

ARCHITECTS' JOURNAL



Standard contents

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

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

IEE	Institution of Electrical Engineers. Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 75, Eaton Place, S.W.1.	Sloane 3158
IIBD	Incorporated Institute of British Decorators. Drayton House, Gordon Street, W.C.1.	Euston 2450
ILA	Institute of Landscape Architects. 12, Gower Street, W.C.1.	Museum 1783
I of Arb.	Institute of Arbitrators, 35/37, Hastings House, 10, Norfolk Street, Strand, W.C.2.	Temple Bar 4071 Museum 7197
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	
IR	Institute of Refrigeration. Empire House, St. Martin's-le-Grand, E.C.1.	Monarch 7391 Abbey 6172
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1.	Sloane 7128-29
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Museum 9200
IWA	Inland Waterways Association. 11, Gower Street, W.C.1.	
LIDC	Lead Industries Development Council. Eagle House, Jermyn Street, S.W.1.	Whitehall 7264 Museum 3891
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	
MARS	MARS Group (English Branch of CIAM). 34, Gordon Square, W.C.1.	Euston 2158-9 Whitehall 3400 Mayfair 9400 Whitehall 4300 Whitehall 6200 Gerrard 6933 Abbey 7711
MOA	Ministry of Agriculture and Fisheries. 55, Whitehall, S.W.1.	Whitehall 8411 Reliance 7611
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1.	
MOH	Ministry of Health. Whitehall, S.W.1.	
MOLNS	Ministry of Labour and National Service. St. James's Square, S.W.1.	
MOS	Ministry of Supply. Shell Mex House, Victoria Embankment, W.C.	
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1.	
MOTCP	Ministry of Town and Country Planning. 32-33, St. James's Square, S.W.1.	
MOW	Ministry of Works. Lambeth Bridge House, S.E.1.	
NAMMC	Natural Asphalte Mine-Owners and Manufacturers Council. 94, Petty France, S.W.1.	Abbey 1010
NAS	National Association of Shopfitters. 9, Victoria Street, S.W.1.	Abbey 5277/8
NBR	National Buildings Record. 37, Onslow Gardens, S.W.7.	Kensington 8161
NCBMP	National Council of Building Material Producers. 2, Caxton Street, S.W.1.	Abbey 5111
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Langham 4041
NFBTO	National Federation of Building Trades Operatives, Federal House, Cedars Road, Clapham, S.W.4.	Macaulay 4451
NFHS	National Federation of Housing Societies. 13, Suffolk St., S.W.1.	Whitehall 2881/2/3
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1.	Langham 4041 Molesley 1380
NPL	National Physical Laboratory. Head Office, Teddington.	
NSAS	National Smoke Abatement Society. Chandos House, Buckingham Gate, S.W.1.	Abbey 1359
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1.	Whitehall 0211/2
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1.	Whitehall 9936
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh.	Edinburgh 20396 Langham 5721/7
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Whitehall 5322
RICS	Royal Institution of Chartered Surveyors. 12, Great George St., S.W.1.	Whitehall 3935
RFAC	Royal Fine Art Commission. 22A, Queen Anne's Gate, S.W.1.	Regent 3335
RS	Royal Society. Burlington House, Piccadilly, W.1.	Temple Bar 8274
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Sloane 5134
RSI	Royal Sanitary Institute. 90, Buckingham Palace Road, S.W.1.	Wimbledon 5101
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19.	Regent 6347
SBPM	Society of British Paint Manufacturers. 20, Piccadilly, London, W.1.	Western 1571
SCR	Society for Cultural Relations with the USSR. 14, Kensington Square, London, W.8.	Abbey 7244
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1.	
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3.	Mansion House 3921 Central 4444
SIA	Structural Insulation Association. 14, Moorgate, London, E.C.2.	
SIA	Society of Industrial Artists. Room 243, Empire House, St. Martin's-le-Grand, E.C.1.	Metropolitan 8344
SNHTPC	Scottish National Housing & Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen.	
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Holborn 2646 Temple Bar 5006
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2.	City 4771 (6 lines)
TDA	Timber Development Association. 75, Cannon Street, E.C.4.	Sloane 4554
TGC	The Gas Council. 1, Grosvenor Place, S.W.1.	Victoria 8015
TPI	Town Planning Institute. 18, Ashley Place, S.W.1.	City 1476
TTF	Timber Trades Federation. 81, Cannon Street, E.C.4.	
WDC	War Damage Commission. Devonshire House, Mayfair Place, Piccadilly, W.1.	Mayfair 8866 City 4263/4
WEDA	Welfare Equipment Development Association. 61, St. Paul's Churchyard, E.C.4.	
ZDA	Zinc Development Association. Lincoln House, Turl Street, Oxford.	Oxford 47988

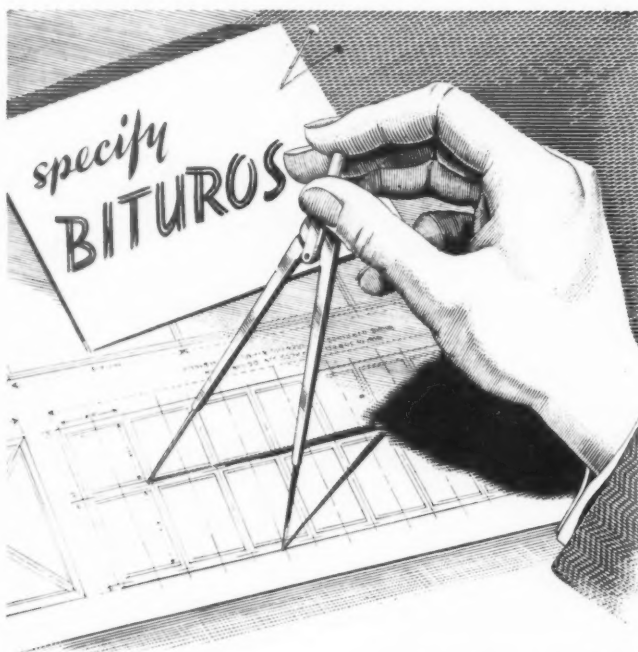
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[Vol. 111

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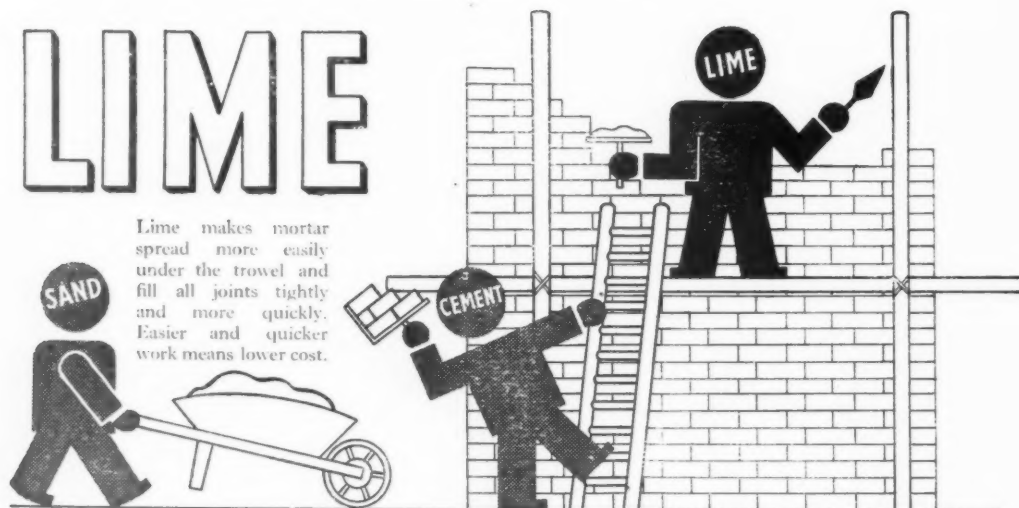
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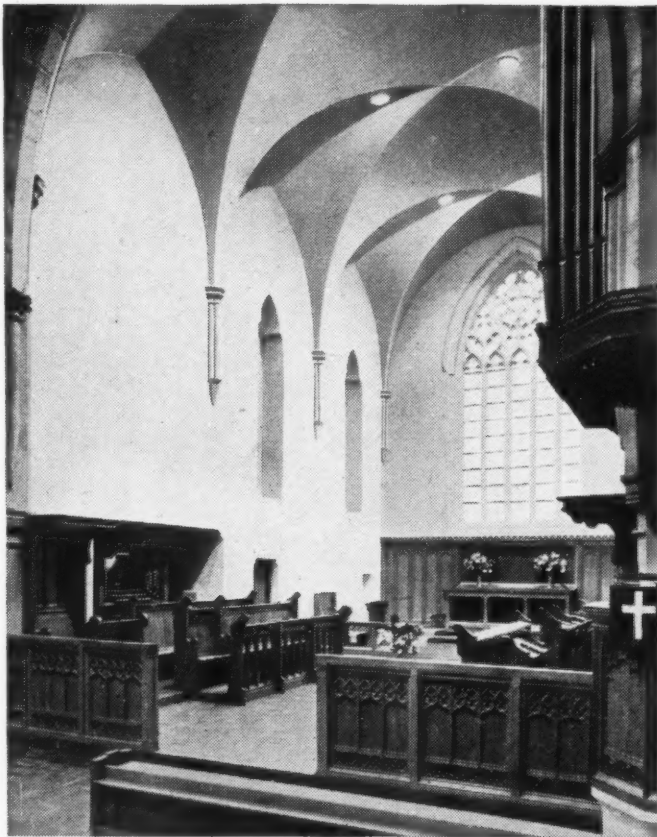


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No. 4

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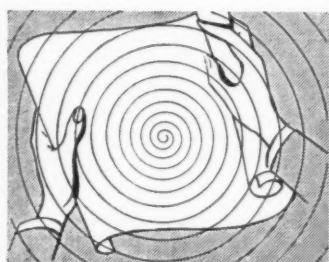
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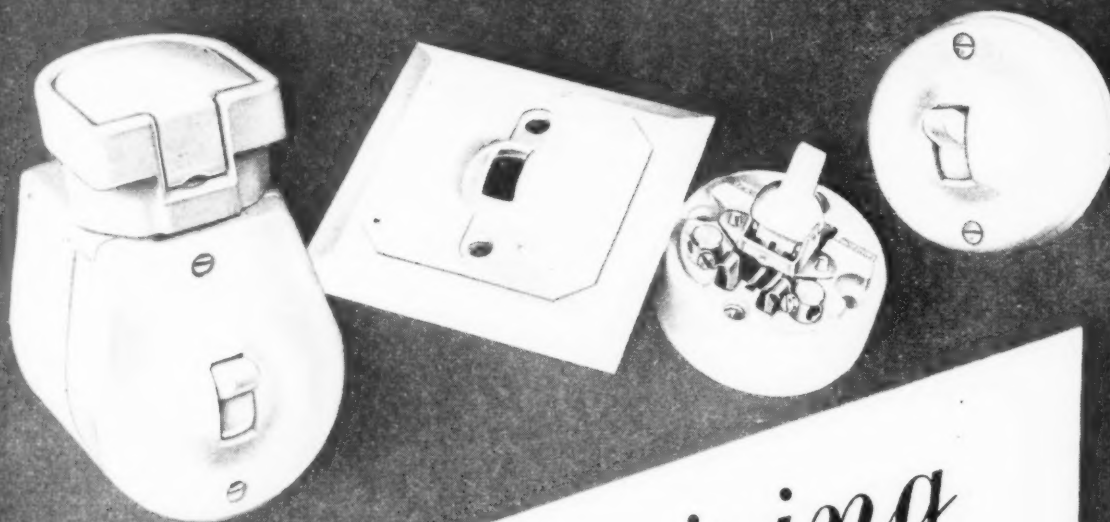
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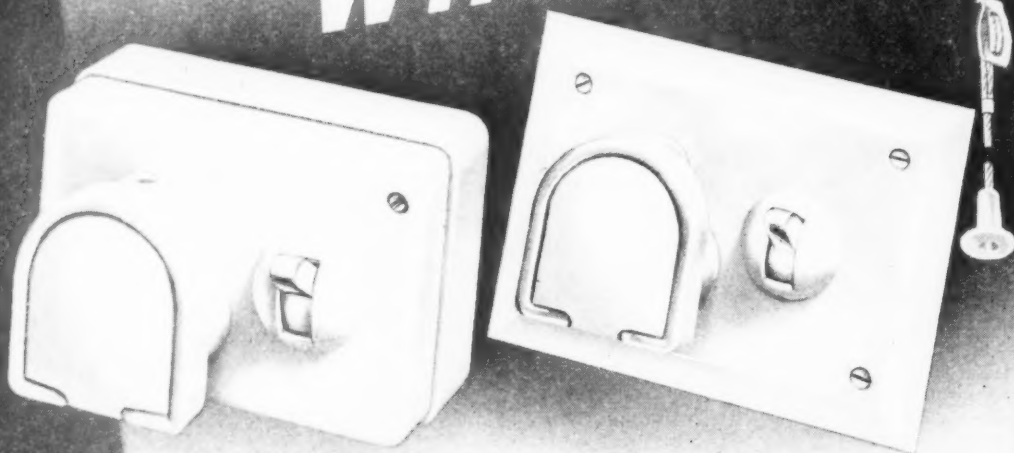
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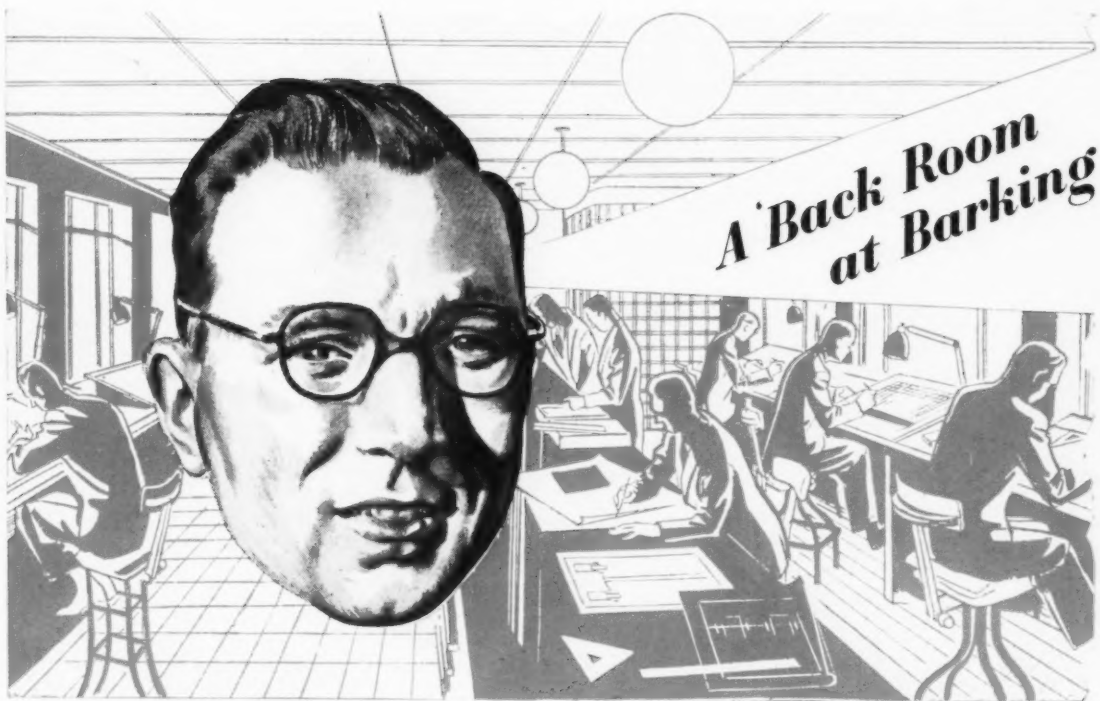


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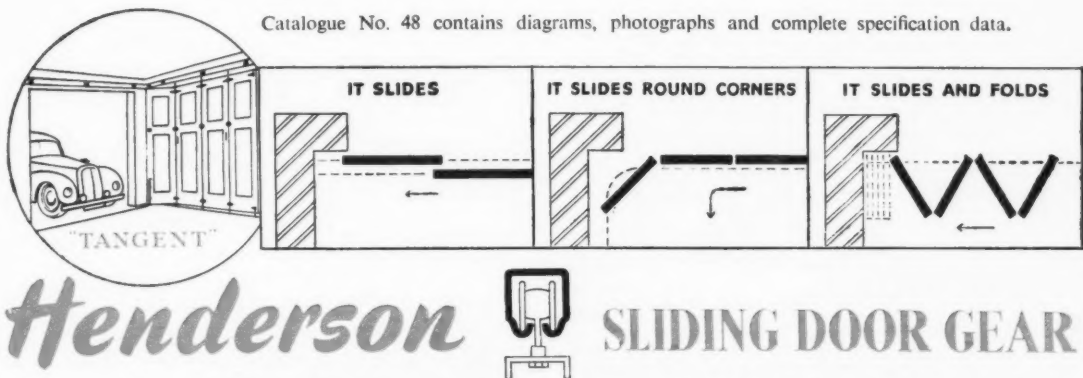
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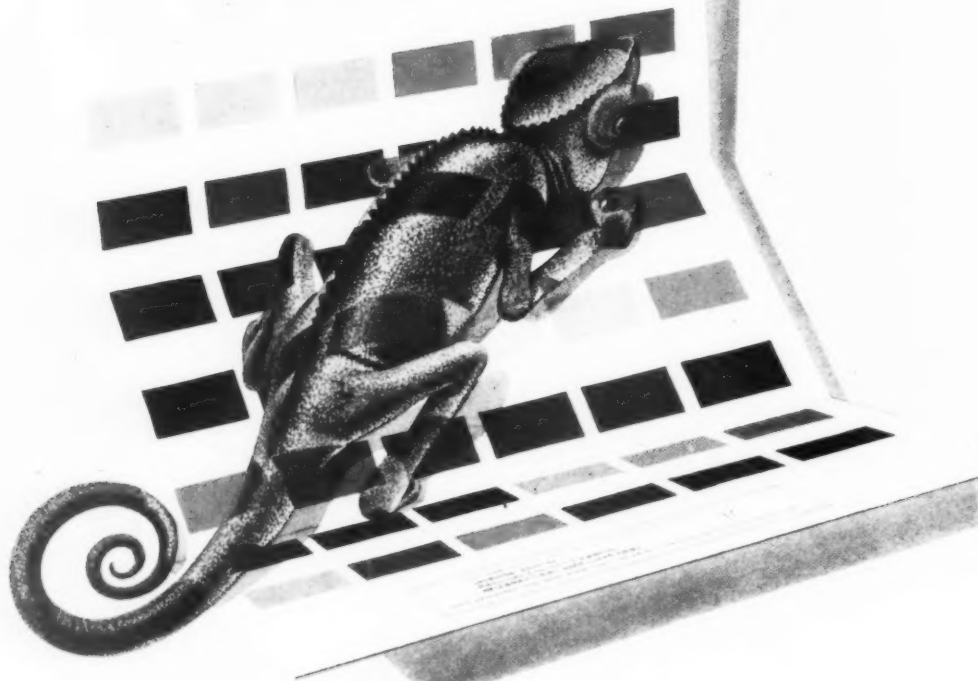


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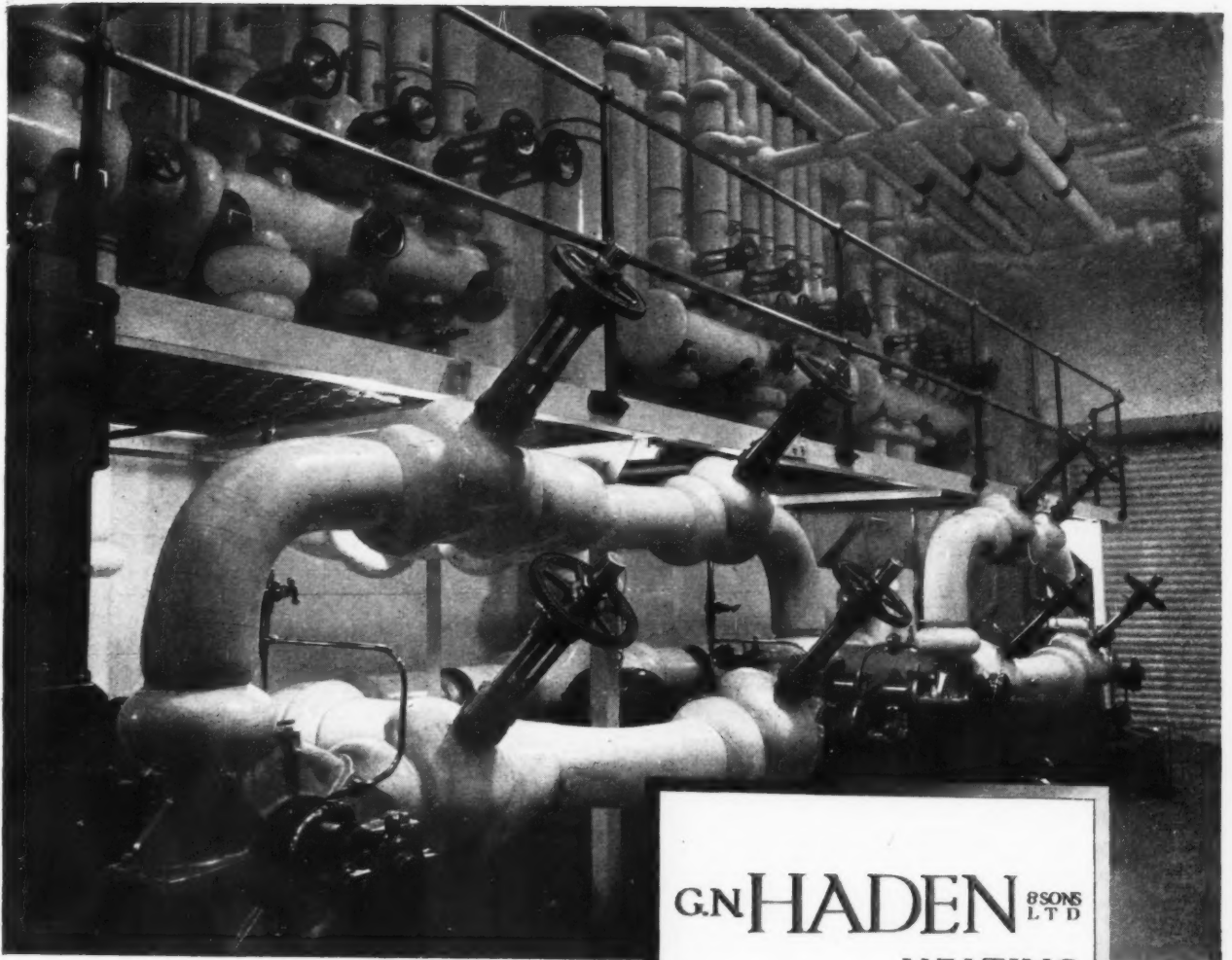
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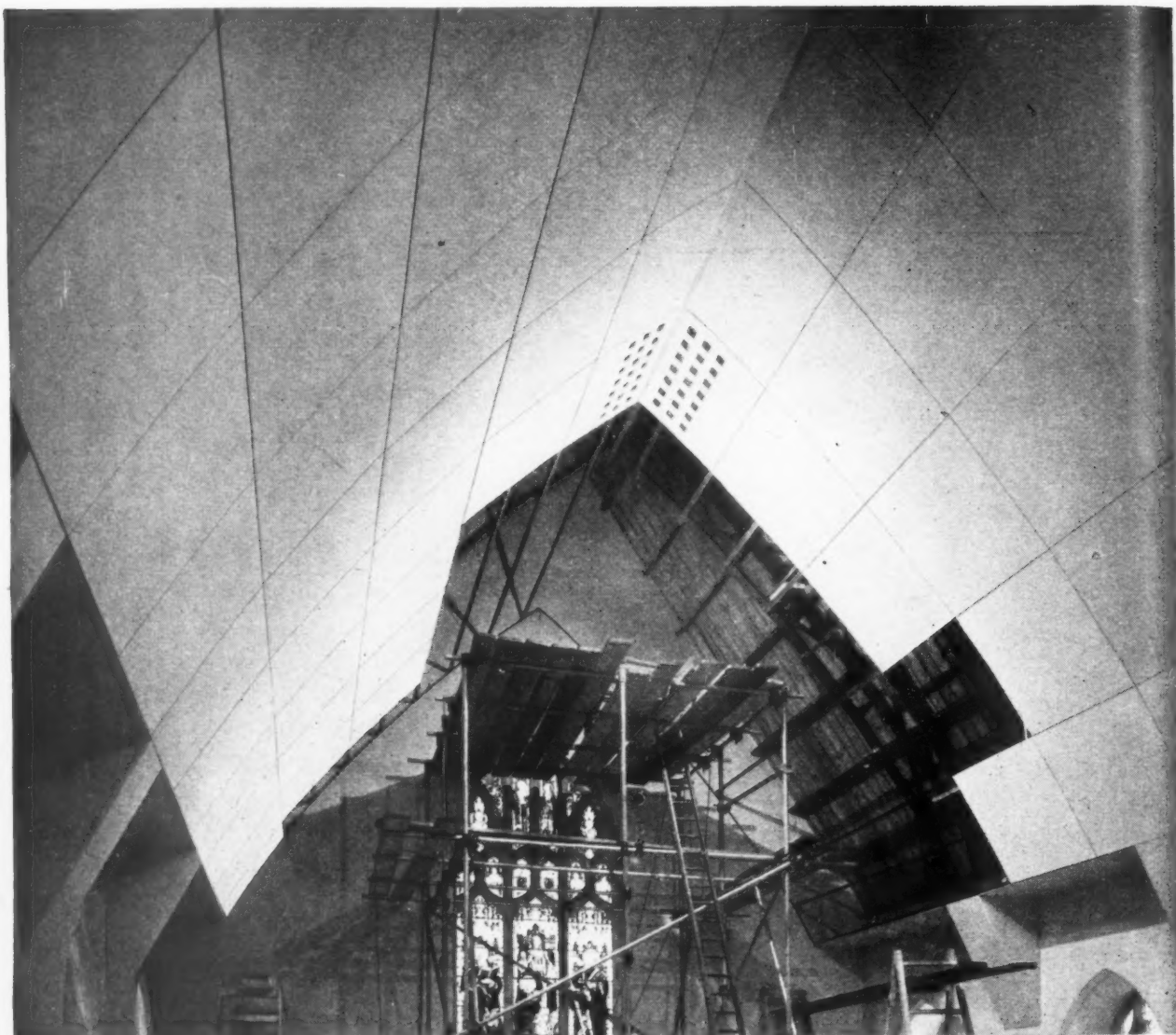
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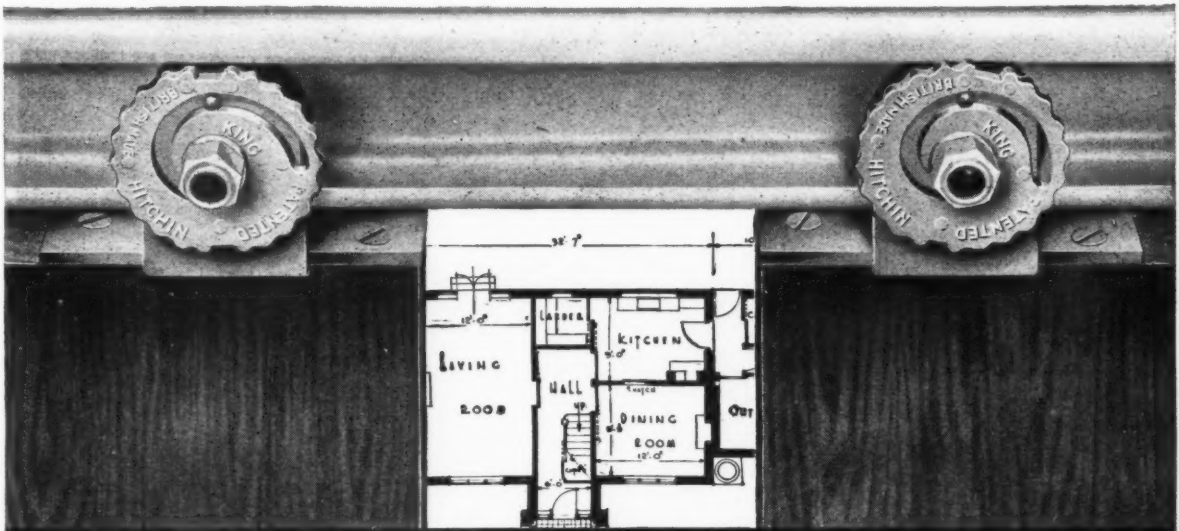
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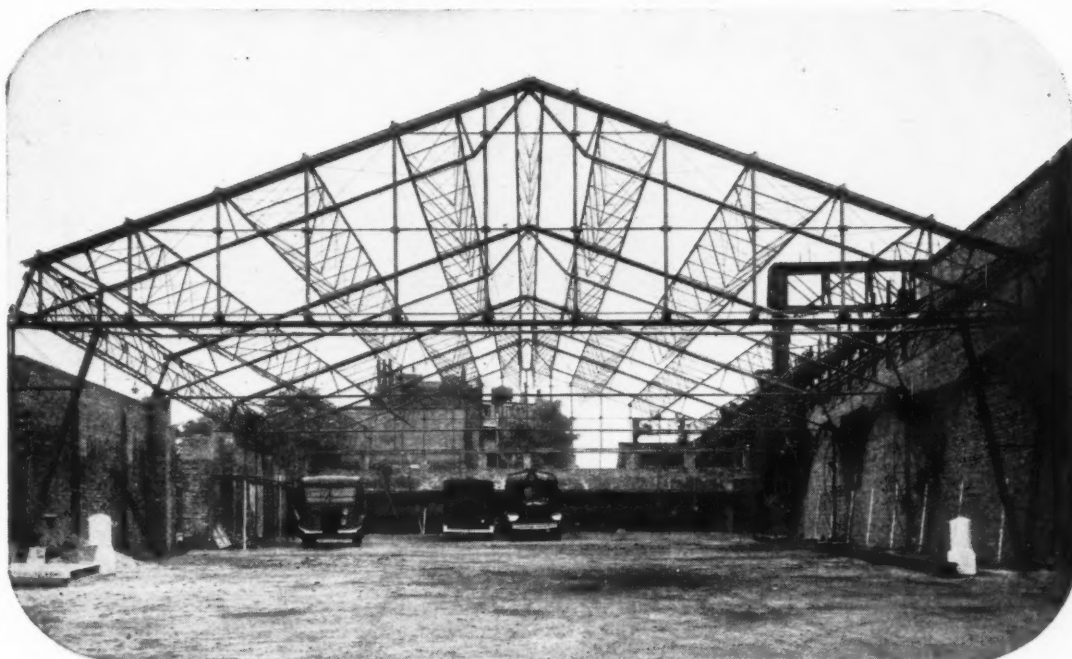
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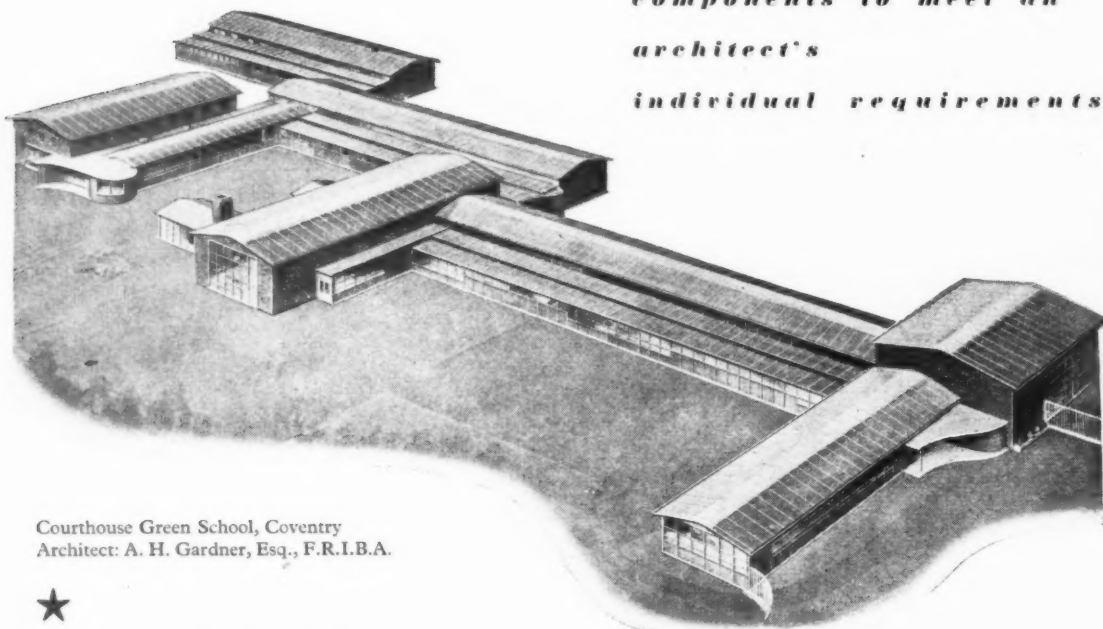


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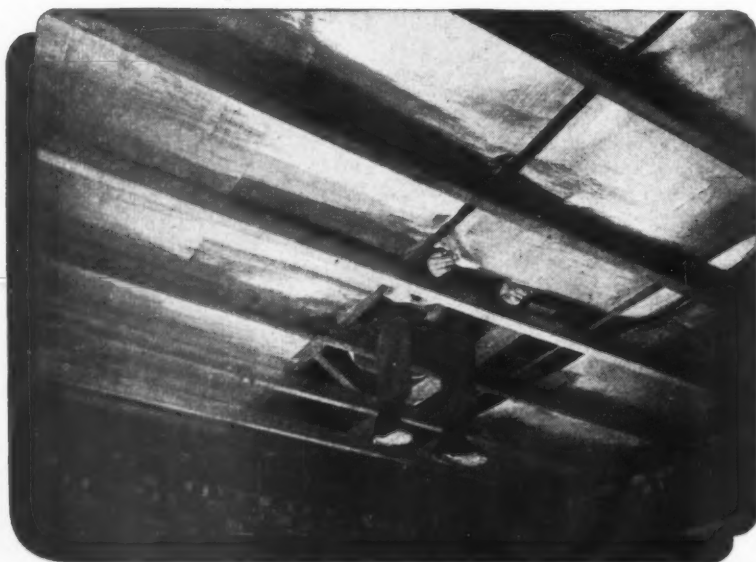
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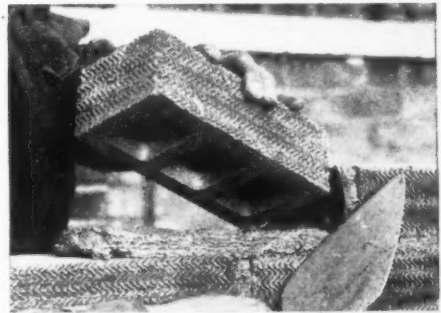
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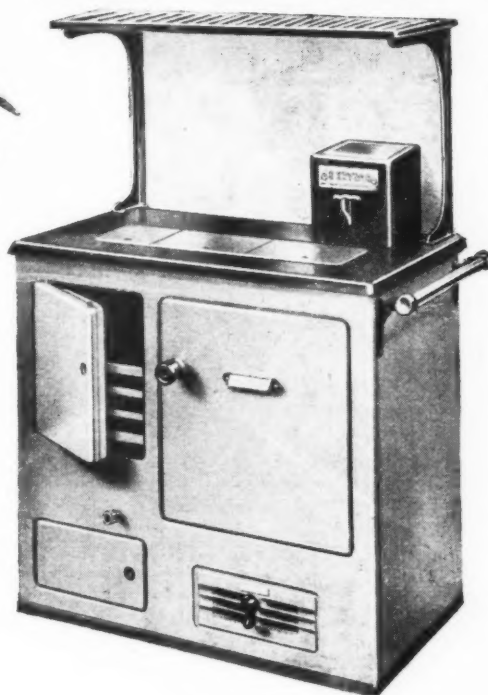
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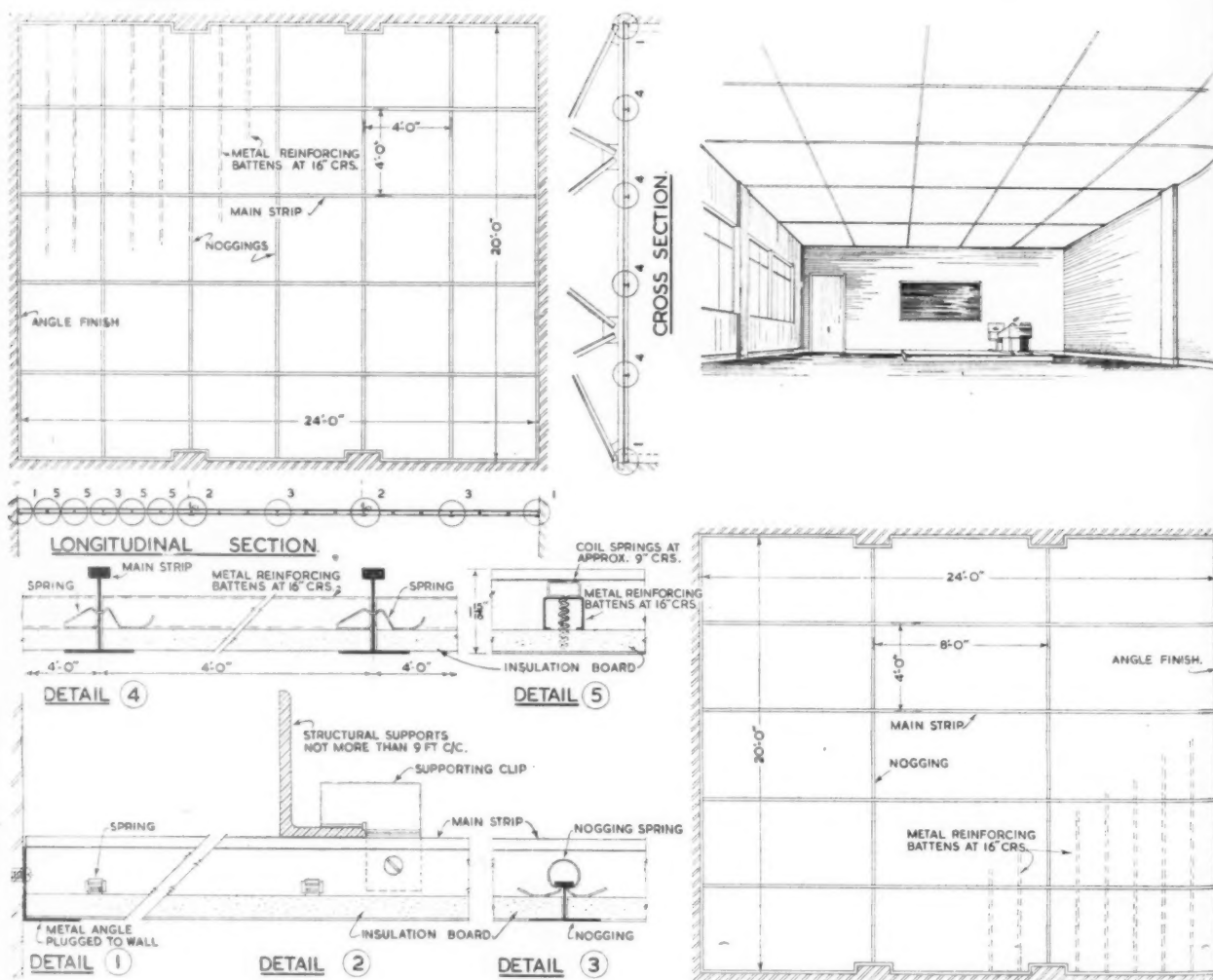


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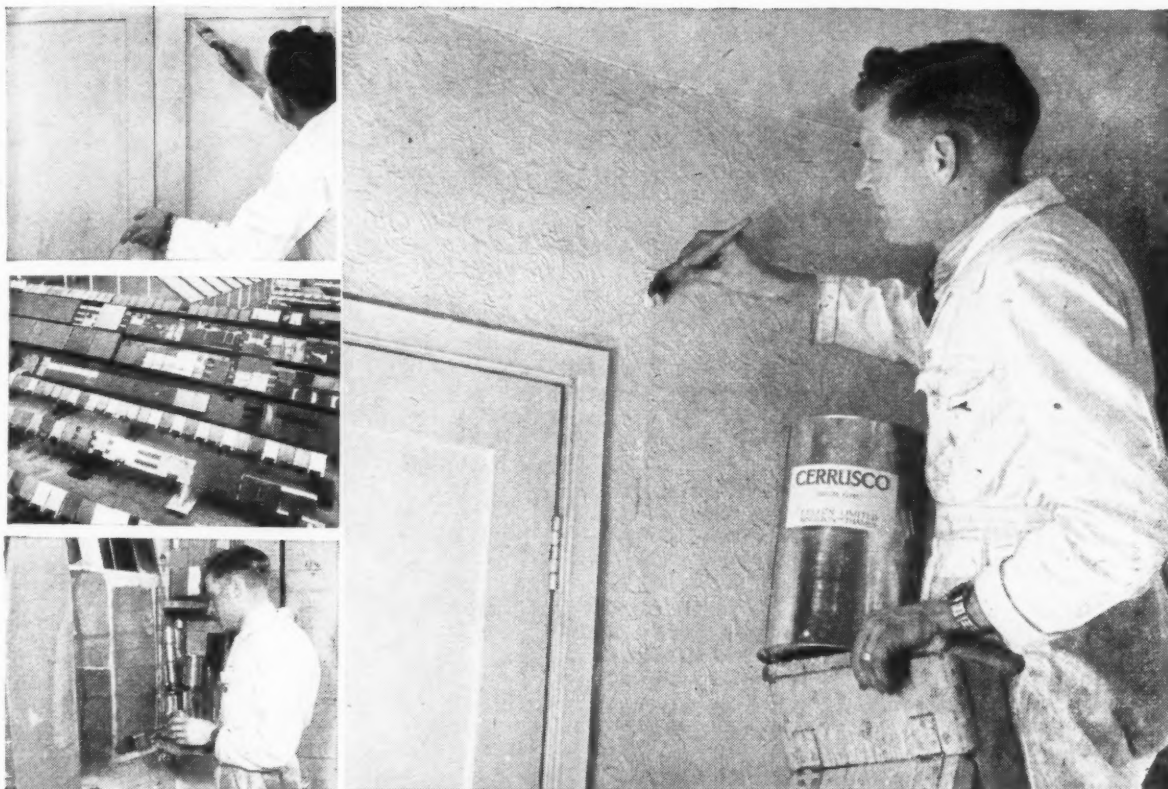
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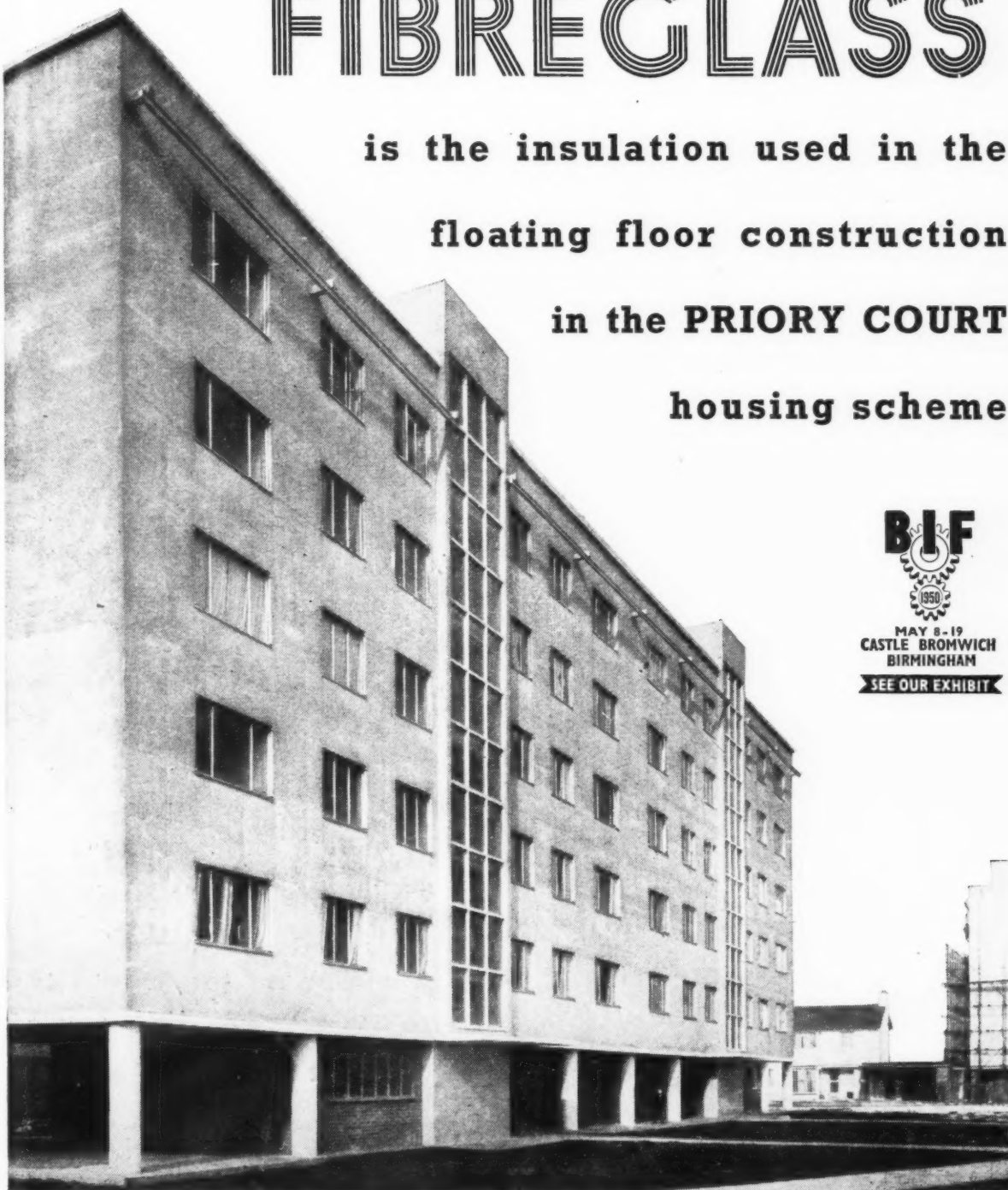
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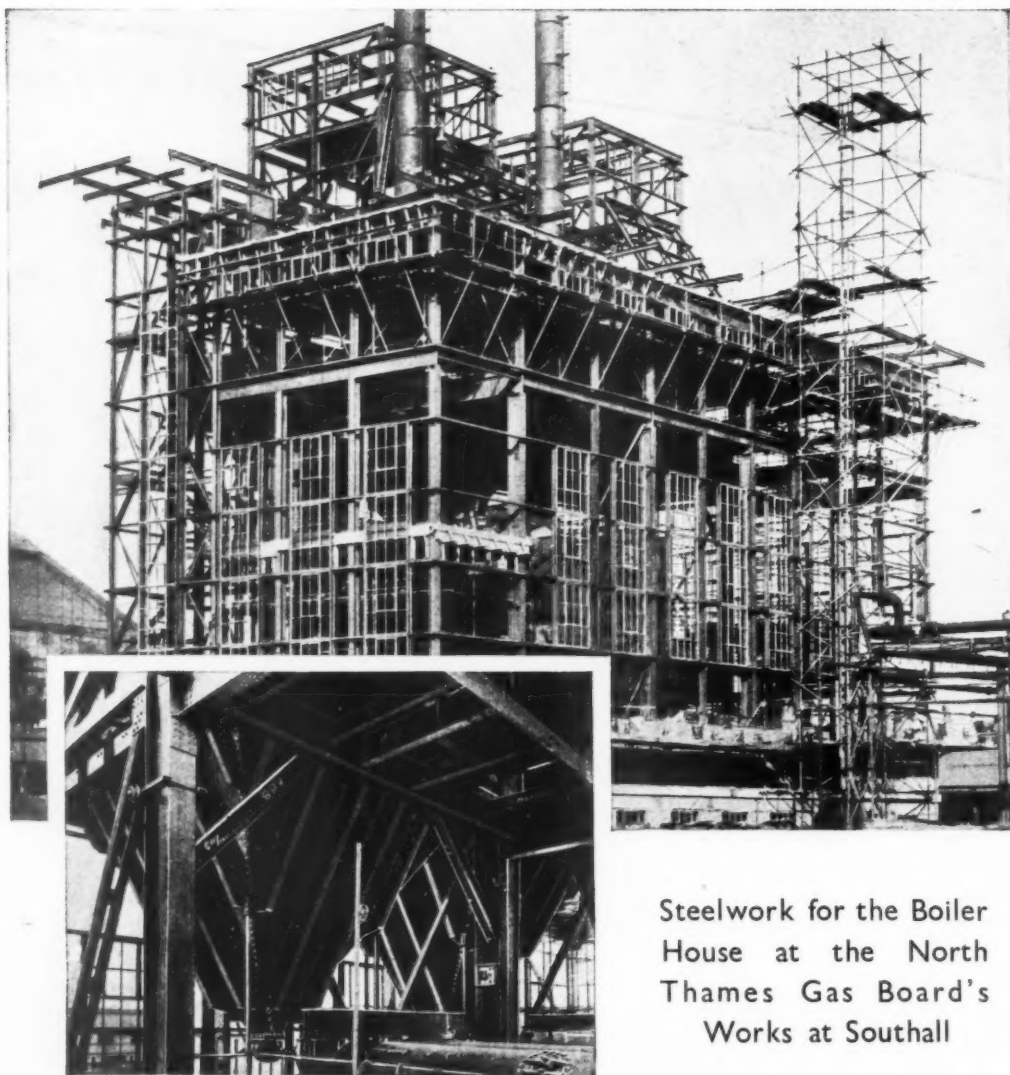
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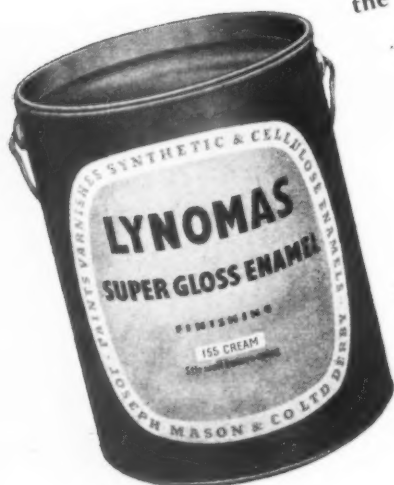


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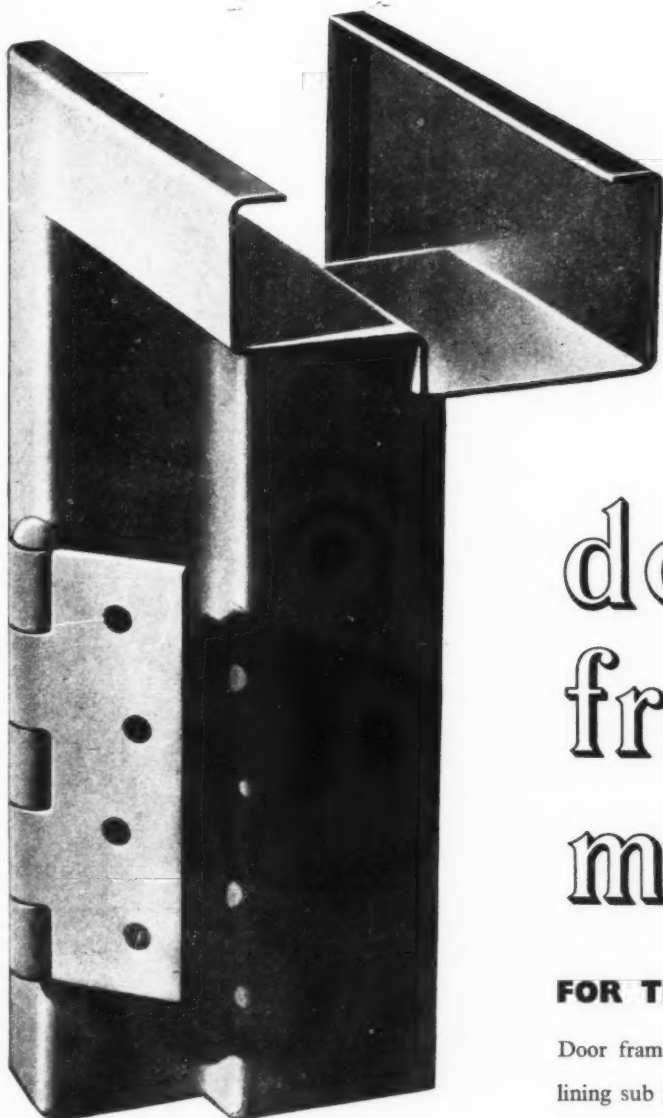
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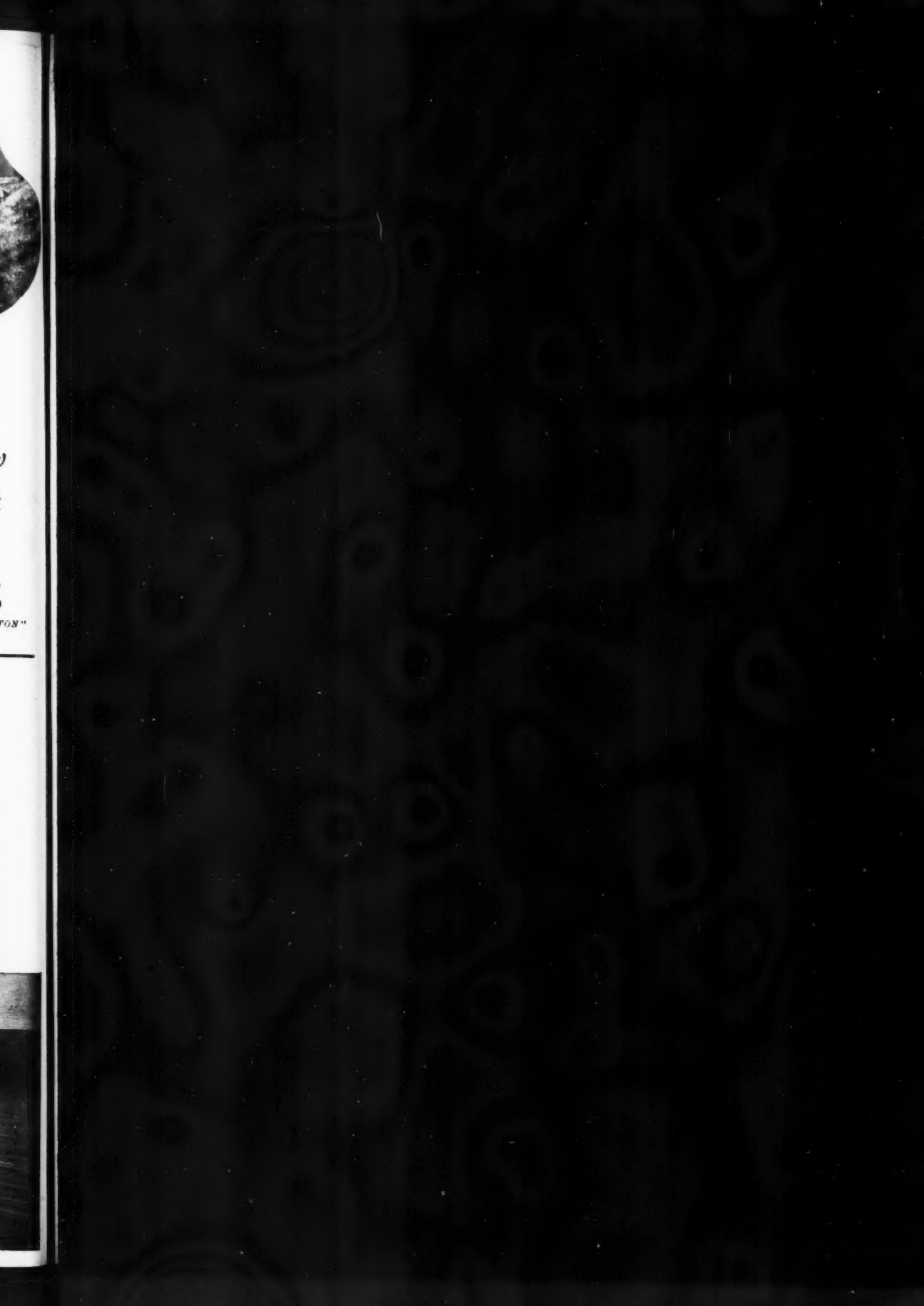
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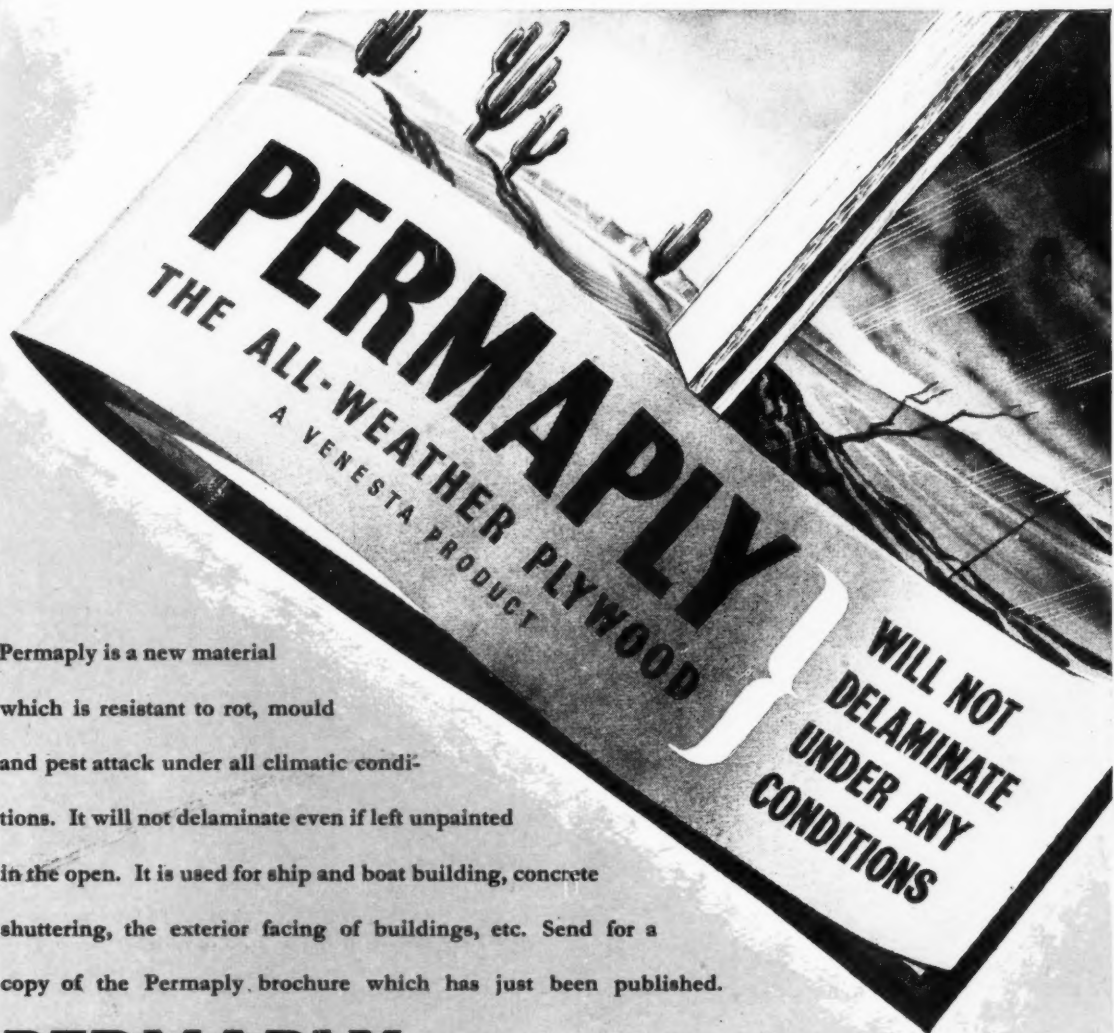
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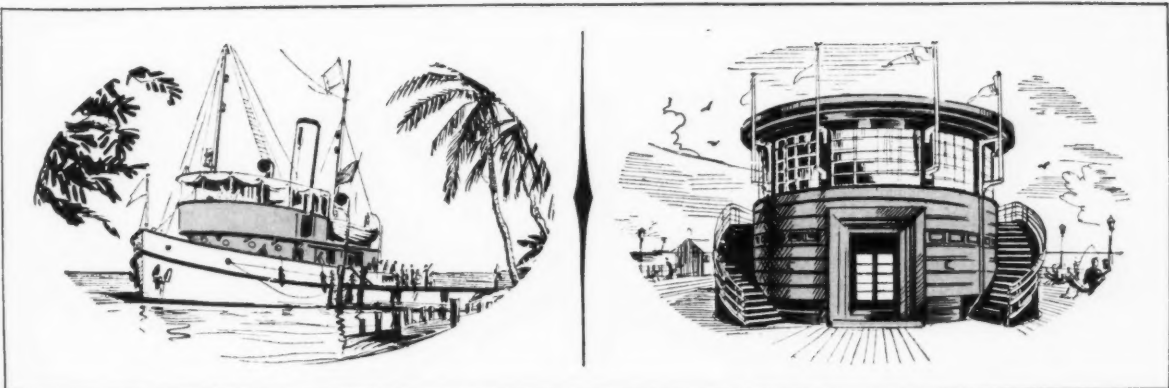






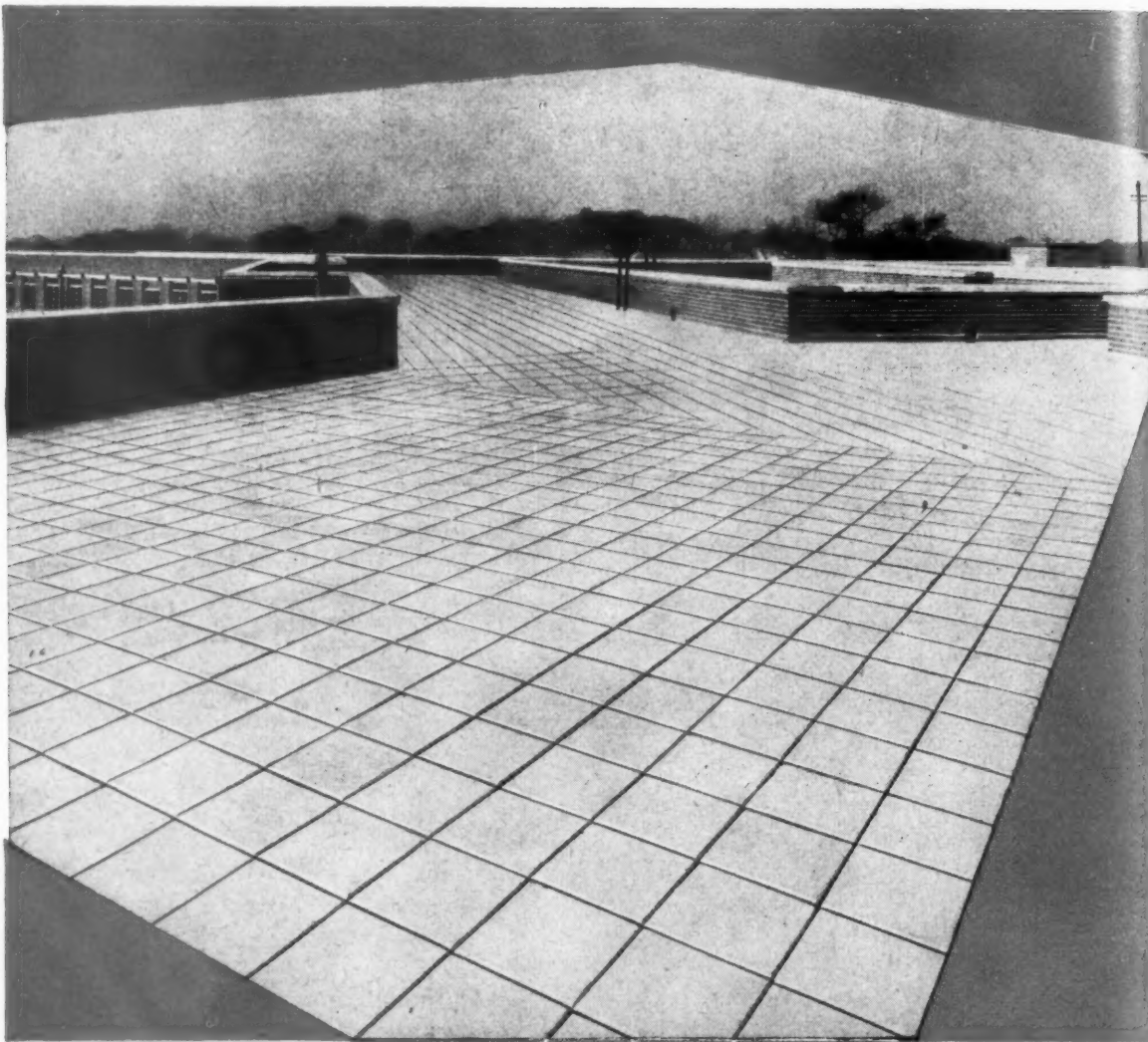
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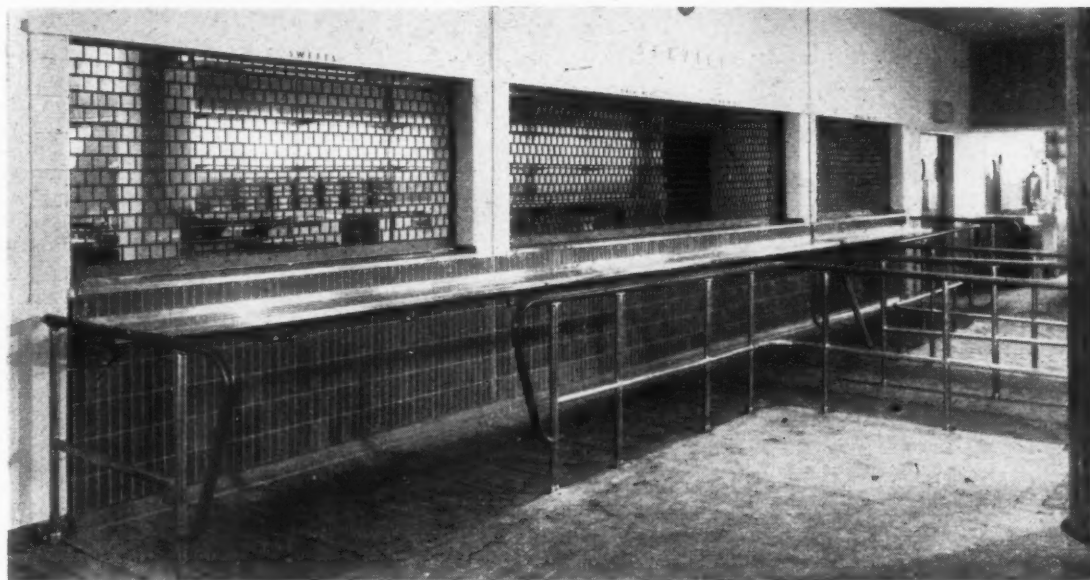
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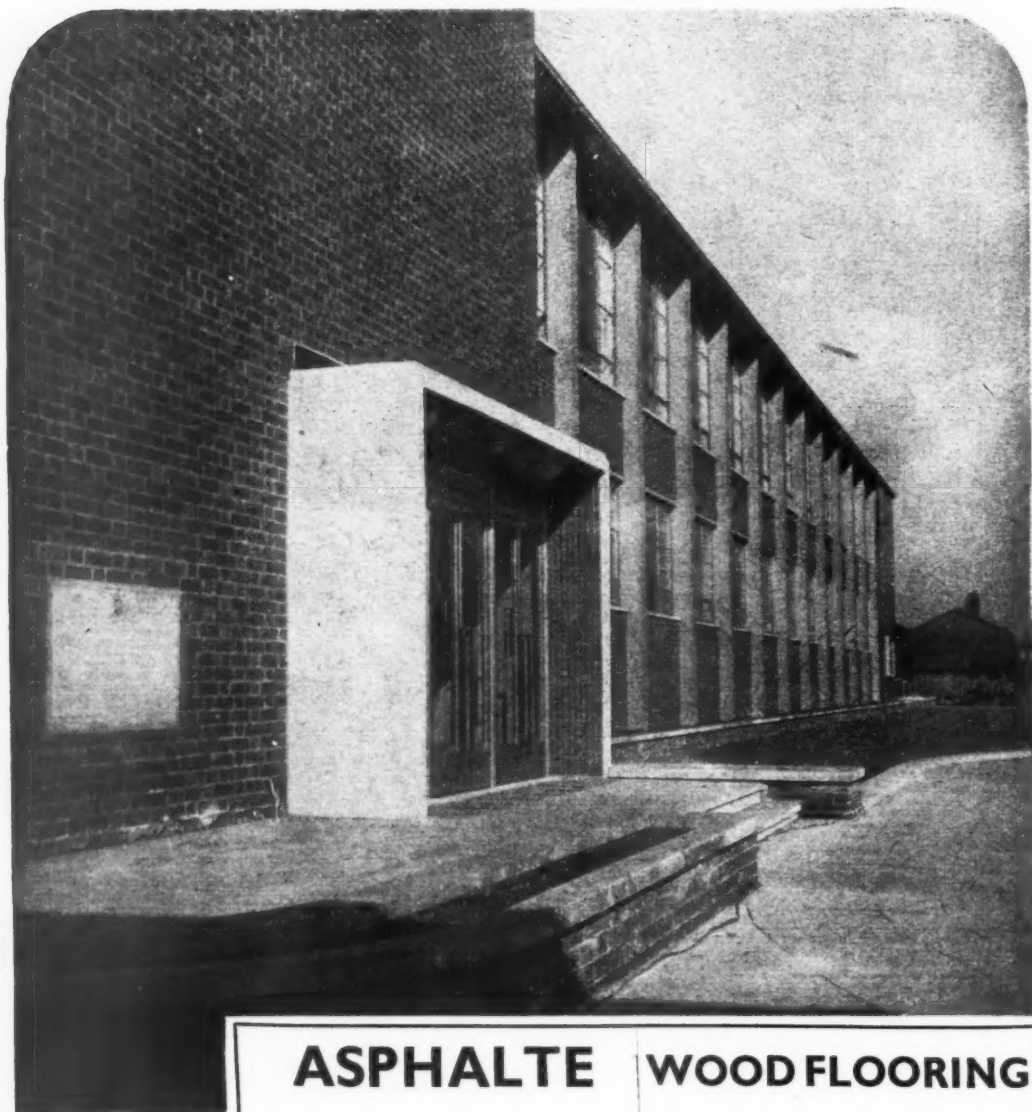
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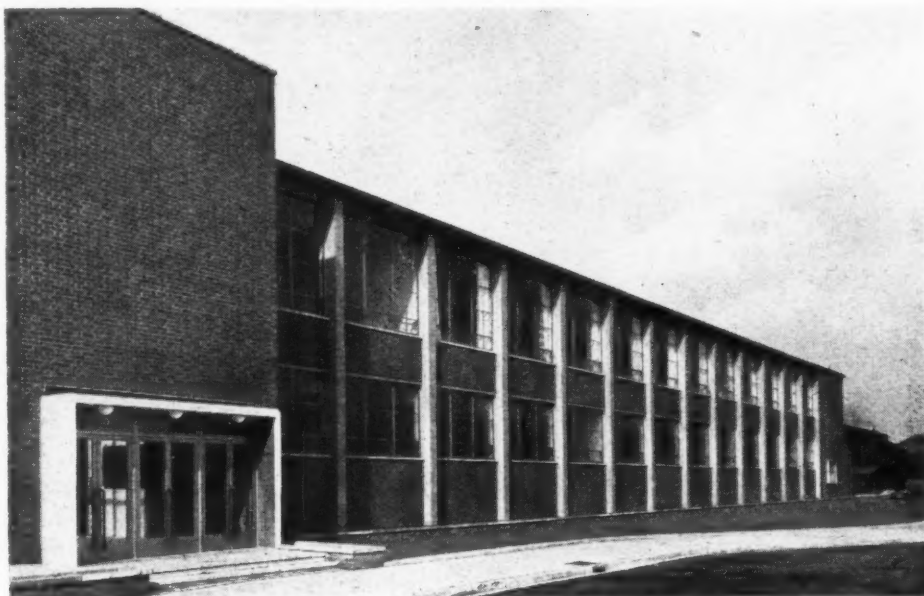
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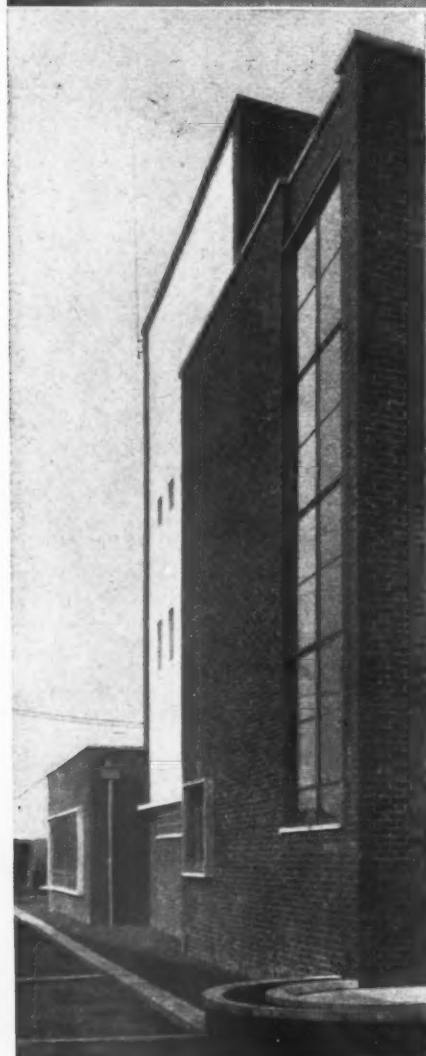
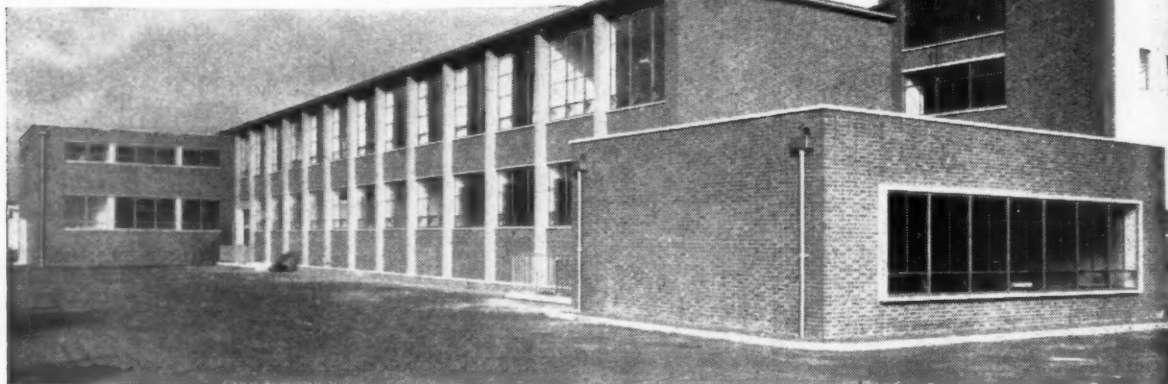


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Had these windows and doors been made in steel they would have been remarkable only as an example of an excellent architectural design correctly interpreted by the window manufacturer. But by specifying aluminium alloy, the Consulting Engineers obtained not only a faithful interpretation of his design, together with adequate strength and durability, but also a special resistance to the highly corrosive atmosphere associated with these works. In addition, the extruded sections give an air of sleekness and precision

very much in keeping with the general character of the building.

The windows and doors were treated at Works by the Alocrome process to give good paint adhesion, and then primed and stoved. The finish, which was in pale blue cellulose, was applied at site. The effect of this high finish on the slim, precise aluminium alloy sections is most pleasing.

Additional ventilation

An impression of the window layout in this building is quickly gained from the photograph of the west elevation (above). Here, the windows are fitted with hopper ventilators and are glazed internally by means of aluminium beading. The building is air conditioned and the hopper ventilators are provided for extra ventilation in the hottest weather. The staircase window, 28 ft. high (left), is entirely free

CONSULTING ENGINEERS: *Brian Colquhoun & Partners*. CHIEF ARCHITECT: *A. H. Shearing, A.R.I.B.A.*
CONTRACTORS: *Taylor Woodrow Construction Ltd.* WINDOWS AND DOORS: *Williams and Williams, Ltd.*

standing and its appearance is enhanced by the clear razor-edged lines of the extruded aluminium sections.

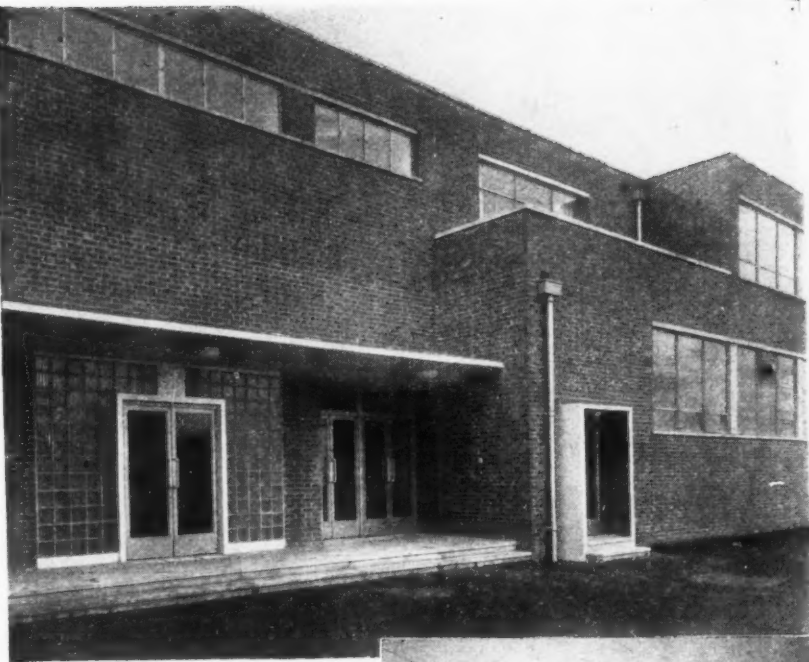
The Aluminium Alloy double action swing doors in the main entrances to the building (above right) and the entrance lobbies (centre right) were specially designed by Williams and Williams to fulfil the Consulting Engineers' requirements. The leaves were constructed from hollow extrusions produced expressly for this particular job.

Extrusion gives freedom of design

This is an excellent example of the freedom of design which the use of aluminium gives to the architect, as special extrusions can be made available without undue delay and at reasonable cost.

The canteen is well lighted by its series of sidewall windows, and there are also anodised aluminium lay lights made by Williams and Williams Limited.

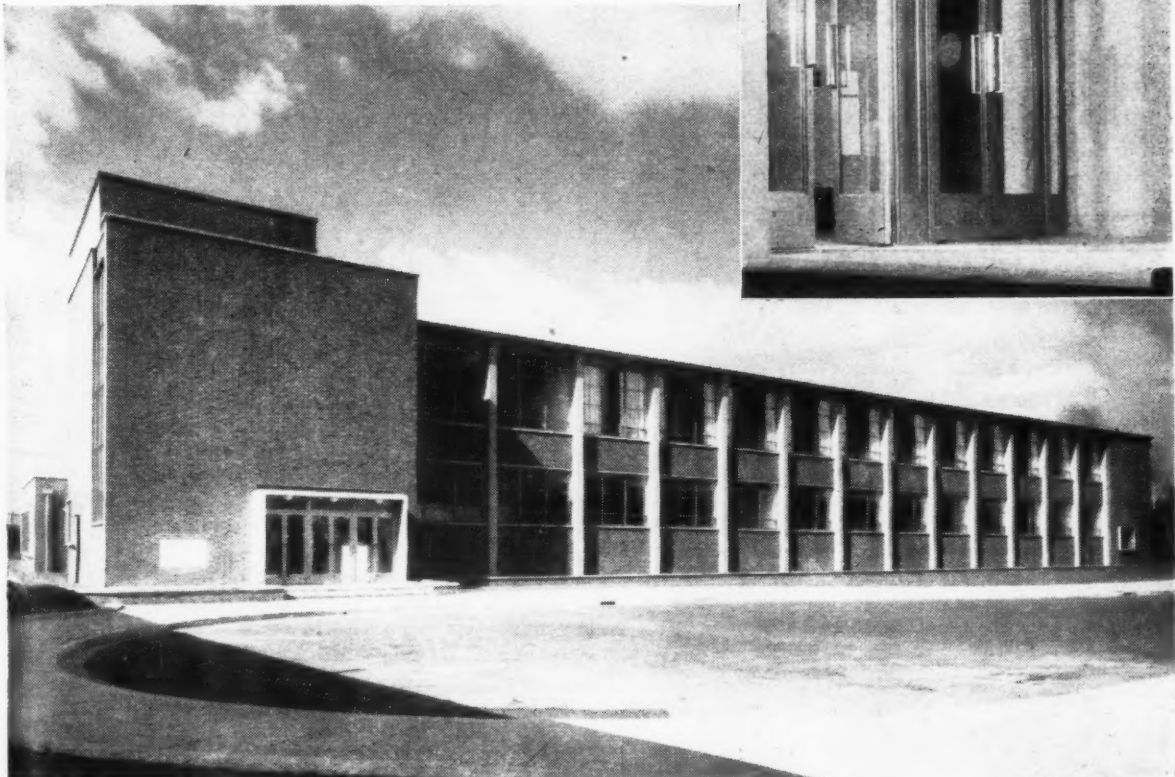
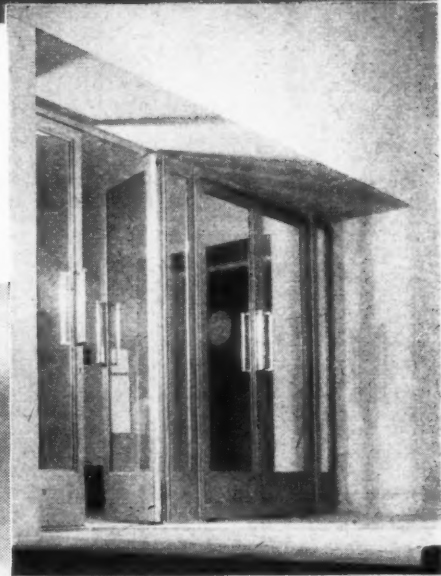
Below is a view of the east elevation, showing the canteen and locker room windows, and swing doors. These windows and doors are in conformity with good modern prac-



tice, and in order to resist the special corrosive conditions which occur at the Beckton Gas Products Works, they are in extruded aluminium sections by

Williams & Williams Ltd.

Reliance Works · Chester





Above: Bar showing clean lines and clear serving area throughout by fitting Pressure Dispense Taps behind Bar.

Right: Cellar showing arrangement of E.B.I. Pressure System and Helvellyn Easy Loading self-tilting hygienic stillages.

WELFARE CENTRE, BECKTON

North Thames Gas Board

Consulting Engineers: Brian Colquhoun & Partners
(Chief Architect: A. H. Shearing, A.R.I.B.A.)

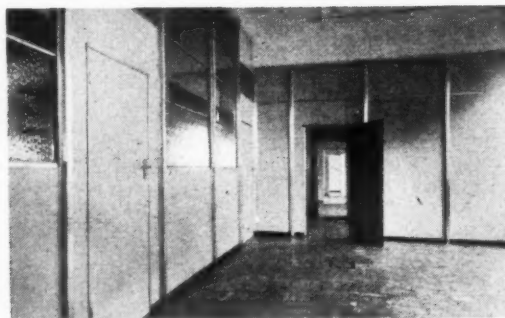
This modern Bar and up-to-date cellar selected by the Architect as the most suitable installation in keeping with the magnificent structure erected for the Staff Catering and Welfare.



PARTICULARS FROM:—

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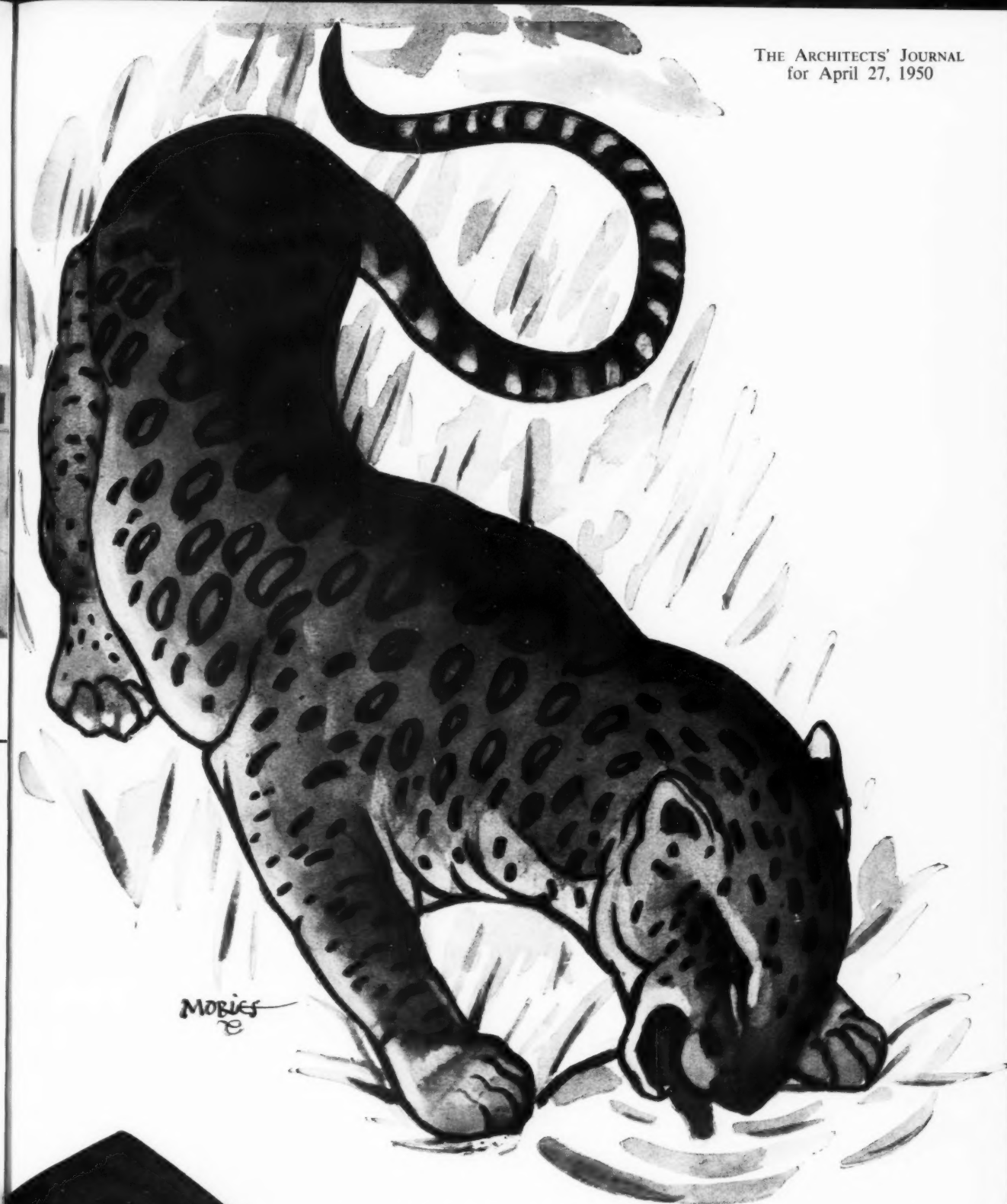


General view of City Offices showing glazed Corridor Partitions 12' high with inter-communicating doors through transverse solid Partitions. Aluminium Junctions and Partitions with 1" cream painted panels.

The architect need only give COMPACTOM a rough sketch or plan of the partitioning he requires and leave the rest to them. Their technical representatives visit the site to take actual measurements and prepare the detailed drawings and specifications. COMPACTOM are specialists in the fabrication and erection of licence-free partitioning that employs a measure of standardisation. This keeps cost down and allows elasticity in material and design. Because the panels, doors and other items are prefabricated, work on the site is reduced to a minimum. Ask for a free wallet of photographs of some recent contracts handled by COMPACTOM.



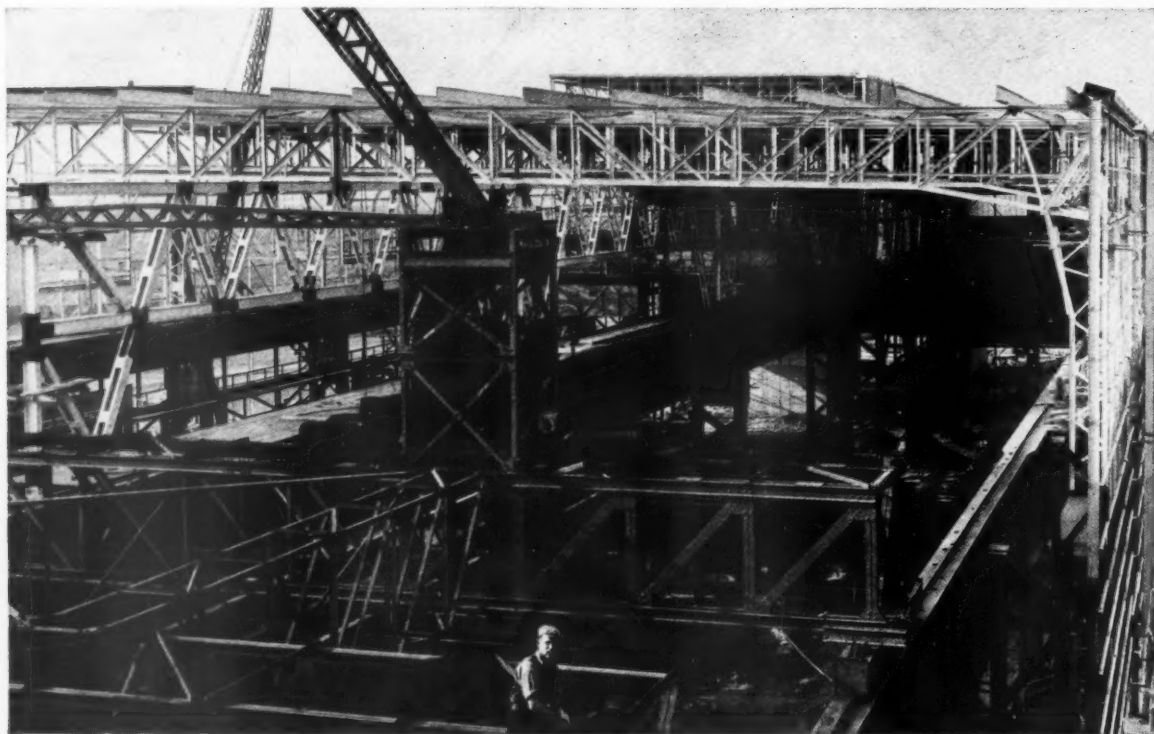
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PERMANENT COLOUR. All Marley tiles are surfaced with fixed-coloured granules, the colour of which is permanent. There is no free colour, a distinctive feature which can be tested by washing. When these qualities are desired, the Specification should call for "Approved fixed-colour granule-faced concrete tiles."

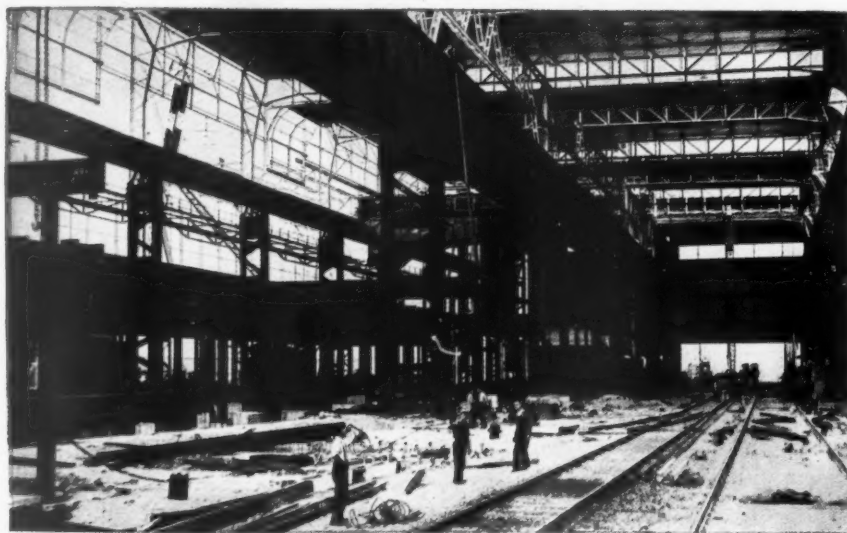
MARLEY

The Marley Tile Company Limited, London Road, Riverhead, Kent. Sevenoaks 2251/6



The welded crane girders are 110 ft. long and weigh 90 tons.

Steelwork by
DORMAN LONG



Two views of the melting shop, Abbey Works,
Steel Company of Wales.



THE ARCHITECTS' JOURNAL

No 2881 27 April 1950 VOL III

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GHOST CLIENT

My recent remarks about the somewhat uninspired rule-of-thumb modernity of most of the students' designs for an Institute of Contemporary Arts, on exhibition in Bedford Square, were not intended to cast doubt on the value of the experiment that produced them. It is obviously a useful idea to get a real organization to act as ghost client, and the fact that several architectural schools were working at the same time on the same programme added considerably to the interest.

*

The ghost client (which, incidentally, will be less ghostly in a few weeks' time—I am able to announce that the ICA is shortly taking premises of its own in Dover Street) materialized at the AA last week at a most instructive

discussion meeting, when Herbert Read, Roland Penrose and others of the organizers criticized the students' designs in relation to the actual functioning of their future Institute, and the architects, in their turn, criticized from the planning point of view the Institute as conceived by the organizers. So early an exchange of views between clients and architects should make the Institute of Contemporary Arts the best thought-out of all modern buildings when the time comes for it to build its own home.

TEETOTALITARIANISM

The director of the Victoria and Albert Museum, when he offered the Review a gallery for the display of the pub competition results, can hardly have expected the attacks he has had to put up with in consequence. [If he had he would certainly not have been deterred.] During the past week an organized succession of protests has descended on the Museum, not only by post but in the form of deputations as well; but not, as you might think, deputations of disappointed competitors.

*

The objectors are the various temperance societies and Bands of Hope, who apparently imagine the exhibition is a plot to get more beer sold in more places. They have rightly been told that the only plot the Museum is concerned in is a plot to further the cause of good design, and that the inside of a pub is as legitimate a subject for study with this purpose in view as any other building.

*

If people of this sort ever succeed in making the world as disagreeable a place as apparently they want to, they will drive us all to drink. It

always seems to be the temperance people—and the Sunday Observance people—who make these efforts to impose their views (which of course they have every right to hold and act on privately) on other people. I don't suppose the Victoria and Albert Museum, who have an admirable permanent gallery for the display of Islamic art, receive angry letters accusing them of trying to convert the people of London to Islam.

WALL-PAINTING

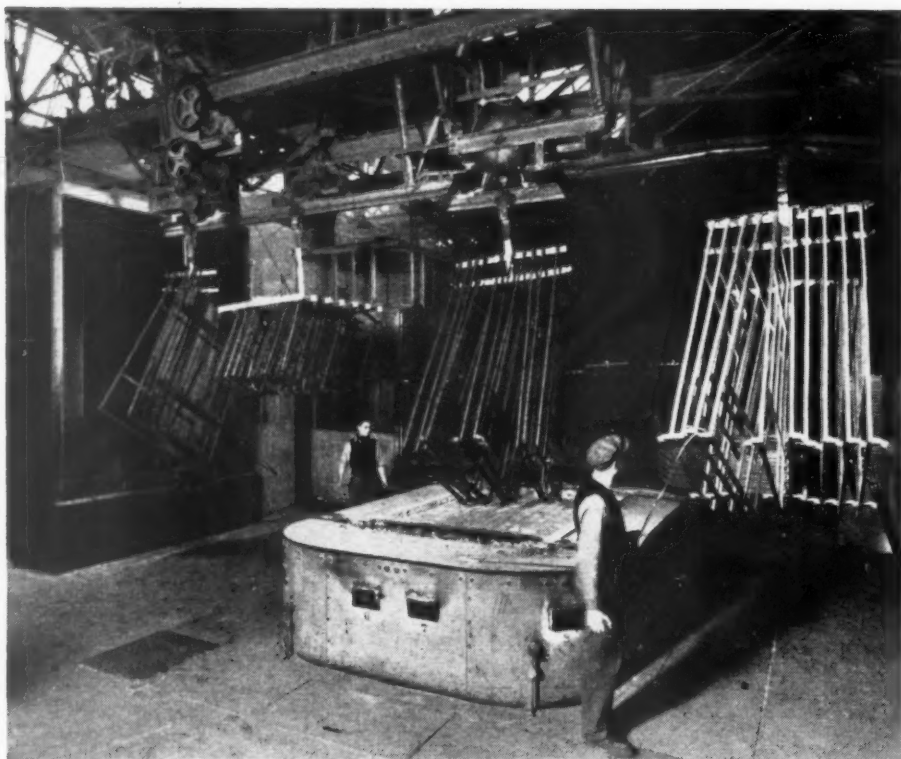
An exhibition of wall-paintings (I refuse to use that pretentious term "murals") is an impossible thing to arrange, because no painting can be judged except in relation to the building it adorns. The organizers of the exhibition now to be seen at the New Burlington Galleries realize this and do not claim that it is any more than an exhibition of large panels painted in a style (or, more precisely, a variety of styles) suitable for decorating buildings.

*

Some of the panels are admirable, and the best—strangely enough—are by artists not hitherto known as wall painters. I was particularly impressed by two panels by Ivon Hitchens, who should at once be commissioned to do a large painting by some public body—perhaps a county education committee.

*

I was sorry more prominence was not given to the photographic display of executed wall-paintings—the photographs were far too small—and that some explanation of how a painter can change the character and the apparent proportions of a room was not added to the interesting explanation of the various techniques he has at his disposal.



BEFORE building our galvanizing factory at Wednesbury in 1938, we had satisfied ourselves that hot-dip galvanizing was the only reliable method of rustproofing steel windows.

Specimens protected by all known processes have been subjected to prolonged trial in field and laboratory. The superiority of hot-dip galvanizing over all others is beyond cavil.

HOPE'S *Windows*
ARE HOT-DIP GALVANIZED

ARCHITECTURE AND THE SPIRIT

I have just received a copy of "Architecture and the Spirit of Man,"* by Dean Joseph Hudnut, who will be remembered, apart from his work at Harvard University, as the person responsible for Walter Gropius being given a significant teaching appointment after the closing of the Bauhaus. His book, which is instinct with humanity, instead of the humanism we have had too much of lately, reveals an understanding of the needs and aspirations of contemporary life, although, at times, he tends to be too tolerant of sentimentalities.

*

One paragraph from the book deserves quotation in full. "There must be many of us," the author writes, "who, knowing the latent power of architecture for human happiness, wish for an architecture which is no longer a dead art. We should like to relate our architecture to ourselves in order that it may have meaning for us. Living in the midst of a becoming and an unfolding, conscious of change and of the necessity of change, of the end of old systems and thoughts and usages, even when we love them ardently, opening our arms to an unpredictable future, we too desire a symbol. That symbol, if it is to command us, must be founded upon our own thoughts. We do not ask for escape."

*

This is a book to ponder over. It is also, I fear, a book from which our most ingenuous and voluble eclectics will derive much material with which to justify their own malpractices and betrayals.

BRITAIN CAN TAKE THEM

I was delighted to come across a short but sensible leading article in *Art News and Review*, which pointed out that even if the Festival of Britain was as badly organized as its critics claimed it to be, it would still be a commendable positive gesture. It will be a success, said the writer, "if ordinary people make it a success—if artists, designers and architects look upon it as a stake to their claim in the co-operative life of the community." And certainly the ordinary people will have a chance to contribute to the success of the venture, for many of them will be taking foreign visitors into their homes. I feel that

the national Press leader writers have not yet heard about this, or we would have had a renewed attack on the Government for attracting visitors to Britain and offering them the common hearth instead of the luxury hotel.

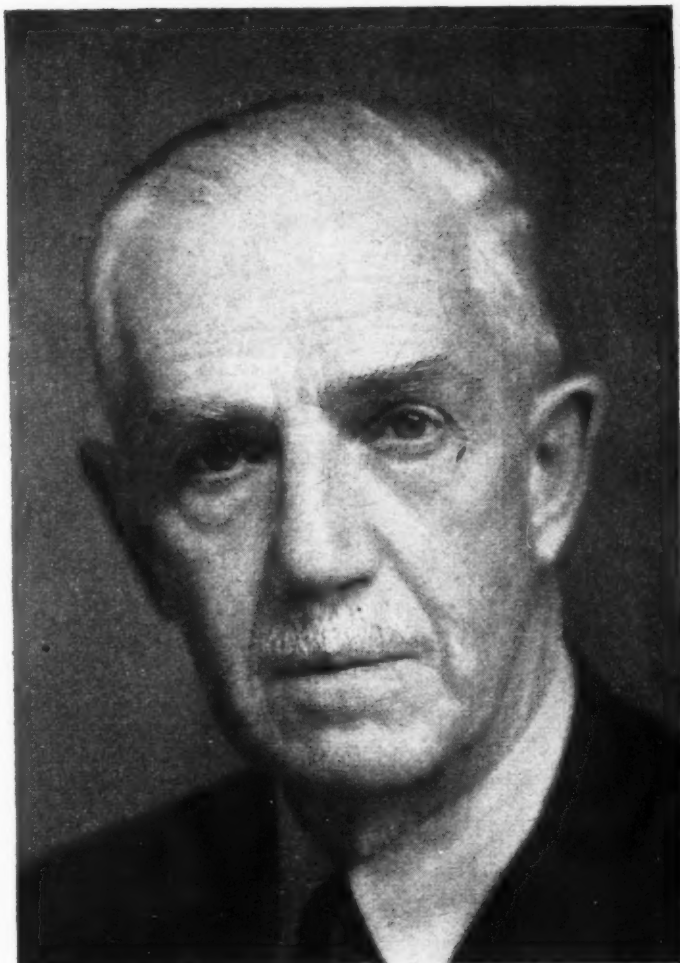
*

Of course, there have already been criticisms pointing out that the Festival should not have been held until better accommodation was available, and there have even been gloomy rumours that our friends from overseas would be delegated to deep air raid shelters on arrival. I find, however, that arrangements for the provision of beds, breakfasts and etceteras are well in hand. The Festival authorities have not attempted to set up their own organization to deal with this important aspect of Britain's festive year; instead, they have had the good sense to turn the matter over to the British Trade and Holidays Association. This experienced association is quite confident that all visitors, which, it believes, will number only 100,000

more than the average figure of 600,000 for a year, will be comfortably housed. Accommodation will be allocated as it was for visitors to the Olympic Games. Early comers will be found rooms in hotels and inns, while later applications will be forwarded to boarding houses and to private householders who will be willing to share their homes.

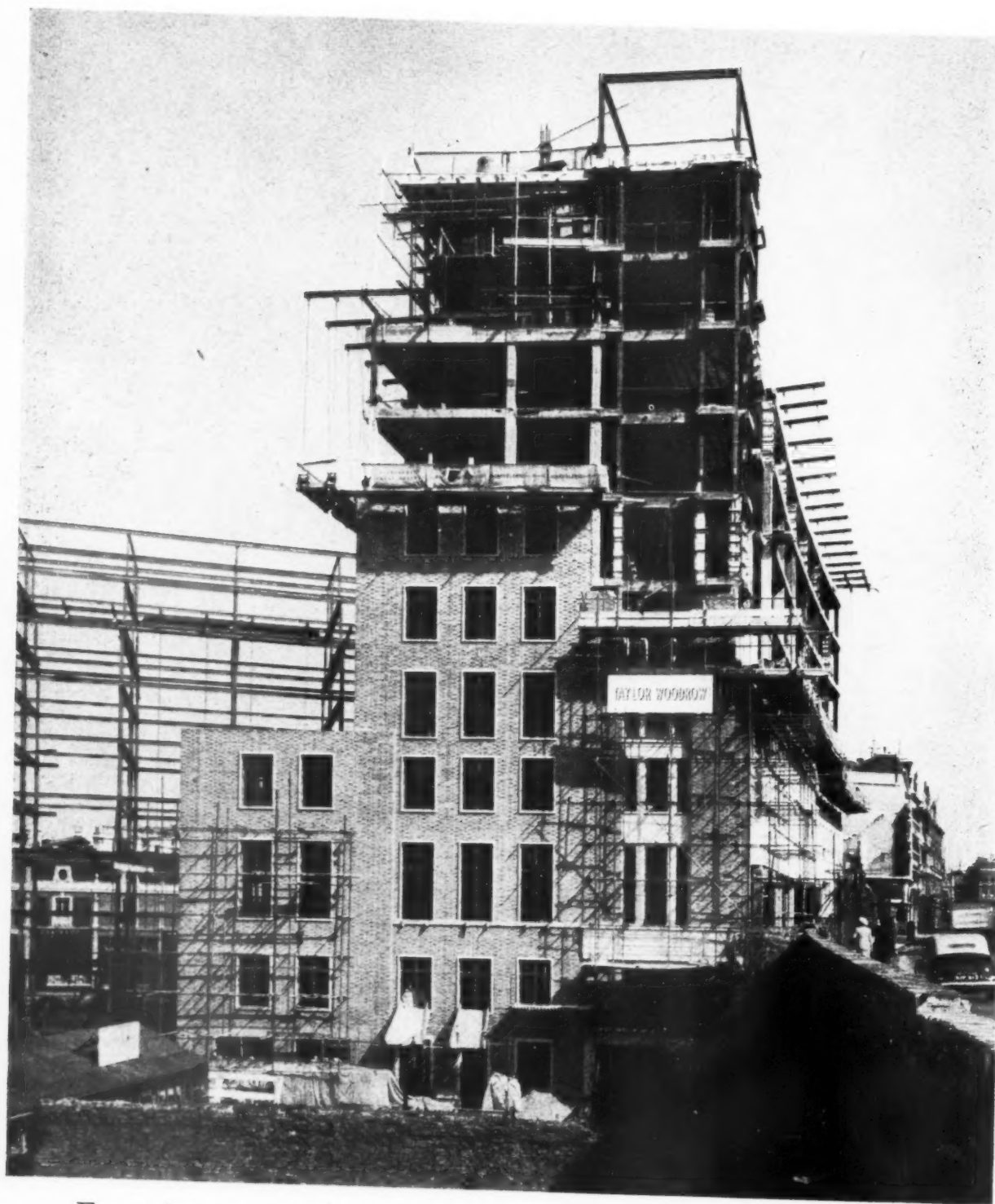
*

And just to forestall any criticism of this last point, let me say that many visitors who came over to the Edinburgh Festival last year made special requests that they should be billeted in private houses. They had experienced Scottish hospitality in previous years and preferred the more intimate atmosphere of a private house to the cold impersonal air of the hotel. So let's stop being ashamed that we are not a nation of hotel keepers and make up our minds to create as good a name abroad for British hospitality as that already made by the Scots.



Andrew Graham Henderson, who has been nominated President of the RIBA. (See page 509 and news item on page 518).

* Harvard University Press, Cambridge, USA. \$4.50.



Further work under the Lessor Scheme

This was the first building to be started in the City of London since the war. On a bombed site near Holborn Viaduct, this building, by T. P. Bennett & Son, is one of the blocks of offices being built under the Ministry of Works' Lessor Scheme. A recent article in the JOURNAL described and criticized this building scheme. The criticism was based not only on the poor standard of design of the offices so far erected, but on the extremely low standard of town planning. The sites selected appear to follow no planning

pattern, except the accidents of war-damage or the chance existence of pre-war clearances. Our article was concerned mainly with finished work; but, as the photograph above shows, other buildings are rapidly going up, and, no doubt, more buildings are being designed. Can it be said that the architectural profession, and the general public, are satisfied with the results of this method of rebuilding London? The voices of protest are not yet sufficiently strong to affect the issue. Silence now can only imply consent.

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PLANNED PROCRASTINATION

While on the subject of the Festival, let me say something about the lack of publicity it is receiving overseas, another matter that is apparently distressing our leader writers. There is a



S.E.T. Cusdin has been elected President of the AA. He is a partner in the firm of Stanley Hall, Easton and Robertson. He joined this firm after training at the AA school, which he entered in 1926, and was engaged in the design and execution of the Hospital for Sick Children at Great Ormond Street and British pavilions at the Brussels International Exhibition and the Johannesburg Exhibition. After serving in the war, he rejoined the firm as a partner and, in particular association with J. Murray Easton, worked on science buildings for Cambridge University, London University and Queen's University, Belfast.

simple reason why the publicity campaign has not yet been launched abroad; it was not considered wise to advertise the '51 celebrations too soon, in case potential visitors were persuaded to postpone their proposed visit to Britain from 1950 to 1951, thus damaging the tourist trade this year and swamping it next year.

*

I have been assured that when the right moment arrives there will be ample advertising overseas, and no-one will be left in doubt as to whom they should contact in order to book accommodation. That clears that point up, I think. But, no doubt, even while I have been writing this paragraph, another germ of anti-Festival criticism has been breeding in a dark corner of Fleet Street.

ASTRAGAL

The Editors

A HAPPY ENDING

A LETTER from the chairman of a parish council, published in *The Times* of October 30, 1948, started an argument in the daily and weekly press, on the wireless, and, no doubt, on many local councils and planning committees, which culminated in a public inquiry held by the Minister of Health. The cause of the controversy was the future of a cluster of neglected cottages, which, together with a church, a pub, some farms and two racing stables, lie on the edge of the Berkshire Downs and comprise the village of Letcombe Basset. On the one hand, the planners argued that the village lacked main drainage, and that the cost of installing it was disproportionate to the value of the village, which was too small ever to become a reasonable social unit, with its own school, social clubs, and so on. On the other hand, it was said that the villagers should not suffer for past neglect which was beyond their control.

Last week the chairman of the parish council, Mr. Frederick T. Barrett, wrote again to *The Times*. In this letter he said that: "the council has approved the installation of a sewage disposal plant to deal with the drainage at one end of the village. This plant could also deal with a few new cottages . . . Proposals are under consideration for the reconditioning by the council, of two blocks, each of three old cottages, and it is hoped that private owners will similarly deal with six other Tudor cottages . . . The village's future now seems assured . . ."

This incident will go far to dispel any apprehensions on the part of small parties that they are helpless before officialdom. Public opinion, expressed through the newspapers, is still a most potent force, but public opinion can only be stirred by great energy on the part of the few.

The little battle of Letcombe Basset has been won, with the defeat, not of planning, but of bad planning; of planning which ignored the vital crux of the matter—the life-force of the village.

TIMBER SHORTAGE

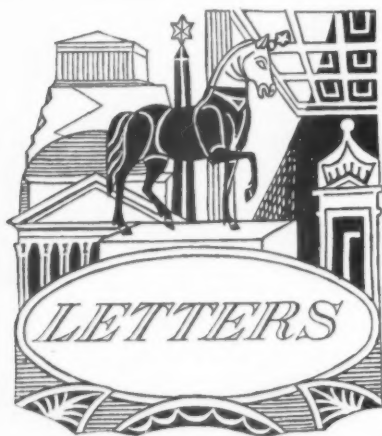
Architects feeling aggrieved at the poor response to their applications for timber licences, are apt to view the controlling authorities with disapproval. This is especially so at about this time of the year, when large piles of timber appear to be stacked in the yards, and it is difficult to see why these apparently vast stocks should not be released for a job which is just about to start.

While we do not suggest that all's well with the timber control, it seems only fair to point out some of the facts. First, it should be remembered that timber supplies have to be built up to carry over the period when export is impossible from ports which are frozen during the winter. Much of

the apparently vast stocks will disappear within the next few months. Next, it should be remembered that building is not the only, nor even the largest, timber-consuming trade, and that many of the species and qualities such as pitch pine, yellow pine and clear qualities of other timbers are reserved for special purposes.

The apparent abundance is therefore illusory and our "make do" methods must continue. In order to do the best we can with what is available, it must be clearly recognized that owing to the greatly reduced imports of timber there is not as much choice—quite apart from amount—as there used to be. Wide clear softwood timber of good length is almost unobtainable for building purposes. This lack of prime quality material need not be quite so serious as might be supposed. Modern technique is doing much to overcome this side of the difficulty. Nowadays, glues can provide joints stronger than the wood. Such joints can be achieved by reasonable trade processes and not merely in freak laboratory specimens. In addition, by recognizing the difficulty of getting large sizes and long lengths, it is often possible to design specifically for the present-day conditions.

The Timber Development Association have given a good lead in this direction with designs for efficient roofs and other timber structures. It is to be hoped that all concerned will follow this lead and thereby make the best of our present resources. All present timber designs should commence with the idea of using varying lengths of material and with an acceptance of intelligently glued jointing as being a reasonably efficient technique.



Architects' Salaries

SIR,—A word, please, about your recent editorials on this subject, and in particular about Mr. Michael Torrens' letter in your issue of April 13.

You have mentioned an average salary for assistant architects of about £366; and Mr. Torrens says this should have been calculated as being about £663.

When dealing with salaries, everyone, for some inexplicable reason, appears to be hypnotised into accepting their true worth at their face value—that is, in "pounds per year." But everyone knows only too well

H. Alexander Furness, L.R.I.B.A.

Frank Higginson, A.R.I.B.A.

*M. E. Gooch and J. S. Broome,
A.A.R.I.B.A.*

William Crabtree, F.R.I.B.A.

H. Rosenberg

S. Baines

that when these face values are translated into their true worth (the standard of living the salaries provide) in this post-war Crippsian Utopia, a salary of £663 provides a present-day standard of £221, if that, compared with the 1939 standard; because the pound now buys only about six shillings-worth of goods.

What was the 1939 standard? To deal with the local government side of the profession, with which I am personally concerned, a chief assistant or section head in the London area in 1939 could command a salary of about £600 or £700. Today, after 11 years' additional experience, the same man can usually get no higher (if as high) than the Local Government Charter Scale of APT X, which has a maximum salary of £1,030 in London. And such men have to have had about 25 years' experience in the profession to attain these dizzy heights.

We all know that a present-day salary of £1,030 face value buys no more "living" than did a salary of £343 in 1939.

Need any more be said about the architectural and engineering professions, as

compared with those of the doctor or dentist?

London.

H. ALEXANDER FURNESS.

Pub Competition

SIR,—After inspecting the results of the Pub Competition, may I put forward the following suggestions?

It is time the delivery of beer at the bar counter by manual "beer pulls" was brought up to date. A small electric pump connected to the pipe line, situated in the cellar, and controlled by a push-button on the counter, would give the desired result. A touch of the button would start a steady, and regular flow of liquid, which would be stopped merely by releasing the button. As a result, the serving of customers would be speeded up, as it would take less time to fill a glass than two or three pulls on a beer pull, and there would be no obstruction on the counter top, so leaving more space for service.

To reduce the temperature of draught beer, delivery pipes from the barrels could converge on a refrigerator, through which they would pass in the form of coils and thence to the bar.

As the tourist trade is so important in bringing dollars into Britain, I suggest a "Tourist Pub" in London (and perhaps elsewhere) which caters specially for tourists. The service would include hostesses who could speak various languages, a wider range of foreign drinks than normally provided, a cocktail bar, and such smaller details as plenty of ice cubes to put in the beer, and famous brands of American and other foreign cigarettes. There could also be an exhibition room devoted to the oldest, most picturesque and historical pubs in Britain, complete with photos, written information and models.

FRANK HIGGINSON.

London.

Building Bulletin

SIR,—The review of the Ministry of Education's Building Bulletin on secondary schools in your issue of March 23 rightly draws attention to the importance of this document. While not wishing to ignore its positive contribution to better design, we think it important to see the Bulletin in relation to the general picture of school building at the present time.

The LCC area is typical. Here the London School Plan stated London's post-war needs and proposed vigorous measures to meet them—a building programme totalling £161 million to be fulfilled in eighteen years, at an approximate yearly expenditure of £9 million. What is the actual position today? Only six new schools have so far been completed, but for 1950 the Council proposed to spend £7,580,000; in other words they meant to make a real attempt to fulfil the plan. This proposal was turned down by the Government, and reduced to £3 million, and now on top of this comes the order to cut costs by 12½ per cent., followed next year by a further 12½ per cent. The need exists; the general desire to see decent schools exists; the technical means exist and yet the Government insists on cutting the resources allocated to school building.

In this context it is unfortunate to see the authors of the Bulletin—and your reviewers—apparently accepting quite meekly the Government's view that such cuts are essential to the national interest, and it must be bitterly disappointing for such a brilliant group of designers to see their work used to further such an end. The fact that the economy cuts are made to look attractive and sound progressive merely obscures the real issue.

As for the argument that schools can be both cheaper and better, the limited rationalisation of building methods achieved by the Herts County Council may have had

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some effect, but unless and until the building industry is completely reorganized and the appalling problem of building materials profits tackled, we must conclude in general that cheapening of building can only mean lowering of standards.

This unpleasant fact cannot be overcome by pious hopes or attractive drawings, and we must face squarely the conclusion that a nation which spends £780 million a year on rearmament must put up with a wretchedly inadequate school building programme, and with schools of inferior quality.

M. E. GOOCH, J. S. BROOME.

London.

Liverpool School of Architecture Society

SIR,—Before the war brought such gatherings to a close, the Liverpool School of Architecture Society held several successful meetings, and it is now proposed that the society should again come into being, with periodic meetings of a social, recreational and professional nature. The committee, which has been concerned with the fund for the Reilly Medal award, has agreed to continue in being as an organizing group in connection with the recommencement of the society, and proposes to hold a dinner on Wednesday, May 31, at which the further activities can be discussed and a programme outlined.

It may be as well to state briefly the main purposes of the society, which are, firstly, to maintain and renew the friendships of our School of Architecture days, and, secondly, to maintain a connection between the older students now in practice and the younger ones both at, and recently from, the school. This kind of contact would be stimulating and helpful to both the old and the new, and would help to keep alive the spirit of enthusiasm and vigour which we associate with the Liverpool School and particularly with its great teacher and leader, the late Sir Charles Reilly.

Would all present and old students who wish to attend this inaugural dinner please keep this time free and send their names to me as acting Hon. Secretary of the society with Mr. N. J. Aslan for this occasion, and I will let them know of all further arrangements.

WILLIAM CRABTREE.

London.

LCC Concert Hall

SIR,—May I congratulate you on the progress reports of the Concert Hall, by John Eastwick Field and John Stillman. They are exciting, well written and well illustrated. I hope that they will continue, right up to the hall's completion, at frequent intervals.

H. ROSENBERG.

London.

Journal Layout

SIR,—I was interested to read the letter from Mr. J. F. G. Hastings on the subject of the JOURNAL layout, as I have intended for some time to write you on this subject. I think the dissection of technical books and the filing of selected illustrations and articles is carried out by the majority of offices and by a large number of individuals. In addition to the suggestion in Mr. Hastings' letter, could you not further assist by printing classification symbols in the top corner of the pages? These could be filed in spring clip folders as used for Information Sheets. The collection could be classified into main groups, such as Domestic, Education, etc., which could be further sub-divided.

Birmingham.

S. BAINES.

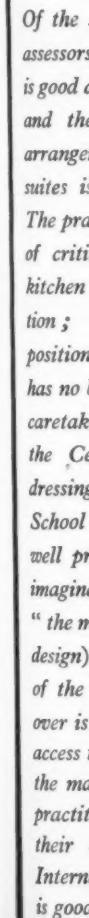
The EDITORS reserve the right to shorten letters from readers. Whenever possible, however, they are published in full.

CHURCH BY ANDREW GRAHAM HENDERSON



Andrew Graham Henderson, who has been nominated as President of the RIBA (see photograph on page 505 and news item on page 518), designed this building, the MacNicol Memorial Church, at Croftfoot, Glasgow, before the war.

Model of

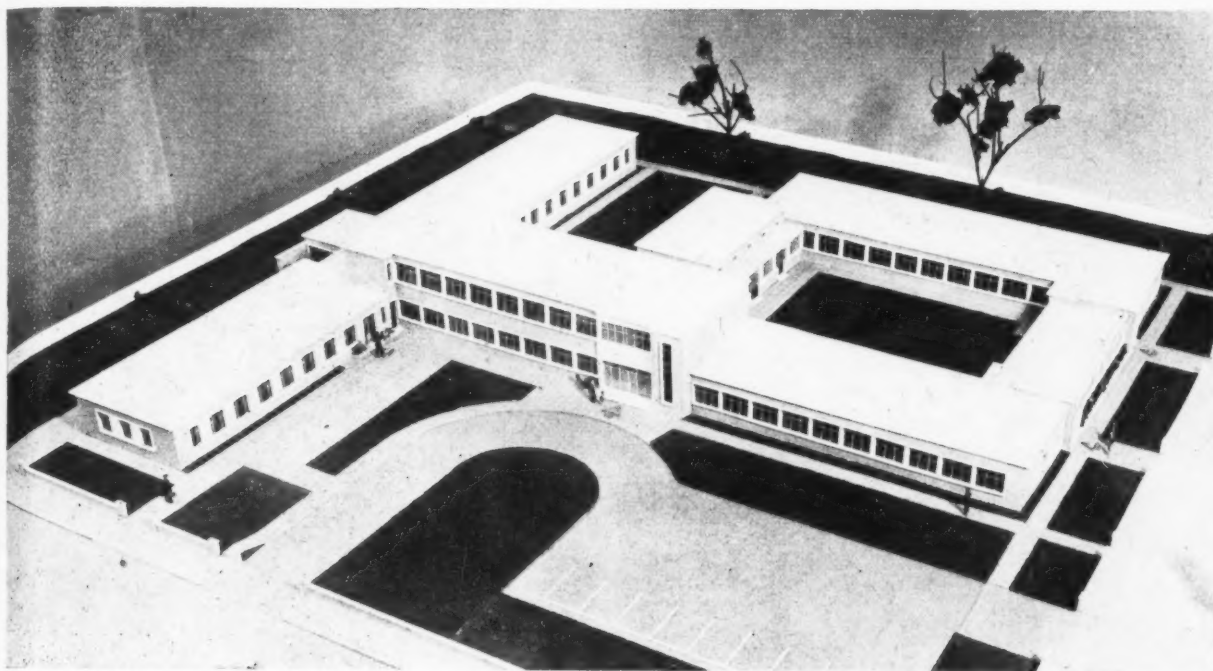


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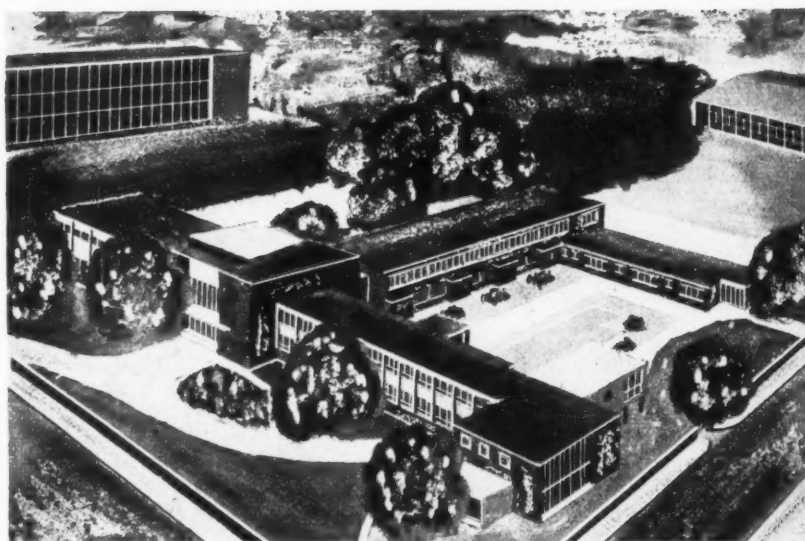
of 73, College Drive, Manchester 16, were of sufficiently good quality to justify the award of the premiums of £100, £60 and £40. Following is an extract from the report of the assessors, F. Leslie Halliday, Leonard C. Howitt and Dr. C. Metcalfe Browne, which refers to the first prizewinning design :—The planning of this design is very capable, with no serious faults. The main entrance is well placed, with the accommodation in general use conveniently situated. Detailed arrangements for the internal working of the departments have been carefully studied.

ORGANIZERS, THE MANCHESTER SOCIETY OF ARCHITECTS



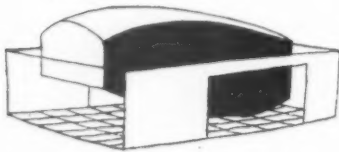
Model of first winning design

Of the second prizewinning scheme the assessors wrote:—"The general layout is good and the arrangement of entrances and the rooms in general use. The arrangement of the general practitioners' suites is good but rather extravagant. The pram space is well situated. Points of criticism were the position of the kitchen relative to other accommodation; the upstairs lecture room, the position of the doctor's bedroom, which has no bath; the isolated position of the caretaker's flat with no internal access to the Centre and the arrangement of dressing rooms in the Maternity and School Health sections. The scheme is well presented and the elevations show imagination." In the assessor's opinion "the main entrance (of the third winning design) is rather enclosed and the position of the pram store and caretaker's flat over is not good. There could be better access to departments other than through the main entrance. Again the general practitioners' suites are extravagant and their construction somewhat involved. Internal planning of the different sections is good."



Above, and below, perspectives of second and third winning designs





DIARY

March 20.—Inner leaf of auditorium walls as far as balcony cast to underside of seating beam for roof trusses. Crane for hoisting roof trusses in position. Slab to ventilating plant room complete. Balcony strutted and shuttered to soffit—reinforcement being fixed. Stone facings being fixed to stair blocks on north and west corners.

March 23.—Seating beam for roof trusses completed.

March 25.—Remainder of inner leaf to auditorium wall completed. Air ducting within kitchen area completed. Roof trusses scheduled for rolling into position.

LCC CONCERT HALL: 4

Concreting Technique: described by John Eastwick-Field and John Stillman.

The idea of pouring a whole building in concrete is an attractive one, but it has its disadvantages and difficulties. What appears straightforward on the drawing board may become quite a complex problem on the site. To begin with there is the difficulty of constructing and supporting the



Concrete mixing charge hand.

shuttering, and especially of maintaining a true face to the walling: even careful workmanship will not achieve a machine-like accuracy, and some allowance has to be made for this in the design: on the job a maximum variation of about $\frac{1}{4}$ in. either way is not uncommon. Then there is the problem of how to finish the surface, which is notoriously unattractive unless special provision is made to improve it, and this may mean subsequent treatment by bush-hammering or tooling, or exposing the aggregate by using retarders, or it may mean that fixings have to be provided for other applied finishes, such as stone or marble.

The very nature of the process makes it more difficult to complete the carcass of the structure and to erect the roof early in the job, which in turn means that there is some delay before the finishing trades start; it is also more than usually necessary to have the positions of openings for services settled, because it is obviously undesirable to have to cut openings after the concrete has been poured.

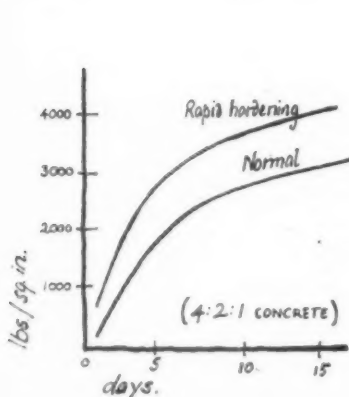
Finally, there are the technical and

practical difficulties of applying the specification, which lays down the quality of concrete to be used. These difficulties are increased when the work has to continue in cold weather.

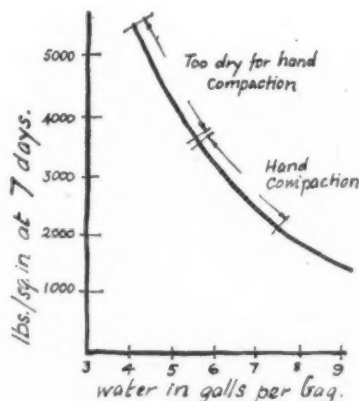
Concreting is not one of the traditional crafts, and although it ought to be a very specialised trade, it has not always received the attention it deserves in the industry. For oversite concrete and mass concrete in foundations, it is perhaps less important that control should be rigidly applied, but in a building such as the Concert Hall, it is very necessary that the specified quality of concrete should be maintained, and that the general standard of workmanship should be high. It is for this reason that the contractors, Messrs. Holland & Hannen & Cubitts have thought it worthwhile to maintain a Concrete Control Engineer on the job, with the special responsibility of controlling the quality of the concrete in all its stages; and that Mr. Taylor, the Resident Engineer, has delegated to one of his assistants the task of giving special supervision to this aspect of the work. There are, in addition, a number of inspectors working under the Resident Engineer, and a number of foremen representing the Contractors whose responsibility it is to see that the work is properly carried out, in the various parts of the building.

There has been much written about the theory of concrete technique, but especially in "buildings" as distinct from "engineering" projects, such as roads, bridges, docks and so forth, the practical measures necessary to interpret the theory have not always been appreciated and there have been failures of one kind or another. This particular job provides an excellent opportunity of studying how a high standard of concreting can be maintained in a large building, and also how it has been possible to continue work in cold weather.

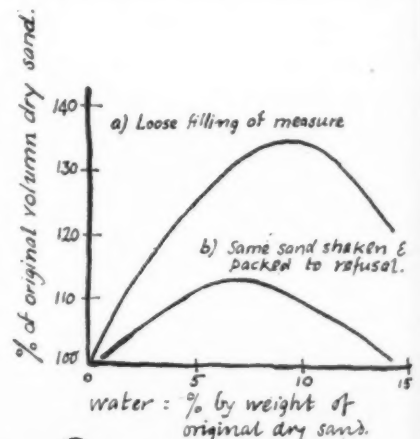
The possibility of having to contend with cold weather was foreseen and



A. AGE/STRENGTH CURVES FOR NORMAL & RAPID HARDENING CEMENTS



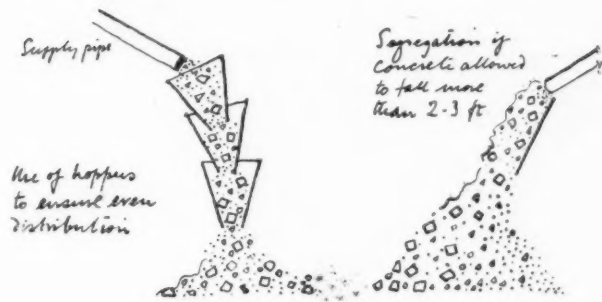
B. RELATION BETWEEN WATER/CEMENT RATIO & STRENGTH OF CEMENT.



C. GRAPH SHOWING BULKING OF DRY SAND.

	TEST	FREQUENCY	BY WHOM
CEMENT	TO B.S.S.	CERTIFICATE WITH EACH LOAD	MAKERS
	TO B.S.S.	2 or 3 / WEEK	INDEPENDENT TEST LABORATORY
FINE AGGREGATE	BULK DENSITY (as mod. loose) b) dried loose	2 / WEEK	INDEPENDENT TEST LABORATORY (occasionally by Contractors on site)
	VOIDS		
	MOISTURE CONTENT		
	BULKING		
	SIEVE ANALYSIS		
	SILT		
	ORGANIC IMPURITIES	FREQUENTLY	CONTRACTORS ON SITE
COARSE AGGREGATE	MOISTURE CONTENT		
	BULKING	2 / WEEK	INDEPENDENT TEST LABORATORY (occasionally by Contractors on site)
	SIEVE ANALYSIS		
	MOISTURE CONTENT		
	MOISTURE CONTENT		
CONCRETE	SLUMP TEST	FREQUENTLY 3 or 4 / WEEK	CLERK OF WORKS & CTGS INDEPENDENT TEST LABORATORY
	CUBE TEST		

TESTS MADE ON CONCRETE MATERIALS & CONCRETE AT CONCERT HALL



Left, chart of site tests. Right, from top to bottom, technique of placing concrete, method of measuring aggregate, and typical construction joint.

Wheelbarrows rule for coarse aggregate.



Fine aggregate rule making allowance for sand bulking.



provision was made for it, but such measures are unusual in this country. It raises the question as to whether it is not mere conservatism which has prevented "cold weather concreting" becoming a normal routine in the industry, for in America and elsewhere, concreting is continued in cold weather as a matter of course, especially if the early completion of a building means that returns on it are sooner forthcoming.

THE CONCRETE MIX

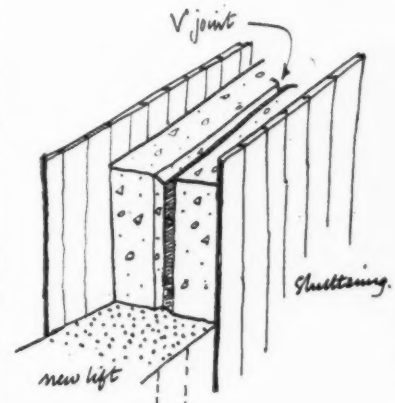
The concrete specified for the normal reinforced concrete work is a 1:1.8:3.6 nominal mix by volume. The cement being used at the moment is rapid hardening Portland cement, and the fine and coarse aggregates which are washed come from pits at Broxbourne, Bedford, Wraybury and Iver. The contractors obtained permission to use a rapid hardening cement at the beginning of October when the weather became colder. The higher rate at which strength develops enables the shuttering to be struck earlier than if normal Portland cement was used, and it also has advantages in concreting in cold weather which are discussed later. The strength of concrete made with rapid hardening cement is the same after 5½ days as that made with normal Portland cement after 12 days. Its cost is 77s. 6d. per ton as compared with 71s. 6d. per ton for normal Portland cement, or 1s. 7d. extra per yard cube of concrete; but this is offset by the obvious economy in the saving of time.

The mix, which was specified by the consulting engineers, was designed to

be more workable than a 1:2:4 mix which they considered insufficiently workable for reinforced concrete of this type, and yet to be more economical than a 1:1½:3 which was considered unnecessarily rich.

The design of mixes for high grade work is a matter of considerable importance and depends upon the minimum strength which is required, the degree of workability necessary for various conditions of placing, and upon the obvious desirability of being as economical as possible in the use of cement. The problem is neatly summed up in "Road Note No. 4" as: "the question of obtaining at the lowest cost, by a suitable choice of materials and of the proportions in which they are used, a concrete of the required strength and workability." In order to arrive at a suitable specification, therefore, such factors as the water/cement ratio, and method of placing, and the type and grading of the aggregates have all to be taken into account. Road Note No. 4 gives, incidentally, a set of tables and material and graphs which are a most useful guide to the design of mixes.

On this job the specified crushing strength of cubes at 28 days is not less than 3,300 lb. sq. in., and the water/cement ratio, which largely determines the strength of the cement, is governed by the specified slump of 3 in. to 4 in. Thorough compaction is necessary if the concrete is to acquire the desired strength, and, in theory, this may be achieved either by



an increase in the mechanical energy put into the process; that is, by tamping and by mechanical vibration, or, less economically, by increasing the ratio of cement to aggregate. In order to obtain the required strength with the particular mix which was specified, mechanical vibrators are being used on the job. As far as the supply pipe is concerned it has proved satisfactory to pump the concrete, with the specified slump—which would be considered to give a "medium" degree of workability. The ratio of aggregates to cement in the mix was determined so as to give a satisfactory degree of workability under the anticipated conditions on the site, and with aggregates conforming to the specified range of sieve analysis gradings. At the same time it was such as to ensure that the minimum design strength would be maintained.

* Road Note No. 4, "The Design of Concrete Mixes." Road Research Laboratory, DSIR, HMSO 4d.

There is a body of opinion which considers the American practice of specifying concrete in terms of its strength a good one, because the engineer can get what he pays for, and yet the contractor can profit by his zeal and industry. This method may, however, be open to abuse, and involves much supervision, and it is still customary in this country to specify actual mixes.

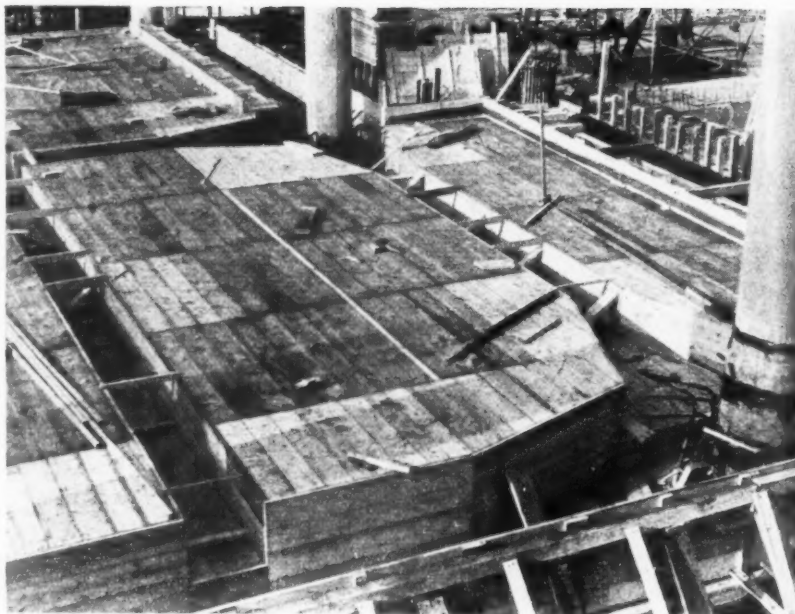
MIXING AND PLACING THE CONCRETE

We have described previously how, in the main, the concrete is mixed by weigh batching and then pumped to the shuttering. The weight of material allowed to pass through the batcher is determined by conversion of the "normal" mix, which is by volume, to one of weights, with cwt. bags of cement as units in the mix. The 1:1.8:3.6 nominal mix thus becomes 1 cwt. cement, $2\frac{1}{2}$ cubic ft. fine aggregate, and $4\frac{1}{2}$ cubic ft. coarse aggregate, which is then converted to proportions by weights, determined and varied by the results of bulk density tests carried out twice weekly. In addition, the proportion of fine to coarse aggregate may be altered to allow for variations in the grading of either aggregate. A typical set of readings on the scale on one of the batchers are to be seen in the photograph. Each batch remains in the mixer for approximately 1 minute.

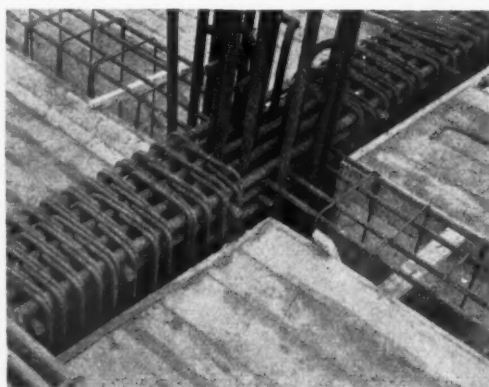
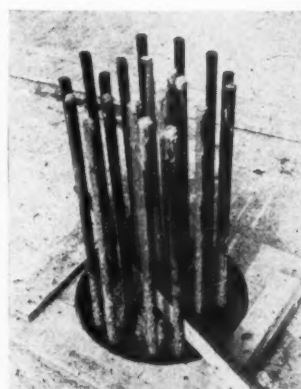
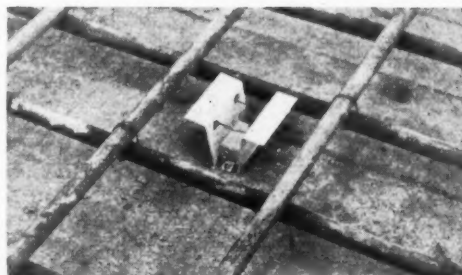
It is well known that "bulking" takes place when the fine aggregate gets wet and that this upsets the ratio of the mixes when measured by volume. With weigh batching the variation is less significant and is sometimes ignored, but on this job adjustment for the increase in weight due to the presence of water is taken into account, and the amount of water added to the mix is also varied.

It is not always possible to place all the concrete from the pipe, and for isolated work volume batching is used. Here the "bulking" is taken into account, and a convenient method of obtaining the required variations in measurement when using a barrow instead of gauge boxes was suggested by one of the foremen on the job. Instead of having a number of different gauge boxes, the material is put into a barrow and "skimmed" off with different sized "rules" which are cut to suit a number of variations.

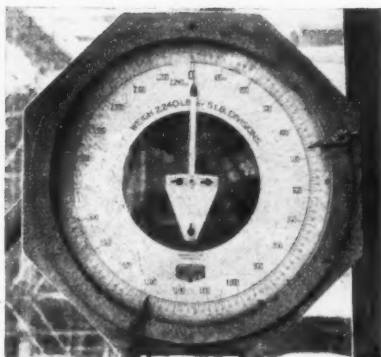
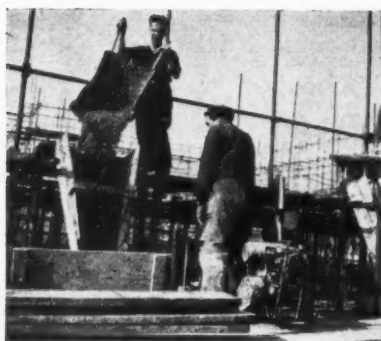
The actual method of placing of the concrete is an important factor in obtaining good concrete. One of the commonest defects is the "segregation" of the fine from the coarse aggregate which takes place if sufficient care is not taken to avoid it. Wherever there is a vertical drop a system of bellmouth hoppers with flexible joints is used so as to ensure a controlled drop and to keep the concrete well mixed.



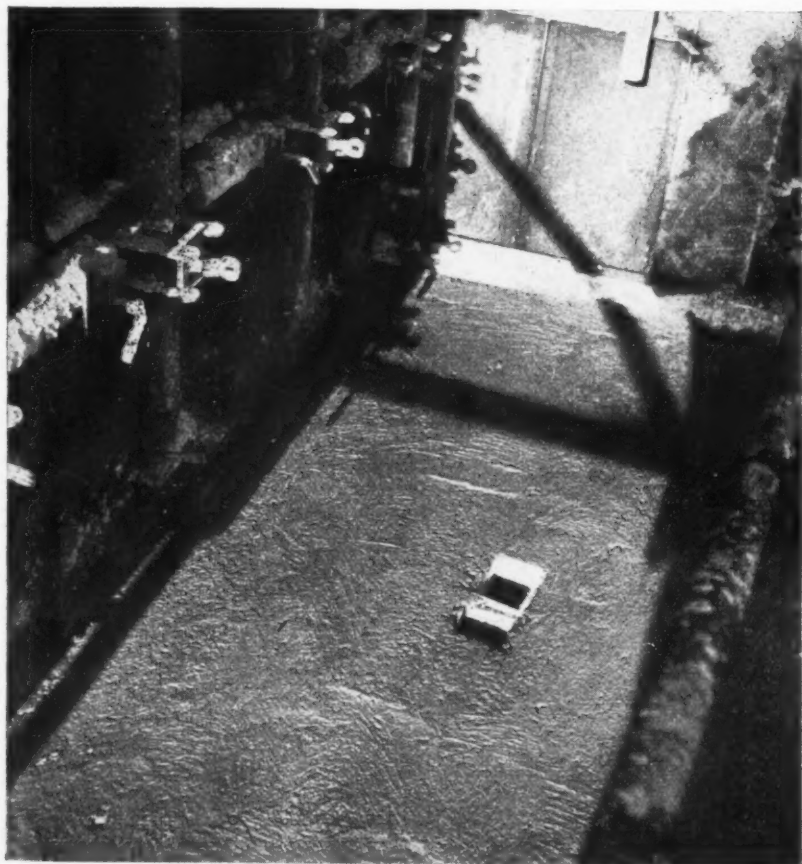
Above, some of the timber shuttering. Right, a patent metal fixing device. On striking the shuttering, a fixing slot is exposed on the soffit. Below, some details of the steel reinforcement. In the photograph immediately below can be seen wire clippings which will later be removed by compressed air.



Above, right, pump of the scale the batch forming



Above, left, cleaning the shuttering with compressed air. Top right, pouring hand-mixed concrete. In the foreground is a pump operating one of the internal vibrators. Above, right, the scale readings for fine and coarse aggregates on one of the batchers. Below, two of the numerous wood box inserts forming openings for service pipes.



Before putting the concrete into position all shuttering is cleaned, and for walls and beams, all dust, shavings and tie wire snippings such as may be seen in the photograph of the column base on page 514, are blown out by compressed air.

Once in place, the concrete has to be suitably compacted, and this is being done using "internal" type vibrators. These vibrators are generally considered to be more effective than surface vibrators or vibrators attached to the formwork. Nevertheless, they have to be used with care to prevent segregation in the formwork, and to avoid an uneven surface appearance. Construction joints are to be seen in the walls and are made as shown in the sketch. Before work is continued the surface of the old work is thoroughly brushed free of dust and loose particles, and watered down and grouted to bond the new concrete to the old.

Curing is done in warm weather by covering the concrete in floors with hessian-covered frames which are kept damp, and by hosing down the concrete in walls, and in cold weather, by steam—a process described in connection with cold weather concreting.

SHUTTERING

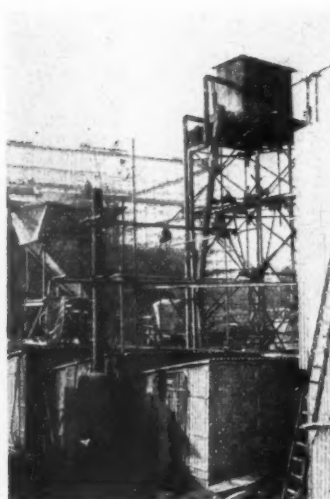
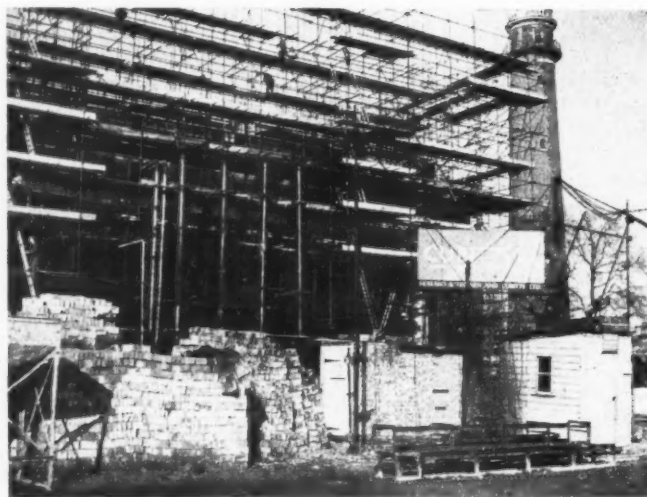
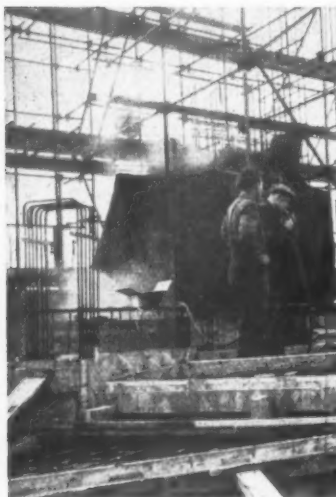
Some idea of the kind of shuttering which is to be seen on the job is given by the photographs. As is well known, timber is in some ways a more extravagant form of shuttering than steel. On the other hand, it is more flexible and convenient to handle. There is a good deal of timber shuttering on the job. Nevertheless, for the walls, and wherever else it is practicable to do so, steel shuttering is being used. All the shuttering is oiled to prevent the concrete adhering to it.

The problem of leaving holes for service pipes has already been referred to, and in forming some of these, wooden box forms are used.

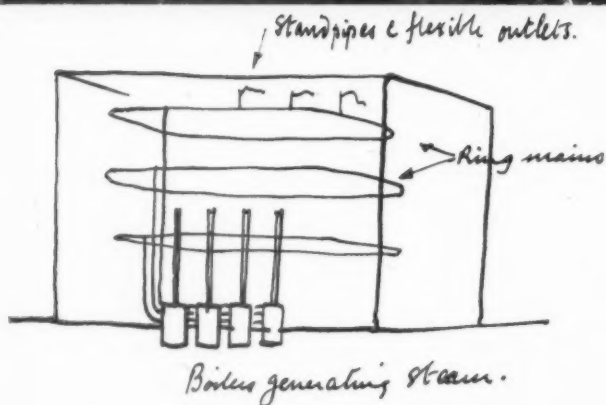
REINFORCEMENT

Again, the photographs serve to illustrate the complexity of the reinforcement. The supply and fixing of the reinforcement is, incidentally, sub-contracted to the Rom River Company. In places, notably in the columns, the rods are closely spaced so as to keep the members as small as reasonably possible. All the bars are examined and checked for size, damage and heavy rusting, before being fixed. Occasionally it is necessary to leave the rods exposed for a considerable time before concreting, and when this is likely to occur, they are given a brush coat of cement slurry to avoid the formation of loose rust which would affect the bond.

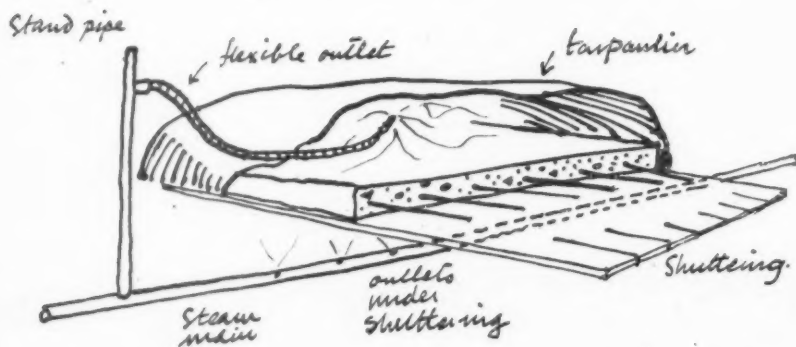
In certain major beams, where the bars are very long and of large



Above, extreme left, steam heating part of a column. A stand pipe and flexible tube have been taken from the ring main below the shuttering to the floor. Above left, the boiler flues and main pipes for steam heating. On extreme left, heating the aggregate by steam. Left, the plant for heating the mixing water.



Left, a sketch showing the steam heating layout for cold weather concreting. Below, warming a concrete slab with steam.



diameter, they are being butt welded in order to save tonnage of steel due to lapping, and also to save bulk. Welding is one of the technical processes which has been fairly widely used on the Continent but which, until recently, has been utilized in this country relatively little, except in the form of a welded fabric. It was, however, used and found reliable in the construction of the nearby Waterloo Bridge. The bar ends are cut to a V and welded by the electric arc method.

INSPECTION AND TESTING

To describe in detail the inspection and testing which is necessary in connection with the concrete, shuttering, reinforcement and general standard of workmanship would be outside our scope: but since we feel that it is of interest to have some idea of the measure of control which is considered necessary, we have listed on page 513 a number of the tests which form a routine on the site at the moment.

COLD WEATHER CONCRETING

It is normal practice in this country to stop concreting when the temperature reaches about 38° F. on a fall-

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ing thermometer, but this is not necessary if certain precautions are taken. The extent of the precautions—and the cost which they incur—will vary according to the size of the job, and the amount of concreting which it is anticipated will be done during the cold weather. In relatively mild weather it may even be sufficient merely to cover up the concrete at night, especially if rapid hardening cement is used.

Rapid hardening cement has a higher heat of hydration when setting than normal Portland cement, and in this way helps to maintain the newly placed concrete at a temperature which will allow the setting process to take place. Calcium chloride up to 2 per cent., by weight, of the cement, can be added to increase even further the heat evaluation of the cement, but reliance cannot be placed solely on this addition when temperatures fall below freezing point.

On a job such as the Concert Hall, more extensive precautions are neces-

sary, and in addition to using rapid hardening cement as a matter of routine, the temperature of the concrete leaving the mixer is raised to not less than 50° F., and maintained during transport and placing and subsequently for 2 to 3 days, to ensure proper curing. No admixtures whatever are permitted on this job.

The water for mixing is heated to about 130° F. by the plant shown [see top of page 516], and the aggregate is warmed by live steam injected through perforated pipes buried into it.

The whole of the mixing plant is screened from the wind, and after mixing, concrete is transported through the pipe line which is lagged with sacking and a bituminous felt wrapping.

The more difficult problem is to know how to keep the concrete warm when it is once in place. If one is concreting in an enclosed space, the problem is relatively easy, but when large areas of open flooring and free standing walls have to be protected,

the matter is more difficult.

In order to retain any form of heat which is applied, some form of enclosure has to be provided as, for instance, by means of tarpaulins. The kind of heat provided is important, because excessive drying may adversely affect the concrete, and for this reason the "live steam" system adopted at the Concert Hall, which was one of a number of schemes submitted by the contractors, is more suitable than heating pipes and radiators because it provides a moist heat which helps curing. It is also a reasonably flexible system, and more convenient than individual braziers. A "grain blower" was tried but it was found too difficult to retain the heat on the rather complicated shapes involved.

Tests are made with the steam system which is in use, after $\frac{1}{2}$, 1, 3, 24, and 48 hours, and so far it has been found possible to adhere to normal striking times.

Welding some of the reinforcing bars of large diameter.





NFBTE

Building productivity team: public meeting

The first of a series of meetings to be arranged by the organizations which sponsored the visit of the Building Industry Team to the United States last summer, under the auspices of the Anglo-American Council on Productivity, will take place on Friday, June 9, at 7 p.m., at the Kingsway Hall, London. Invitations have been issued to the American Ambassador, Lewis Douglas, and to the Minister of Works, R. R. Stokes. Speakers from the team will include Robert O. Lloyd, president of the NFBTE, who was the team's leader last summer.

By the time this meeting is held, the team's report will have been published. It is anticipated that this will be available during the first ten days of May.

JERSEY

Art School Competition Results

The winners of the competition for an art school (proposed to be erected in the Victoria College Grounds, Jersey, Channel Islands), which was organized by the Association of Old Victorians, are as follows:—

(1) Margaret M. Brodie, B.S.C.A.R.C.H., A.R.I.B.A., 141, West George Street, Glasgow; (2) R. B. Thomson, M.A., A.R.I.B.A., 76A, Moorburn Road, Largs, Ayrshire; (3) Elizabeth and Henry Speakman, St. Peter Port, Guernsey; commended, John Breakwell, Lamotte Street, Jersey.

The assessor was A. E. O. Geens. Premiums were £75, £50 and £25.

RIBA

New President Nominated

Andrew Graham Henderson, senior partner of John Keppie and Henderson and J. L. Gleave, of Glasgow, is the first architect practising in Scotland to be nominated by the RIBA Council as president, although several past presidents have had connections with Scotland. Mr. Henderson, whose photograph appears on page 505, was born in Auckland, New Zealand, and came to Britain in his early youth. He was educated at Irvine Royal Academy and Allan Glen's

School, Glasgow, and served his apprenticeship with Macwhannell and Rogerson, Glasgow architects. After studying at the Royal Technical College and Glasgow School of Art, he passed the professional examination and was elected an associate of the RIBA in 1910. He was awarded the Arthur Cates prize during the following year.

In 1931, he became a fellow of the RIBA. From 1933 to 1934 he was president of the Glasgow Institute of Architects and in 1946 he became president of the Royal Incorporation of Architects for one year. He served in both world wars. From 1939 to 1945 he was Quartering Commandant, West Scotland District.

At the moment Mr. Henderson, who is an associate member of the Royal Scottish Academy, a member of the Royal Fine Art Commission for Scotland and a member of the Ancient Monuments Board for Scotland, is a vice-president of the RIBA and a chairman of the Allied Societies Conference.

The firm, of which he is senior partner, was originated by John Honeyman over one hundred years ago; earlier partners were John Keppie and Charles Rennie Mackintosh.

Work undertaken by the firm of John Keppie and Henderson includes premises for Progress Co-operative Society Ltd., Wallace

London's New Office Blocks

During recent months many enormous blocks of offices have been rising in London—for example, in Theobald's Road, Shaftesbury Avenue, New Oxford Street, and Kensington High Street. Such towering masses of brickwork are scarcely to be ignored, but they have not so far been the subject of much expert criticism. The current issue of the "Architects' Journal" contains a highly critical examination by one of the editors, Mr. J. M. Richards, not only of these buildings but of the scheme under which they are erected, the "lessor scheme."

They are built by private enterprise under the sponsorship of the Ministry of Works, which then leases them for use by Government departments. Thus office accommodation is obtained by the Ministry "without having to invest public money or undertake building construction." The Ministry takes no responsibility—"and seems to take no interest," says Mr. Richards, in the standard of design exhibited in the buildings put up under the scheme. The general level of architecture Mr. Richards describes as undistinguished and in some cases worse than undistinguished—"a return to the taste associated with the kind of pre-war commercial enterprises we thought we had left behind for ever."

No Planning Pattern

The two blocks most severely criticised are those in New Oxford Street and at Shepherd's Bush "with their pretentious display of period architectural trimming." There is complaint, too, about the "lessor scheme," in which the sites selected follow no planning pattern except the accidents of war damage or the chance existence of pre-war clearances. The two blocks in Theobalds Road, for instance, ruin the outlook of the Holborn Borough Council flats near by.

If a Government department, in sponsoring a vast building scheme, Mr. Richards asks, cannot ensure that it represents a contribution to better architecture in London, who can?

The above cutting which refers to the criticism of the Lessor Scheme by J. M. Richards, published in the JOURNAL on March 30, was taken from the Manchester Guardian.

Street, Glasgow (1921); an extension of business premises for Pettigrew & Stephens Ltd. (1922); a demonstration school at Jordanhill, Glasgow (1922); shop premises for Watt Brothers, Glasgow (1931); premises for the Bank of Scotland (1935); an elementary school, Cloverhill, Knightswood, Glasgow (1939); a primary school, Whitby (1949, Keppie, Henderson and G. L. Gleave).

FOB

Travelling exhibition ship

The 16,000-ton aircraft carrier, HMS *Campania*, now in reserve at Gareloch, Scotland, is to be temporarily converted to a Festival of Britain travelling exhibition ship.

The work of conversion by Messrs. Cammell Laird, of Birkenhead, will be undertaken during the summer of 1950, and by the autumn the ship will be ready for the installation on board of displays based on those which will be seen at the 1951 Exhibition, Thames Bank, London. The conversion has been planned by the Director of Naval Construction, Sir Charles Lillicrap, in conjunction with the Festival Co-ordinating Designer, James Holland, F.S.I.A., who has also arranged for the Exhibition display design, etc. Architect members of the staff working under Mr. Holland are L. Wills, E. Pollak, V. Prus, and W. Kay; designers are C. Hasler, P. Sharland, R. Negus, and Miss P. Behr. The Festival's Shipbuilding Advisory Panel (Chairman, R. Gebbie) has also examined and advised on the conversion.

DIARY

The Public-house of Tomorrow. Exhibition at Victoria and Albert Museum, Kensington, W.1 (Sponsor, The Architectural Press.) Daily, 10 a.m. to 6 p.m.

UNTIL APR. 29

Exhibition of Danish Architecture. At Royal Scottish Museum, Edinburgh. (Sponsor, RIBA.)

UNTIL MAY 7

RIBA's Annual Reception. 66, Portland Place, W.1. 8 p.m. (Also Exhibition of Unidentified Drawings. Daily, 10 a.m. to 7 p.m. Saturdays, 10 a.m. to 5 p.m.)

UNTIL WHITSUN

Settlement and Subsidence of Buildings. D. H. Lee. At RICS, 12, Great George Street, S.W.1. 5.30 p.m.

MAY 1

Annual General Meeting. RIBA, 66, Portland Place, W.1. 6 p.m.

MAY 2

Picasso. (Series of lectures, admission free.) Professor A. F. Blunt. At Courtauld Institute of Art, 20, Portman Square, W.1. 5.30 p.m.

MAY 2, 9, 16 AND 23

The Revival of Lettering. (Inaugural Percy Smith Memorial Lecture). M. C. Oliver. At RSA, John Adam Street, W.C.2. 2.30 p.m.

MAY 3

Percy Smith Memorial Exhibition. RSA, John Adam Street, W.C.2. Daily, 10 a.m. to 5.30 p.m. Saturdays, 10 a.m. to 12.30 p.m. [Opening May 3 after lecture noted above.]

MAY 3-26

Annual General Meeting. Roads Beautifying Association. Speaker, Hugh Casson. In Lecture Room, New Hall, Royal Horticultural Society, S.W.1. 3.45 p.m.

MAY 3

Annual General Meeting. IRA. At Waldorf Hotel, Aldwych, W.C.2. 6.30 p.m.

MAY 5

WELFARE CENTRE

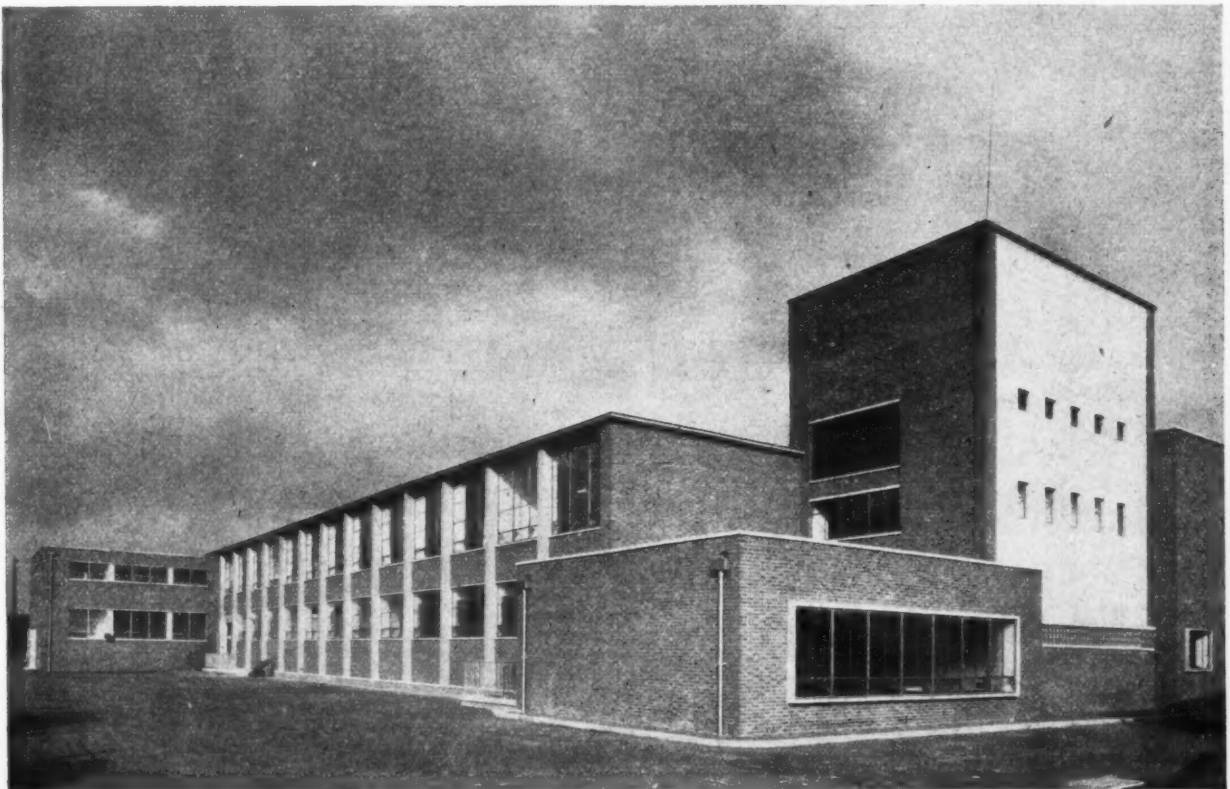
at BECKTON, EAST HAM

designed by BRIAN COLQUHOUN and PARTNERS

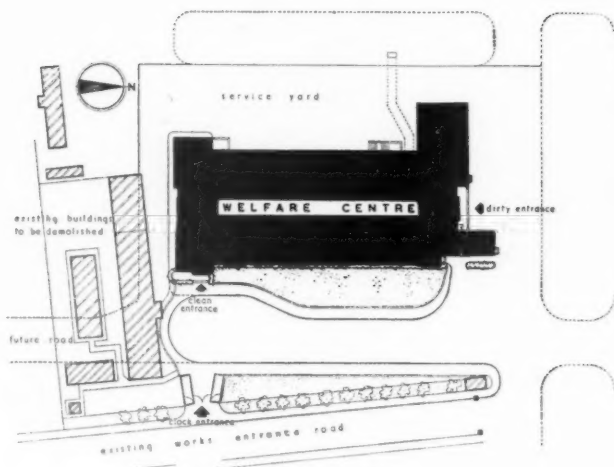
chief architect ARTHUR H. SHEARING

The new welfare centre at Beckton for the North Thames Gas Board is the first building of its kind to be provided for gas workers in this country. The building forms the first part of the reconstruction of the Tar and Ammonia Products Works, which manufactures first and second stage products from the liquor by-product of gas production, including such commodities as naphthalene, sulphate of ammonia, benzole, pitch and sulphuric acid. The welfare centre lies on an open site between the works entrance and the area in which the various processes are carried out.

The south and west façades.



PLAN.—The building has been designed to provide changing, bathing and general welfare accommodation for some 600 men and also full canteen facilities for 1,000 workers. Clean and dirty locker rooms bath-houses, brush up room and laundry for male and female workers, foremen and staff are provided on the ground floor. The arrangement is that on arrival at the works the men pass through a clocking station and thence into the building and remove their outdoor clothing in the clean locker room, hanging the various articles in heated and ventilated lockers. The men pass through the bath-house and toilet accommodation to enter the dirty locker room, where their working clothes are stored. They put on these clothes and leave the building on the north side for the working areas.

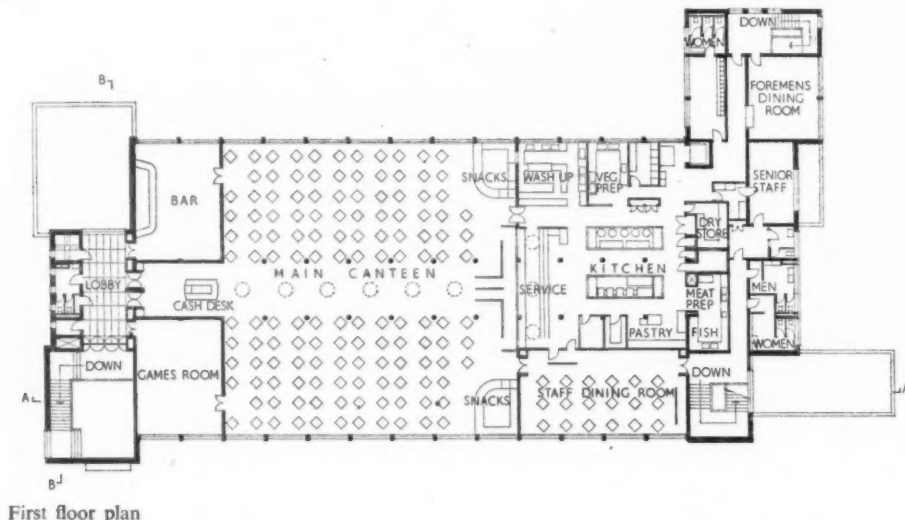


Site plan

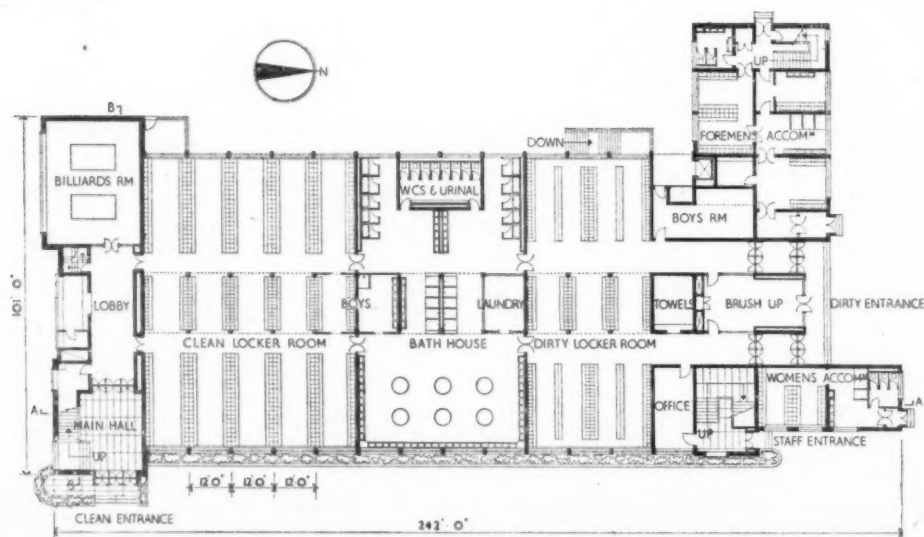
WELFARE CENTRE

at BECKTON, EAST HAM

designed by BRIAN COLQUHOUN and PARTNERS
chief architect ARTHUR H. SHEARING



First floor plan

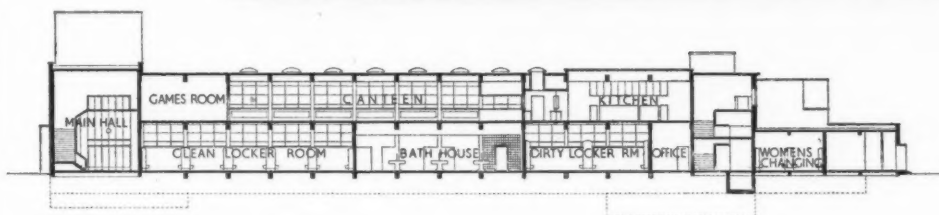


Ground floor plan

[Scale : $\frac{1}{8}$ " = 1' 0"]



The east façade with the main entrance on the left.



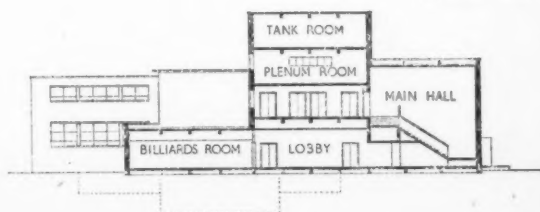
Section A-A [Scale: $\frac{1}{4}$ " = 1'0"]

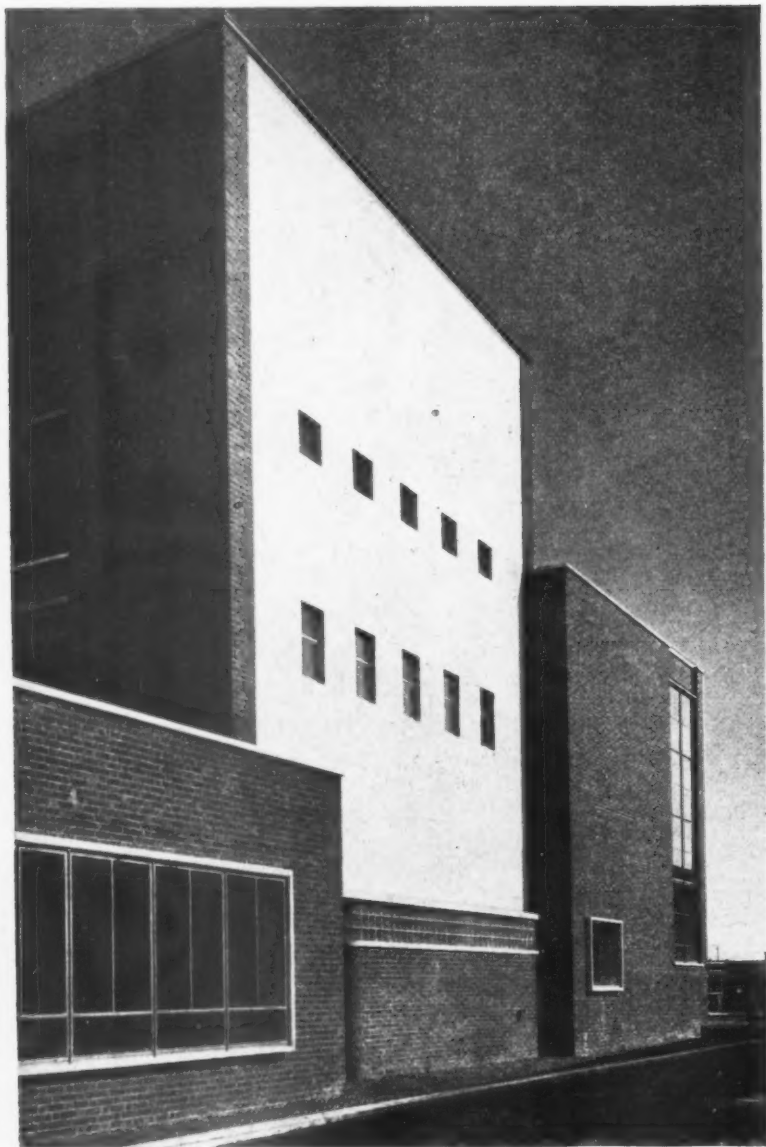
This circulation is reversed at midday and at the completion of the day's work. The men re-enter the dirty entrance and those who have become exceptionally dirty passing through the brush up room, where they can clean their boots and remove heavily contaminated articles of clothing. The men then pass through the bath-house where there is provision for bathing, washing and taking showers, according to the work on which they have been engaged, after which they again put on their everyday clothes. The men then proceed directly to the canteen on the first floor, where they may obtain a full hot meal or tea and snacks.

CONSTRUCTION.—Due to the nature of the ground, which consists of acid impregnated slag to

depths up to 30 ft., it was found necessary to use 178 reinforced piles of aluminous cement, 25 to 30 ft. in length and an average of 12 in. square. The ground beams are encased in engineering bricks joined with aluminous cement. The entire area of the block is covered with a 2-in. layer of aluminous cement and there is a 6-in. reinforced concrete floor.

Section B-B





WELFARE CENTRE

at BECKTON, EAST HAM
designed by BRIAN COLQUHOUN and PARTNERS
chief architect ARTHUR H. SHEARING

Above, the south front showing the billiards room in the foreground and the tank and plenum tower, which is faced with reconstructed stone. Right, part of the bath-house showing bath cubicles and wash troughs.

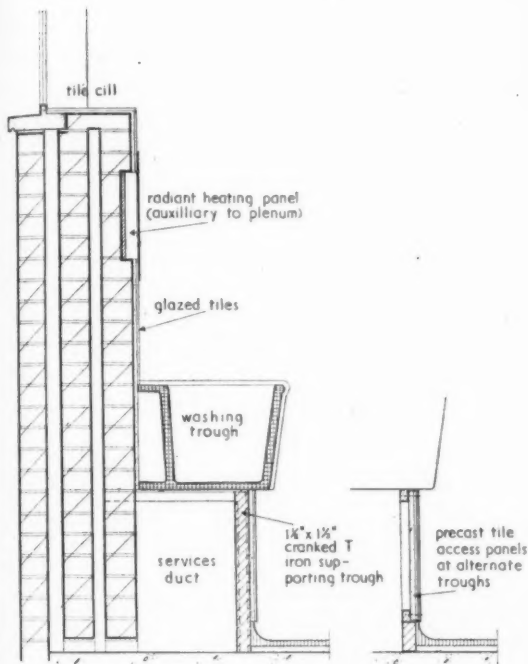


The reinforced concrete frame has a cladding of brick cavity walls. The first floor and the roof are of hollow tile construction with reinforced concrete ribs.

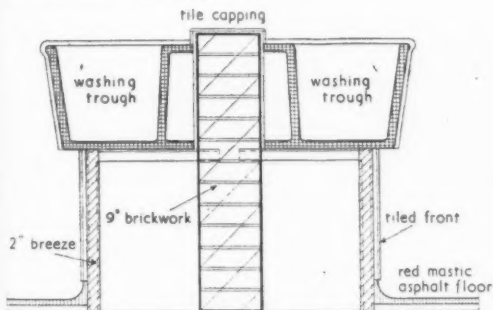
FINISHES.—Bearing in mind the excessively dirty nature of the conditions at Beckton and the heavily corrosive atmosphere, precautions have been taken to use materials which will not readily deteriorate. The external skin is of hand-made, sand-faced bricks and it has been found from previous use that they successfully resist this atmosphere. Except for steel reinforcements, this material has been almost entirely excluded from finishes and fittings other than the use of stainless steel. Aluminium alloy has been used extensively for window casements, doors and frames, roller shutters and grilles, door furniture and internal screens. Glazed tiles, terrazzo dados and other impervious materials have been used for lining the walls up to at least shoulder height because of the dirty condition of those using the building. Coloured asphalt flooring has been used in the bath-house and locker room, where the workers proceed from room to room in bare feet. The canteen floor has hardwood strip flooring to withstand heavy wear and to be suitable when the canteen is used for social functions, dancing, etc. The kitchen has a Dorset red tiled floor and the staircases are of terrazzo paving. The canteen ceiling on either side of the centre aisle is of acoustic tiles, spray-painted peach and the snack bar ceilings are of vermiculite plaster. The circular columns and the fronts of the bar counters are faced with turquoise eggshell tiles and the crush rails and chair frames are Devon red.

SERVICES.—An underground duct runs the whole length of the building to serve the clean and dirty

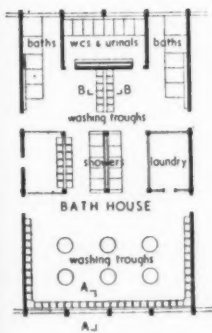




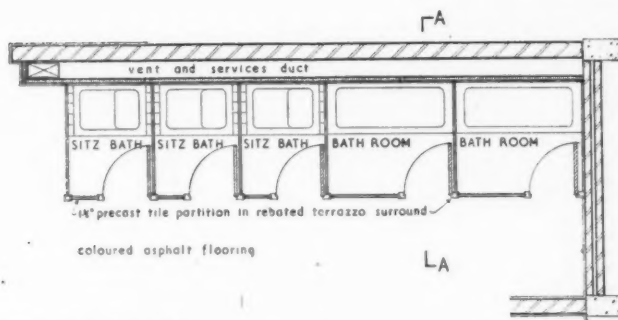
Section A-A [Scale: 1/8"=1'0"]



Section B-B

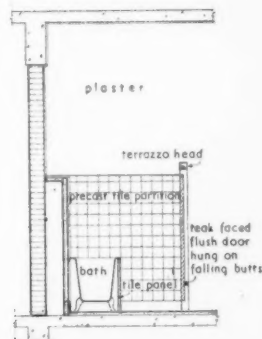


Key plan of bath-house [Scale: 1/16"=1'0"]



Plan of bath cubicles [Scale: 1/8"=1'0"]

Section A-A



Below, the bath-house showing showers and circular washing troughs, which are foot operated. Bottom, the dirty locker room showing the peacock blue stove-enamelled lockers which have plenum intake and extract ventilation.



lockers, the clean lockers being plenum ventilated and the dirty lockers having plenum heating and separate extract incorporated in the design. It has been possible in this way to avoid unsightly ducting in the locker rooms. The calorifier system in the basement converts low pressure steam from the works for the plenum ventilation and heating of the building. Controlled temperatures are provided in the various rooms and a constant high temperature

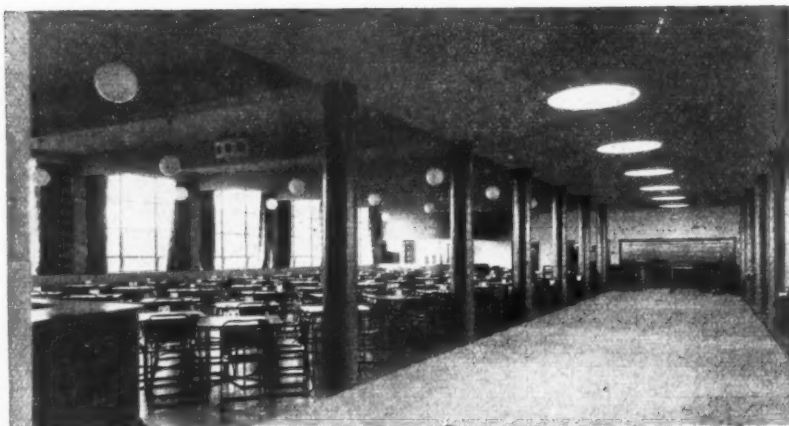


is maintained in the bath-house, where the plenum system is assisted by panel heating and also in the canteen. Warm air is also fed directly into the lockers to dry wet clothes. There is internal telephone communication and a loud speaker system for music and public address in the canteen. An electric fire alarm system with warning bells is installed throughout and emergency gas lighting has been provided. The kitchen layout was planned in conjunction with Mrs. M. L. G. Crouch and A. F. Williams of the North Thames Gas Board. The general contractors were Taylor Woodrow Construction, Ltd. For list of sub-contractors see page 532.

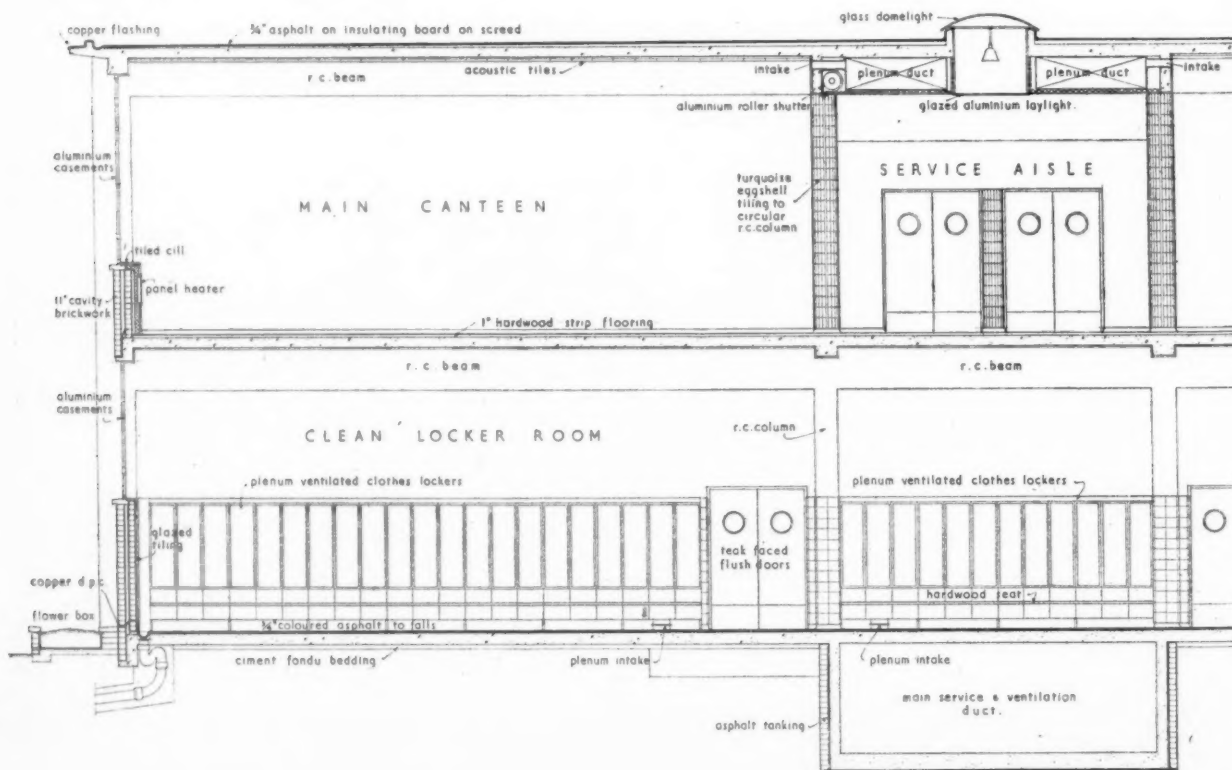
WELFARE CENTRE

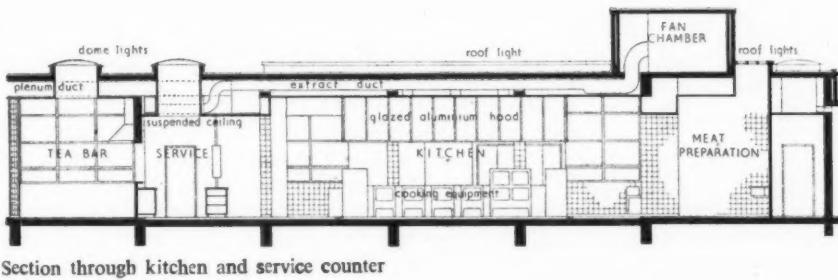
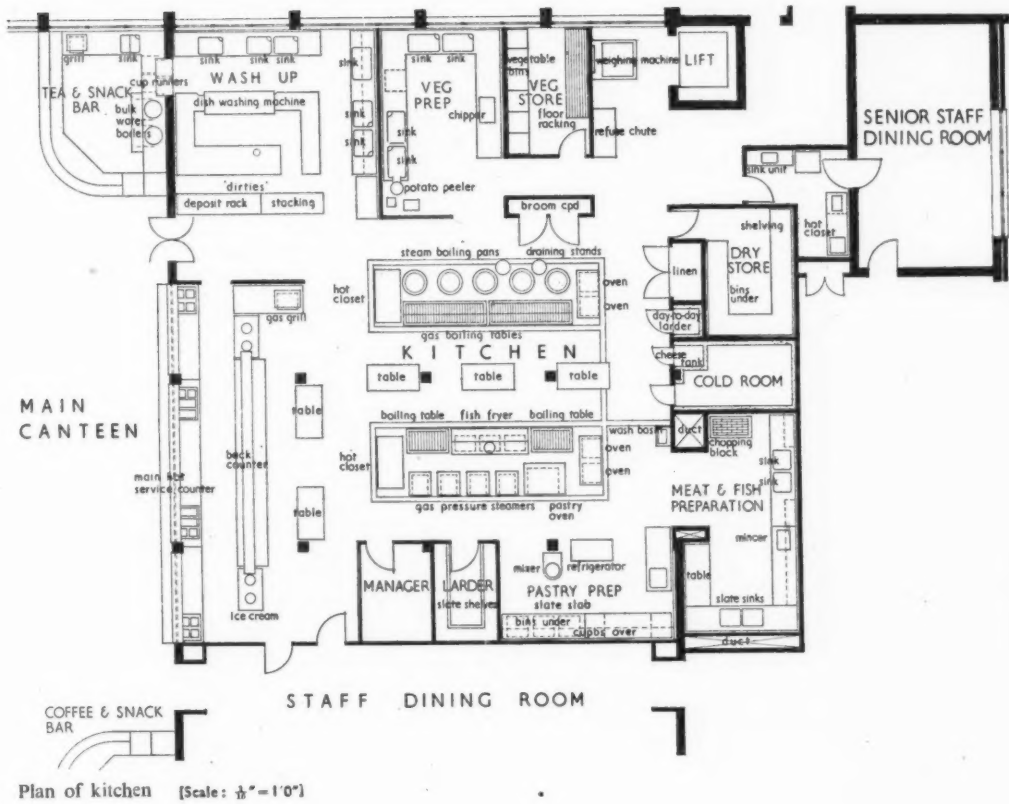
at BECKTON, EAST HAM
designed by BRIAN COLQUHOUN and PARTNERS
chief architect ARTHUR H. SHEARING

Above, a snack bar in the main canteen. The light alloy lettering is on a mushroom coloured background and the bar counter is faced with turquoise blue tiles. Right, the major canteen service aisle. The dropped ceiling conceals a plenum duct and roller shutters enable half the canteen to be cut off when required.



Section through canteen and locker room [Scale: 1"=1'0"]

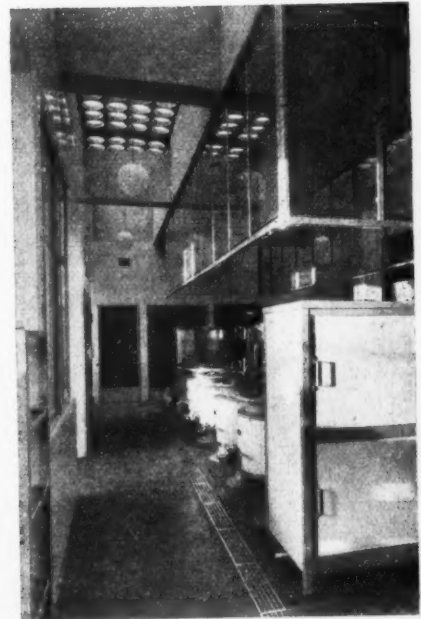


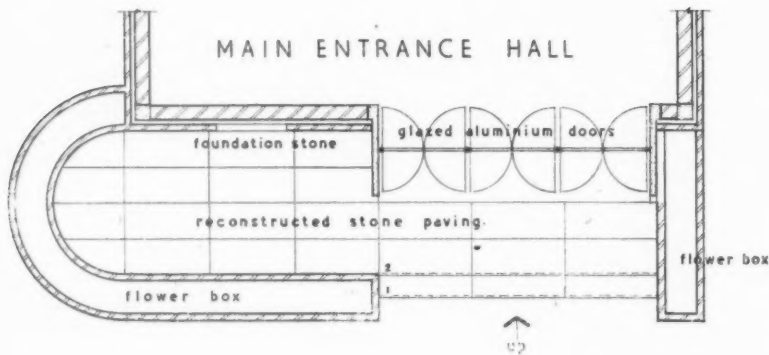


Below, part of the kitchen showing the glazed aluminium hood over the cooking equipment.



Right, the canteen back counter fitting, which has a top of stainless steel, glass shelves and a mirrored reeded glass back.



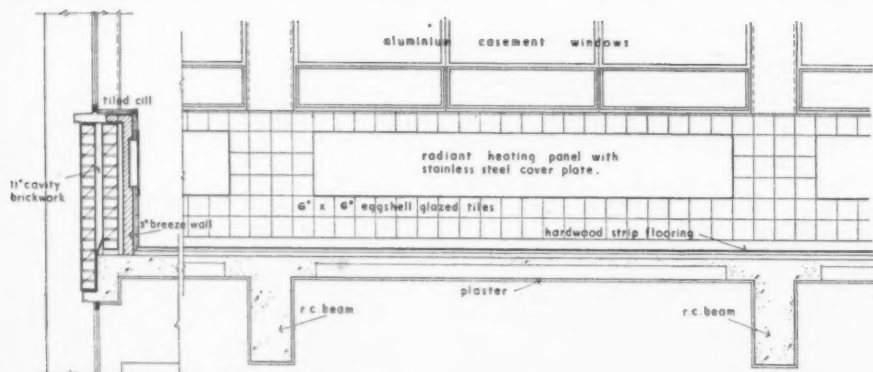
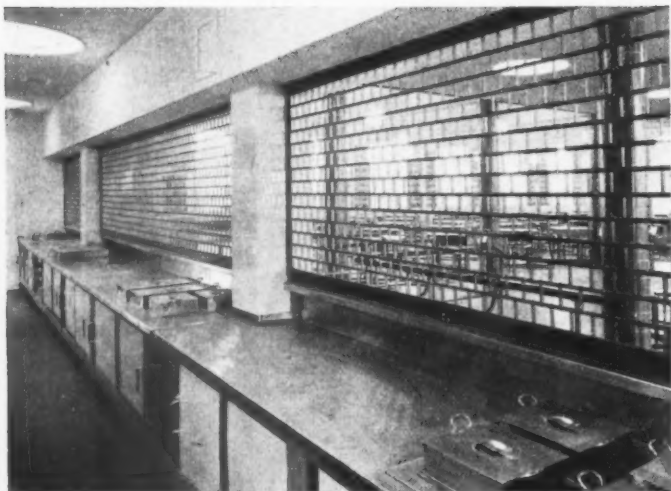


Plan of flower box [Scale: $\frac{1}{2}$ "=1'0"]

Below, one of the carafe fillers attached to a circular column in the canteen. These fittings were specially designed by the architect. Below left, the flower box beside the main entrance doors. Bottom, left, the roller grilles to the main canteen service counter. There are bain maries in the foreground.

WELFARE CENTRE

at BECKTON, EAST HAM
designed by BRIAN COLQUHOUN and PARTNERS
chief architect: ARTHUR H. SHEARING

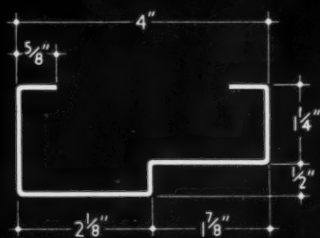


Section and elevation of radiant heating panel [Scale: $\frac{1}{2}$ "=1'0"]

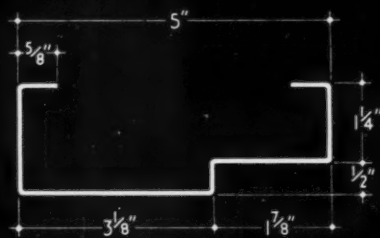


PRODUCTS | METAL TRIM**26.J20**

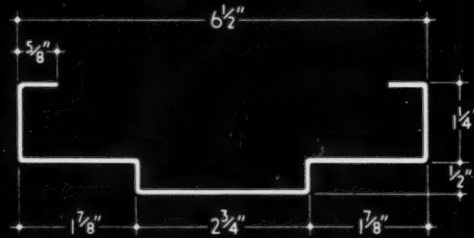
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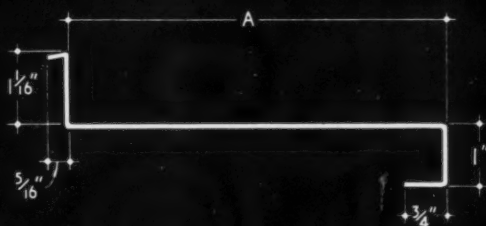
profile A: internal or external



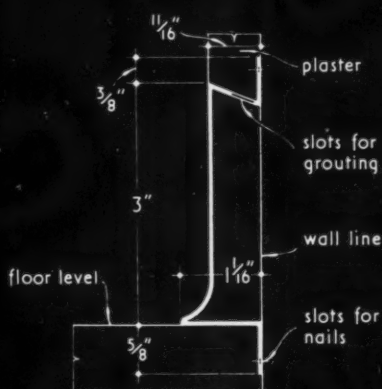
profile B: internal



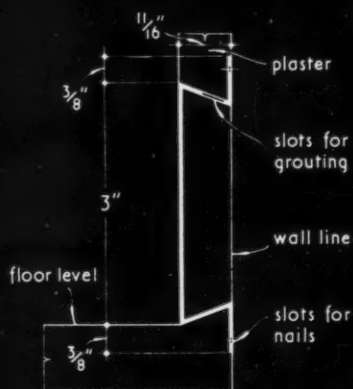
profile C: internal

DOOR FRAMES.

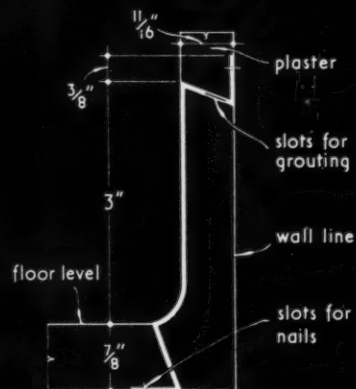
type	1	2	3	4	5
size A	8 9/16"	7 1/16"	6 5/16"	5 7/16"	4 11/16"

WINDOW BOARDS.

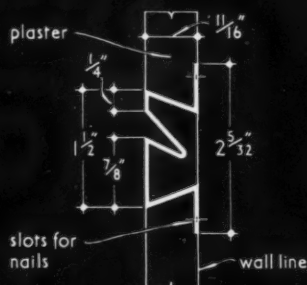
SKIRTING TYPE A1.



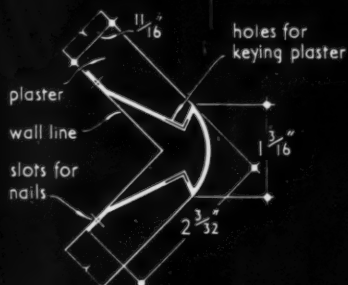
SKIRTING TYPE A2.



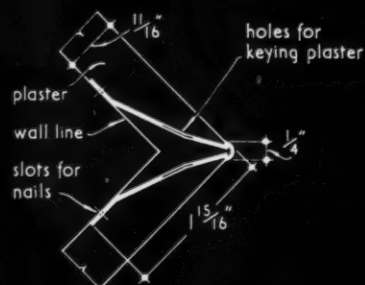
SKIRTING TYPE A3.



PICTURE RAILS.



ANGLE BEAD TYPE A.



ANGLE BEAD TYPE B.

STEEL DOOR FRAMES, SKIRTINGS, PICTURE RAILS AND ANGLE BEADS.

Manufacturer: Joseph Sankey and Sons Limited.

26.J20 STEEL DOOR FRAMES, WINDOW BOARDS, SKIRTINGS, PICTURE RAILS AND ANGLE BEADS

This Sheet describes a range of metal trim sections which are supplied in the form of door frames, window boards, skirtings, picture rails and angle beads.

Door Frames

Material and construction: The frames are constructed from 16 gauge commercial quality mild steel sheet. They are supplied with corners mitred and welded and complete with adjustable building-in lugs, hinges and rubber buffers. Brass striking plates, to customer's sample, can be fitted.

Fanlights: Jambs can be extended to any given height and a transom fitted to take opening fanlight or fixed glazing panel. Steel fanlight frames can be included where required or glazing beads provided.

Swing doors: Frames suitable for double swing and single swing doors are also available, provision being made for housing self-closing hinges or floor spring plates and top-centres.

Special fittings: Frames can be prepared for rising butts, rim locks, cupboard catches, bolts, electric switches, etc., as required.

Window Boards

Material: Window boards are constructed from 16 gauge commercial quality mild steel sheet.

Sizes: The board sections can be supplied to suit standard metal casements or timber sash frames.

Applications to standard metal windows: The five profiles are for use when the windows are in the following positions:

Type 1, set back $2\frac{1}{4}$ in. in 11 in. cavity walls with external sills or with subframes.

Type 2, set back $3\frac{1}{4}$ in. in 11 in. cavity walls, with external sills.

Type 3, set back $2\frac{1}{4}$ in. in 9 in. solid walls fair face or rendered brickwork with external sills or with subframes.

Type 4, for use with standard cavity wall subframes.

Type 5, set back $3\frac{1}{4}$ in. in 9 in. solid walls fair face or rendered brickwork with subframes.

Skirtings and Corner Pieces

Material: Skirtings and corner pieces are constructed from 20 gauge commercial quality mild steel sheet.

Joints: At corners the skirting section can be mitred or used with flush or overlapping corner pieces.

Sizes: The skirting sections are supplied in 10 ft. lengths for cutting on site or cut accurately to finished lengths as required.

Picture Rails

Material: The picture rail shown is constructed from 24 gauge commercial quality mild steel sheet.

Joints: No corner pieces or junction plates are necessary, the rails being mitred or butted together to form a flush joint.

Angle Beads

Material: Type A—24 gauge commercial quality mild steel sheet. Type B—26 gauge commercial quality mild steel sheet.

Sizes: The angle bead sections are supplied in lengths of 8 ft. or 9 ft.

Finish

The door frames, window boards, skirtings, picture rails, and angle beads are supplied phosphate treated and primed one coat of red oxide.

Relevant British Standards

Door frames: These conform to B.S. 1245 : 1945, *Metal door frames*.

Window boards: These conform to B.S. 1422 : 1948 *Metal window subframes, sills and window boards*.

Skirtings, picture rails and angle beads: These conform to B.S. 1246 : 1945 *Metal skirtings, picture rails and angle beads*.

Compiled from information supplied by:

Joseph Sankey & Sons Limited.

Address: Hadley Castle Works, Wellington, Shropshire.

Telephone: Wellington 500.

Telegrams: Sankey, Wellington, Shropshire.

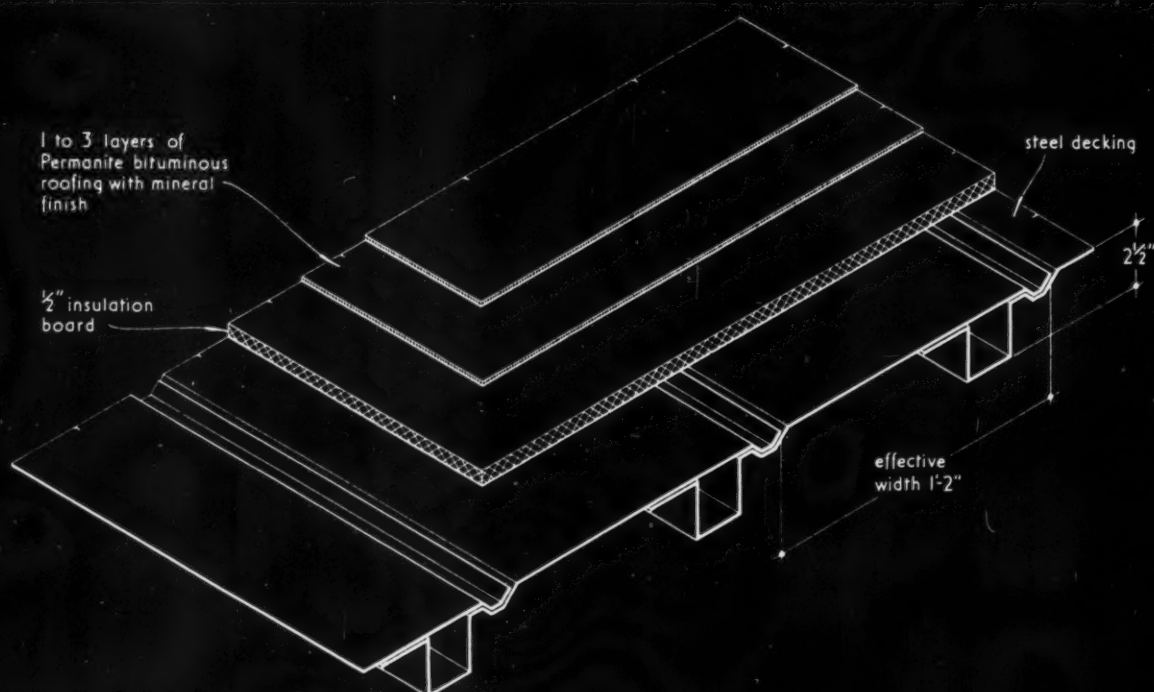


ROOFS | COMPOSITE

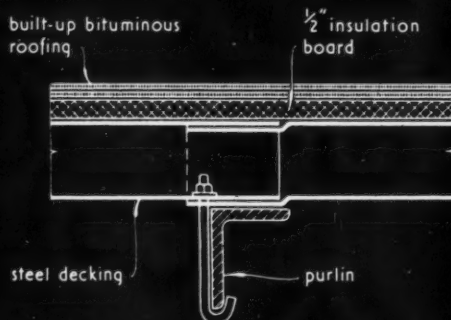
20.Z2

20.Z2

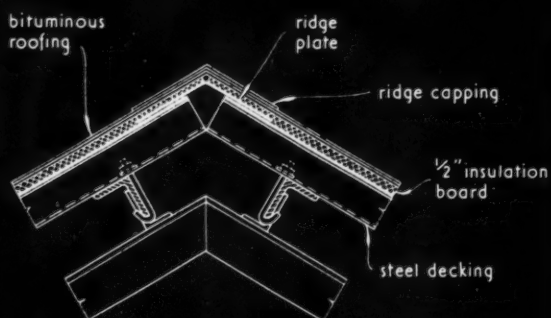
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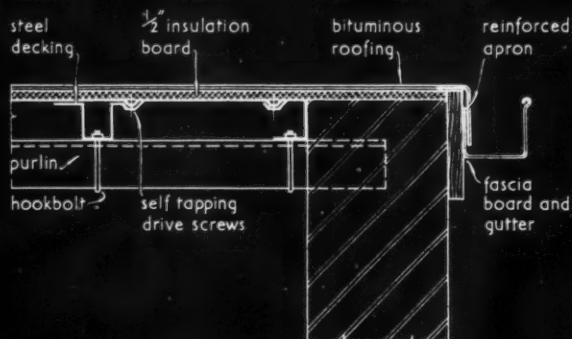
ISOMETRIC VIEW OF COMPLETE ROOF.



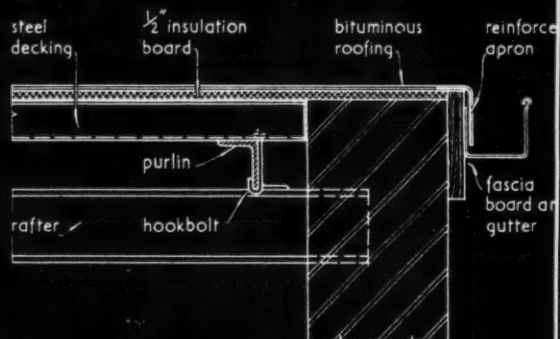
FIXING TO PURLIN.



PITCHED ROOF: RIDGE.



FLAT ROOF: VERGE.



FLAT ROOF: EAVES.

20.22 PERMADEK INSULATED STEEL ROOF DECKING

This Sheet describes a composite roof built up from pre-formed steel sheets, insulation board and bituminous roofing. The design is adaptable to flat, pitched, curved and vertical constructions. The decking is secured to the structural steelwork, or other supporting members, forming a virtually continuous flat surface for the application of various finishes. In the case of roofing and exterior walls, the decking is covered with insulation board and one or more layers of Permanite bituminous roofing which may have coloured mineral or white spar finish. For interior partitions, various finishes may be utilised, e.g., factory partitions—paint or distemper, office partitions—painted plaster board or similar.

Steel Deck Units

The steel deck consists of units having an effective covering width of 1 ft. 2 in.; the thickness of the units is governed by the length which, in turn, is determined by the span of the supporting members. The table shows recommended gauges for various spans and also gives the weight of the steel decking.

Span.	Thickness (s.w.g.).	Weight in lb. per yd. super of steel decking.
Up to 6 ft.	22	17
6 ft. to 8 ft.	20	22
8 ft. to 10 ft.	18	30

Fixing

The steel decking is fixed to the purlins, or other supports, in one of several ways depending upon the nature of the structure. Holes are first drilled or punched in the base of the deep channel section of the decking members at a pitch to suit the supporting structure. On timber supports the decking is screwed down with ordinary wood screws. In the case of angle or channel supports standard hook bolts are used to secure the decking.

Joints: One end of each unit is joggled to provide an overlap and the sides of the unit are interlocked by means of two longitudinal semi-circular depressions at the base of which are punched holes for self tapping screws.

Pitched Roofs

Ridge: The ridge of the roof is completed by the application of a pre-formed steel sheet ridge member which is held down by means of self tapping screws driven into the holes punched into the top end of the upper lines of decking members. The ridge is finally completed by means of roofing felt laid longitudinally along the ridge over the insulation board and secured by means of a mopping of hot bitumen.

Eaves: The lower edge of the roof, which overlaps the gutter, has a pre-formed apron which seals the open end of the channels in the decking, this being finally finished with roofing felt.

Flat Roofs

Verge: The verge of the roof deck is finished by the insertion of a separate pressed steel channel section, the depth of which is equal to the depth of the deep channel of the decking member. This effectively seals the end of the roof and provides support for the last line of decking members. The roofing felt is carried over the end for weatherproofing.

Eaves: The finish here is as shown in the lower right-hand drawing.

Thermal Insulation

The thermal transmittance (U) value for the complete roof without ceiling below is approximately 0.35 B.th.u./sq. ft./hr./°F. This insulation value is approximately equal to that of a roof constructed of 2½ in. thick timber or 11 in. precast concrete.

Compiled from information supplied by:

Permanite Limited.

Address: 455, Old Ford Road, London, E.3.
Telephone: Advance 4477 (8 lines).

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Editor: Cotterell Butler, A.R.I.B.A.

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QUESTIONS AND ANSWERS • CURRENT TECHNIQUE
THE INDUSTRY • PRICES • TECHNICAL ARTICLES

TECHNICAL SECTION

THE OUTLOOK FOR BUILDING

By Ian Bowen

The Economic Survey for 1950* gives a picture of the future outlook for building activity which, though not entirely new, is in some respects rather disquieting. Ever since 1947 the policy of reducing capital expenditure has been followed. The Survey merely confirms the magnitude of the reduction, and gives precision to the detailed programmes for 1950. The forecasts are not, however, supported by any reasoned arguments to show what level of activity is to be regarded as the basis for the 1950's as a whole; nor is there any indication here or in other official statements of the degree to which long-term stability is still a recognized objective.

THE DECLINE IN EMPLOYMENT

The Survey shows that the total manpower of the building and contracting industry was 1,480,000 at the end of 1948, and that the same figure was forecast in last year's Survey for the end of 1949. In fact, by the end of 1949 the figure had fallen to 1,462,000. It is forecast at 1,420,000 for the end of 1950. Thus, the industry is to decline from its post-war peak, in accordance with the policy of cutting capital expenditure.

At the same time, total unemployment (in all industries) is forecast as likely to rise by some 50,000; how much of this increase is likely to consist of building and contracting labour has not been stated, but the proportion of such labour in any increased unemployment may well be quite high.

The decline in construction activity will occur in the main in transport and communications and in housing. House building as a whole is to be £41 millions (about 8 per cent.) less in 1950 than in 1948; expenditure on the roads will be rather higher in 1950 than in 1948, but slightly less than in 1949, the figures being:—

	1948	1949	1950
	£ million.		
Improvement of trunk roads	1.4	1.8	2.3
Improvement of classified roads	3.2	4.0	3.7
Maintenance of all roads	38.0	44.9	42.5
	42.6	50.7	48.5

Apart from housing, most of the main building programmes such as education, the services building programme for defence and the BEA's programme for electricity power stations are to show increases in 1950. The principal items are shown in the following table.

	1948	1949	1950
	£ million.		
Housing:			
England and Wales	440	425	405
Scotland	52	50	46
Government Building:			
Defence	20	28	33
Other	13	11	13
Education:			
England and Wales	25	37	49
Scotland	4	4	5
Health Services, etc.:			
England and Wales	33	38	39
Scotland	5	6	6
Total of above items	592	599	596

Figures for building for industrial purposes are not given, but it appears that they were greater in 1949 than in 1948, and will be of about the same order (perhaps some £225 million for Great Britain) in 1950.

Education and defence are together, it will be noted, largely offsetting the cut in the housing programme. The general cut in building employment can, therefore, only be achieved if licensing of maintenance works of all kinds is strictly enforced, as this is the only administrative means of "steering" privately financed activity.

BUILDING CUTS

The decision that is now being carried out was first taken as long ago as 1947, and the policy pursued is only a continuation of the medicine as administered before. Of course, the level of building activity is still high, and likely to remain high; but the decline is, nevertheless, marked and may be difficult to reverse.

It is difficult to discuss the Government's precise reasons for maintaining the cut in housing expenditure; neither the Government nor the Opposition succeeded in throwing much light on the subject in the recent housing debate. The Opposition, it is to be feared, attacked on so broad and emotional a front that they did not force the Government's spokesman to make a reasoned case for its particular policy. So long as the Opposition fails to produce its own version of a capital programme there is little basis for an informative debate.

This is what the Minister of Health has said:—"Everybody knows very well that, in fact, the size of the housing programme is not decided by even the quantity of timber available, because if we had more timber we would still find ourselves up against labour difficulties in the housing field; but we are up against the disposal, in a prudent way, in the interests of the nation as a whole, of the total national resources of the country." The real question is whether or not the continued housing cut represents the most prudent use of the limited resources at our command.

Presumably, the unstated case for the cut rests on two grounds, strategic and political. Defence is expanding, and may expand further. No private citizen can really judge the extent to which prudence dictates a degree of preparation against military attack.

The political argument is that more of our resources must be fed into the "consumption" needs of the national economy. The national income is steadily increasing. Some of that increase (estimated at £200 million in 1950) is earmarked for the necessary expansion of the export industries' output; some for the slight concessions to the consumers of the nation as incentives to them to continue the long struggle to earn their living.

The economic problem is a problem of choice, and if we are to have rising consumption of food, clothing, entertainments and so forth, then the building cuts are necessary. If the level of consumption could be stabilized, or allowed to increase only slightly, then housing activity might be increased again.

POPULAR EXPENDITURE CHECKED

But consumption is not uniformly divided among all the different families of the population, and, of course, there is the further question as to whose consumption is to increase the most. The falling off in beer, cinema and railway passenger traffic receipts suggests that the gravest inflation of popular expenditure has already been checked, and it is known that there will be serious pressure to raise wages. If this pressure was to be resisted it might happen that increased consumption goods would be largely of the semi-luxury variety, contributing to the amenity of many homes, but not noticeably stimulating the production of goods.

Anyone who has recently visited the continent will know that there are plenty of goods to buy, at very high prices. At the same time, industrial tension is far worse than in this country; there are more cases of extremism and violence. It is doubtful whether any government could for long succeed in encouraging much increased luxury consumption here on a free market and free price basis, and without regard for social consequences.

By far the most successful item in the Conservative party's election campaign was its bid for reversing the cut in housing expenditure. It would diminish the problem of increased consumption if, for another few years, the belts of the nation were relaxed but not thrown away, and if, instead, capital investment was brought back up to its 1948 level and stabilized there. Admittedly, with Marshall aid coming to an end, and defence expenditure growing at a dangerous rate, the Government may at present wish to keep something to play with in reserve; but within the next year or two the demand for new housing is likely to prove politically irresistible. The slight depression in housing activity should not, on this calculation, last for more than two years; perhaps to the end of 1951. This country can surely afford to put up 200,000 houses a year, and suffer any consequences of reduced standards of living that go with such a decision. Some indeed would claim that a much higher figure is attainable. It will surely not be long before the present plan is reconsidered, and a determined effort to "solve" the housing problem within a measurable future is once more begun.

TARGET RESTORED

Since I began this article the Chancellor of the Exchequer has announced that the cut of autumn, 1949, in the programme of new houses to be completed each year will be restored, so that the target will now be 200,000 houses per annum. This decision, which may raise the value of housing work done by between £15 and £20 million, will probably earn general support; it is far more sensible to stabilize output at about the 1949 level than force a severe economy upon the housing sector of the building programme. The real danger to the building programme is that, with materials more plentiful and the licensing limits fairly high, small works will be started in such large numbers as to draw off too much of the available labour from the more essential undertakings. It is extremely likely that in most parts of the country it will be much harder to obtain licences for larger works in 1950 than in 1949, and not much alleviation in this position is to be expected for at least another twelve months.

* Cmd. 7915, March 1950.

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18.47 construction: theory OPERATING THEATRES

Explosions in Operating Rooms—there are Structural Solutions to the Problems. (Architectural Forum [USA] Feb., 1950.)

Review of latest views as given in new USA National Fire Protection Association Recommendation. Important because of recent changes in conditions and because safety depends on building precautions.

This two page survey of the latest American regulation is valuable in giving emphasis to the new and more dangerous conditions arising from new types of anesthetics. The article stresses the fact that operational caution alone is insufficient and that much depends upon the work of the architect. 1944 regulations are now out of date. The essential points are the need for a conductive floor—but not one which is highly conductive—the use of explosion proof electrical switches for all electrical work less than five feet above floor, and the correct design of equipment. The article discusses all these points and makes some suggestion for floor finishes though with reservations about their long term efficiency.

23.124 ventilation EXPERIMENTS IN NATURAL VENTILATION SYSTEMS

Experimental Studies in Natural Ventilation of Houses. J. B. Dick. (J. Institution of Heating and Ventilating Engineers, Vol. 17, No. 173, Dec., 1949.)

Paper describing experiments in natural ventilation of houses at Abbot's Langley.

Although this paper was primarily for the benefit of engineers and research workers, much of the practical results described are no less the concern of the architect, who cannot fail to be interested in such subjects as the fit of windows, the arrangement of ventilation flues, and like subjects. In this

summary much of the description of experimental methods and the calculations upon which the findings are based are omitted as being outside the sphere of interest of most architects; those who are interested will prefer to read them, complete and unabridged, in the Journal of the Institution of Heating and Ventilating Engineers.

The general scheme of the Abbot's Langley trials has already been described in the ARCHITECTS' JOURNAL for December 2, 1948. It will be remembered that there are twenty houses, with different heating systems. Four of the houses, with different ventilating systems, were chosen as the basis of this study in natural ventilation.

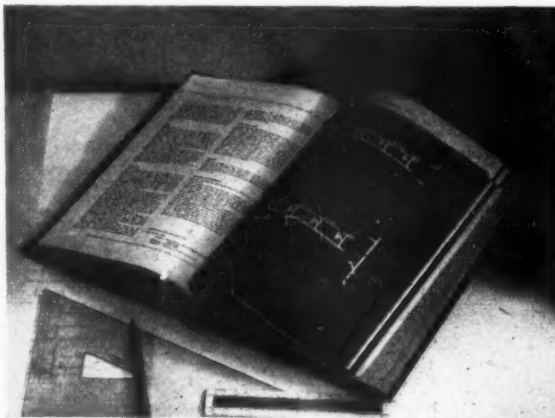
These ventilating systems were designed with reference to the heating systems; the basic principle underlying them was that for habitable rooms there should be provision both for entry of replacement air (tempered, if possible) and means of removing the vitiated air. The replacement air for a room without convection ducts, or ducts from outside, is obtained through a ventilator with louvred plates 12 in. by 3 in. above the door to the hall, which in turn has a similar ventilator beside the front door. The vitiated air may leave either through a flue, or in flueless rooms through a ceiling ventilator and duct to the roof space; the ducts from the bedrooms are 12 in. by 2½ in.; those from the living rooms are 12 in. by 4 in. The kitchen and bathroom are ventilated directly to the outside, the kitchen through two airbricks in the larder and a flue or duct to the roof space, the bathroom by an airbrick. Illustrating these, Table 1 shows the ventilating systems of "two-stage," "whole house" and "partial" houses. The roof spaces are ventilated by

allowing the soffit of the eaves to stand a little clear of the fascia; air entering here may leave through the vents in the asbestos cement flue cap. Metal flues from solid fuel appliances lead to circular holes in the top of the caps; flues from gas fires terminate at various levels in the roof space; the flues from living-room appliances are 8 in. diameter, those from the kitchen, 6 in. for solid fuel and 4½ in. for gas, and from bedrooms with gas fires, 6 in.

The windows are wooden, of BS sizes and types. They are single glazed, and the side hung casements are 49 in. by 21 in. or 43 in. by 21 in., and the top hung vents are 21 in. by 12½ in. or 21 in. by 10½ in. The opening lights are shown in Figs. 1a and b. The total length of cracks around opening windows is 74 ft. at the front, 43 ft. at the side, and 92 ft. at the back. Troubles were experienced with bad fitting and warping; two fasteners fitted to each casement in place of one helped to remedy this trouble. Similar troubles with outside doors were experienced; these were cured by using a phosphor bronze weather strip to jambs and head, and a metal threshold to the sill, interlocking with a metal bar on the bottom rail of the door.

Measurements of air change were measured by introducing a "tracer" gas into the room air in measured quantities, mixing it well, using a sensitive instrument (katharometer) to find out how long the gas took to disappear. In addition, smoke was used to determine the air flow pattern. Measurements were also taken of internal and external temperatures and humidities, state of heating appliances in the house, and the external wind speed and direction.

Table 2 shows the observed air change rates compared with the "Egerton" stan-



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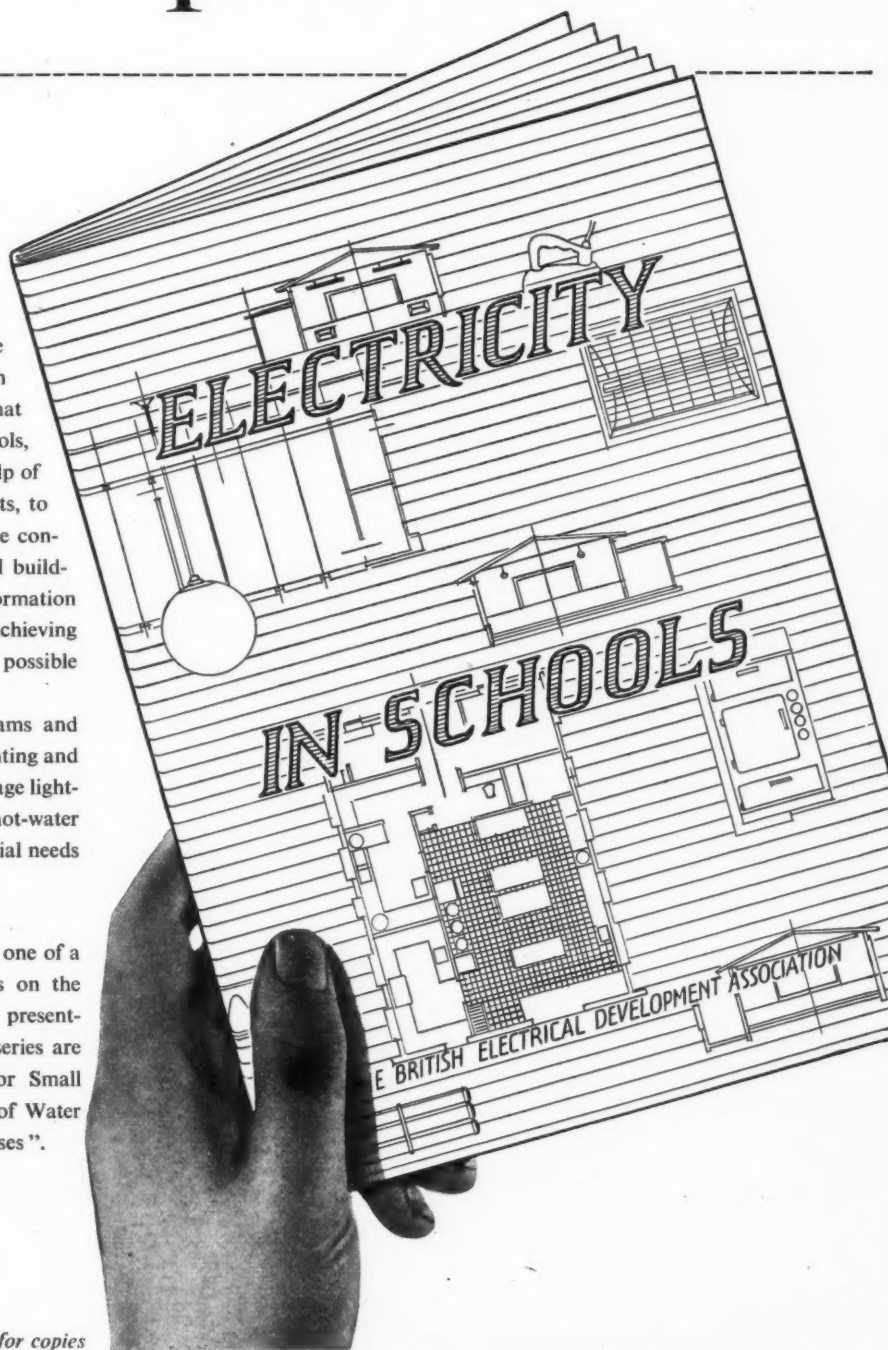
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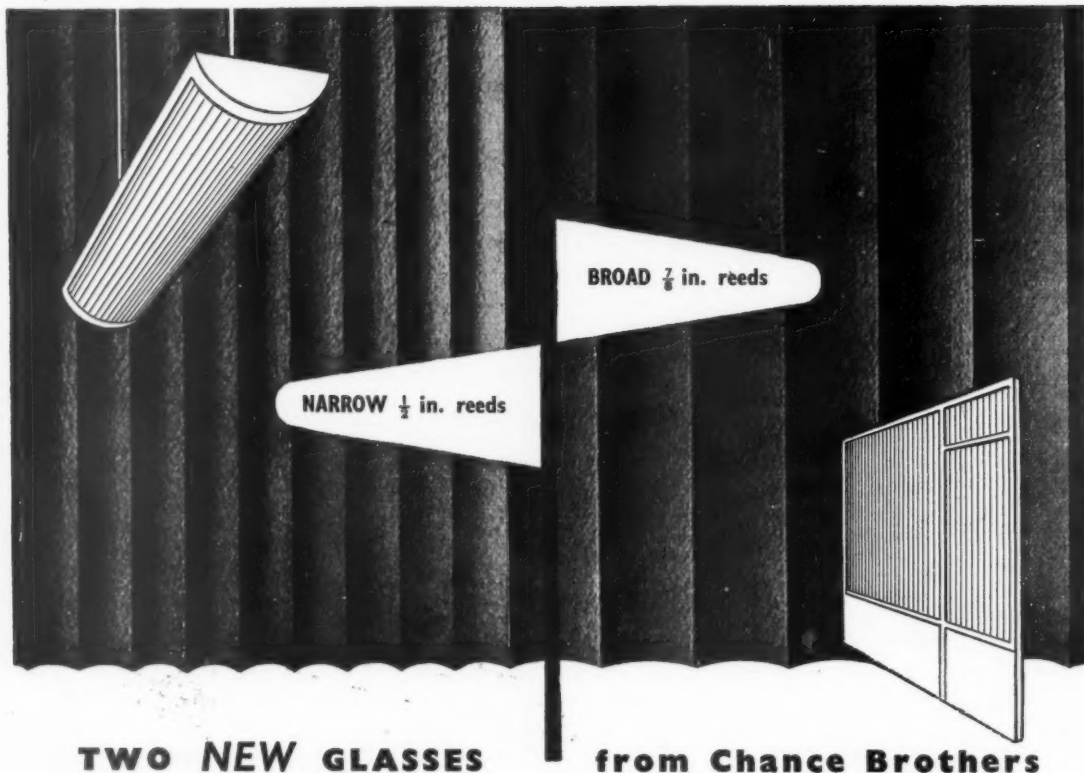
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dards. The air flow tests are interesting, in that they show also the freshness of the air coming in. Thus, with the centrally heated houses, the prevailing wind on the front of the house, air entered beside the front door and passed to the living rooms and bedrooms 1 and 3; it came into bedroom 2 through window cracks and flowed through the grille down to the hall. With the wind on the back of the house, the movement was reversed. Thus, generally, the living room and back bedrooms received tempered air from the hall mixed with partly-used air from bedroom 2. It was found that the quantity of air entering the front-door grille was only a fraction of the total entering, and that in the case of the living room, the action of the ventilating system was partly nullified by this.

The air change in a room is produced by a complex pattern of forces, due to wind and temperature differences within and without, acting on a network of resistances—flues, cracks, vents, etc.—in the house; the flow through any one opening is governed not only by the pressure difference but by the resistance elsewhere in the system. A room cannot, therefore, be considered by itself, and it is difficult, by theoretical means, to forecast rates of change, given a particular set of conditions. Instead, the observed changes have been related to the prevailing conditions and the results analysed. From this analysis is produced equations for the prediction of air-change rates, and hence heat loss requirements, for varying sets of conditions. A direct relationship between rates of air change and wind speed was found. These are shown graphically in Fig. 2. It will be seen that in House 13, where there is no living room flue, there is a marked increase in air change with wind velocity; in 38, with open fire and vents to hall and thence to open air, the variation was less; while in 10, with heated flue and underfloor duct from outside, there is only a small difference.

The results of the observations in the experimental houses may thus be summarized. The air change rate throughout a house varies considerably with variations in wind velocity, the degree of variation depending on the design, especially in respect of flues, and workmanship, in respect of fit of windows and doors; though here, defects may be in part reduced by weather stripping (Fig. 3). Changes of wind direction may have a considerable effect on individual rooms—in particular, the ventilation rate of rooms on the windward side is greater than that in rooms to leeward—but, taking the house as a whole, the variations tend to cancel out. With a wind speed of 10 m.p.h., the maximum variation due to changes of wind direction, for ventilation heat losses, is shown to be less than 1 therm per week. The average ventilation heat loss is 8 therms per week. The relationship between ventilation heat losses and wind velocity is but slightly modified by changes in the temperature differential; in one house it is shown to be no more than .05 therm per week per 1° F. Research into pressure differentials in and around the house showed that most of the pressure drop across a house subjected to wind pressure takes place across the windward wall, resistance here being the greatest; beyond this the resistance is much less, as air can pass out through a large variety of vents, authorized and unauthorized, in parallel. Further it was found that results agreed fairly closely with model experiments in wind pressures on buildings carried out both here and in Denmark, and, therefore, it seemed that results gained from experiments on models could be used to predict the airflow through buildings due to wind pressure. These pressure measurements, taken in conjunction with the house air change rate measurements, enabled windows to be calibrated. Thus, with a wind velocity of 8.5 m.p.h. normal

to the front of a house, the estimated overall air change is 1.8 per hour, or 12,600 cu. ft. per hour. Air entered the ventilator beside the door at 4,500 cu. ft. per hour, and through the weather-stripped door at 1,000 cu. ft. per hour. The rest came in through the windward windows. The crack length was 74 ft., so air entered at 94 cu. ft. per hour for every foot run. Published test figures in America gave only one worse example—industrial RS pivoted windows, with $\frac{1}{16}$ -in. crack, giving 103 cu. ft./hr./ft. crack. The comparison is very unfavourable. Investigation showed that not only in one case was the wood inferior and warped, but hinges were often badly placed, with conspicuous gaps on the hinge side. Weather stripping reduced this to 22 cu. ft./hr.

Air change ratio measured in other cases by other investigators are generally lower than those now observed, but this could be due to the unorthodox ventilation system adopted in the BRS houses and to the fact that they are on an exposed site, while little information on variations in window cracks is available.

With regard to ventilation standards, these are at present based on Yaglou's experiments as to the air supply necessary to prevent undue concentrations of body odour, which, curiously, have been adopted in this country, while in America, where the experiments were carried out, no standards have been laid down. This could be because the more open planning, general in America, allowed better circulation throughout the house. Thus, the occupants had the benefit of all the air in the house, and not only of that in the room in which they happened to be at any one time.

The discussion which followed was no less valuable than the paper. Dr. Bedford agreed that if a house was built on the open plan, with perfect ventilation between rooms, so that the whole of the air within the house could be used as a reservoir, a considerable reduction in overall air change could be effected, though for a family of four he preferred the total air supply to be more of the order of 4,000 ft.³/hr. than 2,400; this was based on his opinion and not on scientific findings. He considered that there should be an upper and lower opening from room to hall, and that the 100 sq. in. opening over the door into the hall, as demanded by the LCC, was not likely to give adequate ventilation if the cracks round the windows were sealed.

Dr. R. E. O. Williams thought that the danger of spreading infection by the recirculation of air between rooms in a house was not very great, but provision should be made for one room to be available as sick quarters in case of illness, and air from this should not be recirculated.

Dr. T. C. Angus expressed surprise that there was not a larger difference between air change rates in the centrally-heated and open-fire houses. An open fire extracts some 6,000 ft.³/hr., and for the houses under review this would mean a rate of 2.95 changes for the living room alone, or 0.86 for the whole house. This was a substantial contribution, yet after weather stripping the rates for all the houses were the same. The air change in the open-fire house was in fact .8 more before weather stripping than in the centrally-heated house: it was as though the weather stripping had neutralized the extra ventilating effect of the open fire. Perhaps the real answer was that the weather stripping was not entirely effective, and severe infiltration was taking place between frames and walls rather than round doors and casements; such leaks had been found in the experimental rooms of the Barnet Field Research Unit.

Mr. J. S. Hales gave interesting figures for the reduction in air extraction brought about by reducing the size of the throat of an open fire. In a sheltered room, with air

speeds less than 5 m.p.h., an ordinary fire with 50 sq. in. of throat area gave an extraction of 6,000 cu. ft. per hour; 20 sq. in. gave 4,000; 10 sq. in., 2,500; and 5 sq. in., 1,500.

Mr. L. Gordon Davies thought that as the rate of airflow through the house is based on the wind velocity, an automatic inlet control, limiting this to a predetermined figure, was desirable; a constant-flow ventilator is suitable. They could be used in internal walls also, to keep to balance pressures throughout the house.

From the point of view of the architect, the chief lessons to be learnt seem to be these:—

1. Something must be done to improve the design and fit of windows in this country, and proper supervision must be exercised to ensure that, for instance, hinges and fasteners are properly placed and the joint between frame and windows properly pointed up in mastic.
2. Apart from any aesthetic preference for the open plan, by its adoption it may be possible to reduce the overall ventilation rate without risk of the occupants finding it stuffy. We must bear in mind it is important, however, to provide a room which can be separately ventilated, for use as a sick room if required.
3. The possibilities of a more scientific system of small-house ventilation should be considered, such as that adopted in the BRS houses, in place of present hit-and-miss methods. In particular, we should have no more to do with the by-law airbrick. The use of constant-velocity inlets seem well worth while; ones only adjustable by the occupants are likely to be neglected.
4. The open fire, provided that it is of good design, with restricted or variable throat, need not be considered over-much of a bogey from the point of view of excessive ventilation.
5. Ventilation of the roof space, in the manner described, means that the insulation must be placed at ceiling and not rafter level, but this is no disadvantage, provided the tanks are included in it. Experience shows that it is wise to cover the eaves inlet with a strip of wire gauze. A wasps' nest in this position can cause inconvenience.

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

QUESTIONS AND ANSWERS

3919 COPYRIGHT: ARCHITECTS DRAWINGS

Q. As an architect, do I own the copyright of my drawings and can a client use these to have a building erected without employing me to supervise the work?

A. Drawings, regarded as chattels, belong to the person who employs the architect but, in the absence of any agreement to the contrary, the copyright in the drawings belongs to the architect.

Though the point has not been judicially decided it is thought that working drawings may be used by the employer for the purpose for which they were prepared, without employing the architect for supervision, etc., and that this would not be an infringement of the architect's copyright.

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This feature covers both the production and marketing of new materials and designs of equipment, as well as the general trend of developments within the Building Industry.

THE INDUSTRY

By Brian Grant

DRAWINGS FOR PUBLICATION

In these days, when so many architects are making town plans and producing reports which have to be printed with charts (often in colour) it is essential to make drawings which will reproduce clearly in the block-making process. If one works on a technical journal one tends to forget that not everyone even realizes that blockmaking is a photographic process and that the drawing does not have to be made the size it will appear on the page. This, of course, is quite elementary, but there are many other points which have to be borne in mind. I have just had, from a firm of publicity consultants in Manchester, a most excellent pamphlet setting out the various traps to be avoided. The preferred size for drawings is about $1\frac{1}{2}$ to twice as large as the finished result, and this must be borne in mind when the size of the lettering is considered. A diminishing glass is a help, but it is very easy to make section shading lines too close together so that the result appears as solid black. Colour is somewhat tricky: greys and greens tend to give a broken line, while red and dark brown reproduce in the same way as black. Blue will not reproduce at all, unless it is very dark, when it may be uneven. These points are particularly important if the colours appear in the background lines of graphs; and it is much simpler if all drawings are made in a dense black ink.

It should be added that the pamphlet deals only with drawings to be reproduced in black or a single colour. For any sort of multi-colour work it is always best to consult the blockmaker or some other expert first. Blockmakers can, of course, produce a fairly good result from almost any drawing, including pencil, but things can go wrong very easily and there may also be fairly heavy charges for what blockmakers call "art work," which consists mainly of strengthening lines on the drawings and sundry other tricks during the etching of the plate, all of which take time.

Copies of the pamphlet, which is thorough and clear are available free of charge. (Rowlinson-Broughton, Royal Buildings, 2, Mosley Street, Manchester, 2.)

LONG SPAN JOISTS

Produced in Canada, and presumably not available in this country, DB long-span joists are of the all-welded type, and should be quite simple to fabricate. Standard joists are produced for spans ranging from 25 to 72 feet and with loading capacities from 200 to 700 lb. per foot run. The photograph shows them used for the roof of a church in Montreal, and gives a good idea of their construction, although the diagonals in the left-hand half of the joists do not show up very well in the photograph. The joists can be built with parallel chords for floors or flat roofs, or with sloping top chords for pitched roofs, while the open webs make it simple to run conduits and piping in the floor thickness. If it is necessary to accommodate larger ducts the diagonal can be omitted and the panel reinforced in some other way. (The Dominion Bridge Co., Ltd., Lachine, Quebec.)

STEEL DOOR FRAMES

The Metal Door Frame Makers have just issued a folder containing reprints of their AJ Information Sheets, instructions for fixing on the site, and an interesting analysis of the comparative costs of steel and timber door frames. The comparison is not easy to make from normal bills of quantities, because steel frames include such things as butts and lock strikes which do not normally appear in the joiner section.

For the purpose of the survey, a bill of quantities for a complete door frame built in, walls plastered, doors hung, hardware fitted and frame painted, was evolved after advice had been sought from many architects, quantity surveyors and builders of good standing. Copies were sent to 6 architects, 14 quantity surveyors and 20 contractors, and their replies gave comparative total costs of wood and steel door frames for a typical 3-bedroom house in the four most densely populated areas in the country. The figures are based on two frames in external walls, 3 frames in $4\frac{1}{2}$ in. brick, 5 frames in 3 in. breeze and one in 2 in breeze. They do not include the cost of the door itself. For steel the figures vary from £23 11s. 2d. in the London area to £22 18s. in the North, while for wood the corresponding figures are £28 3s. 11d. and £24 15s. 7d. It is only fair to add that these are average figures, and that the minimum figures for wood frames are less than steel by amounts varying from 3s. 11d. to 32s. 6d. The figures, however, do seem to suggest that steel frames are less in cost, on the average, than wood, and the metal frame makers put forward the argument that the minimum wood prices may include a low grade of timber. No doubt the figures will be argued about, but at least they should help to dispel the common assumption that steel frames are expensive. (The Metal Door Frame Makers, Millbank House, 2, Great Peter Street, London, S.W.1.)

AN INSULATING PLASTER BOARD

A new type of insulating plaster board has just been introduced by Plaster Products (Greenhithe), Ltd. It consists of the usual gypsum plaster board, but one of the paper liners is specially treated and a covering of aluminium foil is fixed to it during manufacture. It is available in all the normal wallboard, baseboard and lath sizes, and is fixed in the same way as ordinary plaster board, with countersunk sherardized nails as recommended by all the plaster board manufacturers. It has scrimmed joints according to the final finish required.

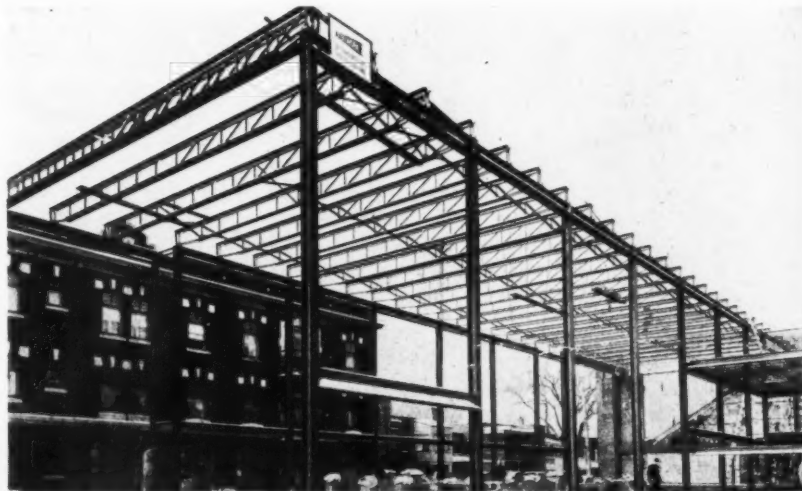
The bright metal surface of the aluminium is a good reflector and a poor radiator of heat, and the boards should be fixed so that the foil covered face is facing the external wall or the ceiling space. Tests show that the board, with a 1 in. air space, has a U figure of 0.42, a value claimed to be greater than most other insulation boards of equal thickness.

Cost is 1s. 3d. per square yard more than ordinary plaster board, so that the extra cost of insulating the ceiling of the average present-day 1,000 sq. ft. house is about £3 10s. Gypsum plaster boards, incidentally, have a $\frac{1}{2}$ -hour grade E fire rating and are in Class 1 in terms of resistance to fire spread. From the builders's point of view it is a considerable advantage to be able to apply a wall lining and insulation in one operation. (Plaster Products (Greenhithe) Ltd., Greenhithe, Kent.)

Announcements

The expenditure of a limited sum has been authorized for the private purchase of Hardwoods from the Belgian Congo, for which payment must be made not later than June 30, 1950. Any person wishing to purchase and import goods from this source should submit to BOT Timber Control, Dept. III/8, 30, Cadogan Square, London, S.W.1, the following information relating to the goods which it is wished to purchase:— (a) species; (b) description, i.e. logs or graded lumber; (c) quantity in cubic feet; (d) cost f.o.b. and c.i.f. UK. The Timber Controller will make an appropriate allocation of the limited funds available and inform the applicants, who may then make official application on Form ILD/A (in duplicate) to BOT Timber Control, Dept. III/8, Clifton Down Hotel, Bristol, for an Import Licence, and arrange for the necessary funds to be available. In view of the limited sum available it is requested that applications be confined to available species for which there is known to be a good demand and that the quantity applied for be reasonable.

The BBC announces that the contract for the building work for the new television station at Holme Moss, near Huddersfield, has been awarded to John Laing & Son Ltd., of Mill Hill, London. The 35-kW. vision transmitter, the 12-kW. sound transmitter, the aerial and the aerial feeder system are being manufactured by Marconi's



Typical use of DB long span joists in a church building.

Wireless Telegraph Co. Ltd. A 750-ft. mast similar to that at Sutton Coldfield will be supplied and erected by British Insulated Callender's Construction Co. Ltd. As recently announced by the Postmaster-General in Parliament, it is hoped that this station will be completed by the middle of 1951.

Mr. Edward Playne, FRIBA, of Sir Aston Webb & Son, announces that the practices of Sir Aston Webb & Son and Mr. Grey Wornum, FRIBA, have amalgamated. The style of the firm is now Wornum & Playne, incorporating Sir Aston Webb & Son. The address is 19, Queen Anne's Gate, Westminster, S.W.1. Tel.: Whitehall 2552.

Buildings Illustrated

Welfare Centre, Beckton, East Ham (pages 519-526): Designed by Brian Colquhoun & Partners. Chief Architect, A. H. Shearing, A.R.I.B.A. Quantity Surveyors: F. Stanley Griffith & Partners. General Contractor: Taylor Woodrow Construction Ltd. Sub-contractors: Asphalte, The Rock Asphalt Co. Ltd.; bricks, "High Brooms" sand-faced handmade, supplied through Wiggins Sankey Ltd.; reconstructed stone, Ferro-concrete (Lancashire) Ltd.; partitions, London Brick Co. Ltd.; aluminium windows, Williams & Williams Ltd., suppliers of aluminium, Northern Aluminium Co. Ltd.; woodblock and strip flooring, The National Flooring Co. Ltd.; gas fixtures, William Sugg & Co.; gasfitting, North Thames Gas Board; calorifiers, Hartley & Sugden Ltd.; heating and air conditioning, Matthew Hall & Co. Ltd.; electric wiring, Newman & Anderson Ltd.; electric light fixtures, Trough-

ton & Young, Merchant Adventurers Ltd.; plumbing, Stitson White & Co. Ltd.; sanitary fittings, John Bolding & Son Ltd.; door furniture, Rennis Ltd.; back counter fittings, Pollards Ltd.; bells, General Electric Co. Ltd.; telephones, Siemens Bros. & Co. Ltd.; entrance gates, Scaffolding (Great Britain) Ltd.; rolling shutters, Arthur L. Gibson; venetian blinds, J. Avery & Co.; plaster, Plaster Specialists Ltd.; Pyrok by Scuton Ltd.; flush doors, Trudors Ltd.; terrazzo, Diespeker & Co. Ltd.; tiling, Carter & Co. (London) Ltd.; textiles, I. D. Moggach Ltd.; suppliers of fabric, Donald Bros.; wall-papers, Arthur Sanderson & Sons Ltd.; mantels, Bratt Colbran Ltd.; furniture, Permatoms Ltd. (tables), Apex Steel Furniture Co. Ltd. (chairs); turfing and soiling F. M. Reffell Ltd.; kitchen fittings, Benham & Sons Ltd.; bar fittings, Electromatic Bar Installations Ltd.; paint and distemper, W. & J. Leigh Ltd.; Imperial Chemical Industries Ltd. (cellulose); painters, Decorative Specialists Ltd.; cold rooms, J. & E. Hall Ltd.; lifts, Marriot & Scott Ltd.; clocks, Gent & Co. Ltd.; sound equipment, General Electric Co. Ltd.; steel lockers, James Randall & Co. Ltd.; roof lights and glass concrete construction, Lenscrete Ltd.; acousti-celotex tiling, Horace W. Cullum Ltd.; weighing machine, W. & T. Avery Ltd.; ticket issue machines, Automaticket Ltd.; hi-rib ceilings, The Trussed Concrete Steel Co. Ltd.; canvas floor covering, John Smith (London) Ltd.; drying cabinet, Thermocontrol Insulations Ltd.; vacuum plant, The British Vacuum Cleaning and Engineering Co. Ltd.; tarmac, Improved Macadams Ltd.; wringers, Acme Wringers Ltd.; washing machines, Thor Appliances Ltd.; fencing, Peerless Fence & Products Ltd.; masonry, Art Marble Stone & Mosaic Ltd.; granolithic flooring, The Johnson Flooring Co. Ltd.; drainage, G. N. Haden & Sons Ltd.; conduit boxes, Linden Engineering; curtain track, Thomas French Ltd.; gas fire, Radiation Ltd.

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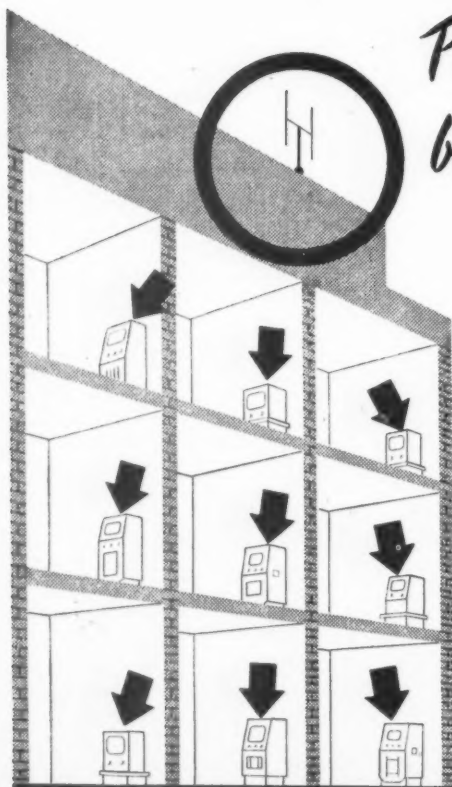
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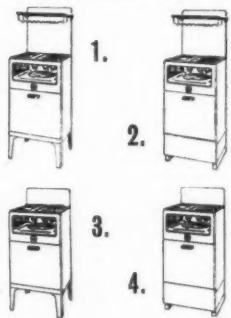


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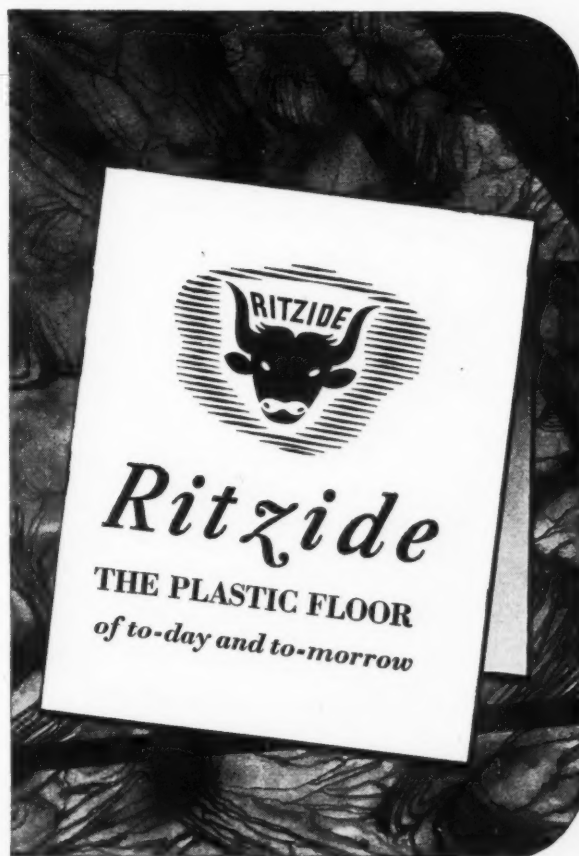
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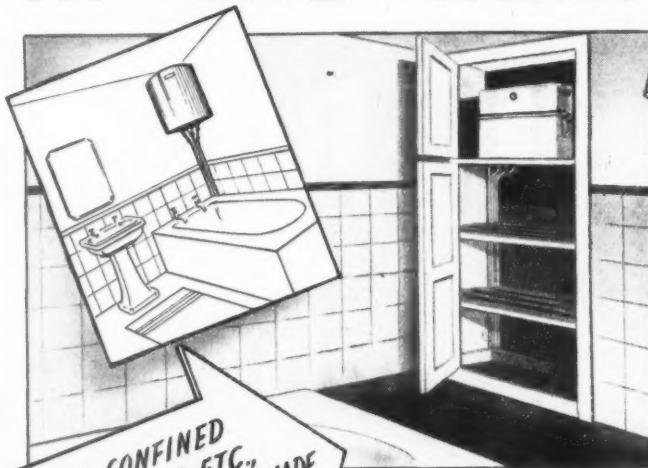
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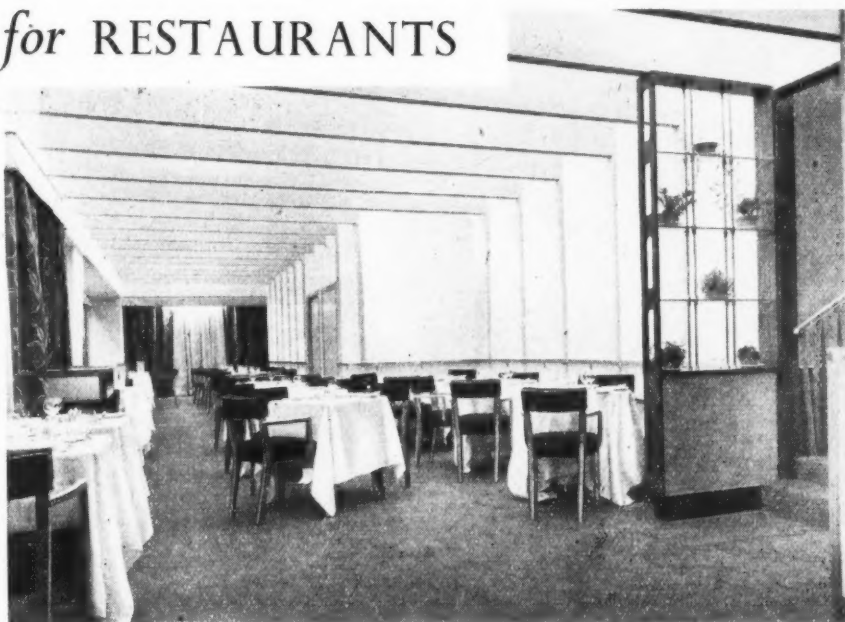
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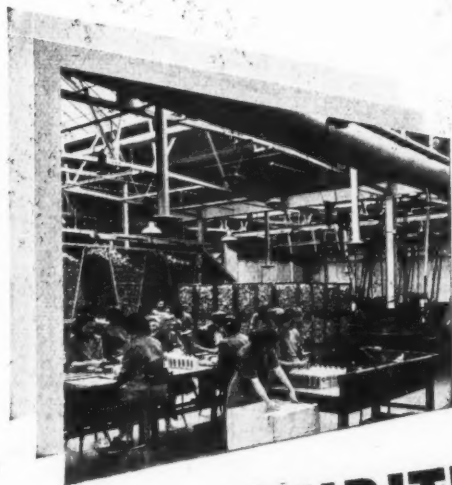
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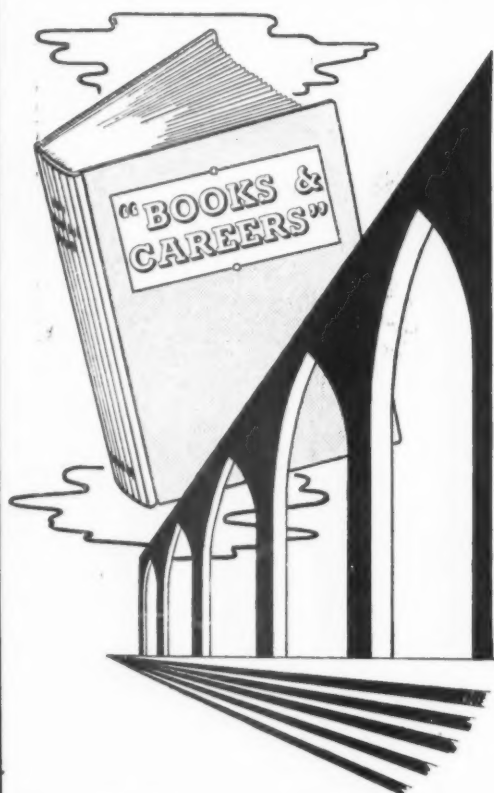


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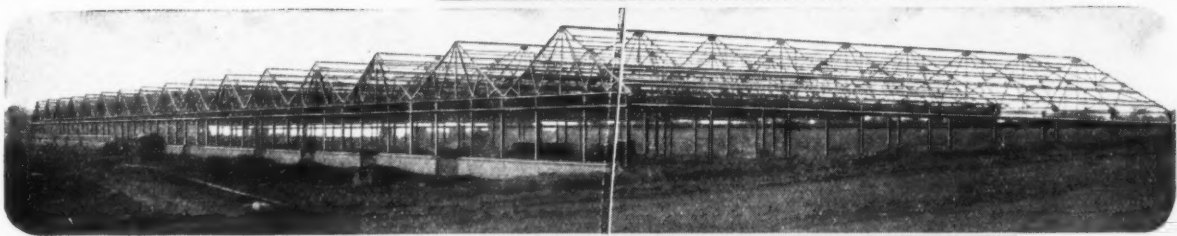
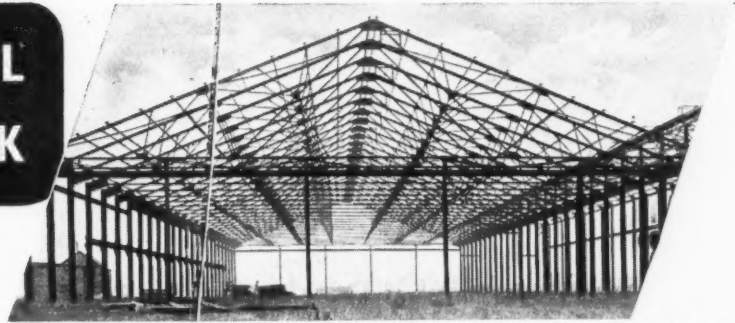
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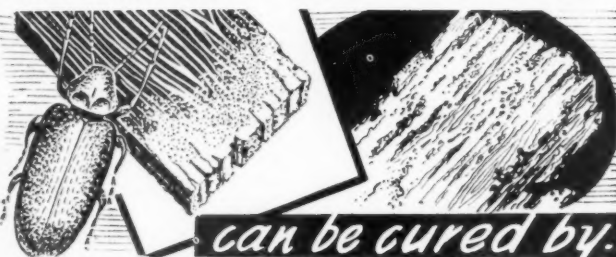
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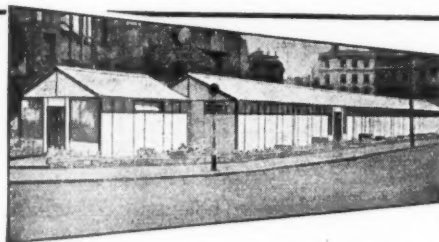
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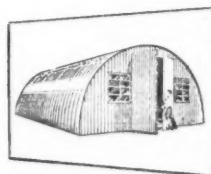
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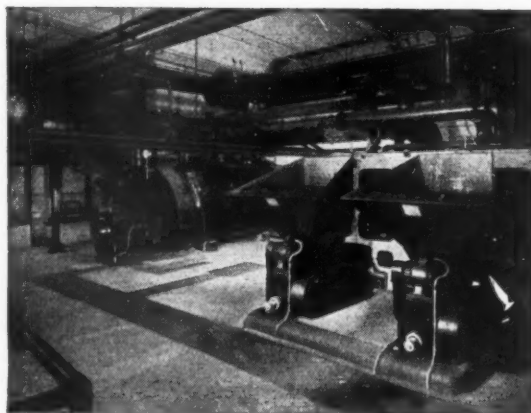


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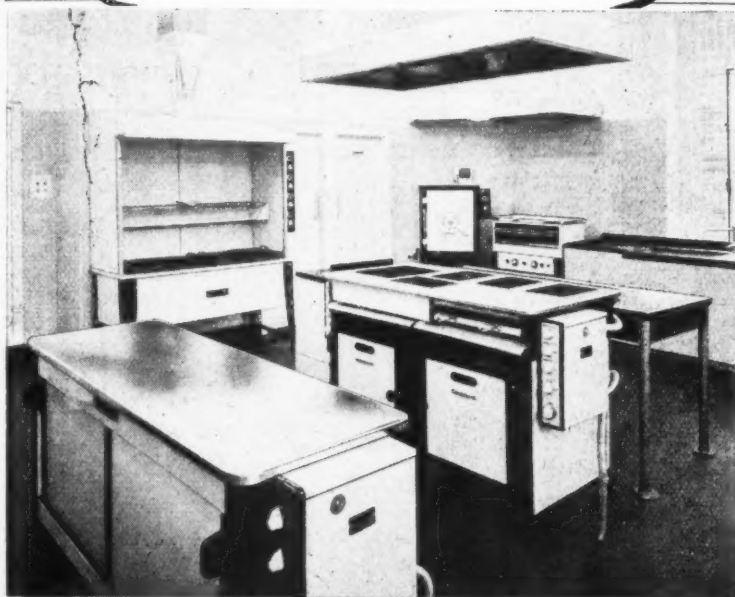
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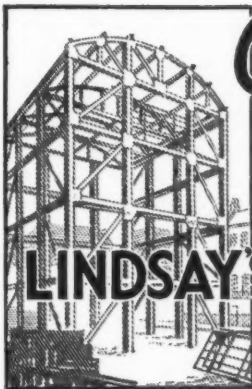
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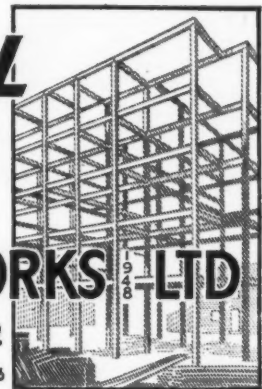
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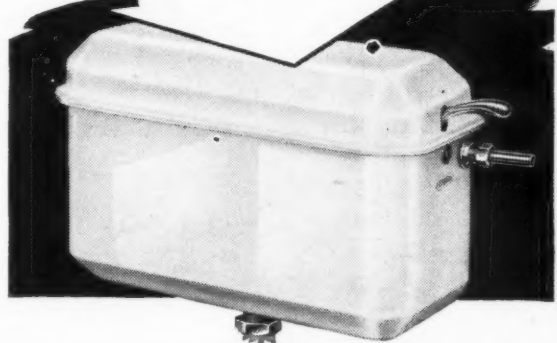
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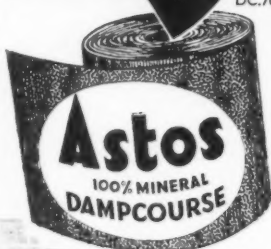
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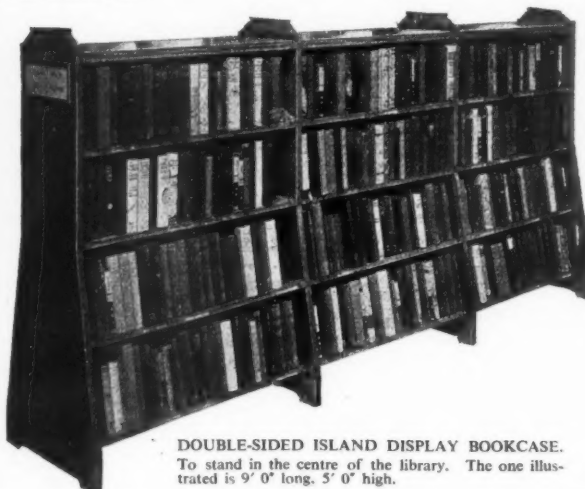


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Applicants should hold the Intermediate Examination of the R.I.B.A. or equivalent qualifications. Experience of field survey work will be an added advantage.

Applications, stating age, training, experience, past and present appointments, and date available, should be received by the undersigned, not later than noon on Saturday, the 6th May, 1950. Copy testimonials will not be required in the first instance, but candidates should give the names of three persons to whom reference can be made.

Canvassing, directly or indirectly, will disqualify. Candidates must in their applications state if to their knowledge they are related to any member or the holder of any senior post under the Council.

A modern semi-detached house will be available to the successful candidate, if required.

J. SANDIFORD,
 Clerk of the Council.

Clerk's Office, Swadlincote,
 near Burton-on-Trent. 4052

DERBYSHIRE COUNTY COUNCIL. COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the undermentioned appointments on the permanent staff.

Conditions of service and salaries are in accordance with the National Joint Council Scheme for Local Authorities, as adopted by the County Council.

(a) SENIOR ASSISTANT ARCHITECTS.

Grade VII, £635×£25 to £710 per annum.

Applicants must be fully qualified by examination, and be experienced in work connected with County Buildings and in particular new Schools.

(b) ASSISTANT ARCHITECTS. Grade IV, £480×£15 to £525 per annum.

Applicants must have had a good general architectural experience, and it is desirable that they should have passed the Intermediate Examination of the Royal Institute of British Architects or its equivalent at one of the recognised Schools of Architecture, and worked in an architect's office for a period of two years.

(c) JUNIOR ARCHITECTURAL ASSISTANTS. Miscellaneous Division (Grade I), £315×£15 to £360 per annum.

Applicants to have had experience in an architect's office and to be first-class draughtsmen.

(d) LAND SURVEYING ASSISTANTS. £420×£15 to £465 per annum, Grade II.

Applicants must be capable draughtsmen and competent to prepare site surveys and take levels.

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

Canvassing members of the Council, directly or indirectly, will be a disqualification for appointment.

The County Council is not in a position to assist successful applicants with housing accommodation.

Applications to be made on a form to be obtained from the undersigned, to whom it must be returned, accompanied by copies of three recent testimonials not later than 10th May, 1950.

Envelopes and applications must be endorsed, stating clearly the vacancy for which the application is made.

F. HAMER CROSSLEY, Dipl.Arch.(L'pool),
 A.R.I.B.A.,
 County Architect.

St. Mary's Gate, Derby.
 27th April, 1950. 4082

WESTMORLAND COUNTY COUNCIL. COUNTY ARCHITECT'S DEPARTMENT. APPOINTMENT OF CHIEF ASSISTANT ARCHITECT.

Applications are invited for the above appointment at a salary within the range of Grade VII (£635-£710), commencing anywhere within the Grade, according to experience.

Candidates must be Associates of the Royal Institute of British Architects, have had good drawing office experience, be capable of controlling sizeable Contracts, and have had recent experience of modern school design and construction.

Previous local authority experience is desirable but not essential.

The appointment will be subject to the terms and conditions of service of the National Joint Council, the Local Government Superannuation Act, 1937, and one month's notice on either side, expiring at the end of a calendar month. The successful candidate must pass a medical examination.

Applications, giving particulars of age, married or single, education, technical training, qualifications, previous appointments, present salary and appointment, and full details of experience, in the order stated above, should be accompanied by one recent testimonial and the names of two other persons to whom reference can be made. They should be sent to R. H. Crompton, A.R.I.B.A., A.M.T.P.I., County Hall, Kendal, to reach him not later than 10th May, 1950.

H. B. GREENWOOD.

Clerk to the Council.

County Hall, Kendal.
17th April, 1950.

4062

METROPOLITAN BOROUGH OF POPLAR.

Applications are invited from suitably qualified persons for the under-mentioned appointments on the permanent staff of the Borough Engineer and Surveyor's Department:—

(a) ARCHITECTURAL ASSISTANT, for Reconstruction Planning. Salary £520-£570 per annum, plus "weighting," £10 to £30 per annum, according to age.

(b) ARCHITECTURAL ASSISTANT. Salary £520-£570 per annum, plus "weighting," £10 to £30 per annum, according to age.

(c) ARCHITECTURAL ASSISTANTS (THREE). Salary £480-£525 per annum, plus "weighting," £10 to £30 per annum, according to age.

Full details of the appointments and forms of application may be obtained from the Borough Engineer and Surveyor, Poplar Town Hall, Bow Road, E.3, to whom completed applications must be delivered not later than first post on Wednesday, 10th May, 1950.

Requests for application forms should state clearly for which post the form is required.
12th April, 1950.

4085

CITY OF LEEDS.

CITY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments:—

(a) ASSISTANT ARCHITECT. Consolidated salary scale, £685-£760 p.a.

Candidates must be Registered Architects and should have had a wide experience in the preparation of schemes for alterations and additions to various kinds of public buildings. The successful candidate will be in charge of a small sub-section of the department.

(b) ASSISTANT ARCHITECT. £595-£710 p.a.

(c) ASSISTANT ARCHITECTS. £595-£660 p.a.

(d) ASSISTANT ARCHITECTS. £520-£570 p.a.

Candidates must be Registered Architects and should have had a thorough training and experience in architectural design and construction. Special consideration will be given to candidates who have had experience in one or more of the following:

(1) Schools.

(2) Multi-storey Flats.

(3) Sports Centres or Stadiums.

(e) ASSISTANT ARCHITECTS. £480-£525 p.a.

(f) ASSISTANT ARCHITECTS. £450-£525 p.a.

(g) ASSISTANT ARCHITECTS. £450-£495 p.a.

(h) ASSISTANT ARCHITECTS. £420-£465 p.a.

(j) ASSISTANT ARCHITECT. £390-£435 p.a.

(k) DRAUGHTSMAN. Commencing salary according to age, maximum £385 p.a., for Males, and £308 for Females.

(m) ASSISTANT QUANTITY SURVEYOR. £375-£420 p.a.

(n) CLERKS OF WORKS. £420-£465.

Candidates should be fully conversant with the supervision of large building contracts. Special consideration will be given to applicants who have had experience in supervising the erection of school buildings.

In each case the payment of salary increments will be subject to satisfactory service, and will be granted normally with effect from the 1st April following the completion of 6 months' service, except in the case of appointment (k), where birthday increments will be payable.

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

Applications on forms obtainable from the undersigned, accompanied by copies of not more than three recent testimonials (not returnable), must be received by me in the envelope supplied therefor not later than 10 a.m. on Tuesday, the 9th May, 1950.

Canvassing in any form, either directly or indirectly, will be a disqualification.

R. A. H. LIVETT, O.B.E., A.R.I.B.A.,

City Architect.

Priestley House, Quarry Hill, Leeds, 9.

4063

BOROUGH OF BRENTFORD AND CHISWICK. APPOINTMENT OF TEMPORARY ARCHITECTURAL ASSISTANT.

BOROUGH SURVEYOR'S DEPARTMENT.

Applications are invited for the appointment of a Temporary Architectural Assistant, at a consolidated salary according to A.P.T. Division, Grade VI, of the National Scheme (£520 to £570 p.a., plus appropriate London weighting, commencing 1st year), the appointment to be determinable by one month's notice on either side.

Applicants should have passed the Intermediate Examination of the Royal Institute of British Architects (or hold a similar qualification), but consideration will also be given to applicants intending shortly to take the Intermediate Examination.

Applicants should have had experience in general architectural work and possess a sound knowledge of design any construction of housing estates, including the preparation of working drawings and specifications. It may be possible to provide housing accommodation for the successful applicant.

Applications for the above-mentioned appointment must be made on the prescribed form (which contains particulars and conditions of appointment), obtainable from the undersigned, to whom applications should be sent not later than the 11th May, 1950.

W. F. J. CHURCH.

Town Clerk.

Town Hall, Chiswick, W.4.

4078

CRANBROOK RURAL DISTRICT COUNCIL.

HOUSING ARCHITECT'S DEPARTMENT.

Applications are invited for the post of ASSISTANT in the above Department of the Council. Applicants should have passed the Intermediate Examination of the Royal Institute of Chartered Surveyors, and be capable of undertaking work in connection with bills of quantities for housing contracts entered into by the Council. Applicants should have a good knowledge of the building trade and have had experience in dealing with Contractors.

The appointment (which is for a term in the first instance up to 5 years) is placed in Grade A.P.T. III, of the National Scheme of Conditions of Service, viz., a commencing salary of £450 per annum, rising subject to satisfactory service to £495 per annum. The post will otherwise be determinable at one month's notice on either side.

The person appointed will act under the supervision of the Council's Architect.

Applications, marked "Architect's Assistant," stating age, present appointment, particulars of experience, when able to undertake duties if appointed, together with the names of three referees, should be addressed to the Council's Architect, Mr. D. Smith, B.A., Dip.T.P., A.R.I.B.A., at this address, not later than 15th May, 1950.

Canvassing of any kind will be disqualifying.

P. G. BANFIELD.

Clerk to the Council.

Council Offices, Hill House, Cranbrook, Kent.

4076

EASTERN REGIONAL HOSPITAL BOARD, SCOTLAND

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

(a) ARCHITECTURAL ASSISTANT. A.P.T., Grade VI (£595-£660).

Candidates must have a sound architectural training and good general experience in design, construction, and maintenance of buildings.

(b) ARCHITECTURAL ASSISTANT. A.P.T., Grade III (£450-£495).

Candidates must have experience in an Architect's office and be capable of undertaking surveys and preparing working drawings under supervision.

(c) QUANTITY SURVEYOR. A.P.T., Grade V (£520-£570).

Candidates must have experience in the preparation of Schedules of Quantities, according to the Scottish Mode of Measurement, site measuring, and in settlement of jobbing and final accounts for all trades.

All appointments will be subject to the National Health Service (Scotland) (Superannuation) Regulations, 1948, and to the passing of a medical examination. Appointment (a) will be terminable by two months' notice on either side, and appointments (b) and (c) by one month's notice.

Canvassing in any form will be disqualifying.

Applications, stating age, qualifications, experience, past and present appointments, and accompanied by the names and addresses of three referees, should be addressed to the Secretary, Eastern Regional Hospital Board, "Braeknowe," 430, Blackness Road, Dundee, and lodged not later than 13th May, 1950.

4074

EDINBURGH COLLEGE OF ART.

ANDREW GRANT BEQUEST SCHOLARSHIPS.

The Board of Management may award Four Senior Open Scholarships, for advanced study and/or research, of £500 each per annum for one year at the Edinburgh College of Art, to persons engaged in any branch of art (including Architecture and Town and Country Planning) who have completed a period of not less than two years' professional and/or industrial experience. They are open to men and women, married or single, of any nationality.

The College comprises Schools of Drawing and Painting, Design and Crafts, Sculpture, Architecture, and Town and Country Planning.

Further information may be had from the Secretary, Edinburgh College of Art, Lauriston Place, Edinburgh, to whom application on the prescribed form should be sent not later than 31st May, 1950.

4041

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

APPOINTMENT OF ARCHITECTURAL ASSISTANT (GRADE IV).

An Architectural Assistant is required on the staff of the Engineer and Surveyor, Mr. C. J. Hawkes, A.M.I.C.E., M.I.Mun.E., M.R.S.A., a salary in accordance with Grade IV of the A.P.T. Division of the National Scale of Salaries, i.e., £480 per annum, rising by three increments of £15 to £525 per annum.

General architectural experience is necessary, and candidates must be capable of preparing detailed plans and specifications and supervising housing schemes.

Candidates should have passed some part of the Associate Membership Examination of the Royal Institute of British Architects.

Housing accommodation, if necessary, will be provided for the successful candidate if he lives beyond twenty miles from the Thurrock Urban District.

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

Applications, endorsed "Architectural Assistant IV," stating age, qualifications and experience, and quoting three references, should reach the undersigned not later than the first post on Tuesday, 2nd May, 1950.

Canvassing will disqualify, and applicants must disclose in writing any relationship to any member or senior officer of the Council.

A. E. POOLE.

Clerk of the Council.

Council Offices, Whitehall Lane,
Grays, Essex.

4070

COUNTY BOROUGH OF MERTHYR TYDFIL. BOROUGH ENGINEER SURVEYOR AND ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments in the above Department:—

(a) SENIOR ARCHITECTURAL ASSISTANT.

Grade A.P.T., VI (£595-£660).

(b) SENIOR ENGINEERING ASSISTANT.

Grade A.P.T., VI (£595-£660).

(c) ARCHITECTURAL ASSISTANT.

Grade A.P.T., IV (£480-£525).

(d) JUNIOR ARCHITECTURAL ASSISTANT.

Grade A.P.T., II (£420-£465).

Candidates for (a) must have had considerable experience in the design and construction of houses, clinics, public buildings and general architectural work, and in the preparation of specifications, bills of quantities and estimates in connection therewith. Applicants must be Associate Members of the Royal Institute of British Architects.

Candidates for (b) must be Associate Members of the I.Mun.E., or have equivalent qualifications, and have had good Municipal Engineering experience. Preference will be given to applicants who have had Private Street Works experience.

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

Candidates for (d) should have experience in Local Government, and preference will be given to students of the R.I.B.A.

The appointments will be subject to:—

(1) Scheme of Conditions of Service of the National Joint Council.

(2) Provisions of the Local Government Superannuation Act, 1937.

(3) The passing of a satisfactory medical examination.

(4) One month's written notice on either side. Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should be delivered to the undersigned not later than Friday, the 12th May, 1950.

Canvassing in any form will be deemed a disqualification.

EDWARD ROBERTS.

Town Clerk.

Town Hall, Merthyr Tydfil.

4066

EAST SUFFOLK COUNTY COUNCIL. COUNTY ARCHITECT'S DEPARTMENT.

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

Grade B ASSISTANT ARCHITECT. A.P.T., Grade V. Consolidated salary £520-£570.

The commencing salary in the grade will be fixed according to the qualifications and experience of the candidate.

Applicants for these appointments should be Registered Architects and preferably be Members of the R.I.B.A. They must be quick and accurate draughtsmen, fully conversant with a 1 in. scale, half inch and full size details for all types of buildings normally dealt with by a Local Authority, and have a good knowledge of design, construction and specifications.

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

Applications, stating age, qualifications and full details of previous experience, accompanied by copies of three recent testimonials, should be sent to E. J. Symcox, F.R.I.B.A., County Architect, County Hall, Ipswich, not later than 15th May, 1950.

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

G. C. LIGHTFOOT.

Clerk of the Council.

County Hall, Ipswich.

PETERLEE APPOINTMENT

Application

CHIEF ARCHITECT

Corporation

£1,500 per annum

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PETERLEE DEVELOPMENT CORPORATION.

APPOINTMENT OF CHIEF ARCHITECT.
Applications are invited for the appointment of CHIEF ARCHITECT to the Peterlee Development Corporation on a salary scale of £1,200-£1,500 per annum, the commencing salary to be fixed according to the experience of the person appointed.

Applicants must be members of the Royal Institute of British Architects, and a University Degree in Architecture is desirable.

The Corporation, which was set up in accordance with the provisions of the New Towns Act, 1946, has the task of building a new town for a population of approximately 30,000 on a site of 2,550 acres, and the position of Chief Architect is one requiring an officer with considerable experience in the design of layouts, houses and public buildings of all types, the supervision of building works and the control of staff.

The person appointed, if married, will be provided with a house when one becomes available, and if, in the meantime, he is forced to live apart from his dependants, will be paid a lodging allowance.

The position is superannuable and is terminable by three months' notice in writing on either side. The successful applicant will be required to pass a medical examination.

Applications, giving details of experience, age, and qualifications, together with the names of three referees, should be forwarded to the undersigned not later than 16th May, 1950.

A. V. WILLIAMS.

General Manager.

Shotton Hall, Castle Eden, Co. Durham.

17th April, 1950. 4080

COUNTY BOROUGH OF DARLINGTON.**BOROUGH ARCHITECTS' DEPARTMENT.**

Applications are invited for the following permanent appointments:—

(a) TWO ASSISTANT ARCHITECTS. Salary

Grade VI (£595-£660).

(b) ONE ASSISTANT ARCHITECT. Salary

Grade Va (£550-£610).

(c) ONE ASSISTANT ARCHITECT. Salary

Grade V (£520-£570).

Candidates who have had previous experience on Education and Housing work and are Members of the R.I.B.A. will receive preference.

The Council will endeavour to make housing accommodation available.

Applications specifying the appointment (a),

(b) or (c), together with age, qualifications,

present appointment with salary, previous experience with dates, and the names of three

referees, to be sent to E. A. Torbourn, A.R.I.B.A.,

A.M.P.I. Borough Architect, Central Buildings,

Darlington, not later than Saturday, 6th

May, 1950. 4077

METROPOLITAN BOROUGH OF FULHAM.**HOUSING AND PUBLIC BUILDINGS DEPARTMENT.**

Applications are invited for the following appointments in the Architectural Section of the Housing and Public Buildings Department, which is controlled by the Director of Housing and Public Buildings:—

(a) SENIOR ASSISTANT ARCHITECT.

A.P.T., Grade VI (£625-£720) (2) × £25 (1) — £690

per annum, including London weighting.

(b) ASSISTANT ARCHITECT. A.P.T., Grade

III (£450-£515-£495 per annum, plus London

weighting).

Applicants for (a) should be Registered Architects,

experienced in designing and dealing with

large contracts through all stages. The successful

applicant will be employed in a senior capacity

in connection with the planning, design and

execution of large schemes of flats and public

buildings. Lack of previous experience in a

Municipal office will not debar applicants from

consideration.

For (b) applicants must have good general experience as Architectural Assistants.

Applications on forms obtainable from me;

closing date 8th May, 1950.

CYRIL F. THATCHER.

Town Hall, Fulham, S.W.6. 4108

COUNTY BOROUGH OF EAST HAM.**BOROUGH ENGINEER'S DEPARTMENT.**

Applications are invited for the under-

mentioned appointments:—

SENIOR ARCHITECTURAL ASSISTANT.

Grade A.P.T., VI. Salary £595 to £660 per

annum.

ARCHITECTURAL ASSISTANT. Grade

A.P.T., V. Salary £520 to £570 per annum.

ARCHITECTURAL ASSISTANT. Grade

A.P.T., IV. Salary £480 to £525 per annum.

ESTIMATOR (BUILDING WORKS). Grade

A.P.T., V. Salary £520 to £570 per annum (tem-

porary appointment).

The appropriate London weighting is paid in

addition to the above salaries, and salaries in

excess of the minima of the grades may be paid

according to the qualifications and experience

of successful candidates.

The Council will be prepared to consider applica-

tions for a subsistence allowance in appropriate

cases from persons appointed should they be

unable to obtain suitable housing accommodation.

Full particulars of the duties, terms and con-

ditions of appointment and form of application

(which must be returned by Monday, the 8th

May, 1950) may be obtained from the under-

signed.

Canvassing in any form will disqualify.

H. A. EDWARDS.

Town Hall, East Ham, E.6. 4110

WAR DEPARTMENT.

Applications are invited for the following

vacancies in the Fortifications and Works

Directorate at Chessington, Surrey:—

(1) CIVIL ENGINEER (Design). Must

have worked in a Consulting or Municipal

Engineer's office. Experience in sewage disposal

schemes and water supply and knowledge of

general Civil Engineering work such as roads,

retaining walls, cost defence, etc., as required.

(2) ASSISTANT CIVIL ENGINEER (Design).

Experience similar to that for Post 1.

(3) ASSISTANT MECHANICAL ENGINEER.

Must have good practical experience of major

heating and ventilating installations.

(4) ASSISTANT MECHANICAL ENGINEER.

Must have experience with firm of consultants in

steam and other forms of prime movers, work-

shop and mechanical equipment, and mechanical

handling plant.

Applications for Post 1-4 must have passed

Section A and B of examination for A.M.I.C.E.

or A.M.I.Mech.E., as appropriate, or possess an

equivalent qualification.

(5) ASSISTANT ARCHITECTS (2 vacancies).

Must be A.R.I.B.A. or Registered Architect by

examination.

(6) TECHNICAL ASSISTANTS (Architectural)

(2 vacancies). Should have experience in

preparing specifications of architectural projects,

examination of applicable British Standard Spec-

ifications and Code of Practice, and collation of

data and extracts from publications as required

by Architects. Applicants should be of Inter-

mediate R.I.C.S. standard.

(7) CHIEF DRAUGHTSMAN (Architectural).

Must be at least R.I.B.A. Intermediate

standard, with initiative, wide experience, and

ability to control large drawing office staff.

Though primarily architectural, successful ap-

plicants must be able to supervise generally the

work of Civil Engineering, Mechanical, Electrical

and Structural drawing offices.

(8) SENIOR DRAUGHTSMEN (Architectural)

(2 vacancies). Should not be below

R.I.B.A. Intermediate standard and have had

considerable experience in an Architect's office.

(9) LEADING DRAUGHTSMAN (Architectural)

(2 vacancies). As for Post 8, but in a

lesser degree.

(10) DRAUGHTSMAN (Architectural) (several

vacancies). Must have recognised training and

not less than 3 years' experience in an architect's

office.

Applicants for the following posts should have

reached a technical standard of not less than

Ordinary National Certificate.

(11) SENIOR DRAUGHTSMAN (H. and V.

and Mechanical). Should have experience in

general mechanical engineering, including 4 years'

apprenticeship with at least 1 year in a drawing

office. Good general knowledge of I.C. engines,

pumps, fans, boilers and refrigeration and air

conditioning plants, and heating and ventilating

installations and lay-out is essential, with

specialist knowledge of at least two of them.

(12) LEADING DRAUGHTSMAN (Mechanical).

Must have practical experience in general engi-

neering, including I.C. engines, compressor pumps

and fans.

(13) LEADING DRAUGHTSMAN (Civil Engi-

neering) (2 vacancies). Must have practical ex-

perience of re-inforced concrete or steelwork or

general civil engineering work.

(14) DRAUGHTSMAN (Mechanical, Electrical

and Civil Engineering). Must have good know-

ledge and experience in the appropriate field.

Candidates for all posts should be under 50

years of age. Salaries for the posts are:—

Post 1, £720-£960 per annum.

Posts 2, 3, 4, 5, £448-£720 per annum.

Post 7, £760-£910 per annum.

Posts 8, 11, £595-£720 per annum.

Posts 6, 9, 12, 13, £470-£595 per annum.

Posts 10, 14, £283-£495 per annum.

Starting salary will be fixed according to age,

qualifications and experience. Annual increases

are payable, subject to satisfactory service.

The posts are temporary, but most of them have

long-term possibilities, and open competitions are

held periodically to fill established posts.

The work is varied and interesting, and good

canteen facilities exist.

Apply in writing, stating age, nationality, and

full details of qualifications and experience, to

The War Office (C.5(A)), Room 504, Hotel Victoria,

Northumberland Avenue, London, W.C.2. 4109

CROWN AGENTS FOR THE COLONIES.

BUILDING SURVEYOR required by Hong

Kong Government Public Works Department for

three years, with prospect of permanency. Com-

mencing salary, including expatriation pay,

according to qualifications and experience in the

scale \$1,047 a month, rising to \$1,820 a month,

plus cost-of-living allowance. (The Government

rate of exchange is at present 16 dollars to the

£, but is liable to alteration.) Free passages

and liberal leave on full salary. Candidates, not

over 45 years of age, must be Chartered Surveyors,

and have had at least 5 years' experience in a

City Engineer's or similar office dealing with the

approval of plans for the construction of build-

ings, including reinforced concrete framed struc-

tures. Apply at once by letter, stating age,

whether married or single, and full particulars

of qualifications and experience, and mentioning

this paper, to the Crown Agents for the

Colonies, 4, Millbank, London, S.W.1, quoting

M/N/23704/3A on both letter and envelope. The

Crown Agents cannot undertake to acknowledge

all applications, and will communicate only with

applicants selected for further consideration.

DERBYSHIRE COUNTY COUNCIL.**COUNTY PLANNING DEPARTMENT.**

Applications are invited for the following

appointments:—

(a) SENIOR PLANNING ASSISTANT (DE-

VELOPMENT CONTROL, in the Peak Area

Planning Office, Bakewell, A.P.T., Grade VI

(£595-£660). Applicants should be Associate

Members of the Town Planning Institute and/or

Associate Members of the Royal Institute of

British Architects. Experience in the Planning

Department of a Local Authority will be an ad-

vantage. A motor car allowance in accordance

with the County Council's scale is attached to

this post.

(b) DRAUGHTSMAN, in the (i) Headquarters

Office, Derby; (2) Area Planning Office at Chester-

field, Misc. Div., Grade I (£315-£350). Ap-

plicants should be competent architectural draughts-

men, preferably with experience in the office of a

private architect or the Architectural department

of a Local Authority.

(c) MODEL MAKER, in the Headquarters

Office, A.P.T., Grade IV (£480-£525). Applicants

should have a comprehensive experience in the

making of architectural and relief models. Addi-

tionally, experience in general presentation of

plans and drawings would be an advantage.

The appointments will be subject to the pro-

visions of the Local Government Superannuation

Act, 1937, the Council's Conditions of Service and

medical examination. Applications from regis-

tered disabled persons would be considered. The

appointments may be filled at a commencing

salary within the range of the Grade indicated,

according to qualifications and experience.

Canvassing, either directly or indirectly, will

be a disqualification, and candidates should state

whether they are, to their knowledge, related to

any member of the Council or to any senior

official.

Applications, stating age, qualifications and ex-

perience, accompanied by one recent testimonial,

and the names of two persons to whom reference

can be made, should reach the undersigned at

8a, Bold Lane, Derby, not later than 13th May,

1950.

MAURICE J. HELLIER.

County Planning Officer.

4091

BRITISH ELECTRICITY AUTHORITY.**EASTERN DIVISION.**

Applications are invited for the following posts

in the Generation Construction Department at

Divisional Headquarters in North London:—

Grade I DRAUGHTSMEN (STRUCTURAL).

Commencing salary range £515-£535 per annum,

ANGLESEY COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.
Applications are invited for the following permanent appointments in the County Architect's Department:

(a) **ONE SENIOR ASSISTANT ARCHITECT.** Salary Grade VII, commencing at £635 per annum and rising to £710 per annum. Applicants should be registered Architects and Members of the Royal Institute of British Architects, with considerable experience in the design of Education Buildings, supervision of Technical staff, etc.

(b) **ONE ASSISTANT ARCHITECT.** Salary Grade V, commencing at £520 per annum and rising to £570 per annum. Preference will be given to Associate Members of the Royal Institute of British Architects, with good general experience in design and construction.

(c) **TWO ASSISTANT ARCHITECTS.** Salary Grade IV, commencing at £480 per annum and rising to £525 per annum. Applicants should have had good experience in the preparation of working drawings, and preference will be given to applicants who have passed the Intermediate Examination of the Royal Institute of British Architects.

(d) **ONE ARCHITECTURAL ASSISTANT.** Salary Grade III, commencing at £450 per annum and rising to £495 per annum. Applicants should have had good architectural training and be good draughtsmen.

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937, and will be subject to three months' notice in the case of (a) and one month's notice in the cases of (b), (c) and (d) on either side.

Candidates called for interview will be required to undergo a medical examination by the County Medical Officer.

A lodging allowance of 25s. per week will be paid for a period up to six months to the successful candidates who are married (or, if single, with dependent) and unable to secure housing accommodation in the district, as from the date of their appointment.

Further particulars regarding the appointments may be obtained from N. S. Johnson, A.R.I.B.A., A.M.T.P.I., County Architect, Shire Hall, Llangefni, Anglesey.

Applications, stating age, training, experience, qualifications, names of two referees, and accompanied by a copy of one recent testimonial, are to be sent so as to reach the undersigned not later than Monday, the 22nd May, 1950.

WILLIAM JONES,
Clerk to the County Council.
Shire Hall, Llangefni, Anglesey.
24th April, 1950. 4118

LANCASHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.
Applications are invited for the following appointments:

(a) **SENIOR ARCHITECTURAL ASSISTANT.** in the Estate Development Section at Preston. Salary £685-£760.

A Degree in Architecture or Corporate Membership of the Royal Institute of British Architects is essential. Previous experience in housing and the preparation of comprehensive development schemes would be an advantage.

(b) **SENIOR PLANNING ASSISTANTS (Engineering)** at Preston, Lancaster, Accrington, Liverpool, Wigan, Burnley and Manchester Divisional Offices. Salary £595-£660. Applicants should possess one of the following:—A Degree in Engineering, A.M.I.C.E., A.M.I.Mun.E., and Planning experience would be considered an advantage.

(c) **LANDSCAPE ARCHITECT.** A.P.T., Grade VII (salary £635-£710).

Candidates for this appointment should possess one or more of the following qualifications: A.B.I.C.S., A.M.T.P.I., A.I.L.A., or should have taken a recognised course in Landscape Design.

(d) **PLANNING ASSISTANT.** A.P.T., Grade V (salary £520-£570).

Experience of planning Rural Areas would be an advantage.

Candidates should possess one or more of the following: A.M.T.P.I., A.R.I.C.S. (Land Agency Sub-Division), or membership of Land Agents' Society.

All appointments are subject to the National Joint Council Scheme of Conditions, the Local Government Superannuation Act, 1937, and to a medical examination.

Applications, giving the names and qualifications of two referees, and indicating for which appointment or appointments application is made, to be forwarded to the County Planning Officer, County Offices, Preston, by 27/5/50. 4117

MINISTRY OF WORKS.

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

Salary: Architectural Assistants, £300-£525 per annum plus overtime. 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, some of them have long term possibilities, and competitions are held periodically to fill established vacancies.

Apply in writing, stating age, nationality, full details of experience and locality preferred, to Chief Architect, W.G.10/AT, Ministry of Works, Abell House, London, S.W.1. 4053

COUNTY BOROUGH OF SOUTHEND-ON-SEA.

Applications are invited for the following appointments in the Department of the Borough Engineer and Surveyor:

TWO SENIOR ASSISTANT ARCHITECTS. Grade VI (£595-£660).

ASSISTANT QUANTITY SURVEYOR. Grade VI (£595-£660).

The appointments will be subject to medical examination and to the Local Government Superannuation Act, 1937.

Applications, stating age, education, training and qualifications, and previous and present employment, and accompanied by one copy testimonial and two professional references, to be sent to the Borough Engineer and Surveyor, Municipal Buildings, Southend-on-Sea, by Saturday, 6th May, 1950.

ARCHIBALD GLEN,
Town Clerk.
Southend-on-Sea.
14th April, 1950. 4093

NORTH THAMES GAS BOARD.

Applications are invited for the following appointment in the Architects' Section of the Chief Engineer's Department of Westminster: **SENIOR ARCHITECTURAL ASSISTANT.** minimum starting salary £650 per annum.

Applicants, who must be Registered Architects and should be studying for or have passed 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.

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 9757. 3953

BRITISH ELECTRICITY AUTHORITY.

SOUTH WALES DIVISION.
Applications are invited for the appointment of **WORKS INSPECTORS (Temporary)** in the Construction Department at Divisional Headquarters, to be centred at the Uskmouth Generating Site, near Newport.

The salary, which is provisional and subject to negotiation, will be £450 per annum.

Applicants should have been engaged on large civil engineering works involving pile driving, bulk excavation, heavy foundation and superstructure work. Experience in the checking of the erection of structural steel buildings would be considered an advantage.

Forms of application may be obtained from the Divisional Secretary at the address below, to whom completed applications should be returned not later than 5th May, 1950, in sealed envelope endorsed "Works Inspector".

H. V. PUGH,
Divisional Controller.
Cardiff (Pengam Moors) Airport, Cardiff.
13th April, 1950. 4069

BATTERSEA BOROUGH COUNCIL.

APPOINTMENT OF SENIOR ASSISTANT ARCHITECT (A.P.T., Grade VIII) (£685 per annum, rising by annual increments of £25 to £760, plus London weighting).

The late date for receipt of applications for the above-mentioned appointment, advertised in a previous issue of this paper, has been extended to 12th May, 1950.

R. G. BERRY,
Town Clerk.
Town Hall, Battersea, S.W.11.
21st April, 1950. 4113

COUNTY COUNCIL OF THE COUNTY OF LANARK.

PROPERTY DEPARTMENT.
ARCHITECTURAL ASSISTANTS.

Vacancies exist within the establishment of Architectural Assistants on the staff of the County Architect's Department (Motherwell). Appointments range from a junior to senior capacity, and salary will be in accordance with the J.I.C. Scheme of Salaries and Conditions of Service ranging from General Division to A.P.T., Grade VII. If preferred, appointment could be a temporary one.

While the work of the Department is mainly of an educational character, consisting largely of the design and development of a large schools building programme, an interesting and varied syllabus embraces every branch of architectural development, including Police Housing, but not general housing.

Although the salary grade and scale will be discussed and adjusted at the interview of selected candidates, written applications should indicate a preference compatible with the qualifications of the applicant.

Applications, stating age, particulars of training, experience and qualifications, together with the names and addresses of three referees, should be addressed to the County Architect, Property Department, 34, Albert Street, Motherwell, not later than 20th May, 1950.

The appointments (permanent) will be subject to the provisions of the Local Government Superannuation (Scotland) Act, 1937, and the successful applicants will require to pass a medical examination.

Canvassing, directly or indirectly, will be a disqualification.

WM. C. BROWNLEE,
County Clerk.
Lanarkshire House, 191, Ingram Street,
Glasgow, C.1. 4115

COUNTY BOROUGH OF BOURNEMOUTH.

APPOINTMENT OF PLANNING ASSISTANTS.
Applications are invited for the following appointments:

SENIOR PLANNING ASSISTANT. A.P.T. VII (£635-£710).

PLANNING ASSISTANT. A.P.T., V (£520-£570).

TWO PLANNING ASSISTANTS. A.P.T. IV (£480-£525).

PLANNING ASSISTANT. A.P.T., II (£420-£465).

Applicants for Senior Planning Assistant must be an A.M.T.P.I., and should hold a recognized qualification in Architecture, and/or Engineering and have had considerable experience in planning practice.

Applicants for Planning Assistant, A.P.T., V should be suitably qualified and be eligible for Associate Membership of the T.P.I. or other professional body, and have experience in the preparation of Development Plans.

Applicants for Two Planning Assistants, A.P.T., IV, should have passed the Intermediate Examination in Town Planning, Architecture or Engineering, and have experience in Development Plan work or Survey and Research and be good draughtsmen and colourists.

Applicants for Planning Assistant, A.P.T., II should have had some Town Planning experience, including Survey and Research work, and be good draughtsmen and colourists.

All appointments will be terminable by one month's notice in writing on either side, and subject to the conditions of the National Scheme of Conditions of Service, the provisions of the Council in force from time to time, and the Local Government Superannuation Act, 1937. The successful candidates must pass a medical examination. Canvassing will disqualify.

Applications, appropriately endorsed, and stating in the following order:—Name, address, age, qualifications, present and past appointments, with dates and full details of experience, together with copies of two recent testimonials, should reach me not later than Monday, the 15th May, 1950.

A. LINDSAY CLEGG,
Town Clerk.
Bournemouth. 4112

NORTH THAMES GAS BOARD.

DESIGNER DRAUGHTSMAN.

A Designer Draughtsman is required for the preparation of detailed drawings of proposed alterations to existing showrooms and the erection of new showrooms, and to work on the design of such jobs as exhibition stands, demonstration kitchens, mobile showrooms, etc. Starting salary range £560 per annum to £650 per annum, according to age, qualifications and experience. The appointment would be of a permanent nature, and pension arrangements will be discussed with short list candidates.

Applications, stating age and giving full particulars, should be sent to the Staff Controller, North Thames Gas Board, 30, Kensington Church Street, London, W.8, quoting reference number 9770. 4061

CO-OPERATIVE WHOLESALE SOCIETY, LTD.

ARCHITECT'S DEPARTMENT, LONDON.
Applications are invited for the following:

FOUR ASSISTANT ARCHITECTS. Salary £490-£555 per annum. Applicants should have a sound knowledge of building construction and Architectural design, capable of preparing working drawings and details under supervision.

SURVEYOR'S ASSISTANT. Experienced, taken-off, with sound knowledge of present day prices.

TAKER-OFF. Experienced in all branches of building work, with sound knowledge of present day prices, and preferably Member of the R.I.C.S. (Quantities Section). Salary £600-£750.

The appointments are permanent and offer prospects of up-grading.

Successful candidates will be required to undergo medical examination for a compulsory Superannuation Scheme.

Applications, stating age, experience, qualifications and salary expected, to the Chief Architect, Co-operative Wholesale Society, Ltd., 99, Leaman Street, London, E.1.

COUNTY BOROUGH OF DERBY.

BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointment on the permanent staff in accordance with the National Scale of Salaries:—

ONE JUNIOR QUANTITY SURVEYOR. Grade III, IV and V. Salary £450-£570.

Applicants should be fully experienced in working up final accounts, the taking off of minor works, and have passed the Intermediate Examination of the R.I.C.S.

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

Form of application may be obtained from Thos. W. East, F.R.I.B.A., Borough Architect, The Council House, Corporation Street, Derby, and should be returned when completed, together with a copy of one testimonial and the names of two persons to whom reference may be made, to arrive not later than Monday, 15th May, 1950.

Canvassing, directly or indirectly, will be a disqualification.

E. H. NICHOLS,
Town Clerk.
The Council House, Derby. 4096

COUNTY BOROUGH OF BURTON-UPON-TRENT.

Applications are invited for the following appointments in the Architectural Office of the Borough Surveyor:—

- (1) ONE QUANTITY SURVEYOR, Grade VII, A.P.T. Division (£635-£710).
(2) ONE ARCHITECTURAL ASSISTANT, Grade VI, A.P.T. Division (£595-£660).

Preference will be given to candidates who are Associate Members of the appropriate Institute.

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937; to determination by one month's written notice on either side, and to the successful candidates passing a medical examination by the Medical Officer of Health.

Applications, in sealed envelopes, stating age, qualifications and experience, and accompanied by copies of three recent testimonials, must be delivered to the Borough Surveyor, Town Hall, Burton-upon-Trent, not later than 10 a.m. on Wednesday, the 24th May, 1950.

H. BAILEY CHAPMAN,

Town Clerk.

Town Hall, Burton-upon-Trent.

19th April, 1950. 4102

COUNTY BOROUGH OF SOUTHAMPTON. BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments:—

- (a) ONE SENIOR ASSISTANT PLANNING OFFICER, Grade VII (£635-£710 p.a.).
(b) ONE ASSISTANT PLANNING OFFICER, Grade VI (£595-£660 p.a.).

- (c) ONE PLANNING ASSISTANT, Grade I (£390-£435 p.a.).
(d) ONE JUNIOR ASSISTANT, G.D. (£135-£385 p.a.).

- (e) ONE ARCHITECTURAL ASSISTANT, Grade II (£420-£465 p.a.).

Applications, on forms obtainable from L. Berger, Dip.Arch., A.R.I.B.A., Borough Architect, Civic Centre, Southampton, must be returned not later than 8th May, 1950. 4101

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

Applications are invited for the following appointments on the permanent staff:—

- (a) ASSISTANT ARCHITECTS. A.P.T., Grade V, salary £520 to £570 per annum.

Candidates for the appointment should be Registered Architects, preferably Associates of the Royal Institute of British Architects and/or hold a Degree or Diploma of a recognised School of Architecture.

Candidates with these qualifications who are not yet registered Architects are eligible to apply; the salary in such cases would be A.P.T., Grade IV, commencing at £480, until registered.

Students about to graduate are invited to apply.

- (b) JUNIOR QUANTITY SURVEYING ASSISTANT, General Division, salary £220 per annum at age 21, rising by annual increments with opportunity of promotion to A.P.T. Division on passing Intermediate Examination of R.I.C.S.

The successful candidates will be required to pass a medical examination before the appointments are confirmed, to contribute to the Corporation's Superannuation Fund, and in the case of (a) to execute the Corporation's Deed of Service and in the case of (b) the Corporation's Service Agreement.

Applications on the official form, which can be obtained from the City Architect's Department, must be returned, together with not more than three recent testimonials, to Leonard C. Howitt, B.Arch., Dip.T.P., D.P.A., F.R.I.B.A., M.T.P.I., City Architect, Town Hall, Manchester, 2, by 15th May, 1950, endorsed for the appropriate appointments.

The appointments are subject to the Standing Orders of the Council and the National Joint Council's Scheme of Service Conditions. Canvassing in any form is prohibited, and relationship to any member of the Council or senior official must be disclosed to me in writing.

PHILIP B. DINGLE,

Town Clerk.

Town Hall, Manchester.

April, 1950. 4105

COLONIAL DEVELOPMENT CORPORATION require ARCHITECTURAL DRAFTSMEN

for Head Office, London, and West Indies. Age 25-45. Should be Licentiates or Associates of R.I.B.A., but others may apply. Experience in design of housing, community buildings. £450-£750, depending on age and qualifications, plus overseas allowances for West Indies. First four years, with prospects of permanency.

Possible conversion to pensionable post later. Accommodation provided overseas, generous U.K. leave. Write, giving age, qualifications, and experience, quoting Serial No. 24E, to Personnel Manager, 19, Curzon Street, W.1, by 5th May, 1950. 4099

WARWICKSHIRE COUNTY COUNCIL. ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointment:—

- ASSISTANT ARCHITECT, Grade VII (salary £635-£710).

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

Application forms can be obtained from C. H. Elkins, F.R.I.B.A., A.R.I.C.S., County Architect, Shire Hall, Warwick.

L. EDGAR STEPHENS,

Clerk of the Council.

Shire Hall, Warwick.

April, 1950. 4068

COUNTY OF LINCOLN—PARTS OF LINDSEY. COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following vacancies, where, in the case of married men finding it necessary to obtain lodgings in Lincoln whilst maintaining their homes outside Lincoln, a subsistence allowance of 25s. per week for six months, plus third class railway fare to their home each two months, will be paid.

- SENIOR QUANTITY SURVEYOR, Grade A.P.T., VII, at a salary of £635, rising to £710 per annum. Preference will be given to applicants who are Associates of the Royal Institute of Chartered Surveyors.

- ARCHITECTURAL ASSISTANTS, Grade A.P.T., IV, salary £460 per annum, rising to £525 per annum. Applicants should have passed the Intermediate Examination of the R.I.B.A. and have had practical experience in an office.

- JUNIOR ARCHITECTURAL ASSISTANTS (TWO), Grade A.P.T., II, salary £420 per annum, rising to £465 per annum. Preference will be given to candidates who have passed the Intermediate Examination of the R.I.B.A. or equivalent.

Applications, stating age, qualifications, experience, and giving the names of two referees, should be sent to the undersigned not later than Monday, 1st May, 1950.

A. RONALD CLARK, A.R.I.B.A.,

A.M.T.P.I.,

County Architect.

County Offices, Lincoln. 4075

Tenders for Contracts

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

STATE HOUSING COMMISSION OF WESTERN AUSTRALIA.

Tenders are invited for the supply, shipment to Western Australia, and complete erection upon sites to be allocated, of 752 single storey Prefabricated or Precast Houses to the requirement of the State Housing Commission of Western Australia.

Contractors may tender for the total number or for any number in excess of 250.

Plans, specification, general conditions and form of tender are available on application to the Agent-General for Western Australia, 115-116, Strand, London, W.C.2, at a cost of 10s. 6d. per set.

Tenders, together with deposit, are to be submitted to The Chairman, Government Tender Board, Murray Street, Perth, Western Australia, not later than 2.15 p.m. on 1st June, 1950. 4098

DURHAM COUNTY COUNCIL.**EDUCATION COMMITTEE.****BILLINGHAM NORTH COUNTY SCHOOL.**

No. 27.

BRANDON COUNTY AND MODERN SCHOOLS, Nos. 31 and 641.

The Education Committee are prepared to receive sole tenders for the work in connection with the drainage, levelling and laying out of the playing field at each of the above named schools.

Applications for the Specifications, Plans and Forms of Tender are to be sent to the County Architect's Office, Court Lane, Durham, not later than the 6th May, 1950.

No pledge is given to accept the lowest or any tender.

G. R. CLAYTON, F.R.I.B.A.,

County Architect.

Court Lane, Durham.

17th April, 1950. 4090

BIRMINGHAM CITY TRANSPORT.**TO BUILDING CONTRACTORS.****PROPOSED NEW MOTOR OMNIBUS GARAGE, LEA HALL.**

The BIRMINGHAM CITY TRANSPORT DEPARTMENT invite TENDERS for the BUILDING WORK in connection with the ERECTION of a proposed new MOTOR OMNIBUS GARAGE at LEA HALL.

Application for particulars and Bills of Quantities must be made before 12 noon on Monday, 8th May, 1950, to the General Manager, Birmingham City Transport Department, The Council House, Congreve Street, Birmingham, 3, accompanied by a deposit of five guineas, which will be returned on receipt by the appointed time of a bona fide Tender if not subsequently withdrawn. Cheques must be made payable to the Birmingham City Transport.

General Conditions of Contract (which include the Corporation's usual Fair Wages and Conditions of Labour Clause), Specifications and Drawings, may be inspected at the Office of the Architects, Messrs. Gateley & Parsons, of 50, Harborne Road, Birmingham, 15, on and after Monday, 22nd May, 1950, upon production of the Bills of Quantities or by appointment.

Tenders must be enclosed in the official endorsed envelope provided for the purpose, and such envelope must be sealed and delivered to the Town Clerk, The Council House, Birmingham, 1, not later than 12 noon on Wednesday, 14th June, 1950, when they will be opened. Tenders received after that time will not be considered.

The Committee does not bind itself to accept the lowest or any Tender.

A. C. BAKER,

General Manager.

The Council House, Congreve Street, Birmingham, 3. 4116

Partnership

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

LONDON Architects, with established staff and good accommodation; willing to extend limited partnership to young progressive Architects able to contribute work to common pool. Box 4000.

Architectural Appointments Vacant

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

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

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

SENIOR ARCHITECTURAL ASSISTANTS required by United Dairies, Limited; applicants to state age and experience in the preparation of surveys, sketch plans and working drawings, and be able to supervise work in progress. Apply in writing, stating qualifications and salary required, to Chief Architect, 31, St. Petersburg Place, London, W.2. 3576

ARCHITECTS' SENIOR ASSISTANT also JUNIOR, for urgent industrial and other schemes; very interesting experience. Watson, Johnson & Stokes, Victoria Square, Birmingham, 2. 3638

ASSISTANT to Technical Editor of "The Architects' Journal"; qualifications required: Interested in building construction, R.I.B.A. Inter. standard, or equivalent qualifications; experience in architect's or builder's office an advantage. Replies to Cotterell Butler, 9-13, Queen Anne's Gate, S.W.1. 492

STUDENT or JUNIOR ARCHITECT for editorial work; applicants to have a bias towards building technology and the science of building; salary according to qualifications and experience. Box 493.

ASSISTANT ARCHITECT required by British Railways in London; applicants should have passed Inter. R.I.B.A. Examination and have had several years' experience in an Architect's office; salary £475-£525 per annum. Apply, stating age, qualifications and experience, to Box 3969.

SCHERRER & HICKS, F.R.I.B.A., 19, Cavendish Square, W.1, require one A.R.I.B.A. ASSISTANT, with two or three years' experience, and one JUNIOR ASSISTANT in their London office (Langham 6217), and one A.R.I.B.A., with one to two years' experience, and two JUNIOR ASSISTANTS in their Manchester office (Eccles 3967). Work includes schools, hospitals, laboratories, industrial building and housing. 3978

REQUIRED, at Company's Head Office, Guildford, ARCHITECTURAL ASSISTANT, A.R.I.B.A.; varied work, mainly factory; five-day week; salary by arrangement. Box 3855.

WEST RIDING Architects require ASSISTANTS, with experience in any of the following:—Local Authority Housing, Hospitals, Schools, of Industrial Work; good salaries and prospects for reliable men. Full particulars to Box 3981.

ARCHITECTURAL ASSISTANTS required in South Devon offices; must have passed R.I.B.A. Intermediate Examination. Full details of experience and salary required to Box 4058.

ARCHITECT'S ASSISTANT required for general Country practice; must be capable of preparing surveys, specifications, details, etc.; knowledge of housing an advantage. Reply, stating age, training, experience, and salary required, Edwin H. Earp, L.R.I.B.A., Scholars Lane, Stratford-on-Avon. 4004

SENIOR ARCHITECTURAL ASSISTANT required in busy office, West End of London; must be capable of taking full responsibility of large and small jobs through all the stages; work of varied interest now in progress in London and Provinces; excellent opening, with good salary for suitable man. Apply in writing, giving full particulars of training, experience, past and present employment, to Box 4012.

ARCHITECTURAL ASSISTANT (SENIOR) required for permanent and progressive appointment with firm in private practice; fully qualified or Finals standard; salary commensurate with experience; house available if required. Full particulars to W. S. Hatfield & Partners, 1, Queen's Road, Coventry. 4013

REQUIRED at once two competent JUNIOR ARCHITECTURAL ASSISTANTS; good draughtsmen, working drawings, and details; salary according to experience; West Lancashire area, in private practice; write, with references. Box 4022.

ARCHITECTS, SENIOR ASSISTANTS required. Should have good knowledge of commercial and industrial buildings and contemporary design. Apply in writing to S.C.W.S., Ltd., Architectural Department, 119, Paisley Road, Glasgow, C.5. Envelopes to be endorsed "Architect." 2025

QUANTITY SURVEYORS, SENIOR ASSISTANTS required. Preferably with pre-war experience in Scheduling; probable costing; measuring and agreeing Final Measurements. Apply in writing to S.C.W.S., Ltd., Architectural Department, 119, Paisley Road, Glasgow, C.5. Envelopes to be endorsed "Surveyor." 2026

ARCHITECTS require SENIOR ASSISTANT, with good office experience; salary £500-£550, according to experience; permanent; excellent prospects. Stenhouse & Gillis, 2, Saville Chambers, Newcastle-on-Tyne. 4096

ASSISTANT QUANTITY SURVEYOR required in professional office in South Devon; capable of preparing bills, valuations and dealing with contractors' accounts for housing schemes. State age, experience, and salary required. Box 4104.

SENIOR ASSISTANT required for general practice; able to take charge of small group and fully experienced in professional routine; good office accommodation and working conditions; share of profits; salary £500-£700, according to experience. S. Morrison, A.R.I.B.A., 90, Derwent House, Full Street, Derby. 4111

ARCHITECTURAL ASSISTANT required, with good general practice experience; five-day week. Write, stating age, experience, and salary required, to Aslan & Freeman, A.A.R.I.B.A., 90, Lower Thames Street, London, E.C.3. 4100

OPPORTUNITY for young ARCHITECT with flair for colour and interior decoration to join Lighting Engineering Department of leading progressive lamp manufacturers. Write Box A.C.905, c/o Central News, Ltd., 17, Moorgate, London, E.C.2. 4088

SENIOR ARCHITECTURAL ASSISTANT required in busy London Architects' office, capable of taking entire charge of jobs; sound knowledge of detailing and construction essential; excellent opportunity possible for right man; salary according to qualifications and experience. Write full particulars to Milner & Craze, FF./R.I.B.A., 3, Buckingham Gate, S.W.1. 4094

ARCHITECT'S ASSISTANT required in well established provincial practice. North of London; permanent post with good prospects. Apply, giving full particulars of qualifications, age, experience, and salary required, to Box 4092.

ARCHITECTURAL DRAUGHTSMAN required in Reading office; capable of preparing working drawings. Write, giving experience and salary required. Box 4064.

ARCHITECTURAL ASSISTANT required, Exeter; intermediate standard; knowledge of ecclesiastical work an advantage, but not essential; state particulars and salary required. Box 4066.

ARCHITECTURAL ASSISTANT AND DRAUGHTSMAN urgently required by leading West End Firm engaged on the design and erection of Prefabricated Schools, Office Buildings, etc., in all parts of the country. Please reply, giving the usual particulars, to Box 4071.

ARCHITECT'S ASSISTANT required in West End office; R.I.B.A. Inter. standard; experienced in preparation of working drawings and details of commercial buildings, alterations, etc.; salary in accordance with experience. Apply with full particulars to E.H.D., Box 4072.

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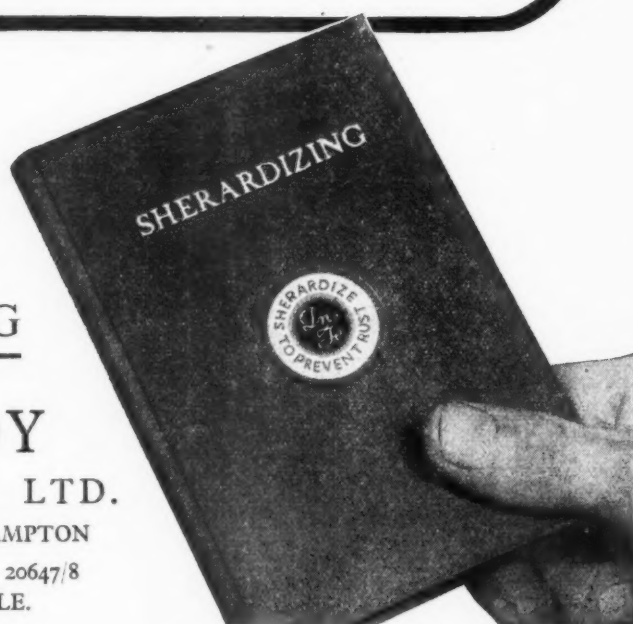
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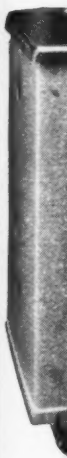
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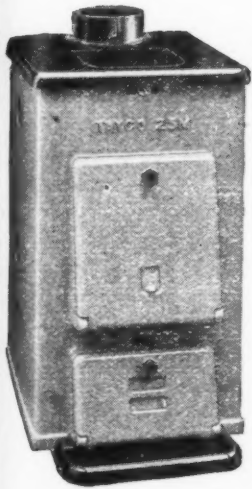
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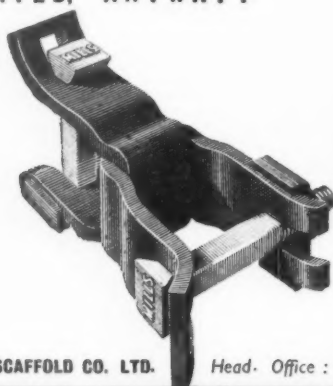
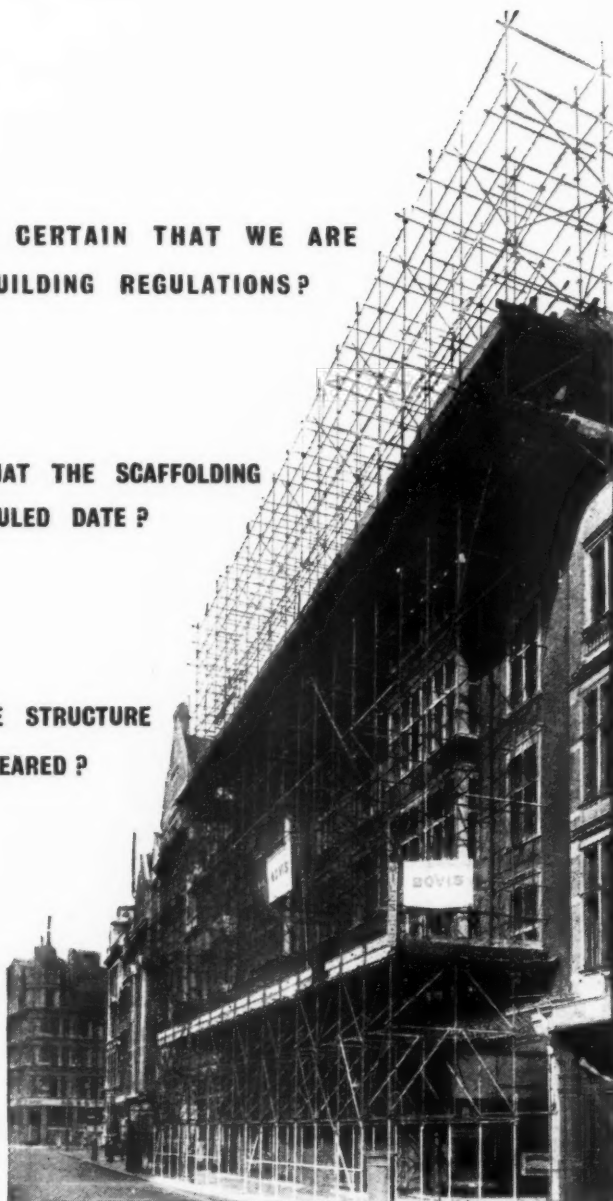
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