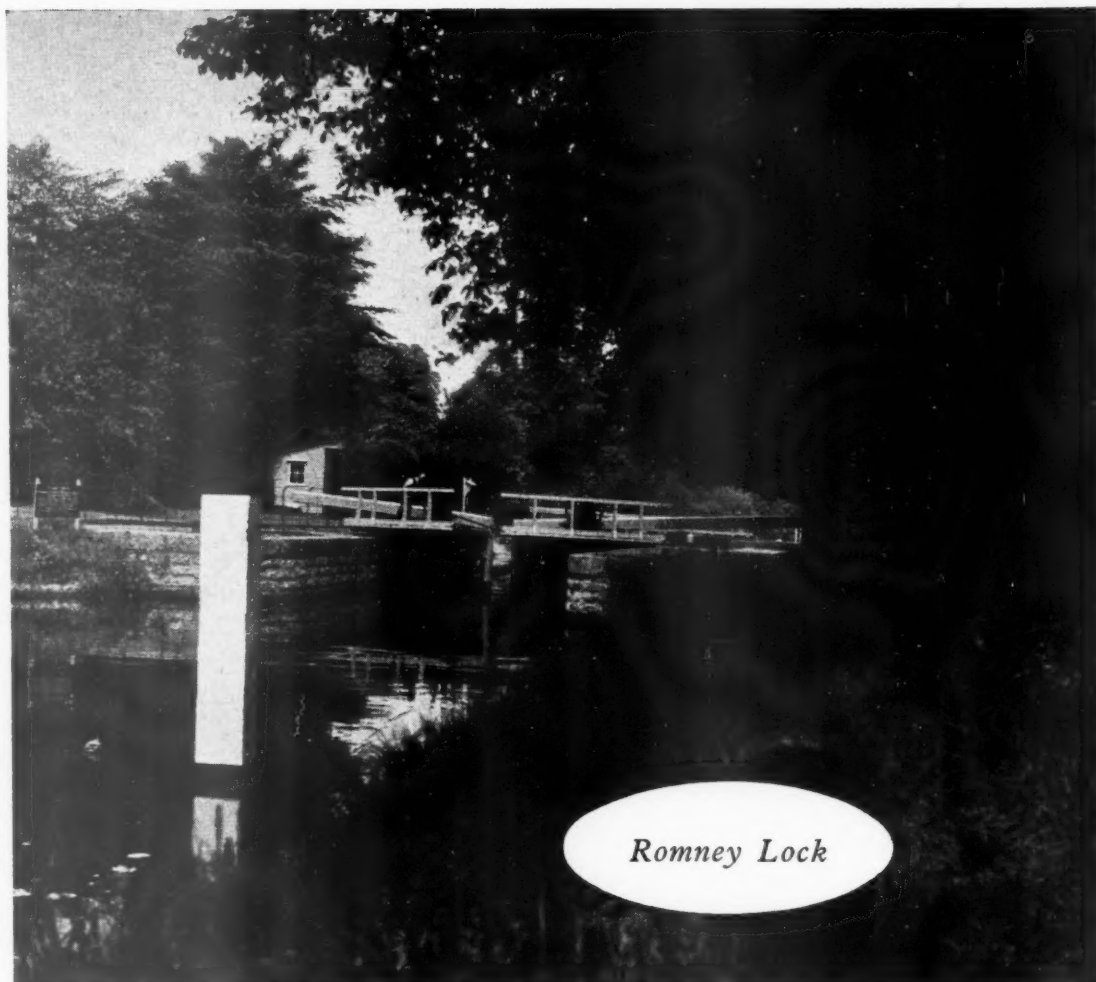
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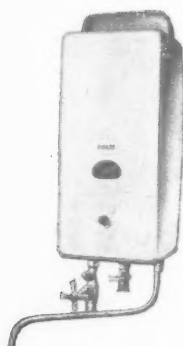
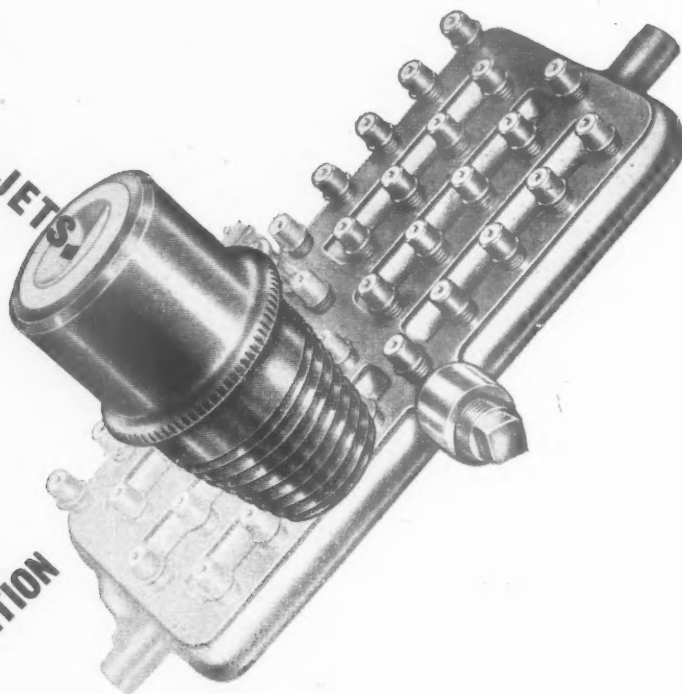
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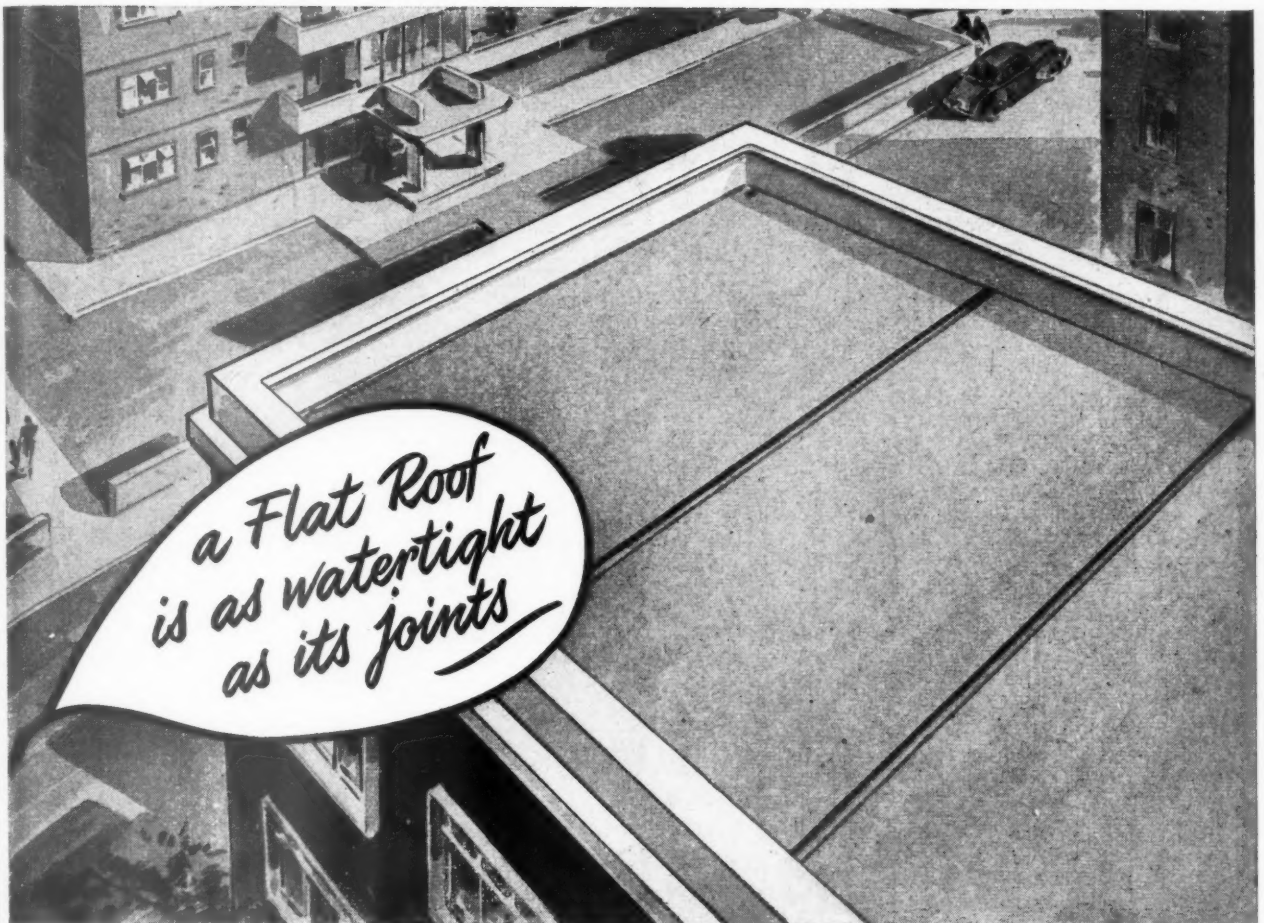
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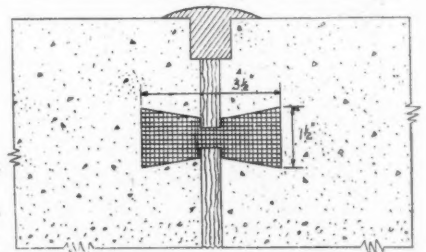
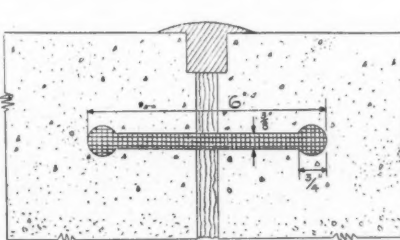
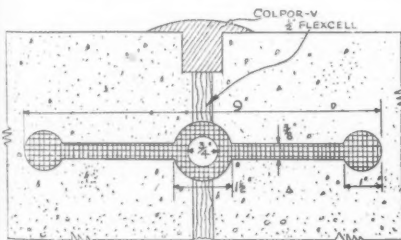
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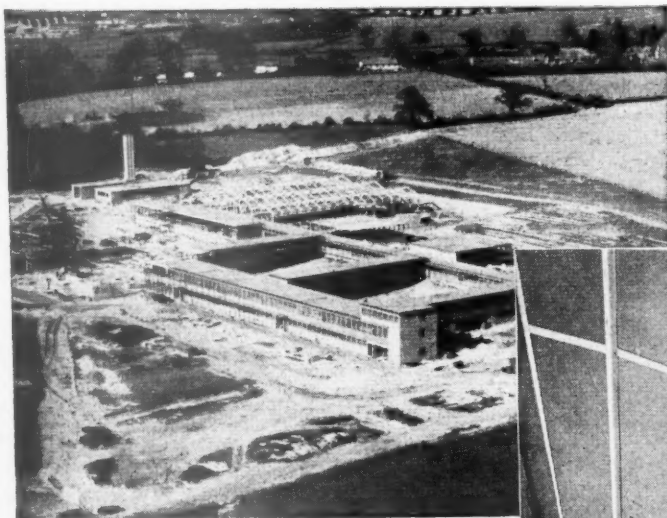
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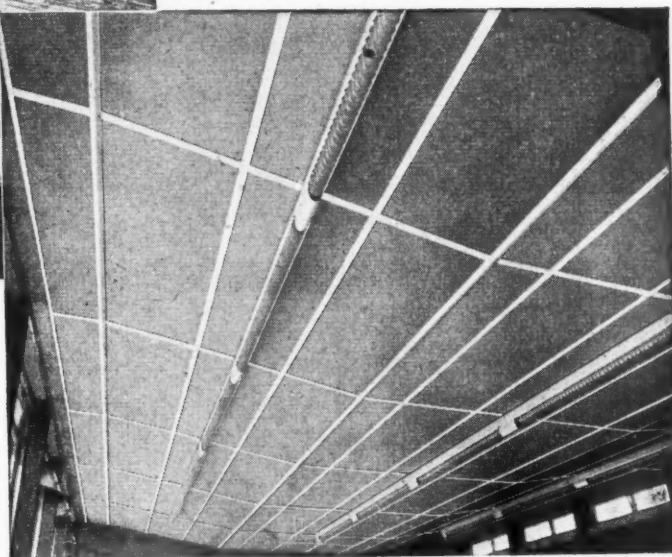


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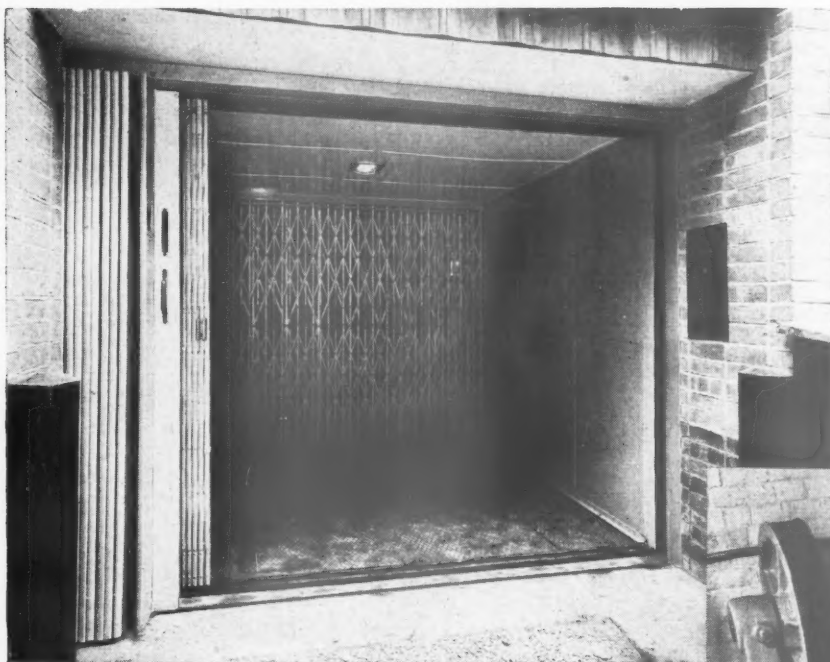
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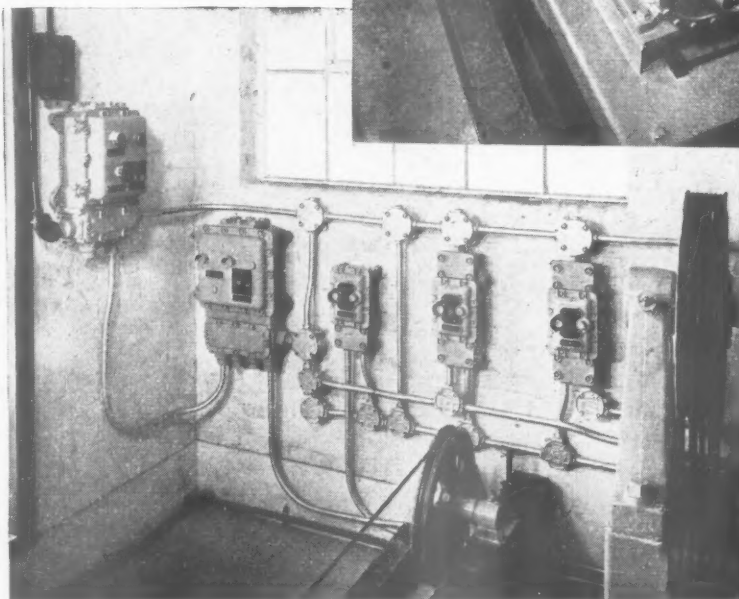
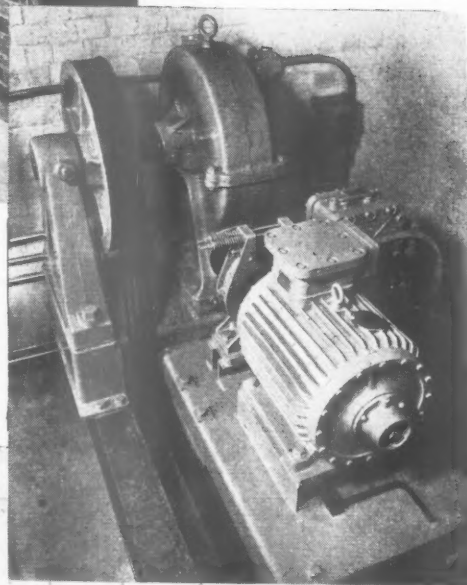


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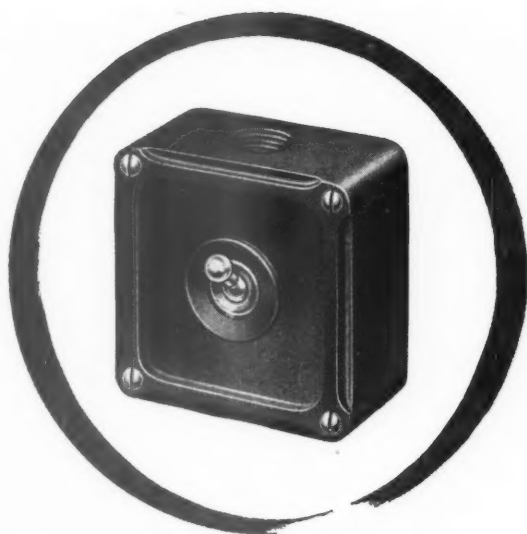
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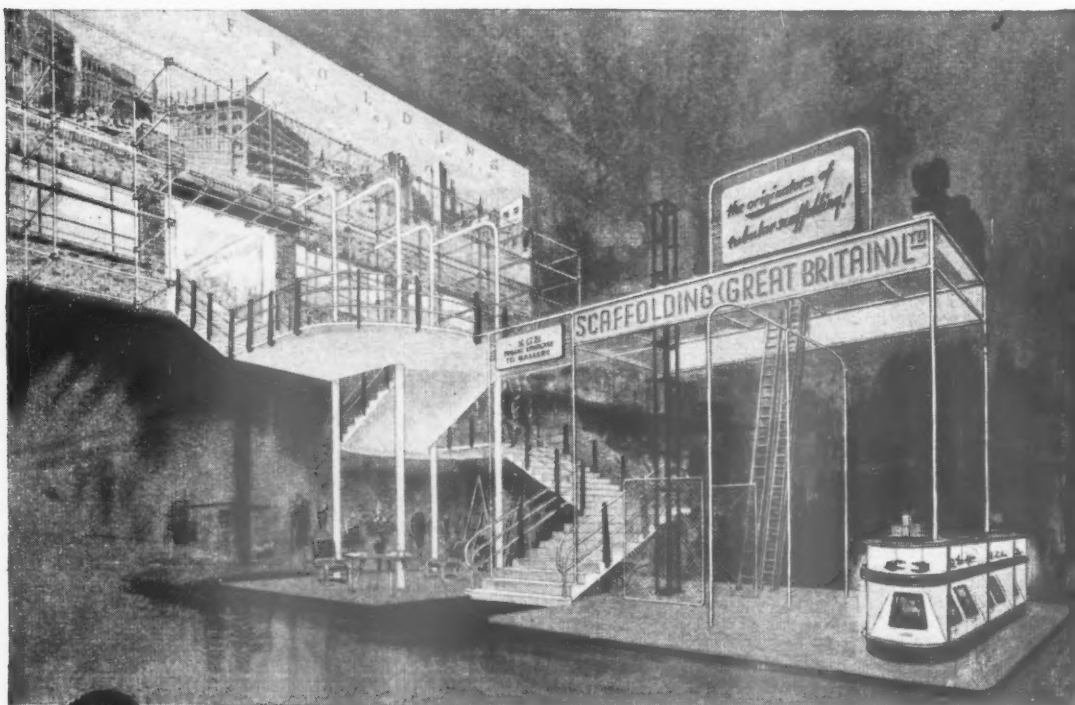
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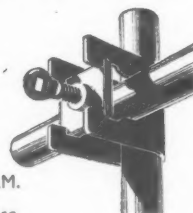
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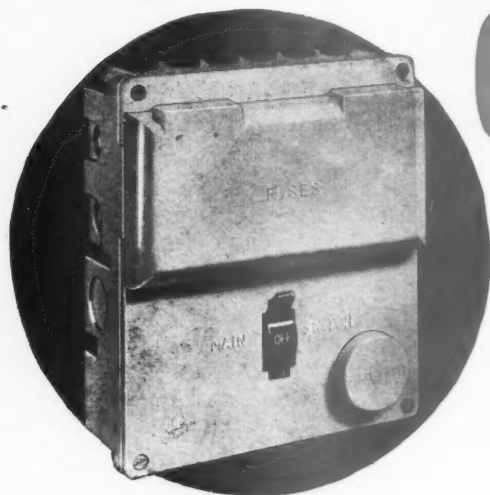
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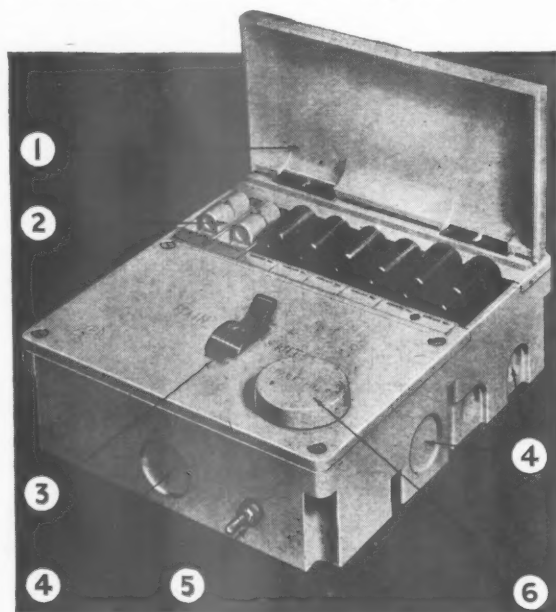
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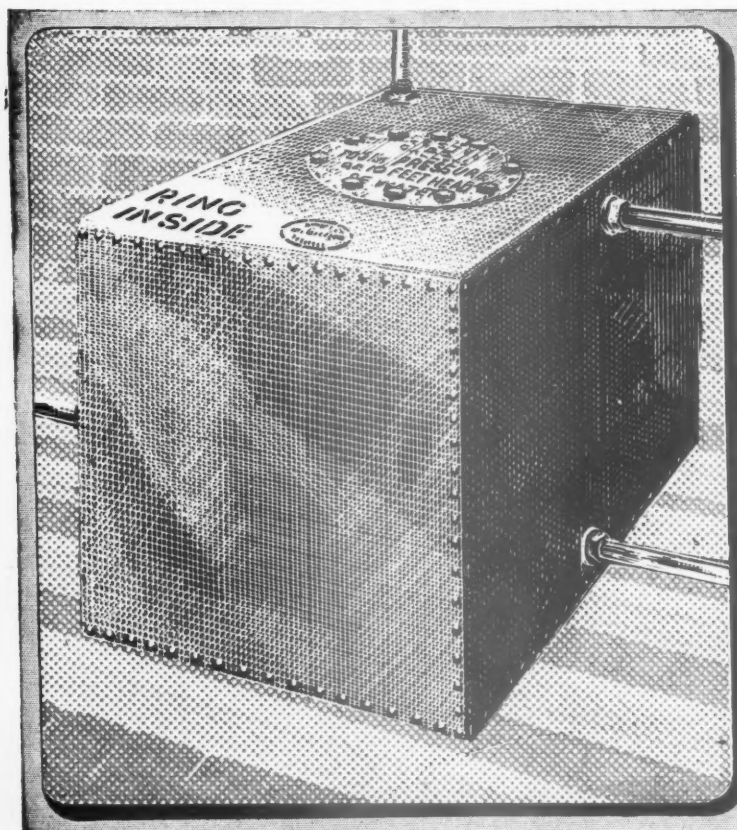
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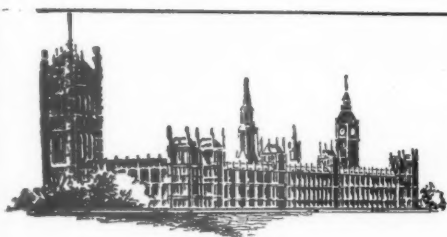
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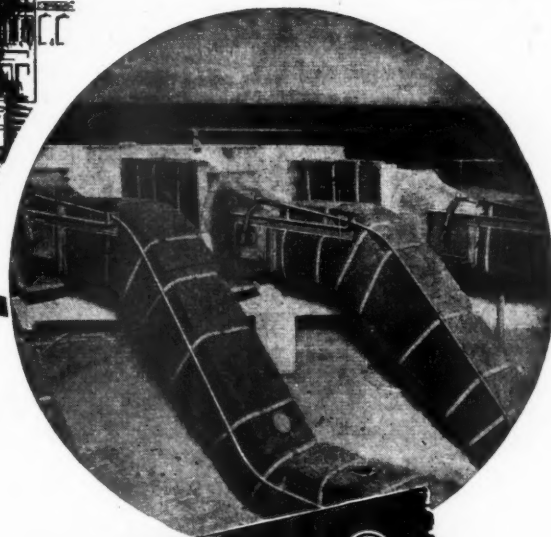
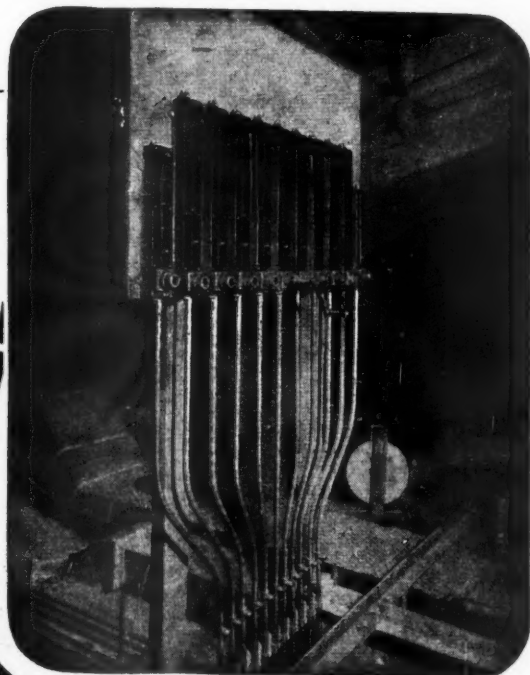
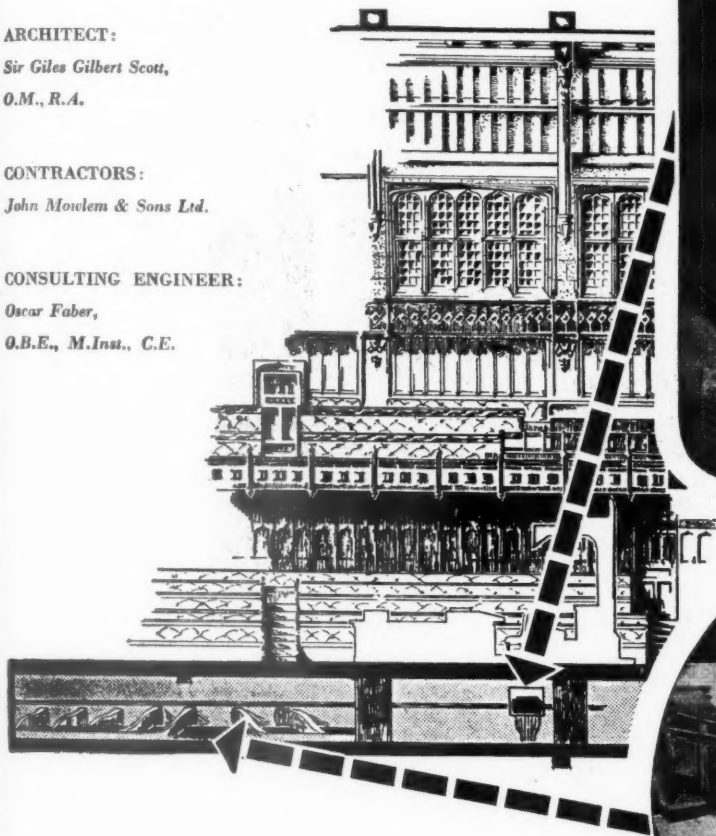
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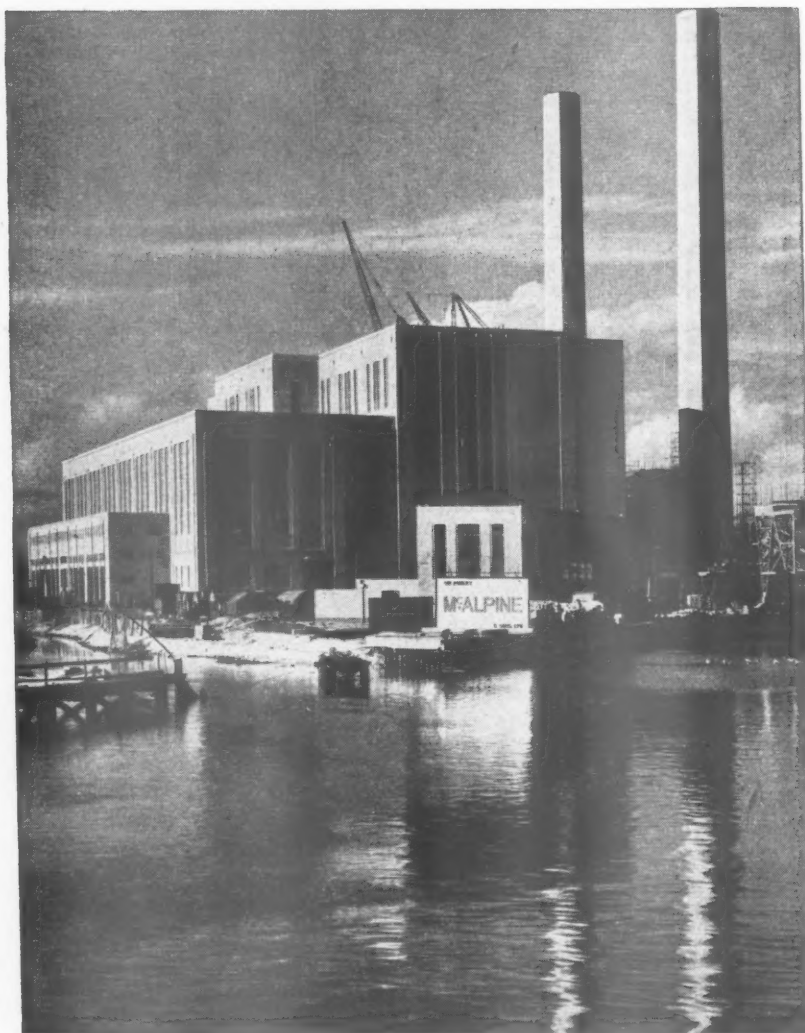
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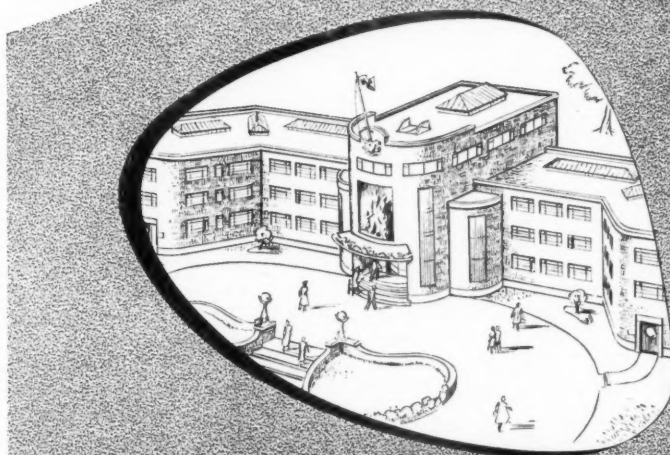
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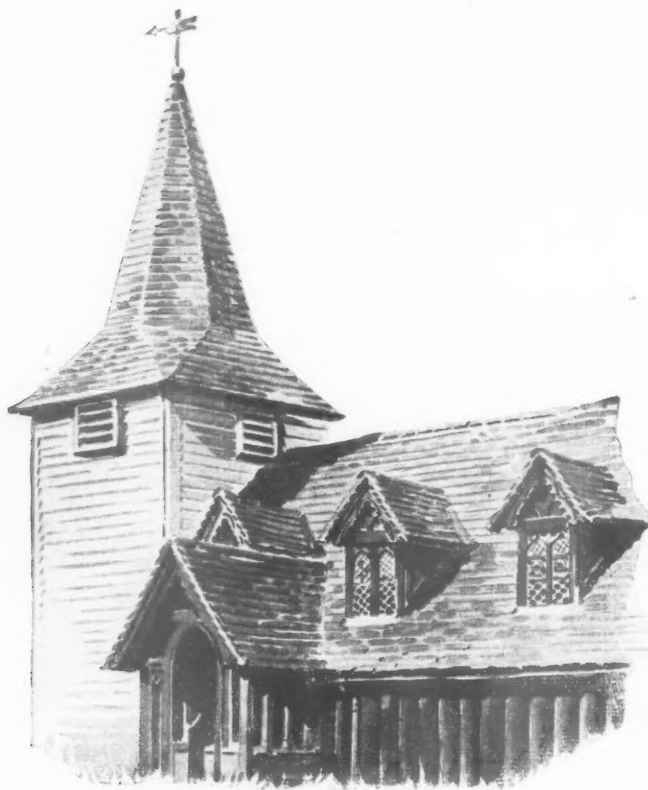
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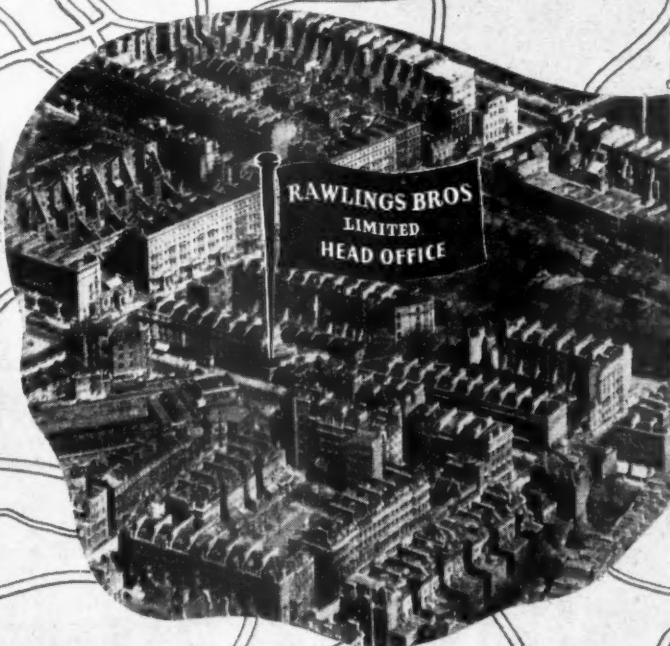
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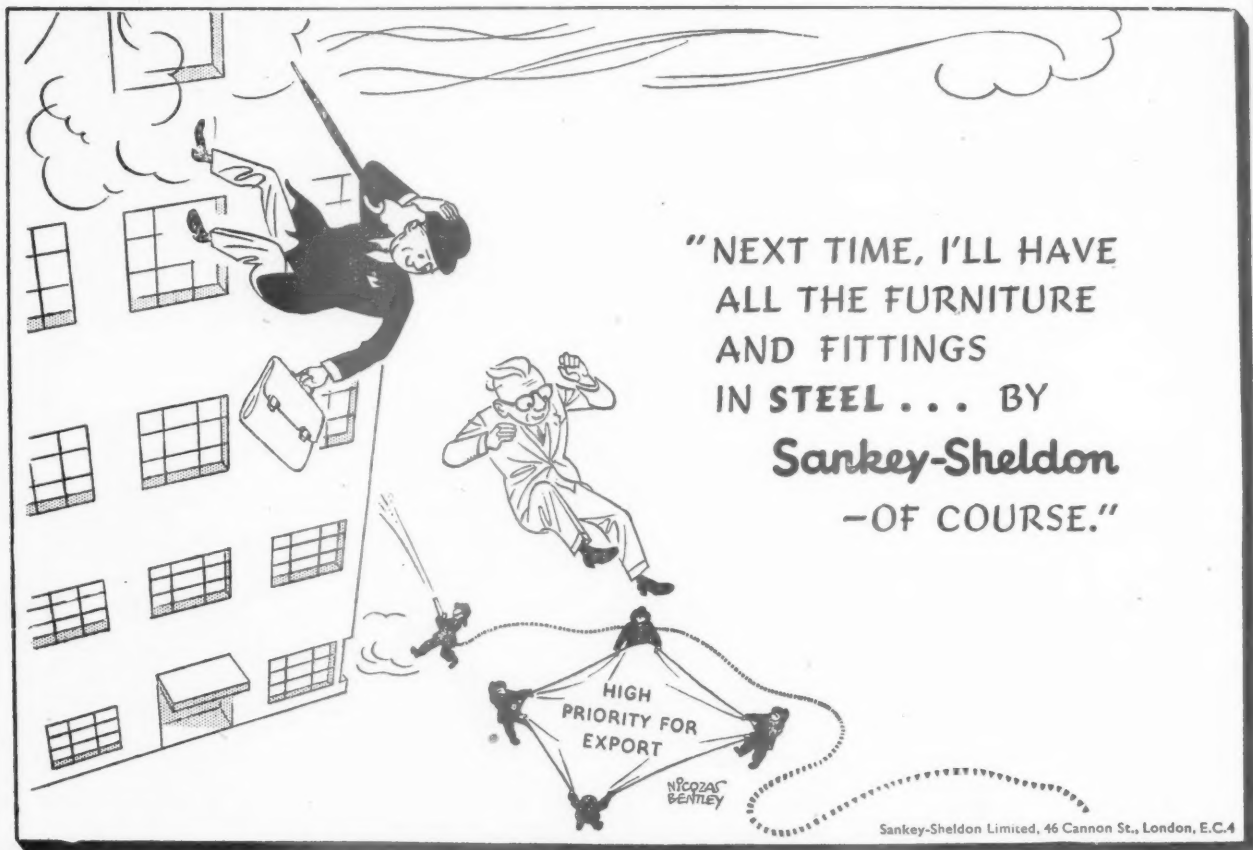
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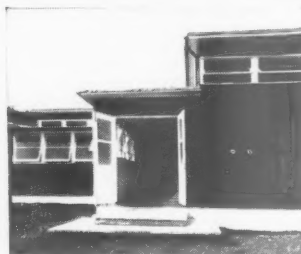
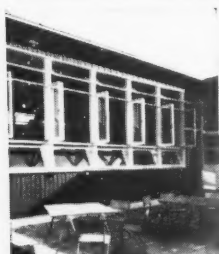
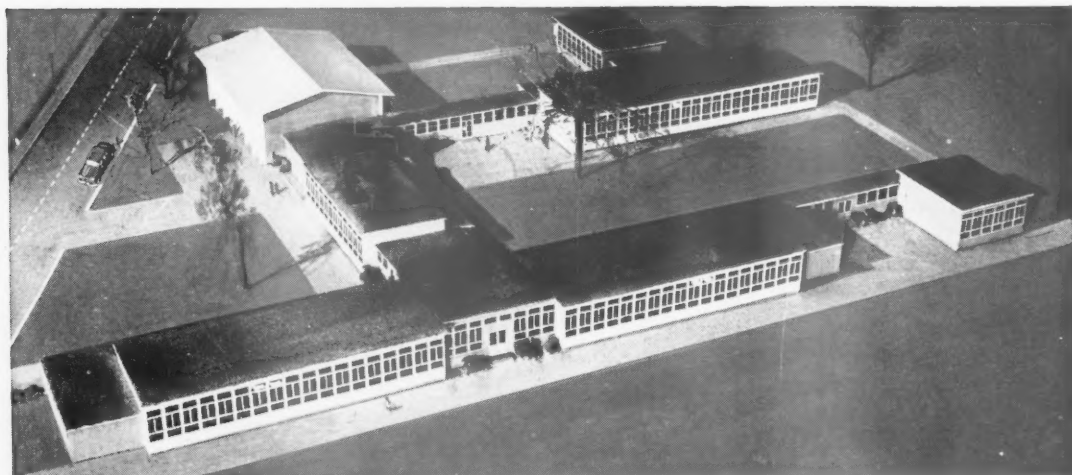


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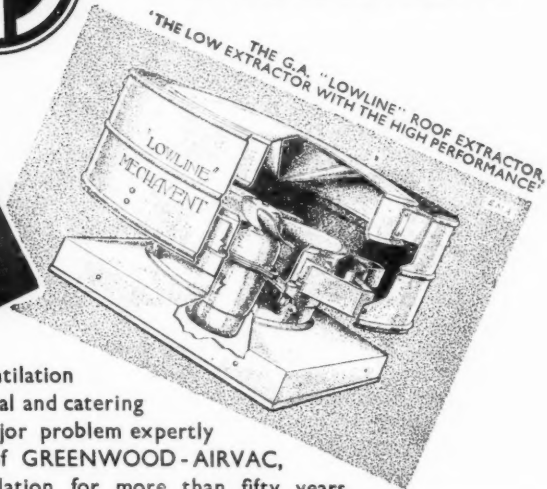




# Scientific



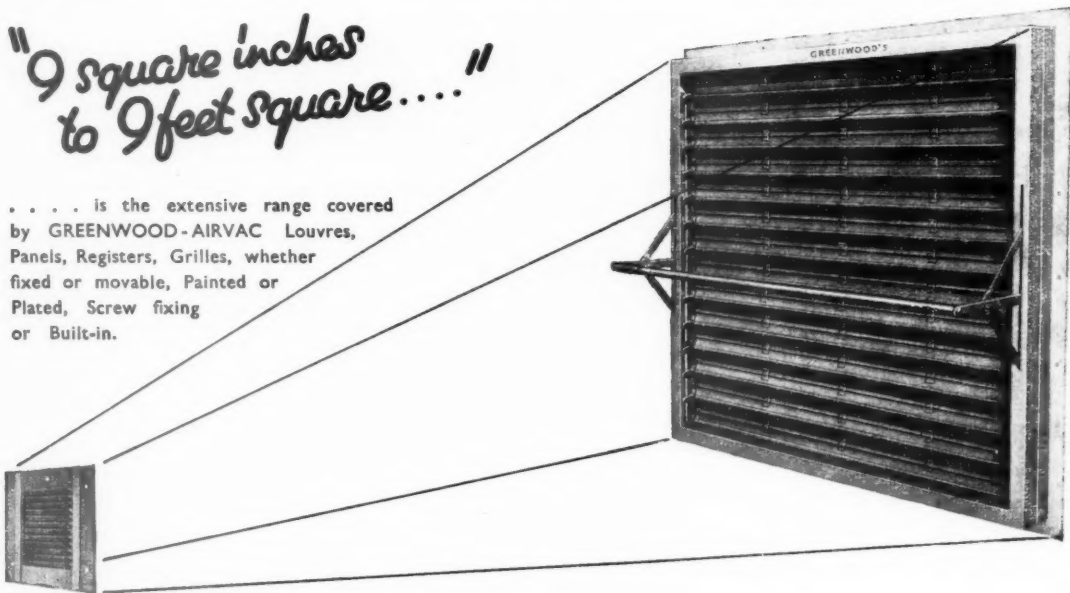
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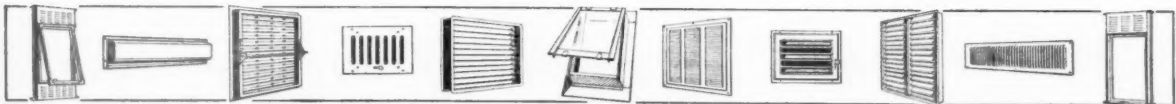
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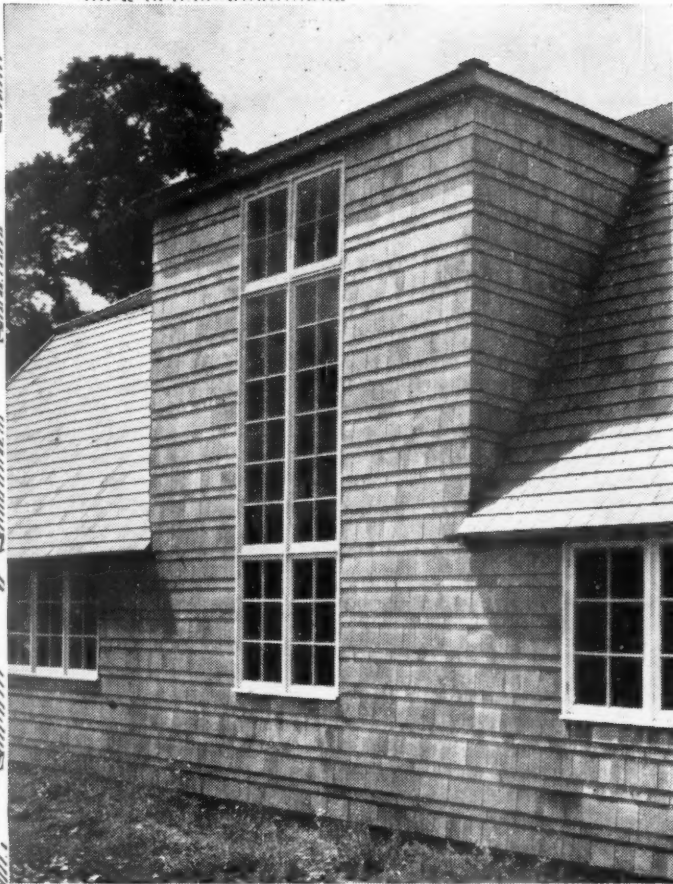
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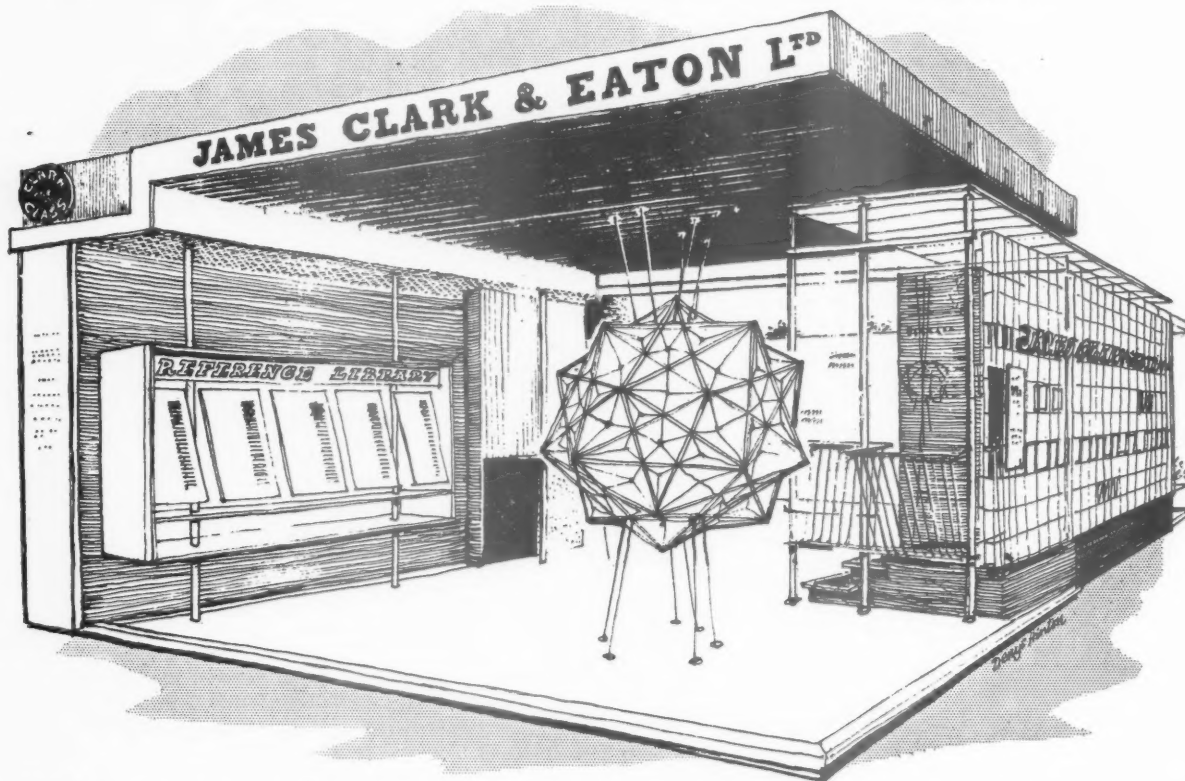
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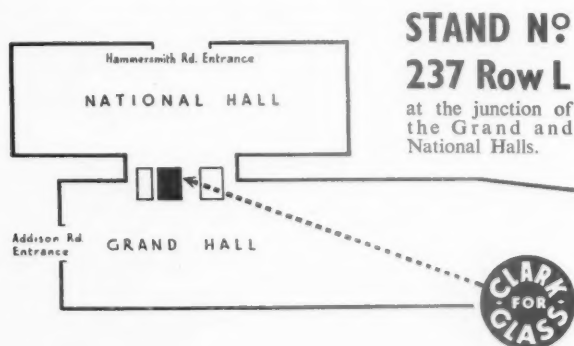
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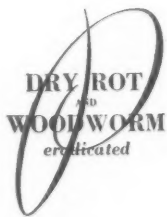
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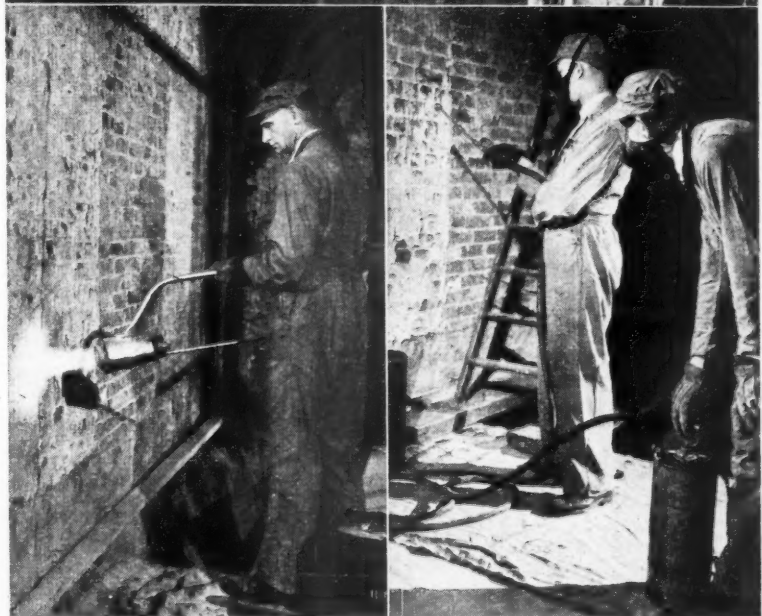
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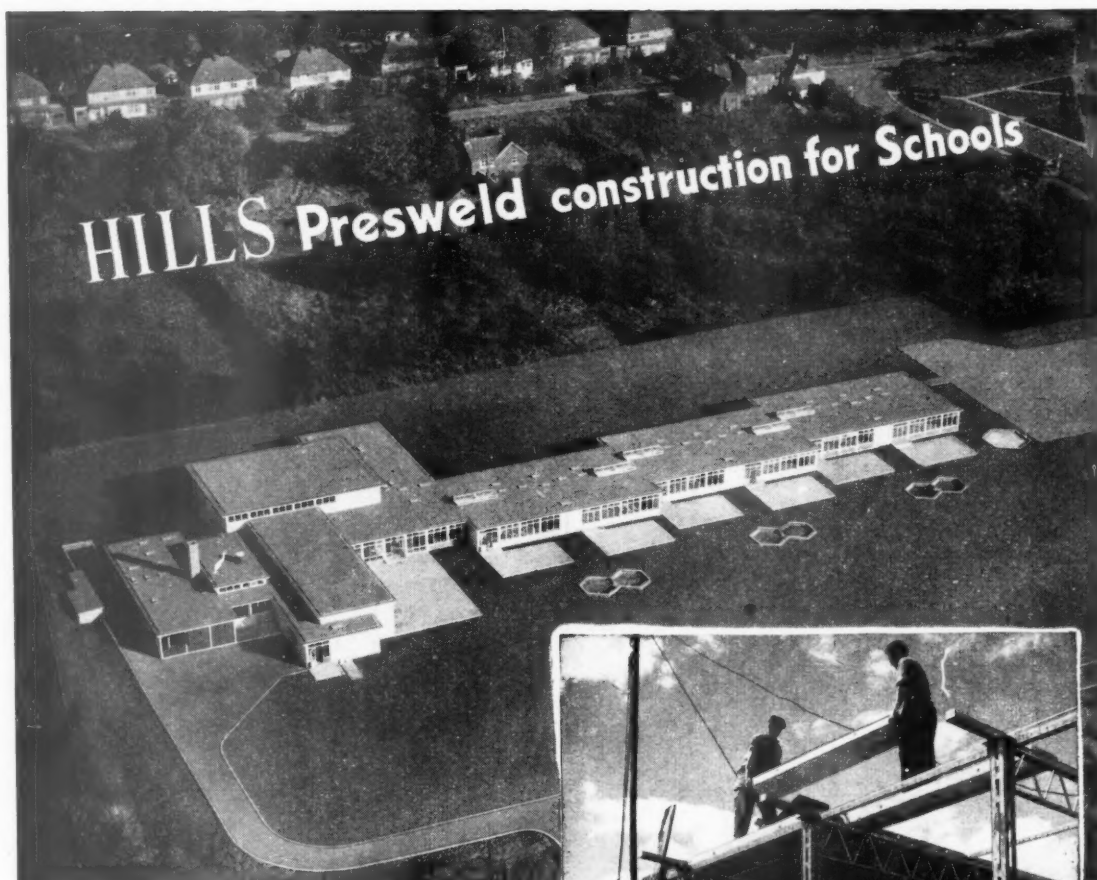
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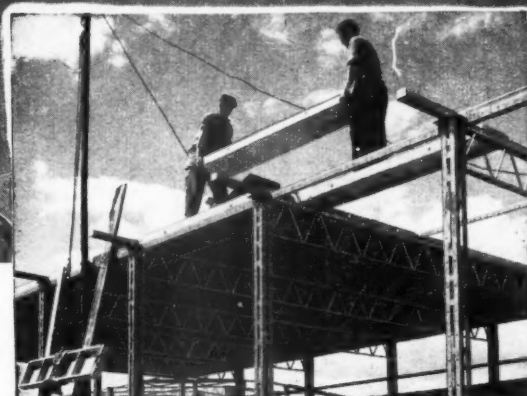
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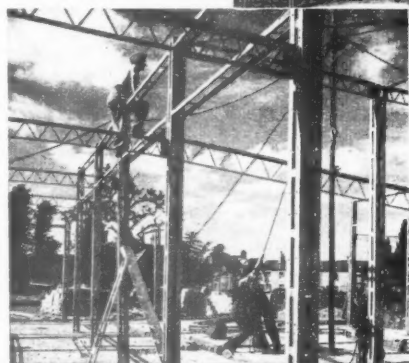
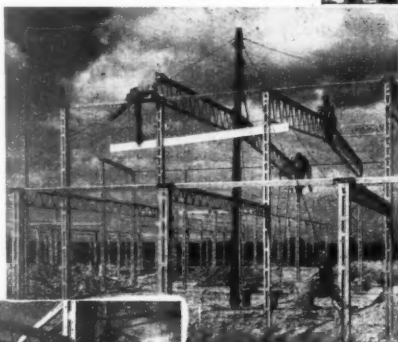
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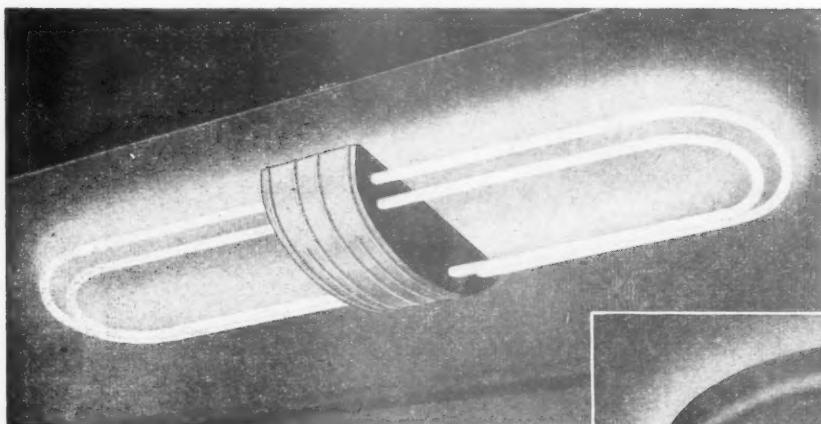
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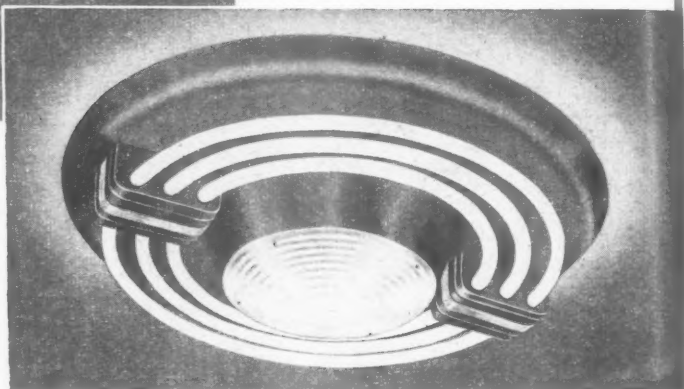


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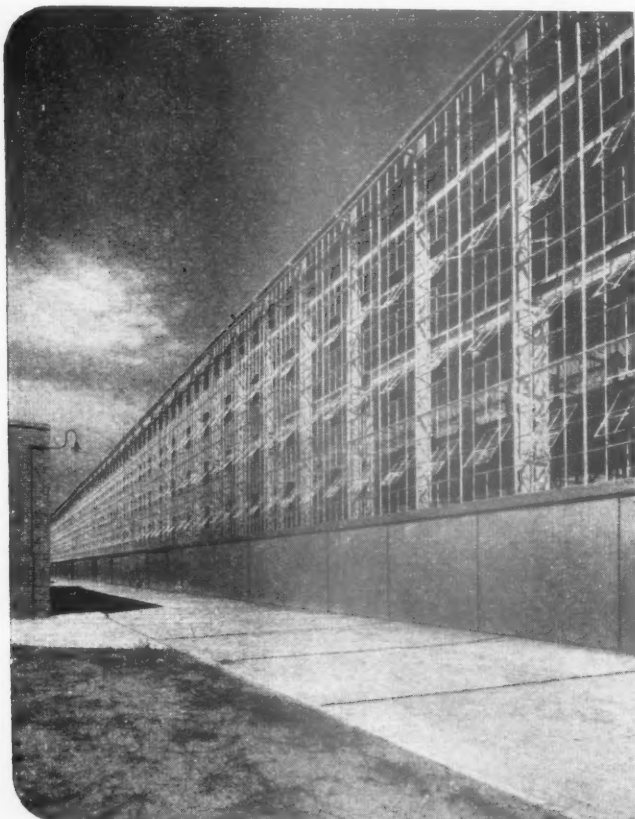
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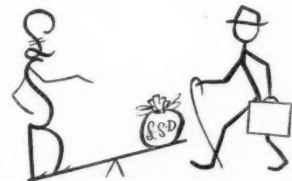


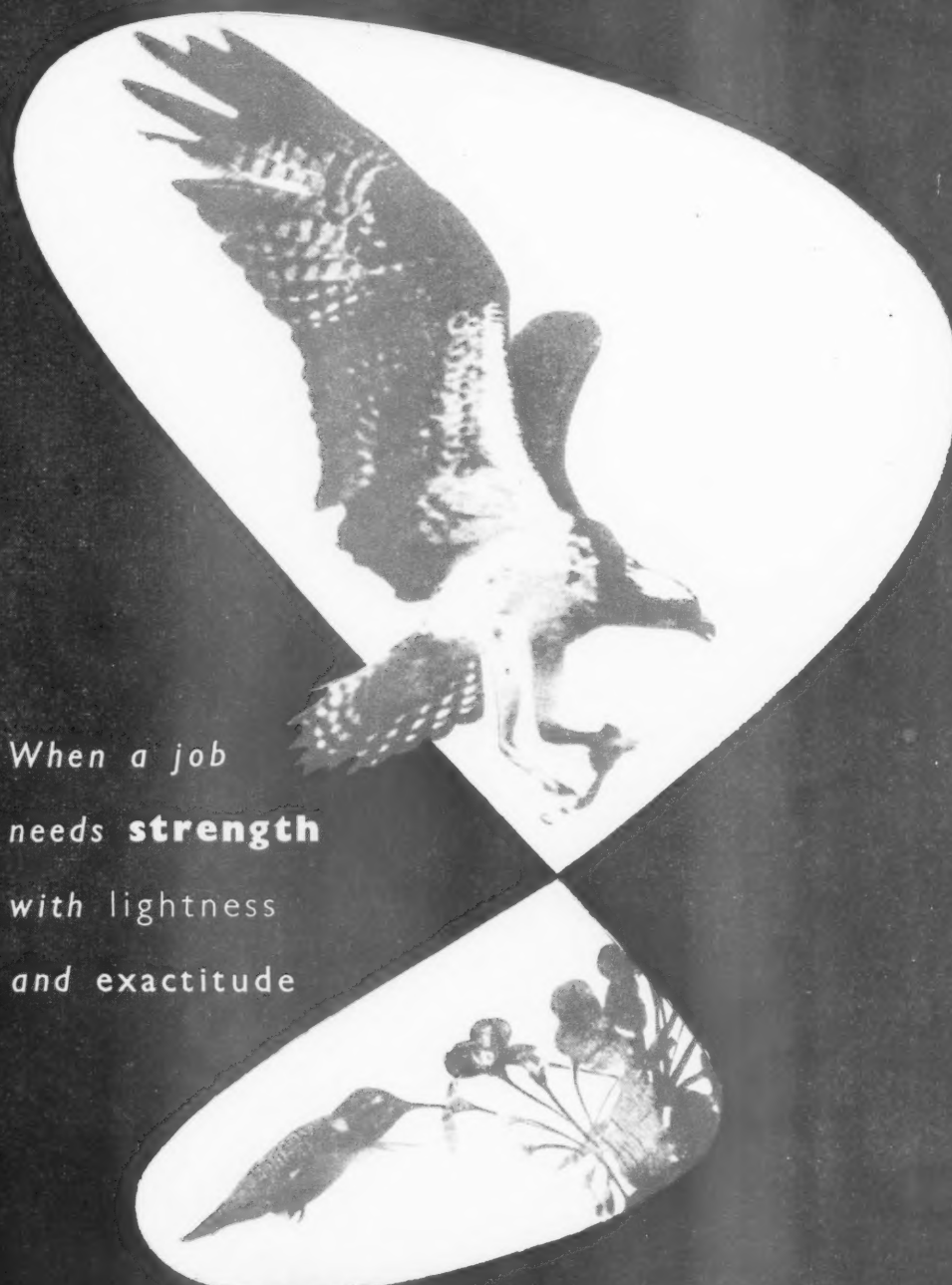
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THE ARCHITECTS' JOURNAL

No. 2960 22 NOVEMBER, 1951 VOL 114

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## OLYMPIA AGAIN

Exhausted, prematurely grey and with very sore feet I am still doing my best to have a proper look at all the Olympia exhibits and another glance at the new Minister of Works. Last week he sounded as if he meant builders and architects to do a lot more building and he said it as though he meant it; sincerely enough at any rate to make quite a lot of builders look as though the millenium must be just around the corner. It seems that materials are going to be the main trouble, but I doubt if we shall know for twelve months or more whether the manufacturers can really produce enough bricks and cement for the 300,000. But a Minister who seems prepared to listen to

what the industry has to say is a Minister worth having.

## MOTHERS-IN-LAW REVALUED

Scarborough Housing Committee, according to press reports, has decided to increase the rent of Council Houses by 2s. a week for mothers-in-law, and 3s. for more distant relatives if they are invited to stay during the summer months. I suspect that the ruling of this account can only be the result of tenants letting rooms during the holiday season—no doubt a very reprehensible practice for people whose rents are subsidized but I should be very angry if anyone tried to do it to me.

\*

In fact it seems that a Local Authority tenancy must be about the worst possible way of living. Well-built and presentable houses, I agree, but with no security of tenure, no permanently agreed rent, no cats, dogs, television aerials or flowers more than eighteen inches high, no more than four hours' flying time for the pigeons. In fact hardly anything that the Local Committee doesn't fancy. Not even the pleasure of being able to tell the landlord what you think of him.

## PAB

I have been studying the time-table of a two weeks' course in the protection and repair of ancient buildings that the York Civic Trust plans to hold next September, and I must say I am impressed. Twenty-eight lectures, numerous visits, and several periods of discussion and practical work are going to keep twenty people and their instructors pretty fully occupied.

Well occupied too, I should add. It has been pointed out more than once recently that the scarcity of architects qualified, by the highly specialized knowledge necessary, to care for old buildings is likely to prove a serious difficulty in the fulfilment of the preservation programme to which we are now morally committed. For my own part, I incline to the view expressed in a leader in the current *Architectural Review*—that what is needed in the long run is nothing short of a special kind of architect. In the short run, such ventures as this course at York, designed for the ordinary kind of architect like you or ASTRAGAL, are of great value.

\*

If you are interested, write to the secretary of the Academic Development Committee, York Civic Trust, 1, Museum Street, York; and, since the party is limited to twenty, remember to write soon. Remember too that it is a course in "protection and repair"; the prospectus, wisely enough, avoids "restoration" like a naughty word.

## WREN REPAIRED

Those familiar with Wren's Church of St. Bride's, Fleet Street, before its destruction in 1940 by incendiaries, may be somewhat startled by the illustrations I show this week of the proposed "restoration." The most noticeable change is the removal of the galleries and the insertion of a screen linking the columns. Other changes are in the appearance of the east end and the re-positioning of the organ so that it does not screen the delightful galleried opening which was but slightly damaged and which is shown in the drawing of the west end.

*See*  
**HOPE'S**  
**WALLS**  
**OF LIGHT**  
*at the*  
**BUILDING**  
**EXHIBITION**

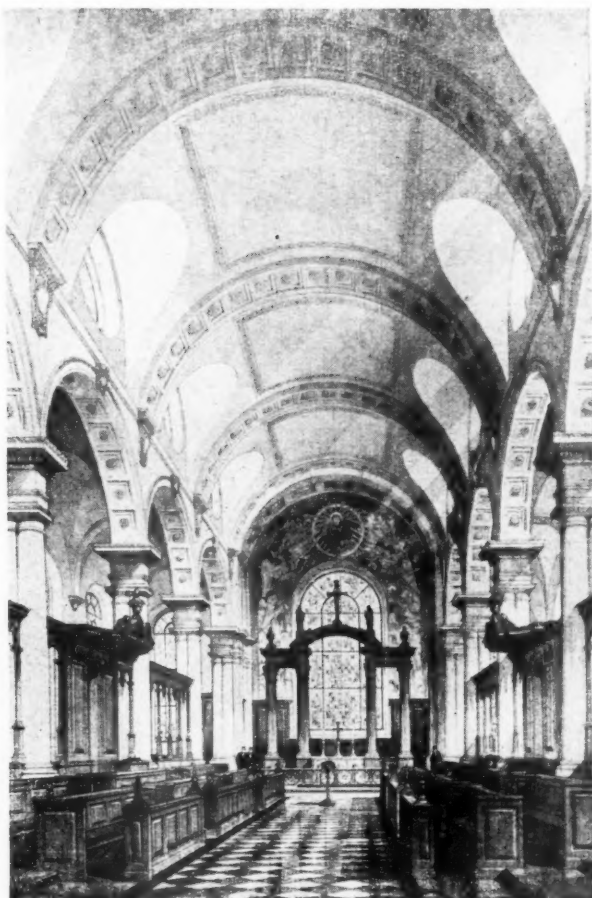
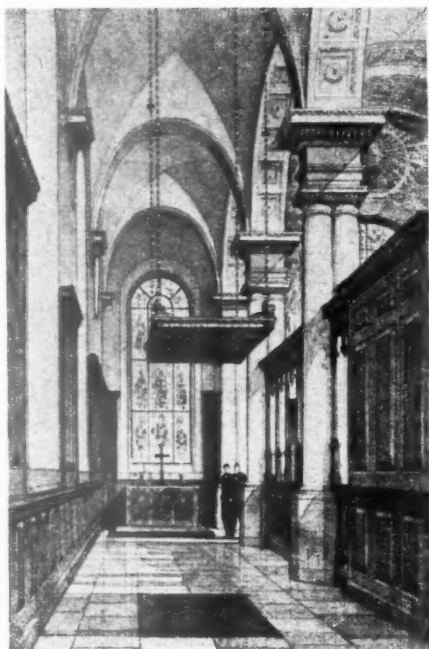
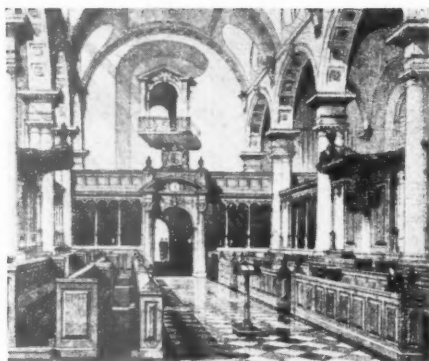


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*W. Godfrey Allen's design for the "restoration" of the Church of St. Bride, Fleet Street, London. Left: top, the west end; bottom, the Press memorial chapel. Above, the east end. See Astragal's note on page 605.*

The architect for the "restoration," W. Godfrey Allen, tells me that in making these alterations he is confident that he is reproducing the building very much more on the lines Wren intended it to be than it was before its destruction.

\*

The fact that the side windows ran right through the lines of the gallery suggests that the gallery was an addition which Wren was forced, possibly, to add but which he did not include in his original design. Similarly the east window is now designed to be its full depth—approximately the lower quarter had been filled with a blocking course of stonework—and the surrounding pilasters and entablature, another later addition, have been removed and space left for a painting of Christ in Glory which was, again, originally there. Only a very vague

sketch of the old Glory is in existence. It will be interesting to learn how Mr. Allen proposes to replace it.

\*

All in all this would seem to be, to my untutored eye a most scholarly "restoration" on which Mr. Allen should be congratulated. It is to be hoped that the Appeal Fund which was inaugurated yesterday will soon reach its target of £210,000.

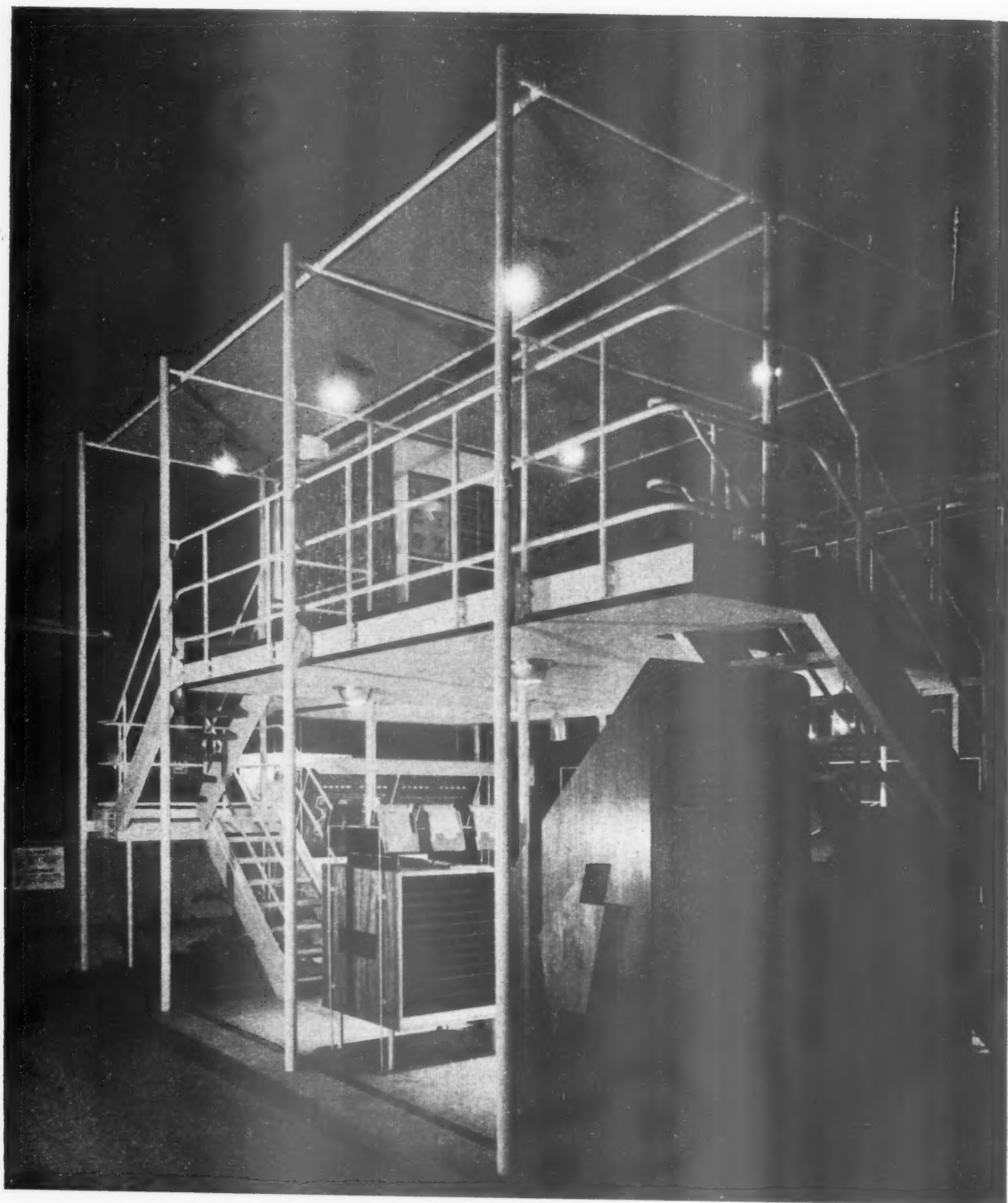
#### THIRD TIME UNLUCKY

Another disappointment for Le Corbusier—which will also be a disappointment for his many admirers who have long wished for him to be given the chance of tackling a major public building, and especially one suited to his international reputation.

They will remember how his brilliant design for the League of Nations Building at Geneva was shelved for political reasons and what a mediocre building was put up instead. They will also remember that he was one of the international team appointed to design the UNO secretariat in New York, eventually carried out by Wallace Harrison, and that its best points were clearly based on Le Corbusier's own ideas. Many people thought that the building's weaknesses were due to other of his ideas being ignored.

\*

Le Corbusier must have hoped that the third time he would be lucky, when discussions began about an architect for UNESCO's Paris headquarters, which are to be built on a magnificent site behind the *Ecole Militaire*. This time it was decided not to have a competition,



## *The South Bank Goes West*

Reports that many people in West London are South-Banking their sitting rooms have not yet been confirmed. But the influence of the South Bank exhibition has undoubtedly spread as far west as Olympia, where the most prominent features of '51 Festival architecture have been applied extensively to the design of Building Exhibition stands. While it is encouraging to see an increase in the number of stands which have a pleasing economy of line (like the one above, designed by Peter Bender and Douglas

Cole for the Armstrong Cork Co.), it is obvious that a hall completely filled with transparent stands, each designed independently, without regard for its relation to other displays, would be an irritating jumble of conflicting metal tubes, staircases and lettering. All the more reason, then, why exhibitions such as the present one at Olympia (reviewed on pages 619 to 633) should have a co-ordinating designer, who could supervise the work of a team of architects.

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nor to repeat the not very satisfactory experiment of designing in committee, but instead to appoint an architect direct. It was also decided that the architect should be French, as a compliment to the French Government who had shown great generosity in making this site available.

\*

The obvious candidate was Le Corbusier, who was favoured among others by Torres Bodet, UNESCO's director-general, in whose hands the appointment lay. He felt it necessary, however, to call together an international committee to advise him, and I have just learnt what happened when the committee met the other day. Most members agreed about Le Corbusier, and he would probably have been appointed had it not been for the opposition of the American member who wouldn't stand for it—chiefly, I understand, because of Le Corbusier's outspoken criticism of the final outcome of the UNO enterprise, and other opinions he had expressed which were interpreted as anti-American.

\*

So Le Corbusier doesn't get the job. Beaudouin is to be appointed instead—one of the best French architects, who will no doubt do a first-rate job. Readers will remember the pre-war work he did in partnership with Lods—especially the skyscraper flats at Drancy. But there will be many regrets that Le Corbusier has been passed over again.

#### BOWING AND SCRAPING

Nine times out of ten if I make a challenge no one could care less. Two weeks ago, however, I innocently asked: can any county beat Herts CC's total of fifty schools commenced since the war? The reaction was prompt. Lancashire, Essex, Middlesex and Kent all claim the honour—two of their letters are printed elsewhere in the JOURNAL, I believe. So four more times I gravely doff my hat. Now no cracks please, about the number of places provided, or the number of schools started but not finished, or quality before quantity. I'm a quiet, peace-loving fellow, as well you know.

\*

Middlesex claim to have built fifty schools in only four—no, no, never mind.

ASTRAGAL

## POINTS FROM THIS ISSUE

The York Civic Trust is to hold a course in the protection and repair of ancient buildings at the end of next year. ....	Page 605
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## The Editors

### A LESSON LEARNT ?

DAVID ECCLES, Minister of Works, opening the Building Exhibition last week, said: "We are aware that in the past the industry has suffered from the chops and changes in the pontifical pronouncements of Government planners. Mr. Harold Macmillan and I are businessmen and we know what it means to be messed about. If we were in your shoes we might well be a little sceptical, a little apprehensive of weathercock planning. We should want from the Government a firm long-term programme on which our industry could rely. The Ministers concerned will try, as soon as possible, to give you such a programme."

Mr. Eccles then went on to give plans for trying to increase the production of materials, to appeal for the greater use of bonus and incentive schemes and to ask the architect to design buildings so that new techniques and methods could be applied. All these are good points to which we will return in future issues. But the excerpt we have quoted in full does suggest that one Minister, at least, is aware that one of the greatest, if not the greatest, retardant to increased production is uncertainty as to the economic future. Whether it is a brick manufacturer planning to open fresh pits, or architects trying to form a planned production of schools, it is essential to know what capital expenditure can be safely undertaken. Not just for the current financial year, but for a period which bears some relation to the time it takes to get a claypit into economic production, or a schools programme designed and got under way as a building operation.

This long-term programme is the first essential. There are dozens of other points to be improved before really satisfactory results can be obtained. W. S. Shirra describes a typical one in his admirable letter overleaf. But this, and others, can be tackled in due course. The first thing is to ensure that the Government forms a long-term programme which will *not be upset* by recurring financial crises every few months. It does not matter if the capital expenditure schemes are not very ambitious at first so long as confidence can be restored to the industry by such long-term planning. With such confidence obtained the other problems can be handled with much more realism and greater assurance.



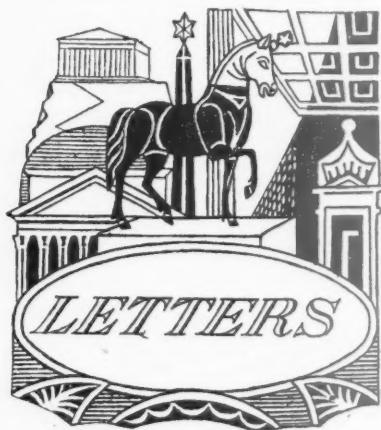
## No. 18: Legal Editor

## PLANNING REFORM NEEDED

Should the planning responsibilities of local government authorities be the subject of reform? Many people would say that these responsibilities form part of an integrated social life, and that it is wrong to consider them as something apart from the other work of a local authority. Certainly the major political parties seem to look at the question of such a reform with apprehension. Nevertheless, as Ernest Watkins points out in his article on page 612, few people can regard the present system of local and regional planning administration as satisfactory.

What can be done to improve matters? Mr. Watkins suggests—among other things—that Part II of the 1947 Act (development plans) should be the concern of a “middle-tier” authority, and that Part III (control of development) should be the responsibility of local councils (In new development areas the planning authority staff should, he thinks, be a joint board drawn from the development area organization and the local authority.)

Mr. Watkin's suggestions can be defended on the grounds that a piecemeal reform is the most likely reform to be accepted by Parliament. And some reform is necessary if we are to avoid waste of time, and land and building resources, and to retain vitality in local government.



John Sheldon, A.R.I.B.A.

Denys M. Hall, A.R.I.B.A.

H. Conolly, F.R.I.B.A.

W. S. Shirra

### No Worthwhile Work for Young Architects

SIR,—Thank you for your timely leader (October 31). Any method of providing a more even distribution of available work is very welcome, particularly to the younger architects, who find such great difficulty in obtaining worthwhile commissions. In common with many of my friends, I find it

essential to work a full-time job as a salaried assistant, in order to make up for a practice which is virtually non-existent, apart from the odd unimportant job.

Recently, seeking a new post, I had occasion to meet many architects, some of them very well known. From the many interviews I had, and from past experience, I have two observations to make: one is that I am convinced that 80 per cent. of the available work goes to 20 per cent. of the architects, and vice versa; only the slender remains go to the vast majority. Secondly, the firms who are prepared to pay reasonable salaries are not always the ones you want to work for.

Allow me to quote just one example, illustrating both points. One interviewer explained that his firm had little use for creative ability, as with 70 jobs in the office, ranging from a mere £100,000 to nearly a million, they had very little time for design, and as long as the client had a job that worked reasonably well they were satisfied.

Now that the days of practice buying are virtually over, what can the younger architect do to start a practice; or, rather, what can he do to continue with a reasonable remuneration? It does seem that the RIBA should adopt a fresh attitude to meet this changing situation, on the lines you suggest. Associate membership has increased by over 1,000 in the past year; it would be interesting to know how many of those will ever have the chance to start on their own.

JOHN SHELDON.

Twickenham.

### Alpha Plus.

SIR,—In your issue of November 8, ASTRAGAL commented on the commencement of the 50th new school in Hertfordshire and asked “... can anyone beat that?” The answer is “Yes, easily.” Kent County Council has completed 31 new

schools and has a further 24 under construction—a total of 55. If the adaptation of existing buildings to form new schools is taken into account the Kent total is 88. All these schools are of different design and in many cases the method of construction is unique.

But in all this friendly competition for record achievement there is one sobering thought—that the rate of progress must of necessity be governed by the people's capacity to find the money by rates and taxes.

With an annual expenditure on Education of well over £300 million the architect has a vital part to play in ensuring that the Nation obtains good value for its money in respect of the school building programme. It is this good value for money and not merely the erection of monuments to individual architects which will best serve this great social service.

Gravesend.

DENYS M. HALL.

### Alpha Minus

SIR,—We who are members of the Essex County Architect's Department join ASTRAGAL in lifting our hats (those of us who wear them) to our mutual friend C. H. Aslin and his Herts colleagues in their celebrations of 50 schools started.

But spare a nod, please, for Essex—to the boys and girls of the staff, and a galaxy of distinguished “private” architects. For we have started 57 new schools. Or, if you count infants and junior department as separate schools, 80.

Chelmsford.

H. CONOLLY.

### Late Payments to Building Contractors

SIR,—There is an overwhelming amount of evidence to show that building contractors who undertake building work for local authorities and government departments, are becoming seriously embarrassed as a result of the slowness of the authorities in making payment for work completed. The situation was becoming serious towards the end of last year, but has become infinitely more acute during the past few months as a result of the many recent increases in material prices.

Interim payments appear in general to be made regularly and promptly but the payment for extras due to increased cost of materials is in nearly all cases only made after a considerable lapse of time, in many cases as much as eighteen months to two years after completion of the contract. In many instances the sums involved are very considerable and when the amount representing the customary 10 per cent. retention is added, represent an outlay which is stretching to the limit the capital resources of the firms concerned. Some indication of the final result of this situation is provided by the following BOT statistics:—

Failures under the Bankruptcy and Deeds of Arrangement Acts: England and Wales

	1949	1950	1951
Builders, plumbers and associated trades	Bkcies. and Deeds. 228	Bkcies. and Deeds. 350	Bkcies. and Deeds. 352 (an approximation for 12 months based upon actual figures for first 9 months)
Proportion of above to total figures for all trades	13.5 per cent.	17.03 per cent.	17.8 per cent.

The strain suffered by the main contractors is always to some degree passed on to the

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sub-contractors and to the suppliers of materials, and all concerned will agree that the length of credit demanded for the provision of these essential services is extending at an alarming rate. The provision of extremely long credit, with its inevitable accompaniment of higher credit risk must ultimately be reflected in the cost of the services provided, with corresponding reflection in the cost of the contract.

Quite apart from this, as a direct result of this unwholesome state of affairs peculiar to municipal and state contract work, there is much evidence to show that many well established building concerns and sub-contractors of repute are now avoiding housing contracts in particular. Many authorities are now experiencing grave difficulty in obtaining tenders for house construction and are being compelled in many instances to reduce the size of contracts to uneconomic size in order to attract some of the smaller (and often inexperienced) firms into the field. Again the result is increased contract costs.

In the opinion of this council the question is one which should command the urgent attention of all those representing the many sections of the building industry. The object of this letter is to test the reaction to a suggestion that a meeting, representative of the trades involved, be called shortly in order that the whole subject be thoroughly explored with a view to taking strong collective action for suitable remedies.

W. S. SHIRRA.

Birmingham.

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



## BUILDING EXHIBITION Olympian Show Opened by Minister of Works

On Wednesday, November 14, the Minister of Works, David Eccles, opened the 24th Building Exhibition at Olympia. A. Graham Henderson, the President of the RIBA, who introduced Mr. Eccles, said that this was the biggest building exhibition ever held in this country. He spoke of the valuable exchanges of information which members of the building trade were able to have with each other.

Mr. Eccles said that he was surprised but delighted to find himself opening the Exhibition. The building trade was of "the very first importance to the recovery of our country." "The catalogue of the Exhibition," he said, "is a manual of signposts to efficiency. On stand after stand the guiding thought behind the exhibits is the expansion of the industry."

Mr. Eccles said that when management and men could see a better flow of materials coming forward we could begin to talk about increased productivity in the building industry. "I don't forget the architect," he said, "who has a special responsibility to design his buildings so that the new methods can be economically applied." Bonus schemes and incentive payments are in operation on less than one-third of the building sites today.

"That is simply not good enough," said Mr. Eccles. "Our programme will limp and drag unless there is a marked extension of such schemes as a by-product of greater stability in the industry. We want managers and men to work faster without loss of standards, to earn more by doing so, and to keep more of what they earn."

A vote of thanks to the Minister was moved by Stephen Hudson, President of the NFBTE.

## 300,000 HOUSES

### The Government Promises

In the House of Commons on November 14, Harold Macmillan, Minister of Housing and Local Government, made the following remarks on the Government's housing programme. To prevent undue pressure on the cost of housing the Government had invited the local authorities concerned to enter into negotiations with them. A review of the housing subsidy, which normally took place in June, would be brought forward six months, and in the negotiations the rise in the cost of borrowing would have its place.

He assured members that the housing programme would be exempt from the period of three months in which no new building projects could be started. The Government's target of 300,000 houses a year still stood, said Mr. Macmillan, though it would not be

reached until after 1953. He added that the new towns that were springing up must have essential services, new buildings for essential industries must be done, and there was the problem of the balance between houses and other services, such as schools. He said that the present rate of house building was about 190,000 a year. Amongst measures to improve this, there must be an increase of at least one-third in brick production. Supplies of plaster board were inadequate and the amount of softwood available, half of which had to be used for purposes other than housing, would have to be used economically.

## TCPA

### Director Resigns

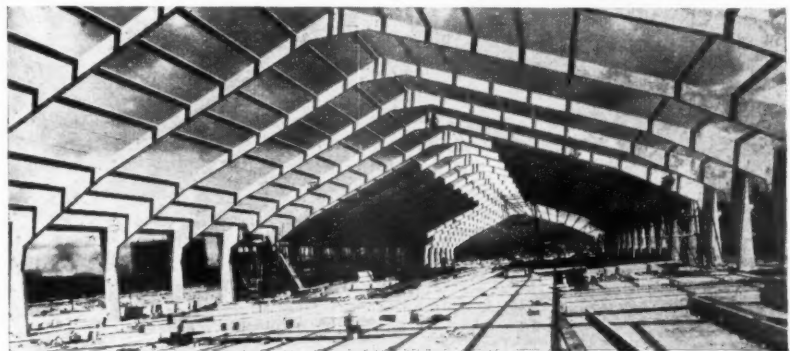
Russell W. Kerr has resigned from his position as Director of TCPA. No new appointment has yet been made, and for the present, communications should be addressed to the Secretary, TCPA, 28, King Street, Covent Garden, W.C.2.

## COVENTRY CATHEDRAL

### Modifications Proposed

The chairman of the Cathedral Reconstruction Committee, E. H. Ford, has said that when the design was submitted to the technical committee of the RFAC on November 14, the architect, Basil Spence, described modifications that he had in mind. The modifications have not been submitted to the Cathedral Reconstruction Committee and their details will not be revealed until the RFAC has announced its recommendations. It is understood that the Committee will meet to consider the modifications as soon as these recommendations are known.

To accommodate new pottery kilns for Doulton & Co. Ltd. each of which is about 320 ft. long, a new building has been designed by W. S. Atkins & Partners, engineers. The kilns are placed at first floor level. In the photograph below the precast concrete structure of this floor and the roof is shown nearly completed. The load bearing capacity of the site was poor and the whole building is founded on a system of in situ piles—good load bearing stratum being found at from 20 ft. to 30 ft. Up to and including the first floor slab all the construction with the exception of a small annexe to the east is



in situ concrete framed. Columns at 15 ft. centres divide the building lengthwise into 32 equal bays; main beams run longitudinally and span the 15 ft. from column to column and secondaries at 7 ft. 6 in. centres span transversely between the main beams. The suspended slab of the first floor is 5 in. thick and cast integral with the beams. From the first floor slab upwards the construction changes from the in situ to a proprietary precast system of framing of which the span is 85 ft. and thought to be the largest yet erected in Britain. The framing consists essentially of transversely spanning portals spaced at 15 ft. centres which carry precast purlins 4 ft. 6 in. apart and special gutter units along the eaves. The external wall infilling to all the reinforced concrete framing is of 11 in. cavity brickwork. The main roof is covered with asbestos cement corrugated sheeting. The contractors were C. Cornes & Son.

## ACOUSTICS

*A Discussion on the Royal Festival Hall*

After the experience of the first six months, the acoustics at the Royal Festival Hall are to be discussed at a meeting at the RIBA on November 23, at 4.30 p.m. The meeting is being convened by the Acoustics Group of the Physical Society and architects are invited to attend. P. H. Parkin and W. Allen of BRS will introduce the discussion in which Hope Bagenal, acoustic consultant, will speak. A number of musicians and music critics expect to contribute. The three persons mentioned above gave their views on acoustics when the Hall was first opened, in the JOURNAL for May 10, page 604.

## NFBTE

*A New Book of Costing*

The NFBTE published recently a book entitled "Accounting and Costing Systems for Small and Medium-sized Builders." (Price 5s. net.) It is hoped, says a press notice issued by the NFBTE, that the book "will not only encourage those who have not adopted a costing system to do so at an early date, but will also help others to make improvements in their present systems."

It will be remembered that the Building Working Party, in its report published last year, expressed the view that "an adequate costing system is an essential factor in management, both in promoting efficiency in the utilization of labour, materials and plant, and in controlling overhead expenditure."

## ABS

*Monumental Competition*

Already the ABS competition for a "Monument to the Passing of the Good Old Days of Architecture" is assured of a degree of success which can be described as moderate. The competition was announced in the JOURNAL for October 18. The committee hopes that architects will send in their entries so that, by the time sending-in day (December 3) arrives, the success can be described as overwhelming. A copy of the conditions is obtainable from the Secretary of the ABS, 66, Portland Place, W.1, in exchange for a minimum non-returnable deposit of 10s., which goes to the Centenary Appeal Fund. Since the competition was announced, Rowland Emmett has been added to the jury of Assessors, which already includes H. S. Goodhart-Rendel, Osbert Lancaster and John Summerson.

## BETJEMAN

*Victorian Architecture*

Recently John Betjeman gave a lecture, with lantern slides, on Victorian Architecture, at the Forum Club, London. Proceeds from the sale of tickets for the lecture were given to the donation fund of the Shoreditch, Hackney and Highbury Housing Association. The scene for the talk was an ill-proportioned L-shaped room in this woman's club, the Forum, its walls hung with highly coloured paintings in water-colours and with tinted photographs. Appropriately enough Mr. Betjeman commenced by reading (with asides) one of his poems on the Victorian Church of St. Saviours, Aberdeen Park, Highbury. When the delighted audience had stopped applauding Mr. Betjeman said that he would mainly be talking about churches because that is what the

Victorians believed in. The reasons given for disliking Victorian architecture were usually that it was over-decorated (here Mr. Betjeman mentioned somewhat sarcastically the "clean clear-cut lines" of design today), and because the Victorians built rows and rows of two-storey houses—which were now slums. What, Mr. Betjeman asked, to the accompaniment of "hear-hears," would posterity think of the prefabs and towering new blocks of flats today? We had merely exchanged the life of the street to the life of the staircase.

Mr. Betjeman then showed, with some speed, a considerable number of slides—some were photographs, but they were largely engravings because, as he said, that was how the Victorians saw them. The most beautiful of the buildings—though Mr. Betjeman was not mean in the use of superlatives—was St. George's Hall, Liverpool, the greatest of a number of sound classic designs which lasted throughout the century—a type of design associated with velvet curtains, heavy port, malachite clocks and men's clubs. Then followed a number of gothic designs. The University College of Wales, Lancing College Chapel, St. Pancras Hotel, and a slide of the interior of a gothic church which Mr. Betjeman staked half-a-crown no one would know where it was. Alas, the third guess was right: Brandon's Catholic Apostolic Church in Gordon Square, St. Pancras. A second appeal to the audience was rather more successful from Mr. Betjeman's point of view. He showed a slide of a house by Burgess in Melbury Road, Kensington, and expressed a longing to see the inside. Might anyone, possibly, get him an introduction to the owner? Sure enough a lady in the audience had an uncle who owned it. From that moment the audience was in Mr. Betjeman's hands.

## AUCTION

*South Bank Equipment Sale*

The first public auction of the smaller items of equipment, chairs, electrical gear, textiles, etc., will be held on the South Bank site on December 11 to 14. Catalogues will shortly be available from the auctioneers, Harold Williams & Partners, 70, Victoria Street, S.W.1.

## DIARY

*The Obsolete Street.* R. Furneaux Jordan. (Sponsor, Students' Planning Group of TCPA.) At 28, King Street, Covent Garden, W.C.2. 6.15 p.m. NOVEMBER 22

*Fire Protection: The Architect's Responsibility.* Eric L. Bird. At 66, Portland Place, W.1. (Sponsor, RIBA). 6 p.m. NOVEMBER 23

*The Rapid Calculation of the Plastic Collapse Load for a Framed Structure.* A lecture by B. G. Neal and P. S. Symonds. At ICE, Great George Street, S.W.1. At 5.30 p.m. NOVEMBER 27

*Building Exhibition.* At Olympia. Week-days 10 a.m. to 8 p.m. UNTIL NOVEMBER 28

*Holiday in Sweden.* A talk by Gontran Goulden at the ordinary general meeting of the AA, 36, Bedford Square, W.C.1. At 8 p.m. NOVEMBER 28

*Some Landscape Aspects of the Development Plan.* A lecture by James W. R. Adams. (Sponsor, TPI.) At Caxton Hall, Caxton Street, S.W.1. At 6 p.m. DECEMBER 6



*In this article, the last of a series, Mr. Watkins makes suggestions for the reorganization of planning administration. Development Plans, he says, should be the responsibility, of a "middle-tier" authority—something between the local and national government levels—and the control of development should be handled by local councils. The author also proposes a transitional scheme for such reorganization.*

ERNEST WATKINS  
*Planning and the State (5)*

Government in Britain today is carried out on a three-tier basis—national, regional and local.

Last week's article contained suggestions for a more sensible arrangement for planning control in the national government. This week I want to say something about regional and local government. Few people can regard the present arrangements as perfect. It is often said that the county councils are responsible for too much detailed work. And some people think the system of delegated authority is unsatisfactory. The trouble is we are still trying to plan with two different types of authority—the elected local authority and the nominated development area authority—which have no link between them.

Consider the development areas. Under the Distribution of Industry Acts, the BOT is responsible for a wide range of development areas. General policy is decided by a division of the departments in London. And that policy is carried out regionally by the department's regional offices. These are helped by voluntary advisory organizations, made up of people representing all types of industry in the region, and presided over by a civil servant. The day to day business in the development areas is managed by the trading estates—limited companies owned by the BOT. Many of these were established by the Special Commissioners fifteen years ago.

There is no trace of any "democratic" local government in such a set-up, though Liverpool corporation must be cited as an exception. This corporation obtained authority by private Act of Parliament to set up its own trading estate. It manages this as part of its corporation property, in spite of the fact that three other county boroughs and two county councils are responsible for the Merseyside area served

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## PRIMARY SCHOOL AT BRISLINGTON, BRISTOL

by the trading estate. It is possible to argue that either the rule or the exception is better than the other.

Can we dispense with the middle-tier or regional authority? It is difficult to believe that we can. Let us consider an example of its work. Suppose the coal-mining industry were to be given a special allotment of 10,000 of the houses to be built in 1952, as the industry has requested. On a national level a decision would be made as to the number of houses to be allocated and, possibly, how many should be allocated to each of the regions in the Coal Board's organization. On the local level, it would be decided where houses should be sited, how they should be built and how they should be managed when built. Somewhere between these two levels someone would have to decide how the regional allotment of houses could best be divided among the pits in its coalfields.

It is useless for us to look for a uniform pattern of planning organization—one that can be applied, without modification, to the country as a whole. Nor can we return to the war-time regional pattern for local government. Logical as it may seem, it has received little support since the war. We must, therefore, concentrate on remodeling our existing regional and local planning administration.

## DIVIDING RESPONSIBILITIES

Here are some suggestions.

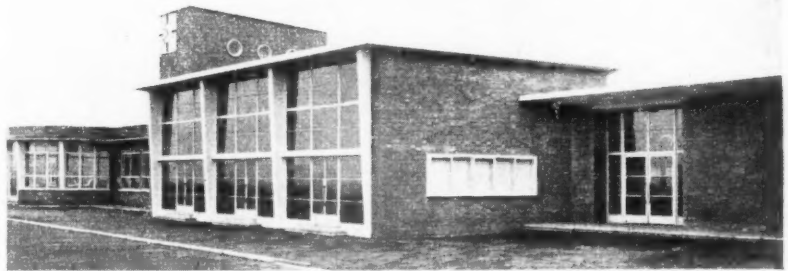
Responsibility for carrying out the 1947 Act should be divided. Part II of the Act (development plans) should be made the responsibility of a middle-tier authority. And Part III (control of development) should be handled by district and borough councils. (Application for permission to vary a development plan should go to the middle-tier authority.) This would give local councils the full duty of enforcement and of the preservation of sites and buildings on the minister's list.

Some of these middle-tier authorities would be existing administrative counties. Others would be existing development areas. And some would be specially created. (This is necessary, for it is not satisfactory—to take an example—that the planning of Fensland should be the responsibility of six administrative counties.) All their boundaries would be the same as those of existing local government boundaries where possible.

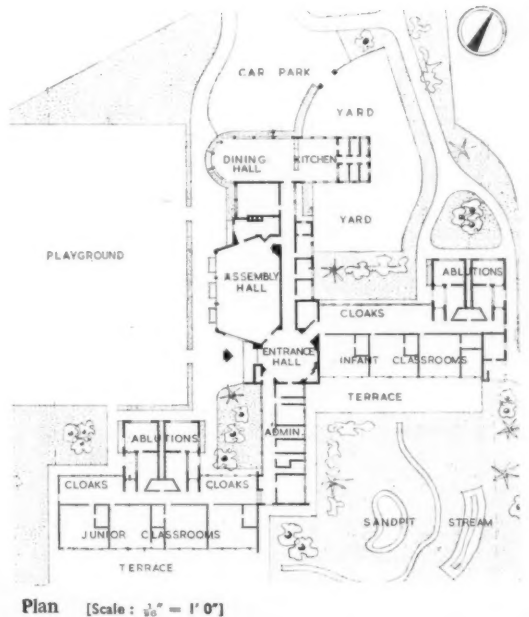
In the development area the planning authority should consist of a joint board with members drawn from the development area organization and the local authority. (Joint boards would also be needed where a middle-tier planning authority covered more than one local government area.) And in the development areas people should be made to think of planning as part of industry and industrial development as well as part of local government.

## A TRANSITIONAL PLAN

If all this seems too drastic let me suggest a transitional plan. It would be possible to amend the Distribution of Industry Acts which give the BOT its powers in development areas. The Act could be amended to give the MOHLG authority to set up a joint planning board for each development area and, possibly, for the area which would have a new town as its centre. (This assumes that the MOHLG had already been given responsibility for the distribution of industry.) In the case of the development areas these boards would inherit the experience—and perhaps, the staff—of regional committees and would have the useful function of bringing the civil service and the local government service into closer working co-operation. An amending Act should ensure that a new town would be able to help anyone proposing development in its area. (It does not now have the power to do so.)



*The Broomhill Primary School in Allison Road, Brislington, Bristol, designed by Burrough and Hannam, provides accommodation for 160 juniors and 120 infants, and an assembly hall (seen above) that can be used for community purposes without the public using classroom corridors. Classrooms, as seen in the photograph below, and administrative blocks, are of prefabricated aluminium,*



*minium, and assembly hall and dining hall are RC framed with prestressed concrete beam roofs. Floor heating coils are provided in the assembly hall and all classrooms. The contract price was £62,193, or 3s. 11d. per cub. ft. The general contractors were W. Rogers & Sons (Bristol), Ltd. For sub-contractors, see page 634.*





## DEMONSTRATION HOUSES

at HIGHWORTH, WILTSHIRE

designed by ERIC CHICK

consulting architects, POWELL and MOYA

The aim in building these first two semi-detached prototype houses has been to construct them cheaper than the normal council houses in traditional materials, without lowering standards of space or comfort. The Highworth Council have given every encouragement to the experiment and have now decided to proceed with a block of terrace houses designed on similar principles. Small builders, with a minimum of plant, as in the case of the builder of the prototype pair, can carry out the work, as the economies effected do not depend on mass production.

*The west facade.*



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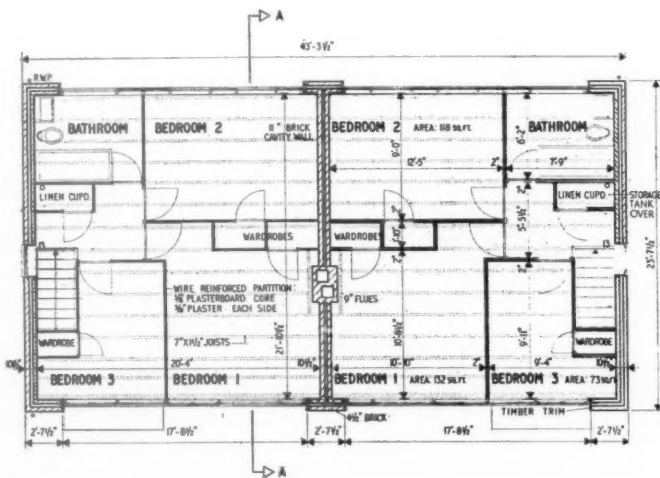
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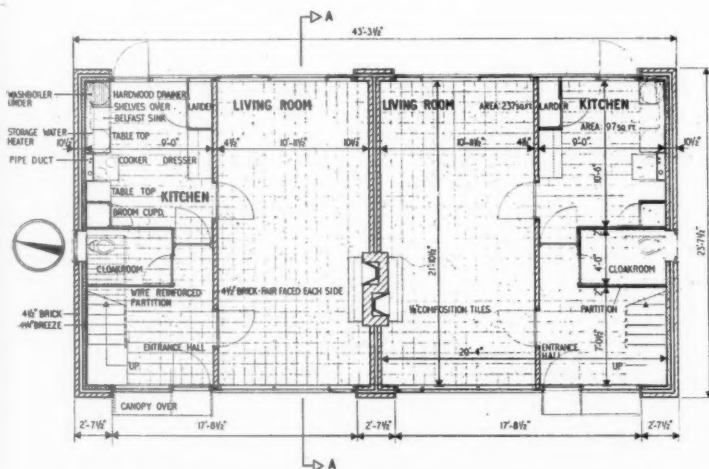
**GENERAL.**—The weight of materials handled during the erection of these houses is about 125 tons—about 65 tons less than usual and the site man-hours show a considerable reduction over those taken on a normal job. It is further claimed that the man-hours on the shell of the house compare favourably with those for any type of non-traditional house referred to in "New Methods of House Construction"—2nd Report (HMSO 1949). The design of the houses has allowed the use of light-weight materials where loads are not carried. This, in itself, is no innovation, but in the past, lightweight materials used in non-traditional house construction have usually been more expensive and more complicated than the traditional heavy materials. Here, this is not the case. The cost of the materials and labour in these houses has been less and the cost of the houses has, therefore, been less, and it is estimated that one of these houses is rather more than £100 cheaper than the normal equivalent traditional council house.



Looking south-west  
at the east facade.

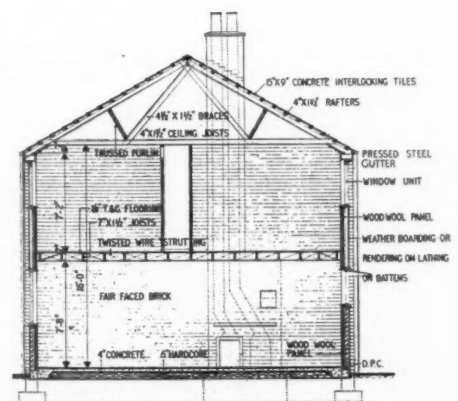


First floor plan

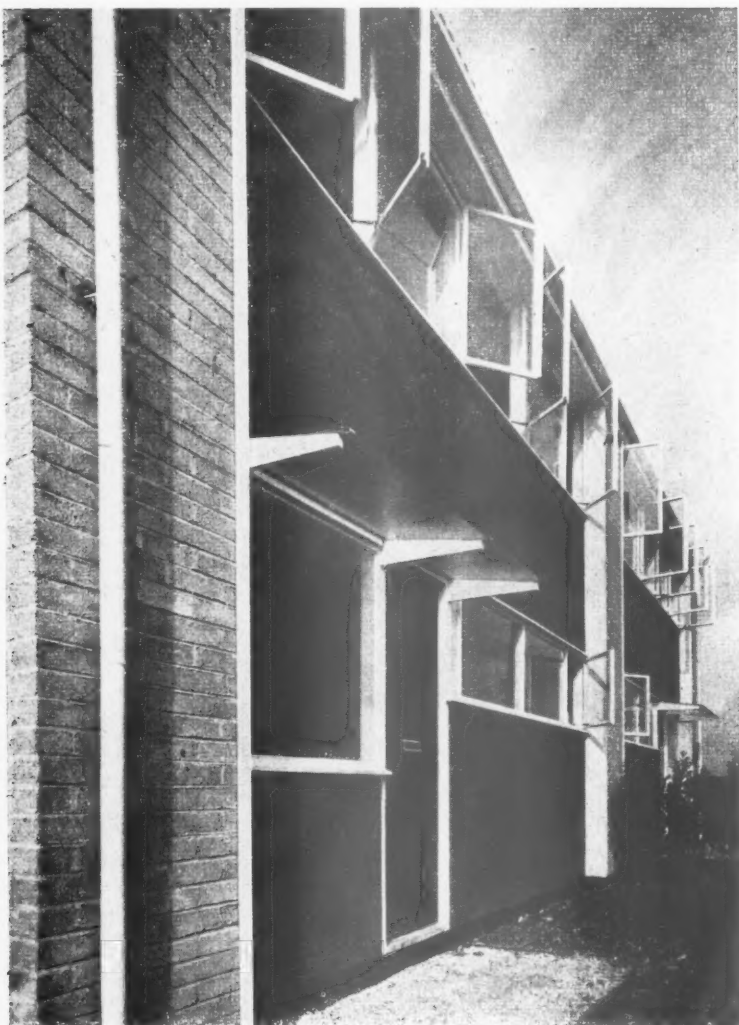


Ground floor plan [Scale:  $\frac{1}{32}'' = 1' 0''$ ]

Details of the costs are given in the quantity surveyors' report. Other type plans and designs have been produced to show the flexibility of the constructional design. At the same time the technique and methods of construction could be applied to many forms of building—not necessarily only to standardized house designs. It should be noted that the size of the houses built already (886 sq. ft. floor area) is somewhat larger than what is now permissible in the recommendations of the MOLGP (Circular 38/51). They are also built in a semi-detached form. If similar houses—but slightly smaller, as now sanctioned—were built in terrace form, there would be further economies. The type 4 terrace house with 2 bedrooms and flat roof is estimated to be £1,150 in blocks of 12.



Section A-A

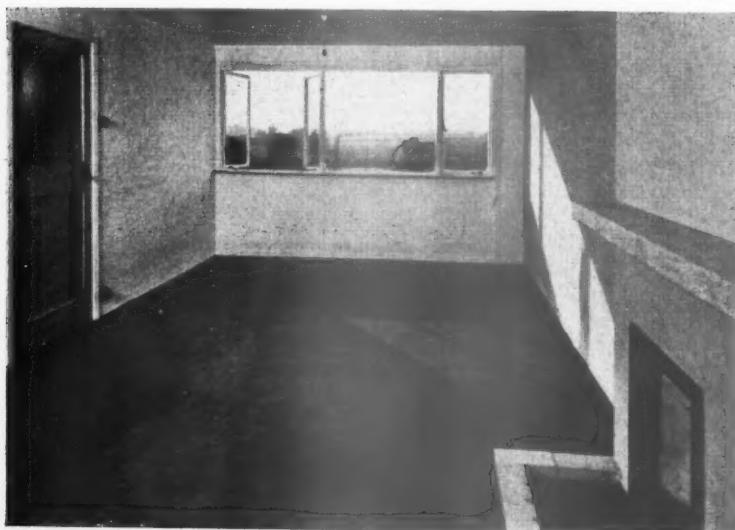


## DEMONSTRATION HOUSES

at HIGHWORTH, WILTSHIRE

designed by ERIC CHICK

consulting architects POWELL and MOYA

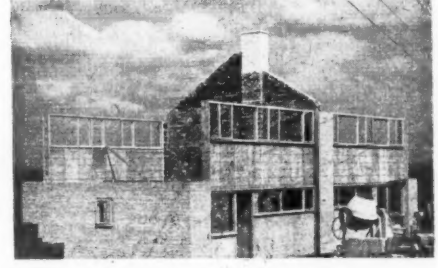
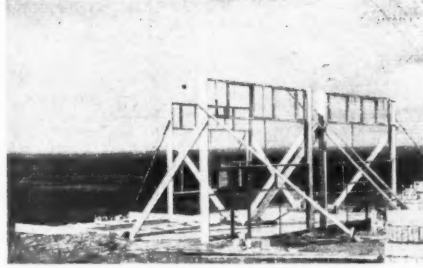
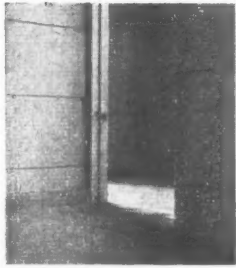


## CONSTRUCTION AND MATERIALS.—

Specialized pre-fabricated methods have not been used and the constructional methods allow the flexible use of alternative materials. The houses are built with traditional materials and by traditional methods where these are considered to be most efficient and economical—for example, end walls, party walls and cross walls are of traditional brick construction and carry all the loads. These walls are simple and almost unperforated and the full economies and advantages of traditional construction can thus be exploited. A new system of wall construction is used where traditional methods are uneconomical. These walls are, in fact, the external window walls and do not take any of the loads. By restricting the loads to the cross walls only considerable economies can be effected in the foundations. The worse the site, the greater are these economies, if compared with the foundations of a traditional house. The construction of these walls (the apron walls to the ground and first floor windows) can be briefly described as a 3-ply wall formed in-situ. The centre ply is formed of sheet materials—in this case cementated wood wool slabs have been used to give high insulation values. These slabs are placed in the space to be filled and are located with specially designed hook nails which are driven into the surrounding frame. Light-gauge reinforcing wire is then passed over the hook nails and across the face of the slab in a continuous length. When the reinforcing is in position, the hook nails are driven further in, to tension the reinforcing which is then stapled at convenient centres to the wood wool slabs. When this very simple operation has been carried out, the faces of the wood wool slabs are plastered in the usual way to form an extremely strong and rigid wall. In effect, the wall becomes a reinforced concrete beam, which requires no shuttering. It is automatically reinforced against cracking. Additional protection to these wall-beams can be given by applying an outer skin of rendering on expanded metal on battens or weatherboarding on battens. The price of the house has been calculated on the assumption that this extra skin would be included. This additional skin, however, has not been incorporated in the houses already built and it is not felt to be necessary. Its omission would, in fact, result in a further reduction on prices given on page 618 of about £14 per house. The form of the non-load bearing walls has been kept simple. Windows and doors have been concentrated in one large frame with full

*Above left, looking south at the entrance facade. Left, the living room.*

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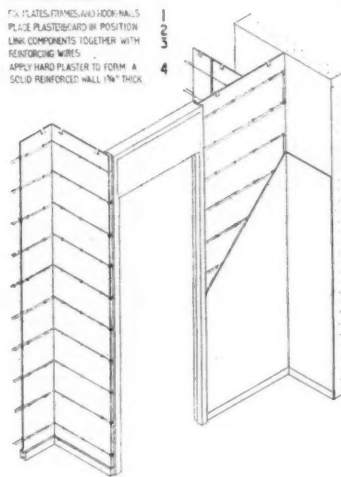
length timber jambs and a head formed by the soffit and fascia, with light-weight walls as infilling panels where windows or doors are not required. The frames are assembled on the floor slab by bolting the ground floor and first floor window units to the jambs. The complete assemblies, when erected, form jigs for the load bearing walls and make the structure so precise as to allow carcassing timber, joinery, plumbing, etc., to be pre-cut to detailed drawings with confidence. This pre-planning has been taken to its practical limit by extracting all pre-cut and manufactured items and, under a unit number, giving all details for their individual fabrication. The drawings are, in fact, broken down into two parts which comprise the erection drawings and the manufacturing drawings. The erection drawings are simplified by being produced in book form (on the lines suggested by the Anglo-American Productivity Team Report) with each page giving precise information on one phase only of the erection, e.g. foundations, window unit assembly, ground floor brickwork, etc. This method has proved very effective in practice and is popular with the operatives. The partitions are built up on similar principles to the non-load bearing external walls. In the case of these partitions, the centre-ply is a sheet of  $\frac{3}{8}$  in. plasterboard which is placed in the space to be filled and located by the hook nails. The sheet material is then reinforced by wires, as already described, and plastered to complete the wall. Angles are formed by cutting one face of the plasterboard and folding the sheet. It is not necessary to scrim angles or joints between the plasterboard. The finished wall will compare favourably for strength and solidity with walls built of breeze blocks or other partition slabs. It also has the great advantage of eliminating architraves and cover strips, as frames formed in the wall become part of the structure and are restrained mechanically throughout their length. An interesting innovation is a simple patented device to stabilize first floor joists. Normal herringbone strutting has been replaced by flexible metal reinforcing formed of two strands of galvanized wire twisted together and supplied in coils. This rein-

Above left, partitions shown before application of plaster. Above, window units bolted to vertical trims. Above right, brick bearing walls built against profile of vertical trim. Right, twisted wire floor-joist reinforcement.



#### ERECTOR SCHEME

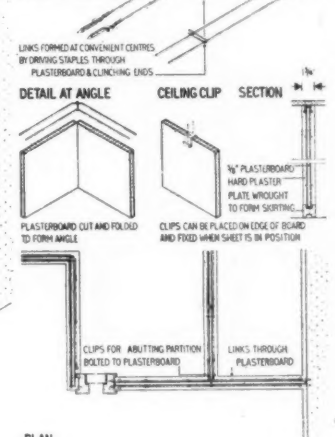
FIX PLATES, TRIMS AND WINDOW UNITS  
PLACE PLASTERBOARD IN POSITION  
LINK COMPONENTS TOGETHER WITH  
REINFORCING WIRES  
APPLY HARD PLASTER TO FORM A  
SOLID REINFORCED WALL 1 3/4" THICK



ISOMETRIC PROJECTION  
finished partition thickness: 1 3/4"

#### DETAILS OF REINFORCING

HOOKE-NAILS DRIVEN INTO FRAMES OF PLUGS  
TO LOCATE PLASTERBOARD AND ANCHOR  
REINFORCING WIRE  
TENSION IS OBTAINED BY DRIVING HOOKE-  
NAILS FURTHER IN WHEN REINFORCING  
IS IN POSITION

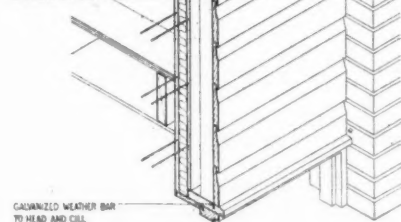


PLAN

Details of partitions

#### DOUBLE SKIN PANEL

VERTICAL TRIM RUNNING FULL HEIGHT OF BUILDING  
LOAD-BEARING CAVITY WALL RETURN  
WINDOW UNITS BOLTED TO VERTICAL TRIMS AND  
ERECTED AS PROFILES FOR LOAD-BEARING WALLS  
WOODEN SLABS NAILED TO HEAD AND CILL  
WITH OPEN VERTICAL JOINTS AND LOCATED AT  
ENDS WITH HOOKE-NAILS  
LIGHT GAUGE REINFORCING WIRES  
PASSED ROUND HOOKE-NAILS  
TENSIONED AND STAPLED  
WOODEN SLABS ROUGH-  
RENDERED OVER REINFORCING  
WIRES  
WEATHERBOARD ON 2"x1 1/2"  
STUDS - OR RENDERING ON  
LATHING ON BATTENS

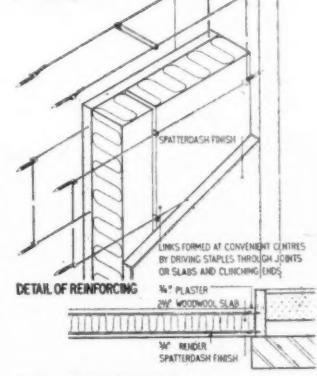


GALVANIZED WEATHER BAR  
TO HEAD AND CILL

ISOMETRIC OF TYPICAL NON-BEARING WALL AT FIRST FLOOR

#### SINGLE SKIN PANEL

HOOKE-NAILS DRIVEN INTO FRAMES TO LOCATE  
WOODEN SLABS AND ANCHOR REINFORCING  
TENSION IS OBTAINED BY DRIVING HOOKE-  
NAILS FURTHER IN WHEN REINFORCING  
IS IN POSITION



PLAN

SINGLE SKIN PANEL



PLAN

DOUBLE SKIN PANEL

Details of non-load bearing walls [Scale: 3/4" = 1' 0"]



## DEMONSTRATION HOUSES

at HIGHWORTH, WILTSHIRE  
designed by ERIC CHICK  
consulting architects, POWELL and MOYA

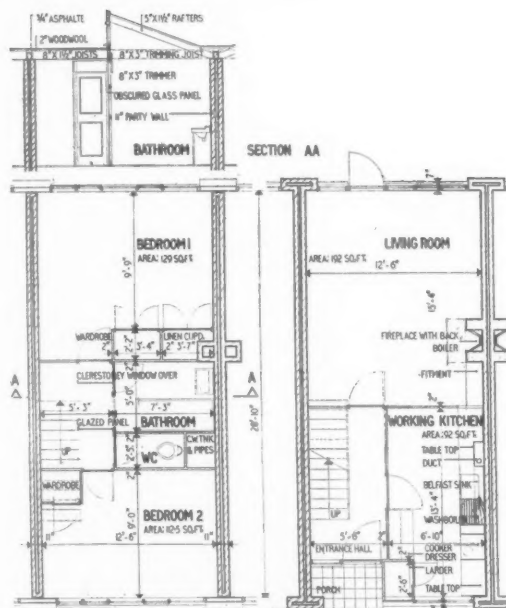
forcing is fixed by passing a length along the top of the joists and a length along the underside of the joists, then forming diagonal braces by twisting the top and bottom together with a suitable lever-like tool. The braces are then locked by the simple expedient of driving a nail between the two strands of wire that form the reinforcing and into the top and bottom of each joist. Because of the extra strength the floor joists have been reduced from 7 in.  $\times$  2 in. to 7 in.  $\times$  1½ in. at 18 in. centres. The roof load is carried on to the party walls by trussed purlins.

**FINISHES.**—The finishes used are not essential to the system and may, of course, be varied from job to job. For the houses already built, the finishes are as follows: Externally, bricks: "Cotswold" colour concrete bricks. Apron walls to windows: Dark red cement spatter-dash on rendering. Roof: Dark grey interlocking tiles. Rainwater goods: Pressed steel box gutter and steel tube downpipes. Ironwork and woodwork is painted. Internally, generally: Distemper. Ground floor: standard 9-in. sq. composition tiles. Doors and cupboards: Wood varnished. Miscellaneous woodwork (skirtings, etc.): Distemper varnished. Brick walls, unplastered: Distempered. Insulation: Infilling walls (2½-in. wood wool with ¾-in. rendering on both sides). Total resistance 0.18. This applies for both single and double skin panels. End walls (4½-in. brick 2-in. cavity 4-in. breeze). Total resistance 0.24.

**SERVICES.**—Internal plumbing: Water heated by electric immersion heater in lagged cylinder. Gas cookers and wash boilers.

**COST.**—The cost of a pair of Type 1 houses similar to those built at Highworth, Wilts., for the Highworth RDC (but including for the additional protection to external non-load bearing walls referred to earlier) is estimated to be £2,576 per pair, or £1,288 per house, at September 1951 price rates, inclusive of outhouses and external works within the curtilage of the houses, which amount will be reduced for other house types designed to the Ministry's latest requirements. The general contractors were Percy Chick. For sub-contractors see page 634.

*Left, kitchen and service entrance. Below, detail of front door.*



Terrace house type 1 ground and first floor plans (Scale: 1/8" = 1' 0")



## MATERIALS AND GOODS BASIC PRICES

	£	s.	d.
Portland cement, ton ...	4	14	9
Lime, ton ...	5	9	0
Building sand ...	0	12	6
Plastering sand ...	0	16	0
1½-in. aggregate (per yard cube)	0	14	0
Fletton bricks (per 1,000) ...	5	0	0
4½-in. breeze blocks ...	0	5	0
1½-in. wood wool slabs ...	0	6	9
½-in. plasterboard (per yard super)	0	2	2½
Softwood timber	120	0	0
½-in. T. & G. flooring* (per standard)	125	0	0
Plaster (per ton)	5	19	3
Galvanized wire (per cwt.) ...	3	15	0
Copper tube (per lb. basic) ...	0	2	2½
Ceilingite ...	1	10	0
Distemper† (per cwt.) ...	5	0	0
Varnish (per gallon) ...	2	5	0
Type 1 House, as built ...	1,288	0	0
Estimated saving per house ...	104	0	0

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*This week we continue our review of the Building Exhibition by describing in the following pages another 37 of the exhibits. Once again the descriptions are accompanied, in some cases, by illustrations of stands, and there are more of Sam Lambert's photographs of exhibitors. In addition, there are three pages of photographs of stands taken on the opening day and, at the end, two pages are devoted to exhibits of the ministries and the nationalized industries.*

## BUILDING EXHIBITION, 1951

### SECOND REPORT FROM OLYMPIA

#### THE EMPLOYERS' FEDERATION (482, 484, 486 G.H.G.)

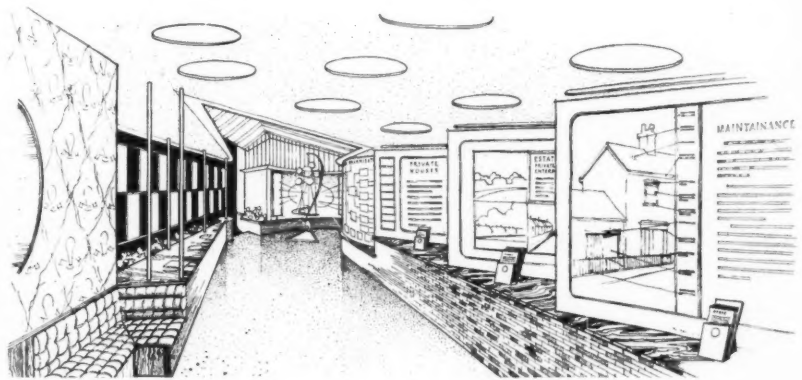
The National Federation of Building Trades Employers are exhibiting independently for the first time and it is encouraging to note that, unlike many builders, they employed an architect, Kenneth J. Lindy, to design their stand. In all probability, not nearly enough architects know what the NFBTE actually does and this stand serves to show not only that its membership has spread all over the country but that one of its most important activities is the consultative and advisory machinery which it has evolved with the Government and various official and industrial bodies associated with the industry. At a time when every week there are reports of various industries suffering from strikes and other processes like working to rule, it is worth remembering that there has been no major industrial dispute in the building industry since the general strike of 1926, and that much of its comparative tranquillity is due to the joint consultations which the Federa-

tion holds with the various unions.

**also on show:** An interesting map showing a number of places throughout the world where British contractors are carrying out work and presumably earning quite large amounts of foreign currency. It seems a little surprising, when most industries are making a

considerable song and dance about their export earnings, that the building industry should have been fairly quiet about theirs for so long.

**firm:** The National Federation of Building Trades Employers, 82, New Cavendish Street, W.1 (LAN. 4041). Stand No. 482, 484, 486 G.H.G.



#### ROOFING TILES FOR LOW-PITCHED ROOFS (F.129)

Langley London Ltd. show many interesting types of clay roofing tile, most of which can be employed on rafters pitched as low as 30 degrees, thus giving considerable economies in timber and brickwork. Models on the stand show roof constructions to the

latest MOW recommendations, and there are also detailed charts showing the savings that can be made by using interlocking tiles.

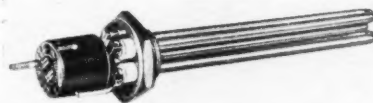
**also on show:** A large range of floor, sill and quarry tiles, and the floor of

the stand is covered with "Langboro" tiles, which are now being specified by many local authorities.

**firm:** Langley London Ltd., 72, Borough High Street, S.E.1 (HOP. 2946 and 2538). Stand No. F.129.

#### IMMERSION HEATERS FOR HARD-WATER DISTRICTS (D. 79)

Aidas Electric Ltd. show a large range of electric immersion heaters including a new grid type, which has been specially designed for use in hard water districts. These heaters are intended to be fitted to rectangular hot water tanks having removable covers, and are placed in position from the inside of the tank and fixed by a lock nut on the outside. The U-type range consists of rod type elements, and visitors should make a point of looking at the new type UT, available in 2 and



*Aidas UT2 immersion heater, 2,000 watt.*

3 kilowatt sizes with a thermostat, mounted on a 1½ in. pipe head, a much smaller size than is usual with heaters of this kind.

**also on show:** A range of storage

water heaters with capacities from 1½ to 40 gallons, and also the coal-electric model which is arranged to work with the ordinary backfire boiler. Thermostatic control provides a constant supply of hot water during the summer months or in the winter, if for any reason the fire should go out.

**firm:** Aidas Electric Ltd., Sadia Works, Rowdell Road, Northolt, Greenford, Middx. (WAXLOW 1607) and at Johannesburg. Stand No. D.79.

## TWENTY RECOMMENDED APPLIANCES M.254/5)

The CUJC was formed in 1932 (as the Coal Utilisation Council), by the coal producers and distributors, and was re-constituted in 1939 as the Coal Utilisation Joint Council when the appliance manufacturers' and appliance distributors' organisations became constituent members. The primary aim of the council is to promote the efficient use of solid fuel in the home and ensure the correct installation of the new improved appliances. On the stand are displayed approximately 20 examples from the full list of 200 odd recommended domestic solid fuel appliances on which information is available.

**on the stand:** *A. J. (Jimmy) Waldron, an exhibition engineer for the Coal Utilization Joint Council, is a Londoner by birth (Fulham) and inclination (Ealing), but he spends most of his time away from the city. He has already visited Exeter, Dorchester, Glasgow, Aberdeen, Cambridge, Harrogate, Chester and Blackburn this year and, for a change, took on a motor boating holiday on the Broads. Served his apprentice-*



*ship as heating engineer at Nestlé's (since when he has lost the taste for chocolate). Made an eventful trip to South Africa in 1948, when working for Federated Foundries Ltd., his previous job. Most memorable incident was when he tried to take photo-*

*graphs of natives in war paint. When they started throwing spears, he didn't stop to argue. Favourite continental city is Rome; favourite feature, the pavement cafés. Has also seen Cairo, Cyprus, Athens, Geneva and Paris. Dislikes corny comedians. Will eat anything he is given, and reads Nevil Shute for preference. Hobby is designing and making tubular furniture to quarter full size; also woodwork. He has a son and a daughter. Used to do cross-country running.*

**also on the stand:** W. Lennox (assistant regional officer for Scotland), panel members who have been through the CUJC training course and the lady demonstrators of the council.

**firm:** Coal Utilisation Joint Council, 3, Upper Belgrave Street, S.W.1 (SLO. 9116). Stand No. M.254/5.

**representation:** over 600 firms are members of the CUJC's panel of approved appliance distributors. Lists of panel members for all areas can be obtained on the stand.

## GLAZED CEMENT PANELS (N.270)

John Ellis & Sons Ltd. is showing for the first time its "Friesalux" glazed cement panels. These panels are easy to clean and are supplied in black, white and five colours in full size panels 8 ft. by 4 ft. on various types of base, such as asbestos cement or hardboard, and panels in sizes suitable for baths. "Emalux" glazed cement wall finish is shown applied to a brick wall and also to glazed bricks and tiles.

**also on show:** Samples of reconstructed stone and granite concrete paving slabs and kerbs. (The paving slabs have a matt face and the aggregate used is pink.) Mount-sorrel granite to give a non-slip finish. The "Stafford"



building system, as described in "The Industry" (AJ, Sept. 20, 1951)—see illustration above. This system of constructing single-storey buildings, which was designed by P. L. Bruning, involves the use of only five components, all of which are recoverable should a completed building be dismantled or modified. The system is rapid to use and requires very little skilled labour.

**on the stand:** One of the many on the stand of John Ellis & Sons Ltd., is John Tatham, commercial manager of the company. He is president of the local RASC Association in Leicester; was with the Eighth Army during the war and saw service from Tunisia to Sicily and Normandy to Berlin. He plays tennis and badminton, spends his holidays on the south coast where—in all seriousness—he catches butterflies. Reports

*of the resulting catches are of very great help to the Royal Meteorological Society in that weather conditions can be predicted from the behaviour of insects. Business takes him to Holland three or four times a year. He is married and has a two year old daughter called Angela.*

**also on the stand:** B. C. Sharman (managing director), R. H. Francis (London manager), L. M. Lingard (works manager), M. J. Morton (Birmingham, North West and South West representative), B. Farrands (Derbyshire, Nottinghamshire, Northamptonshire), F. Noble (Lincolnshire, Eastern Counties and Leicestershire), C. H. English (wall surfaces).

**firm:** John Ellis & Sons Ltd., 21, New Walk, Leicester (LEICESTER 5682). Stand No. N.270.

**agents:** 12 agents and representatives.



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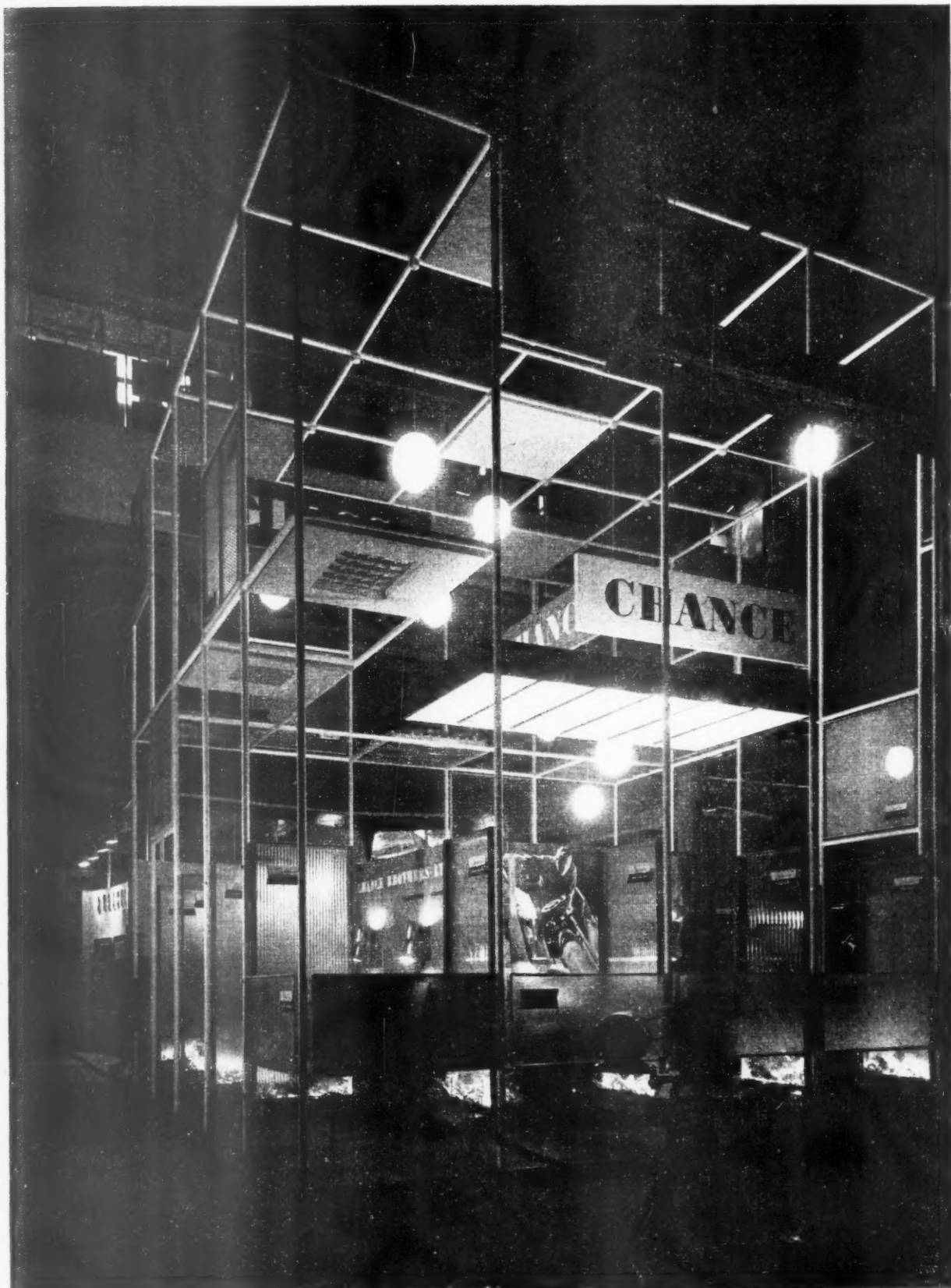
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*Chance Brothers' stand, designed by Boissevain and Osmond, featuring six new prototype glass patterns, which will be illustrated in next week's JOURNAL.*

## ALL-WEATHER WINDOWS (P.297)

Star exhibit on the John Thompson (Beacon Windows) Ltd. stand is the "Beacon" (after Sedgley Beacon, near at hand) all-weather window. This is a double-skin window. The model on view at the exhibition consists of six units, of which the diametrically opposite units open towards each other. This type is ideally suited to hospitals, sanatoria and offices, as it provides for ventilation in wet weather, without water penetration and also has a high insulation factor when closed. The two skins are at least four inches apart.

**also on show :** The "Beacon" heavy-type double-hung aluminium window in a rustproofed steel surround. (This is a frame capable of taking the heaviest type of plate glass normally used.) The "Beacon" delivery hatch of pressed steel with two automatically-locking compartments. Pressed steel floor joists, the 16 gauge floor joist capable of taking a loading of 40 lb. per sq. ft. with spans of 13 ft. at 18 in. centres.

**on the stand :** G. P. A. (Pat) Thompson (right), director and general manager of John Thompson (Beacon Windows) Ltd., is one of the few men in the building business to have had a comprehensive architectural training. He spent four years at the AA School of Architecture before the war. He feels very strongly that architects should regard the manufacturer as a specialist and bring him in as an adviser as early as possi-



ble in the design stage. As a gunnery officer during the war, he spent much of his time in Austers spotting hostile batteries. He

was hit, but had the good fortune never to be shot down. His hobby is water colour painting (admires the English tradition) and was lucky enough to have Madeira as a subject this year. For bucket and spade holidays he prefers Devon. He likes skiing and has tried the snows of Canada, Austria and Italy. He owns a '28 Sunbeam; when it finally gives up the ghost he says he will use the upholstery to make 300 pairs of slippers.

**also on the stand :** H. L. Perry (manager, London office), M. S. Eves, A. T. G. Astwick (sales).

**stand :** Designed by Carlludwig Franck.

**firm :** John Thompson (Beacon Windows) Ltd., Ettingshall, Wolverhampton (BILSTON 41121). London office : Imperial House, Kingsway, W.C.2 (TEM. 3216). Stand No. P 297.



## A NEW CHIMNEY THROAT (A.11/12)

The Finch organization, as one might expect, has a considerable proportion of its display devoted to the "Spruce Thrower" soil unit, of which it is the proprietor. The exhibit is mainly devoted to good-quality, flat installations, with internal ducting, and a sectional duct shows how the "Spruce Thrower" unit helps to make a neat

installation. Shown for the first time is a chimney throat unit, a precast concrete fitting designed to increase the efficiency of flues for open fires. Various models are produced for different types of fireplace and there are no difficulties in installation.

**also on show :** Models of "Unimer"

tubular steel buildings, for which Finch is the agent in London and the Eastern Counties; they are intended mainly for industrial and agricultural uses.

**firm :** B. Finch & Co. Ltd., Belvedere Works, Barkingside, Essex (VAL. 8888). Stand No. A.11/12.

## LOOK FOR THE BLACK AND YELLOW LABEL (M.257)

A. J. Binns Ltd. maintains that every architect is given special and completely personal attention. Among the big jobs that have been carried out are the fencing of London Airport and many of London's squares (look for the black and yellow label). New on the stand this year is the cloakroom equipment which has recently been developed, consisting of flush-welded tubular frames with rounded corners, mesh partitions, seats and shoe baskets.

**on the stand :** A. J. H. (John) Binns (right), the managing director of the firm named after him, and founded by him, is an engineer by profession. He is well known outside the business as a friend of

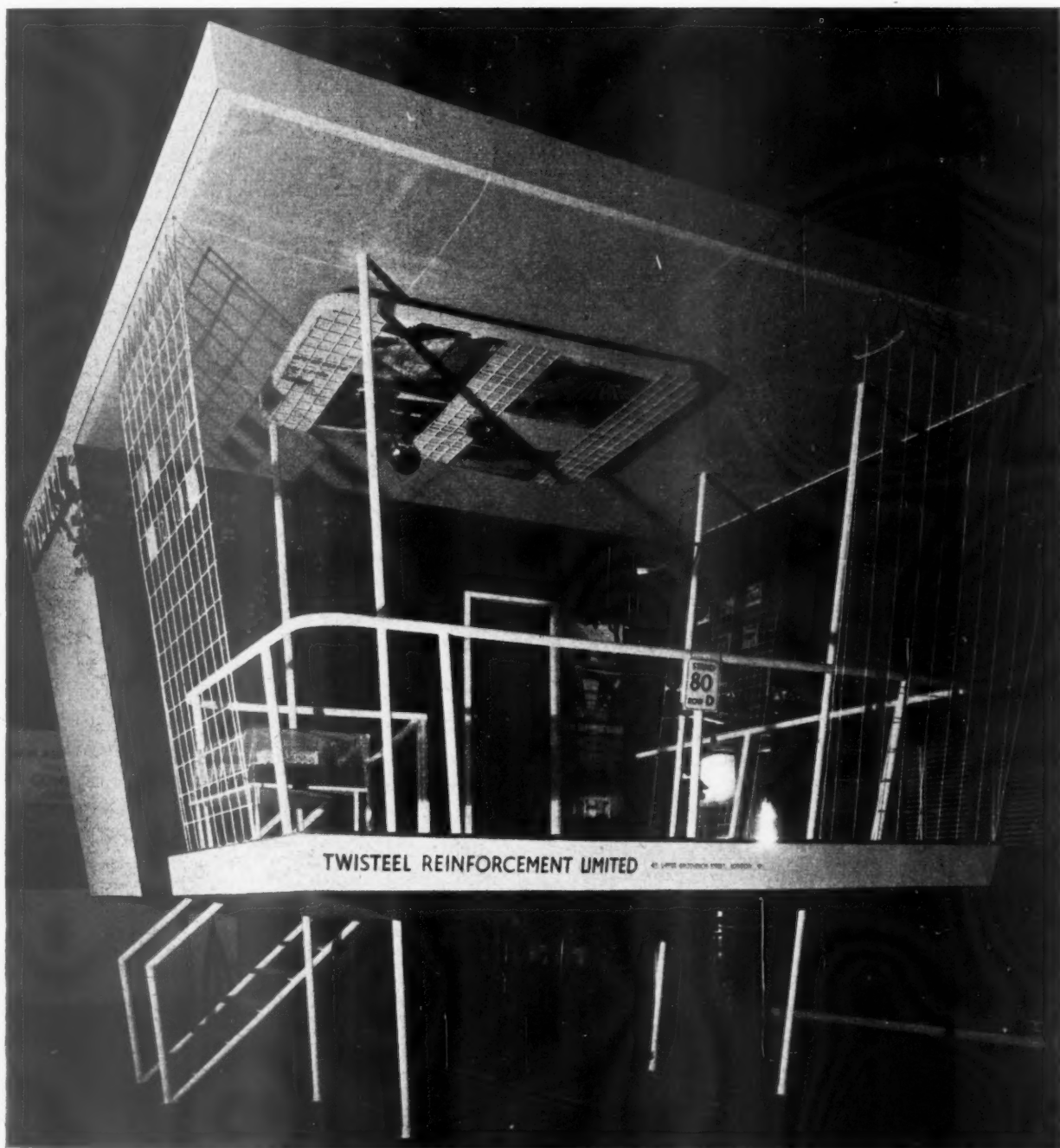
actors and artists, and for the parties he throws at his house (one-time pub) at Clare, in Suffolk. Speciality at these parties is the local wine of elderberry, parsnip and blackcurrant, made by 90-year-old villager, Mrs. Addison. Amongst many strange things that he collects are hats of all nations, menus, barrel organs and one fire engine (150 years old), any of which you may find incorporated as an "added attraction" on the stand. He plays tennis and travels a lot; he has been to the USA and the West Indies this year.

**firm :** A. J. Binns Ltd., Harvest Works, 99-107, St. Pauls Road, N.1 (CAN. 2061). Stand No. M.257.





*Left, Aga Heat stand, designed by A. C. Braven.  
Below, Twisteeel Reinforcement stand, designed by  
Noel Moffett.*





## NAILABLE STEEL JOISTS (C.60)

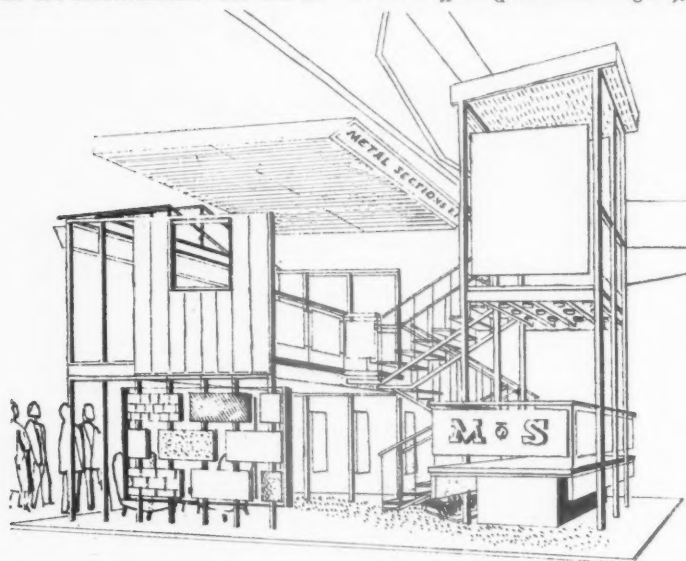
"Nail Steel" Joists are being shown by Metal Sections Ltd. for the first time, although in use for eighteen years across the Atlantic. They are made of steel, and no wood fillet is needed because the nail is driven between two closely spaced sections of steel. The nail is held because it is clinched by the profile of the sections, which have a shallow indentation running parallel with the upper surface of the joist. Joists are 6 in. to 9 in. deep and of 12 to 16 gauge steel and are recommended for use as

floor joists and rafters. A 6-in. by 2-in. 16-gauge joist will carry a total distributed load of 1,135 lb. Standard studs and half studs are manufactured on the same system. All sections can be had in lengths up to 30 ft. Holes are punched in the web for the passage of conduit and pipes.

stand : designed by Hugh Casson.

on the stand : J. O. Hunter (sales manager), B. H. Daffern (production designer), Fred

Cormack (development engineer), H. Hadley, S. W. Robinson, S. Sanders, H. Grosvenor (sales representatives) and Desmond Homer will all be on the stand.



Mr. Homer (above) is in the development section of MS. He is a member of the Loyal Order of Moose, plays the 'cello, runs a '33 Austin seven, likes Devon, dancing and the "Grand Hotel" radio programme.

firm : Metal Sections Ltd., Broadwell Road, Oldbury, Birmingham (BROADWELL 1461). Stand No. C.60.

## SHUTTERING FOR BARREL VAULTS (D.71/2)

Kwikform Ltd. is a firm which has made a speciality of unit-frame scaffolding and steel formwork of all kinds. Most of us remember the considerable display towers at Leeds and Chester Building Weeks, built in astonishingly few man-hours from unit frames.

This firm was also one of the first to make any serious attempt at shuttering for barrel vault roofs, and evolved some time ago a relatively simple method with flexible steel sheets which can be pulled down to the required curvature and which provide a

smooth finish to the soffite of the barrel.

firm : Kwikform Ltd., Waterloo Road, Birmingham, 25. London office : 66, Victoria Street, S.W.1 (VIC. 8915 and 9896). Stand No. D.71/2.

## A NEW SINGLE-LAP TILE (G.145/50)

G. H. Downing & Co. Ltd. is the largest firm in the country producing double-lap clay tiles. Its pre-war weekly output was three to four million tiles per week. Although it does not produce that number today, this is still its potential. It makes 25 per cent. of the country's clay tiles and uses 1,000 tons of coal per week making them. Very new and also on the stand is a single-lap tile, more or less on the continental pattern. It will compete with the concrete tile, having the advantage that the colour is integral.

on the stand : The Building Exhibition is a busman's holiday to Arthur



Eardley (left), sales manager of G. H. Downing & Co. Ltd. Normal holidays are spent in Devon and Cornwall. Any other spare time he devotes to gardening and motoring (he prefers a pre-war Vauxhall). Goes to bed late, rises early, takes salt with his porridge, is not musical and dislikes crooners.

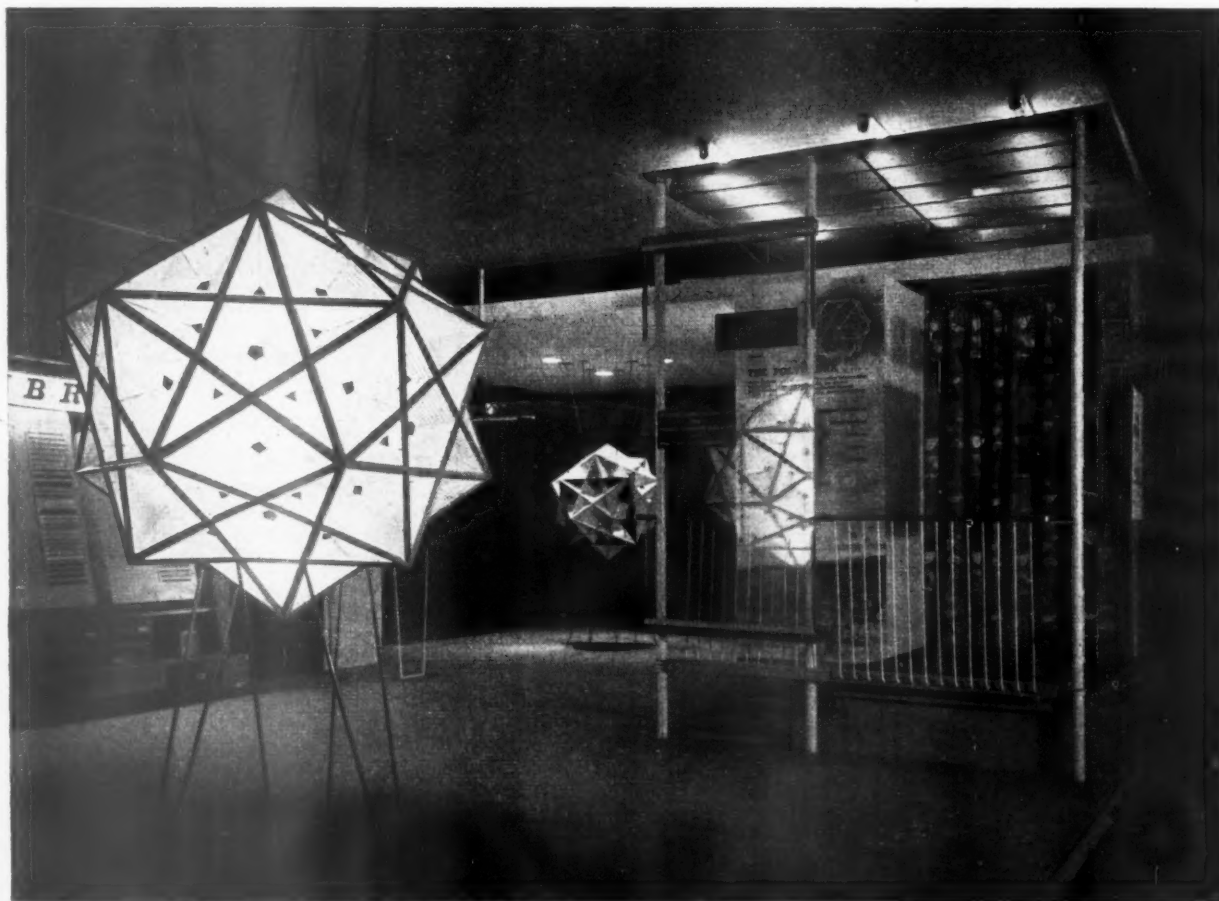
also on the stand : A. Hartley (managing director), R. Walker (technical sales representative), F. A. Bage (London representative), and G. Nicholson.

firm : G. H. Downing & Co. Ltd., Brampton Hill, Newcastle, Staffordshire (NEWCASTLE 65381). Stand No. G.145/50.





Left, National Federation of Clay Industries' stand designed by C. C. Handisyde. Above, interior of Fibreglass stand, designed by A. S. Buckley. Below, interior of James Clark & Eaton's stand, designed by Wells Coates.



## PLASTIC SHEETING CHEAP ENOUGH FOR "UTILITY" (D.81)

Warerite is showing its plastic sheeting in use both decoratively and to increase efficiency in kitchens and elsewhere. A sink unit with a plastic draining board is shown, and also a sliding table with a "Warerite" top. The stand displays a large number of the colours and patterns in which the plastic panels and veneered boards are made.

Installation methods are simple and the material can be used in furniture and fittings of all kinds, and, as a commentary on cost, it is worth pointing out that "Warerite" is used in a number of Utility designs. Various grades are available, all of which are scratch proof in ordinary use, and have excellent heat-resisting properties, while some

grades are proof against cigarette burns. For kitchen or bathroom purposes "Warerite" has the advantage that moisture movement is virtually nil.

stand : Designed by Richard Levin.

firm : Warerite Ltd., Ware, Herts (WARE 502). Stand No. D.81.

## FIRE RESISTANCE AND INSULATION (K.221)

The wide range of Gyproc's wall-boards, plasters, slabs and insulating materials are all on show on their stand. Data are available to show how these building materials meet official

requirements for fire, sound and thermal insulation.

also on show : The "Gypstele" system of wall linings, partitions and ceilings.

firm : Gyproc Products Ltd., Westfield, Upper Singewell Road, Gravesend (GRAVESEND 4251). London office : Morris House, 1/5, Jermyn Street, S.W.1. (WHI. 8073). Stand No. K.221.

## MODERN SANITATION (B.25/6)

Econa Ltd. have solved many problems in the plumbing world and are willing to solve many more. Of the many achievements to the firm's credit are the solution of bending copper tube to a narrow radius, and forming T-joints in the same material.

At Olympia they are staging, several times a day, a demonstration of the rapidity with which their pre-formed

soil pipe units can be installed. Starting from the word "Go," the soil stack is connected up to bath, W.C. and lavatory basin and then tested, all within half an hour. Perhaps the most interesting exhibit is the "Duplex" soil pipe, which is designed to take the soil and waste from a pair of adjacent bathrooms in flats or semi-detached houses. The pipe is shown taking the discharge from two "S" trap W.C.'s, two baths and two lavatory basins. The baths and basins have deep-seal traps and in the exhibit are made of glass, and the whole exhibit is working so that the effect on any trap of the simultaneous discharge of the other fittings can be seen. Provided that the plan of the house is suitable, fittings of this kind should show a considerable economy, as only a single soil pipe is necessary for a pair of houses.

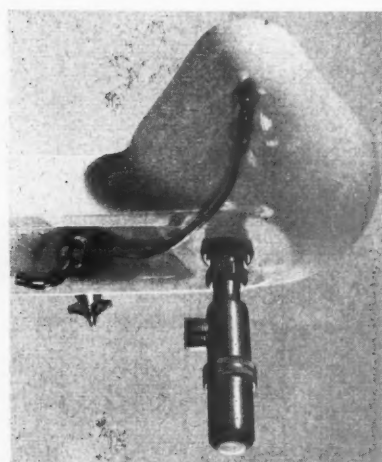
also on show : The new drinking fountain bottle trap (see illustration), designed specially for use with drinking fountains or other appliances having  $\frac{3}{4}$ -in. diameter waste outlets.

on the stand of Econa Modern Products Ltd., with Hugh Golder (managing director),



is Peter Wright (above), who is with the firm on the sales side. He was born in Warwickshire, and is coming to live in London. He likes opera, shooting and skiing.

firm : Econa Modern Products Ltd., Aqua Works, Warwick Road, Tyseley, Birmingham, 11 (ACOCKS GREEN 2211/2). Stand No. B.25/6.



## A NEW METHOD OF DOUBLE GLAZING (F.131)

J. A. King & Co. have evolved several new ideas since the last exhibition and are showing a new type of roof light construction using 12-in. by 12-in. lenses, which will span up to 15 ft. They are also producing pre-cast units for shell roofs, precast surrounds for metal windows, and a grid window construction in which the size of the panes can be varied : this form of

construction is more suitable for large windows as the astragals are bolder and will carry a greater span. Also of considerable interest is a new method of forming double glass units with a dehydrated and sealed cavity. The distance between the glasses can be varied to suit the thickness of the construction, so that, as well as providing heat and sound insulation, the glass

surfaces can be in the same plane as the concrete on both sides of the roof.

firm : J. A. King & Co. Ltd., 181, Queen Victoria Street, E.C.4 (CEN. 5866). Stand No. F.131.

representation : Branches in Hayes, Bristol and Manchester.

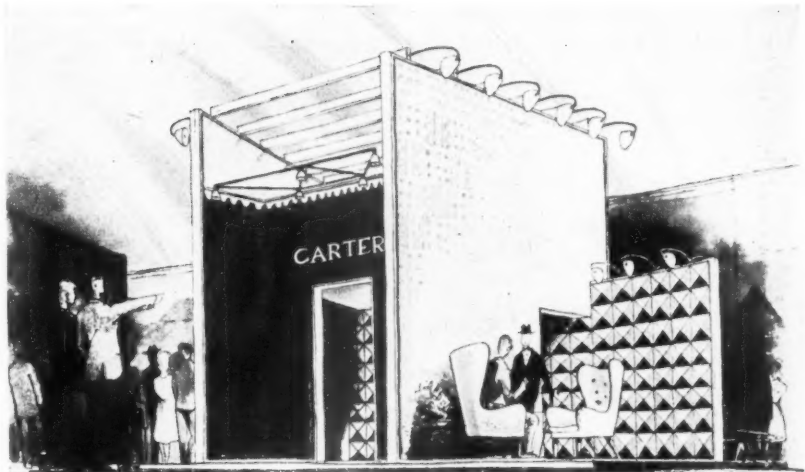
**HAND-PRINTED TILES (D.85)**

The Carter group of companies has a joint stand. The main exhibit consists of hand-printed tiles, as used for the mural in the Ricardo Street primary school, Lansbury. If you like hand-painted tiles, there are a few in the display office.

**also on show:** Flooring by two of the subsidiary firms: Art Pavements and Decorations, Ltd. (terrazzo) and Marbolith Flooring Co., Ltd. (linoleum in the office).

**stand:** Designed by Yorke, Rosenberg and Mardall (architects for the Ricardo Street school).

**firm:** Carter & Co., Ltd., Tile Works, Poole, Dorset. Stand No. D.85.

**DOUBLE GLAZING (G.144/5)**

Pilkington Brothers' stand is made almost entirely of glass, the floor being built up of glass concrete slabs, above which are three curved balustrades of armourplate glass. "Insulight" hollow blocks and thick rough-cast blocks have been put to structural use, while the sound insulation efficiency of glass products is demonstrated in a small

office or silent room, which has walls of hollow glass blocks and a double-glazed window.

**also on show:** A display of shop flowers in a refrigerator atmosphere. This is glazed with a double-thickness unit, 6 ft. 8 in. high and 8 ft. 4 in. wide. A good idea of the clear vision through

double glazing units can be obtained, as alongside there is a panel of single glazing for the purpose of comparison.

**stand:** Designed by S. M. Sternfeldt.

**firm:** Pilkington Brothers, Limited, St. Helens, Lancs. (ST. HELENS 4001). Stand No. G.144/5.

**A CANTILEVERED STAIRCASE (F.123/4 and 458 G.H.G.)**

Scaffolding (Great Britain), Ltd., was the pioneer of tubular scaffolding and has a large display which includes a stand in the main hall and a staircase up to gallery level. The firm also runs a welded structures division which, incidentally, carried out a considerable amount of work at the South Bank. One sometimes forgets that scaffolding is used nearly as often for shuttering for reinforced concrete work as it is for providing access, and the SGB shuttering division undertakes work of this

kind on a contract basis. The firm also has an ornamental ironwork division.

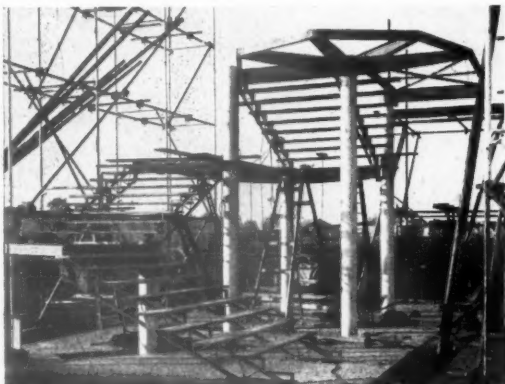
**stand:** The principal feature of the stand is the staircase, designed by the firm's welded structures division. It is formed by a series of cantilevers from five main structural tubes. These tubes are 10 in. in diameter and have walls  $\frac{1}{2}$  in. thick. The landings are supported by a series of tapered beams connected to the main columns, and the stair

stringers consist of welded tubular lattice beams.

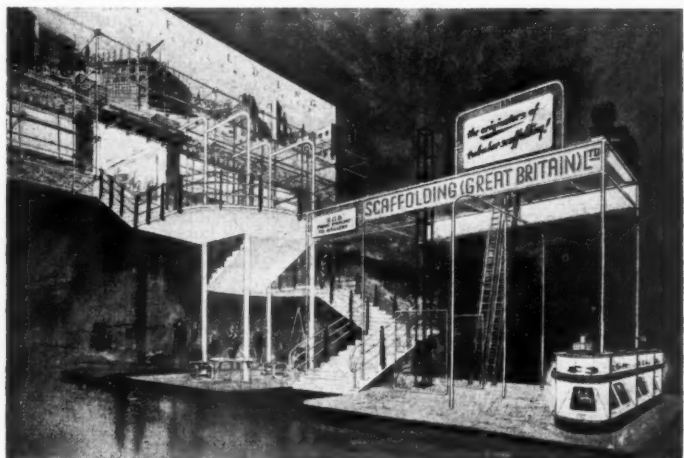
The stair treads were made from 2-in. mahogany and the handrail supports are of polished teak, with 2-in. tubular rails.

**firm:** Scaffolding (Great Britain), Ltd., Mitcham, Surrey (MIT. 3400). Stand No. F.123/4 and 458 G.H.G.

**representation:** 25 branches throughout the British Isles.



Right, a perspective of the SGB stand. Above, a photograph, taken during a trial erection of the stand, showing the cantilevered supports.



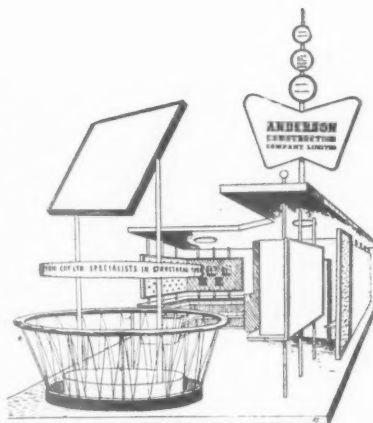


**A REVOLVING CEILING (R.319)**

The Anderson Construction Co. Ltd. has for many years been developing methods of fixing wall boards, and perhaps the best known of these is the wedge method which, when applied to ceilings or to the lining of factory roofs, allows the boards to be fixed with nothing but a series of cover strips showing. At the same time it is not necessary to cut the boards in any way and, if necessary, they can easily be taken down for access.

**stand :** Designed by F. W. Ransome Smith, the Anderson stand has a revolving ceiling which shows the wedge method of fixing. Aluminium and steel sections are used to display photographs of Anderson contracts, and a pylon helps visitors to locate the stand

**firm :** The Anderson Construction Co. Ltd., Clifton House, Euston Road, N.W.1 (EUS. 7465). Stand No. R.319.

**MOBILE CRANES (D.73/4)**

Ransomes & Rapier Ltd. have received a great deal of publicity lately over the 20 cubic yard drag-line which they have recently supplied to Stewart and Lloyds Ltd, and it is amusing to think that if it were conceivably possible to exhibit a device of this kind at Olympia, it would require about 5,000 square feet of the floor space avail-

able in the Main Hall—and even then 200 ft. of boom would project above the roof. Shown at Olympia are five types of mobile crane, with lifting capacities of up to 10 tons, and concrete mixers with capacities of up to 7 cubic feet per batch.

**also on show:** The 2½ cubic yard

truck-mounted mixer in which the concrete is mixed while it is on the way to the site.

**firm :** Ransomes & Rapier Limited, Waterside Works, Ipswich. (IPSWICH 2143.6) London office: 32, Victoria Street, S.W.1 (ABB. 6383/7). Stand No. D.73/4.

**HALF-SCALE BRICKWORK (C.65)**

The Accrington Brick & Tile Co. have a stand which consists of a number of walls and piers, each of which is constructed in one of the many types of brick that this company produces. These include multi-coloured rustics and sand-faced bricks, as well as the engineering bricks for which the firm is,

perhaps, better known.

**stand :** Designed by Messrs. Willink & Dod, the stand consists of a screen made up of various types of brick produced by the firm and suspended on metal rods. The top portion of a tall industrial chimney is also shown, and

this is built to half scale in half-size pressed red bricks, while the floor, used for demonstration purposes, is paved with non-slip 6-in. by 6-in. and 8-in. by 8-in. tiles.

**firm :** The Accrington Brick & Tile Co., Accrington, Lanes. Stand No. C.65.

**GENUINE CANADIAN INSULATING BOARD (F.130)**

"TenTest" Fibre Board is exhibiting its specialised methods of fixing insulating and similar boards for purposes of thermal insulation. Good news is the fact that genuine Canadian-produced

insulating board is now being imported, for the first time since the war.

**also on show :** "Masonite Presdwood" and "Tempered Presdwood."

**firm :** The TenTest Fibre Board Co., Ltd., 75, Crescent West, Hadley Wood, Barnet, Herts. (BARNET 5501). London office : 18, Pall Mall, S.W.1 (WHL 9366) Stand No. F.130.

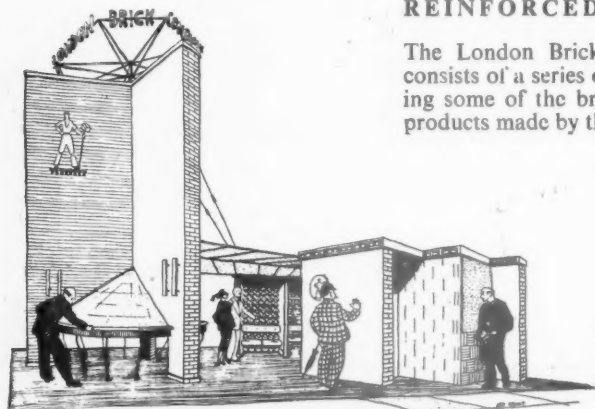
**REINFORCED BRICKWORK (E. 97)**

The London Brick Company's stand consists of a series of display fins showing some of the bricks and other clay products made by the Company. Three

of these fins are carried to a height of 18 ft. 6 in. and, by using the principles of reinforced brickwork, it has been possible to cut out of the base three large triangular sections to accommodate a revolving cone carrying a photographic display of some of the Company's activities.

**stand :** This was designed by John R. Harris.

**firm :** London Brick Company Ltd., Africa House, Kingsway, W.C.2 (HOL. 8282). Stand No. E.97.



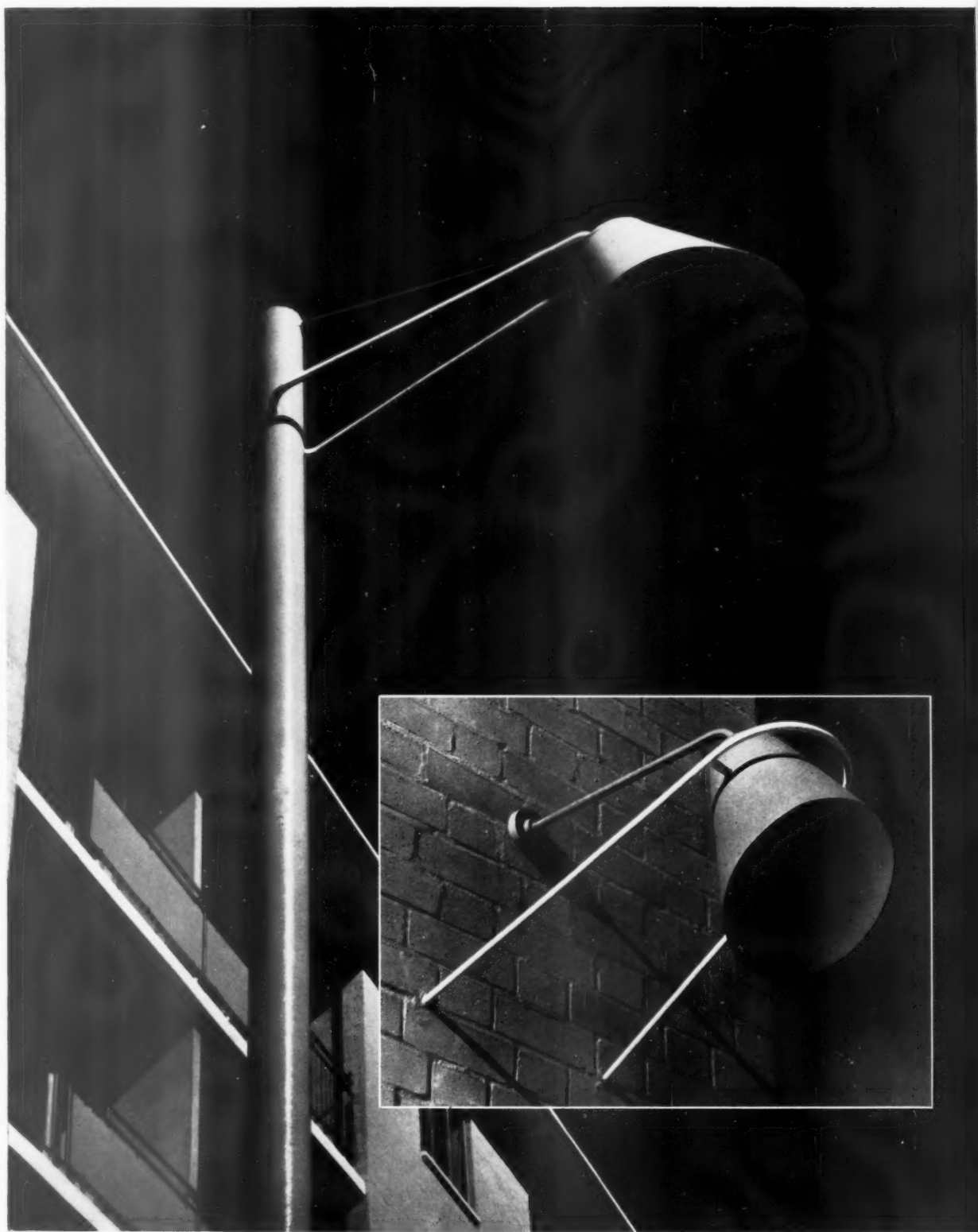


## WORKING DETAIL

LIGHTING :

EXTERIOR LIGHTING : FLATS IN LEWISHAM

*Fry, Drew and Partners; architects*



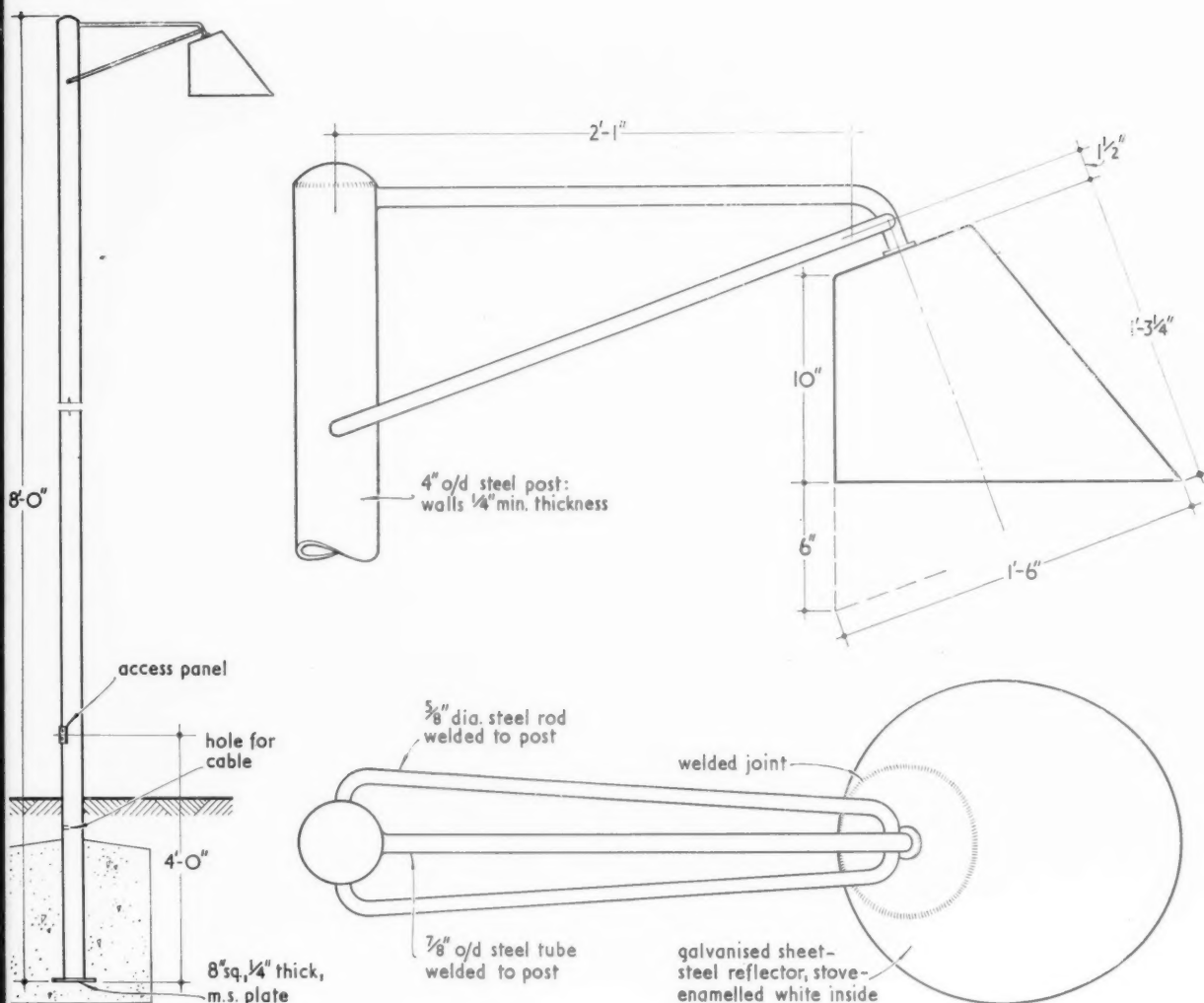
*The sheet steel reflectors of the lamps are supported on metal brackets, welded to the steel standard in the one case and grouted into the brickwork in the other.*

# WORKING DETAIL

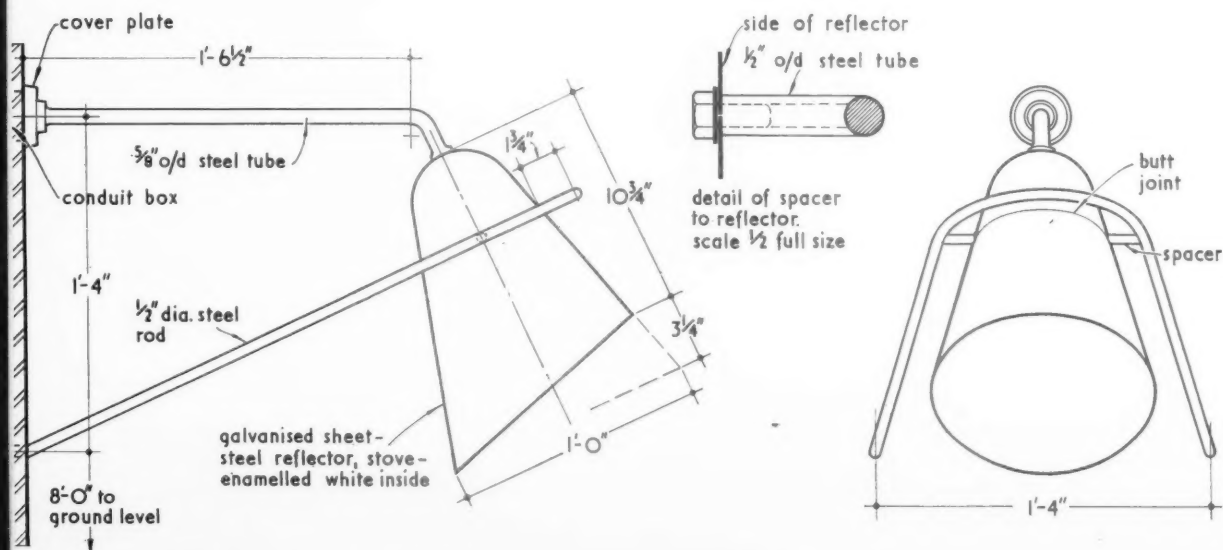
EXTERIOR LIGHTING: FLATS IN LEWISHAM

by, Drew and Partners, architects

LIGHTING : 2



ELEVATION AND DETAILS OF LAMP STANDARD. scales  $\frac{3}{8}$ " = 1'-0" and  $\frac{1}{2}$ " = 1'-0"



DETAILS OF WALL LAMP. scale  $\frac{1}{2}$ " = 1'-0"

## WORKING DETAIL

MISCELLANEOUS : 1

EXHIBITION STAND, BUILDING EXHIBITION, OLYMPIA

*Kenneth Bayes, architect: Frederick S. Snow and Partners, consulting engineers*



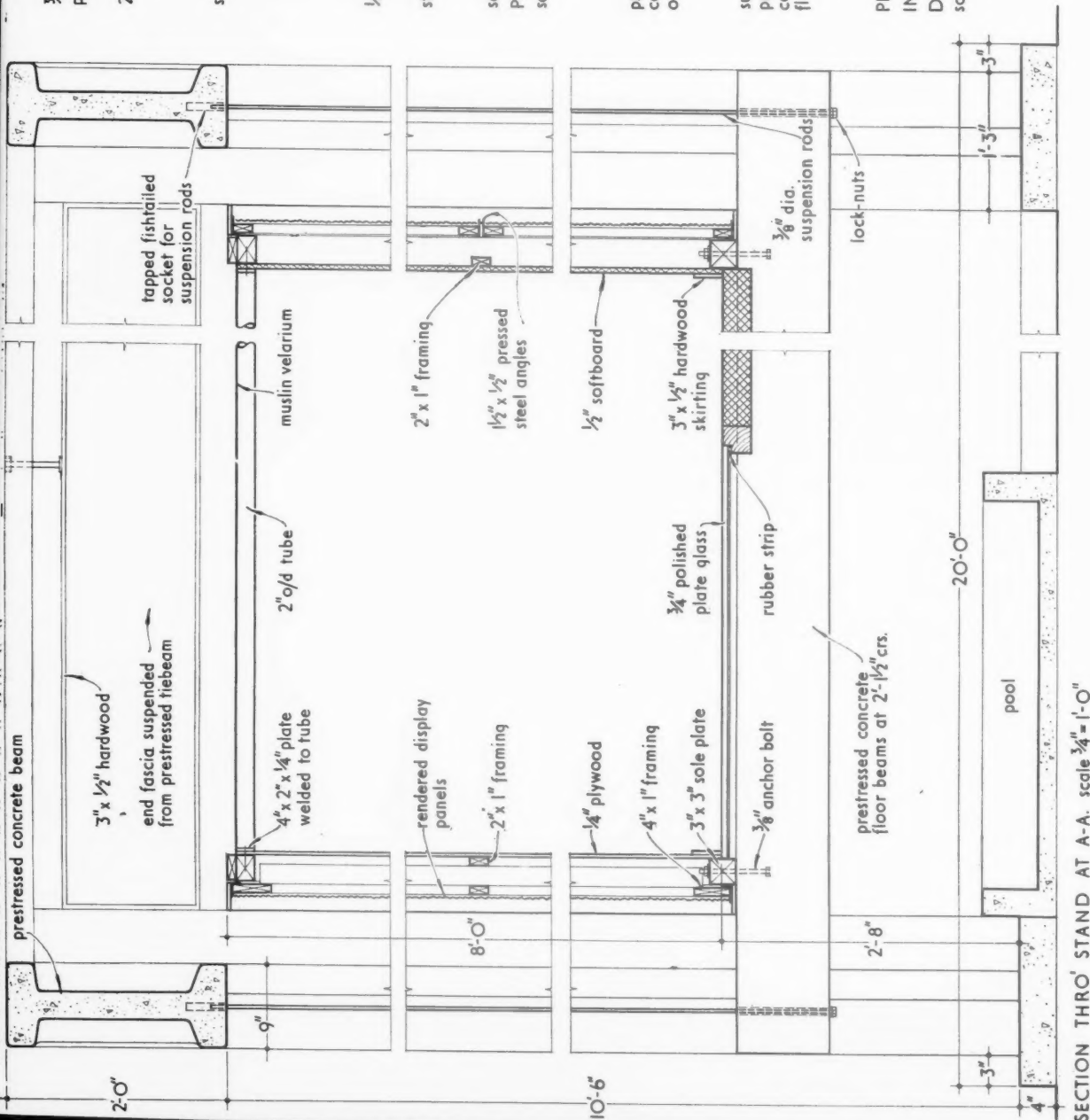
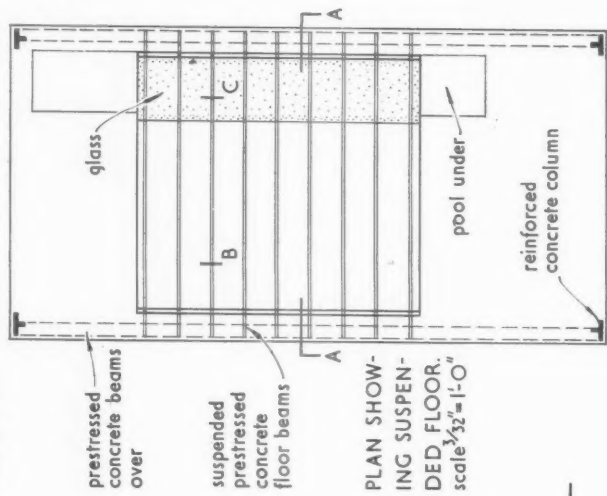
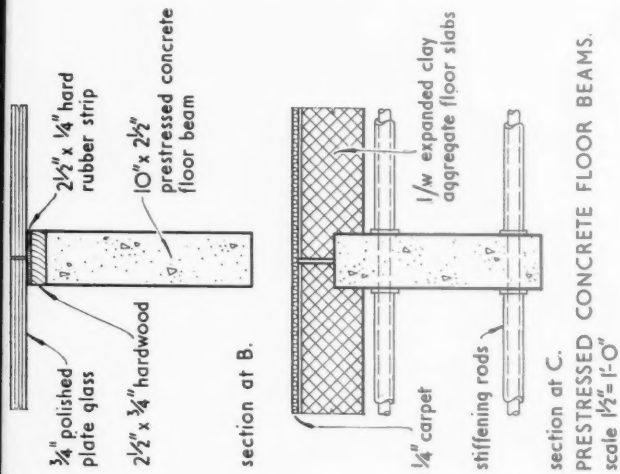
*The floor of the stand is suspended by steel wires from a prestressed concrete frame.*

# WORKING DETAIL

EXHIBITION STAND BUILDING EXHIBITION, OLYMPIA

Kenneth Bayes, architect: Frederick S. Snow and Partners, consulting engineers

MISCELLANEOUS : 1











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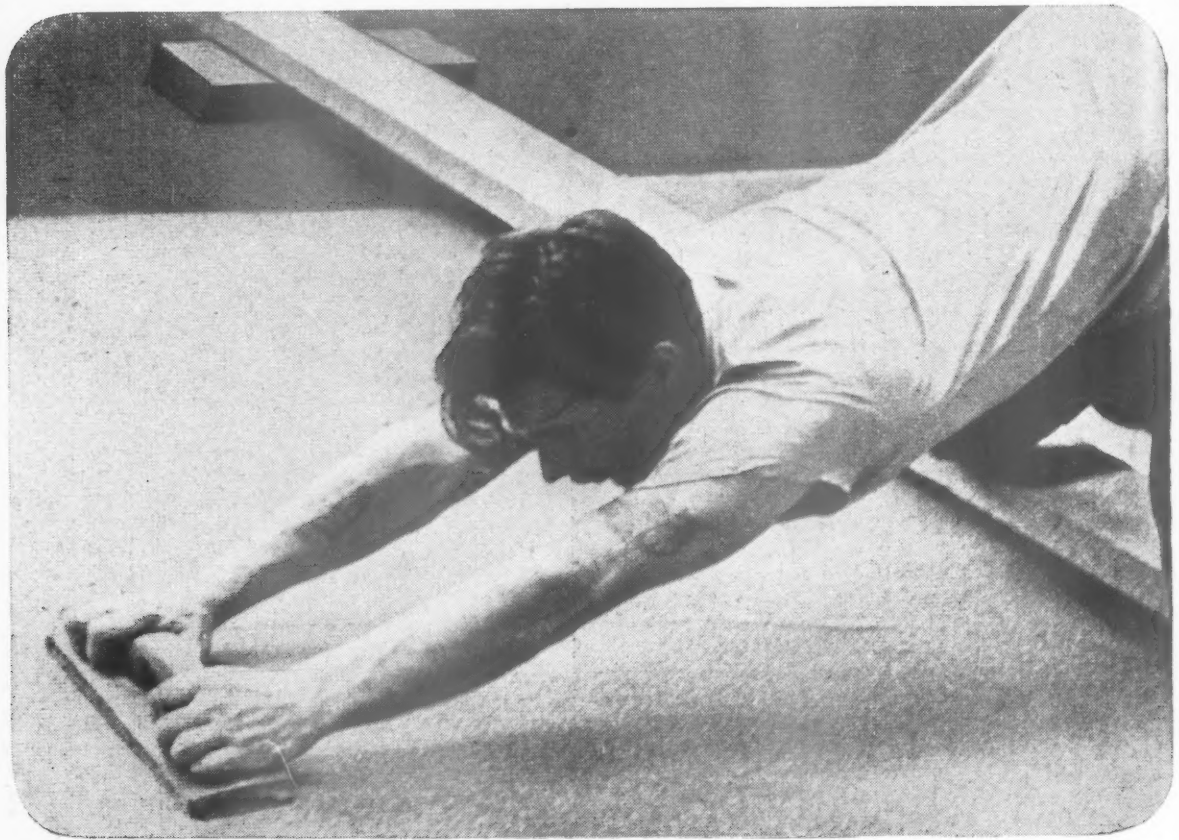
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*Cecil Kahn*



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Photograph: Courtesy Highways Construction Ltd.

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BIRMINGHAM OFFICE: Piccadilly Arcade, 105 New Street (Midland 0464/5)  
DUBLIN OFFICE: 21 Merrion Square North. (Dublin 66024)



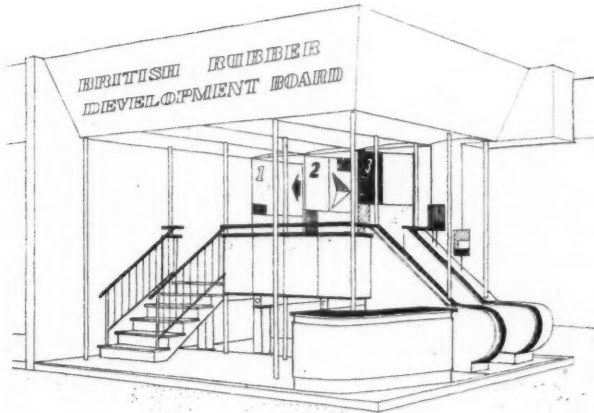
## NEW USES FOR RUBBER (B.34)

The British Rubber Development Board is featuring two new uses for rubber: as a key for plaster and for "texturing" concrete and rendering.

**also on show:** Inflatable rubber tubing for forming ducts in concrete.

**stand:** Designed by Evan Jones, the two-storey stand shows four types of flooring—rubber sheet, rubber tile, latex-cement composition and sponge-backed rubber—and the new rubber-covered escalators as used in some renovated underground stations.

**firm:** The British Rubber Development Board, Market Buildings, Mark Lane, E.C.3 (MAN. 9383). Stand No. B.34.



## THE FAMILIAR KENTISH OAST HOUSE (H.180/1 and J.202/3)

Once again the Marley Tile exhibit consists of the familiar Kentish oast house, which has the advantage that it shows many interesting aspects of the craft of tiling. Make a point of seeing the "Roman" tile, a variable gauge Roman pattern without mitres at the corners. This has been under development for several years. It can be laid

to varying gauge and is claimed to have improved weathering properties.

**also on show:** Floor tiles, of which the company makes a considerable range. Note particularly the special types which include grease-, oil- and acid-resisting grades, also a semi-flexible type for laying on wood floors—

remarkably useful if it will take up the inequalities of a worn floor. The firm also produces plain and cored base skirtings, and a plastic strip for finishing off the edges of tile or jointless floors.

**firm:** Marley Tile Co., Ltd., Riverhead, Sevenoaks, Kent. Stand No. H.180/1 and J.202/3.

## POLYHEDRA OF THE GOLDEN SECTION (L.237)

The principal features of this stand are two polyhedra, each of which consists of 5 cubes intersecting in the ratios of the "golden section." One is glazed with 5 types of figured rolled glasses, the other with coloured vitrolites.

The most instructive section of the stand is the "reference library" of structural, decorative and decorated glass. Over 150 samples can be inspected and handled (please don't drop them) by inquisitive visitors.

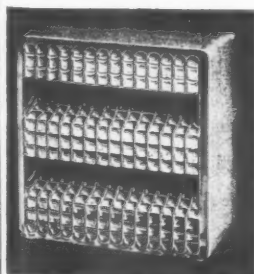
**also on show:** "Ventiblock"—an all-glass ventilating unit for incorporation

in hollow glass block panels (see photo), "Insulight" double glazing units, "Plyglass"—fine glass fibre gauze sandwiched between sheet glass, etc., etc.

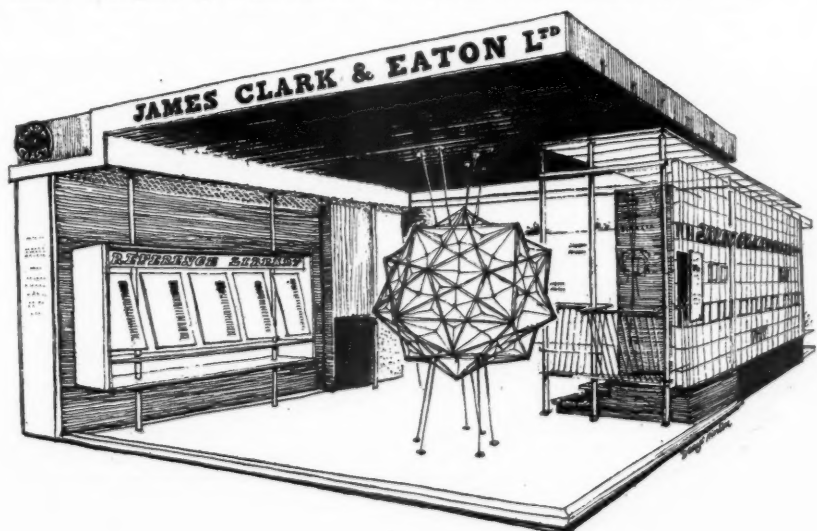
**stand:** Designed by Wells Coates. It

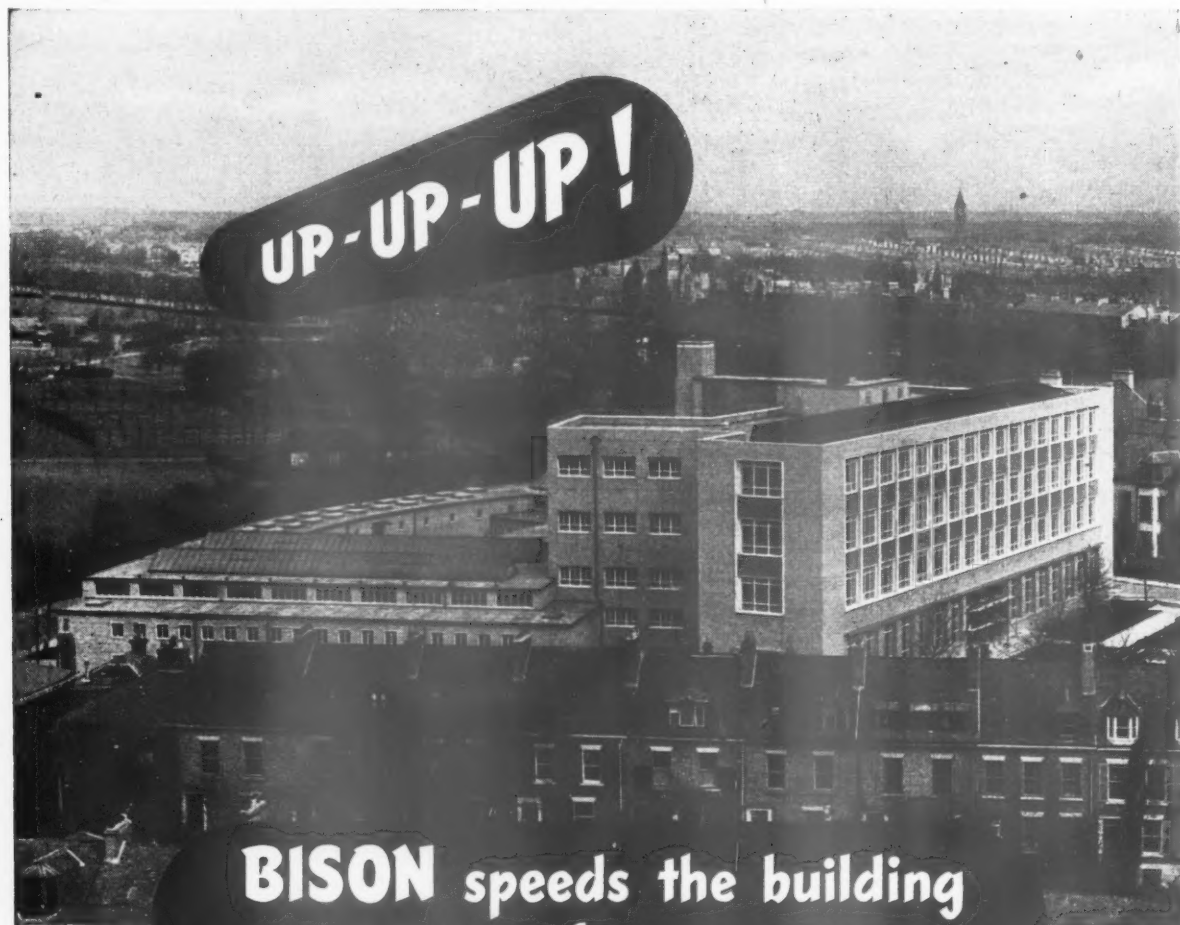
made a change after the Telekinema (no glass at all). The polyhedra show the South Bank influence.

**firm:** James Clark and Eaton, Ltd., Scoresby House, Glasshill Street, S.E.1 (WAT. 8010). Stand No. L.237.



The "Clark-Eaton" all-glass Ventiblock.





## BISON speeds the building of 200+ schools & colleges

KING'S COLLEGE, NEWCASTLE (architects: W. B. Edwards and R. M. Manby, F. & A.R.I.B.A., Newcastle-on-Tyne) is one of the many schools throughout the country for which the merits of Bison Floors have proved eminently suitable. At this moment Bison is being used in the building of more than two hundred. Speed of production and erection are obvious advantages of Bison Precast, while Bison Prestressed, by eliminating piers and beams, permits maximum scope in design.



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## A NEW RANGE OF BOILERS (Q.308)

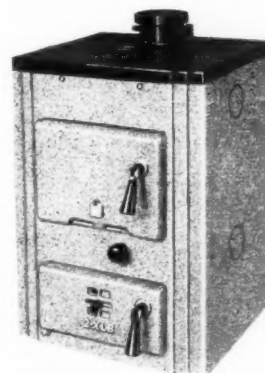
Ideal Boilers and Radiators are showing a large range of equipment starting with the "Neofire," which provides background heating for the contemporary small house and of which there are 80,000 already supplied. A new range of boilers, the XLB range, has also been introduced, having outputs of 20,000, 25,000 and 40,000 BTU's per hour. There is also a selection of the similar central heating and indirect hot water supply boilers, both coke and gas fired, and in various enamel finishes, together with cast iron radiators and other fittings, such as heated towel rails. One of the "Cookanheat" range is also shown.

exhibition, the new "Hostess" cast iron porcelain enamel sink fitted to a white enamelled steel cabinet. Ideal is also showing a complete bathroom of a type suitable for present-day housing, which has a vitreous china lavatory basin and W.C. and a 5-ft. porcelain enamel "Standard" bath. Somewhat more luxurious is a tiled bathroom with fittings in colour.

**firm:** Ideal Boilers & Radiators, Limited, Ideal Works, Hull. London office: Ideal House, Great Marlborough Street, W.1 (GER. 8686). Stand No. Q.308.

**also on show:** A large range of sanitary fittings and, for the first time at this

**representation:** The firm has offices in Hull, Birmingham, Bristol, and Wembley.

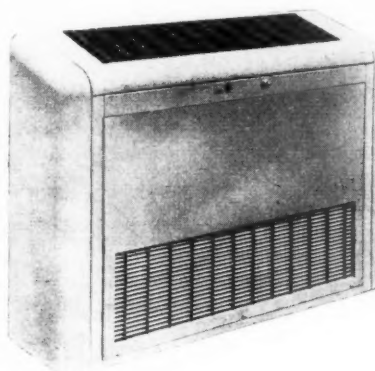


One of the XLB range of boilers.

## FAN CONVECTORS (F.121)

Copperad is showing its new fan convectors. As the name implies, these are heaters operating on the convection principle but they are also provided with electrically-driven fans to increase air circulation. Three types are made—basic, standard (as in the illustration) and extended. They are recommended for use in schools, large offices, retail stores, etc. They operate on steam or hot water.

The fans, which can be controlled automatically by means of room thermostats, are of the two-speed type, and



automatic change-over from full speed to low speed can be achieved, if required, with a second room thermostat.

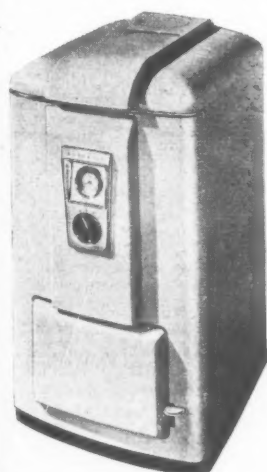
**also on show:** Radiant panels suitable for industrial use, also operated by steam or hot water, and a completely re-designed electrically-operated unit heater of light but robust construction.

**firm:** Copperad, Ltd., Colnbrook, Bucks. Stand No. F.121.

## THE AGAMATIC BOILER (A.5)

Aga Heat Ltd. is showing cookers and the "Agamatic" boiler, which, although it was introduced eighteen months or more ago, has not been seen at the Building Exhibition before.

**stand:** Designed by Arthur Braven, the stand is divided into two sections,



The "Agamatic" boiler.



the first of which is an information room for the use of architects, where they can obtain details of Aga products and also see typical house plans, while the other half of the stand is devoted to a complete range of cookers and boilers. The stand has a tubular frame and a ceiling of primrose muslin. The reception area is raised on a platform covered with green felt; the back wall is draped with specially-printed curtains

with an "Aga" motif; and the flank wall is of wax-polished sapele mahogany faced with plywood and studded with  $\frac{1}{8}$ -in. dia. satin aluminium beads.

**firm:** Aga Heat Ltd., 30, Orchard Street, W.1 (MAY. 6131). London showrooms: 20, North Audley Street, W.1. Stand No. A.5.

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Some of the best stands at the Building Exhibition are those of the ministries and the nationalized industries. Most of them are of interest, not only because of the exhibits on them but because of their high standard of design. (Other stands in this category will be dealt with next week.)

## OFFICIAL EXHIBITS AT OLYMPIA

### BUILDING RESEARCH STATION

A new exhibit on Stand 451 demonstrates by means of models the uses and advantages of tower cranes, when applied to the construction of small groups of dwelling houses. By careful planning of the sequence of building operations, it is possible to complete a pair of normal houses in 64 days by this method.

The tower crane reduces the need for unskilled labour, and a particular advantage of its use is that no unskilled labour need be on the scaffolding while building is proceeding; therefore, more bricklayers can be used. Units such as the complete roof framework can be erected on the ground and lifted into position by the crane.

Considerable interest is being shown in tower cranes at present. Many are already in use in this country on large building projects, but, on the Continent, smaller types are being used on quite small buildings. Officers of the Building Research Station have visited the Continent to study their use in the field and two types are now being studied at the Building Research Station. Tentative conclusions are that these machines are suitable for use in handling the materials on typical British housing sites and that, with good organization, they should enable considerable economies in both time and money to be made.

The station also has a new exhibit showing the development and use of the concreting skip, which can transfer the whole of a concrete mix from the mixer to the site with considerable economy of man-power and handling time.

Other exhibits on the BRS stand show methods of making and using aerated concrete, the correct construction for parapet walls, the testing of steel and concrete bridges, and the measurement of discomfort caused by interior lighting.

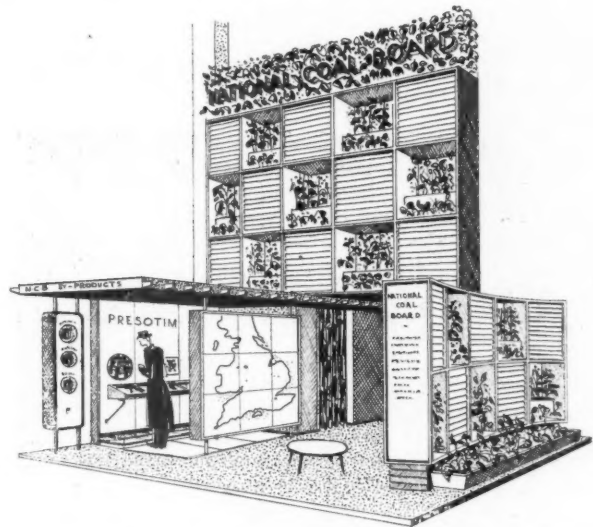
### FOREST PRODUCTS RESEARCH LAB.

The Laboratory (Stand No. 453) shows for the first time, up to 70 samples of tropical hardwoods, many of which can be used to replace softwoods for building purposes. The samples are divided into light, medium and heavy varieties, and their properties and the purposes for which they can best be used are described. As many of these hardwoods are now being used for purposes for which they are unsuitable, it is hoped that the exhibit will be of particular interest.

### NATIONAL COAL BOARD

The National Coal Board (D.69), who are, oddly enough, our second largest producers of bricks, are showing for the first time at the building exhibition, and their stand has been designed by Cecil C. Handisyde to show the range of bricks produced by the East and West Midlands Divisions of the Board. These include hand-made sandstock facing bricks, rustic facings,

*The National Coal Board Stand, designed by Cecil C. Handisyde.*



sand-faced facing bricks, and red, blue and brindle engineering bricks. A raised wall of panels, each made of one type of brick and separated from the next by flowers, is the main feature of the stand.

Also displayed are the proprietary coal by-products made by the Board at their plant at Caerphilly, Glamorgan. The products are "Synthaprufe," a liquid waterproofing and jointing material containing rubber, for treating walls, flat roofs and sub-floors, and for fixing wooden floor blocks and linoleum; "Presomet," a high quality bituminous black paint which dries with an elastic film, withstanding wear and tear and climatic extremes; and "Presotim," a wood preservative in browns and other colours. Most of us know this latter group of products quite well from the days when they were made by private enterprise.

The layout of the stand was determined partly by the position of an existing stanchion that had to be incorporated in the design.

### MINISTRY OF FUEL AND POWER

The Ministry of Fuel and Power exhibit (Stand No. 449) describes the technical advisory services which are available to assist industry in promoting the more efficient use of fuel and power. These services range from practical instruction in stoking to the provision of the means by which a comprehensive survey may be produced of the entire heat and power production and consumption of a factory or other industrial unit.

The survey work is undertaken by the mobile testing service of the Ministry and the methods adopted are shown by means

of photographs, diagrams and letterpress, with illustrations of typical results. Recommendations based on these surveys have shown that savings of about 25 per cent. in fuel consumption are possible generally in industry.

Information about other advisory services of the Ministry, and pamphlets and publications on fuel efficiency, are also available on the stand.

### THE TRANSPORT STAND

British Railways and British Road Services have a joint stand (No. 444). It is elliptical in shape, with information counters at each end and an office in the centre. One of the counters is for rail information and one for road, and the office is available for private consultations with experts regarding rail and road transport problems. Photographs and posters decorate the walls of the stand and there is a novel type of illuminated photographic display with selector buttons. By pressing the appropriate button an illustration of the form of transport selected appears on a screen.

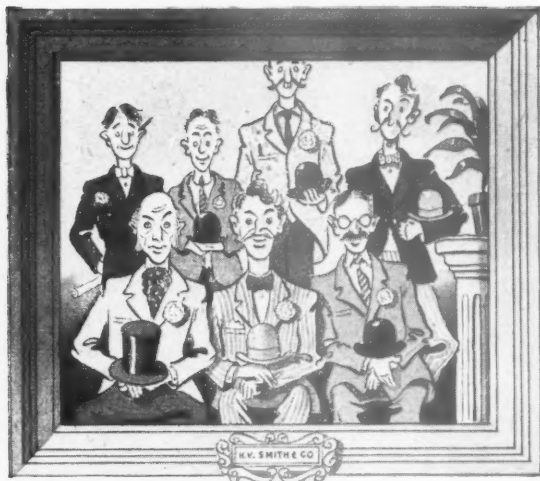
### THE GAS COUNCIL

The Gas Council stand (No. 299/300) features appliances suitable for all types of houses, flats, schools, hospitals and other public buildings, and includes panels illustrating central heating and hot water installations, showing the provision it is necessary to make for these connections at the planning and drawing-board stage. In addition, you can find on the stand expert advisers who, as the Gas Industry's representatives responsible for arranging gas supplies to new towns and new housing estates, have all

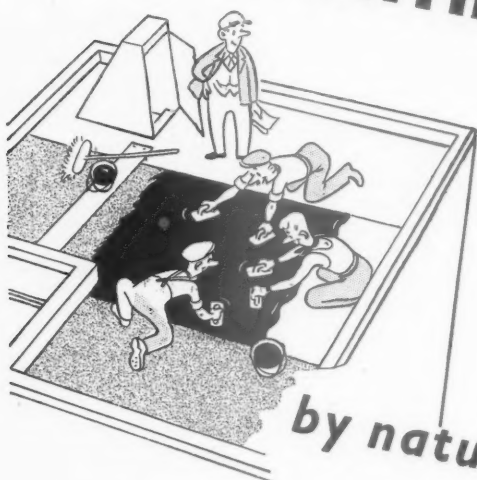
*The Gas Council Stand, designed by the Council's Exhibition Department.*



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the special knowledge which visitors to the exhibition are likely to require.

The exhibit includes: Two sections showing the installation of gas and coke appliances in low-cost housing estates. Two sections showing the installation of gas and coke appliances in larger houses. A section showing a method by which gas fires can be installed in large blocks of flats. A section showing typical heating, catering and water-heating appliances for installation in schools. A section showing hospital equipment for sterilizing, central heating, cooking and water heating, including a storage water heater specially suitable for first aid rooms. A balanced-flue appliance display, featuring a Cowper Penfold "Sapphire" space heater and the Ascot "715" multipoint gas water heater. A special display of the heating and catering installations at the Royal Festival Hall, which are served entirely by gas. A special display showing how the British Standards and Codes of Practice apply to the installation of gas appliances for water heating.

#### FUEL RESEARCH STATION

The Fuel Research Station's stand (No. 454) consists of a demonstration of the work of the station, where household appliances for heating and cooking which use solid fuels are tested for their degree of efficiency. Two appliances are exhibited under test—a free-standing cooker and an openable stove with boiler. These have been chosen as they exemplify most of the tests required.

The tests usually last 24 hours and are designed to include the normal household routine on a baking day. Several varieties of dough are cooked, in order to test the efficiency of the oven. Also tested is the speed at which water boils on the hot plate, the hot water output, the fuel consumption and the

ability of the fire to remain alight unattended.

Practical cooking tests are included for the first time at any exhibition and specimens of food cooked during the tests show typical failures due to defects in the equipment.

#### JOINT FIRE RESEARCH ORGANIZATION

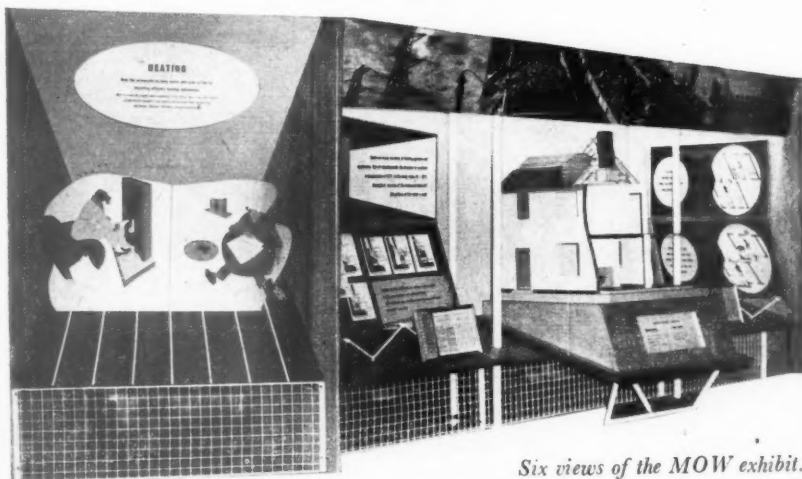
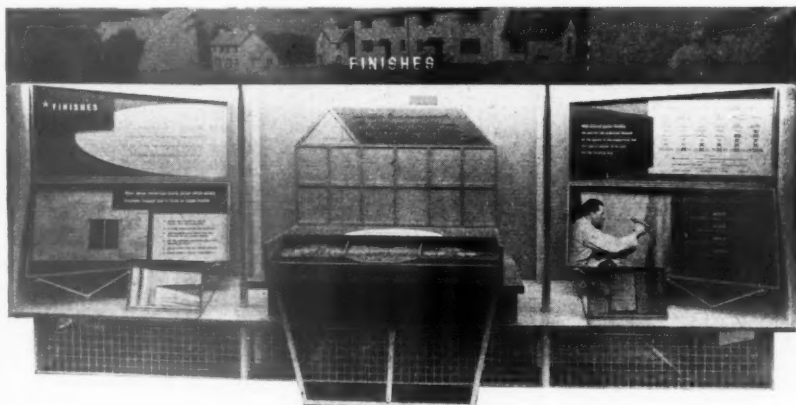
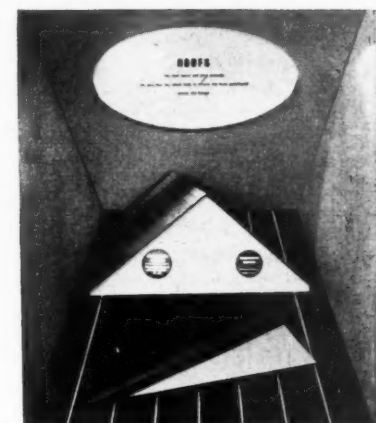
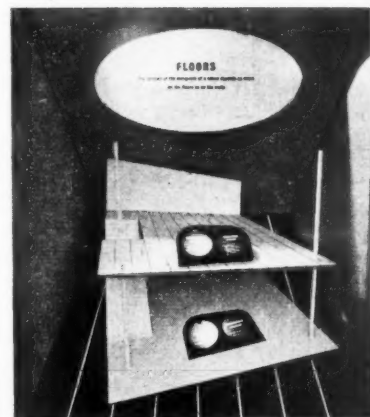
This exhibit (on Stand No. 456) illustrates the methods used to test the fire resistance of floors. Photographs and script deal with the tests and the minimum desirable standards, and there are six models showing typical methods of floor construction.

#### MOW

The theme of the main MOW exhibit at the Building Exhibition is "Better, and More Comfortable, Houses." All the photographs on this page are from the MOW stand (E.107/9) and indicate the lively technique of presentation used. The display shows the results of research applied to the building of a normal, semi-detached, two-storey dwelling. It starts with foundations, and deals, in turn, with walls, floors, roofs, the use of timber, plastering and finishes. In addition, a number of non-traditional methods of construction are shown.

In the Gallery of the Grand Hall (Stand No. 447), the Ministry has an information centre, which illustrates the Technical Information Service it offers to the building industry. Technical information officers will be in attendance to answer inquiries, and the stand has been designed so that problems can be discussed in comfortable surroundings.

Wall panels will illustrate the work of the Technical Information Service throughout the country and the use which the service makes of visual aids in the form of films, photographs and charts.



Six views of the MOW exhibit.



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AJ. 22.11.51

## Announcements

Brian O'Rourke, A.R.A., F.R.I.B.A., has moved his office to 15, Chantrey House, Buckingham Palace Road, London, S.W.1. The telephone No. SLOane 0556 is not changed.

The Board of Management of the School of Planning and Research for Regional Development is pleased to announce that, owing to an unforeseen change of personal circumstances, Mr. E. A. A. Rowse has now found it possible to withdraw his resignation as principal of the school, and to postpone his retirement for the time being.

A revision of British Standard 715:1951 (sheet metal cylindrical flue pipes, fittings and accessories for gas fired appliances) has been published recently by the BSI. Copies of this standard may be obtained from the BSI, Sales Department, 24, Victoria Street, London, S.W.1, price 4s. post free.

## Corrections

We regret that in our issue for November 8, Mr. G. W. Jackson, F.R.I.B.A., was described as Mr. A. W. Jackson, A.R.I.B.A., and Mr. F. R. Greenen was described as an A.R.I.B.A., instead of an L.R.I.B.A.

In our issue for November 1 we said that the general contractors for the re-designed shop interior for James Beattie Ltd., Wolverhampton, were Messrs. Harris and Sheldon Ltd. In fact, both this company and Messrs. Courtney, Pope Ltd. were equally responsible for the work done.

In our issue for November 15, under the heading "Building Cuts" on page 581, we said that December 10 would be the day when starting dates already granted for buildings would be reviewed and postponed. The correct date is December 1.

## Buildings Illustrated

*Broomhill Primary School, Allison Road, Brislington, Bristol. (Page 613.) Architects: Burrough & Hannam, F./A.R.I.B.A. Quantity surveyor, Bernard & Sons. Clerk of Works, H. Wakeham. General foreman: H. Rich. General contractor, W. Rogers & Sons (Bristol) Ltd. Prefabricated aluminium classrooms, Bristol Aeroplane Co. (Housing) Ltd. Sub-contractors: asphalt, Asphalte Specialists Ltd.; bricks, Catty Crook Brick Co. Ltd.; precast concrete, Bristol Stone & Concrete Co. Ltd.; precast beams, Concrete Ltd.; partitions, Venesta Ltd.; w.c. partitions, Plymax; glass, E. G. Croney & Co.; woodblock flooring, Stevens & Adams Ltd.; patent flooring, Horsley Smith & Co. Ltd.; central heating, Z. D. Berry & Sons, Ltd.; boilers, Ideal Boiler & Radiator Co. Ltd.; electric wiring, Burchill & Morgan; electric light fixtures, Hail Wood & Ackroyd Ltd.; plumbing, Arthur Scull & Son Ltd.; sanitary fittings, Rowe Bros. & Co. Ltd.; door furniture, James Gibbons Ltd.; windows & window furniture, Williams & Williams Ltd.; plaster, A. C. V. Telling (Bristol) Ltd.; decorative mural plaster, Alan Durman; joinery, Southmead Timber & Joinery Works; facing to counter & hatches, Waverite Ltd.; cloakroom fittings, James Gibbons Ltd.*

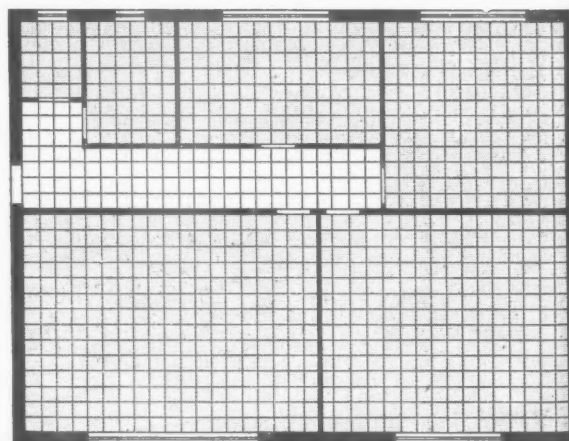
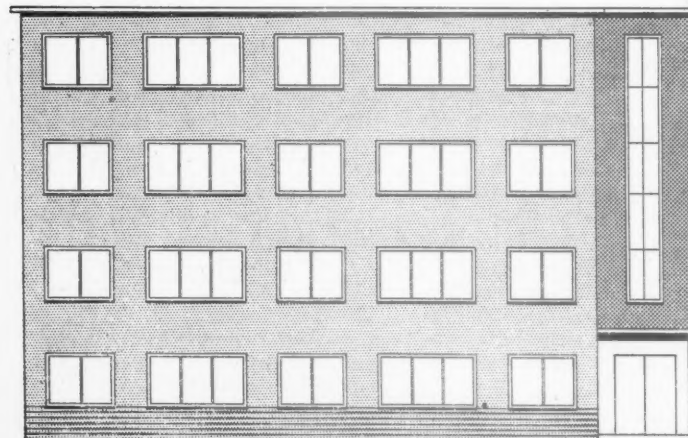
*Pair of Houses at Highworth for the Highworth Rural District Council (pages 614-618.) Designer: Eric Chick. Consulting architects: Powell & Moya, A./A.R.I.B.A. Consulting quantity surveyors: Davis, Belfield & Everest. General contractor: Percy Chick. Sub-contractors: joinery, Samuel Elliott & Sons; interlocking roof tiles, wood-wool slabs and ground floor paving, The Marley Tile Co. Ltd.; general supplies, Stephensons; electrical contractors, Warne Bros.; pressed metal rainwater goods, G. H. Coates Ltd.; plumbing, A. B. Haddow Ltd.; plastering, G. Brooks Ltd.; ironmongery, Yannedis Ltd.; glazing, H. Hunter & Co.*

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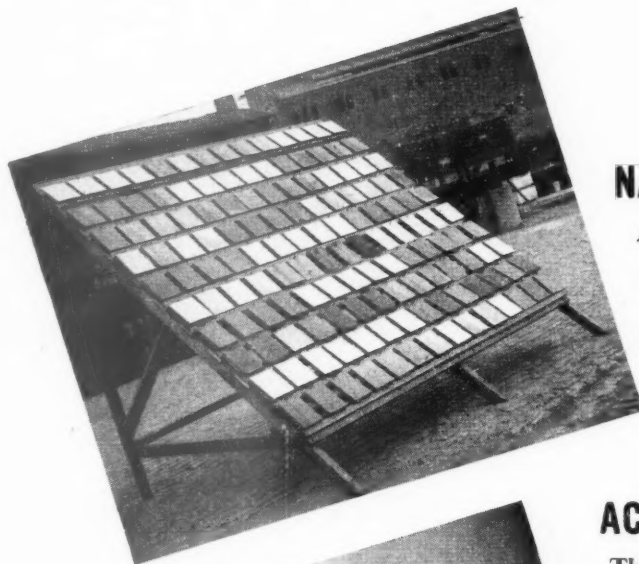
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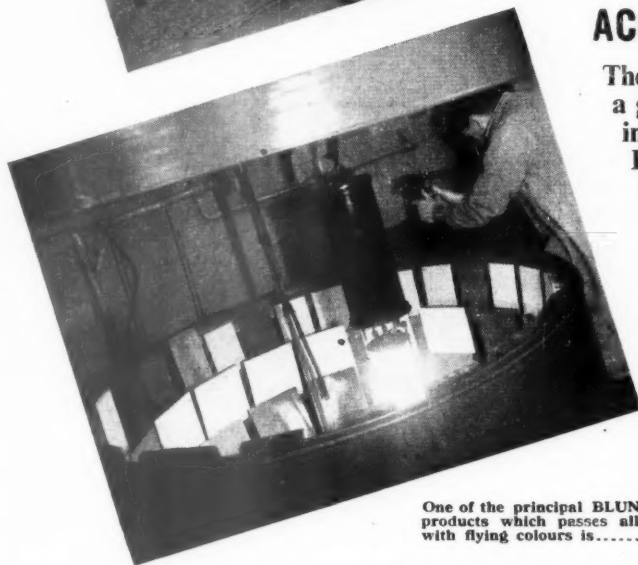
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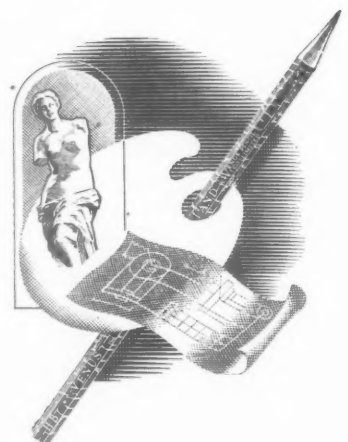
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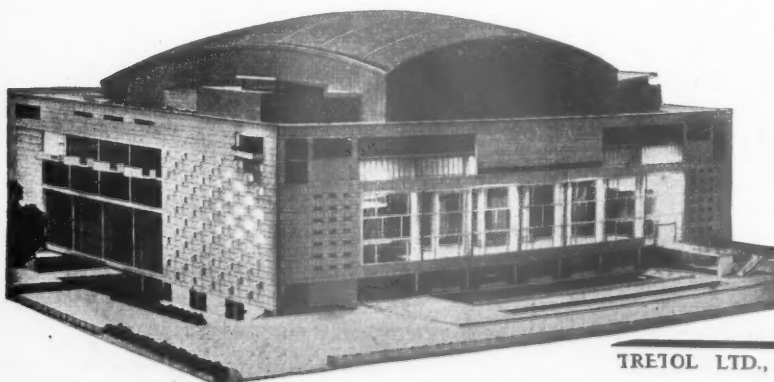
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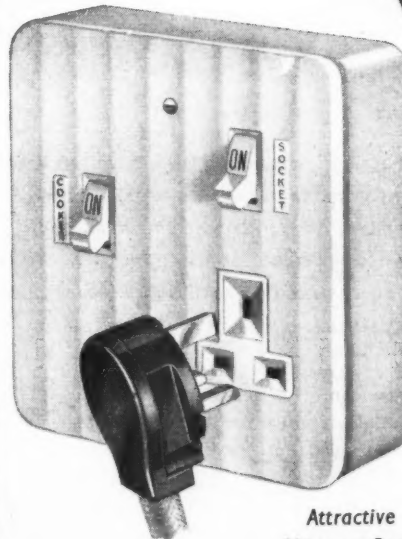
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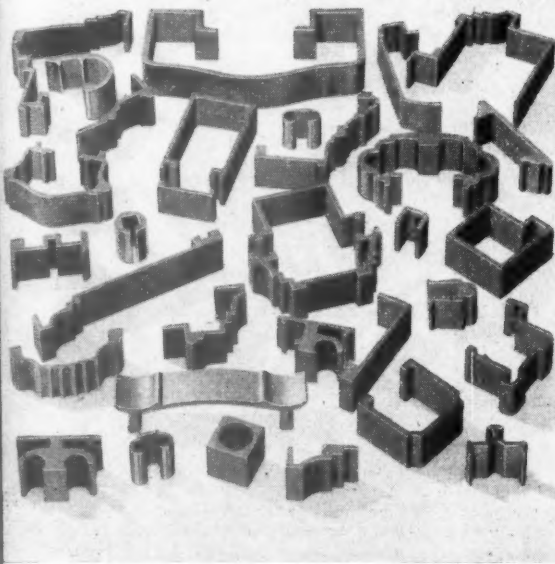


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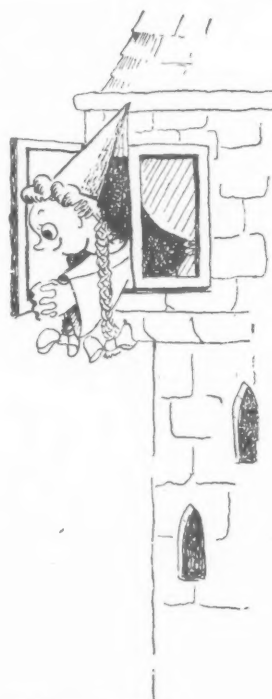
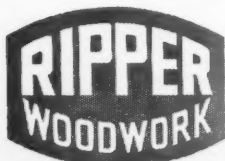
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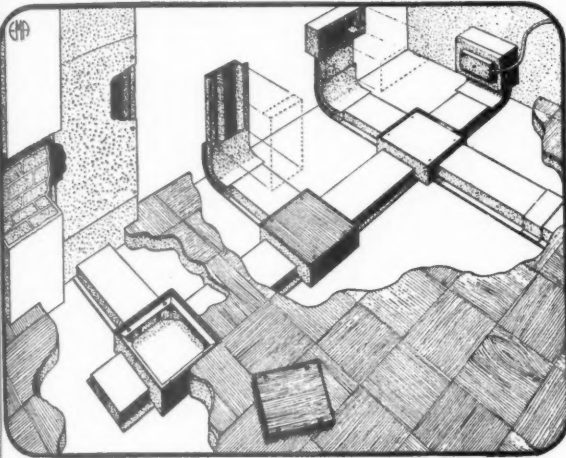
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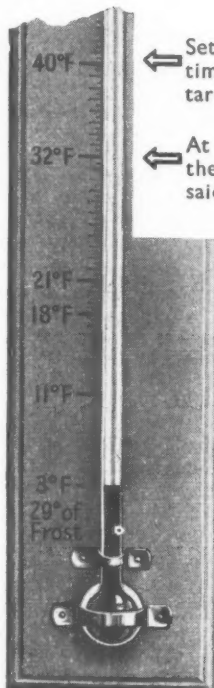
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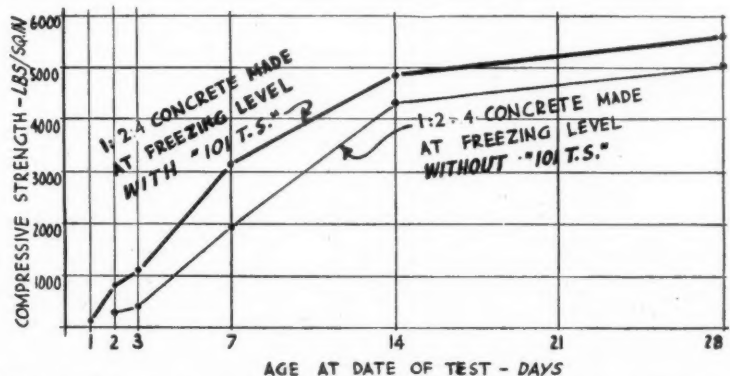
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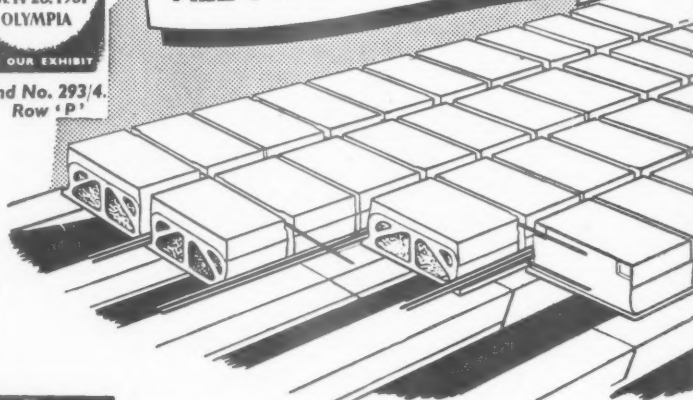
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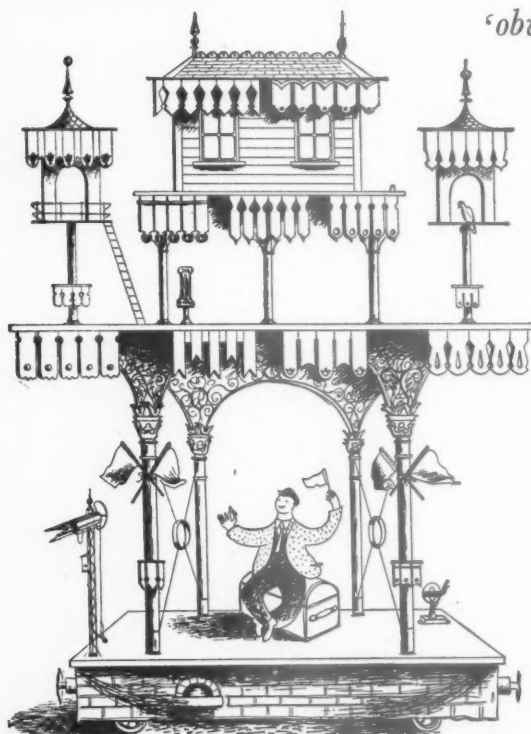
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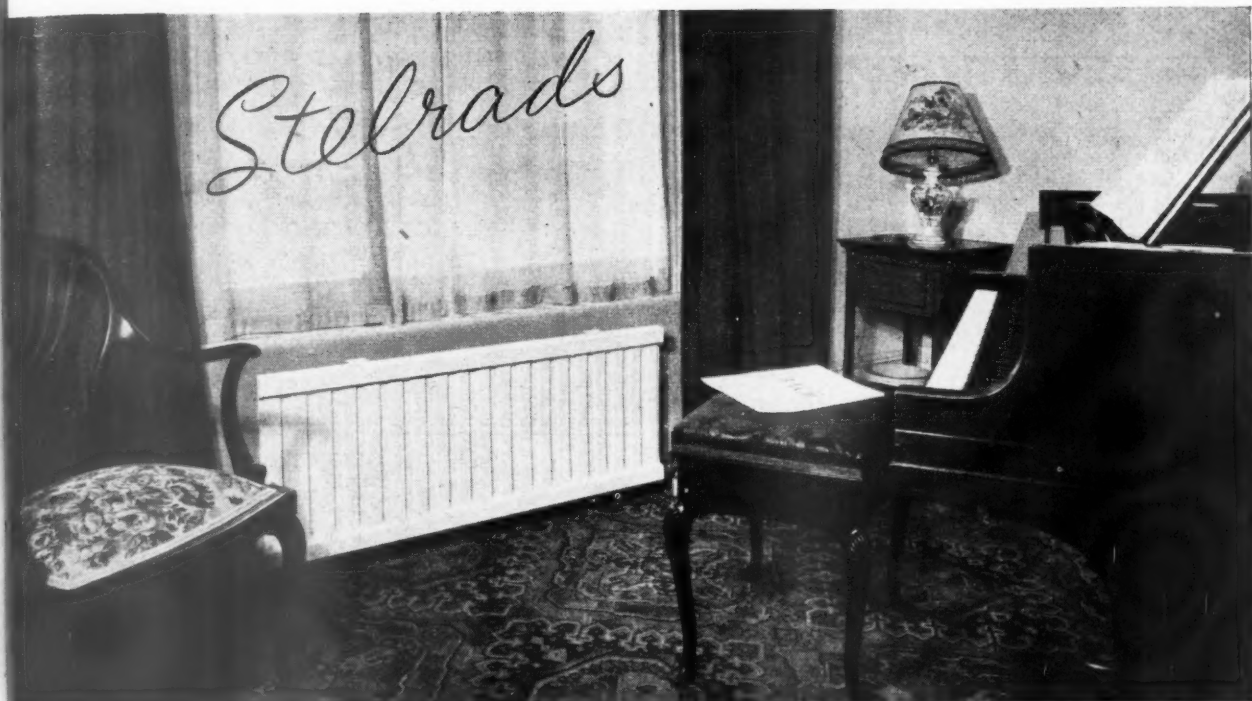
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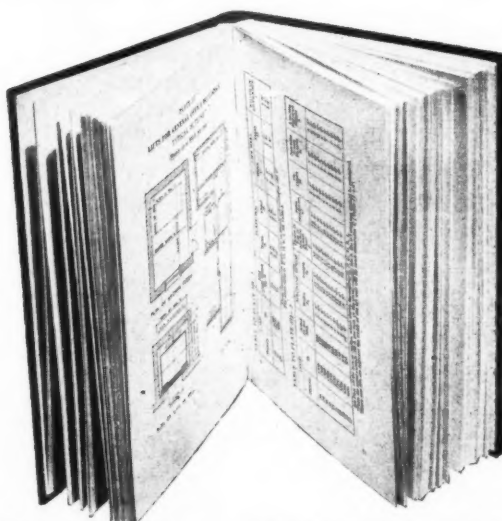
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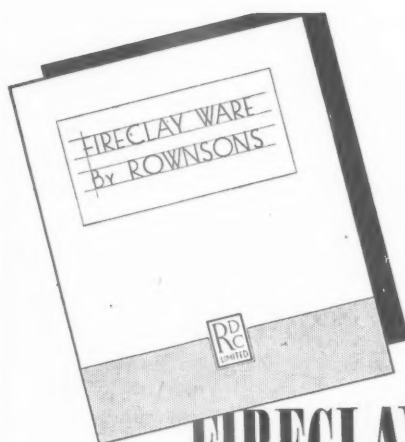


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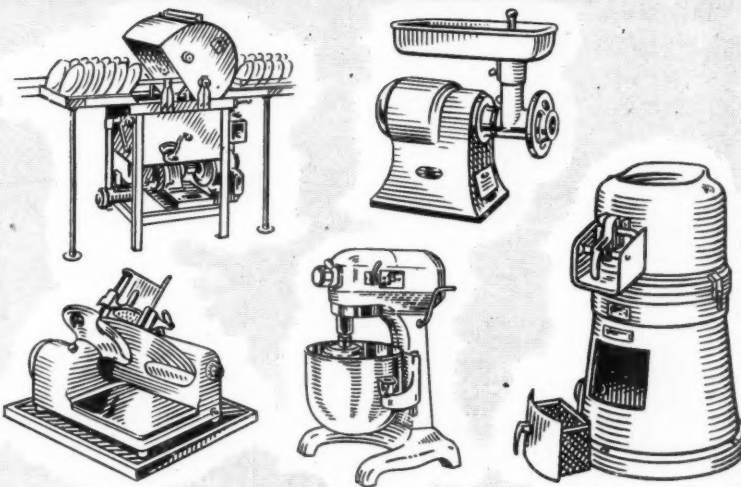
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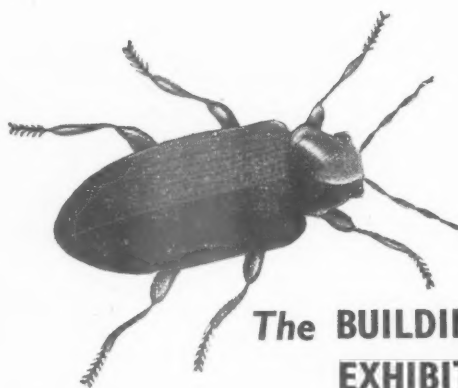
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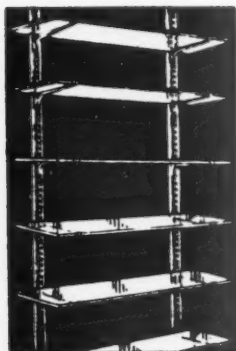
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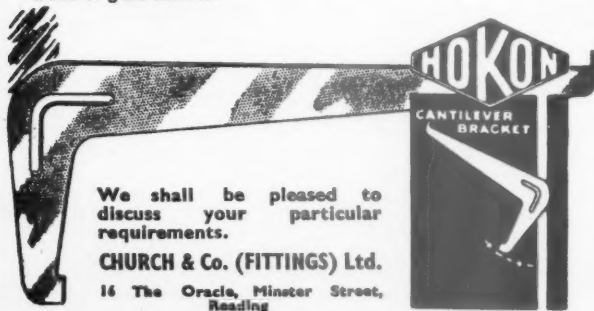


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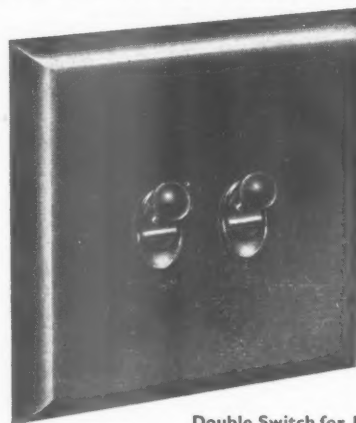
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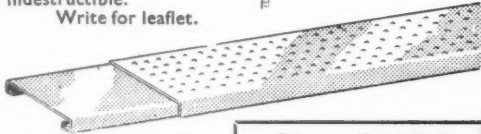
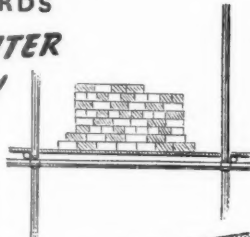


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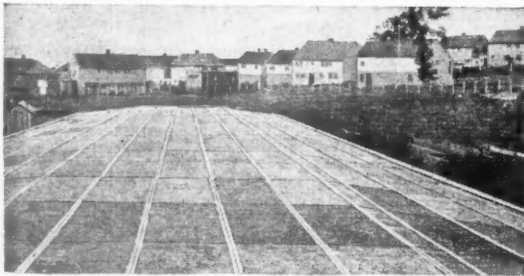


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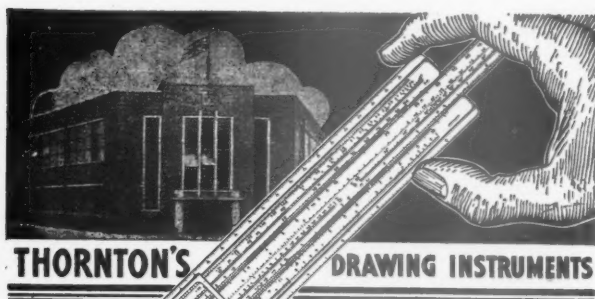
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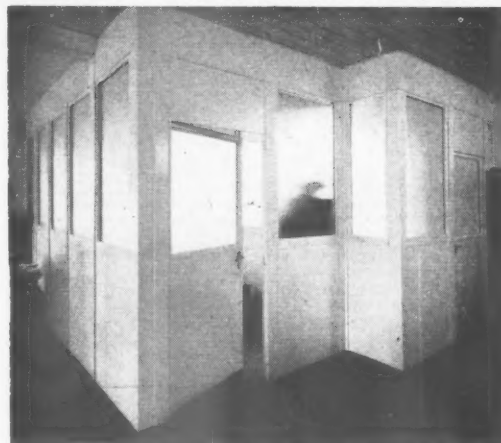
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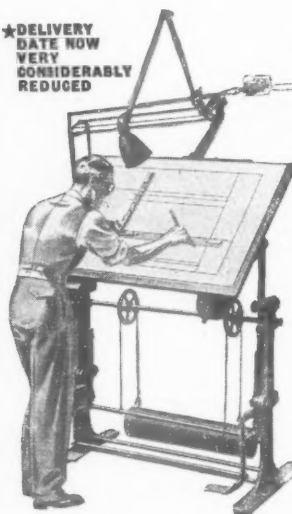
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Applicants must have a wide experience in quantity surveying, and preference will be given to candidates with experience in a Quantity Surveyor's office with a working knowledge of current housing practice, an aptitude for cost analysis and the settlement of accounts. The Council will offer housing accommodation if required.

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

Applications, stating age, qualifications, details of experience, whether holding the Intermediate certificate of the R.I.C.S., together with the names and addresses of two referees, should reach the undersigned not later than Monday, the 26th November, 1951.

C. WICKENS,

Clerk of the Council.

Rural Council Offices, Lynn Road,  
Ely, Cambs.  
2nd November, 1951. 4887

### MINISTRY OF WORKS.

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

Salary: Architectural Assistants £340-£575 per annum; Leading Architectural Assistants, £570-£675 per annum. Starting pay will be assessed according to age, qualifications and experience. These rates are for London; a small deduction is made in the Provinces.

Although these are not established posts, many 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, Ministry of Works, Abell House, John Islip Street, London, S.W.1, quoting reference WG10/BS. 4304

### NORTH THAMES GAS BOARD.

A **SENIOR ARCHITECTURAL ASSISTANT** is required in the Architectural Section, Chief Engineer's Department, Westminster.

Applicants, who must be Registered Architects and who should have passed, or be studying for, the Final Examination of the R.I.B.A., should be capable of preparing working and detailed drawings and specifications, and supervising and controlling the work on contracts. Experience in design and planning of industrial buildings would be an advantage.

Starting salary, depending on age and qualifications, will be within the range £650-£800 per annum. The appointment is of a permanent nature and pension arrangements will be discussed with short list candidates.

Applications, stating age, qualifications and particulars of previous appointments held, must be submitted to the Staff Controller, North Thames Gas Board, 30, Kensington Church Street, London, W.8, quoting reference 95. 4890

### COUNCIL OF THE COUNTY OF ABERDEEN.

**COUNTY ARCHITECT'S DEPARTMENT.**  
Applications are invited for appointment as **ARCHITECTURAL ASSISTANT**. The salary scale applicable to the appointment is £735 rising by annual increments of £25 to £810 per annum. Applicants must hold the qualification A.R.I.B.A. and preference will be given to candidates having experience in the design of educational buildings. The appointment is subject to the Local Government Superannuation (Scotland) Act, 1937, and the successful candidate will require to pass a medical examination.

Conditions of appointment and forms of application are obtainable from the undersigned and should be returned completed to him not later than 26th November, 1951.

**THE COUNTY COUNCIL WILL MAKE HOUSING ACCOMMODATION AVAILABLE TO THE SUCCESSFUL CANDIDATE WITHIN A REASONABLE TIME, IF REQUIRED.**

Canvassing of members of the Council directly or indirectly in connection with this appointment shall disqualify the candidate.

CHAS. HORNAL,

County Clerk.

County Buildings,  
22, Union Terrace, Aberdeen.  
1st November, 1951. 4889

### CARDIGANSHIRE COUNTY COUNCIL.

**COUNTY ARCHITECT'S DEPARTMENT,**  
**ABERYRON.**  
Applications are invited for (a) ONE ASSISTANT ARCHITECT, A.P.T. Grade V-VI (£570-£710) and (b) ONE ARCHITECTURAL ASSISTANT, A.P.T. Grade III-IV (£500-£575). The commencing salary to be determined according to qualifications and experience of successful candidates.

Applicants for (a) should be members of the Royal Institute of British Architects with experience in the design and construction of modern buildings (particularly schools), the supervision of large contracts and other works carried out by Local Authorities.

Applicants for (b) should preferably have passed the Intermediate Examination of the R.I.B.A. and should have good general experience in Architectural work.

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

Applications, endorsed (a) Assistant Architect or (b) Architectural Assistant, stating qualifications, details of experience, previous and present appointments, age, present salary and the earliest date when available, together with two recent testimonials and the names of two referees are to be delivered to the undersigned on or before the 3rd December, 1951.

The Council regret they are not in a position to assist in finding living accommodation.

J. E. R. CARSON,

Clerk of the County Council.

Cambrian Chambers,  
Aberystwyth, Cards.  
9th November, 1951. 4932

### DEPARTMENT OF TOWN AND COUNTRY PLANNING, CEYLON.

Applications are invited for the post of **ASSISTANT GOVERNMENT TOWN PLANNER (TEMPORARY)** in the Department of Town and Country Planning, Ceylon, on the scale of £1,050 x £50-£1,250 per annum.

Further particulars and forms of application may be obtained from the office of the High Commissioner for Ceylon in the United Kingdom, 13, Hyde Park Gardens, London, W.2.

Applications for the above post should reach the High Commissioner for Ceylon in the United Kingdom on or before 21 days from the date of publication of this notice. 4939

### WEST SUSSEX COUNTY COUNCIL.

**COUNTY ARCHITECT'S DEPARTMENT.**  
Applications are invited for the appointment of an **ASSISTANT QUANTITY SURVEYOR** at a salary in accordance with Grade V, A.P.T. Division (£570 to £620 per annum) of the National Scales of Salaries.

Applicants should possess approved qualifications and experience in taking off and working up Bills of Quantities and measurement of works.

Further particulars should be obtained from the County Architect, County Hall, Chichester, to whom detailed applications must be submitted not later than the 28th November, 1951.

T. C. HAYWARD,

Clerk of the County Council.

County Hall, Chichester.  
10th November, 1951. 4940

### CITY OF COVENTRY.

**ARCHITECTURAL AND PLANNING DEPARTMENT.**  
Applications are invited from qualified persons for the appointment of two **QUANTITY SURVEYING ASSISTANTS**, Grade A.P.T. VIII (£735 x £25-£810 per annum).

Housing accommodation may be made available in certain circumstances.

All employees are expected to belong to an appropriate organisation as referred to in paragraph 44 of the "Charter."

Applications, on forms obtainable from the undersigned, by Saturday, 8th December, 1951.

D. E. E. GIBSON,

City Architect and Planning Officer.

Bull Yard, Off Warwick Row,  
Coventry.  
12th November, 1951. 4946

### NEW SOUTH WALES UNIVERSITY OF TECHNOLOGY.

#### LECTURING VACANCIES.

Applications are invited for appointment to lecturing positions in the New South Wales University of Technology. Opportunities exist for appointment to, or advancement to, the position of Senior Lecturer.

Salary: LECTURER, £A898-£A1,148; SENIOR LECTURER, £A1,172-£A1,422.

Commencing salary will be in accordance with qualifications and experience. Successful applicants will be eligible, subject to medical examination, to contribute to the State Superannuation Fund. Most of the vacancies are at Sydney but appointees must be prepared to accept appointment at any centre in New South Wales. The first-class shipping fares of the appointees and their families to New South Wales will be paid. Applicants should possess appropriate Degree or Diploma, Honours standard being essential for Senior Lectureship. They should have had appropriate industrial or professional experience and be prepared to undertake research in special fields.

Positions are as follows:—

- Architecture.
- Electrical Engineering.
- Civil Engineering.
- Mechanical Engineering.
- Naval Architecture.
- Production Engineering.
- Geology.
- Applied Chemistry.
- Metallurgy.
- Mathematics.
- Optometry.
- Applied Physics.
- English.
- History.
- Philosophy (special reference to Scientific Method).
- Economics.
- Economic History.

Particular requirements are listed below.

**Architecture.**—Applicants should indicate experience in Design, Building Science, Building Research, Theory of Structures, etc.

**Electrical Engineering.**—Vacancies exist in both the power and electronics fields.

**Civil Engineering.**—Vacancies exist in both Civil Engineering and/or Surveying.

**Mechanical Engineering.**—Applicants should state experience in any of the following:—

(a) Heat Engines—internal combustion engines and gas turbines.

(b) Fluid Mechanics—compressible fluids.

(c) Laboratory work.

**Geology.**—Preference given to applicants who have specialised in Geophysics.

**Applied Chemistry.**—(a) Organic Analysis. Applicants should be experienced in analytical techniques associated with foods, drugs and intermediates.

(b) Analytical Chemistry. Appropriate experience in the inorganic field. Appointment in the first instance to Newcastle.

(c) Inorganic and Physical Chemistry. Appointment in the first instance to Newcastle.

(d) Engineering Technology.

**Metallurgy.**—(a) Secondary Metallurgy. Appointment in first instance to Newcastle.

(b) Primary and Non-Ferrous Metallurgy. Appointment in first instance to Newcastle.

**Optometry.**—Applicants should have had at least two years' experience as a practising optometrist.

Six copies of applications stating age, educational career, experience in the appropriate field, and other qualifications (and six copies of any testimonials and other supporting documents) must reach the Agent General for New South Wales, 56/57, Strand, London, W.C.2, not later than the 15th December, 1951. Applicants should state clearly for which post they are applying. No special forms of application are available. 4934

### SALOP COUNTY COUNCIL.

**COUNTY ARCHITECT'S DEPARTMENT.**

Applications are invited for the following superannuable appointments:—

(1) **BUILDING SURVEYOR**, A.P.T., Grade V (£570-£620 per annum).

(2) **ASSISTANT BUILDING SURVEYOR**, Grade IV (£530-£575 per annum).

Applicants for post (1) must be up to Final R.I.C.S. (IIIB) standard and preference will be given to those who have passed that examination. They must have a good general knowledge of all branches of the building and surveying profession and be able to prepare schemes for alteration and adaptation work to all classes of County-owned property. A knowledge of the Cinematograph and Theatre Acts would be an advantage.

Applicants for post (2) must have passed the R.I.C.S. (IIIB) Intermediate Examination or hold an equivalent qualification. They must be capable of preparing plans, working drawings and specifications for alterations and improvements to buildings, including the installation of small sewage disposal plants, etc.

Forms of application may be obtained from C. H. Simmons, A.R.I.B.A., Dip.T.P., County Architect, Column House, London Road, Shrewsbury, to whom they must be returned, accompanied by copies of not more than three recent testimonials, not later than Friday, 30th November, 1951.

G. C. GODBER,

Clerk of the County Council.

November, 1951. 4941

**CUMBERLAND COUNTY COUNCIL.**

Applications are invited for the established appointment of an ASSISTANT HEATING AND VENTILATING ENGINEER in the County Architect's Department at a salary within A.P.T., Grades V or VI (£570-£620 and £600-£660) according to qualifications and experience.

Applicants must have wide experience in the design and installation of Engineering Services for public buildings, and preference will be given to Corporate Members of the Institution of Heating and Ventilating Engineers.

Forms of application, together with further particulars and conditions of appointment may be obtained from the County Architect, 15, Portland Square, Carlisle. Applications should be received by him not later than 10 a.m. on Tuesday, 4th December, 1951.

G. N. C. SWIFT,

Clerk of the County Council.

8th November, 1951.

4942

**LONDON TRANSPORT** invite applications for **QUANTITY SURVEYOR** to carry out technical investigation of estimates and costs of building and civil engineering works. Candidates should be Chartered Quantity Surveyors or have sound experience of quantity surveying work, and be experienced in preparing bills of quantities and contract documents, estimating, measuring works on site and settling final accounts. Salary, £650-£750 according to qualifications and experience. Appointment subject to medical examination. Membership of contributory superannuation scheme compulsory upon satisfactory completion of probationary period. Applications within 14 days to Staff Officer (F/EV.198), London Transport, 55, Broadway, S.W.1. For acknowledgment enclose addressed envelope. 4947

**BURGH OF HAMILTON.****CHIEF ASSISTANT PLANNING OFFICER.**

Hamilton Town Council invite applications from suitably qualified Architects, Civil Engineers or Chartered Surveyors, for the permanent appointment of Chief Assistant Planning Officer. Applicants must have a knowledge of Town Planning Law and Practice.

The salary will be Grade A.P.T., VI (£645-£710), or if the successful applicant holds A.M.T.P.I., A.P.T., VII (£685-£760). A house is available for the successful applicant, if required, during the terms of the appointment. The appointment is subject to the Local Government Superannuation (Scotland) Act, 1937.

Applications, stating age, full particulars of qualifications and experience, together with copies of recent testimonials, should be lodged with the undersigned not later than Friday, 30th November, 1951.

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

JOHN R. McLEAN,

Town Clerk.

The Town House, Hamilton.

15th November, 1951.

4956

**CITY OF MANCHESTER.****HOUSING COMMITTEE.**

Applications are invited from suitably qualified persons for the position of ASSISTANT ARCHITECT.

The salary and conditions of service will be in accordance with A.P.T., V, £570-£620 per annum of the National Scheme of Service Conditions.

Candidates should forward particulars of age, qualifications and experience, to Mr. A. Mackenzie, L.R.I.B.A., Director of Housing, Town Hall, Manchester, 2, to be received by the 30th November, 1951.

Canvassing is prohibited.

PHILIP B. DINGLE,

Town Clerk.

4957

**BIRMINGHAM REGIONAL HOSPITAL BOARD.****ASSISTANT QUANTITY SURVEYOR.**

Salary scale, £635-£710 (at present subject to negotiation). Applicants should have passed Final of Royal Institute of Chartered Surveyors, and should be fully experienced in taking off and preparation of Bills of Quantities. Appointment subject to N.H.S. (Supn.) Regs., 1950. Applications, stating age, qualifications, experience, present appointment, and details of two referees, to Secretary, Birmingham Regional Hospital Board, 10, Augustus Road, Birmingham, 15, not later than 8th December, 1951. 4958

**SEDGLEY URBAN DISTRICT COUNCIL.****APPOINTMENT OF QUANTITY SURVEYOR.**

Applications are invited for the following appointment in the Department of the Engineer and Surveyor at a salary in the A.P.T. Division, Grade VII (£685-£760 p.a.).

The appointment will be on the temporary staff, but is likely to be of several years' duration.

Applicants must be fully qualified, preferably by the Final Examination of the Royal Institution of Chartered Surveyors (Quantities Division), and have had extensive experience in the preparation of Bills of Quantities, measuring up, and dealing with final accounts for Housing Contract. The Council is prepared to consider the provision of housing accommodation for the person appointed, if necessary.

Applications, stating age, qualifications and experience, with a copy of one recent testimonial and names of two persons to whom reference can be made, must be received by the undersigned not later than Monday, 10th December 1951.

K. R. F. NEWTON,

Clerk and Solicitor to the Council.

4959

**HOLLAND COUNTY COUNCIL.****COUNTY PLANNING DEPARTMENT.**

Applications are invited for the appointment of **SURVEYING ASSISTANT, A.P.T., Grade II (£470-£515)**, in the Boston office of the Department.

Candidates should have had good general experience in Ordnance Survey revision work, and should preferably have had other experience in a planning office. The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, stating age, education, qualifications and experience, accompanied by one recent testimonial and the names of two persons to whom reference can be made, should be sent to the undersigned, to arrive not later than 14 days after the publication of this notice.

Canvassing will disqualify.

H. C. MARRIS,

Clerk of the County Council.

County Hall, Boston, Lincs.

November, 1951.

4969

**BRIGHTON COLLEGE OF ART AND CRAFTS.**

Principal: E. A. Sallis Benney, R.B.A., A.R.C.A.

**STUDIO MASTER** required in Architecture Department. (Recognised for Intermediate Exemption by R.I.B.A.) Applicants must have passed R.I.B.A. Final or equivalent examination and, preferably, have completed a course in a full-time School of Architecture. Salary in accordance with the Burnham Award for Lecturer (£900×£25-£1,000).

Further particulars and form of application obtainable from the undersigned to be returned to the Principal, College of Art and Crafts, Brighton 7, within 21 days.

W. G. STONE,

Education Officer.

54, Old Steine, Brighton.

4960

**BOROUGH OF BARKING.****APPOINTMENT OF ARCHITECTURAL ASSISTANTS.**

Applications are invited for the following appointments:—

General Division (£180 p.a. at age 18 to £425 at age 30).

Grade A.P.T. I-V (at a commencing salary of £440 p.a.).

These salaries are subject to the addition of London Weighting.

Further particulars and form of application may be obtained from Mr. C. C. Shaw, B.Arch., F.R.I.B.A., Borough Architect, Town Hall, Barking, Essex. Completed applications should reach the undersigned not later than 3rd December, 1951.

E. R. FARR,

Town Clerk.

Town Hall, Barking.

4961

**CITY OF BELFAST.****CITY SURVEYOR'S DEPARTMENT.**

Applications are invited for the following posts:—

(a) **SENIOR ASSISTANT ARCHITECT.** Candidates must be Associates of the Royal Institute of British Architects. The salary attached to the office is £720 p.a. annum rising by annual increments of £25 to £795 per annum and by a further increment of £20 to £815 per annum. Increments shall be payable from the 1st of April each year, but no officer with less than 6 months' service at the incremental date shall be entitled to an increment.

(b) **ASSISTANT ARCHITECTS, CLASS I.** Candidates must be Registered Architects. The salary attached to the office is £500 per annum rising by annual increments of £27 10s. 0d. to £720 per annum. Increments shall be payable from the 1st of April each year, but no officer with less than 5 months' service at the incremental date shall be entitled to an increment. The commencing salary will be determined in the light of the qualifications and experience of the persons appointed.

Appointments will be subject to the conditions prescribed in the Council's Grading Scheme for Officers and in the case of (a) subject also to the Belfast County Borough Council (City Surveyor's Staff Qualifications) Order (N.I.), 1941.

The persons appointed will be required to contribute at the rate of approximately 6 per cent. of their remuneration to the Belfast Corporation Superannuation Scheme.

The Corporation is empowered to enter into reciprocal arrangements with other bodies in Great Britain and Northern Ireland administering Superannuation Schemes, such arrangements to provide for service under such other bodies being reckoned as service with the Corporation on payment of an appropriate transfer value.

Preference will be given to ex-service candidates possessing the required qualifications provided the Council is satisfied that such candidates can, or within a reasonable time will be able to, fill the posts efficiently.

Forms of application and Conditions of Appointment may be obtained from the City Surveyor at Room 39, City Hall, Belfast.

Applications in envelopes endorsed "Appointment of —, City Surveyor's Department," must be lodged with the undersigned not later than 4 p.m. on Friday, 14th December, 1951.

Canvassing in any form, oral or written, direct or indirect will, if proved to the satisfaction of the appointing authority, disqualify a candidate for appointment.

JOHN DUNLOP,

Town Clerk.

City Hall, Belfast.

4972

**BOROUGH OF WALTHAMSTOW.****BOROUGH ARCHITECT'S DEPARTMENT.****ASSISTANT ARCHITECT.**

Applications are invited for an Assistant Architect (Grades I/V, £440-£520, plus London weightings), commencing salary according to qualifications and experience.

Applications, with names of two persons for references, should be received by the undersigned not later than 5th December, 1951.

G. A. BLAKELEY,

Town Clerk.

Town Hall, Walthamstow, E.17.

4971

**STAFFORDSHIRE COUNTY COUNCIL.****COUNTY ARCHITECT'S DEPARTMENT.****APPOINTMENT OF ARCHITECTURAL STAFF.**

Experienced and capable ARCHITECTURAL ASSISTANTS are invited to apply for the above, stating salary required and giving full details of experience, qualifications, age, and present salary and position, etc. Applications, together with copies of three recent testimonials, should be forwarded as soon as possible to C. M. Coombs, F.R.I.B.A., County Architect, Martin Street, Stafford.

T. H. EVANS,

Clerk of the County Council.

County Buildings, Stafford.

15th November, 1951.

4973

**BOROUGH OF HEMEL HEMPSTEAD.****SENIOR ARCHITECTURAL ASSISTANT.**

Applications are invited for the appointment of Senior Architectural Assistant, in the Borough and Water Engineer's Department, at a salary in accordance with A.P.T., Grade V (£570-£620), of the National Joint Council's Scale, commencing at £600 per annum. Candidates should be Registered Architects. The appointment will be subject to the Local Government Superannuation Acts, to the National Conditions of Service from time to time in force, and to the passing of a medical examination, and will be terminable by one month's notice in writing on either side. Housing accommodation will be provided, if required. Application forms may be obtained from Mr. A. H. Turner, A.M.I.C.E., Borough and Water Engineer, Market Square, Hemel Hempstead, Herts., and should be returned not later than the 10th December, 1951. Canvassing will disqualify, and applicants must state whether to their knowledge they are related to any member of the Council or to any senior officer of the Corporation.

C. W. G. T. KIRK,

Town Clerk.

Town Hall,

Hemel Hempstead, Herts.

17th November, 1951.

4967

**CITY OF MANCHESTER.****CITY ARCHITECT'S DEPARTMENT.**

Applications are invited for the appointment on the permanent staff of the City Architect's Department of an **ARCHITECTURAL ASSISTANT, Salary A.P.T., Grade IV (£530-£575 per annum)**. Candidates must have passed the R.I.B.A. Intermediate Examination and have subsequently worked in an Architectural Office for a period of two years.

The salary and conditions of service are in accordance with the National Joint Council's Scheme of Service Conditions.

Forms of application obtained from and should be returned to Leonard C. Hewitt, B.Arch., F.R.I.B.A., City Architect, Town Hall, Manchester 2, by 8th December, 1951.

Canvassing is prohibited.

PHILIP B. DINGLE,

Town Clerk.

Town Hall, Manchester 2.

November, 1951.

4962

**SINGAPORE IMPROVEMENT TRUST.****ASSISTANT PLANNING OFFICER.**

An Assistant Planning Officer is required by the Singapore Improvement Trust, appointment in the first instance being on a three-year Agreement. Age preferably under 30 years.

Candidates must be qualified Architects and members of the R.I.B.A. Experience in a statutory planning office or a housing department of a local authority is an advantage but not a necessity. A planning qualification is not essential but the officer should be prepared to study for the examinations of the T.P.I.

Salary scale, \$500-\$1,000 per month, the point of entry depending on the age, qualifications and experience of the appointee. Expatriation allowance \$110-\$190 per month, according to basic salary. Cost of living allowance 95 per cent. of the first \$200 p.m. of basic salary plus (i) single officers 40 per cent. of next \$100 and 25 per cent. of next \$400 of basic salary (maximum allowance \$330 p.m.); (ii) married officers (no children) 55 per cent. of next \$200 and 45 per cent. of next \$300 of basic salary (maximum allowance \$435 p.m.); (iii) married officers (with children) 75 per cent. of next \$400 and 65 per cent. of next \$100 of basic salary (maximum allowance \$555 p.m.). An allowance will be paid to cover cost of duty transport. All allowances are subject to revision. \$1 (Malayan) equals 2s. 4d. For example, a married officer (with children) on a basic salary of \$590 p.m. would draw equivalent of £1 65s 10s. 0d. per annum, including present allowances.

Strict medical examination.

Provident Fund to which the appointee must contribute 7½ per cent. of basic salary; the Trust contributes a minimum of 7½ per cent. rising by stages to 20 per cent. after 20 years' service. Leave and passages in accordance with Regulations.

Quarters (with heavy furniture) are provided at



a rental of 8 per cent. of salary, or a housing allowance (12½ per cent. of salary) paid in lieu. Applications in duplicate with full personal and technical information and copies of three recent testimonials (also in duplicate) to Messrs. Peirce & Williams (Agents to the Trust), 1, Victoria Street, London, S.W.1, before Friday, 21st December, 1951. 4958

### Tenders for Contracts

6 lines or under, 12s. 6d.; each additional line, 2s.

**WILTS COUNTY COUNCIL.**  
**PROPOSED ERECTION OF A JUNIOR AND INFANTS' SCHOOL AT PENHILL, SWINDON.**  
APPLICATIONS are invited from BUILDING CONTRACTORS who are desirous of TENDERING for the ERECTION of the above SCHOOL, comprising approximately 372,500 cub. ft.

The School will be partly steel framed, having brick walls, precast stone dressings, in situ reinforced concrete floors, asbestos flat roofs, together with roads, drains, and the preliminary layout of Playing Fields.

Contractors should give details of available labour force, plant and organisation, with particulars of any similar work done by them.

Applications to tender should be received by the undersigned not later than SATURDAY, 1st DECEMBER, 1951.

The Council reserves to itself the right to select from the list of applications received those firms who will be invited to submit competitive tenders.

Bills of Quantities will be distributed to the selected Contractors on or about FRIDAY, 14th DECEMBER, 1951, and tenders will be required not later than THURSDAY, 10th JANUARY, 1952.

F. I. BOWDEN, A.R.I.B.A.,  
County Architect,  
County Architect's Dept., County Hall,  
Trowbridge.  
9th November, 1951. 4953

**COUNTY BOROUGH OF READING.**  
**TO BUILDERS AND CONTRACTORS.**  
The Corporation of Reading invite tenders for the erection of a Water Department Depot, Stores and Workshops (with ancillary works) at Berkeley Avenue, Reading. Part of the building is to be two storey in traditional construction, the remainder to be single storey in prefabricated concrete.

The General Conditions of Contract and Drawings may be inspected at the office of the Borough Architect, Town Hall, Reading, and a copy of the Bills of Quantities, Form of Tender and endorsed envelope may be obtained on application to him accompanied by a cheque for two guineas (made payable to the Reading Corporation), which will be refunded upon the receipt of a bona fide tender not subsequently withdrawn. The documents for tendering purposes will be ready for despatch on the 3rd December, 1951.

Tenders must be delivered to me at my office not later than Wednesday, the 19th December, 1951.

No tender will be considered unless enclosed in the endorsed envelope provided and sealed, but not bearing any name or mark indicating the sender.

The Corporation do not bind themselves to accept the lowest or any tender.

G. F. DARLOW,  
Town Clerk.  
Town Hall, Reading.  
22nd November, 1951. 4955

**COUNTY BOROUGH OF READING.**  
**TO BUILDERS AND CONTRACTORS.**

The Corporation of Reading invite tenders for the works of converting a single storey building to provide a Restaurant and a Dormitory for herdsmen at the Cattle Market, Great Knollys Street, Reading.

The General Conditions of Contract may be inspected at the office of the Borough Architect, Town Hall, Reading, and copies of the Drawings, Specification, Form of Tender and endorsed envelope, may be obtained on application to him, accompanied by a cheque for two guineas (made payable to the Reading Corporation), which will be refunded upon the receipt of a bona fide tender, not subsequently withdrawn. The documents for tendering purposes

will be ready for despatch on the 3rd December, 1951.

Tenders must be delivered to me at my office not later than Wednesday, the 19th December, 1951.

No tender will be considered unless enclosed in the endorsed envelope provided and sealed, but not bearing any name or mark indicating the sender.

The Corporation do not bind themselves to accept the lowest or any tender.

G. F. DARLOW,  
Town Clerk.  
Town Hall, Reading.  
November, 1951. 4970

### Sale by Auction

6 lines or under, 12s. 6d.; any additional line, 2s.

**FREE OF DEVELOPMENT CHARGE.**  
**HORLEY, SURREY.**

**FREEHOLD RESIDENTIAL LAND,**  
Ripe for Immediate Development.

APPROX. 4½ ACRES.

Frontages to Made-up Roads.

**LEOPOLD FARMER & SONS**

will offer the above TO AUCTION at THE LONDON AUCTION MART, 155, QUEEN VICTORIA STREET, LONDON, E.C.4, on TUESDAY, 11th DECEMBER, 1951.

Particulars, Plan and Conditions of Sale from Leopold Farmer & Sons, Auctioneers and Valuers, 46, Gresham Street, London, E.C.2. Tel.: MONarch 3422. 4944

### Architectural Appointments Vacant

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

**ASSISTANTS** required in Architect's Department of large East Midland industrial concern for varied and interesting work in connection with extensive works development programme. Applicants should have initiative in designing and be capable of preparing full working drawings from Architect's sketch plans. Junior and Senior Assistants are required, and applicants should reply, giving details of age, experience and salary required, to Box 4657.

**ASSISTANT ARCHITECTS**—Imperial Chemical Industries Limited, General Chemicals Division, require one or two Assistant Architects in the Architectural Section of their Chief Engineer's Department, Runcorn. Applicants should have had good experience in design and the preparation of working drawings. Other factors being equal, preference will be given to those who have passed the Final Examination of the R.I.B.A. Salary dependent on age and experience. Membership of pension fund. Apply in writing, quoting E/81, to Staff Manager, Imperial Chemical Industries Limited, General Chemicals Division, Cunard Building, Liverpool, 3. 4678

**ASSISTANTS** required in Architects' and Surveyors' Section of large Brewery in London. Applicants should be neat and accurate draughtsmen, able to carry out surveys of existing buildings and prepare working drawings in connection with the reconstruction of industrial buildings and layout of plant. Reply, stating age, experience, past and present appointments, and salary required. 4697

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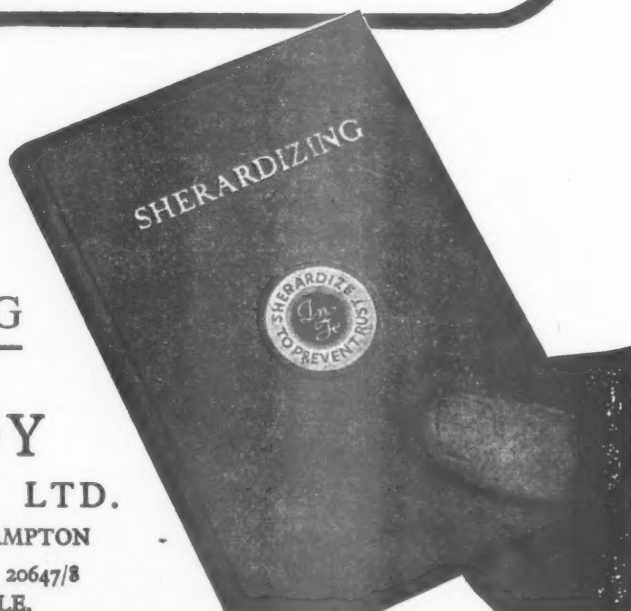
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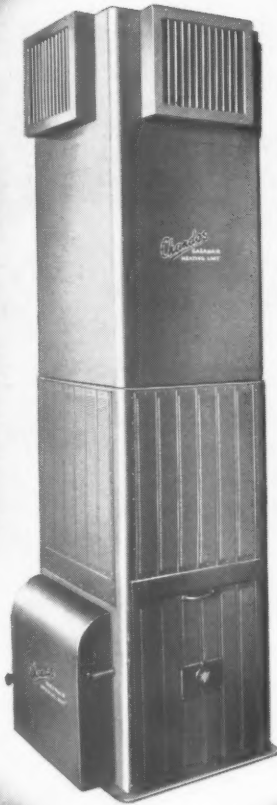
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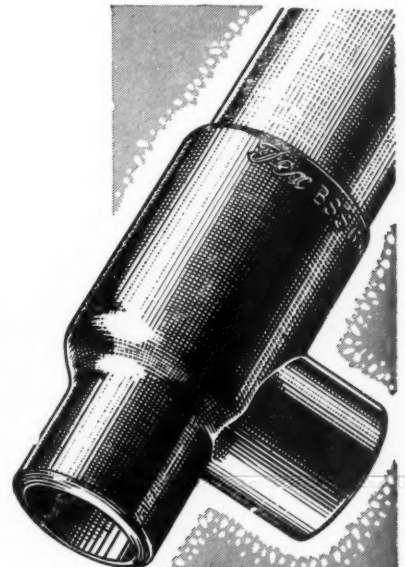
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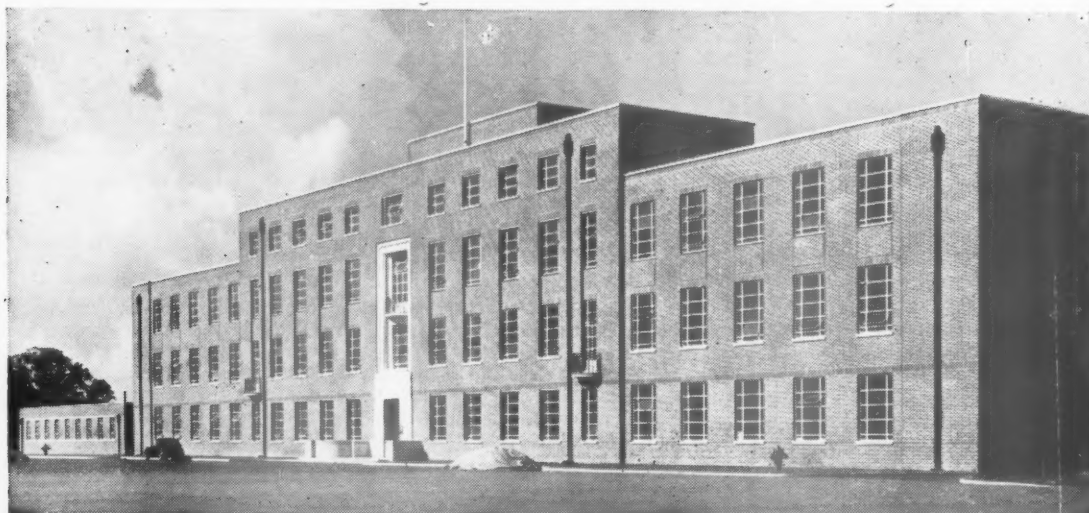
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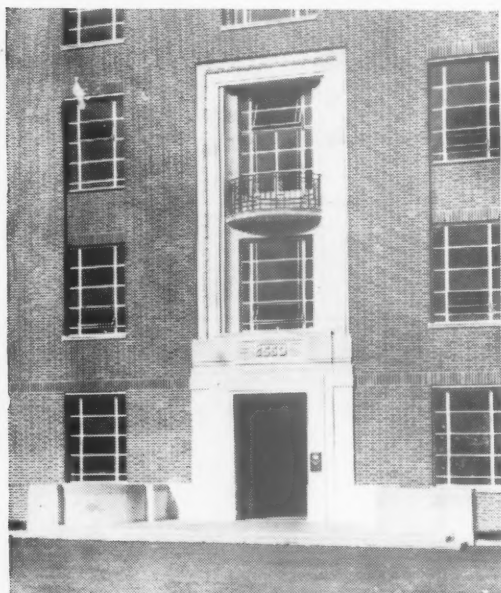
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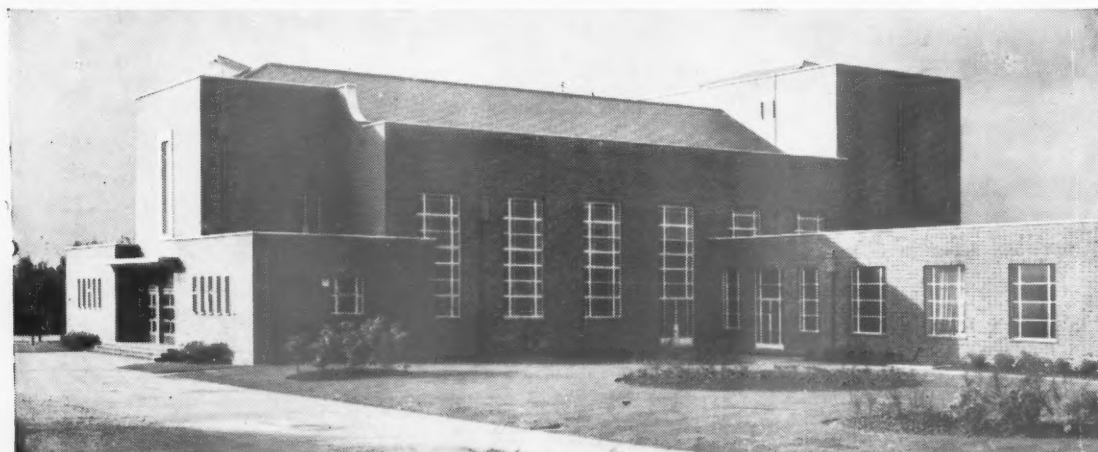
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