

THE ARCHITECTS' JOURNAL



standard contents

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

NEWS and COMMENT

Diary

News

Astragal's Notes and Topics

Letters

Societies and Institutions

TECHNICAL SECTION

Information Sheets

Information Centre

Current Technique

Questions and Answers

Prices

The Industry

PHYSICAL PLANNING

SUPPLEMENT

CURRENT BUILDINGS

HOUSING STATISTICS

Architectural Appointments
Wanted and Vacant

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

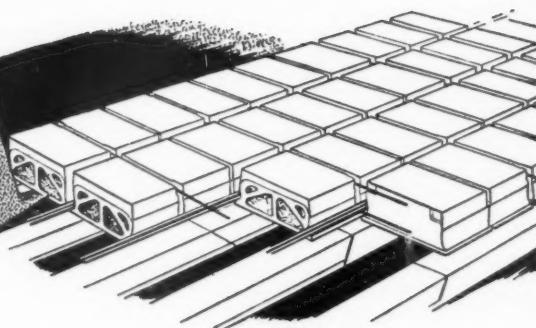
| | | |
|-----------|---|--------------------------|
| AA | Architectural Association, 34/6, Bedford Square W.C.1. | Museum 0974 |
| AAI | Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhamstead, Herts. | |
| ABS | Architects' Benevolent Society. 66, Portland Place, W.1. | Langham 5721 |
| ABT | Association of Building Technicians. 5, Ashley Place, S.W.1. | Victoria 0447-8 |
| ACGB | Arts Council of Great Britain. 4, St. James' Square, S.W.1. | Whitehall 9737 |
| ADA | Aluminium Development Association. 33, Grosvenor Street, W.1. | Mayfair 7501/8 |
| APRR | Association for Planning and Regional Reconstruction. 34, Gordon Square, W.C.1. | Euston 2158-9 |
| ArchSA | Architectural Students' Association. Department of Architecture, School of Building, Ferndale Road, Brixton, S.W.4. | Brixton 7048 |
| ARCUK | Architects' Registration Council. 68, Portland Place, W.1. | Welbeck 9738 |
| ASB | Architectural Science Board of the Royal Institute of British Architects. 66, Portland Place, W.1. | Langham 5721 |
| AScW | Association of Scientific Workers. 15, Half Moon Street, Piccadilly, W.1. | Grosvenor 4761 |
| BAE | Board of Architectural Education. 66, Portland Place, W.1. | Langham 5721 |
| BATC | Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1. | Reliance 7611, Ext. 1706 |
| BC | Building Centre. 9, Conduit Street, W.1. | Mayfair 8641/6 |
| BCC | British Colour Council. 13, Portman Square, W.1. | Welbeck 4185 |
| BCCF | British Cast Concrete Federation. 17, Amherst Road, Ealing, W.13. | Perivale 6869 |
| BCIRA | British Cast Iron Research Association. Alvechurch, Birmingham. | Redditch 716 |
| BDA | British Door Association. 10, The Boltons S.W.10. | Flaxman 7766 |
| BEDA | British Electrical Development Association. 2, Savoy Hill, W.C.2. | Temple Bar 9434 |
| BGF | British Gas Federation. 1, Grosvenor Place, S.W.1. | Sloane 8266 |
| BIA | British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2. | Glasgow Central 2891 |
| BIAE | British Institute of Adult Education. 29, Tavistock Square, W.C.1. | Euston 5385 |
| BID | Building Industries Distributors. 52, High Holborn, W.C.1. | Chancery 7772 |
| BINC | Building Industries National Council. 11, Weymouth Street, W.1. | Langham 2785 |
| BOT | Board of Trade. Millbank, S.W.1. | Whitehall 5140 |
| BRS | Building Research Station. Bucknalls Lane, Watford. | Garston 2246 |
| BSA | Building Societies Association. 14, Park Street, W.1. | Mayfair 0515 |
| BSI | British Standards Institution. 28, Victoria Street, S.W.1. | Abbey 3333 |
| BTE | Building Trades Exhibition. 4, Vernon Place, W.C.1. | Holborn 8146/7 |
| CABAS | City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Borough Architect, Town Hall, Newport, Mon. | Newport 3111 |
| CAS | County Architects Society. C/o F. R. Steele F.R.I.B.A., County Hall, Chichester. | Chichester 3001 |
| CCA | Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1. | Sloane 5255 |
| CCP | Council for Codes of Practice. Lambeth Bridge House, S.E.1. | Reliance 7611 |
| CDA | Copper Development Association. Kendals Hall, Radlett, Herts. | Radlett 5616 |
| CIAM | Congrès Internationaux d'Architecture Moderne. Dolderal, 7, Zurich, Switzerland. | |
| CID | Council of Industrial Design. Tilbury House, Petty France, S.W.1. | Whitehall 6322 |
| CPRE | Council for the Preservation of Rural England. 4, Hobart Place, S.W. Sloane 4280 | |
| CUJC | Coal Utilization Joint Council. 13, Grosvenor Gardens, London, S.W.1. | Victoria 1534 |
| CVE | Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1 | Reading 72255 |
| DGW | Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1. | Reliance 7611 |
| DIA | Design and Industries Association. 13, Suffolk Street, S.W.1. | Whitehall 0540 |
| DOT | Department of Overseas Trade. 35, Old Queen Street, S.W.1. | Victoria 9640 |
| EJMA | English Joinery Manufacturers' Association (Incorporated). Sackville House, 20, Piccadilly, W.1. | Regent 4448 |
| EPNS | English Place-Name Society. 7, Selwyn Gardens, Cambridge. | |
| FAS | Faculty of Architects and Surveyors. 8, Buckingham Palace Gdns., S.W.1. | Sloane 2837 |
| FASSC | Federation of Association of Specialists and Sub-Contractors. 21, Tothill Street, S.W.1. | Whitehall 9696 |
| FBI | Federation of British Industries. 21, Tothill Street, S.W.1. | Whitehall 6711 |
| FC | Forestry Commission. 25, Savile Row, W.1. | |
| FCMI | Federation of Coated Macadam Industries. 37, Chester Square S.W.1. | Sloane 1002 |
| FDMA | The Flush Door Manufacturers Association Ltd. Trowel Nottingham. Ilkeston 623 | |
| FLD | Friends of the Lake District. Pennington House, nr. Ulverston, Lancs. | Ulverston 201 |
| FMB | Federation of Master Builders, 26, Great Ormond Street, Holborn, W.C.1. | Chancery 7583 |
| FOB 1951 | Festival of Britain 1951. 2, Savoy Court, Strand, W.C.2. | Waterloo 1951 |
| FPC | The Federation of Painting Contractors, St. Stephen's House S.W.1. | Whitehall 3902 |
| FRHB | Federation of Registered House Builders. 82, New Cavendish Street, W.1. | Langham 4041 |
| FS (Eng.) | Faculty of Surveyors of England. Buckingham Palace Gdns., S.W.1. | Sloane 2837 |
| GG | Georgian Group. 27, Grosvenor Place, S.W.1. | Sloane 2844 |
| HC | Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1. | Whitehall 2881 |
| IAAS | Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1. | Sloane 5615 |
| ICA | Institute of Contemporary Arts, 17-18, Dover Street, Piccadilly, W.1. | Grosvenor 6186 |
| ICE | Institution of Civil Engineers. Great George Street, S.W.1. | Whitehall 4577 |
| 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 |

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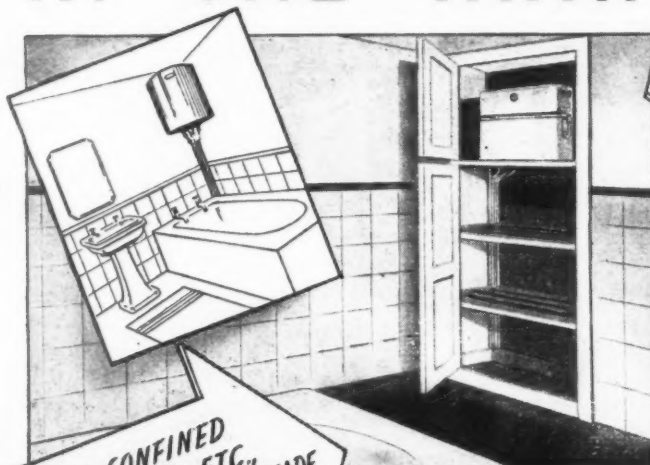


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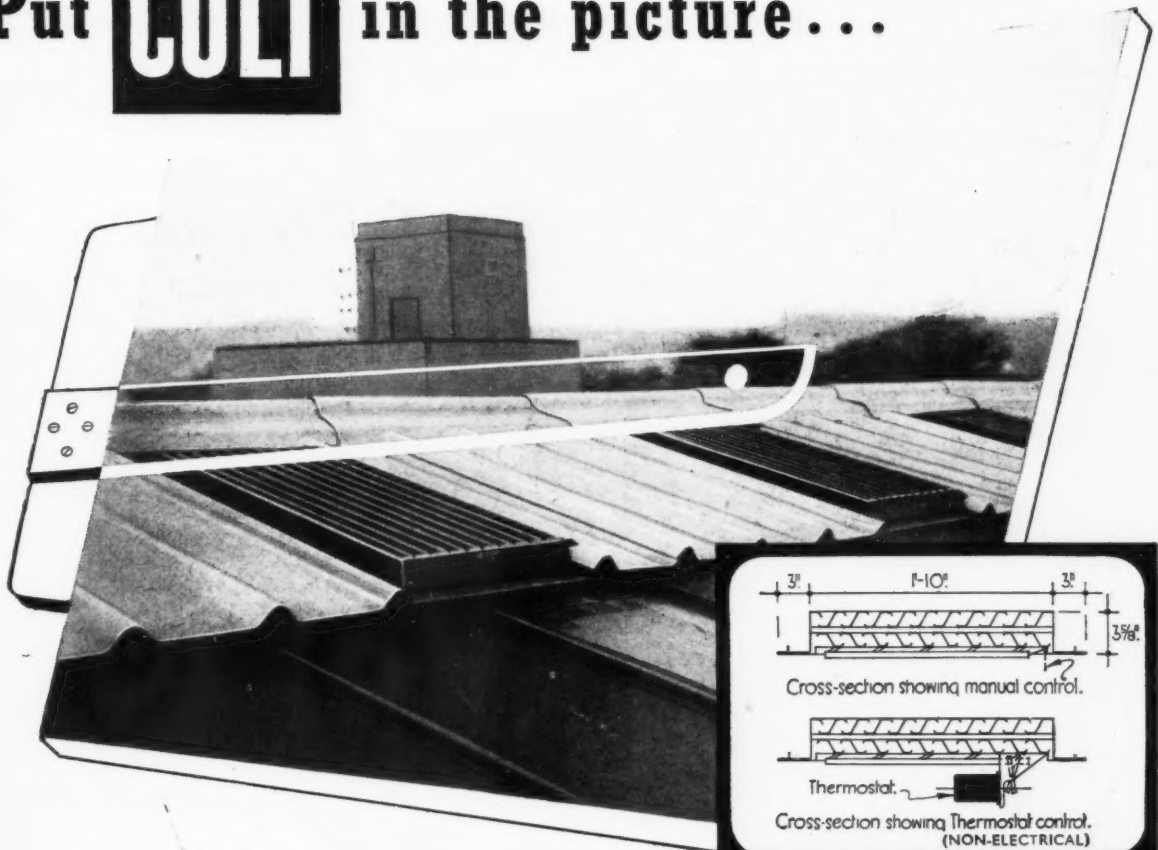
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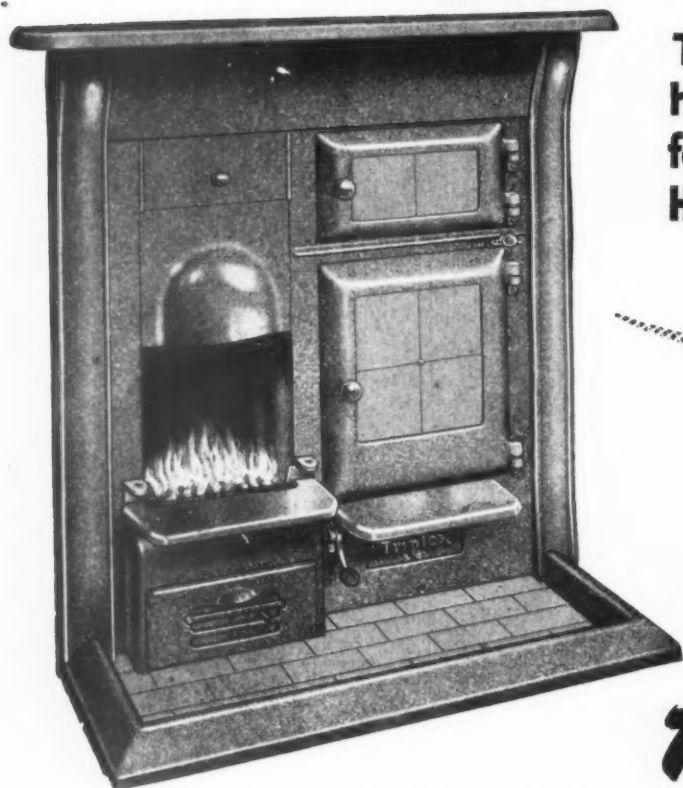
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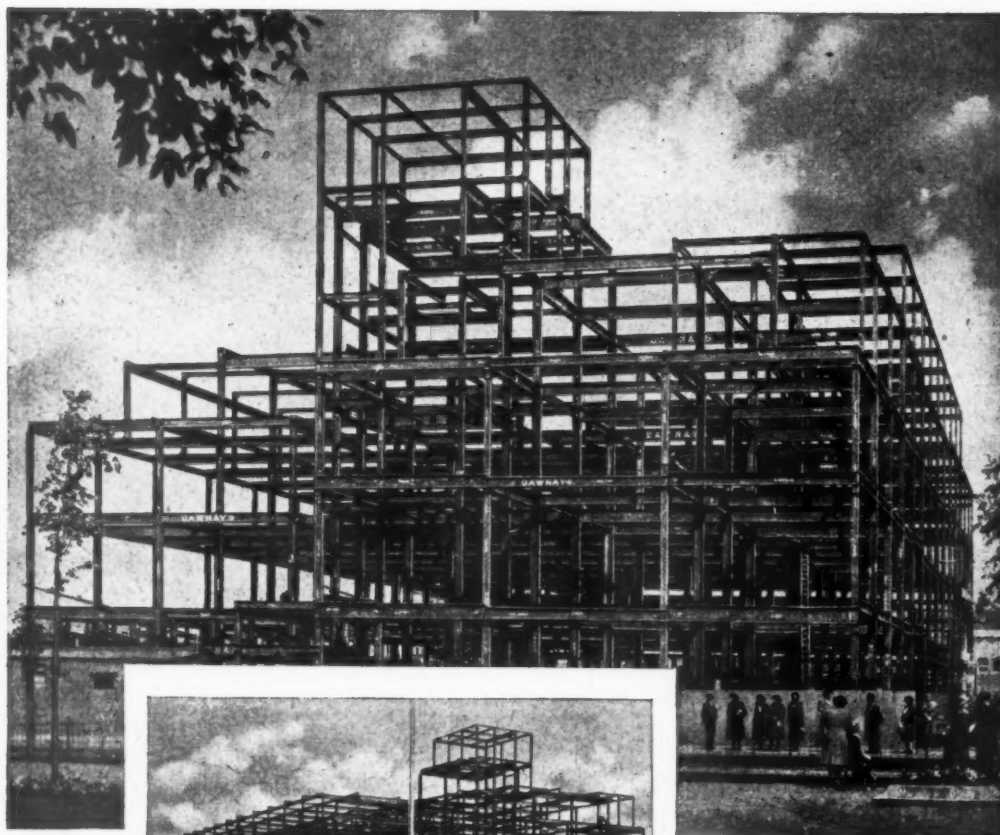
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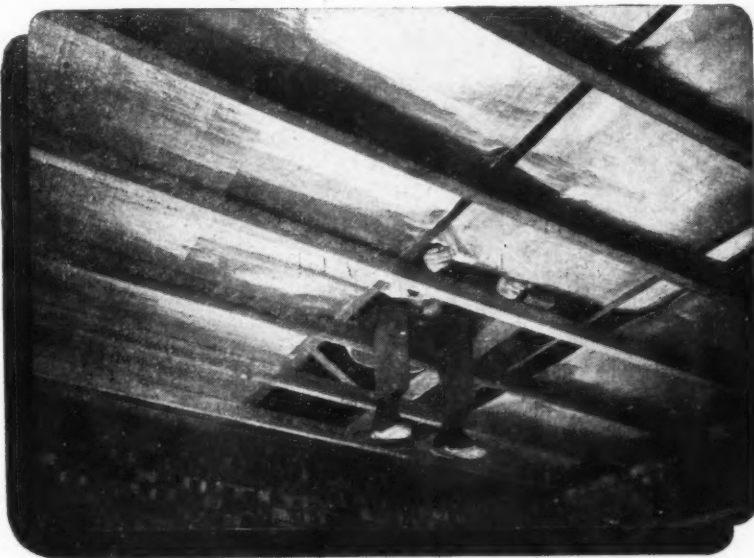


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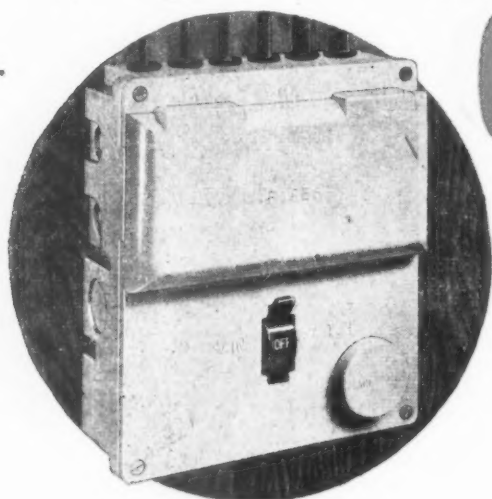
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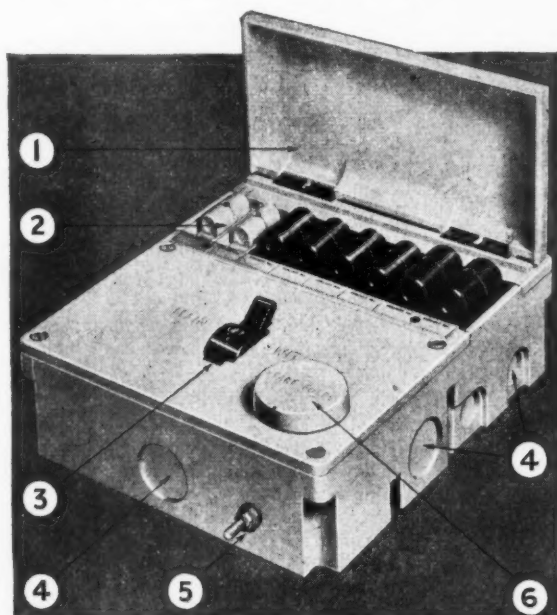
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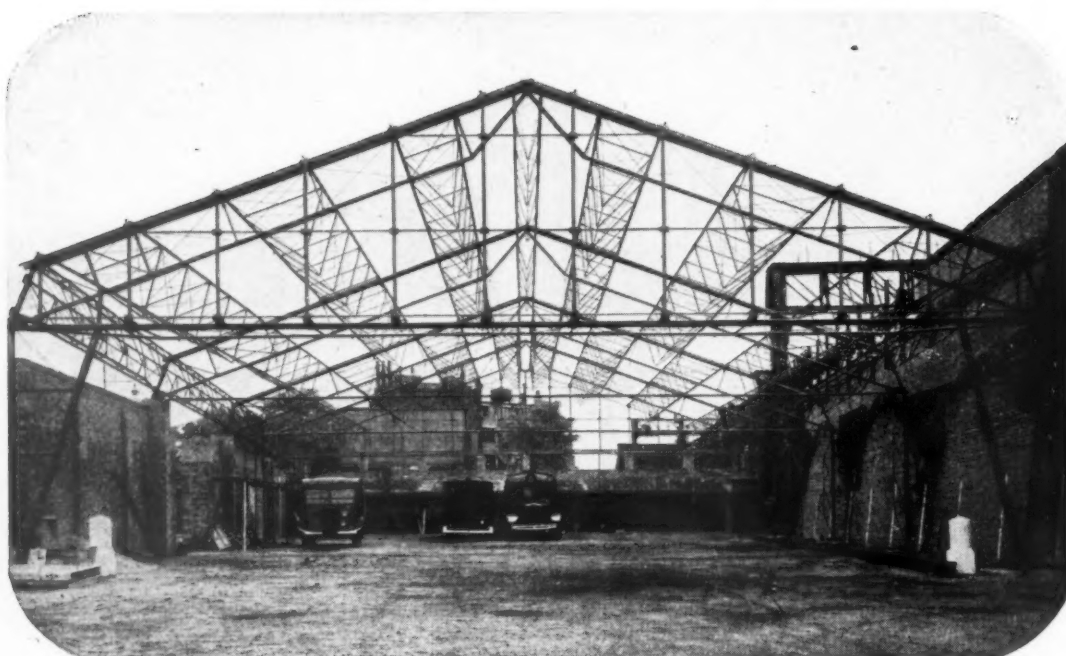
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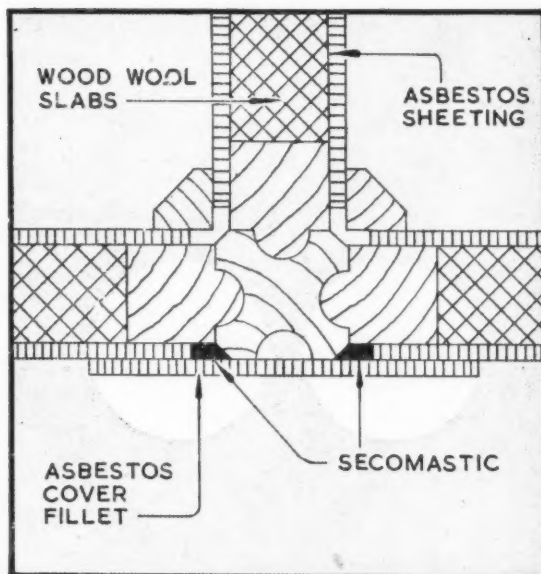
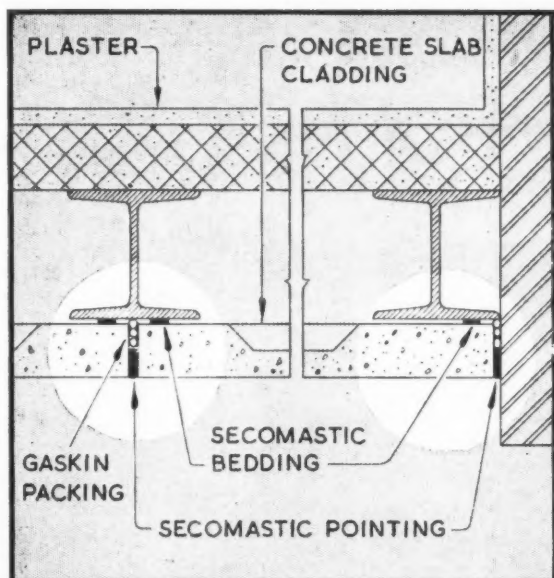
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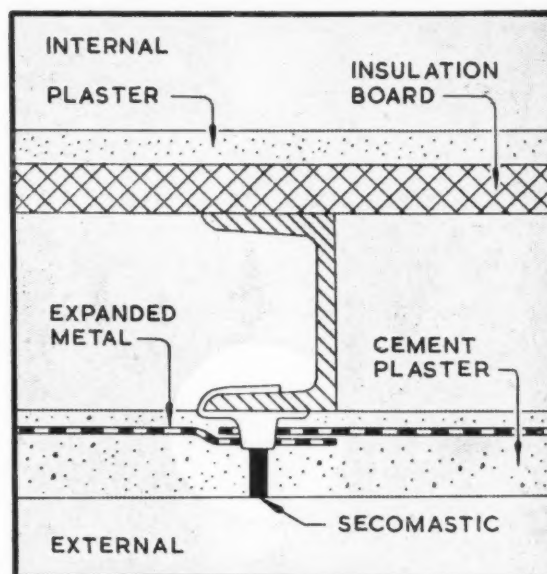
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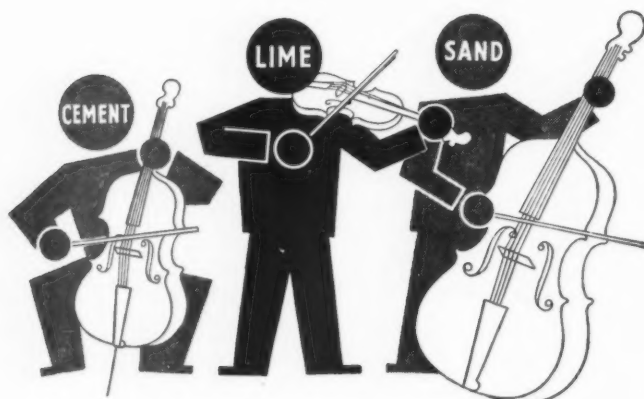
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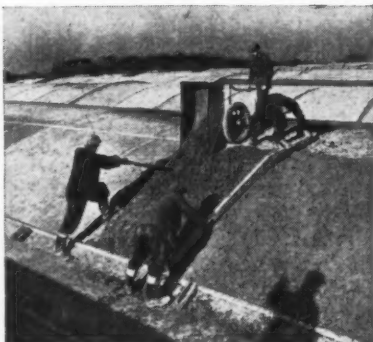
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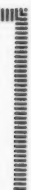
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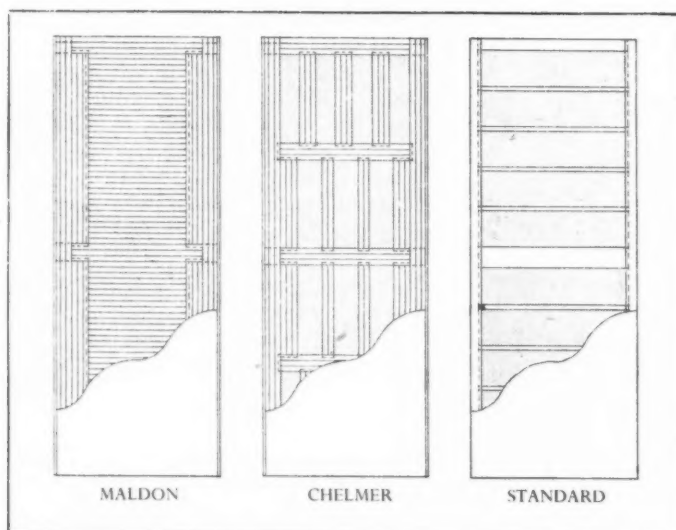
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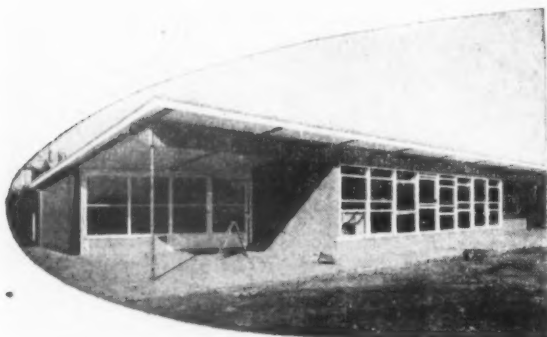


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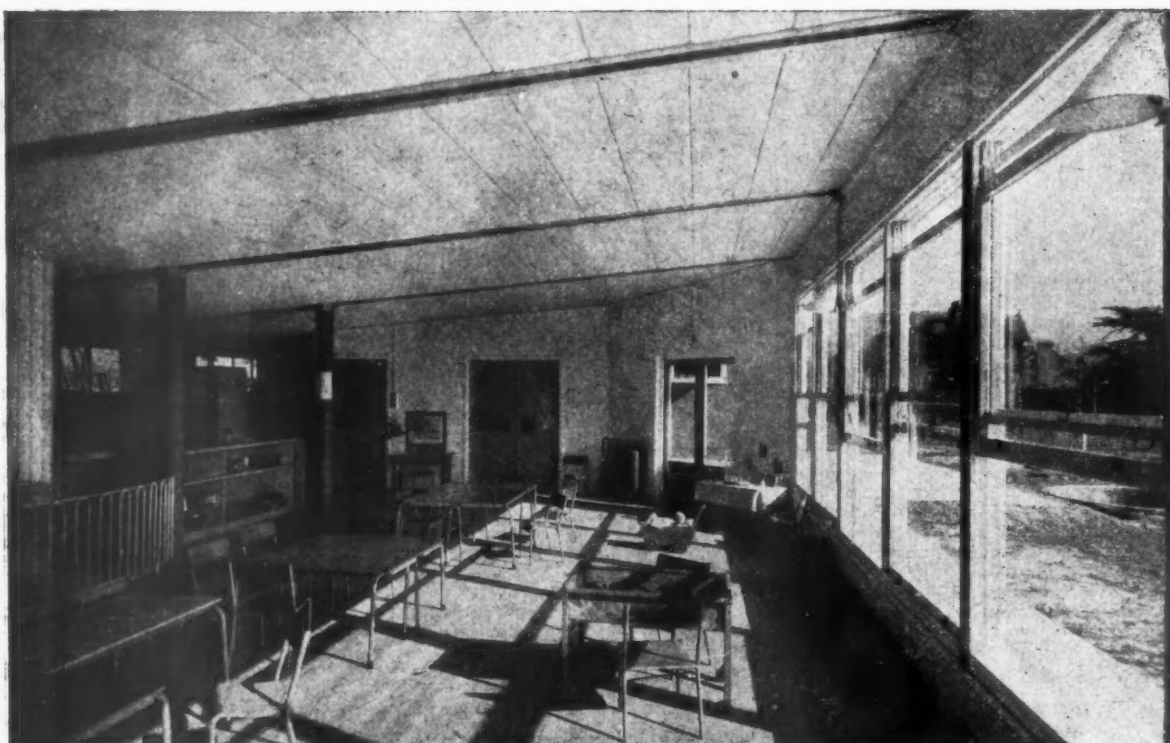


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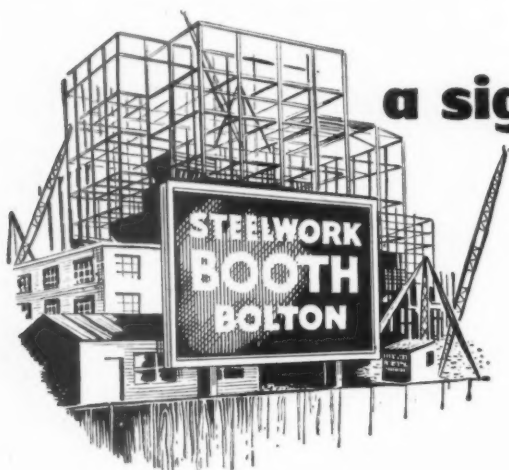
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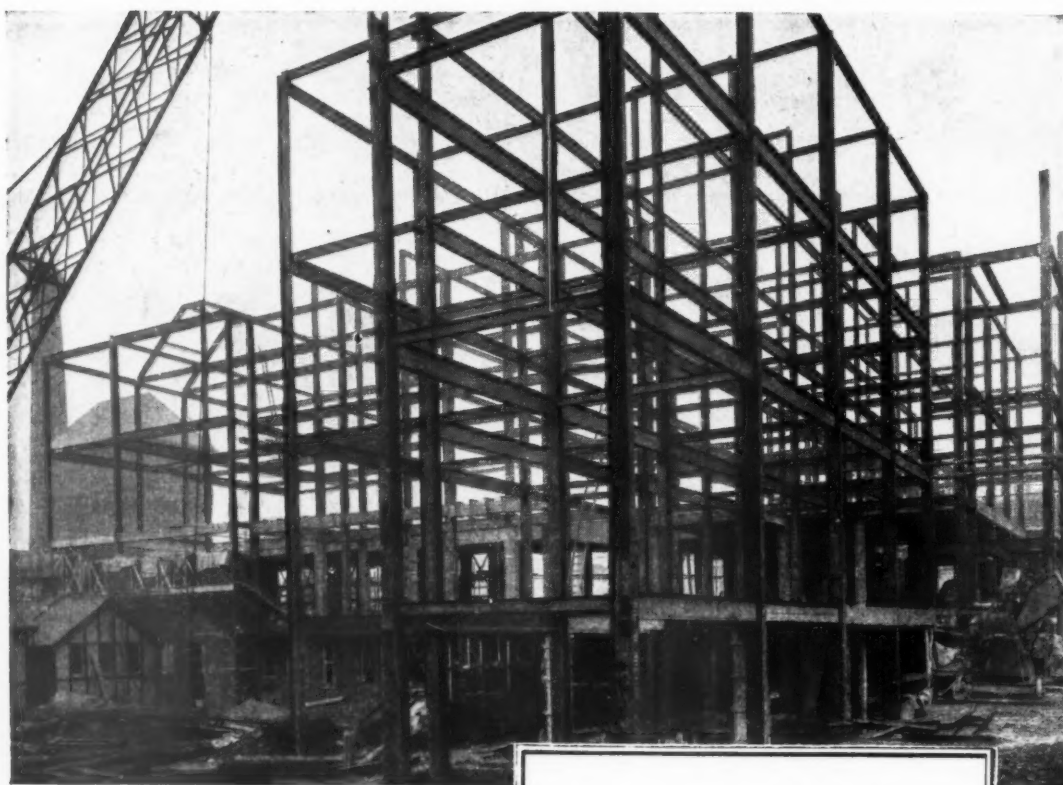
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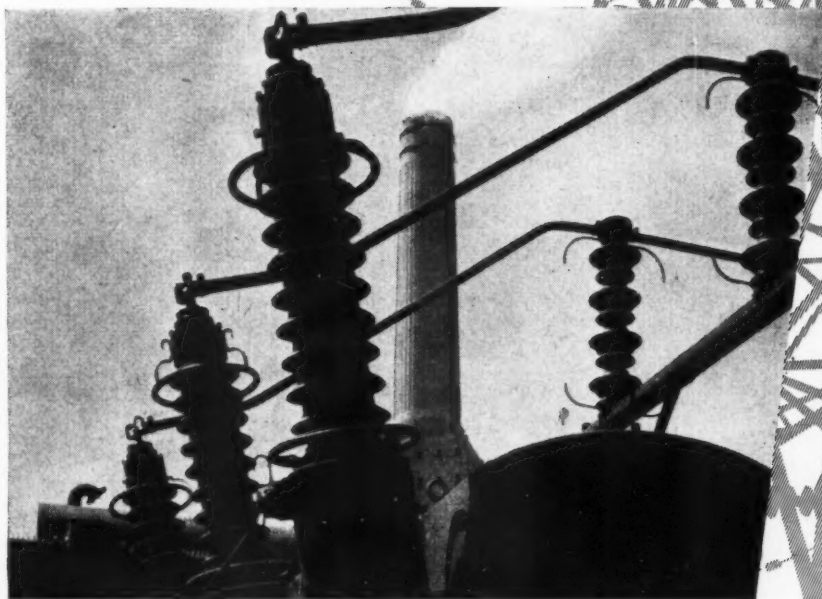
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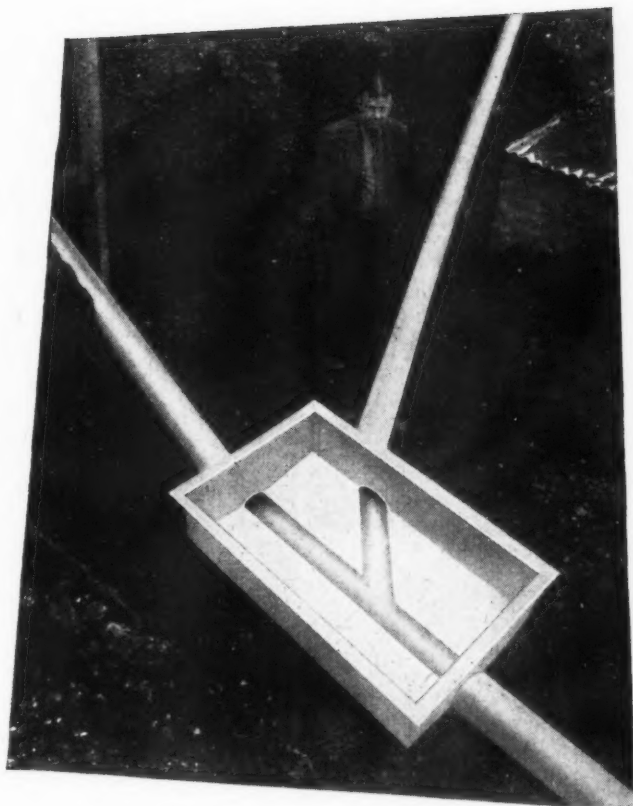
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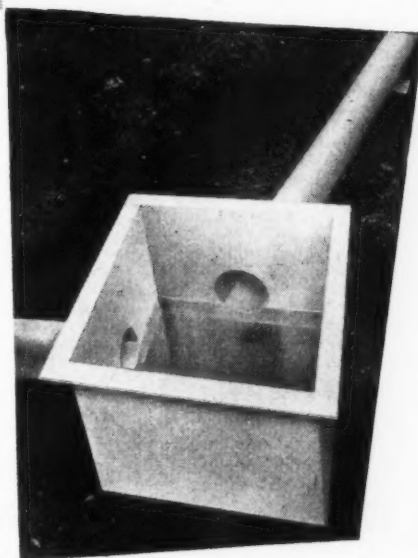
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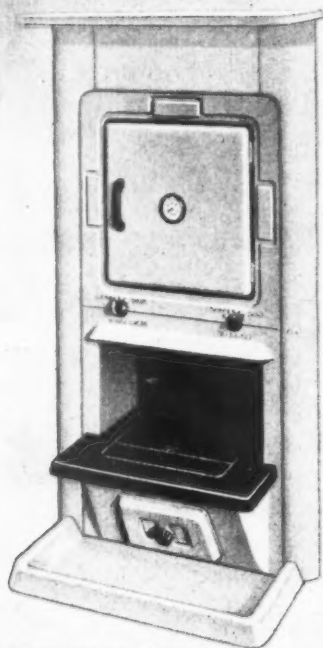


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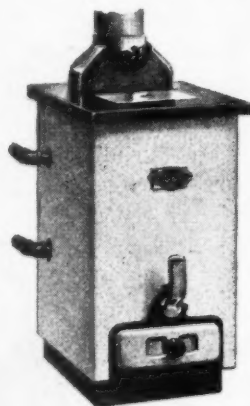
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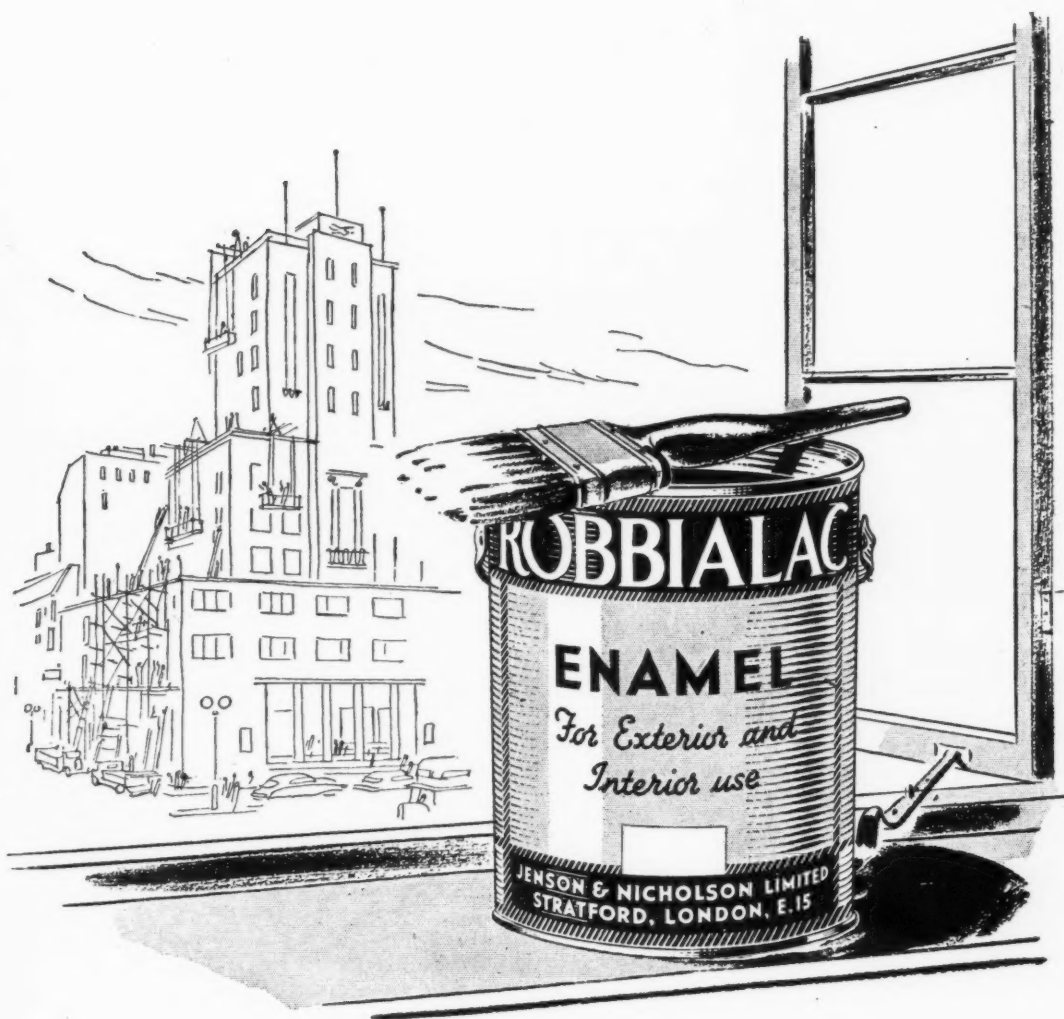


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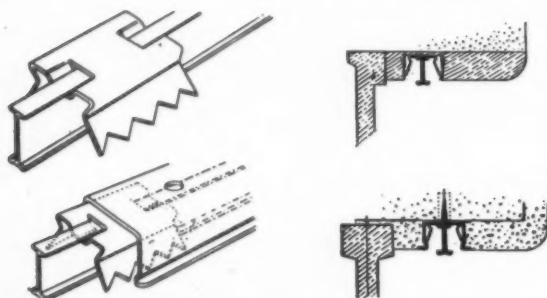


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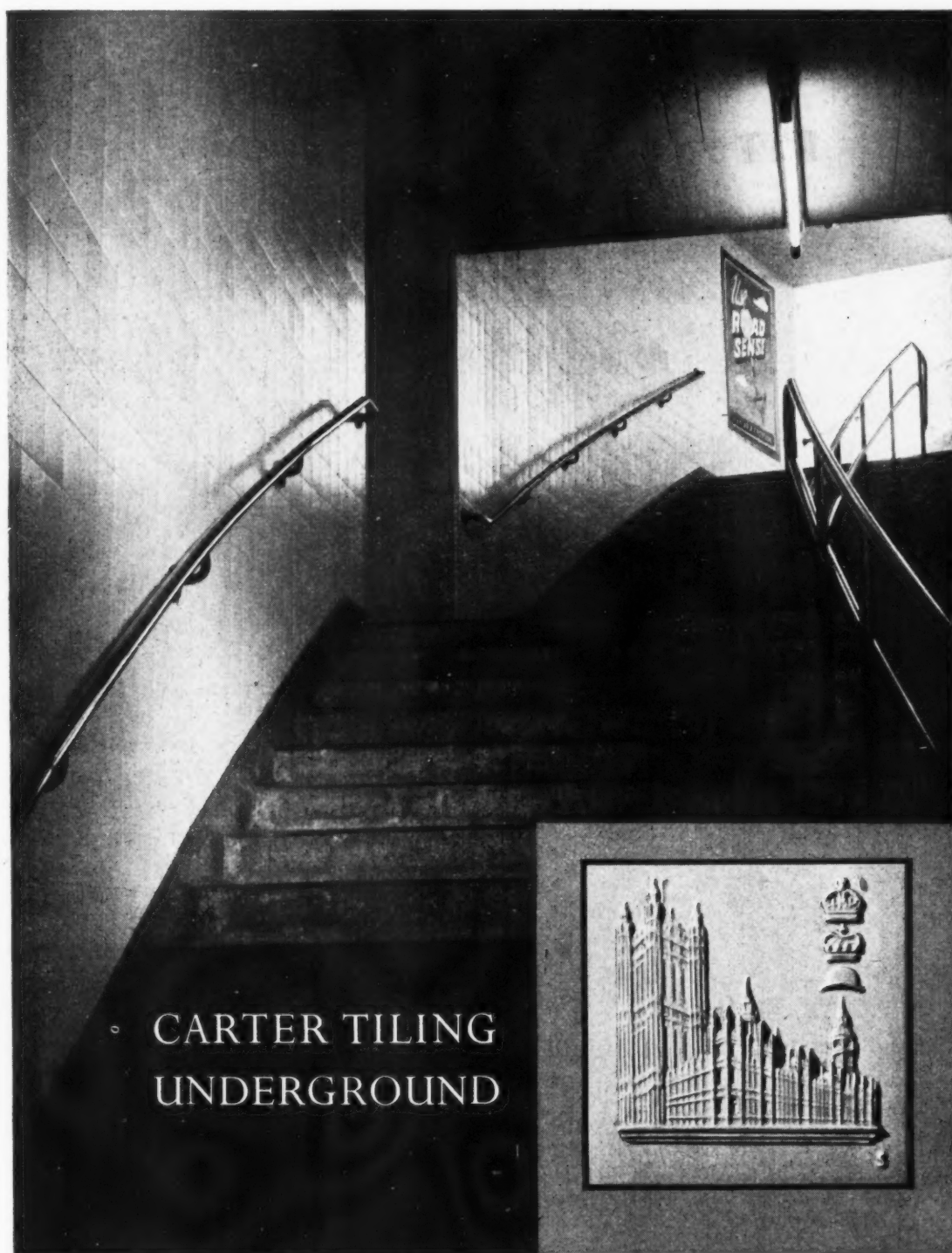
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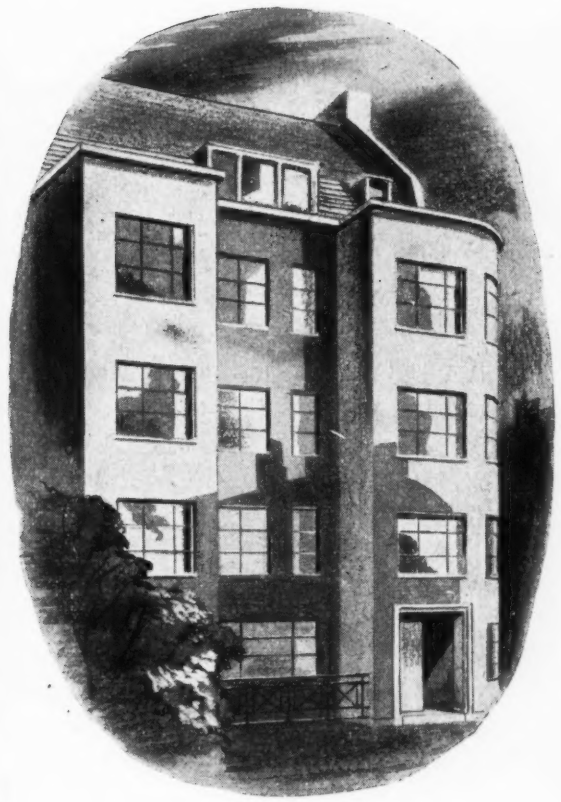
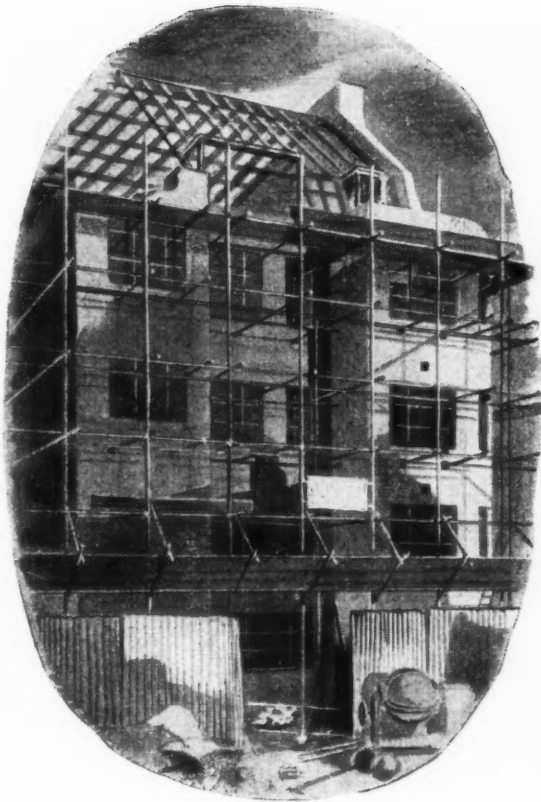
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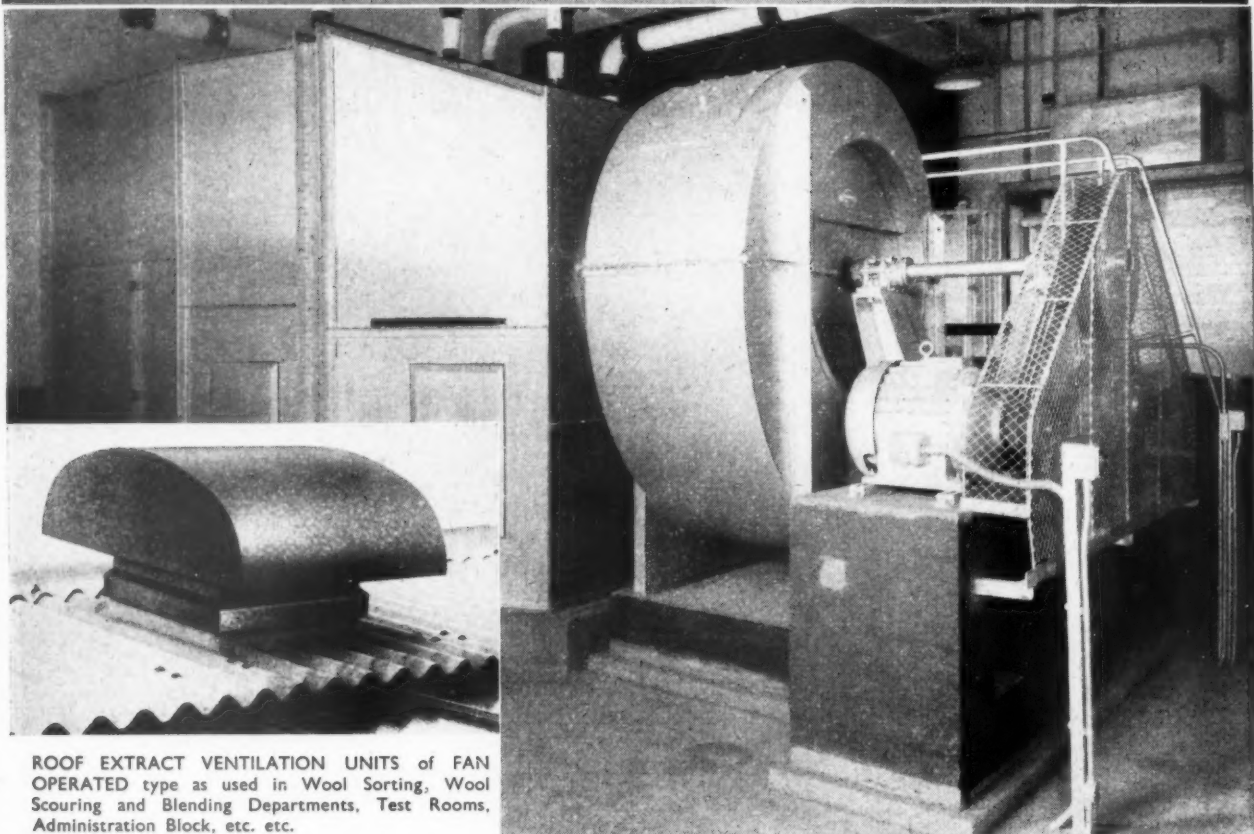
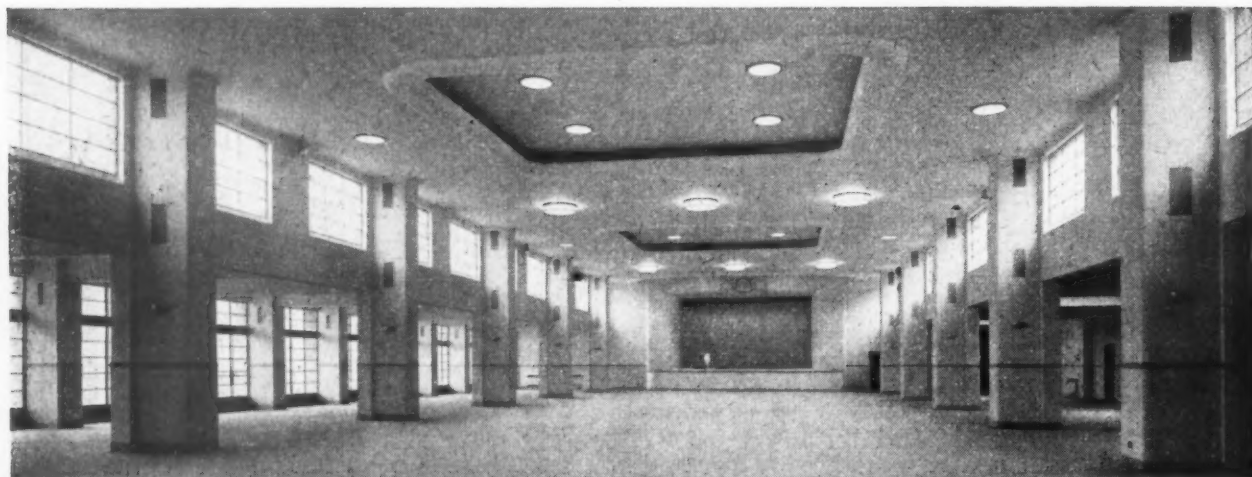
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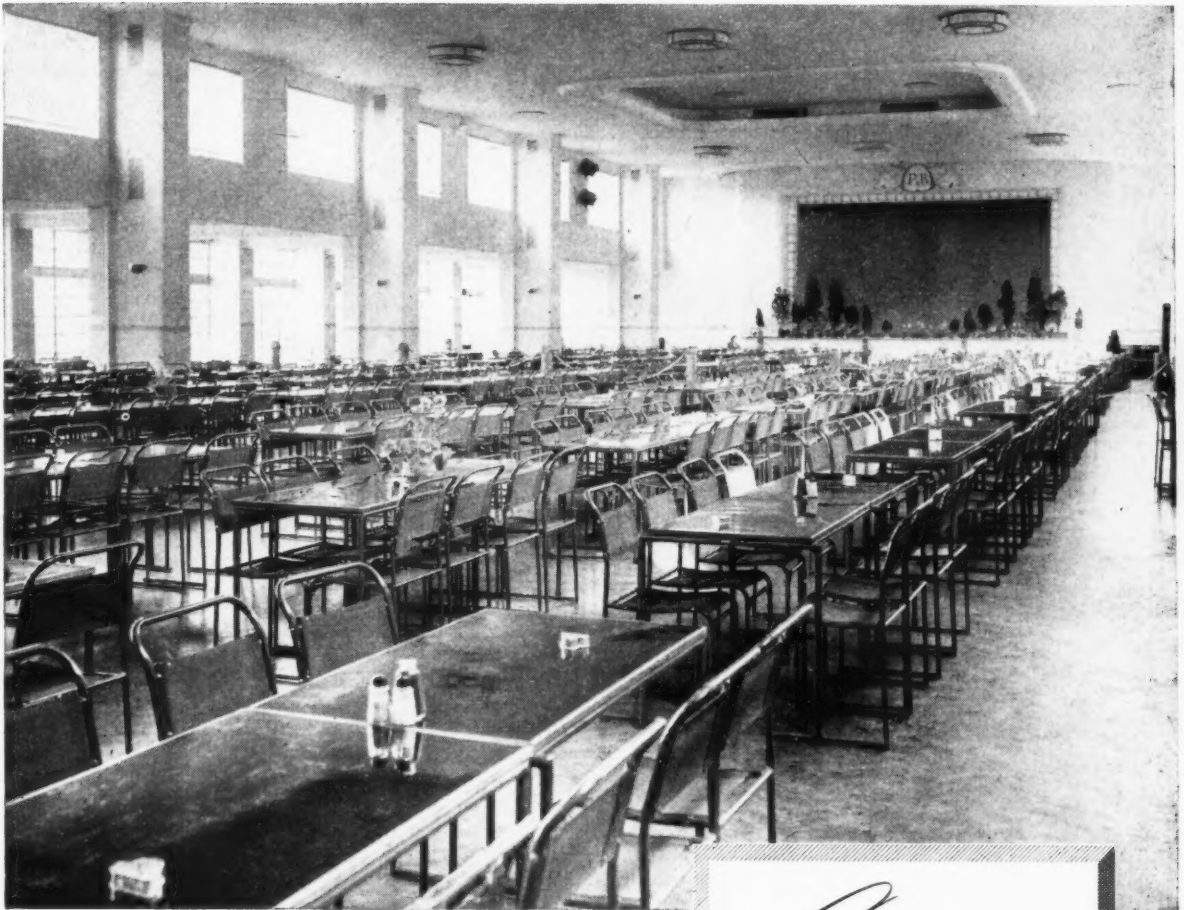
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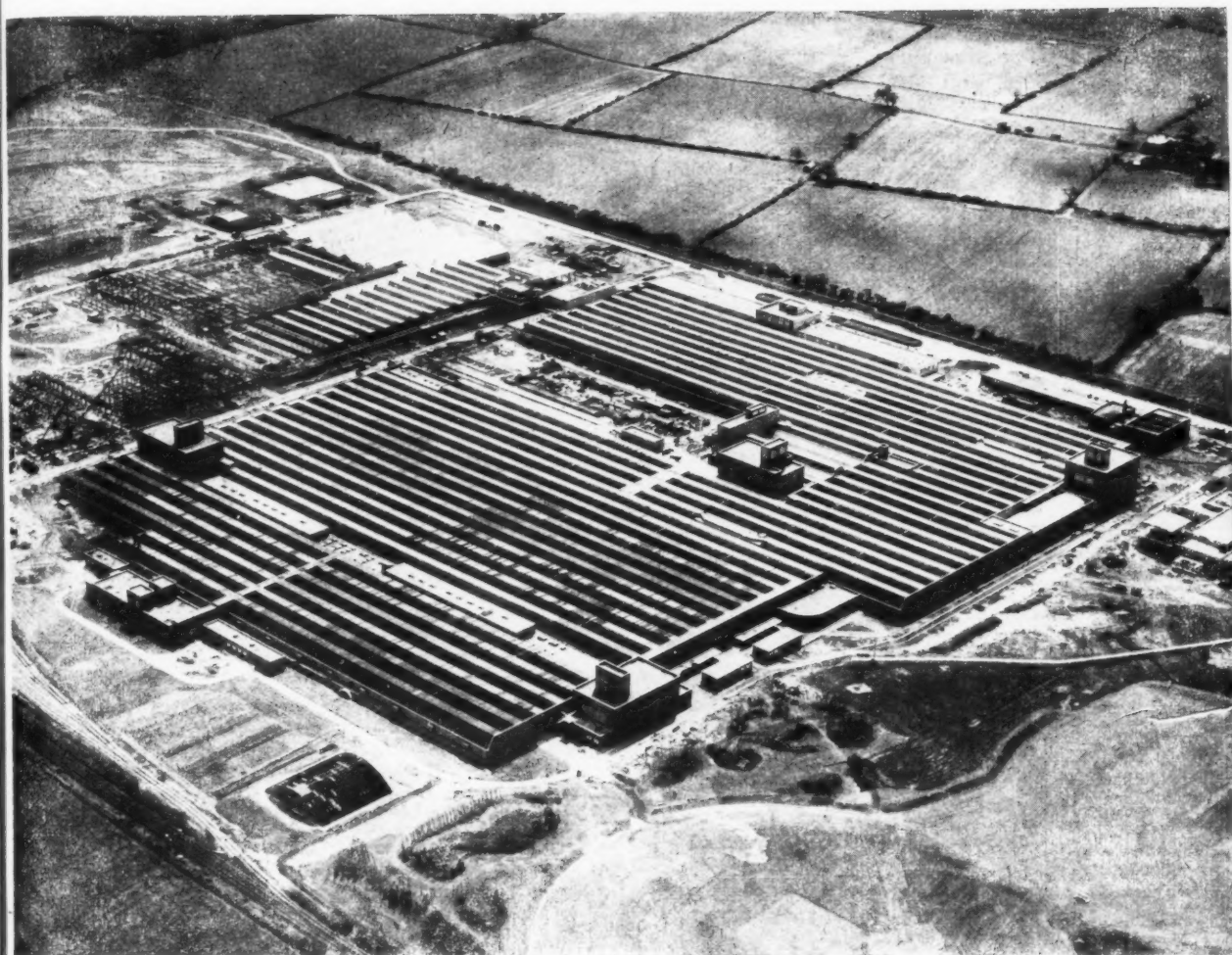
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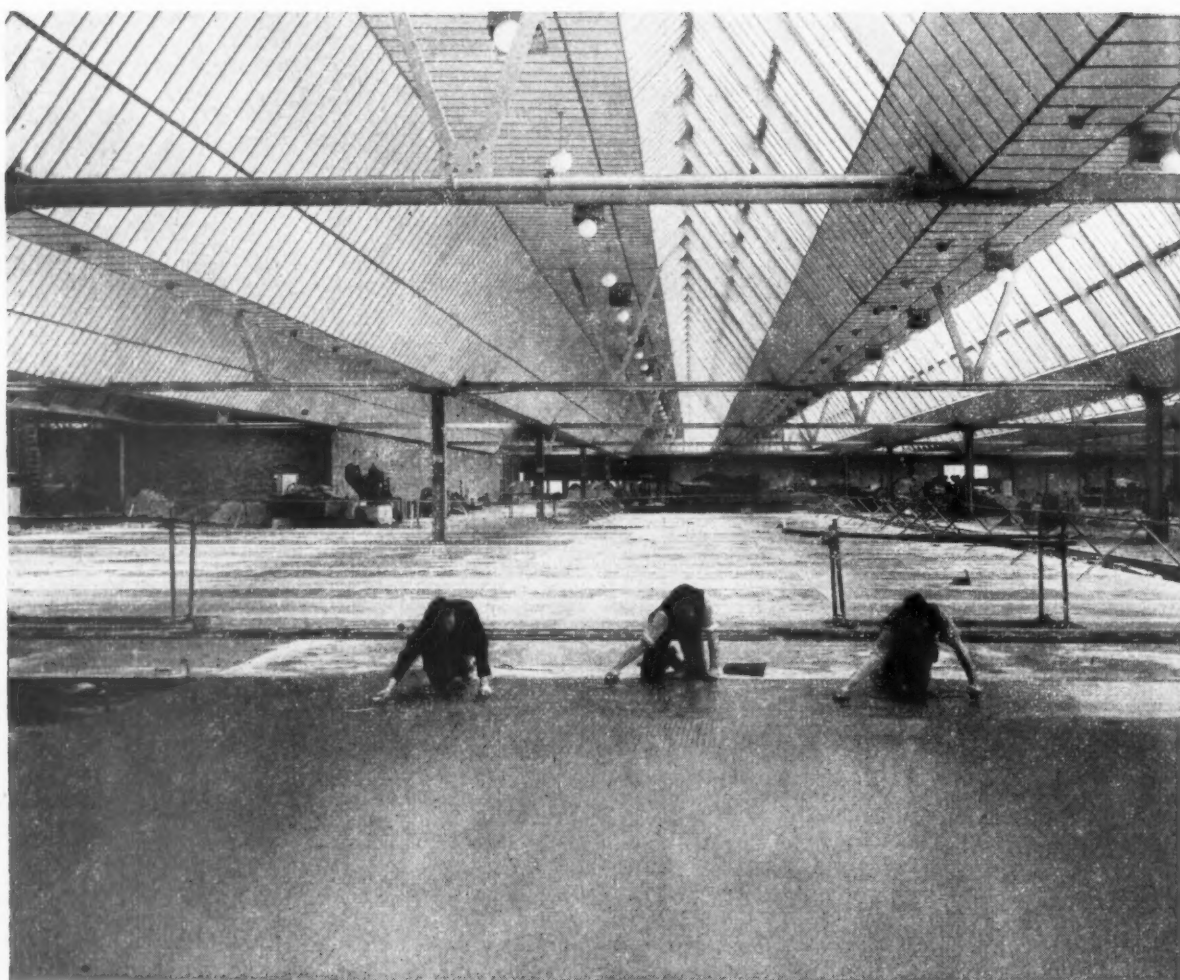


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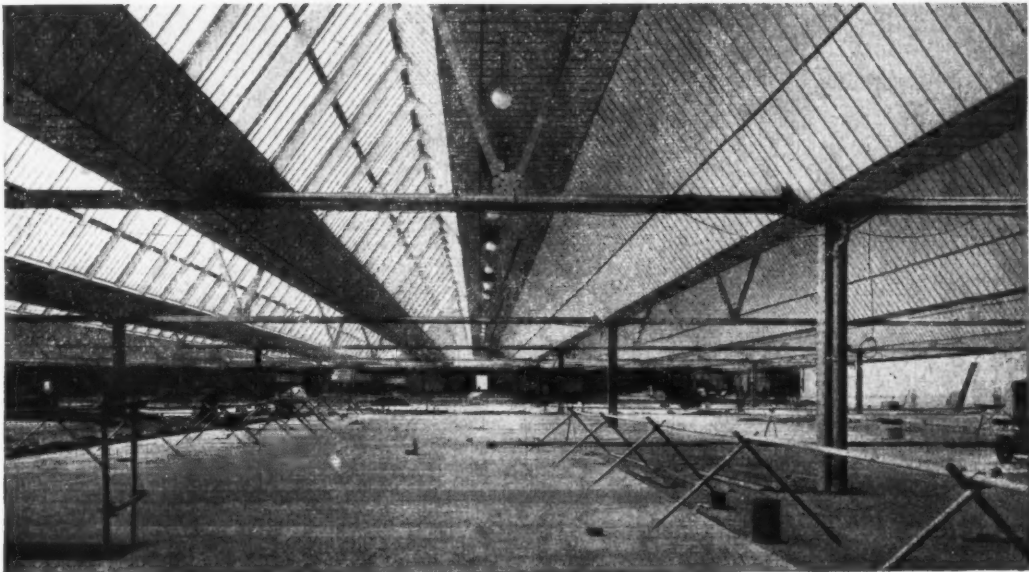
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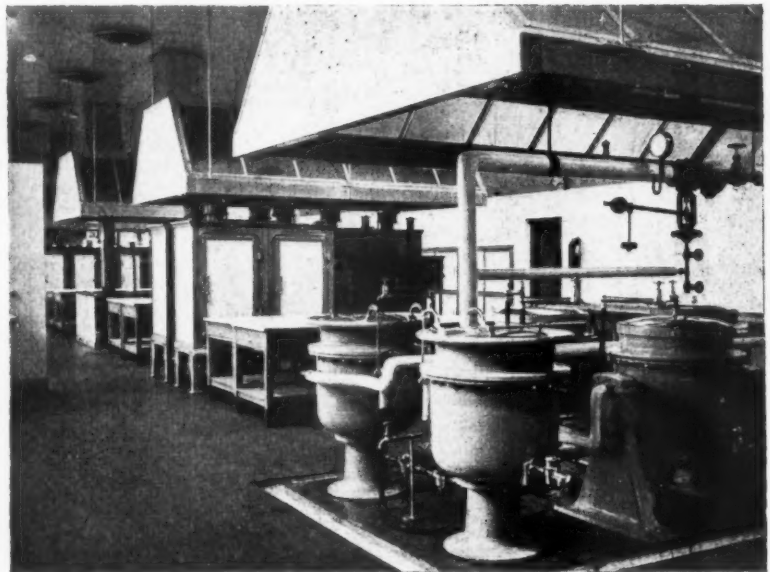
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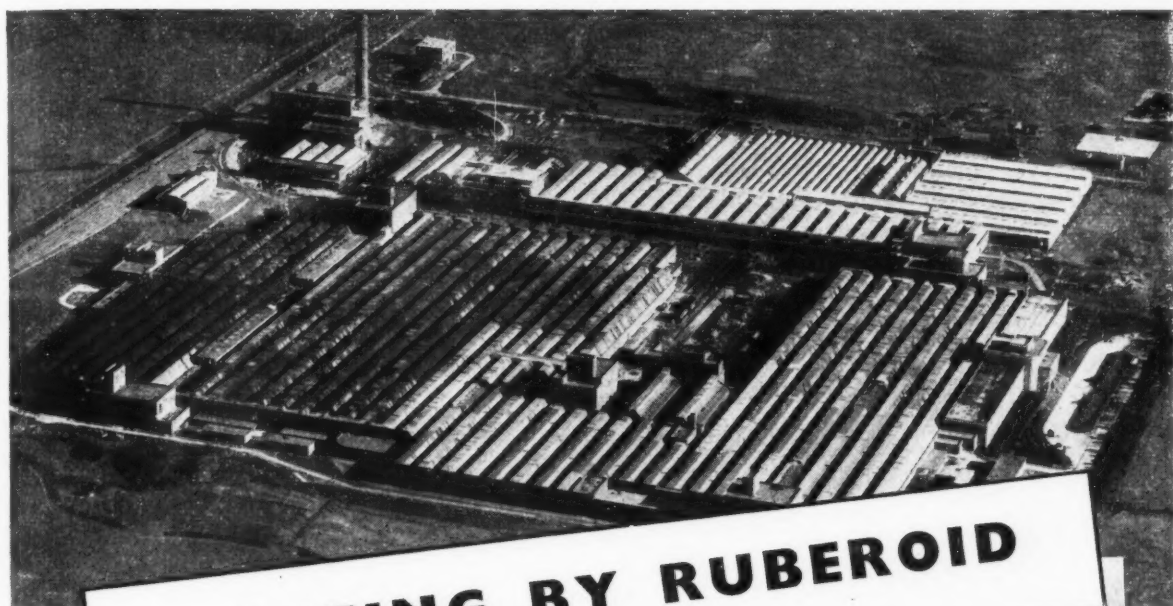
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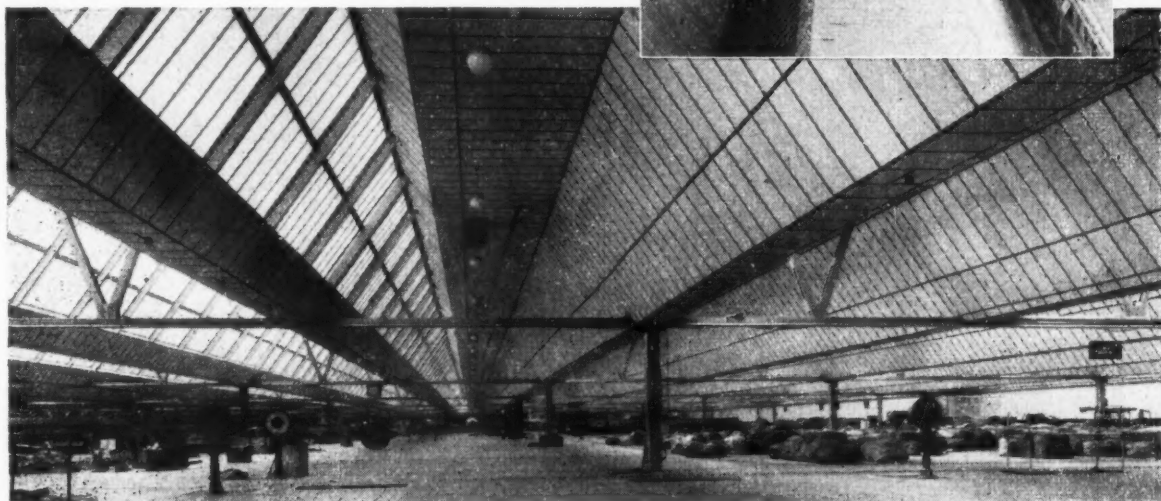
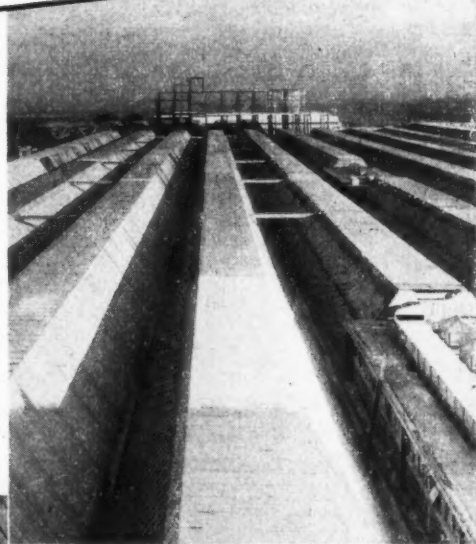
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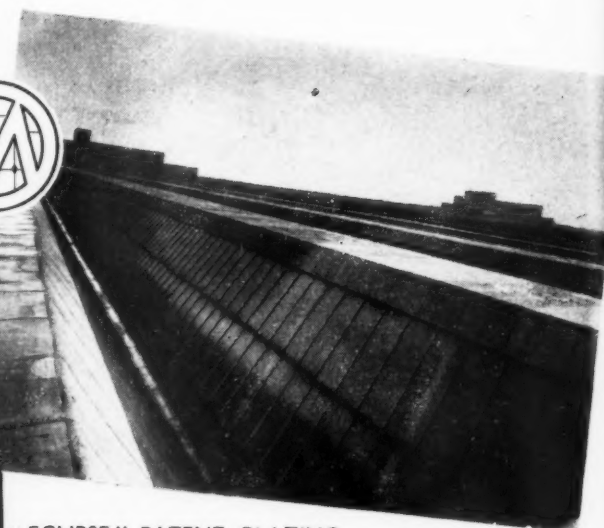
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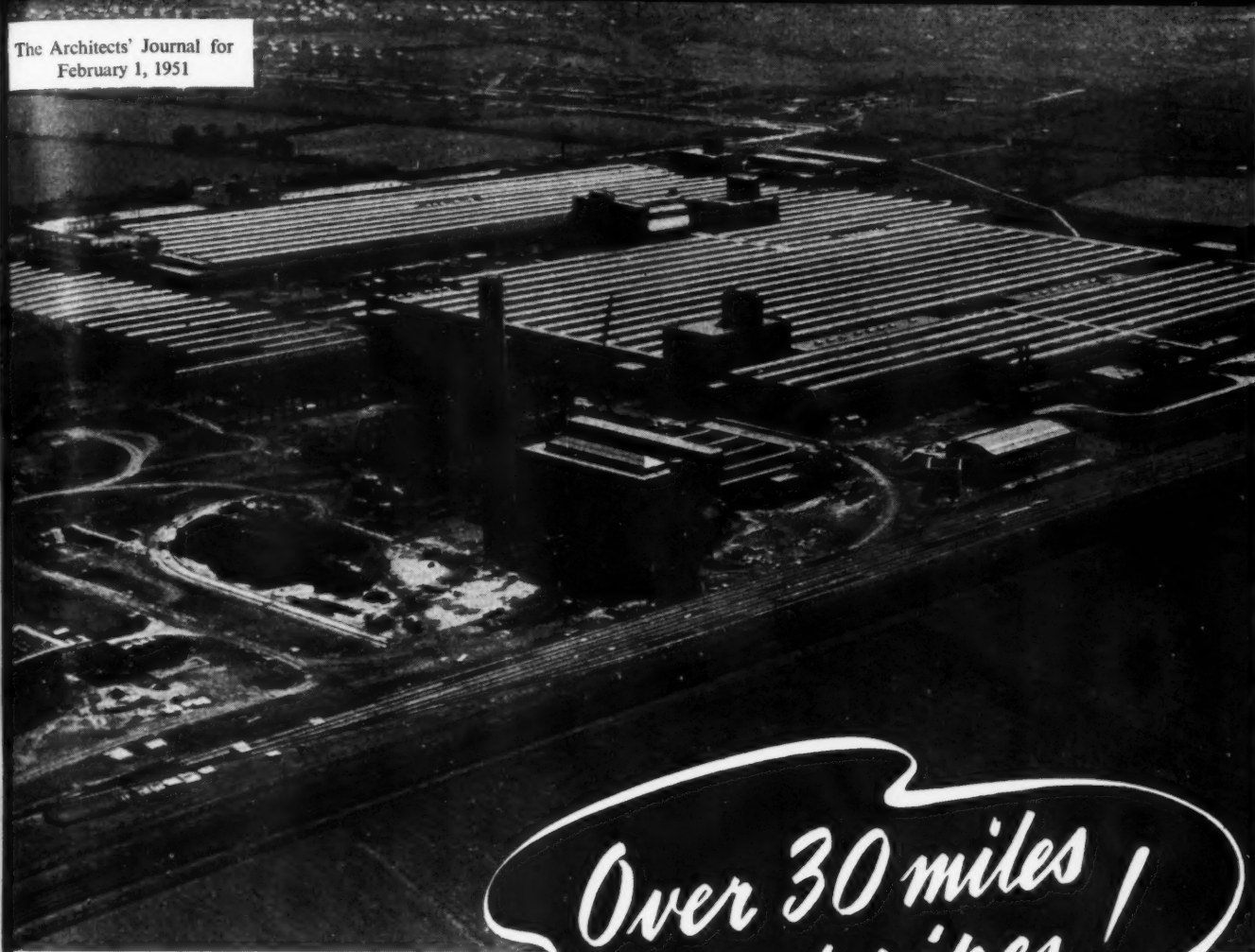
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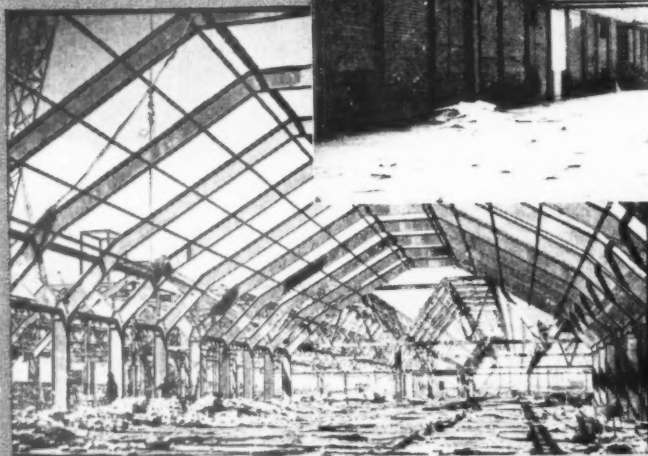
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THE ARCHITECTS' JOURNAL

No 2918 1 FEBRUARY 1951 VOL 113



SILVER JUBILEE

I was reading young Abner's column in the *Architect and Building News* the other day (No, no relation. He is, I think, Topsy's kin) and enjoying the way he falls into the same holes as I fall into (and admiring the nimble way he climbs out again), when I noticed that the Editor had inserted a panel congratulating him on having written his hundredth column. I now hasten to add my congratulations, but I cannot repress the rather uncharitable thought that it is typical of the younger generation to ignore, or forget, the anniversaries of their elders.

*

Just twenty-five years and three weeks ago, to be precise, ASTRAGAL wrote his first signed article. It was under the title "*News and Topics*" in those days. I believe the *News* is presented else-

where in the JOURNAL now. To refresh my memory I re-read it, and lost all sense of time. My first note? On the preservation of ancient monuments, in particular Waterloo Bridge (No, no, not the present one) and Durham Castle which I described (my style was rather more mature then) as "a majestic pile redolent of grand and stirring history." A note on housing follows; the erection of 2,000 steel-framed houses, and a Mr. Coppock prophesying "the biggest crisis in the building industry in 1926 that the country has ever known." I mentioned for my first time the AA, a subject to which I still occasionally return; the Crystal Palace; American productivity (concrete frame building collapsed: "put her up again, boys") and Howard Robertson, who had stated that "the present period is one of experiment . . . from which we shall presently emerge" (Paris Exhibition). I also commented on the insoluble architectural problem involved in the defence of civilians in the next war, the horrors of which H. W. Nevinson, in an article in the same issue, described in terms more applicable to the war-yet-to-come.

*

It has come and gone. My twenty-fifth anniversary; and no one remembered. The Editors forgot, my readers forgot, and, truth to tell, I forgot—at least, until too late. But I am certainly not waiting another twenty-five years before commenting and resting a moment on this little milestone. So, to all those readers who have travelled the same twenty-five years with me, and whom, I hope, will accompany me on the next, I send my best wishes for the future. Life, I expect, will be much the same, despite man's ingenuity. Nevertheless, on looking back, I cannot help feeling that I am not, perhaps, quite the man I was.

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* To preserve freedom of criticism these editors, as leaders in their respective fields, remain anonymous

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[EDITOR'S NOTE.—We regret, of course, that we nearly allowed ASTRAGAL's Silver Jubilee to pass without comment. However, we offer him belated congratulations and as a small token of our thanks we have asked ACANTHUS to immortalize him on page 143. With due respects to the artist we must state that the drawing is not flattering.]

DO'ST HEAR ME, MOW?

We write protesting letters to *The Times*, the columnists complain, and Members of Parliament cry out, but all the while the MOW works quietly on below the ground, preparing the way for two monster erections. First, there is the proposed Colonial Office beside Westminster Abbey. The site is clear and site works starting. No answering roar of praise has drowned the criticisms raised against this building. Soon solid stone and concrete and solid false economies will finally ensure that this unlovely building stands for future generations to wonder at.

*

The second building which is still being proposed, despite strong protests, is the rebuilding of Carlton House Terrace for the Foreign Office. A model is to be made for exhibition in the House of Commons.

*

A few weeks ago I asked what the Royal Fine Art Commission was doing about this matter. Here, my fears fully justified, is the answer, from *Hansard*:

Mr. Keeling asked the Minister of Works whether he knows that the plans of the proposed new Foreign Office substitute two pedimented features for one in the façade overlooking the Mall and therefore do not bear out his assurance that Nash's façade is preserved; whether he is aware that the plans ignore the advice of the Crown Lands Advisory Committee that the height of the terrace should not be raised; and whether he will make a statement.

Mr. Stokes: The architect's drawings show the Nash pediments removed, but I propose



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to follow the advice of the Royal Fine Art Commission and leave the pediments in place until the new building has been completed. It will then be decided whether they ought to be retained. I am aware that the Crown Lands Advisory Committee said that the height of the buildings in Carlton House Terrace ought not to be extended. We have, however, consulted the Royal Fine Art Commission, who approved the architect's plans (my italics), proposing a small increase in height, subject to further consideration of the pediments.

Mr. Keeling: Is the Minister aware that the scheme has been widely condemned by the better newspapers?

Mr. Stokes: Yes, but I am bound to say that none of the newspaper reports I have read bears any relation to the facts.

Ignoring this last point, could not one other aspect of the problem be considered? There are plenty of squalid, ill-planned parts of Westminster admirably suitable for complete rebuilding. Might not their turn come next?

THE SHAKESPEARE THEATRE

When the old Stratford Memorial Theatre—"that bogus, half-timbered, fretted, fretful affair," as J. C. Squire called it—was destroyed by fire in 1926, Bernard Shaw sent the town his congratulations. There were few other theatres, he said, that he would rather see burned down. Many people have felt the same about the Scott-Chesterton-Shepherd building which took its place in 1932. But as no one has had the courage to be careless with cigarette ends the theatre's backers are spending £80,000 on alterations. Brian O'Rorke is their architect.

A colleague who attended a lunch given to the Press in the theatre last week is enthusiastic about the changes which are to take place in time for the season due to begin next month. I gather from what he tells me that the theatregoer, on entering the foyer, will still feel he is in for a song and dance show, rather than a Shakespearian production. But once he has passed this chromium Odeonism he will find an auditorium more suitable for Elizabethan drama than the original fan-shaped interior.

It will be remembered that the absence of boxes or extensions to the ends of the circle in the former auditorium caused the audience and actors to be aware of a great gulf between them. Now, however, the circle is being cantilevered forward (an expensive operation) and extended at the sides in the form of "continental boxes," which

will reach the proscenium arch. In addition, the forestage flanks are being set further back and the frame to the main stage, which resembled the Victorian type of picture surround—elaborate frames within frames—is being simplified. In fact, everything is being done to achieve a compromise between the picture frame and apron stages (such as that now in use at the Old Vic) and to create the actor-audience link which producers are demanding today. The predominant colours, scarlet and crimson, will be used to unite the stage area with the auditorium. Red curtains will hang on each side of the proscenium and will blend with the colourings of walls and seating.

But that is not all. The theatre is also to have the new electronically controlled lighting system. And additions are being made back-stage,* where sixteen dressing rooms, a green room and two new staircases are being built. This is being done with a view to giving more space to administration offices and to eliminating the overcrowding that

resulted from the unpredictable growth of the theatre's popularity.

Where, you may ask, is all the money for this coming from? It is coming partly from the profits of the last three years. But in a short period the alterations will pay for themselves, for by the installation of slightly narrower seats and the diminishing of space between the rows, provision has been made for 135 more seats in the building. An additional £20,000 will therefore be taken this season, if bookings are similar to those of previous years. I shall look forward to seeing a production at Stratford in which the actors will not be fighting the architect. But I hope Mr. O'Rorke has left me room for my long legs.

RAILWAY BUILDINGS

When I wrote last week about the admirable Transport Commission report on the preservation of relics and records, I mentioned Christian Barman as one of the moving spirits behind it. If anyone is not yet persuaded of the historical interest and the architectural value of early railway buildings, I



Astragal has just celebrated his Silver Jubilee, as he points out on page 141. In honour of the occasion Acanthus has contributed the above cartoon. Astragal asks us to assure the reader that only when posing for cartoonists does he dress in such a fashion.

* Picture on page 149.



Railway Architecture

Writers on English architecture have had little to say about railway building. Christian Barman, who feels that the architecture of the English railway companies "contains in itself a complete epitome of the architectural movements of nineteenth century England," has now filled the gap in an interesting aspect of architectural history with a book entitled "An Introduction to Railway Architecture" (Art and Technics: 15s.) In this book, which is well illustrated, he discusses the functional railway station ("shelters for passengers and trains"); the stations which express the idea of sociability ("a cosy domestic tradition

that is essentially English"), and the stations in which the architects tried to express "the social importance of the railways." The wooden train hall shown here (which is also illustrated in the book) is at Bristol and was designed by Brunel, the first person to give serious architectural treatment to the train shed. Mr. Barman says that it was, perhaps, inevitable that Brunel's fine roof trusses and elegant glazing should be so strongly inspired by our church building idiom. "The Gothic Revival," he claims, "produced few carpentry roofs as good as that of the Bristol station." (See ASTRAGAL'S comment on page 145.)

would refer them once more to Christian Barman: this time to his recently published book* on the subject, which (though expensive for its size) is a model of its kind.

*

It is also the first of its kind; I don't know of any other brief summary of the history of railway architecture such as the text of this book provides. Though short, it is packed with information, lucidly written and intelligently relates the buildings it deals with to the spectacular changes, social and technical, for which the nineteenth century was responsible.

*

The 120 illustrations (one is shown on page 144) are a delight, and include a number of railway buildings that will be a revelation to most people. I particularly recommend Wingfield, Thurston, Battle, Monkwearmouth, Northampton (Bridge Street) and Newmarket stations. Bridges and viaducts are not included.

INCENTIVES RESULTS

As long ago as March of last year the MOW issued a summary of the incentives investigation, and the final version has now been published†. The survey was carried out during the early stages of the use of incentives, but the figures are interesting in that they show an average amount of £30 per house being paid in bonus, the labour cost being reduced by £12 net, after allowing for the bonuses paid. But as the work was speeded up the total cost was reduced by something like £30 per house. Whose pocket did the saving go into? Nobody's because, material prices went up and the houses ultimately cost £12 10s. more apiece. If no bonus had been paid, this figure would presumably have been £42 10s.

*

Now that the principle of incentives has been reappraised by employers and operatives, this report, based on the conditions of 1947 and 1948 is of little more than academic interest, we now want to know where we shall be in six month's time, with materials going up and the operatives demand for an extra sixpence an hour.

ASTRAGAL

* *An Introduction to Railway Architecture.* By Christian Barman. London: Art and Technics. Price 15s. net.

† MOW Special Report, No. 18. HMSO. 1s.

The Editors

THE SQUIRE CASE

WE report at some length on another page the proceedings at the Old Bailey last week when Raglan Squire and Messrs. Wates (South Western Estates) Ltd. were charged with an offence under the licensing regulations, Defence Regulation 56A. We should like at the outset to congratulate them on their vindication by the jury. It is clear from the evidence that the contract under which the difficulties arose was an unusual one for today, in that it proceeded without the careful preparations, in the shape of bills of quantities and plans, that are so much of a protection to both architect and client alike. But the contract, and the trial, do contain a number of valuable lessons for all; lessons in the risks that are run under the circumstances governing any sort of private building. But many architects find themselves in a position in which it is difficult not to break the law unintentionally, a situation which we hope to discuss more fully next week in relation to this case.

No. 2: Guest Editor

PRE-PLANNING AND PROGRAMMING

There is absolutely no doubt that the way in which an architect approaches the problem of a building contract can have a great moral effect upon the contractor. Efficient planning in the architect's office can go far towards efficient planning on the building site. By this is meant the careful and precise preparation and execution of the initial stages of the complex problem of erecting a building.

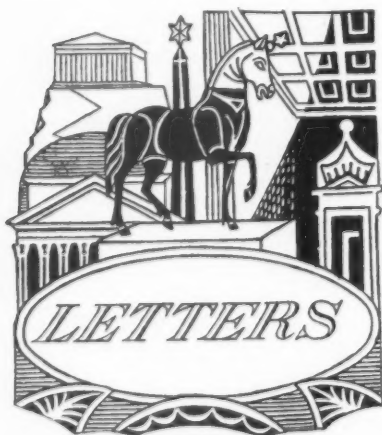
It is obvious that as such an operation starts, so, unless the builder is superhuman, it will end. Inadequate, muddled and ill-timed orders not only create, but merit, second-rate execution. Efficient, complete and well-timed instructions inculcate enthusiasm, interest and efficiency in the performance of work. All this is obvious, and architects should be the first to say so. But builders, on the other hand, although they, in their turn, have their faults, would suggest that this lesson of smooth organization from start to finish is one which many architects have not learnt as well, or as painfully, as the builders themselves. The architect, despite his title, runs constantly in danger of paying more attention to the visualization of a work of art than to the craft of creating it in three dimensions.

The MOW, in exhibitions and in pamphlets, appeals to builders to draw up programmes for, and keep progress charts of, work on the site. In an article on page 163 of this week's JOURNAL, and in a series of Information Sheets which are to appear shortly R. H. James recommends that this process should be initiated in the architect's office.

There is usually a sequence of building operations somewhat

on these lines: First, the client's proposal. Second, the architect's tentative approach to licensing authorities, such as the BOT or the MOTCP. Third, the preparation of design drawings. Fourth, the application for a licence. Fifth, the preparation of details and specification. Sixth, the preparation of the bill of quantities, and seventh, the request for tenders. Mr. James, however, suggests, among many other things, another operation, which is not sufficiently often done today. He proposes that, after receiving a licence to build, the architect should check whether the materials and the labour will be available at the required time. Such an early enquiry allows stocks of materials to be built up by the manufacturer, or alternative materials to be found, and amendments made to the design accordingly. Here, then, in one simple suggestion, is contained the essence of what is meant by pre-planning by the architect. The erection of a building is no longer in two phases—the design and then the construction—but begins to be inter-knit into a continuous process from start to finish.

Of course, all will not go as planned—either as planned by the architect or by the builder. Charts and time-tables cannot alone solve labour difficulties or shortages of materials. But the important thing is not to forsake pre-planning, programming and progressing just because they cannot readily be made to work under present-day conditions. Only by having accurate records of how and why programmes fail can lessons be learnt and fresh and more feasible programmes made. Railway trains do not always run to time, but railway time-tables are still compiled. The building timetable is only, as yet, vague and incomplete, but with patience and co-operation from all it can be made, and adhered to as closely as circumstances permit.



In Defence of Plymouth

SIR,—I feel I must protest at ASTRAGAL'S statement in the JOURNAL for January 11 that Coventry is the only city doing any real re-building. Has he forgotten Plymouth, considered by many to have been the worst bombed town in the British Isles?

During a visit to Plymouth at Christmas I counted seven large blocks of shops and

D. S. Collins

A. R. Chard

J. Madge, A.R.I.B.A.

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A.R.I.B.A.*

offices being built in the new city centre, a new NAAFI club, and the most interesting reconstruction of the gutted St. Andrew's church with reinforced concrete vaulting. In addition, there were several blocks of flats being erected, and I believe that approximately seven thousand houses have been constructed since the end of the war. Two or three new factories, a bakery and several schools have also been built, to-

gether with, I should estimate, over a hundred temporary shops. For a town of the size of Plymouth I think this is an outstanding achievement, when one remembers the terrific work which has gone on in making the new road for the city centre, including the provision of all new services. Gone are the pre-war narrow streets. Today one may stand in the new Royal Parade and see the work of reconstruction progressing steadily. And, what is more, this reconstruction is all proceeding on the lines recommended in "A Plan for Plymouth, 1943," prepared by Paton Watson, the city engineer, and Professor Abercrombie, with only minor modifications.

In conclusion, might I suggest that the JOURNAL should run a series on the reconstruction of our bombed towns similar to the "Progress Reports on the New Towns." I am sure that many readers, like myself, would be very interested to hear of the progress made on the numerous plans for reconstruction prepared during the war and just after. Some, I believe, have been rejected, but in others, like Plymouth and Coventry, progress has been made.

D. S. COLLINS.

Esher.

SIR,—Some 18 months ago I decided to subscribe regularly to the JOURNAL, largely because of ASTRAGAL'S weekly contribution, which I've always found stimulating and often amusing. I feel, however, prompted to do battle with him on behalf of the city of my adoption 4½ years ago as an ex-service student.

We, in Plymouth, frankly envy Coventry its Gibson, but if ASTRAGAL seriously considers Coventry to be "the only city to do any real rebuilding," he really should repair to Paddington at once and come and have a look at Plymouth!

I'll generously agree that we fall hopelessly short of Coventry in the realms of design (with the notable exception of a newly built and opened shoe store, whose staff architect is too well known to need naming), but we have two large shops open, a very large department store almost complete, and numerous smaller shops well on their way to their opening date.

I believe Plymouth is among the first few cities in the housing race, though it's difficult to believe that some of our half-dozen or so new schools were turned out by the same office as some hideous and illogical flats we are having inflicted upon us just now!

We have nothing approaching Coventry's new technical college, or the elegant pieces of street furniture, etc., one so often sees from Gibson, but if quantity of rebuilding is to be the yardstick, I feel I must take ASTRAGAL to task.

I've often felt that any good work done in Britain more than, say, 100 miles from London tends to be ignored, so I must ask you to forgive this outburst of "provincial rancour."

AUSTIN R. CHARD.

Plymouth.

The Architect-Client Relationship

SIR,—I was interested in the suggestions made by Mr. Spencer (January 4) on the need for better understanding between the architect and the public. We have to admit that, in spite of the efforts of various educational and propagandist organizations, there is no sign yet of narrowing the gap between those who provide contemporary buildings and those who use them. The present rate of social and technical change, the absence of any unifying beliefs, and the growing

intervention of the building committee and the trade buyer have all conspired to separate the designer from the user.

Mr. Spencer blamed the architect both for not knowing what the public should have and for not being able to please the public with what, in the absence of this knowledge, he does build. This is less than fair. Architects have their hands full, even if they confine themselves to translating stated requirements into technically and aesthetically satisfying buildings. Their amateur incursions into sociology, in the attempt to discover and interpret public needs, conflict with this task.

To my mind, the only solution is to promote expert *user-research*, conducted by realistic social scientists, which would supplement or correct the now remote client's information on the real needs of those who will have to use the buildings which he is commissioning. Architects should do all they can to persuade the commissioning public to spend a few thousands now on *user-research* in order to save the millions which will otherwise be wasted on socially inefficient buildings. This is the proper way to achieve reconciliation of designer and user, and can be far more effective than intensified campaigns of public indoctrination.

JOHN MADGE.

Bristol.

Learning The Hard Way

SIR.—In your issue of November 16 ASTRAGAL mentions the case of a German ex-POW who has been obliged to continue in work as a farm labourer until he is naturalized, in spite of his desire to study architecture. ASTRAGAL devotes some space to this and is obviously sharing the indignation expressed to him by the head of the Kingston School of Architecture. In view of the difficulties experienced by ex-service Englishmen in entering the profession, I feel that many of your readers, like myself, will be of the opinion that his view is somewhat out of perspective.

What is to prevent him following the example of thousands of other students in this country who are studying by correspondence or at evening classes? Why didn't ASTRAGAL or Mr. Brown suggest that to him? It rather looks as though this young man is only prepared to give his allegiance to the country which will make special concessions to him; in that case the Home Office may be right. He is prepared to decamp at the prospect of having to wait until he is 26 before starting his studies; I know of at least one Polish architect who was prepared to start all over again, when he was well over 40, in order to qualify in this country.

In case any of your readers should suppose I belong to the fortunate band who enjoyed a normal education, and accordingly found themselves qualified in their early twenties, I should explain that I was conscripted in the last war, discharged at the age of 29 and had to go back to evening school for four years before I could qualify as an architect.

JAMES A. SPON.

London.

Contemplated Act of Vandalism

SIR.—We are most alarmed by ASTRAGAL's comment on the proposal of the Zoological Society to adapt Tecton's Penguin Pool for the use of seals. This, no doubt, would imply major alterations and even the removal of the ramps.

It appears to have taken sixteen years, during which the Penguin Pool gave world-

wide publicity to the Zoo, and pleasure to countless visitors, for the Zoological Society to discover that there has always been room elsewhere, and that the pool was functionally inadequate. We hope that it will take them less time to discover that they intend to destroy one of the first and most famous examples of modern architecture in the country.

We trust that the JOURNAL and its readers will join us in trying to prevent an act of needless destruction in this, of all, years.

TIM STURGES.

MICHAEL BROWNE.

GEOFFREY SPYER.

FRANCIS PYKE.

AA School of Architecture, W.C.1.

SIR.—It is fortunate that ASTRAGAL has drawn the attention of architects to the contemplated act of vandalism to the Penguin Pool at the London Zoo, before any serious damage has been done. I hope that you will, through the medium of the JOURNAL, raise sufficient protest to save this unique example of brilliant contemporary design. I understand that the proposed alterations involve the destruction of the superb intertwining ramps and the mutilation of the entire enclosure.

If the Penguin Pool is allowed to be destroyed, it will be no time before the other fine contemporary buildings like the Gorilla House and the Animal Studio are similarly dispatched. Then British prestige in the field of modern architecture will suffer a serious set-back at a time when the inspiration of such rare examples is most needed.

ROBERT C. W. BROWNING.

London.

SIR.—We sincerely hope that the Committee of the London Zoological Society will reconsider its proposal to make alteration to the Penguin Pool, which will destroy it as a work of architecture.

This is the most famous of all zoological buildings. Its importance lies in the brilliant unison of sculpture and architecture; pleasant fantasy and daring structural technique. This rare richness in such a small construction makes it a pioneer work of great importance.

The zoological buildings by Tecton should be, this year, among Britain's most well designed exhibits and visitors from many countries will certainly expect to see them in their original maturely considered form.

[This is a copy of a letter sent to the Committee of the London Zoological Society.]

L. B. TIRAVANTI (Italy), R. DELL (France), C. ANTONIADES (Athens, Greece), A. W. SLUTER (Holland), V. SPINDEL (Switzerland), A. BEER (Tel-Aviv), P. YATES (London).

Loudon's Letters Wanted

SIR.—I am writing a biography of John Claudius Loudon (1783-1843), the landscape gardener and author of many works on gardening and architecture. I should be glad to hear from any reader who has or knows of any letters written by Loudon or his wife, or who knows the present whereabouts of the journal that he kept from about 1800 until the end of his life, if it still exists.

JOHN GLOAG.

London.

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



FOB

Awards for Good Design: Date of Entry Postponed

Last year the Council for Architecture, Town Planning and Building Research sponsored a scheme by which awards would be made during Festival year for good design in building and landscaping. The last date for nominations (formerly August 31, 1950) is now March 31.

The main object of this scheme, says an FOB hand-out, is to stimulate an interest in landscape or architectural design and so benefit future work. Any buildings, or group of buildings, or any improvement to rural or urban landscaping (excluding very large "works" such as new towns or large development schemes and very small "works" such as single houses) will be eligible for the award. To be eligible, the work must have been begun since August 15, 1945, and it must be sufficiently complete to allow judgment to be made by March 31.

Nominations already made can be withdrawn and re-submitted if the designers feel that a better photograph can be obtained.

A plaque, specially designed by Wilson Parker, will be attached to the works selected. Certificates will be presented to the designers shortly after the opening of the Festival.

Nomination forms may be obtained from the Liaison Branch, Festival of Britain, 2, Savoy Court, W.C.2.

The Council for Architecture was set up in 1948 by the Lord President of the Council to advise the Festival Office on architecture, town planning and building research. Its members are: Howard V. Lobb (chairman), Professor H. V. A. Briscoe, F. J. Forty, Professor W. G. Holford, Robert H. Matthew, Rowland Nicholas, Sir George L. Pepler, J. M. Richards, Howard Robertson, Hugh Casson.

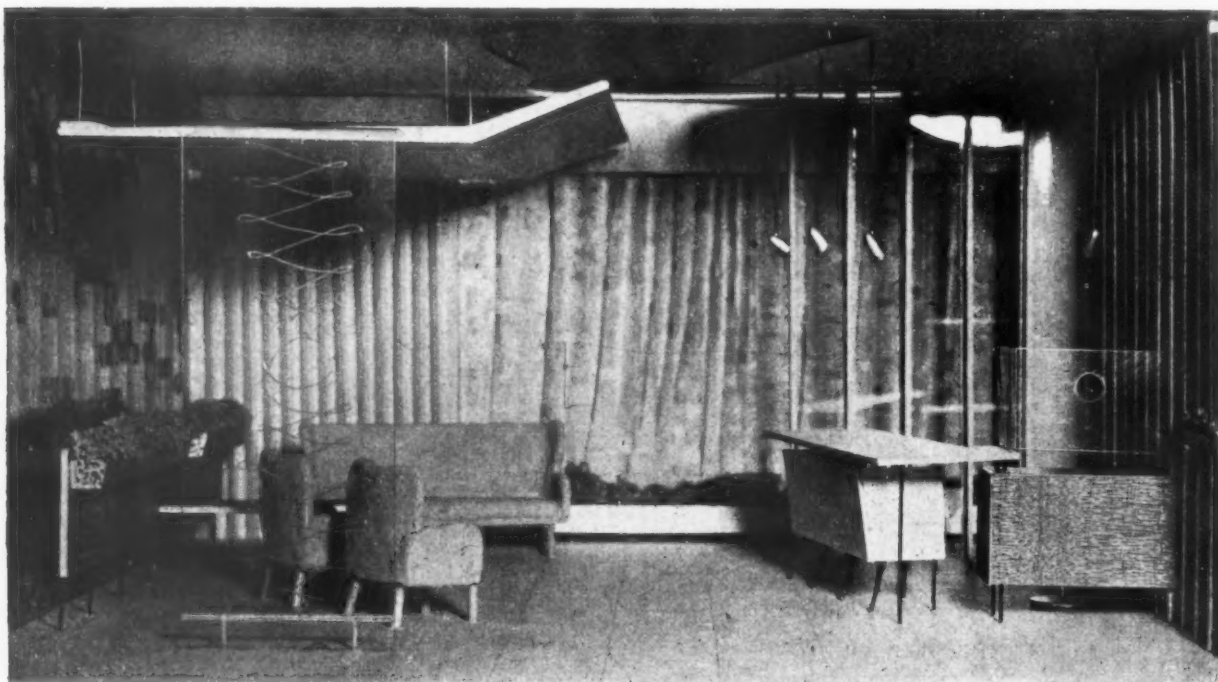
SPAB

Repair of Old Buildings: Course of Lectures

The SPAB is arranging a week's course of lectures, discussions and visits to cover the many important aspects of repair work on old buildings.

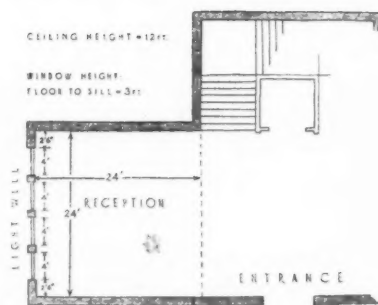
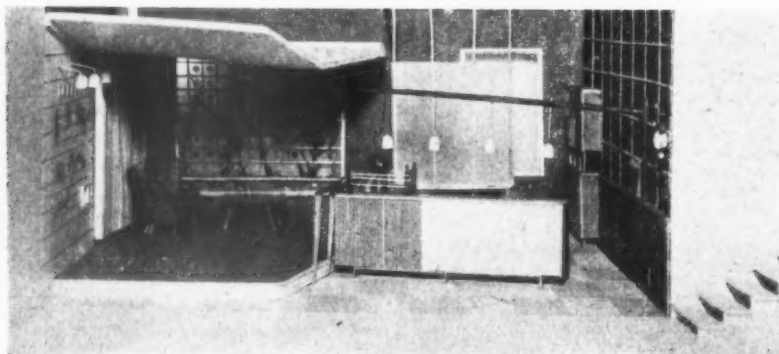
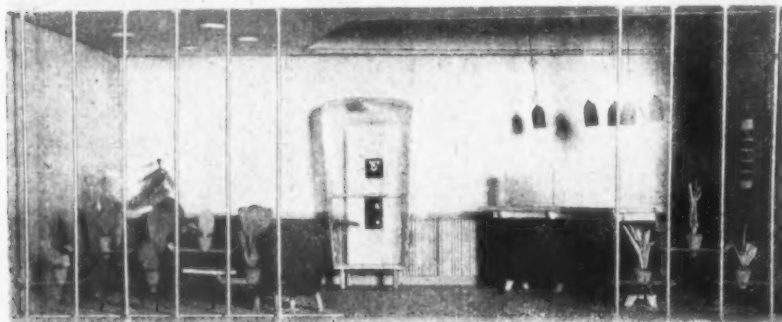
At the present time, when so much repair is waiting to be done, it is apparent that there will be no lack of work of this character for many years. The SPAB realises it is essential that more architects should know

WINNING DESIGNS FOR RECEPTION OFFICE COMPETITION



The eighth industrial design competition organized by the journal "Art and Industry," was sponsored by the Plastics Division of ICI. Architectural and industrial design students were invited to submit designs for the decoration of a hotel reception office, making use of plastics—in particular, "Perspex" acrylic materials.

The design, above, by Henryk Blachnicki, a student of the Polish School of Architecture, received the first prize of £50. Andrew Jackson, of Edinburgh, received the second prize of £30 for the design shown below. Another student of the Polish School of Architecture, Andrzej Chwalibogowski, received third prize of £20



for the design shown at the bottom of the page. The winning plans and models were exhibited on January 25 at the British Colour Council, 13, Portman Square, W.1, when the winners received their prizes from Gordon Russell, Director of the CID. The assessors of the competition were: Leslie Hardern, chairman DIA; A. Rensfrew, development director of ICI; Basil Spence. Competitors were asked to supply a design for the reception office of an exclusive hotel of twenty bedrooms catering for high-class American and Continental tourist trade. The plan, above, shows the largest of the proposed entrance halls, which provided the setting for the competitors' designs. The extravagant use of expensive materials was not encouraged.

not only about the constructional methods of the past, but the principles underlying the sympathetic and conservative treatment of old buildings. The Society hopes that local authorities will help architect members of their staffs to take advantage of this scheme. The course will be held from April 30 to May 5.

OBITUARY

L. William Barnard, E. I. McConnah and F. H. Floyd

We regret to announce the deaths of the following:—

Leonard William Barnard (80), of Cheltenham, who, until his retirement through ill health three years ago, had been associated with the firm of L. W. Barnard and Partners for 60 years. Among buildings he designed are the cloisters at Cheltenham College; Dean Close School Chapel, Cheltenham; Umtata Cathedral, South Africa, and the British Merchant Seamen's Hostel at Marseilles.

Ernest I. McConnah (aged 24), assistant to Ernst May in Nairobi. He had previously studied at the Aberdeen School of Architecture.

F. H. Floyd (aged 76), senior partner in the firm of Floyd and Robson, of Newbury. He had been architect to the Wallingford RDC for their housing schemes since 1925.

RIBA

Tite and Soane Awards

The closing date for the submission of forms of application for the Tite Prize is March 22. The Tite Prize, a certificate and the sum of £100, for the study of the architecture of the Italian Renaissance, is confined to probationers and elected students of the RIBA and elected students of Dominion allied societies who have passed the RIBA Intermediate or equivalent examination, or can produce certificates from members of the RIBA to the effect that they have reached the required standard. Students who have passed the RIBA Final or equivalent examination (or who will have done so at the time of the *en loge* competition) are not eligible to compete. The subject for the competition will be based upon a design in the tradition of the Italian Renaissance.

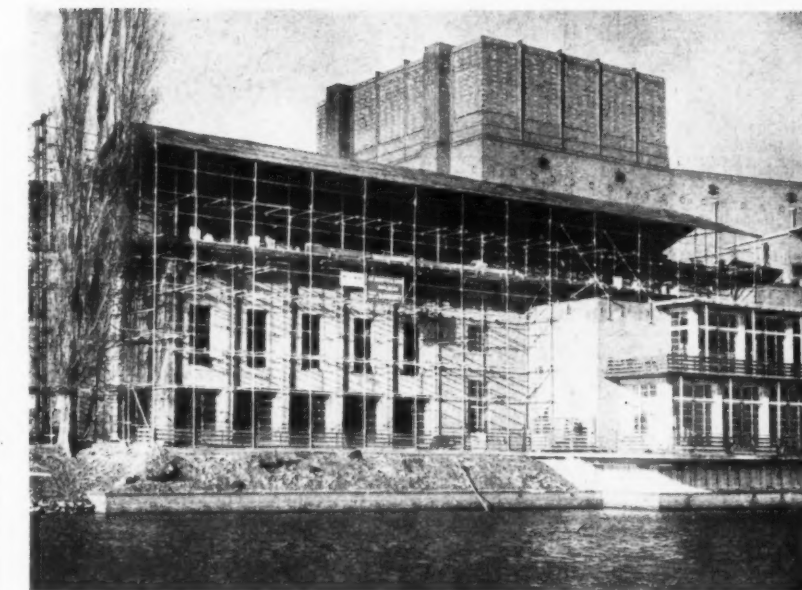
Under the new arrangements for the competition only one *en loge* competition will be held. This will take place in London and at non-Metropolitan centres on May 2. The closing date for the submission of forms of application for the Soane Medallion is March 26. The Medallion and the sum of £120 is confined to members of the RIBA (and of the allied societies overseas) and elected students of the RIBA (and of the allied societies overseas) who have passed the RIBA Final or equivalent examination, or can produce certificates from members of the RIBA to the effect that they have reached the required standard.

The *en loge* competition for the Soane Medallion will be held on the same day as that for the Tite Prize.

AUSTRALIA

Advice to Emigrating Architects

Several architects who have emigrated from this country to Australia have found that the qualification of registration under the Architects' Registration Acts in this country is not sufficient to entitle them to have their names placed on the Statutory Registers in some of



Extensive alterations are taking place at the Shakespeare Memorial Theatre, Stratford-upon-Avon. The architect for this work is Brian O'Rorke (See Astragal's note on page 143). This photograph shows work in progress on the new green room and dressing rooms. Of particular interest is the temporary roof (erected for the contractors by British Scaffolding Ltd.). Although this added £350 to the costs it will undoubtedly pay for itself, for work has been continuous in spite of many days of bad weather.

the Australian States, or to become members of the chapters of the Royal Australian Institute of Architects. While, generally speaking, Associateship of the RIBA or a qualification obtained at one of the Schools of Architecture recognized for exemption from the Final Examination of the RIBA is accepted as a qualification for registration in Australia and membership of the Royal Australian Institute, architects seeking a practice in Australia are advised by the Royal Australian Institute to ascertain whether their present qualifications are valid. The address of the institute is: Barrack House, 16, Barrack Street, Sydney, New South Wales.

FOB

Exhibition Designers

Following is a list of designers commissioned by the FOB for work on Festival exhibitions:—

SOUTH BANK, LONDON. Co-ordinating designers, James Holland, Mischa Black and James Gardner; assistant co-ordinating designer, R. Jeffreys. *Street Decorations*, co-ordinating designer, Jack Howe; *Festival Ship, "Campania"*, co-ordinating designer, James Holland; *Land Travelling Exhibition*, chief designer, Richard Leven; *Exhibition of Science (South Kensington)*, chief designer, Brian Peake; *Exhibition of Industrial Power (Kelvin Hall, Glasgow)*, chief designer, Basil Spence; *Exhibition of Architecture (Lansbury Poplar)*, chief designer, Ronald Avery; *Ulster Farm & Factory, 1951 Exhibition*, chief designer, W. M. de Mayo; *1951 Exhibition of Books (Victoria & Albert Museum, London)*, designer, Hulme Chadwick; *Scottish Committee, Exhibition of Arts, Crafts & Architecture*, designers, Roger Nicholson, Robert Nicholson.

In the remainder of the names of designers given here, those listed as No. (1) are section display designers and those listed as (2) are sub-section display designers.

SOUTH BANK, (1) Beverley Pick. Minerals

of the Island, (1) F. H. K. Henrion. *The Natural Scene: The Country*, (1) Warner Kennedy; (2) Robert Gutmann. *Power and Industry*, (2) Reece Pemberton. *Sea and Ships*, (1) James Holland and Basil Spence and Partners; (2) Richard Negus, Ernst Pollak, Victor Prus and Philip Sharland. *Transport and Communications*, (1) Rodney Thomas. *The Land of Britain*, (1) V. Rotter. *The People of Britain*, (1) James Gardner; (2) Arpad Elfer and Robert Scanlon. *Dome of Discovery*, (1) Mischa Black; (2) Kenneth Bayes, Stefan Buzas, Stirling Craig, Austin Frazer, Robert Gutmann, Clifford Hatts, Ronald Ingles, Jock Kinnaird and Ronald Sandiford. *The Lion and the Unicorn*, (1) R. Y. Goodden, R. D. Russell and Richard Guyatt. *Television*, (1) Wells Coates. *Homes and Gardens*, (1) Bronek Katz, R. Vaughan; (2) J. D. Binns, Patience Clifford, Neville Conder, Robin Day, F. L. Marcus, Clive Latimer, Nigel Walters, Robert Nicholson and Roger Nicholson. *New Schools*, (1) Patience Clifford and Neville Conder. *Health*, (1) Peter Ray. *Sport*, (1) Gordon and Ursula Bowyer; (2) Roger Nicholson and Robert Nicholson. *Shot Tower*, (1) Hugh Casson; (2) John Beresford-Evans. *1951 Centenary Pavilion Boathouse*, (1) James Gardner; (2) Christopher Ironside. *Seaside*, (1) Eric Brown and Peter Chamberlain; (2) Barbara Jones. *The Royal Pavilion: Interior Design*, (1) Faculty of Royal Designers for Industry of the Royal Society of Arts.

RESTAURANT INTERIORS. *The Rocket*, (1) Kenneth Cheesman. *Fairway Café*, (1) Architects Co-operative Partnership. *Dairy Bar*, (1) F. H. K. Henrion. *The Whistle*, (1) Trevor Dannatt. *"The 51"*, (1) Leonard Manasseh. *The Skylark*, (1) Basil Spence and Partners. *Regatta Restaurant*, (1) Mischa Black and Alexander Gibson. *Turntable Café*, (1) George Subiotto and Terence Bliss. *The Unicorn*, (1) R. Y. Goodden and R. D. Russell. *The Garden Café*, (1) Bronek Katz and R. Vaughan. *Thameside Restaurant: Harbour Bar*, (1) Neville and Mary Ward and Frank Austin.

South Bank Features: Symbols and Signposting, (1) Milner Gray. *Drinking Fountains and Street Furniture*, (1) James Cubitt

and Partners. *Kiosks & Telephone Boxes*, (2) Erno Goldfinger. *Bandstand*, (1) Peter Moro. *Litter Bins*, (1) Jack Howe.

Street Decorations, (1) Sergei Kadleigh, John Lansdell, Gordon Cullen.

1951 Exhibitions of Books (Victoria & Albert Museum, London), (1) Hulme Chadwick. *Scottish Committee: Exhibition of Arts, Crafts and Architecture*, (1) Roger Nicholson and Robert Nicholson. *Festival Ship "Campania"*, (1) James Holland; (2) Pauline Behr, Charles Hasler, W. Kay, Richard Negus, E. Pollak, Victor Prus, Philip Sharland, L. Wills. *Land Travelling Exhibition*, (1) Richard Levin; (2) James Cubitt and Partners, Natasha Kroll, H. A. Rotholz. *Exhibition of Industrial Power (Kelvin Hall)*, (1) Basil Spence; (2) Arthur Braven, Hulme Chadwick, Jack Coia, Douglas Stephen, Albert Smith. *Exhibition of Science*, (1) Brian Peake; (2) Gordon Andrews, Ronald Dickens and Eric Mansfield. *Ulster Farm & Factory, 1951 Exhibition*, (1) W. M. de Mayo; (2) L. Bramberg, W. H. Farrow and J. Inbig-Nyes. *Exhibition of Architecture (Lansbury, Poplar)*, (1) Ronald Avery; (2) Tom Mellor, Patrick Horsburgh.

Below is a report by Ernest Watkins on the proceedings at the Old Bailey last week when Raglan Squire and Messrs. Wates (South Western Estates) Ltd. were charged with an offence under the licencing regulations.

LAW REPORT

Raglan Squire and Messrs. Wates Ltd. v. Ministry of Works

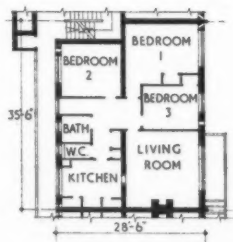
On September 12, 1950, summonses were issued, at the instance of the MOW, against Raglan Squire, F.R.I.B.A., and Messrs. Wates (South Western Estates) Ltd., alleging that they had unlawfully carried out building works within the scope of Defence Regulation 56a without having a MOW licence covering the job. The proceedings were heard, in the first instance, at the Bow Street Magistrates' Court and were sent on for trial at the Central Criminal Court. The case there opened on January 19 before the Common Serjeant and a jury and continued until January 25. After retiring, the jury returned a verdict of "Not Guilty" against both defendants.

The case arose out of work done for the Nuffield Trust at Gatti's old restaurant in Adelaide Street, Strand, London, between October, 1947, and July, 1948. The Nuffield Trust financed and managed a Services Club in Wardour Street, London, and their occupation of those premises was due to end in July, 1948. In March, 1947, the Trust instructed Messrs. Arcon, as architects, to re-

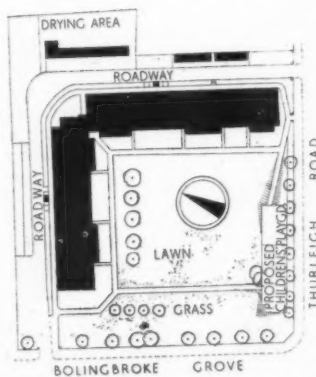
A BLOCK OF FLATS IN BATTERSEA



The Lane Court block of flats in Battersea was designed by H. Atkinson, borough engineer and surveyor. Accommodation for 111 persons is provided in 27 flats on a site area of 1.08 acres. Above, the flats from the south-west, below right, the north-east front. The flats were built by a direct labour force under Battersea Borough Council. Sub-contractors will appear next week.



Typical floor plan [Scale: 1/4" = 1'-0"]



Site plan



port on the suitability of Gatti's restaurant premises for conversion into a new home for the Nuffield Centre for the Forces and to give an estimate of the probable cost (Mr. Squire was then a partner in Arcon). On March 31, 1947, Arcon reported that the premises were suitable and gave a very preliminary estimate of £12,000 as the cost of making the conversion. The Trust accepted the proposal to the extent of instructing Arcon to apply for a building licence for those premises and for that figure, which they did in June. A licence for £12,000 was granted in August, 1947. The question then arose as to the form of the contract. There was evidence that the Trust was deeply concerned with time, with the need to have the job completed by the end of the following July, so that there would be no break in the life of the Nuffield Centre. There was evidence, too, that all concerned regarded the Trust as having something of an official status, enjoying the support of the Service Ministries (indeed, also, of the Metropolitan Police), and that the necessary licences for the work would be forthcoming without difficulty. On September 23, 1947, Arcon wrote to the Trust pointing out that it would be virtually impossible to calculate the cost of the work with any degree of accuracy unless the plans were settled, and detailed drawings and bills of quantities prepared. On September 25 the Trust replied that time was all-important and that it was unthinkable that the work should be held up while these detailed estimates and calculations were made.

Accordingly, a contract for the work was made, in the October, on a cost-plus basis. The firm of Arcon were the architects, Messrs. Wates the contractors, and there were twenty-seven nominated sub-contractors in addition to any engaged directly by Messrs. Wates. All negotiations with the nominated sub-contractors were to be carried out by the architects but, on instructions from the architects, Messrs. Wates gave the official orders and paid them for the work done. The work began and, on January 8, 1948, Mr. Squire informed the Secretary of the Trust that he had personally taken over responsibility for the completion of the work. Messrs. Wates' initial estimate for the cost of the work was £15,000 prime cost.

After the start of the work, weekly site meetings were held, attended by representatives of the Trust, the architects and the builders. At these progress meetings the builders produced figures as to the costs incurred to date and these were incorporated in the minutes of the meetings. By January it was apparent that changes in the plans already made and agreed would increase the cost beyond the figure of the original provisional estimate. The new figure for the cost of the work needing a licence was estimated at £25,000 and a supplementary licence for £12,000 was applied for and, in the March, granted.

The work then proceeded fast; in the words of one witness, it "went on until it reached fever pitch." Owing to the nature of the job, and of the contract, there was always a certain degree of fluidity in the plans. The manager of the Nuffield Centre was interested in the work; the Common Serjeant, in his summing-up, accepted that he had ordered certain additional work (the manager was not called as a witness). The figures produced at the site meetings were also mounting up. On April 6, 1948, they were £23,163, including sub-contractors' material on the site; on May 4, £28,622; on May 18, £30,555. This was the last of the site meetings, as the work was then virtually complete so far as the contractors were concerned. On April 29, 1948, Mr. Squire saw the secretary of the Trust and produced a further revised estimate of £35,000. The secretary assured Mr. Squire that there would be no difficulty in obtaining a further supplementary licence if one was needed. Mr.

Squire's view that was not needed; he estimated that about one-third of the work covered by that estimate was work not needing a licence and so the figure covered by the existing licences, £24,000, was adequate. The Centre, in fact, opened in Adelaide Street on July 28, 1948.

Then followed the period in which the total cost of the job made itself apparent. In early September Mr. Squire presented the final accounts which showed a total figure of £55,000. After a re-check, the final figure was found to be £54,184, and later Mr. Squire made a detailed breakdown, showing that, of this, £38,608 was the cost of the work needing a licence and £15,576 the cost of the non-licensable work. For the purpose of the trial itself, the Common Serjeant accepted that the total figure of the work not covered by the licences issued and needing a licence was £14,000, the approximate figure given by Mr. Squire himself. The figure put forward by the MOW was higher, since they did not accept entirely Mr. Squire's division of what was and what was not licensable work.

In these circumstances, the issue in the case came to have considerable clarity. Regulation 56a provides that certain classes of building operations (in the main, the only exceptions are work done for public and local authorities) are unlawful unless there is in force a licence granted by the Minister. It was admitted that work of the kind covered by the Regulation had been done at the Centre, that it was not covered by the exceptions in the Regulations, and that the quantity exceeded the figure contained in the two licences. The crux of the case lay in the later provisions of Regulation 56a. Those provide that "where it would be a defence for a person . . . to prove that the cost of an operation . . . did not exceed a particular amount, it shall also be a defence for him to prove that at the time when the operation . . . was begun or the work in respect of which he is charged was carried out he had reasonable grounds for believing that the said cost would not exceed that amount." It was submitted on behalf of Mr. Squire that it was a defence if he showed that he believed on reasonable grounds that the cost of the licensable work would not exceed £24,000.

The five days of the hearing was taken up in the hearing of the witnesses whose evidence established the facts set out above and in the submission of the counsel representing the prosecution and the two defendants. Mr. Squire was represented by Gerald Howard, K.C., and E. Ryder Richardson, instructed by Messrs. Turner and Wayman-Hales, solicitors, of Chester. In the course of his address to the jury Mr. Howard put the points that all the surrounding circumstances combined to put the architects in a very difficult position. He claimed that there was no doubt that a further supplementary licence would have been granted in June or July, 1948, if it had been applied for, and that Mr. Squire was being tried because he did not apply for a licence at the right time. The only issue for the jury, he went on, was whether or not, before July 28, 1948, when the work was finished, Mr. Squire acted reasonably because he had reasonable grounds for believing that the cost of the licensable work would not exceed £24,000.

He pointed out that when Mr. Squire arrived at his total figure of £35,000 in April, 1948, it was a *bone-fide* estimate made on reasonable grounds, that no improper motive had been alleged by the prosecution and that, unless Mr. Squire had had cause to alter his views, he was perfectly entitled to rely on his estimate of £35,000.

The case for the prosecution was equally simple. Counsel said: "If ever there was a case in which one may have sympathy for the accused, this is it. Nevertheless, the law was that, if you built without a licence, you committed an offence and were liable to a penalty."

The Common Serjeant began his summing

up by stating that there was no possible doubt that there had been a contravention of the Regulation and that the only matter the jury had to decide was the proviso, quoted above, offering the defence of a reasonable belief. The real issue was, "in all the surrounding circumstances, have each or either of them (the defendants), by and large and not looking at the thing under a microscope, satisfied you that they had reasonable grounds for believing that the costs would not exceed the licence?" There was no allegation of dishonesty on the part of Mr. Squire or anyone else. The jury might think that Mr. Squire had been put in an almost impossible position, but, while it was a terribly difficult contract in which to estimate costs, that cut both ways.

He could not, he said, accept that the Nuffield Trust were to blame. They had shied away from what he described as the proper procedure of having bills of quantities and proper plans and had been warned of the risks, but it was the architects' job to advise them. The difficulty of Mr. Squire's position was shown in the figures for the licensable work. The total of the spot estimates on which he based his calculations was some £14,000. When after the job the bills came in, the total was £30,000, an excess of about £17,000.

He concluded by referring to the difficulty of deciding what was licensable and what non-licensable work, by pointing out that the builder was in a stronger position since it was the duty of the architect to see to the licence, and by reminding the jury that both the defendants were of the highest integrity and repute in their respective professions.

As reported above, both defendants were found "Not Guilty" and discharged.

DIARY

Annual Exhibition of Photographs by Members of the AA. At 36, Bedford Square, W.C.1. Monday to Friday: 10 a.m. to 6 p.m. Saturdays: 10 a.m. to 1 p.m. UNTIL FEB. 23

Costs of Town Development. A Limon. Caxton Hall, Caxton Street, S.W.1. (Sponsor, TPI). 6 p.m. FEB. 1

Leasehold Reform. Michael E. Rowe. 12, Great George Street, S.W.1. (Sponsor, RICS.). 5.30 p.m. FEB. 5

Presentation of Prizes to Students. Address by RIBA President and criticism by R. E. Enthoven of work submitted. At RIBA, 66, Portland Place, W.1. 6 p.m. FEB. 6

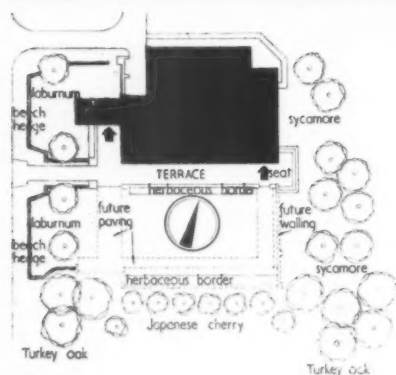
The Construction of an Extension to a Factory at Silvertown. F. G. Etches. 11, Upper Belgrave Street, S.W.1. (Sponsor, ISE.) 6 p.m. FEB. 8

Thoughts on Architecture Today. Michael Waterhouse. At the University of London: Senate House. A course of two lectures. 5.30 p.m. FEB. 8 AND 15

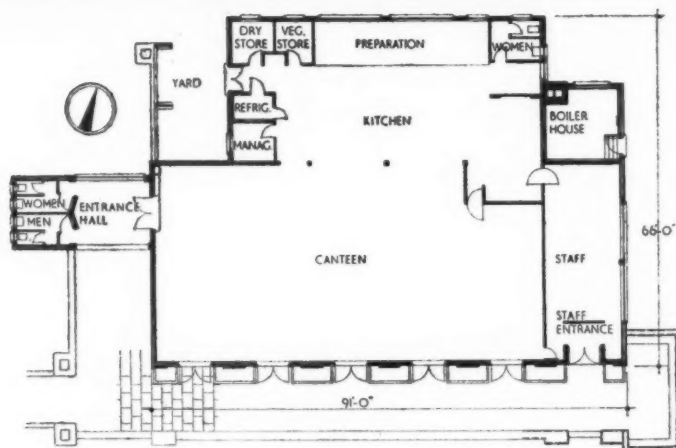
Floor Finishes. (Architectural Science Board Lecture.) F. C. Harper. At 66, Portland Place, W.1. (Sponsor, RIBA.) FEB. 27

The Architecture of Transport. Exhibition at the RIBA, 66, Portland Place, W.1, showing projects in this country and a selection of material from abroad. Weekdays 10 a.m. to 7 p.m. Saturdays 10 a.m. to 5 p.m. FEB. 22 TO MAR. 22

A CANTEEN ON THE TEAM VALLEY TRADING



Site Plan

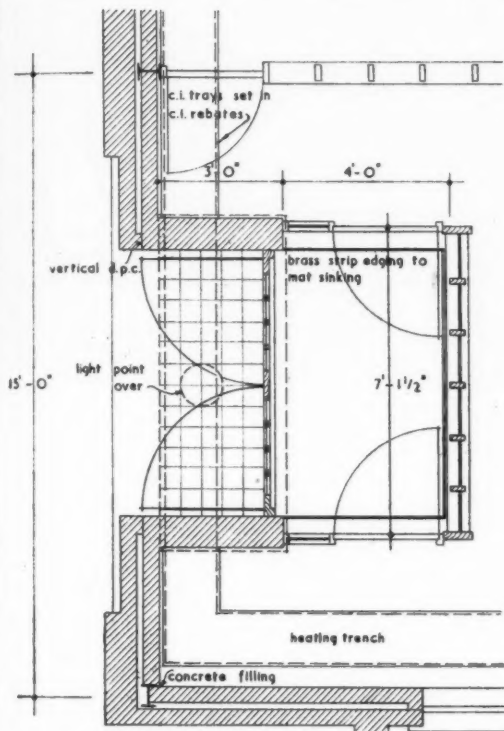
Floor Plan [Scale: $\frac{1}{16}$ " = 1' 0"]

The canteen for North Eastern Trading Estates, Ltd., was designed by Napper & Taylor for workers on the Team Valley Trading Estate at Gateshead, Northumberland. The canteen has seating space for 212 people. The site is open to the north, east and south, and is bounded by an estate road on the west. The ground is level. The area to the south of the canteen is due for development. All sub-floors are of concrete. The external 11-in. cavity walls are of brick. The brick partition walls are 9-in. and 4½-in. thick. The roof is carried by a steel frame. The wood-wool cement slabs are carried on inverted steel T-sections, which in turn are supported by purlins. The roof

to the entrance porch and external lavatories is of reinforced concrete slab cast in situ. The copings, lintels, sills, string course and curbs are of artificial stone. Window frames are of metal. The external finishes are as follows: walls, concrete bricks; garden walls, sand-faced bricks; doors to terrace on south elevation, iroko; concrete surfaces to roof of entrance porch, soffit and fascia, off-white; circular counter-sinkings to soffit of eaves, turquoise. Internal finishes are as follows: Canteen: floor, composition wood block; walls, beams and ceiling, heat-resistant plaster; partition between canteen and staff, white timber framing, mist grey glazing beads, ½-in.

NG ESTATE, GATESHEAD, NORTHUMBERLAND

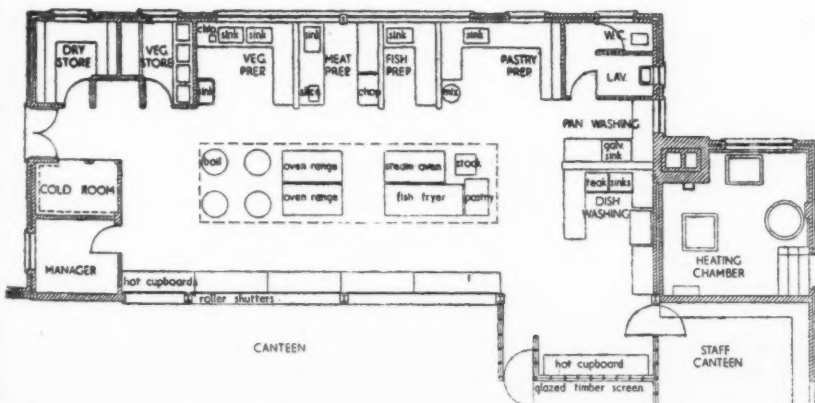
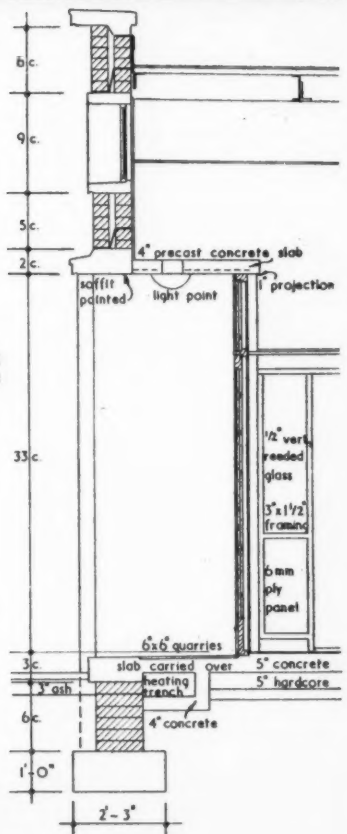
vertically reeded glass; doors, blue; door frames, vellum; servery hatches, blue. Kitchen: floor, buff quarry tiles; walls, distemper on brick, brick-red to dado, off-white above dado; ceiling, plastered; steelwork, light cream; bench tops, sycamore, cream framing; doors and door frames, loam; canopies and trunking, mist grey; preparation areas, light cream tiles; servery counter, plastic veneer, cream top, buff fascia. Heating: gas-fired boilers, low pressure hot water radiators. On the facing page, the interior of the canteen. Right, above, the exterior from the south-west. Right, centre, from the north-east. Right, below, the exterior from the north. The general contractor was Isaac Berriman. Sub-contractors: page 170.



Plan of staff entrance [Scale: 1/4" = 1'0"]



Section through staff entrance



Plan of kitchen [Scale: 1/4" = 1'0"]

DIARY

The general position at the beginning of the New Year was as follows :

EXTERNALLY :—

All work including terraces and car park completed—Waterproofing and paving of terraces commenced—Asbestos cladding to temporary end practically finished—External decoration completed—Site being cleaned and levels being reduced where necessary.

INTERNALLY :—

Windows completed and the majority glazed—All services completed and being tested—Wood strip and block floors and stairtreads 80 per cent. complete—Laminated wood cantilever treads fixed—Wood panelling to bars, etc., well advanced—Counters and screens in cloakrooms fixed—Doors being hung and ironmongery being fixed—Lifts being installed—Decorations proceeding in foyers and escape stairs.

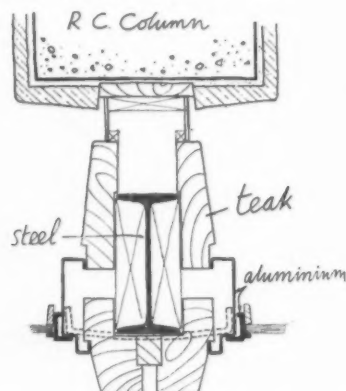
AUDITORIUM

Generally complete except for orchestra platform and cork tiles to floor.—Suspended canopy now in place and being worked on by electricians.

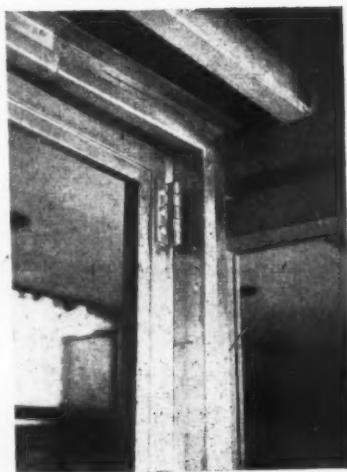
ROYAL FESTIVAL HALL : 9

Progress report by John Eastwick-Field and John Stillman on the windows.

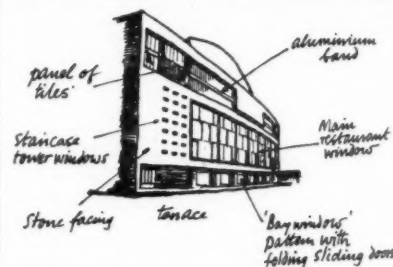
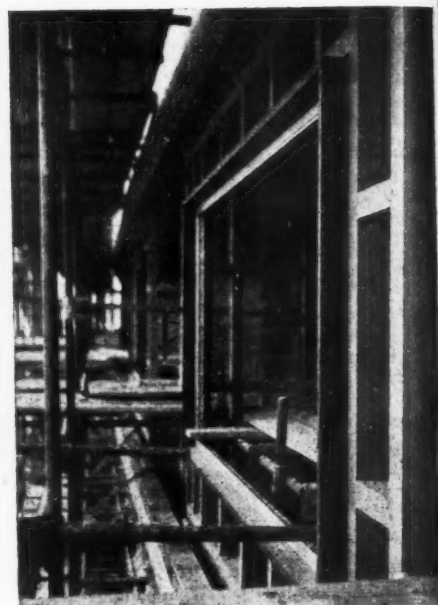
This is a plan-section through one of the main mullions of the large windows on the river front.



The most noticeable thing about it is that it is made up of three different materials which are often used separately for making complete windows. The reasons for deciding to combine the three materials in the Festival Hall windows, and the arguments and processes by which the ulti-



Above, folding sliding doors on the recess of the river front "bay window" pattern. The hinge is a purpose-made casting in a special aluminium alloy. Right, the "bay window" pattern at terrace level on the river front side. The softwood studding is prepared to receive teak vertical siding.



Sketch of elevation facing river front.

mate sections were evolved are of interest, and are described and commented on below.

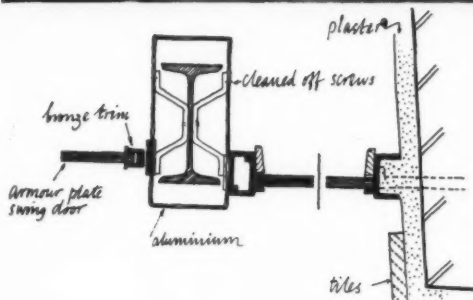
When the windows were first being considered, selected window manufacturers were provided with sets of $\frac{1}{8}$ th scale elevations showing the positions and sizes of openings, together with sketches of typical details, and were invited to submit estimates for the work. At this stage the details were only tentative, and, as often happens, the design could not be finally developed until a sub-contractor had been appointed, and precise limitations in manufacture could be discussed with him. Nevertheless, each of the tenderers consulted with the architects before submitting their prices, in order to ensure that their interpretation of the sketches should be acceptable, and that the basis for tendering should be comparable as far as possible.

In practice, when such a procedure is adopted, it may mean that the tenderers estimate on a general basis, as, for instance, the superficial area of the windows, and the accepted estimate may well have to be adjusted when the details are finally agreed. Unless architects are to have specialized knowledge of the processes and of other details of the manufacture of metal windows, the only alternative procedure for obtaining competitive estimates is to work out the design in full detail with one manufacturer, and to invite tenders on the basis of the designs evolved. Provided no special demands are made on the manufacturer, this latter procedure, is reasonable because the designs, which may be based largely on the manufacturer's own suggestions, are likely to be within the range of tech-

nique common to all manufacturers, and the tendering will be competitive. At least it has the merit of saving all but one of the tenderers the drawing office work which is involved. However illogical the system may seem, any other procedure by which each tenderer would be required to develop the design prior to tendering, would be ex-



Glazed wall facing Waterloo Bridge. The cantilever staircase is under construction.

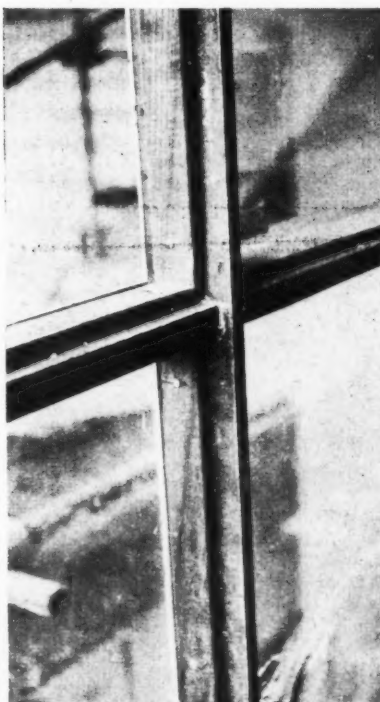
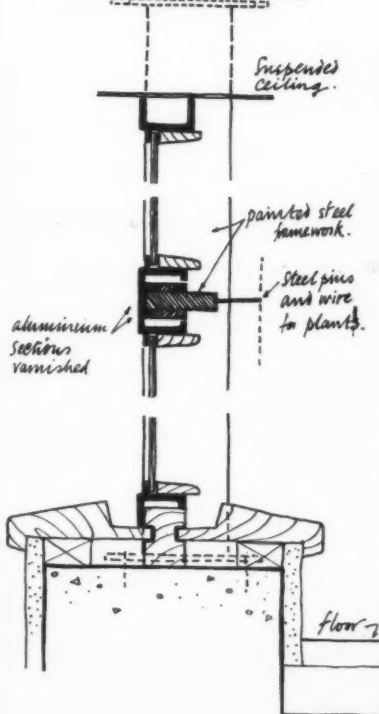


One bay of the north-east glass wall showing the staggered mullions. The overall sizes of the concrete opening are 97 ft. 6 in. by 23 ft. 3 in.

Left, detail of mullion window, and armour plate doors on north east elevation.

Below, left, section through typical internal glass screens. On some of the many large screens pins and wires are fixed on which climbing plants will be trained.

Below, detail of internal glazed screen constructed of MS flats, aluminium sections and hardwood beads.



tremely wasteful of the industry's time, and would be impracticable at present when there are already long delays caused by congestion in the manufacturers' drawing offices.

Inventiveness and originality in window design appear more often to find expression abroad than in this country, and it is to be wondered how this comes about. One suspects that the need for competition in this country limits the development of design, but that, at the present time, the country would not be willing to dispense with a system which is generally thought to effect economies. Furthermore, the resources of the industry are already so fully used that manufacturers cannot normally satisfy demands from individual architects for any considerable variations from standard practice. This is not to say that the leading manufacturers do not undertake research on their own account; and furthermore official encouragement has recently been given for development work, in particular for educational buildings.

Reverting to the development of the Festival Hall windows; two sets of estimates were invited, one for the special large windows, and one for the numerous small steel windows in the staircase towers. The larger windows are of the greater interest and we refer mainly to them in the list, given below, of what we consider to be particular characteristics of the fenestration.

(a) wood, steel, and aluminium are used in combination, and are all produced by the main window subcontractor.

(b) unusually large sheets of glass are used in the larger window openings.

(c) for the most part all the lights are fixed.

(d) within the limits of practicability the sizes and shapes have been chosen for aesthetic reasons, and this applies also to the choice of teak and aluminium for parts of some of the sections. The accent on pattern throughout the building is repeated in the windows with the result that mullions are not always structurally continuous.

(e) extra heavy glass is used for the external glazing in order to minimize the sound transmission.

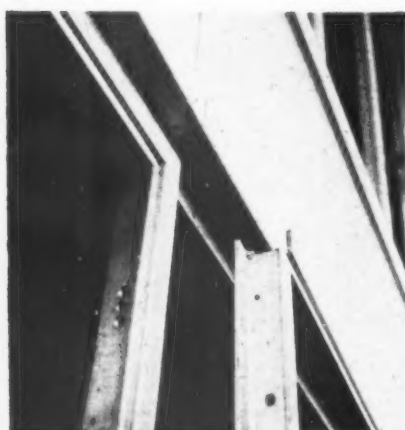
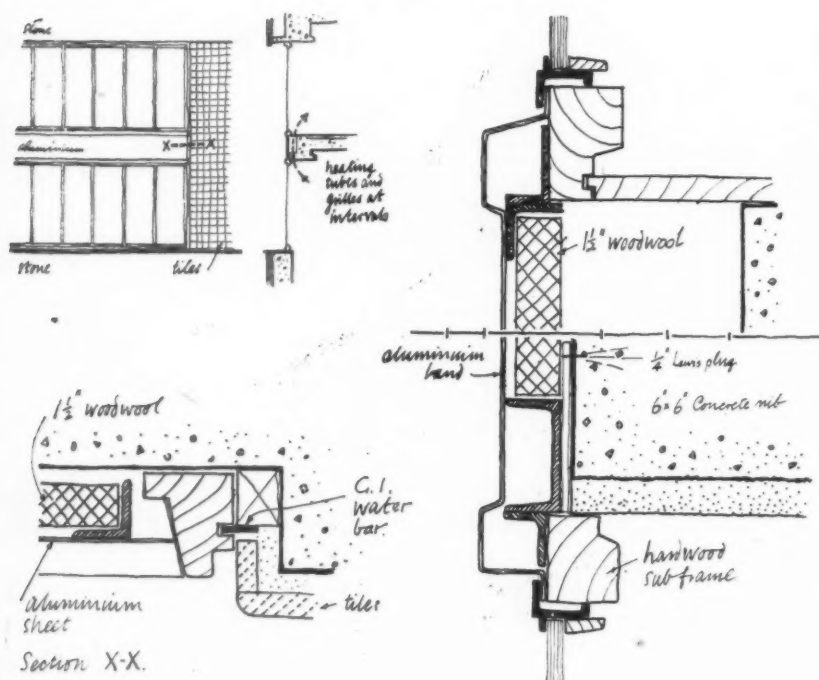
(f) gilled tubes are incorporated in some transoms and cills to prevent cold down draughts.

(g) the fenestration is returned internally in screens of glass which add to the essential transparency of the building.

(h) the external entrance doors are contained within large window areas, and are themselves of armour plate glass with a delicate metal trim.

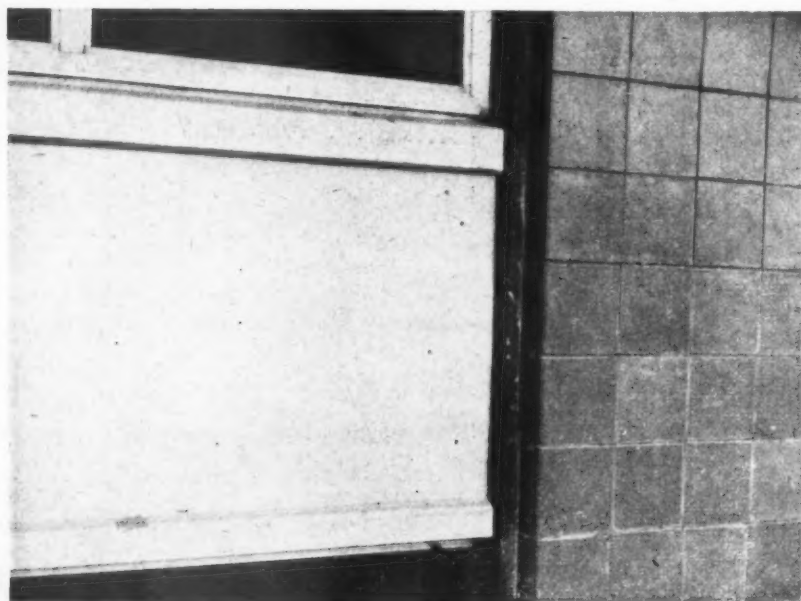
MATERIALS

The architects decided to use wood and aluminium for the exposed parts of the windows. The introduction of these two different materials enabled



Above, details through pressed aluminum band dividing upper windows to River Front elevation.

Left, assembling lower row of double banked sashes divided by sheet aluminum band, on the river front elevation.



Below, end of aluminum band abutting against teak subframe and panel of brown "one fire tiles."

the architects to design the windows in such a way as to achieve the right scale. Teak was used because, in large sections, it provided a good contrast with the stone facings and was known to be very durable. Aluminium was chosen because it gave the required internal effect without painting. It was known that it would go dull externally, but when this happens it is intended that it will be freshened up by painting. In this way a minimum amount of painting will be required, and what the architects refer to as a "white collar and cuff" effect will be achieved. Steel was introduced where necessary for structural reasons, and to reduce the widths of those sections which would otherwise have been too cumbersome to satisfy the architects' desire for lightness in appearance. These steel sections were either galvanized or zinc sprayed and were also painted with red oxide.

Both the wood sub-frames and the aluminium sections could also have been constructed of steel, in pressed and rolled form respectively. From a practical point of view, steel would have been easier to fabricate and the manufacturer could have relied on his accumulated experience of its use. Moreover, there would have been less risk of damage to the windows which were required on site whilst other heavy trades were still working. Nevertheless the architects decided to use teak and aluminium for the aesthetic reasons discussed above, and further they knew that there would be no possible risk of rusting with these materials. Galvanizing and other rust-proofing methods are now considered to give reasonable protection to steel windows, but hot-dip galvanizing, which is one of the most efficient methods, has the disadvantage that it sometimes provides a rough surface which is recognizable even when painted. Aluminium, on the other hand, is more expensive, but has a pleasant natural surface which on this job was scratch-brushed and finished both internally and externally by the application of a special varnish stoved on at works. This particular treatment was the manufacturer's idea, and originated from the need to prevent the atmospheric corrosion to which even aluminium is subject; it also helped to avoid damage in handling and transit, and the corrosion and staining which was likely to occur from accidental contact with lime during erection.

Due to claims which were made before there had been much experience of aluminium alloys in building, the idea still persists that the alloys generally referred to as "aluminium" do not corrode. This is, of course, untrue, and it is now regretfully admitted that at least the alloys normally used cannot be exposed externally without losing their smooth surface. Unless they are

wiped over regularly they become coated with a fine white powder and may be subject to pitting, especially in polluted atmospheres.

The products of the corrosion of aluminium, unlike rust on iron, inhibit further corrosion, and it can therefore rightly be claimed that the material can be exposed externally without protection, but not without becoming disfigured. Plain anodising has been used for protection of exposed aluminium, but until electrical resistance welding was introduced, discoloration occurred at the weld, and anodised sections were therefore often cleated. Electrical welding was used on the Festival Hall, but anodising was not used in view of the original intention to paint the windows externally.

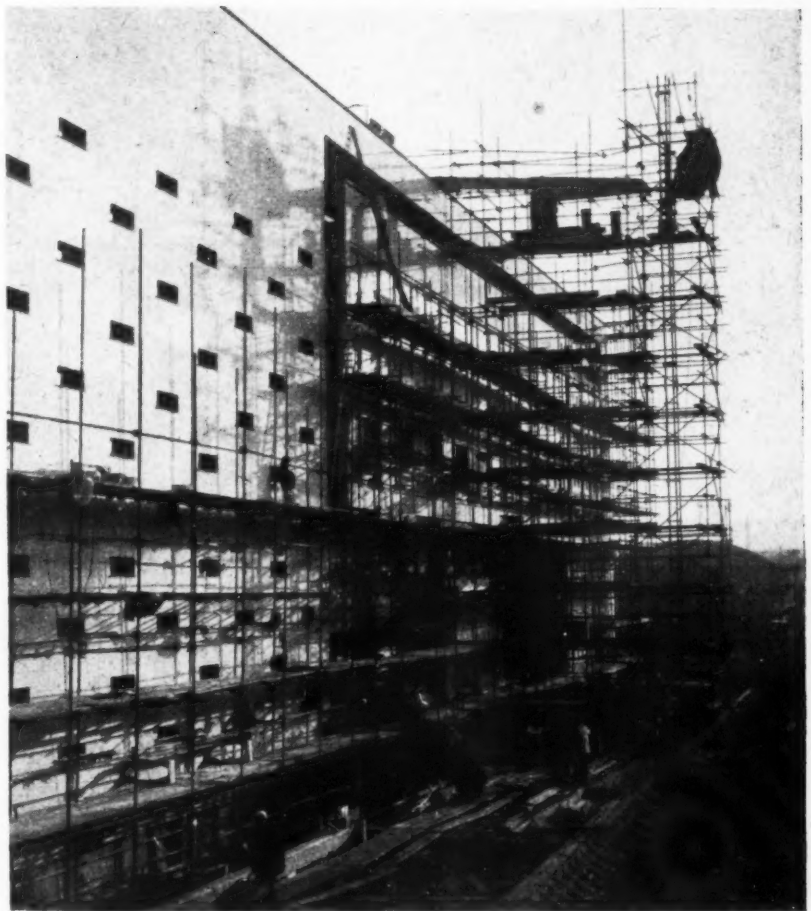
SIZES AND STRUCTURE

The staircase towers are lit by a multitude of small fixed lights, but other windows are exceptionally large. One structural opening is 176 ft. long and 25 ft. 4 in. high, but despite its size, the manufacturer was required to design and to provide any necessary structural members in connection with the glazing, and some large section R.S.J.'s were required, as shown in the accompanying sketches. The calculations made by the manufacturer were submitted to the consulting engineers for approval, and on their advice the wind load for the large river front window was assessed at 20 lb./sq. ft. owing to its height and exposed position.

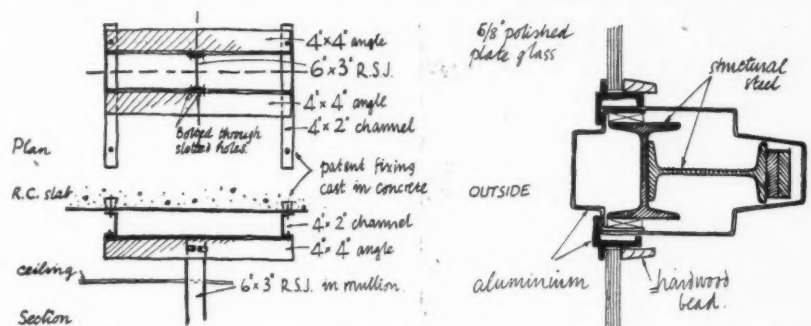
Manufacturers normally prefer to restrict sizes of frames to about 10 ft. \times 8 ft., which is the largest convenient size for handling and transport, but owing to excessive dimensions of the window units required by the architects, the manufacturer decided to design the components of each of the larger windows so that they could be assembled on site. It is interesting that the limit to the size of metal window units may be imposed by the size of opening lights, and the difficulty of cleaning the glass (unless special arrangements are made), and also by handling, as mentioned above. The size may also be restricted by the limits in sizes of various types of glass. These considerations usually override the limitations in size of unit imposed by the metal section itself.

In steel, the largest section normally available in this country is the heaviest of the three Universal sections. In aluminium however a special extrusion is likely to be made for each job, and although it may be the same general pattern as an equivalent steel section, it may become prohibitively large because aluminium has a comparatively low modulus of elasticity.

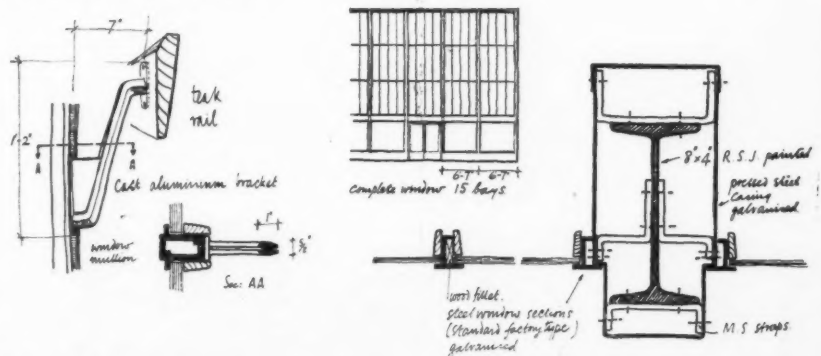
The construction of the large windows is as follows:—the openings are divided into bays by structural steel mullions and into these are fitted oiled teak surrounds. These bays are subdivided by further structural mullions



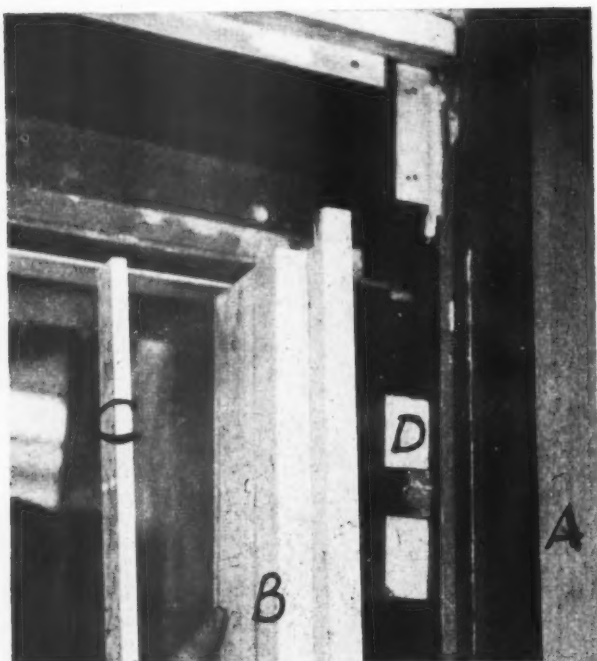
The elevation facing the Hungerford Bridge, showing the windows in the staircase tower.



Left, typical head fixing of steel mullion. As fixing bolts could not be positioned in the concrete with sufficient accuracy during the casting, this arrangement was used in order to allow for the final adjustment of the mullion during erection of the steelwork. Right, typical transome in restaurant window.

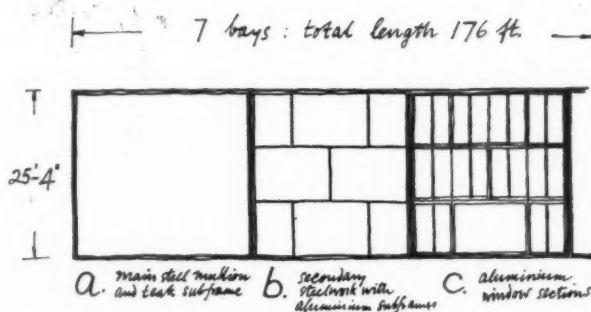
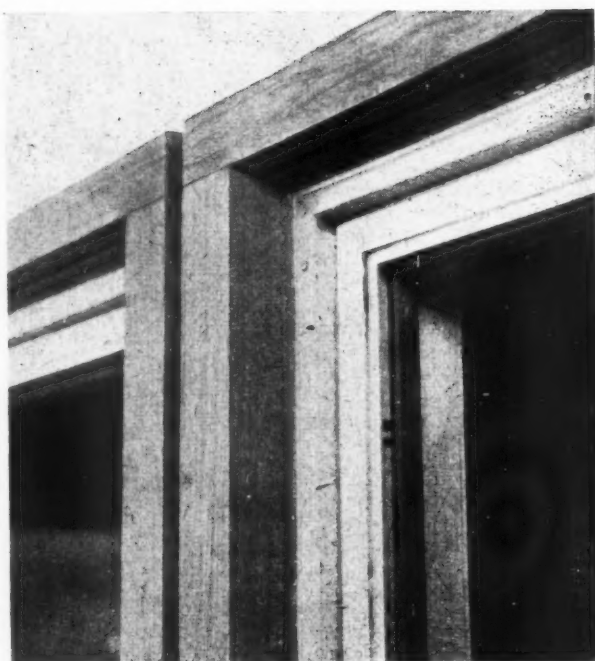


Left, detail of brackets to support protective rail across windows with low cill. Right, details of very large temporary steel window to elevation facing Belvedere Road.



Above, left, details of the construction of one of the main mullions in the restaurant window. The section of this mullion is shown at the head of the article. a. Teak casing to steel mullion. b. Pressed aluminium subframe. c. Aluminium sash section. d. Steel strap and timber fixing blocks. Above right, head of completed mullion to restaurant window.

Below, glass block glazing to bar on Hungerford Bridge side, containing horizontally pivoted opening sashes within an RC framework. Bottom, detail showing concrete mullions grooved to receive lights.



Part of main river-front window exemplifying principles of construction.

and transoms, and pressed aluminium sub-frames and aluminium sashes of extruded sections are fixed into the smaller openings so formed. The pressings could not be longer than 10 ft. owing to the limits imposed by existing presses, and joints therefore had to be arranged when longer lengths were required. These joints were made by rivetting a steel back plate to one length to form a socket, to which the other length was screwed. The screws are sherardised steel, except where exposed when they are in aluminium.

GLAZING

The glass is fixed on the inside of the sashes with hardwood beads which are screwed with plated screws in recessed cups. The glass in the internal doors is bedded in black velvet, and this was used in place of the more usual wash leather, in order to avoid the so-called "grinning" of the glass: that is, the reflection which occurs at the edges when thick glass is used. All the external glazing is bedded in putty. The colour of the putty is adjusted to suit the alu-

minium sections and the wood beads respectively, but is otherwise prepared so as to be suitable in metal sections.

HEAT AND SOUND INSULATION

Because the building has to be artificially ventilated throughout the year, and there is also the need to intercept air borne sound, none of the major windows are designed to open. For the same reasons extra heavy plate glass, $\frac{3}{8}$ in. in thickness, is used, and this is being fixed by a separate sub-contractor who is also supplying the glass.

In spite of the plenum and floor heating in the foyers, down-draughts would be likely to occur from the large expanses of glass, and so gilled heating tubes are incorporated within the transoms and cills. All the necessary grilles and casings were produced by the main window manufacturer.

The authors wish to thank G. R. Caruthers and E. Bunn, of the Crittall Manufacturing Co. Ltd., for their help in the preparation of this article.

FACTORY

at DARLINGTON, COUNTY DURHAM

designed by SIR ALEXANDER GIBB and PARTNERS
architect in charge R. S. de BURGH

On a site of 140 acres outside Darlington the new factory for Messrs. Patons & Baldwins accommodates in one building, covering 38 acres, all the activities and processes originally carried on in the firm's factories at Halifax, Wakefield, Leicester and Melton Mowbray, which have now been closed down. Contrary to usual practice, the factory was designed first and then a suitable site was found with adequate road and rail communications, water supply and other services, as well as the necessary labour. Ample space for welfare for the 3,000 employees in the form of playing fields for cricket, tennis, bowls, football, etc., is provided.

Main wool spinning shed





Main staircase in administrative block.

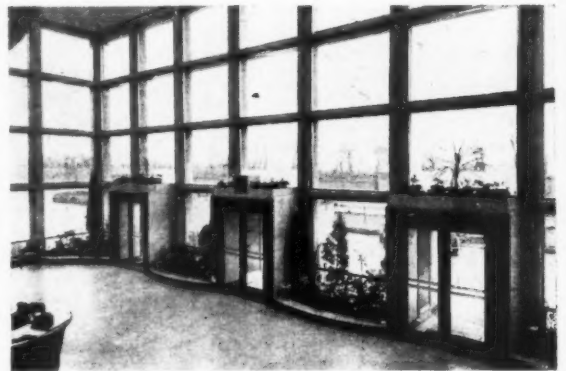
FACTORY

at DARLINGTON, COUNTY DURHAM
designed by SIR ALEXANDER GIBB and PARTNERS

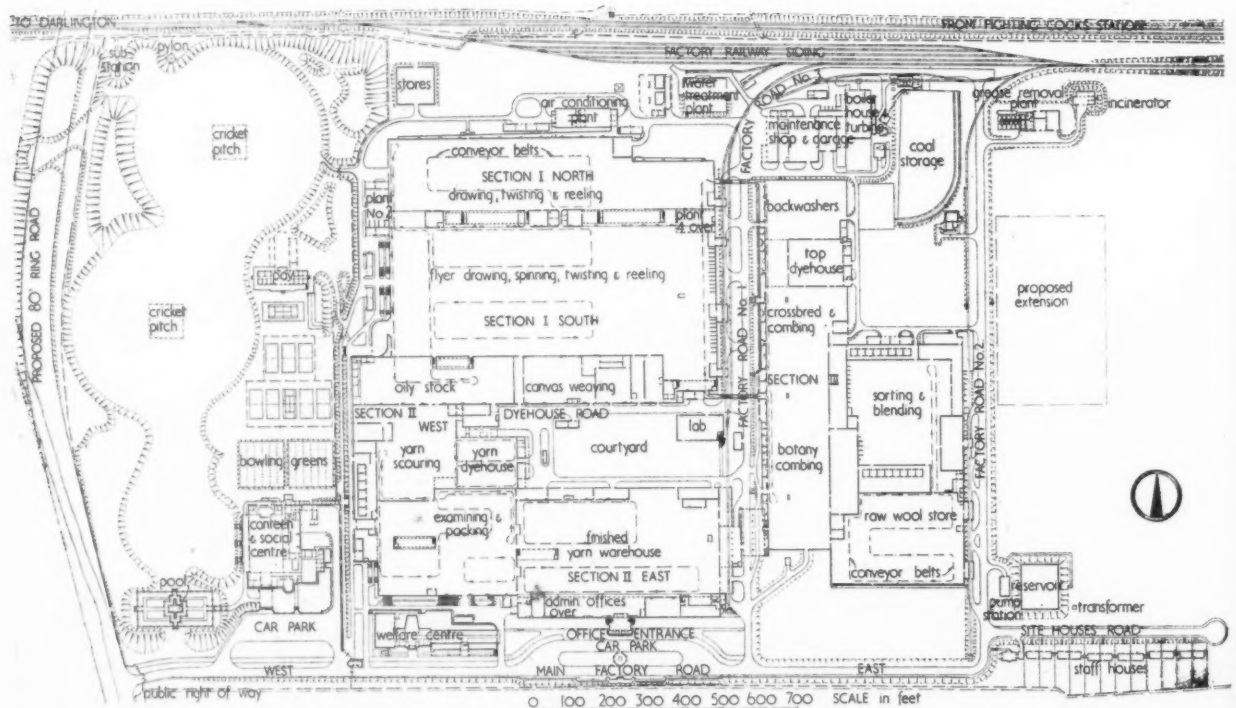


Administrative block.

Below, main office entrance.



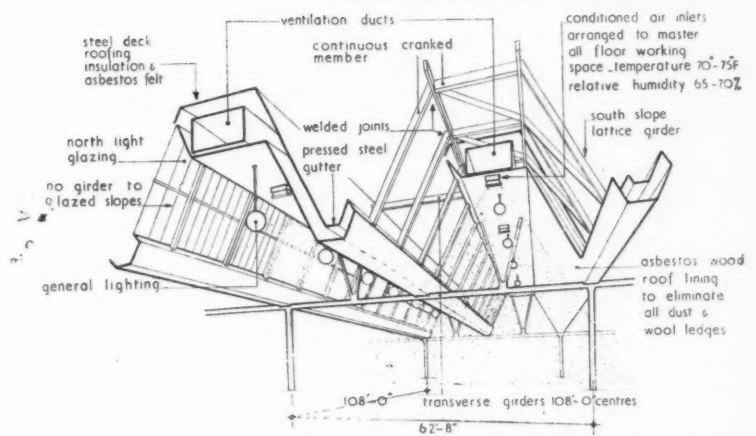
PLAN.—A single-storey building was chosen for economy, for the maximum amount of north light and for the easy conveyance of materials and goods throughout the various manufacturing processes. Raw materials enter the factory and finished goods are despatched in the same area to avoid duplication of road and rail services. Stanchion spacing allows ample space for wide alleyways and mechanical floor conveyors to carry the wool between processes. Each department can be extended without interfering with the flow of materials.



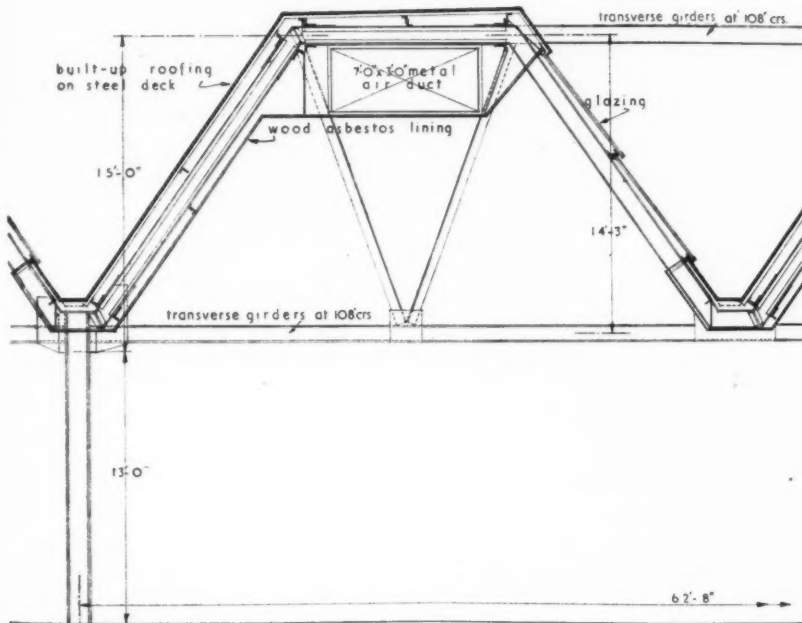
Ground floor and site plan

CONSTRUCTION.—The construction is mainly steel frame with outer walls of 11-in. cavity brick-work. Roofs are of steel girder construction, designed so that floor supports only occur at intervals of 108 ft. longitudinally and 60 ft. transversely. The design of the roof was dictated by the need to provide space for the air conditioning ducts without interfering with the north light glazing. Internal walls are in brickwork of fire-resisting construction.

FINISHES.—Walls are faced with multi-coloured facing bricks with copings, window heads and cills of artificial York stone, which is also used as facing to the two-storey main office block. Floors in the



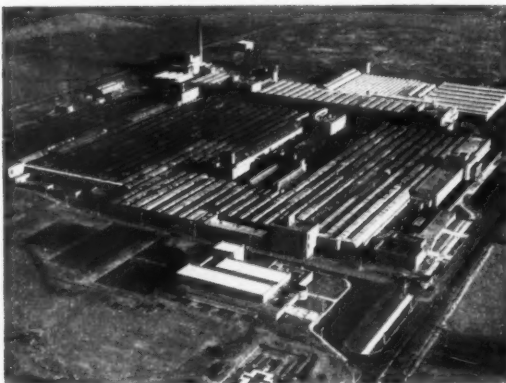
Perspective section through wool processing building

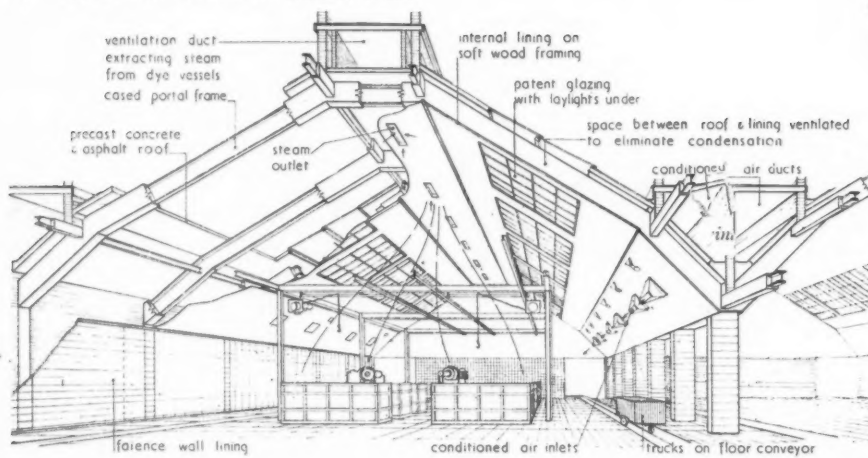


Section through typical bay in wool processing building [Scale 1/2" = 1' 0"]

spinning sections are of Canadian maple boarding or a hard pressed tile in some areas owing to a shortage of boarding. The walls of the factory are painted cream, internally, with an eau-de-nil dado. Board rooms and conference rooms are panelled in veneered hardwood and the main entrance to the office block has walls lined with cream marble. The staircase handrails are of silver bronze.

Below, looking north-west with the boiler house on the right, and the top dye-house on the left. Bottom, left, aerial view looking north-east. Bottom, right, plant room and cycle store looking north.



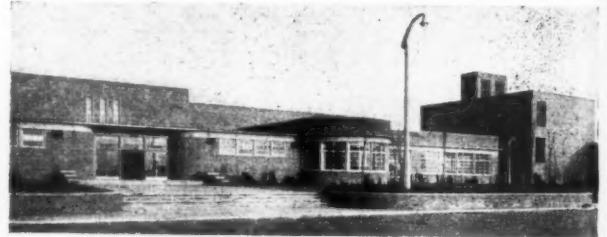
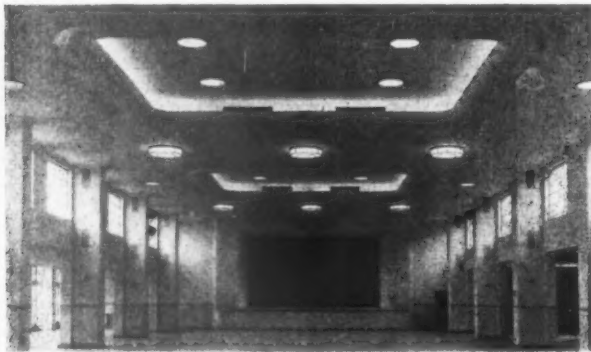


Perspective section through yarn dyehouse

Below, the canteen and welfare building looking north. Below, left, the canteen looking towards the stage.

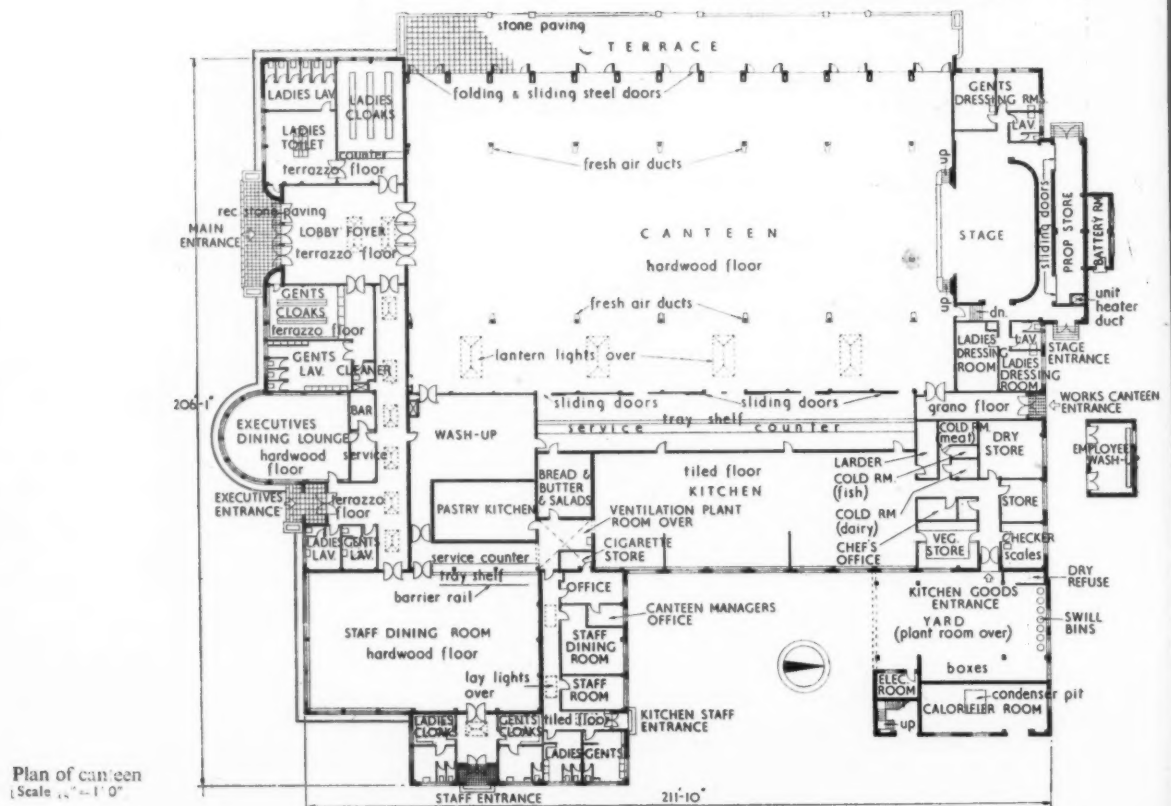
FACTORY

at DARLINGTON, COUNTY DURHAM
 designed by SIR ALEXANDER GIBB and PARTNERS



SERVICES.—The production of fine knitting wools requires iron-free hot and cold water, steam and electric power and conditioned air at correct temperature and humidity throughout. The estimated cost of civil engineering, buildings and services is £5,200,000.

The general contractors are John Laing & Sons Ltd,
 For sub-contractors see page 170.



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

TECHNICAL SECTION

As Chief Adviser (Payments by Results Schemes) at the MOW, R. H. James is responsible for the collection and dissemination of information on methods of increasing productivity in the building industry. The JOURNAL is pleased to give Mr. James this opportunity of explaining the part which the architect can play in improving efficiency.

BUILDING PROGRESS SCHEDULES AND PROGRAMMES

By R. H. James

The necessity for pre-planning and programming of building projects is becoming increasingly recognized: both the Building Industry Working Party and the Anglo-American Productivity Team reports stressed the part which the architect can play in improving building efficiency by these means. The Minister of Works has recently issued a statement on the results of his discussions with members of the industry and the professions concerned and the steps being taken to give effect to these recommendations. This statement was the subject of a review (by the writer of this article) in the AJ, January 18, 1951.

The RIBA is fully alive to the importance of this subject and is collaborating with both sides of the industry and taking the steps which are necessary to adapt building procedure to meet the needs of today. It would be as well, here, to quote two of the main recommendations affecting architects. The Building Industry Working Party says:

"We think that the highest degree of efficiency cannot be achieved in any building operation of considerable size unless it is planned in detail before work is commenced. It is only in this way that the substantial economies to be derived from the proper phasing and programming of the work can be realised. Moreover, the delays and disorganization due to inadequate pre-planning not only add to the immediate cost, but tend to undermine the general morale and so to have an influence extending much beyond the particular job."

and recommends that:

"Building operations of any size must be completely pre-planned."

The Anglo-American Productivity Team in its recommendation aimed at improvement in contract organization says:

"Constructional work should not be started until the organization of the job has been worked out to the most advanced stage possible. Architect and contractor should therefore combine to resist pressure, whether from the building

owner or from the licensing authorities, to begin operations on the site prematurely."

THE FUNCTIONS OF PROGRAMMING

Let us consider the main functions of programming. They are:

- To find out, either how long will be required for the completion of a project with the resources (capital, labour, materials and plant) available, or to ascertain the disposition of these resources in order to complete the project in a given time, e.g. when a given completion date is called for.
- To determine the manner in which the work will be carried out, taking into account the nature of the work, site conditions, the client's requirements as regards completion of particular sections of the work, labour

and material requirements, and their flow, plant and supervision, and, finally, sub-contractors work.

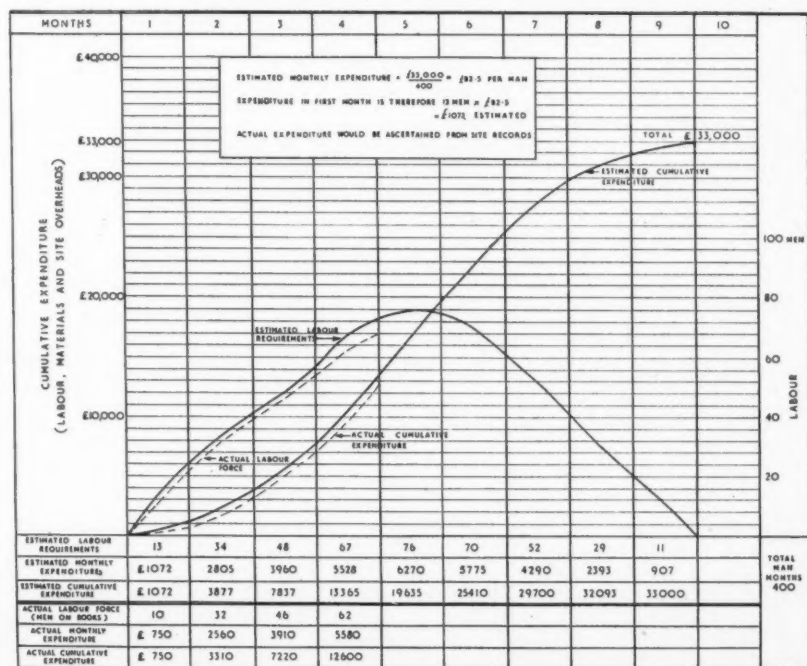
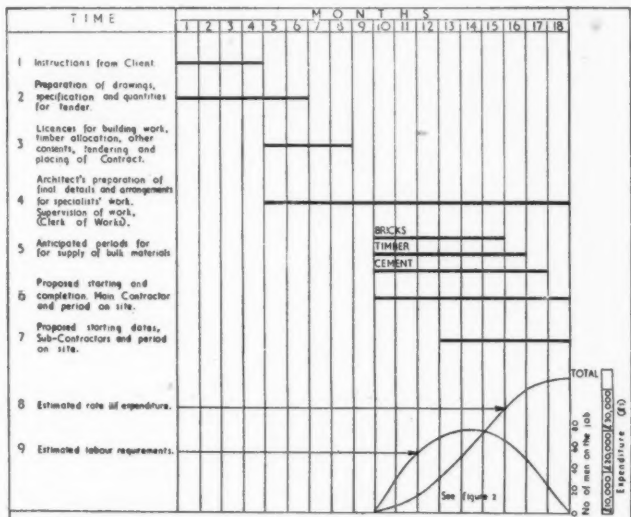
In doing this, the aim will be to ensure that the work is carried out in an orderly manner; each trade and section commencing and finishing at times which will obviate delays, such as those caused by one trade waiting completion of another's work.

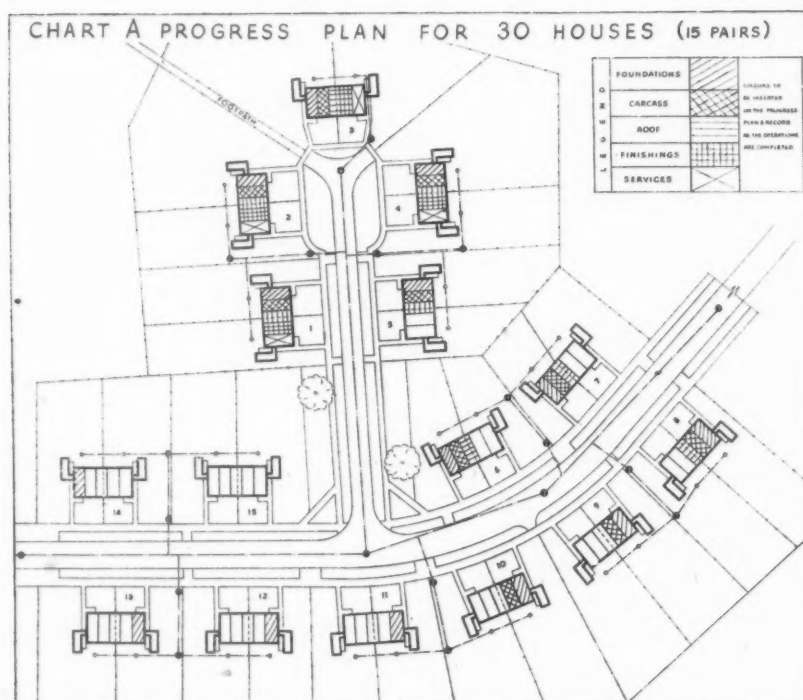
One of the main objectives will be to ensure that various sections of work are completed at the required time, so that there are no "tail ends" remaining at the end of the job. The handing over of completed work should not be held up for some particular items or sections of work. This was particularly important under wartime conditions, when the early use of buildings or sections of work was often the primary objective. In peacetime, it is also important that finished work should be available to the client as early as possible, because of the capital lying dormant during the construction period; this concerns both the client and the contractor.

PRE-PLANNING

In considering the practical implications of these proposals, it would be as well in the first place to deal with the part the archi-

Right, Fig. 1, architect's programme for a project. Below, Fig. 2, Labour and Expenditure Curves for contract of 30 houses.





tect can play. He would be responsible for the following:

(a) The completion, as far as possible, before tenders are called for, of full working drawings, specifications and quantities, with a programme for future supplies of drawings where early completion is not possible. The specification would, where practicable, be flexible in order to allow for the use of alternative materials to meet unforeseen shortages.

(b) The drawing up of a broad programme of completion, based on the fullest possible knowledge of potential supplies of labour and materials within the period required. If possible, tentative arrangements should be made for these supplies before the tender stage. All possible prior arrangements with regard to building and timber licences, specialist trades, etc., should be concluded, even if on a tentative basis.

In doing these things, the architect may find it helpful to make his programme on a very broad basis, including the whole of the work required on his part, both in the design and execution of a project.

Figure 1 shows the type of plan which he would do well to draw up. (The time involved in carrying out his various functions will, naturally, vary considerably with the type of work and the circumstances under

which it is to progress. This table is, therefore, intended purely as an indication of the manner in which the architect can set out, in graphic form, the work which he will be called upon to do.) Such a chart could be embodied in a master plan of the action called for, by all the projects in hand and, thus, form the basis for organizing work in the drawing office and that of any consultants involved.

EXPENDITURE CURVES

In pre-planning the job, the architect will need to take into account the practical limits of time within which he may expect the work to be executed. These limits will, of course, be conditioned by the manner in which the contractor is to execute the various sections of the work and the resources available to him in the form of labour, materials and plant. It is possible, however, to formulate a general programme based on the rate at which the capital involved is to be expended. In doing this, the use of "labour and expenditure curves" can be of great help both to the architect and to the contractor.

Contractors often employ a chart, similar to that shown in Figure 2, which shows them the actual, as compared with the estimated, rate of expenditure on the job. Such a

chart is based on the contractor's previous estimate of the number of men required each month on the site, which he will have determined from his programming of construction. (An example of this is described later.)

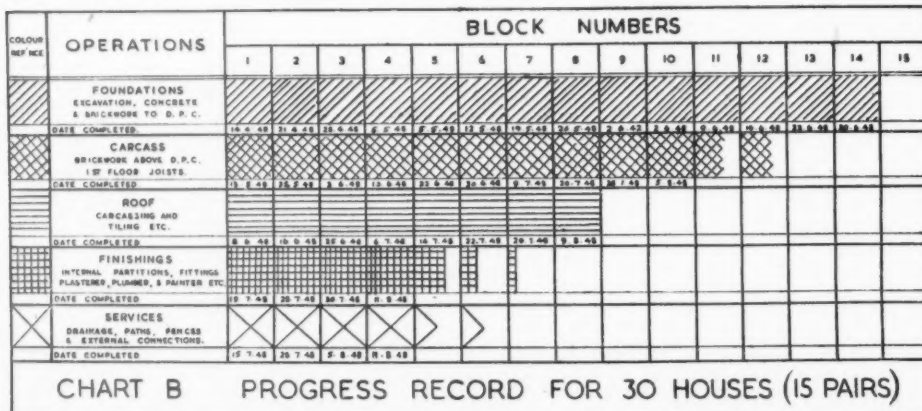
In the example shown in Figure 2, the total value of the work to be done in terms of labour, materials and site overheads, is £33,000. This has been divided by the total estimated "man months" required to complete the job (400), which gives an average man month output of £82.5. By multiplying this figure by the number of men estimated to be employed on the contract each month, the current and cumulative expenditure is assessed. If the estimated and actual cumulative expenditure are plotted in the manner shown, the actual progress of the job as a whole can be clearly seen in relation to the estimated rate of progress. A similar record of the estimated and actual number of men on the site can also be kept as a rough guide to the contractor as to the efficiency of the job.

It will be appreciated that if the architect, from his experience of previous works, can form an estimate of the output per man per month in terms of money he can employ a reverse process. For example: if he is responsible for a project of the value of £100,000, and he estimates that for this class of work the output per "man-month" should be £80, then the total number of "man-months" required for completion will be 1,250. If the proposed period of the contract is to be 10 months, then the average labour force will be 125 men. As the labour force is, necessarily, built up from scratch to a peak and drops off towards the end of the job, the peak labour force will clearly be higher than the average. The peak can be estimated by drawing up a provisional expenditure curve, again based on the architect's general experience. It may then be found that the completion period asked for is clearly impracticable from the point of view of the availability of labour. This knowledge will reinforce the architect's general judgment as to the practical limitations of his provisional programme.

It will be realized that the value of the "man-month" will vary widely with the class of work involved; on highly mechanized jobs it will be high and on jobs involving extensive use of manual labour, very much lower. The figures will also vary with the period of a contract, depending on the type of work predominating at the time and, of course, upon the output of men or machines. Nevertheless, if used with discretion, this method can be of great value in preliminary programming, and in watching progress during the execution of the work.

PROGRESS SITE PLAN

The provisional programme will need to take full account of the layout of the site



A Simple Progress Record. Fig. 3, (top of the page) shows how the stages of completion can be recorded. Fig. 4, (left) shows the dates on which these stages are reached.

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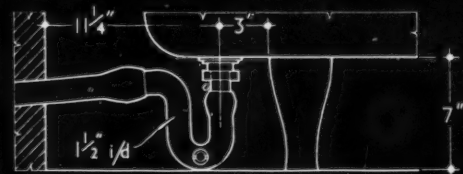
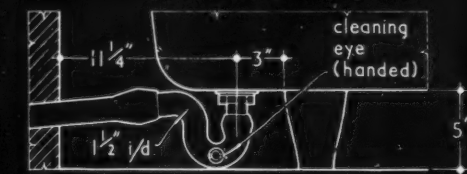
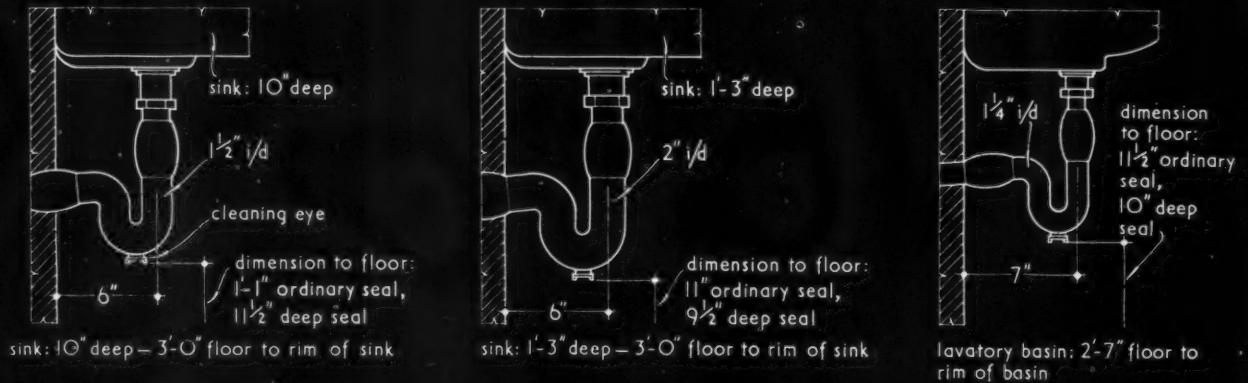
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SANITATION | DETAILS | LEAD

33.C12

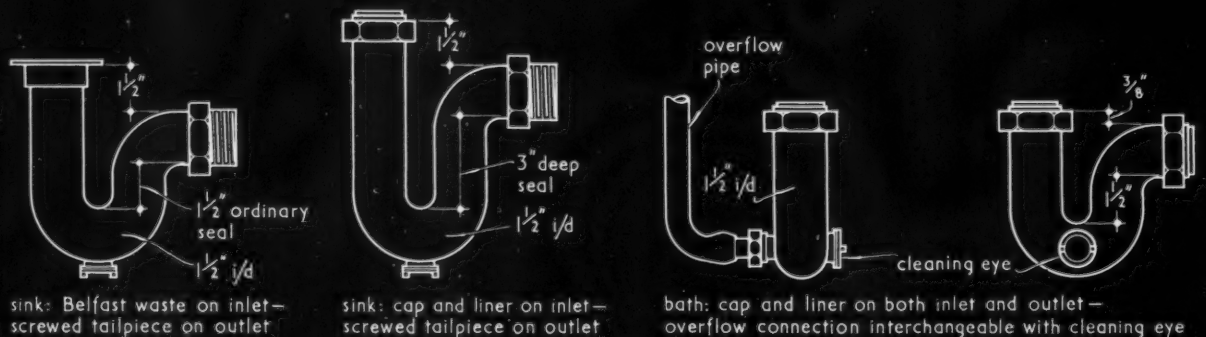
The Architects' Journal Library of Information Sheets 293. Editor: Cotterell Butler, A.R.I.B.A.



bath: ordinary seal

bath: deep seal

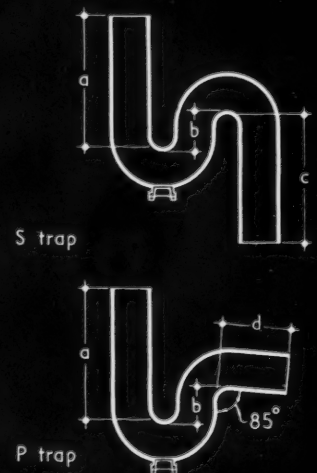
DETAILS OF STANDARD TRAPS FIXED TO DOMESTIC APPLIANCES.



TYPICAL LEAD TRAPS COMPLETE WITH WASTE FITTINGS.

| internal diameter (in.) | sub-stance (lb/sq.ft) | ordinary seal | | | | deep seal | | | |
|-------------------------|-----------------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|----------------|
| | | depth b (in.) | inlet a (in.) | outlet c (in.) | outlet d (in.) | depth b (in.) | inlet a (in.) | outlet c (in.) | outlet d (in.) |
| 1 | 6 | 1 1/2 | 5 | 5 | 2 1/4 | 3 | 6 | 6 1/2 | 2 1/4 |
| 1 1/4 | 6 | 1 1/2 | 5 1/2 | 5 1/2 | 2 1/2 | 3 | 6 | 7 | 2 1/2 |
| 1 1/2 | 6 | 1 1/2 | 5 1/2 | 5 1/2 | 3 | 3 | 6 1/2 | 7 | 3 |
| 2 | 7 | 1 1/2 | 6 | 6 | 3 1/2 | 3 | 6 1/2 | 7 1/2 | 3 1/2 |
| 2 1/2 | 7 | 2 | 6 1/2 | 6 1/2 | 3 1/2 | 3 | 7 1/2 | 7 1/2 | 3 1/2 |
| 3 | 7 | 2 | 6 1/2 | 6 1/2 | 3 1/2 | 3 | 7 1/2 | 7 1/2 | 3 1/2 |
| 3 1/2 | 7 | 2 | 7 | 7 | 3 1/2 | 3 | 8 | 8 | 3 1/2 |
| 4 | 7 | 2 | 7 | 7 | 3 1/2 | 3 | 8 | 8 | 3 1/2 |

DETAILS OF TRAPS TO B.S. 504: 1944.



DRAWN LEAD TRAPS: STANDARD SIZES AND APPLICATIONS TO DOMESTIC APPLIANCES.
Compiled from information supplied by the Lead Industries Development Council.

33.C12 DRAWN LEAD TRAPS : TYPES AND APPLICATIONS TO DOMESTIC APPLIANCES

This Sheet describes drawn lead traps and gives details of their application to domestic appliances. Traps, as shown, may be either with plain outlet and inlet conforming to B.S. 504 : 1944 *Drawn lead traps*, or of similar substance and composition with waste fittings incorporated. Lead traps are readily available with inlets and outlets of other length than those associated with standard or stock forms. Long-tailed traps in which the trap and waste pipe are one piece are commonly supplied for housing work. The flexibility of lead traps is such that easy adjustment can be made to the angle of the outlet to suit the plumbing arrangement and to the inlet to permit easy connection to appliances. The two types of trap most commonly used are the "P" and "S." Other types, referred to in B.S. 504 are the "Q" (or $\frac{3}{4}$ S), the "running" trap and the "bag" trap. Lead traps have a high resistance to corrosion and are not damaged by chemical cleansers.

Water Seal

The term water seal is defined as the depth of water which must be removed from a fully charged trap before gases from the waste pipe pass through the trap into the building.

Ordinary seal : Traps with a seal of 1½ in. or 2 in. are used with two-pipe installations. See Sheet 33.C8.

Deep seal : Traps with a seal of 3 in. are used with one-pipe installations. See Sheet 33.C8.

Cleaning Eyes

Cleaning eyes (screw caps) are fitted to traps up to and including 2 in. internal diameter as required by B.S. 504. The eye is soldered or lead-burned to the trap and neither the cap nor the sleeve protrudes beyond the inner surface, thus maintaining the smooth internal bore of the trap. Traps are also supplied in all sizes without cleaning eyes.

Lead Traps with Integral Connectors

Drawn lead traps, usually 1½ in., 1½ in., and 2 in. internal diameter, are supplied with integral connectors as stock items. Examples of traps with typical connectors are shown on the face of this Sheet. The inlet may be fitted with an integral Belfast waste or ordinary brass cap and liner for a B.S. pipe-thread screw connection to the waste fitting. The outlet may be fitted with a brass cap and liner or with a brass tail piece for screw connections. The fitting of a tail piece to the outlet enables the trap to be detached from the waste pipe and can also provide a connection to other than lead pipes.

Weight of Lead

The substance of the walls of drawn lead traps is normally expressed as equivalent to the substance of sheet lead, that is in lb./sq. ft. This method of measurement is an old one for lead soil and waste pipe. A 6 lb./sq. ft. substance is equal to an approximate thickness of $\frac{7}{32}$ in. (0.101 in.) and 7 lb./sq. ft. to approximately $\frac{1}{8}$ in. (0.118 in.). See Sheet 10.F1 for other equivalents.

Further Information

The Lead Industries Development Council maintains a Technical Information Bureau which is available to answer questions and advise on technical problems dealing with this subject generally.

Compiled from information supplied by :

The Lead Industries Development Council.

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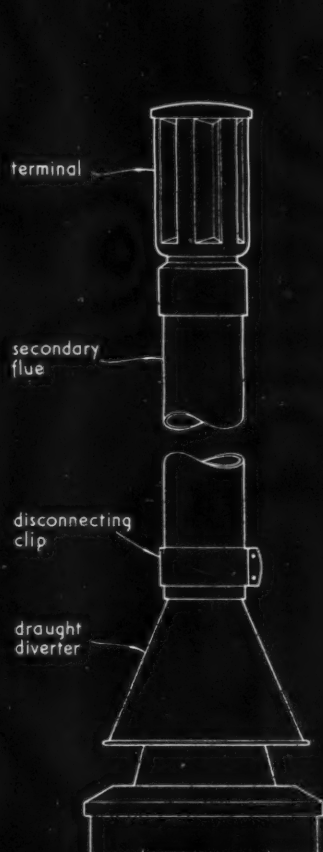
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FLUES | GAS

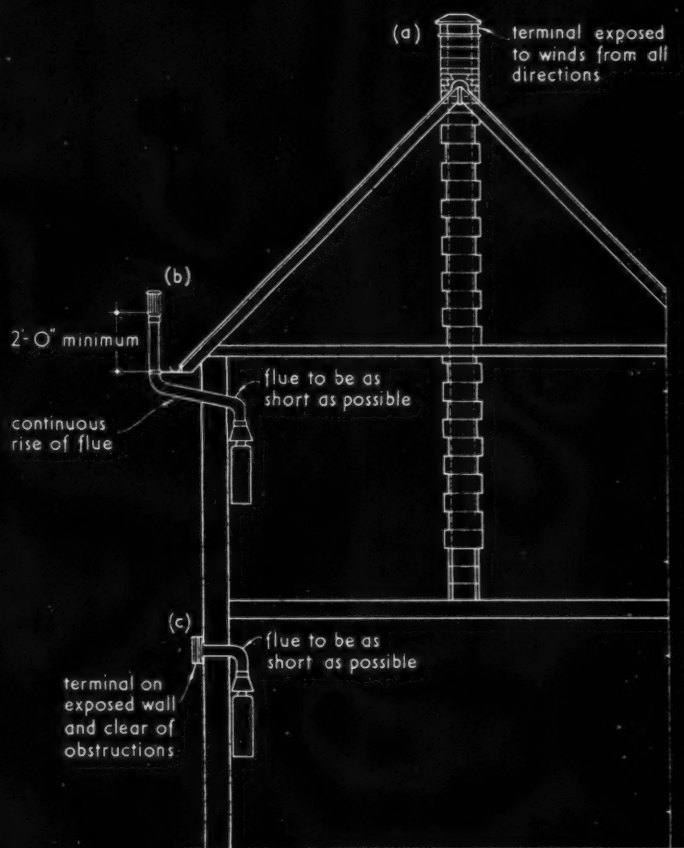
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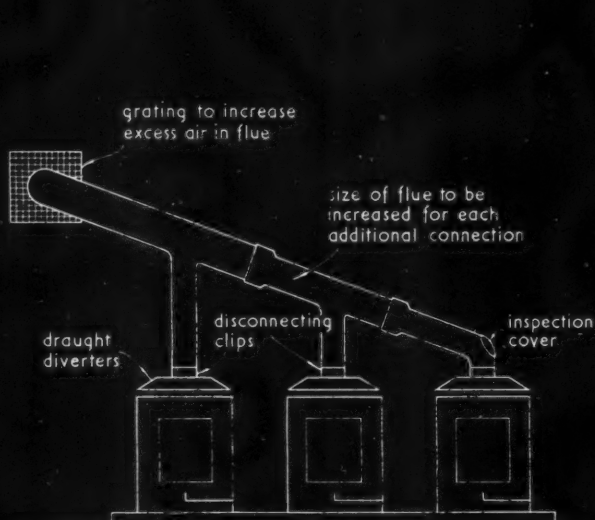
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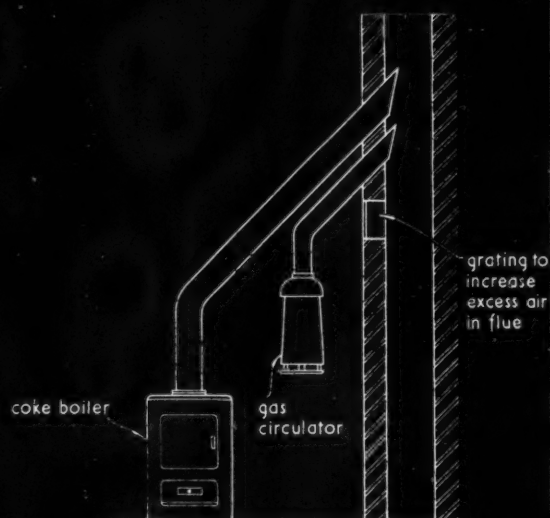
ESSENTIAL FLUE COMPONENTS.



TYPICAL INDEPENDENT FLUES AND TERMINALS. (letters (a) (b) and (c) indicate order of preference.)



TYPICAL COMMON SECONDARY FLUE



GAS APPLIANCE USED AS ALTERNATIVE TO SOLID FUEL APPLIANCE VENTING INTO COMMON FLUE.

30.B1 DESIGN OF FLUES FOR GAS APPLIANCES

This Sheet is the first of two dealing with flues for gas appliances. It summarises the principles of design.

Purpose of Flue

To remove the products of combustion and also to assist in general ventilation of the room.

Provision of Flues

Space-heating appliances: A flue must be provided if the continuous heat input of the appliances exceeds 500 B.th.u./hr. for each 100 cu. ft. of room space.

Water heating appliances: Flues must be provided for:

(a) Instantaneous water heaters of heat input of more than 40,000 B.th.u./hr. or those supplying hot water for other than normal sink use, e.g. a bath or more than one sink. Any appliance fitted in a bathroom for heating water for a bath if the heat input exceeds 500 B.th.u./hr. for each 35 cu. ft. of room space.

(b) Storage water heaters and circulators if the input exceeds 15,000 B.th.u./hr.

(c) Wash boilers and washing machines if the heat input exceeds 20,000 B.th.u./hr.

(d) Instantaneous sink water heaters where usage is likely to be more than usual for normal domestic purposes at the sink.

(e) Central heating appliances.

Summary of Flue Components

All flues from gas appliances must have the following components except that gas fires and incinerators require no draught diverters.

Primary flue: Connects the appliance to the draught diverter and is often incorporated in the appliance.

Draught diverter: A device which prevents down draught from interfering with the combustion of the gas and also serves to break excessive flue pull.

Flue disconnecting device: Allows the joint between the draught diverter and secondary flue to be broken without disturbing either part.

Secondary flue: Connects the draught diverter to the terminal.

Terminal: A device fitted at the termination of the flue to minimise down draught and to stop foreign matter from entering and restricting the flue.

Design of Route of Flue

(a) The flue should be as short as possible.

(b) It should rise progressively to the terminal position. Horizontal runs and 90° bends should be kept to a minimum; 90° mitred elbows should never be used.

(c) Routes which expose the flue to rapid cooling should be avoided.

This is particularly important with flues from gas water heaters to avoid the possibility of condensation.

Sizes of Flues

The cross-sectional area of a flue should not be less than that of the flue connection of the appliance. The tables of flue sizes below are given for general guidance.

Flues for Gas Fires

These are related to the size of the room as they induce ventilation as well as remove products of combustion.

| Size of room (cu. ft.) | Minimum area of flue* (sq. in.) | Minimum diameter of standard circular flue (in.) |
|---------------------------|------------------------------------|--|
| Up to 1,000 .. | 20 | 5 |
| 1,000 to 1,500 .. | 30 | 6 |
| 1,500 to 2,000 .. | 35 | 7 |
| 2,000 to 3,000 .. | 50 | 8 |

* In no case must a flue have a cross-sectional dimension of less than 2 in.

The connection of the appliance should not restrict the opening of any flue to less than 20 sq. in.

Flues for Water Heaters

| Typical appliance | Heat input, B.th.u./hr. | Gas cons. cu. ft./ hr. of 500 C.V. gas | Minimum area of flue* (sq. in.) | Minimum dia. of standard circular flue (in.) |
|---|----------------------------|--|--|---|
| Circulators, wash boilers, storage heaters .. | Up to 40,000 | Up to 80 | 7 | 3 |
| " " " " | 40,000 to 60,000 | 80-120 | 10 | 3½ |
| Bath heater, single point or multi- point .. | 60,000 to 90,000 | 120-180 | 13 | 4 |
| " " " " | 90,000 to 150,000 | 180-300 | 20 | 5 |
| Large water heater | 150,000 to 250,000 | 300-500 | 30 | 6 |

* It is often desirable to increase these sizes to give greater ventilation in the room and to minimise the possibility of condensation.

Terminal Position

Suitable locations for the terminal (in order of preference) are:

(a) Where the wind can blow across it at all times, e.g. on a roof ridge.

(b) At least 2 ft. above roof gutter level.

(c) On the face of an exposed wall.

(d) Where (a), (b) and (c) are impracticable, in a roof space well ventilated to the outside air. The terminal should vent freely and be kept as far as possible from cold water pipes or tanks on which condensation might occur. It should be in such a position that it is well above anything that might be stood on the rafters.

Common Flues

Normally each appliance should have a complete independent flue but common secondary flues may be used:

(a) When several appliances are conveniently placed in the same room, in which case the size of the common flue should be graduated up as the flue of each appliance joins it so that its cross-sectional area is not less than the combined areas of the entering flues.

(b) When a gas appliance is installed to be used as an alternative to an appliance burning another fuel.

Further Information

More detailed information will be found in British Standard Code of Practice: CP 331.104 (1947) *Flues for gas appliances*.

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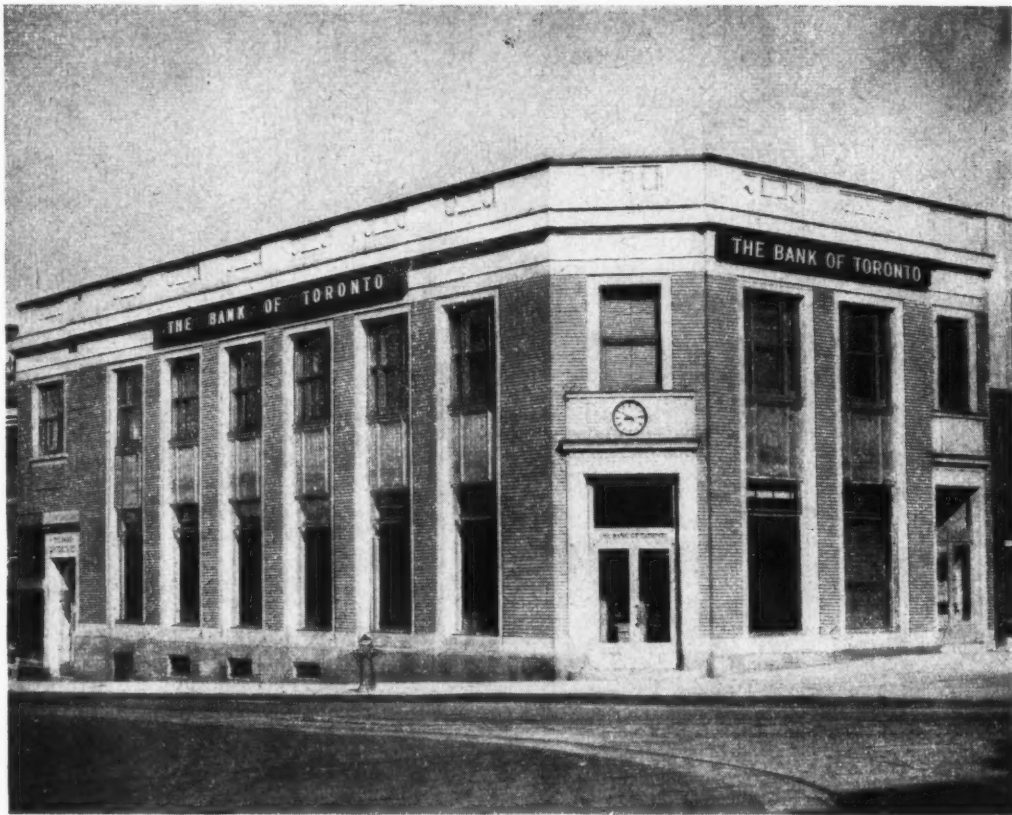
The Gas Council

Address: Gas Industry House, 1, Grosvenor Place, London, S.W.1.

Telephone: Sloane 4554.

Telegrams: Gascil, Knights, London.

THE BANK OF TORONTO, SNOWDON BRANCH, MONTREAL



H. W. DAVIS, Architect.

ATLAS CONSTRUCTION CO. LTD., Contractors.

THE UNDERGROUND STRONGROOM IS IMPERVIOUS

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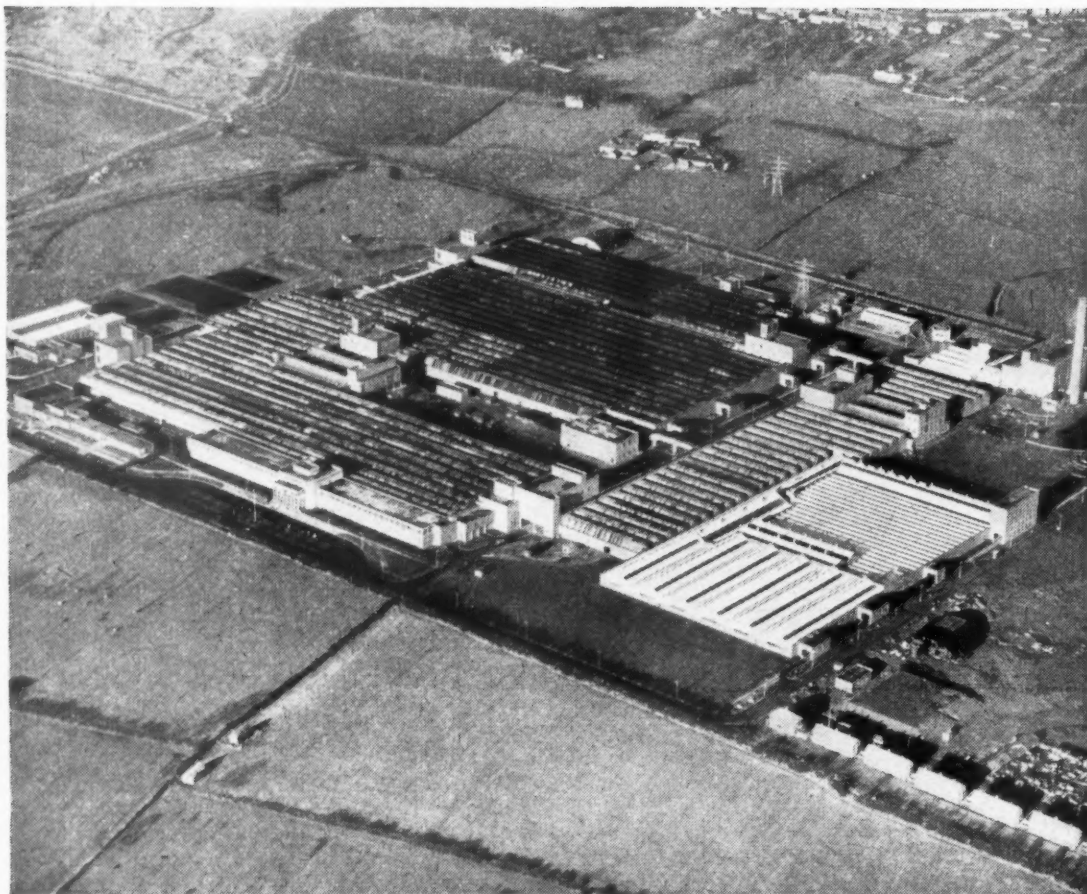
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THE LARGEST KNITTING WOOL FACTORY IN THE WORLD

This great new knitting wool factory for Patons and Baldwins Limited at Darlington, Co. Durham, was built by John Laing and Son Limited. It is a landmark in Darlington, and a milestone in the history of the British wool industry. The value of the contract is approximately £3,500,000, and it is one of Britain's achievements in building and civil engineering since the end of the war. The completed scheme embraces some 34 acres of factory buildings on one level, and is designed for the utmost efficiency and economy. The Spinning Shed alone has a floor area of 13 acres, and the special roof construction gives large unobstructed spans with a minimum of pillars and uniform lighting without shade.

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and, at all stages of a project, a simple plan of the site should be available to all concerned with the planning and execution of the work. The plan should, whenever possible, be reduced to a handy size and should show, not only the general sequence in which the various sections of the work are to be carried out, but also temporary fencing, site access, disposition of materials and plant, the contractor's and clerks of work's offices, temporary services, etc. This plan can also be used for recording the progress achieved as the work proceeds, and Figure 3 shows how this can be recorded by hatching or colouring the various stages of completion on each block of houses on a small housing site.

Figure 4 shows how this information can be transferred to a progress record, on which dates of completion of the various sections can be given together with any other relevant data.

This type of record is very useful to the clerk of works in making his reports, for it shows not only the work completed but gives a good picture of that remaining to be done.

SITE MEETINGS

During the course of the contract, regular site progress meetings are of immense assistance in locating and dealing with difficulties and in co-ordinating the work of the main- and sub-contractors. These meetings often embrace the architect, the builder and members of his site staff, and representatives of the sub-contractors. Progress plans, and programme and progress charts can be of great assistance at these meetings.

THE WORKING PROGRAMME

As early as possible, after the letting of the contract, the contractor should produce a general programme of construction showing the sequence in which he proposes to carry out the various operations and sections of the work, the number of men required, and the items of plant and quantities of materials he will require, in order to complete the contract within the period agreed.

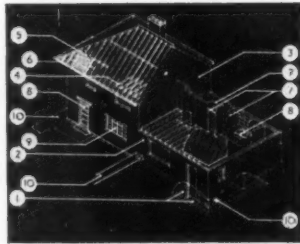


Fig. 5, photographs of part of MOW Modern Site Organization exhibition, showing the part that practical experience plays in estimating labour requirements. (Crown Copyright Reserved.)

ESTIMATION OF LABOUR, PLANT AND MATERIAL REQUIREMENTS

In order to estimate the amount of labour, plant and materials which will be required to carry out each of the various operations and the work as a whole, it is first necessary to know:

(a) the quantities of work to be done in terms of some measurable units,

(b) the number of man or machine hours required to carry out each unit of work. Figure 6 shows how the bulk quantities of work to be done can be broken down into the man and machine hours required for the contract as a whole.

If this information is derived from the Bills of Quantities, the prices in the Bill, which are usually inclusive of labour, materials, overheads, profit, etc., will also

| MAIN OPERATIONS | SUB OPERATIONS | QUANTITIES | TRADE & HYDRATE | MAN REQUIRED FOR | |
|-----------------|---|------------|---|------------------|----|
| | | | NO. OF MEN REQUIRED | | |
| FOUNDATIONS | Excavation Concrete Brickwork to D.P.C. | 10 | 7 Concrete Labourers 8 Bricklayers Labourers 1 Bricklayers Labourer | 17 | 17 |
| CARCAST | Brickwork to 1st Floor 1st Floor Joins | 13 | 8 Bricklayers 8 Bricklayers Labourers 2 Carpenters | 21 | 21 |
| | Brickwork to 1st Floor To Chimney Heads | 10 | 8 Bricklayers 8 Bricklayers Labourers | 20 | 20 |
| ROOF | Roof Trusses & Gables Joins | 2 | 2 Carpenters | 20 | 20 |
| | Roof Trusses & Antennae | 2 | 1 Floor 1 Floor Man | 20 | 20 |
| PLASTERING | Plastering Electrical Gas | 5 | 4 Plasterers & Men 1 Electrician | 21 | 21 |
| | 1st Floor Partitions | 5 | 2 Carpenters 1 Bricklayers & Labourers | 21 | 21 |
| | Plastering 2nd Floor Plastering & Electrical Fixings | 14 | 7 Plasterers 4 Carpenters 2 Plasterers 1 Electrician | 21 | 21 |
| | Gas and Plumbing | 6 | 5 Plasterers 1 Gasfitter | 20 | 20 |
| ME-175 | Plastering Partitions Electrical | 7 | Average 5 General Labourers | 15 | 15 |

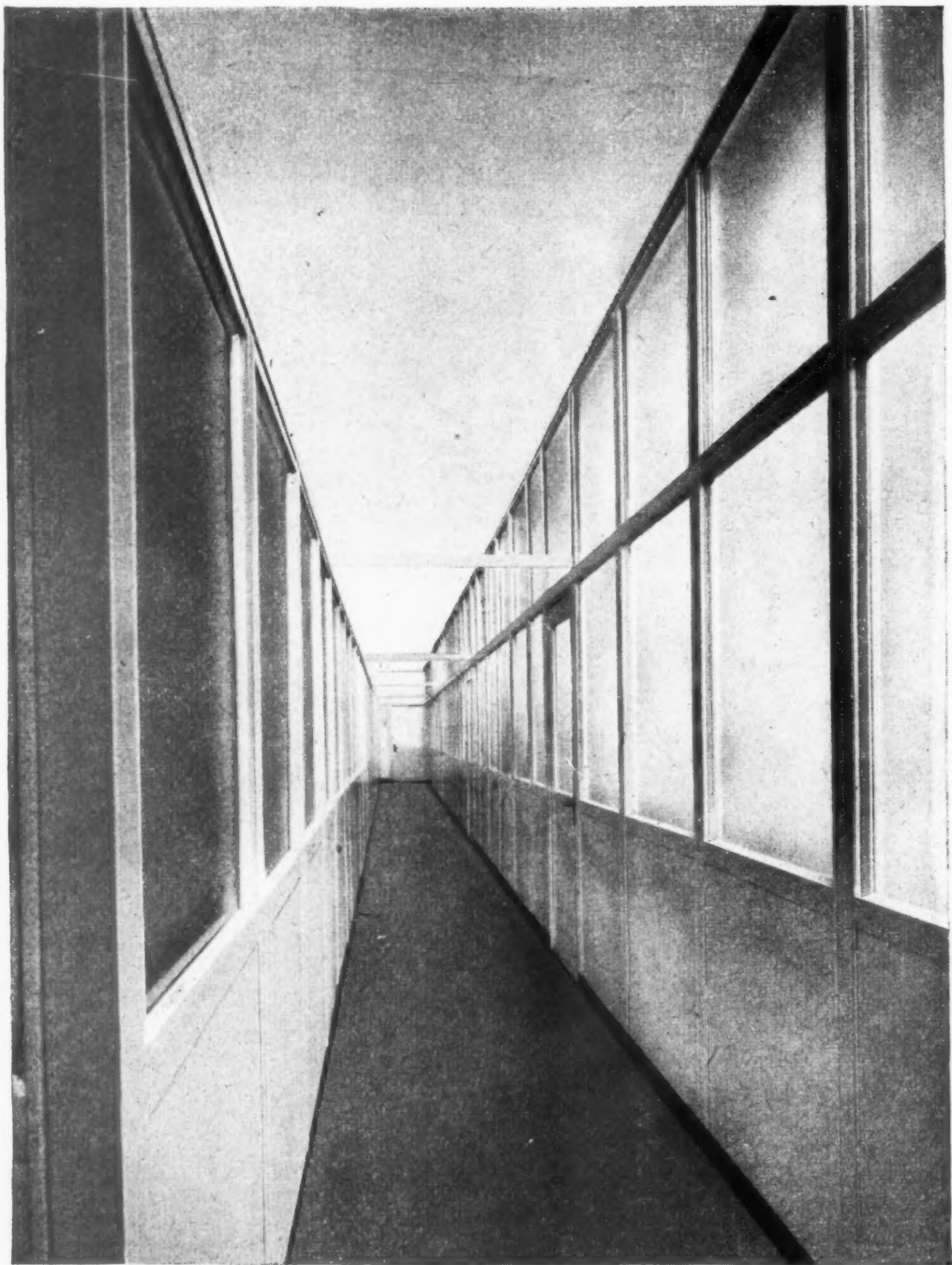
need to be broken down in order to extract the estimated cost of the labour and plant for each item. If the contractor has reliable information about labour and plant productivity he will find that this process presents no difficulty because his Bill prices should have been built up from this.

The quantities of materials required for each section of the work should also be ascertained from the Bill, for use, both in ordering the materials, and in allocating and distributing them throughout the site as the work proceeds.

Having estimated the total number of man or machine weeks required to complete the various operations, the next step will be to strike a balance between the gangs of men suitable for particular operations, and the length of time for which they can be

Fig. 6, Below, an extract from a Bill of Quantities for a pair of houses. Right, the method of estimating requirements of labour, plant and materials for 15 pairs of houses as described in the Bill.

| Item | BRIEF DESCRIPTION OF ITEMS FOR PROGRAMMING | QUANTITY OF WORK PER PAIR OF HOUSES | LABOUR & PLANT | | | | MATERIALS | |
|------|--|-------------------------------------|--------------------|--------------------|--------------------|--------------------|-------------|-------------------|
| | | | MAN HOURS PER UNIT | MAN HOURS PER PAIR | MAN HOURS PER PAIR | MAN HOURS PER PAIR | DESCRIPTION | AMOUNTS REQUIRED |
| | | | | | | | | PER PAIR 15 PAIRS |
| 140 | The prices for excavation are to include for trimming, levelling, and ramming bottoms before filling in or concreting. | | | | | | | |
| 141 | Excavate overalls 6" deep to remove vegetable soil, wheel a distance not exceeding 50 yards, and deposit, spread and level. | 28 yds | 0.4 | 50 | 750 | 17.5 | | |
| 142 | Excavate to form surface trenches not exceeding 50" deep and get out. | 28 yds | 2.2 | 62 | 930 | 21.0 | | |
| 143 | Planking and strutting to sides of trench excavation not exceeding 50" deep including setting, striking, and removing when no longer required (both sides assumed). | 28 yds | 1.0 | 28 | 420 | 9.5 | | |
| 144 | Return, fill in with materials selected for this purpose and well ram in 6" layers around walls and foundations. | 28 yds | 1.0 | 28 | 420 | 9.5 | | |
| 145 | Wheel surplus excavated material a distance not exceeding 50 yds. and deposit, spread and level. | 28 yds | 1.0 | 28 | 420 | 9.5 | | |
| 146 | Hard clean broken brick or other approved hardcore as described, spread and levelled and well watered, rammed, and consolidated in small quantities in filling under hearths. | 28 yds | 2.0 | 24 | 360 | 8.5 | | |
| 147 | Bed of clean broken brick as before described broken to a 2" gauge 6" thick (after consolidation) spread and levelled well watered, rammed and bladed with approved material on top to receive concrete paving. | 28 yds | 2.0 | 24 | 360 | 8.5 | | |
| 148 | Do. 1/2 6" do. | 28 yds | 2.0 | 24 | 360 | 8.5 | | |
| 149 | Concrete 1-3-6 as described in foundations. | 28 yds | 3.7 | 48 | 720 | 16.5 | | |
| 150 | Concrete 1-3-6 as described 6" thick, spread and levelled over hardcore and finished spade smooth. | 28 yds | 5.25 | 58 | 870 | 20.0 | | |
| 151 | Reduced brickwork in approved local bricks in cement mortar as described. | 28 yds | 4.2 | 118 | 1770 | 41.0 | | |
| 152 | Half brick wall in approved local bricks in cement mortar as described. | 28 yds | 4.2 | 118 | 1770 | 41.0 | | |
| 153 | 11" Sollow wall in approved local bricks in cement mortar as described with 4" inner and outer casings and 2" cavity including bonding the casings with and including No. 10 gauge galvanised wire butterfly ties spaced 40" apart horizontally and 20" apart vertically, and staggered and including keeping the cavity free from mortar droppings and other rubbish. | 28 yds | 4.2 | 118 | 1770 | 41.0 | | |
| 154 | Rough out equal or birdsmouth on brickwork. | 28 yds | 4.2 | 118 | 1770 | 41.0 | | |



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engaged on these operations to conform with the general programme.

Figure 5 demonstrates the process of thought which is employed in determining the most economic gangs for the various operations. In deciding on the size of a gang for a particular trade, the contractor will need to take account of such matters as the manner in which he can dispose the men around a building; the supervision available; and, where a machine is involved, the appropriate gang to cope with the capacity of the machine.

When these matters have been decided, it will be possible to arrive at the length of time each operation should take with the assumed gang of men. This will form the basis on which the general programme will be drawn up.

PROGRAMME AND PROGRESS CHARTS

Figure 7 is a typical programme for a small housing contract of 15 pairs of houses. On this all the information previously ascertained as to the resources involved is set out; the time which each of the 10 main operations should take is hatched in on the horizontal lines and, in this way, presents a general picture of the manner in which the work is to be executed. From this may be deduced also the number of men required on the site each week and the material requirements during each month.

The chart also shows when the sub-contractors' work should start and the period during which they should be engaged upon the job in order to fit in with the general programme. In incorporating the work of the sub-contractors in the main

programme, a good method is for the main contractor to supply each sub-contractor with a draft programme showing the point at which construction will be sufficiently advanced to enable each sub-trade to start, and also any fixed points at which the various sections of work should be completed. The sub-contractor then fills in on the chart the time he will require and the labour he proposes to employ, and after discussions with the main contractor the times can be agreed. This is a better method than giving sub-contractors rigid times in which to complete their work, as, in this case, the responsibility is largely held by the main contractor, the sub-contractor being in the position of a possibly reluctant collaborator.

The general construction programme forms the basis for ordering materials, for making arrangements for the supply of labour and plant, and for reaching agreement between the architect and the contractor on the handing over dates for various sections of the work.

It is sometimes said that, in these uncertain times, a programme soon loses its value because the assumptions regarding labour and material supplies, on which it is based, are rarely fulfilled. An early conceived plan of action can, however, alleviate these difficulties to a great extent.

If the programme is based on a realistic appraisal of the labour and material markets and all possible prior arrangements are made, many disappointments will be avoided. If delays do occur, the programme will show clearly the action called for in order that the position may be retrieved.

PROGRESSING

During the execution of the work, the value of the programme will be enhanced by recording on it the actual progress

achieved. If this is done regularly, possible causes of delay will be seen at a glance and, where it is impossible to rectify the position immediately, arrangements can be made in advance which may avoid disarranging the whole system.

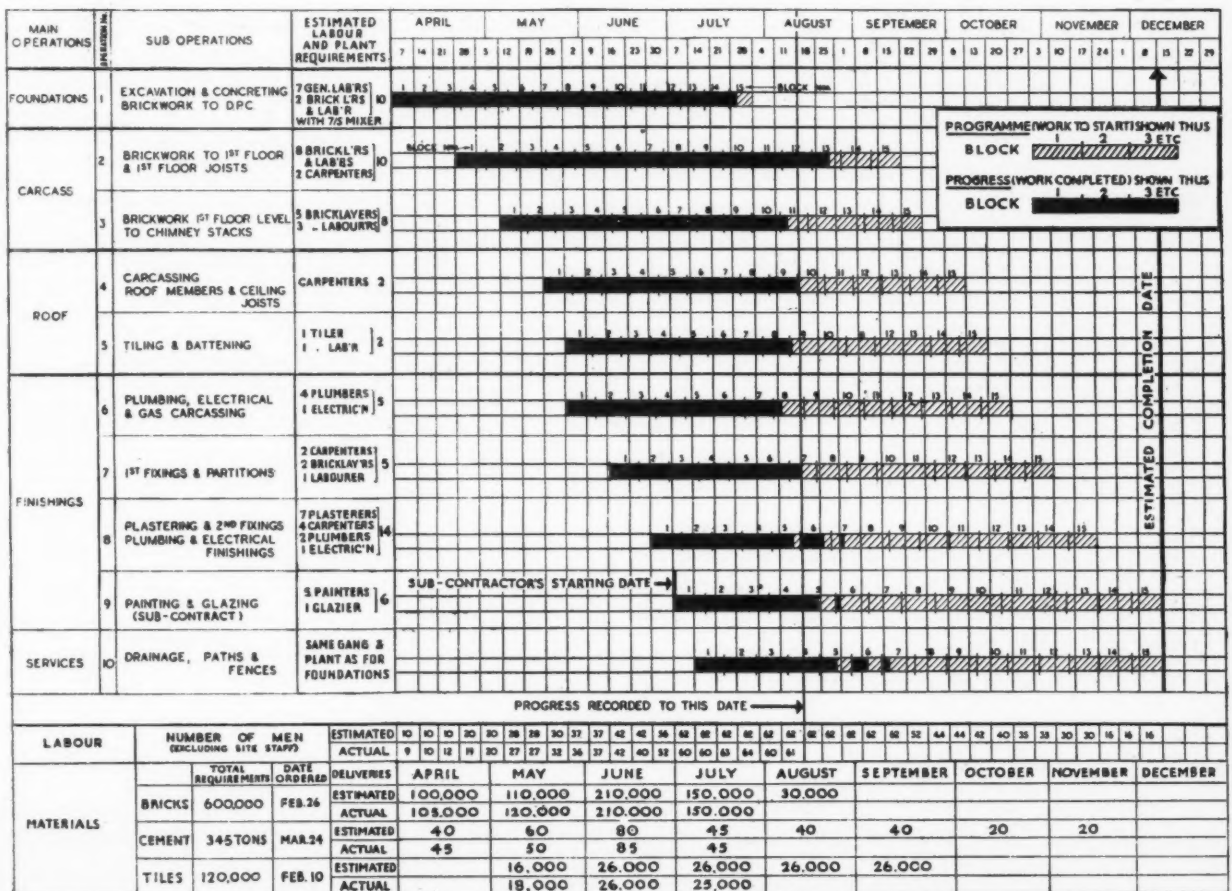
There are many ways in which progress can be recorded. Figure 7 shows how, by blacking in the hatched programme lines, as the work is completed, progress can be seen clearly in relation to the programme. For example: operation 4 (roof and ceiling joists) was estimated to be completed on the ninth block by Aug. 11. The hatched line was blacked in to show that this work had been done and, therefore, this section of the work, at that date, was up to schedule. In the next operation, No. 5 (tiling and battening), work on block nine should have started within the same week but had not begun, and was therefore a little behind the programme.


Although this sort of chart is primarily of use to the contractor, it can also be of great help to the architect. It keeps him informed as to the general progress of the job and, if sections are lagging behind, he will be forewarned of possible delays on the contract as a whole and will be able to use his influence to remedy them.

Although the example shown, that of a housing contract, is perhaps one of the simplest to programme, apart from simple civil engineering contracts, it should be clear that the principles will apply equally to all types of building projects. Indeed, where a number of specialist consultants and contractors are involved, the need for a programme is even greater and, in such cases, may be needed by the architect long before the contract is let.

The charts shown in this article are based on those employed by the MOW and, with the exception of Fig. 1, are Crown Copyright Reserved.

Fig. 7, Progress Chart for the construction of 30 brick houses (15 pairs).





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FORMICA was specified for internal use in the Maypole Child Welfare Centre, Birmingham. Designed by Donald A. Goldfinch, F.R.I.B.A., F.R.San.I.



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INFORMATION CENTRE

8.20 surveying and specification

CURRENT PRICES: BOOK

Spon's Architects' and Builders' Pocket Price Book, 1950-51. (E. and F. N. Spon Ltd., 1950, 76th edition, 15s.)

A book containing some 500 pages of prices—rates of wages, prices of plant and materials, "measured rates," cube rates and other approximate estimating data—with a good deal of other relevant information, well produced and indexed.

All prices and other information have been thoroughly revised and brought up to date and there is a "Stop Press" of 8 pages covering the major changes that have occurred during the editing and printing period.

Since the war the book has been thoroughly overhauled and doubled in size, so the contents, apart from the prices and other data liable to change, remain much the same as in the previous edition.

Unlike most price books, which set out to teach estimating and the analysis of prices, its primary function is that of giving typical up to date prices for building work of all descriptions, with sufficient information to enable the intelligent reader to adapt the prices to his own needs.

In this, it succeeds admirably, and it should prove invaluable to architects, surveyors and builders and all others concerned with building.

11.25 materials: general

DIRECTORY

The Concise Municipal Directory and Buyers Guide. (The Sanitary Publishing Co., Ltd. 67th edition, 1950. 21s.)

Local authority directory with names of officials including overseas Dominions. Articles on road construction, concrete, aspects of public health, transport, water supply, sewage, etc. List of Municipal Engineering, Public Health and Scientific Societies. Classified list of manufacturers of machinery and plant.

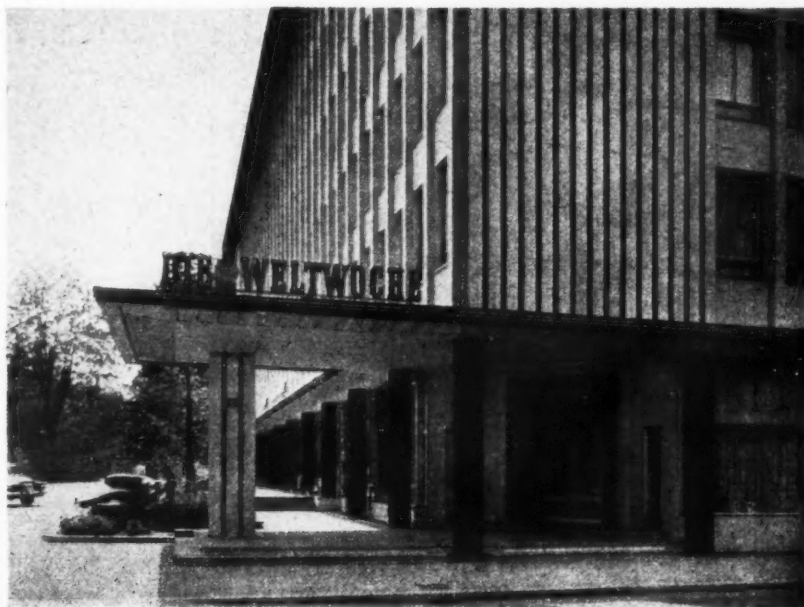
14.37 materials: concrete

SULPHATE ATTACK ON CONCRETE FOUNDATIONS

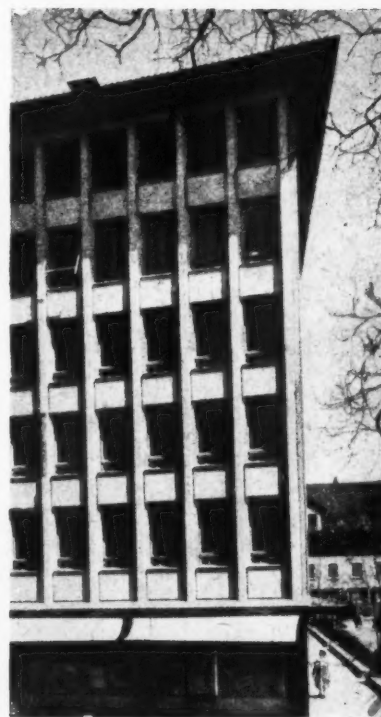
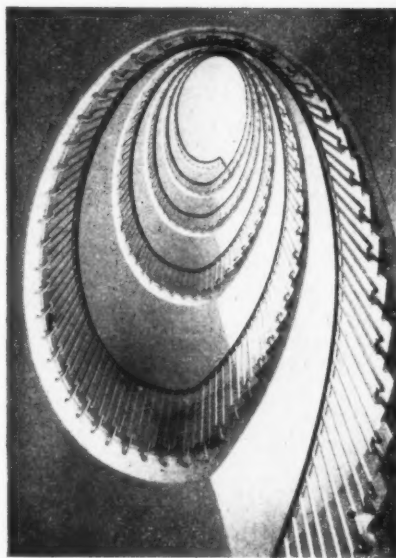
Mineral Sulphates and Their Effect on Concrete. A. J. Syms. (Building Topics, Tretol, Ltd. Oct., 1950)

Useful explanation of the nature of mineral salts in soils, methods of soil analysis, harmful types and proportions, and precautionary measures to be adopted.

The danger of harmful attack on foundations or other concrete in contact with soils may not be very widespread but in some districts is so serious that enquiry and investigation should always be made.



Office block in Zurich. Above, the entrance porch; right, S.W. facade; below, elliptical spiral staircase, view looking up the well. See 20.193



General textbooks often ignore the subject altogether. This article forms an excellent brief introduction to the subject.

The nature of the harmful mineral salts is explained. Where sulphates in ground water are suspected a chemical analysis should be made and because conditions can vary widely over a small area a number of samples must be examined. The article discusses clay soils in some detail and explains the harmful effect of water movement in contaminated soils. Some explanation of the meaning of chemical analysis is given and a rough classification of soils into three classes enables a simple recommendation to be made about precautionary methods. Pre-cast concrete is less liable

to attack than fresh in-situ concrete and high alumina cement concrete is very resistant.

17.72 construction: general

CONSTRUCTION

Mitchells' Building Construction and Drawing. Part I. G. A. Mitchell & A. M. Mitchell. (B. T. Batsford, Ltd., 20th Edition, 1950. 10s. 6d.)

Publishers claim many additions and improvements in this edition but it still looks a very familiar document. Over 600 pages with 2,000 illustrations—a remarkable achievement for 10s. 6d.

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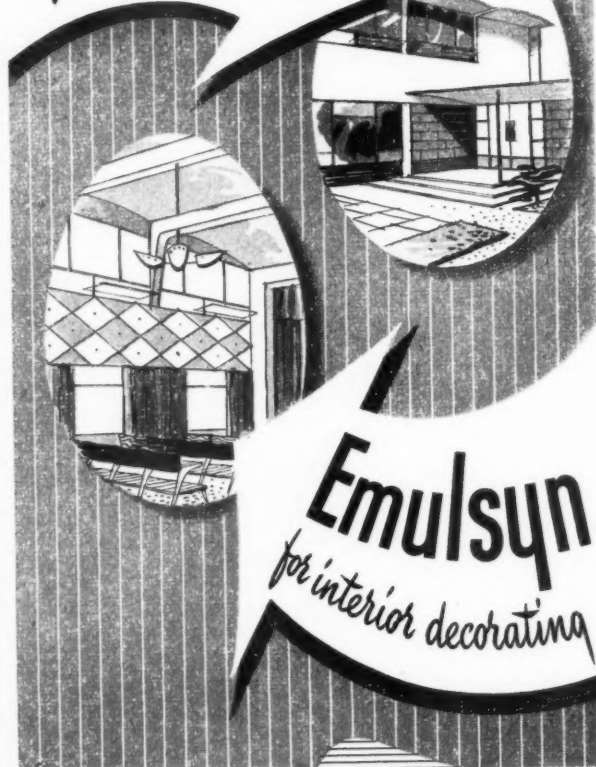
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18.67 construction: theory
FIRE RISKS

Investigations on Building Fires. Part III. Radiation from Building Fires. National Building Studies Technical Paper No. 5. (HMSO, 1950. 1s.)

Risk of fire spread by radiation effect.

The Bulletin deals with the scientific principles underlying the spread of fire from one building to another due to thermal radiation from windows. From basic formula and certain experimental data the paper develops methods of calculating the risk of fire spread in terms of the various factors involved. Examples of correlation with actual fires are given. Relation of risk to building densities is important to planners.

18.68 construction: theory
ECONOMIC RC DESIGN

The Economic Design of Rectangular Reinforced Concrete Sections. T. P. O'Sullivan. (Pitman, 1950. 12s. 6d.)

This is a theoretical treatise on a design problem which is of considerable practical importance, if not to the architect directly, then certainly to the structural engineer. Reinforced concrete sections of rectangular shape have often to be designed for combined axial load and bending. Dr. O'Sullivan claims that the symmetrical reinforcement of such sections is highly extravagant. If the compression falls inside the section, up to three times as much steel is thereby used compared with the necessary minimum. With a compression load acting on the edge of the section, his method would save 20 per cent. of steel. 76 pp. with graphs and tables.

19.105 construction: details
METAL CEILING

Metal Ceiling and Glazed Tile Walls Combined to Resist Dirt and Quakes. (Engineering News Record [USA], Oct. 12, 1950, pp. 36-37.)

Both architectural and structural needs are served in a Los Angeles bakery by a steel ceiling and reinforced glazed tile walls. The interior must be kept spotlessly clean and no dust-catching recesses were permitted. The soffit of the ceiling panels is perfectly smooth, the stiffening ribs are above. These steel panels are extremely rigid and form a solid diaphragm to transmit lateral forces from wind or earthquakes (which are to be reckoned with in California). The floor area is 260 by 230 ft., covered as a one storey structure except for a small section which has a second floor. The glazed tiles form the inner layer of the load bearing walls; the centre course is hollow-tile brick, the outer course common brick. Horizontal and vertical reinforcement is placed in the normal way, but the glazed tiles serve as a cover for the steel reinforcement and form an essential part of this load bearing wall. It has been approved as a 4-hour fire resisting wall. The metal panels consist of a 16-gauge continuous plate as soffit, with rectangular steel cells as stiffeners. They are welded to the supporting steel beams and channels, but only by short tack welds at 12 in. centres.

19.106 construction: details
WOOD FLOORS

The Wearing Properties of Wood Floors. 3. Surface Dressing. Harold T. Eyres. (Wood, Nov, 1950)

Effect of surface fillers on durability. List of hardwood floorings and their properties.

Continuing earlier articles on timber floor finishes the author discusses the added wear resistance given to wood floors by filling the pores. Applications of turpentine and beeswax are absorbed well. French polish may be used as a filler. It is not essential to finish the flooring with a high polish. In addition to assisting durability by filling the pores this type of treatment also helps by reducing shrinkage and swelling with changes in atmospheric conditions and the reduction of such movement in itself increases durability.

The article also contains a table of twenty timbers with notes on their resistance to wear and some general comments and remarks on present availability.

20.193 construction: complete structures
OFFICE BLOCK, ZURICH

Das Geschaeftshaus der Zeitung "Die Weltwoche" in Zürich. Karl Egender. (Schweizerische Bauzeitung [Switzerland], Oct. 28, 1950, pp. 597-600.)

Some interesting features distinguish this office block. It is built entirely in reinforced concrete, without any brickwork, and each column has a separate slab foundation. There is a two-storey basement, and six floors above. A large private car park, with existing and newly-planted trees, provides an unusually pleasant background. A 4-ft. wide concrete canopy runs the full length of the ground floor shop windows and enlarges into a wide rectangular cantilever roof over the corner entrance. The main columns are spaced at about 16-ft. 6-in. in one direction and 30 mm. (about 14-in.) more in the other—a strangely small difference. A great deal of thought has been devoted to sound architectural detailing of which the spiral staircase is a dramatic example. It is elliptic in plan, the edges of the horizontal landings forming part of the ellipse. The reinforced concrete stairs are 5-ft. 8-in. wide, mostly cantilevered from the walls. The illustrations give some idea of the interesting effects. 17 illustrations.

26.81 services and equipment: miscellaneous
HOUSING MAINTENANCE

Care of Fittings and Equipment in the Modern House. Report of a Sub-Committee of the Central Housing Advisory Committee. (HMSO 1s. 6d.)

Intended as a guide for Local Authorities and especially to assist them in informing and instructing tenants.

This report deals with steel and aluminium equipment, solid fuel, gas and electric appliances, floor finishes, plastics and fibre building boards. It is a curious mixture of general discussion and information, more suited to architects than tenants, together with advice of direct use in assisting local authorities to advise their tenants. It is unfortunate that it takes 57 pages of print to cover the subject, as few people have time to read so much.

A great deal of the discussion and some of the information could have been presented more briefly. Nevertheless there is a considerable amount of commonsense in the report and quite a number of points of interest to any architect dealing with housing.

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A.J. 1.2.51

INFORMATION CENTRE
INDEX, 1950

An alphabetical index covering items published during the twelve months ended December 31, 1950, is being prepared. Readers who wish to have a copy—it is free of charge—should complete the form below and post it to the Technical Editor, *THE ARCHITECTS' JOURNAL*, not later than March 9, 1951.

Please send me the Information Centre Index for 1950:—

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Buildings Illustrated

Factory at Lingfield Lane, Darlington, Co. Durham. (Pages 159-162.) Consulting Engineers: Sir Alexander Gibb & Partners. Architect-in-charge: Lieut.-Col. R. S. de Burgh, A.R.I.B.A. Assistant: H. J. Matson. Landscape consultant: James Lever. General Contractor: John Laing & Sons Ltd. Resident Engineer: H. G. Etherton. Sub-contractors: Excavations, foundations, dampcourses, concrete blocks, reinforced concrete, plaster, joinery, John Laing & Sons Ltd.; foundations, Franki Compressed Pile Co. Ltd.; asphalt, Rock Asphalt Co. Ltd.; concrete blocks, Constone Ltd.; reinforced concrete (windows), Lenscrete Ltd.; bricks, (facing), Blackwoods, (engineering), Accrington Brick & Tile Co. Ltd.; stone, artificial stone, stonework, Girlings Ferro Concrete Co. Ltd.; structural steel, iron staircases, Dorman Long & Co. Ltd.; tiles (floor and wall), Carter & Co. Ltd., (faience tiles), Shaws Glazed Brick Co.; special roofings, roofing felt, steel decking, The Ruberoid Co. Ltd.; asbestos sheeting, Universal Asbestos Co. Ltd.; partitions (metal), Luxfer Ltd.; glass, Pilkington Bros. Ltd.; patent glazing, British Challenge Glazing Co., Henry Hope & Sons Ltd., W. H. Heywood & Co. Ltd., Mellows & Co. Ltd.; roof lining and insulating, Eastwood Sales Ltd., Sundeala Board Co., Turners Asbestos Cement Co. Ltd.; woodblock flooring, maple strip and hardwood, Horseley Smith & Co. (Floors) Ltd., Bennets Wood Flooring Co. Ltd.; patent flooring, (precast terrazzo tiles), St. James Tile Co., Fenning & Co. Ltd., (granolithic), Johnson Floor Co.

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Canteen for North Eastern Trading Estates Ltd. at the Team Valley Trading Estate, Gateshead 11, Northumberland. (Pages 152-153.) Architects: Napper & Taylor. Consulting Heating & Ventilating Engineers: Messrs. Cairns & Byles. Consulting Electrical Engineers: R. W. Gregory & Partners. General Contractor: Isaac Berriman, The Woodlands Joinery Works. Sub-contractors: Bricks, Tyzack's concrete bricks; artificial stone, Ace Concrete Products; structural steel, Wright, Anderson & Co. Ltd.; roofing, The Ruberoid Co. Ltd.; glass, Elders, Walker & Co. Ltd.; patent glazing, W. H. Heywood & Co. Ltd.; block flooring, "Granwood" (J. Armstrong Todd); central heating, Rowells (1924) Ltd.; electrical, North of England Electrical Engineering Co. Ltd.; sanitary fittings, Adamsez Ltd.; door furniture, N. F. Ramsay & Co. Ltd.; metal windows, The Rustproof Metal Window Co. Ltd.; rolling shutters, Hardy & Stewart; metalwork, signs, Selborne Engineering Co.

Correction

On page 85 of our issue of January 18 we omitted to mention in connection with the showroom for the South African Travel Bureau in Piccadilly, the name of Sergei Kadleigh, who, as consultant architect to Messrs. Cockade Ltd., was personally associated with every phase of the work.



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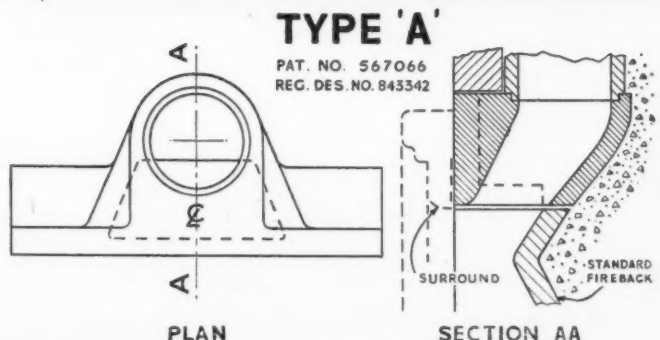
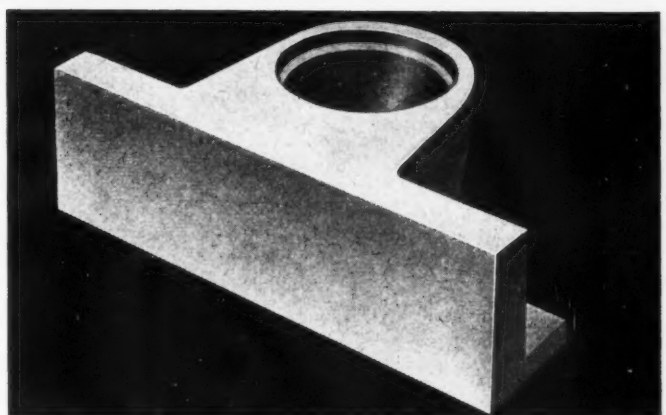
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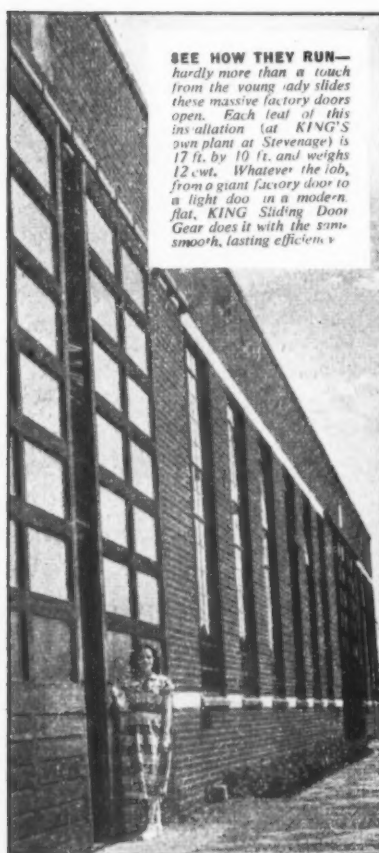
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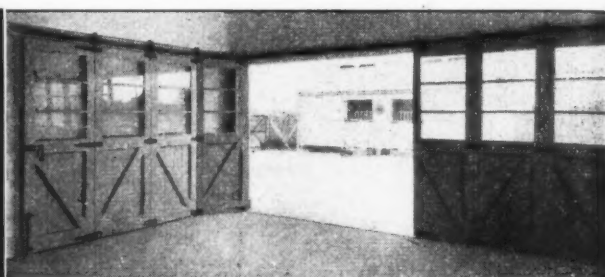
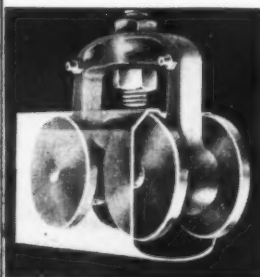
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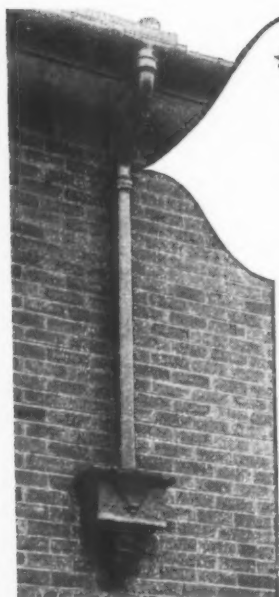
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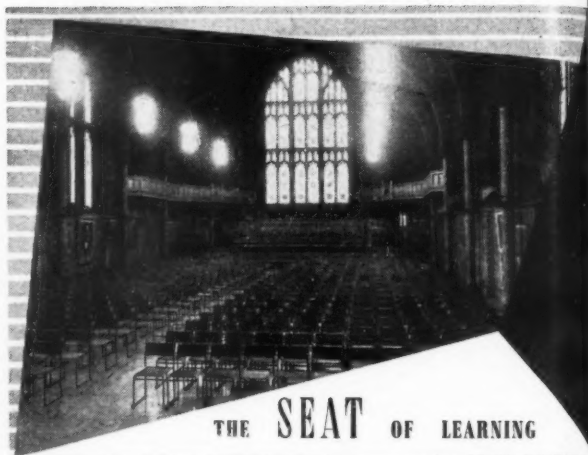
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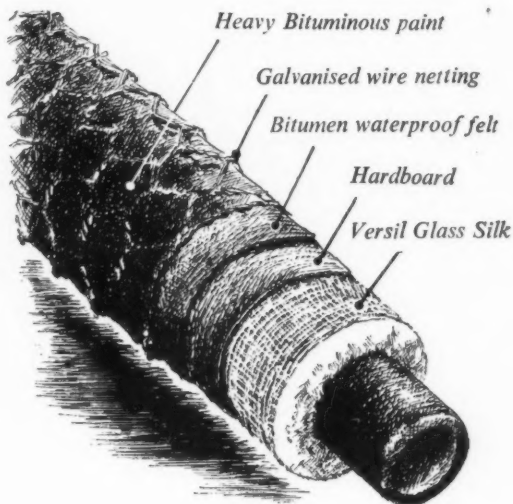
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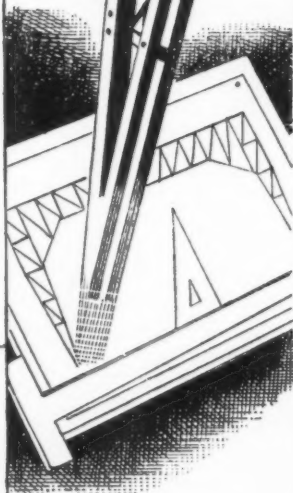
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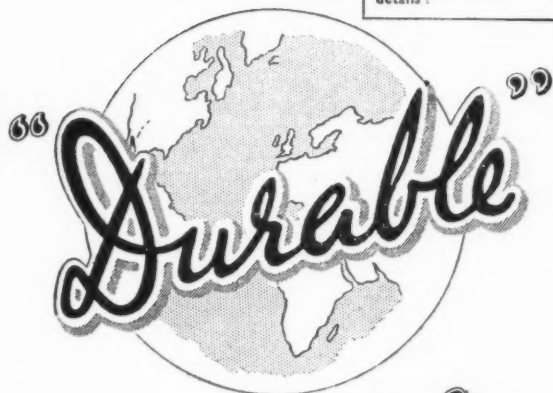
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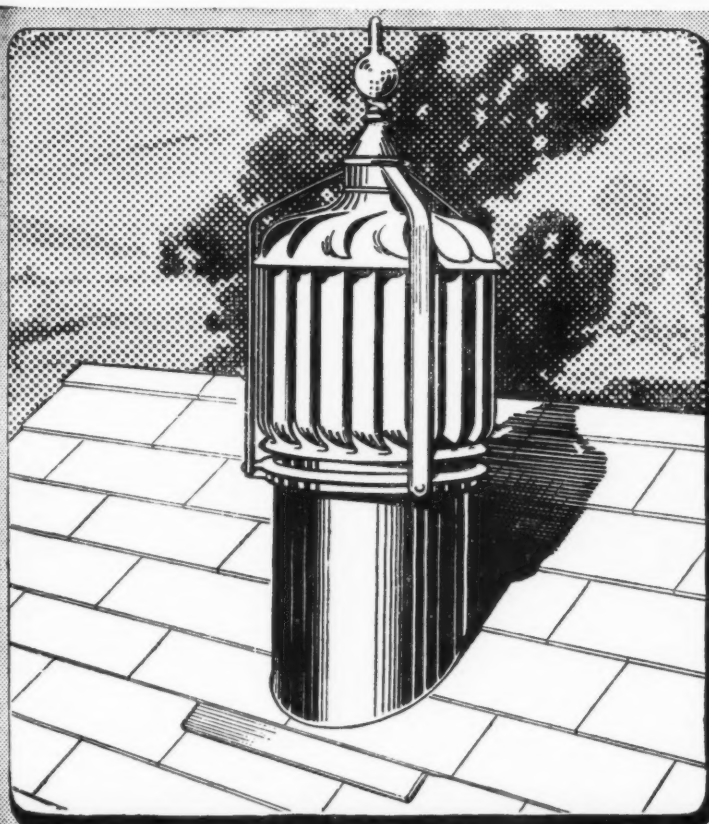
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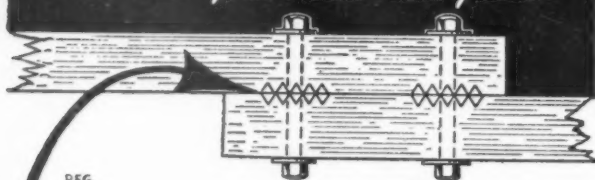
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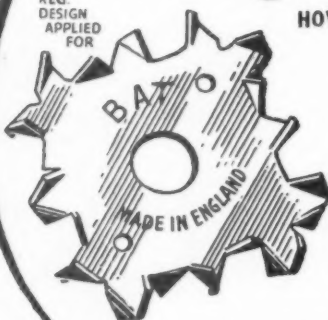
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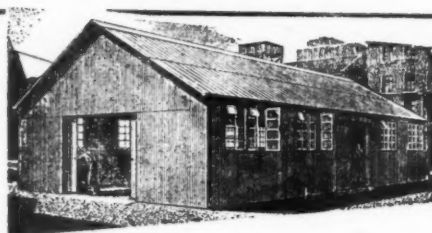


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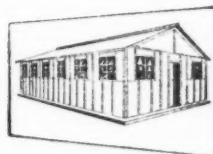
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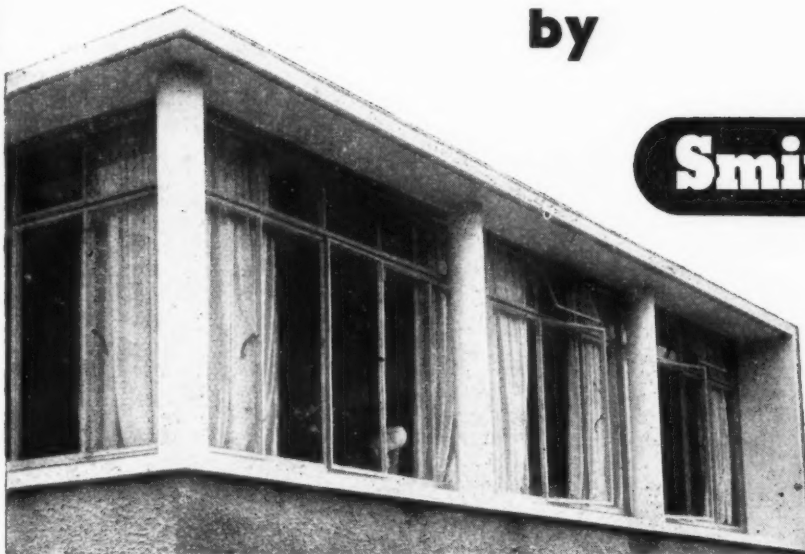
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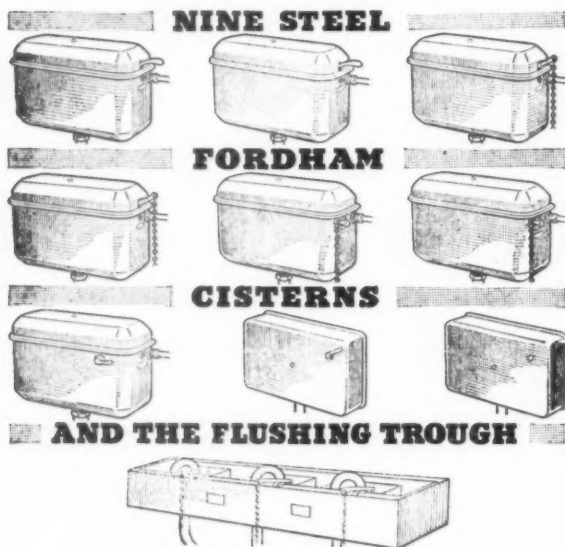


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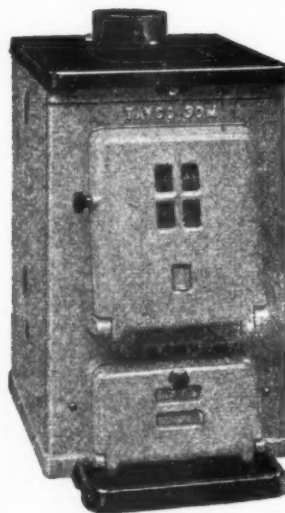
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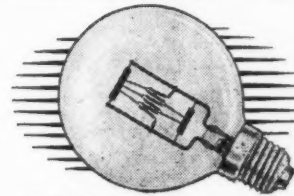
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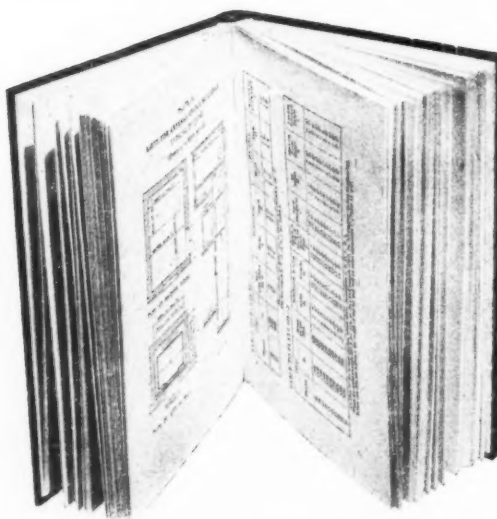
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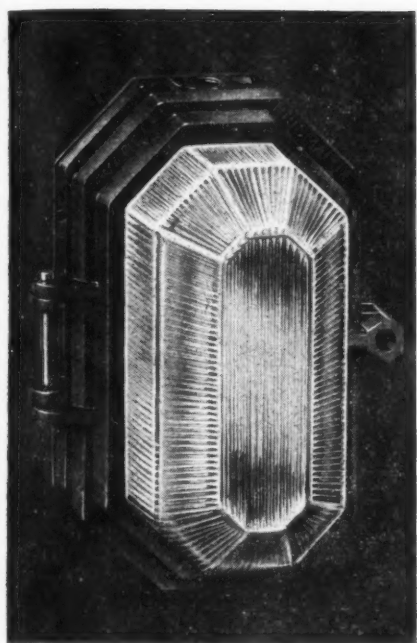
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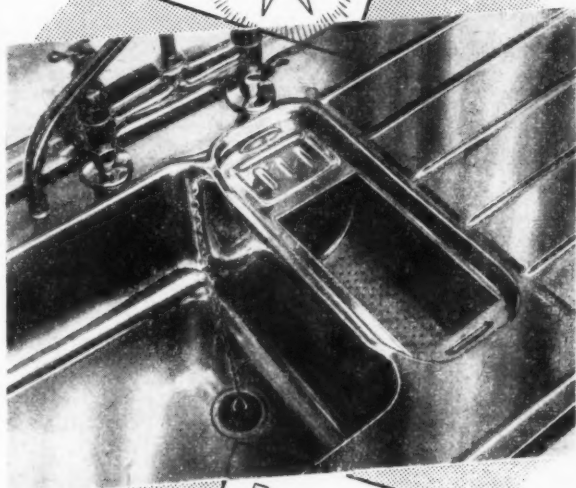
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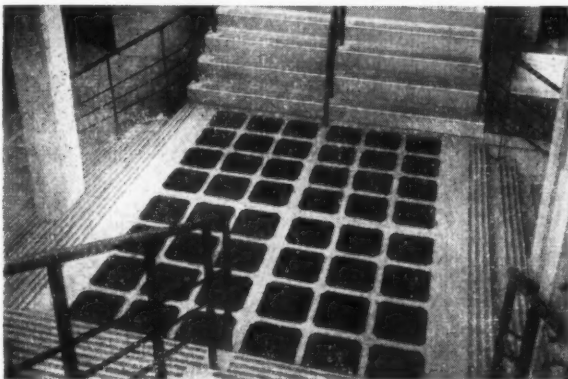
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(a) **ASSISTANT ARCHITECTS**. A.P.T., Grade V. Salary £520-£570.

Candidates should be Registered Architects, and preference will be given to Associate Members of the R.I.B.A., who have had good experience in the design and construction of modern buildings.

(b) **ASSISTANT ARCHITECTS**. A.P.T., Grade IV. Salary £480-£525.

ARCHITECTURAL ASSISTANTS. A.P.T., Grade III. Salary £450-£495.

Candidates should be Students of the R.I.B.A., experienced in the preparation of working drawings from sketches and capable of taking charge of smaller contracts.

The appointments will be subject to the National Scheme of Conditions of Service and to the provisions of the Local Government Superannuation Act, 1937, and to a satisfactory medical examination.

Applications must be made on the forms to be obtained from the County Architect, T. A. Collins, A.R.I.B.A., 123, London Road, Leicester, to whom they should be returned, accompanied by copies of three recent testimonials, not later than 24th February, 1951.

JOHN A. CHATTERTON,
Clerk of the County Council.
Grey Friars, Leicester. 1763

EDINBURGH COLLEGE OF ART.
SCHOOL OF ARCHITECTURE.
Applications are invited for the post of **ASSISTANT, Grade II** (full-time) on the Teaching Staff of the College. Salary scale £450-£700 per annum, commencing salary according to qualifications and experience.

Forms of application and conditions of appointment can be obtained from the Secretary, Edinburgh College of Art, Lauriston Place, Edinburgh, 3, and should be returned to him not later than 9th February, 1951. 1662

CITY OF OXFORD. CITY ARCHITECT AND PLANNING OFFICER'S DEPARTMENT.

Applications are invited for the undermentioned post on the Permanent Staff of the City Architect and Planning Officer's Department:—

PLANNING ASSISTANT. Within the range Grade I/V, A.P.T. Division, £390-£570 per annum. Applicants should be capable of undertaking duties in connection with the survey and preparation of the Development Plan, have had experience in Development Control, and must possess a knowledge of the Town and Country Planning Act, 1947.

Candidates should preferably have passed the Final Examination of the Town Planning Institute, or hold a recognised Town Planning qualification, but consideration will be given to applicants not fulfilling these requirements, the actual salary of the successful applicant will then depend on his qualifications and experience at the time of appointment.

Surveying, Engineering or Architectural qualifications will be deemed an advantage.

The Council may be able to assist the successful applicant in finding housing accommodation, if required.

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

Further details of the duties and Application Form, which must be used in applying for the post, may be obtained from E. G. Chandler, A.R.I.B.A., A.M.P.I., City Architect and Planning Officer, and Application Forms must be returned to him at the Town Hall, Oxford, not later than Saturday, the 10th February, 1951. 1676

HARRY PLOWMAN,
Town Clerk.

NEWCASTLE-UPON-TYNE REGIONAL HOSPITAL BOARD. SPECIAL AREA FOR CUMBERLAND AND NORTH WESTMOERLAND. PROPOSED GENERAL HOSPITAL FOR WEST CUMBERLAND.

The Board wishes to proceed with the preparation of plans for the erection of a new General Hospital for West Cumberland. The site provisionally chosen is at Homewood, Hensingham, Whitehaven. In the first place the bed complement will be about 300, but the hospital is to be planned so as to be capable of later expansion to 500 beds.

Planning progress should be arranged with a view to a probable commencement of building operations in the spring of 1953.

Architects who are interested in receiving an invitation to act for the Board in connection with this project should forward their names and full details of their experience in the planning and erection of large public buildings. A list of the duties to be performed by the architect eventually commissioned can be obtained from the undersigned, to whom the details referred to in the preceding paragraph should also be sent.

Remuneration will be in accordance with the scale of professional charges of the Royal Institute of British Architects as modified for hospital work undertaken for Regional Hospital Boards.

It is expected that during the commission the architect appointed will collaborate with the Board's Chief Architect by engaging in full discussion and interchange of views with him.

Responses to this advertisement should reach the undersigned by the 3rd March, 1951.

E. B. JENKINS,
Secretary.

"Dunira," Osborne Road,
Newcastle-upon-Tyne, 2. 1717

COUNTY BOROUGH OF GREAT YARMOUTH. APPOINTMENT OF CLERK OF WORKS.

Applications are invited for the appointment of Clerk of Works, to act under the direction of the Borough Engineer in the supervision of the erection of six-storey flats.

Applicants should have a thorough knowledge of the building trade, the erection of multi-storey flats, of steel frame building and pile foundations. Membership of the Incorporated Clerk of Works' Association of Great Britain would be an advantage.

The salary will be £12 per week. Applications, stating age, qualifications and previous experience, together with the names of three persons to whom reference may be made, should be enclosed in an envelope endorsed "Clerk of Works," and must be received by me not later than Monday, 5th February, 1951.

Canvassing, directly or indirectly, will be deemed a disqualification, and candidates must disclose, in writing, whether their knowledge they are related to any member, or holder of any senior office, under the Council. Candidates who fail to do so will be disqualified and, if appointed, will be liable to dismissal without notice.

FARRA CONWAY,
Town Clerk.
Town Hall, Great Yarmouth. 1718
18th January, 1951.

BOROUGH OF CHATHAM. AMENDED ADVERTISEMENT. APPOINTMENT OF CHIEF ASSISTANT ARCHITECT.

Applications are invited for the appointment of Chief Assistant Architect within Grade VII (£635-£710).

Housing accommodation will be made available if required.

Conditions of appointment and form of application may be obtained from Mr. H. D. Peake, M.Sc.(Eng.), Borough Engineer and Surveyor, Town Hall, Chatham, to whom completed application forms should be returned not later than Wednesday, 14th February, 1951. 1698

BOROUGH OF WORKINGTON. APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of an Architectural Assistant in the Borough Engineer and Surveyor's Department.

Applicants should be good draughtsmen and possess a sound knowledge of building construction, and be capable of preparing working drawings, etc., with the minimum of supervision. Preference will be given to applicants who have considerable experience in the design of houses to Government standards.

The salary will be A.P.T. Grade IV, i.e., £480-£525, or Grade V, £520-£570, according to the qualifications of the person appointed.

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.

Housing accommodation is not immediately available, but the Council will, if necessary, make a house available to the successful applicant as soon as they are in a position to do so.

Applications, stating age, qualifications, training and experience, details of past and present appointments, and accompanied by the names of three referees, should be forwarded to the undersigned not later than Tuesday, the 6th February, 1951.

JOHN R. COCKFIELD,
Town Clerk.
Town Hall, Workington. 1687
16th January, 1951.

EDINBURGH COLLEGE OF ART. ANDREW GRANT BEQUEST SCHOLARSHIPS.

The Board of Management may award twelve Junior Open Scholarships of £200 each per annum, tenable for two years at the Edinburgh College of Art, to students who have completed a period of, but not exceeding, two years at any recognised Art Institution, and who do not exceed the age of 20 years at 1st October, 1951.

The College incorporates Schools of Architecture, Design and Crafts, Drawing and Painting and Sculpture.

Application forms and further particulars may be obtained from the Secretary, Edinburgh College of Art, Lauriston Place, Edinburgh, 3.

The latest date for receiving applications is 28th February. 1670

METROPOLITAN BOROUGH OF CAMBERWELL. BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT. APPOINTMENT OF TWO ASSISTANT ARCHITECTS.

Applications are invited for the above permanent appointments in Grades A.P.T. V/VI, of the National Scale of Salaries. Commencing salary £550 per annum, rising to £690 per annum, inclusive of £30 London weighting.

Applicants should be Registered Architects and have had considerable experience in the design and practical execution of building works.

The appointments are subject to the National Scheme and Conditions of Service, to the provisions of the Camberwell and Other Metropolitan Borough Councils' (Superannuation) Act, 1908, as amended, and to the passing of a medical examination by the Council's Medical Officer of Health.

Housing accommodation cannot be provided by the Council.

Applications from staff in the service of other Local Authorities will not be considered unless they have been in the service of their present employers for a period of not less than two years.

Applications, on forms to be obtained from the undersigned, must be returned not later than Wednesday, 21st February, 1951.

S. J. HARVEY,
Acting Town Clerk.
Town Hall, Camberwell, S.E.5. 1762

BOROUGH OF SCARBOROUGH. APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the position of Architectural Assistant, Grade A.P.T. V (£520-£570), for work on new housing and other public buildings.

The position is superannuable. The provision of housing accommodation will be considered if necessary.

Applications, stating age, experience, qualifications, past and present appointments, and the names of two persons to whom reference may be made, to reach the undersigned by Wednesday, 14th February, 1951.

H. V. OVERFIELD, M.I.C.E.,
Borough and Water Engineer.
Town Hall, Scarborough. 1726
January, 1951.

COUNTY BOROUGH OF HALIFAX. APPOINTMENT OF CHIEF ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment in the Borough Engineer's department at a salary in accordance with National Scale, A.P.T., VII (£535-£710).

The successful candidate will be offered the tenancy of a Corporation flat.

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

Candidates must disclose whether to their knowledge they are related to any member of or the holder of any senior office under the Council.

Applications, stating age, qualifications, present position, salary and experience, accompanied by copies of three recent testimonials, should be submitted not later than Saturday, 3rd February, 1951.

RICHARD DE Z. HALL,
Town Clerk.

Town Hall, Halifax.
15th January, 1951. 1710

COUNTY BOROUGH OF WEST BROMWICH. APPOINTMENT OF ASSISTANT ARCHITECTS (GRADE VII AND GRADE VI).

Applications are invited for the following appointments on the permanent staff of the Borough Engineer and Surveyor:—

(a) ASSISTANT ARCHITECT. Salary in accordance with A.P.T., Grade VII (£635 to £710).

(b) ASSISTANT ARCHITECT. Salary in accordance with A.P.T., Grade VI (£595 to £660).

The persons appointed must hold and continue to hold the appropriate qualifications set out in the Grading of Special Classes of Officers of the National Charter, M.I.

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

Applications, stating age, experience and qualifications, together with the names of two persons to whom reference may be made, should be delivered to the undersigned not later than Saturday, 17th February, 1951.

Canvassing, either directly or indirectly, will be a disqualification, and relationship to any member or senior officer of the Council must be disclosed.

H. SCHOFIELD, B.Sc.(Eng.), A.M.I.C.E., A.M.T.P.I.,
Borough Engineer and Surveyor.

Town Hall, West Bromwich.
16th January, 1951. 1700

BRACKNELL DEVELOPMENT CORPORATION invites applications from suitably qualified persons for the following appointment:—

ARCHITECT (Housing). Salary £550+£40-£750.

Applicants should be Corporate Members of the R.I.B.A. and an additional town planning qualification will be an advantage.

The successful applicant will be engaged on the design and construction of large housing layouts, and will work under the direction of E. A. Ferriby, B.Arch., A.R.I.B.A., A.M.T.P.I., Chief Architect to the Corporation.

The post will be superannuable under the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, giving full particulars of the candidate's age, qualifications and experience, together with the names of two persons to whom reference can be made, must reach the General Manager, Bracknell Development Corporation, Farley Hall, Birdfield, Bracknell, Berks., on or before 15th February, 1951, marking envelope "Architect."

BOROUGH OF RUGBY. ASSISTANT ARCHITECT.

Rugby Corporation invite applications for the appointment of Assistant Architect. Salary A.P.T., VI, £595-£660. Housing accommodation is available.

Preference will be given to candidates who have had Municipal experience and who have passed the Final Examination of the R.I.B.A.

Applications, together with copies of three recent testimonials, should reach the Borough Surveyor, "Barford House," Rugby, by Monday, 12th February, 1951. 1694

MIDDLESEX COUNTY COUNCIL COUNTY PLANNING DEPARTMENT.

DEVELOPMENT PLAN OFFICER. A.P.T., IX, £750+£50-£900 p.a., plus London weighting, £30 if 25 years or over (and car allowance considered). Special duties under County Planning Officer and his Deputy in connection with County Development Plan and such other planning duties as may be assigned. Should be Member or Associate Member of Town Planning Institute, with suitable complementary qualifications, good experience, and proved ability. Established, pensionable, subject to medical examination and prescribed conditions. Applications, stating age, experience, qualifications, etc., with copies of three recent testimonials, to the undersigned by 10th February (quoting H.993 A.J.). Canvassing disqualifies.

C. W. RADCLIFFE,
Clerk of the County Council.
Middlesex Guildhall, Westminster, S.W.1. 1720

SOMERSET COUNTY COUNCIL. COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of AREA PLANNING OFFICER from persons with extensive experience of planning work and control of staff.

The salary is in Grade IX of the A.P.T. Division (£750+£50 to £900), and the appointment is permanent and subject to the provisions of the Local Government Superannuation Act, 1937.

Applicants must be Members or Associate Members of the Town Planning Institute, and additional qualifications in Architecture, Surveying or Engineering will be an advantage.

The Area Planning Office is at Weston-super-Mare.

The successful candidate will be required to provide a motor car for official journeys, for which they will receive an appropriate allowance.

Forms of application, obtainable from the undersigned, must be completed and returned not later than Monday, 12th February, 1951.

R. W. DALE,
County Planning Officer.

41, Upper High Street, Taunton. 1741

CORPORATION OF THE CITY OF ABERDEEN.

TOWN PLANNING DEPARTMENT.

Applications are invited for the following posts:—

(a) TECHNICAL ASSISTANT. Salary scale £595, rising to £660 per annum.

(b) TECHNICAL ASSISTANTS. Salary scale £390, rising to £570 per annum, with initial placing in accordance with qualifications and experience.

Application forms and further particulars of the appointments are obtainable from the Director of Town Planning, 5, Bon-Accord Crescent, Aberdeen.

Completed application forms (which should be submitted in duplicate) should be returned on or before 21st February, 1951.

J. C. RENNIE,
Town Clerk.

Town House, Aberdeen.
22nd January, 1951. 1740

GLAMORGAN QUARTER SESSIONS AND COUNTY COUNCIL. ARCHITECTURAL ASSISTANT.

Applications are invited for the permanent appointment of Architectural Assistant in the County Police Architect's Department at Bridgend. Commencing salary is £450 per annum, rising annually by £15 to £495 per annum. Applicants must have, as a minimum qualification, the Intermediate Certificate of the Royal Institute of British Architects.

Applicants must not be over 50 years of age, but this condition may be relaxed in the case of a specially suitable candidate employed by a Local Authority. Applications, stating age, qualifications and experience, and accompanied by copies of at least two recent testimonials, must be delivered to the County Police Architect, Police Headquarters, Bridgend, within 14 days of the publication of this advertisement, endorsed "Architect's Assistant."

D. J. PARRY,
Clerk of the County Council.

Glamorgan County Hall, Cardiff.
22nd January, 1951. 1739

EASINGTON RURAL DISTRICT COUNCIL. ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the appointment of SECOND ARCHITECTURAL ASSISTANT, at a salary in accordance with Grade A.P.T., III (£450-£495 per annum).

Applicants must have had previous Municipal experience and have been trained in the office of a Municipal Engineer, Architect or Surveyor, and be experienced in Municipal Housing and General Architectural work. Preference will be given to those holding the Intermediate Certificate of the R.I.B.A. or equivalent.

The appointment is subject to the National Scheme of Conditions of Service and the Local Government Superannuation Act, 1937. The successful applicant will be required to undergo a medical examination.

Form of application may be obtained from the undersigned, and must be returned accompanied by copies of not more than two recent testimonials, to reach the undersigned not later than first post on Tuesday, the 6th February, 1951.

J. W. GRAY,
Clerk of the Council.

Council Offices, Easington, Co. Durham.
23rd January, 1951. 1726

MINISTRY OF WORKS.

SENIOR ARCHITECTURAL ASSISTANTS are required in the Chief Architect's Division, who have had first-class experience and who are capable of supervising drawing office staffs. Vacancies exist in London, Edinburgh, Newcastle, Leeds, Birmingham, Manchester and Capenhurst (Cheshire). Assistants will be employed on a wide variety of Public Buildings, including Atomic Energy and other Research Establishments, Telephone Exchanges, Office Buildings, etc. London salary, £625-£750 per annum. Salary elsewhere is slightly lower.

Although these are not established posts, many have long term possibilities.

Apply in writing, giving full details of age, qualifications and experience, to Mr. W. A. Rutter, C.B.E., F.R.I.B.A., Chief Architect, Ministry of Works, Abell House, John Islip Street, Westminster, S.W.1, quoting reference W.G.10/BE. Locality preferred should be stated. 1719

NORTHERN IRELAND HOUSING TRUST. Applications are invited for the following posts:—

(a) ASSISTANT ARCHITECTS: (i) £725+£25-£800; (ii) £650+£25-£725.

(b) ARCHITECTURAL ASSISTANTS: (i) £525+£25-£600; (ii) £450+£25-£525.

(c) ASSISTANT QUANTITY SURVEYORS: (i) £725+£25-£800; (ii) £650+£25-£725.

(d) QUANTITY SURVEYING ASSISTANTS: (i) £525+£25-£600; (ii) £450+£25-£525.

(e) ENGINEERING ASSISTANTS: (i) £525+£25-£600; (ii) £450+£25-£525.

Candidates for posts (a) and (c) must be Corporate Members of the R.I.B.A. and R.I.C.S. respectively and, in addition, should have wide experience of housing projects.

Candidates for posts (b), (d) and (e) must have passed the Intermediate Examinations of the R.I.B.A., R.I.C.S., I.Mun.E., or equivalent, and, in addition, should have sound experience of general office procedure and site works.

The point of entry on the scales, under (a), (b), (c), (d) and (e) above, will be determined by qualifications and experience.

The person appointed will be required to participate in a contributory Superannuation Scheme, which allows for reciprocal transfer of benefits in Local Government Superannuation Schemes in suitable cases.

Preference will be given to ex-Service candidates. Assistance in obtaining housing accommodation may be given to successful applicants.

Forms of application, which should be returned not later than 13th February, 1951, may be obtained from the General Manager, Northern Ireland Housing Trust, 12, Hope Street, Belfast. 1724

URBAN DISTRICT OF FELTHAM. APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Architectural Assistant on the unestablished staff of the Engineer and Surveyor's Department, at a salary up to Grade IV—the maximum salary of this grade is £525 per annum, plus the appropriate London weighting—of the Administrative, Professional and Technical Division of the National Scales. The grade will depend upon the qualifications and experience of the successful applicant.

The appointment will be subject to (i) the National Scheme of Conditions of Service; (ii) the successful candidate passing a medical examination; and (iii) one month's notice in writing on either side.

Forms of application may be obtained from the undersigned, to whom they should be returned, accompanied by copies of two recent testimonials, not later than 10th February, 1951.

Canvassing will disqualify, and applicants must disclose in writing whether, to their knowledge, they are related to any member of, or the holder of any senior office under the Council.

M. W. COOPER,
Clerk of the Council.
Council Offices, Feltham, Middlesex. 1743

MIDLANDS ELECTRICITY BOARD. BIRMINGHAM AND DISTRICT SUB-AREA. APPOINTMENT OF QUANTITY SURVEYOR.

Applications are invited for the above appointment in the Sub-Area Engineer's Department.

Applicants must have a sound theoretical and practical training in quantity surveying; should be a Member of the Chartered Surveyor's Institution, or hold equivalent technical qualifications; be fully experienced in the writing of Specifications, and preparation of Bills of Quantities in all stages for industrial type buildings, substations, showrooms and offices; be capable of settling accounts for contract work; and also be prepared, if required, to undertake draughting work associated with the above.

Applications, stating salary required, age, full details of experience, present position and salary, endorsed "Quantity Surveyor," should be forwarded within 14 days to Emil Braathen, Manager, Birmingham and District Sub-Area, 14, Dale End, Birmingham, 4.

A. STEPHENS,
Secretary.

19th January, 1951. 1742

COUNTY COUNCIL OF INVERNESS. COUNTY ARCHITECT'S DEPARTMENT.

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

(a) TWO ARCHITECTURAL ASSISTANTS. Salary A.P.T., V, £520-£570. Candidates should have had a sound general architectural office training and experience, more especially in the preparation of working drawings for schools, housing, and other local authority works.

(b) ONE ARCHITECTURAL ASSISTANT. Salary A.P.T., III, £450-£495. Candidates should be neat and accurate draughtsmen, and have had experience in the preparation of plans for local authority housing work.

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

Applications, stating age, qualifications and present appointment, accompanied by copies of not more than three recent testimonials, should be submitted to the undersigned not later than ten days after the date of publication of this advertisement.

R. WALLACH,
County Clerk.

County Buildings, Inverness. 1759

**CITY OF SHEFFIELD.
CITY ARCHITECT'S DEPARTMENT.**
Applications are invited for the following appointments:—

- ARCHITECTS:**
(a) Senior Assistant Architect. Grade IX (£750-£900) (in charge of Sub-Section General).
(b) Senior Assistant Architect. Grade VII (£635-£710).

Candidates must possess high ability in design and administration.

Candidates for (a) must in addition be capable of supervising the above Sub-Section.

Applications are also invited for positions of Assistant Architects, graded as under:—

- Grade VI (£595-£660).
Grade Va (£550-£615).
Grade V (£520-£570).

All applicants for the above vacancies must have the examination qualification of A.R.I.B.A. All appointments will be subject to one month's notice on either side, and to the provisions of the Local Government Superannuation Act, 1937. Candidates must be under 40 years of age, or otherwise have previous local government service carrying a transfer value within the meaning of the Act, and the persons appointed will be required to pass a medical examination.

Canvassing will disqualify.
Applications must be made on the special form to be obtained from W. G. Davies, Esq., F.R.I.B.A., City Architect, Town Hall, Sheffield, 1, and should be returned to the undersigned not later than the first post on Monday, the 12th February, 1951.

JOHN HEYS,
Town Clerk.

Town Hall, Sheffield, 1.

STEVENAGE DEVELOPMENT CORPORATION.

The Stevenage Development Corporation invite applications for the following posts in the Department of Architecture and Planning (Chief Architect and Planner, Clifford Holliday, M.Arch., F.R.I.B.A., M.T.P.I.):—

Candidates for posts 1 and 2 are required to have an aptitude for contemporary design.

- (1) ASSISTANT ARCHITECT. Grade IV, salary £530-£570.

Applicants should be fully qualified architects with experience in housing.

- (2) JUNIOR ARCHITECTS (3 posts). Grade V, £530-£570.

Candidates should either have completed a degree or diploma course at a recognised school of architecture or have passed the Final Examination of the R.I.B.A.

- (3) ARCHITECTURAL ASSISTANT. Grade VI, £580 at age 21, £575 at age 22, £400 at age 23.

Applicants for this post should have reached R.I.B.A. Intermediate standard.

- (4) TRACERS (3 posts). General Division. Scale maximum: Females £308, males £385.

Initial salary according to age.

- (5) CLERK OF WORKS. Salary £600 (fixed).

Candidates should be experienced in the supervision of large scale housing contracts and have a sound knowledge of building construction and of the building trade.

- (6) ASSISTANT QUANTITY SURVEYOR. Grade IV, £580-£590-£750.

Applicants must have had experience of large building contracts and be prepared to undertake the preparation of Bills for all types of work, the measurements of variations, and the settlement of final accounts.

- (7) WORKER-UP. Grade Va, salary £400-£425-£465.

Applicants must be able to "work-up" Bills of Quantities.

- (8) JUNIOR ASSISTANT (Quantity Surveying). General Division, £135-£385—initial salary according to age.

Initial salaries for posts 1, 2, 6 and 7 will be fixed according to qualifications and experience.

Successful applicants will be required to contribute to a Local Government Superannuation Fund or an insurance scheme.

The Corporation anticipates, that if so desired, it will be able in the near future to offer successful married candidates the tenancy of a Corporation house.

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

Forms of application may be obtained from the Chief Administrative Officer, Stevenage Development Corporation, Aston House, Aston, near Stevenage, Herts., to whom completed forms should be returned not later than 24th February, 1951.

1769

MINISTRY OF WORKS.

There are vacancies in the Chief Architect's Division for ARCHITECTURAL ASSISTANTS and LEADING ARCHITECTURAL ASSISTANTS with recognised training and fair experience.

Successful candidates will be employed in London and elsewhere on a wide variety of Public Buildings, including Atomic energy and other Research Establishments, Telephone Exchanges, and Housing.

Salary: Architectural Assistants, £300-£525 per annum; Leading Architectural Assistants, £500-£625 per annum. Starting pay will be assessed according to age, qualifications and experience. These rates are for London; a small deduction is made in the Provinces.

Although these are not established posts, 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/BC, Ministry of Works, Abell House, London, S.W.1, quoting reference W.G.10/BC.

4826

**COUNTY OF CORNWALL.
APPOINTMENT OF SENIOR PLANNING ASSISTANT.**

Applications are invited for the above appointment in the Headquarters Office of the County Planning Department of the above-mentioned Authority, with salary on Grade VI of the A.P.T. Division (£595-£660), commencing salary within the Grade being dependent on qualifications and experience.

Candidates should preferably be Associate Members of the Town Planning Institute or Associates of the Royal Institute of British Architects or of the Institute of Landscape Architects.

The successful candidate will be engaged on work under the National Parks Act, Advertisement Control under the Advertisement Regulations, including surveys for Areas of Special Control and on survey for the Development Plan. Preference will be given to applicants with practical experience in this type of work.

The successful candidate will be required to provide a motor car for necessary travelling, for which mileage and subsistence allowances in accordance with the County scale will be paid.

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. Canvassing, either directly or indirectly, will disqualify, and every candidate must disclose in the application whether he or she, to their knowledge, is related to any member of the Council or to the holder of any senior office under the Council.

Applications, together with the names and addresses of three persons to whom reference may be made, should be addressed to the County Planning Officer, County Hall, Truro, not later than 16th February, 1951. No application forms are issued.

E. T. VERGER,
Clerk of the County Council.

County Hall, Truro. 1769

COUNTY BOROUGH OF BURNLEY.

Applications are invited for the under-mentioned appointments in the office of the Borough Engineer and Surveyor:—

- (a) SENIOR ARCHITECTURAL ASSISTANT. Grade V (£520-£570 per annum).

- (b) ARCHITECTURAL ASSISTANT. Grade III (£450-£495 per annum).

- (c) TEMPORARY CLERK OF WORKS (Building Works). Miscellaneous Division, Grade IV (£350-£420 per annum).

Applicants should have had experience in a similar capacity, and preference will be given to candidates holding a recognised qualification.

Forms of application may be obtained from the Borough Engineer and Surveyor, 22-24, Nicholas Street, Burnley, to whom applications should be returned not later than 9th February, 1951.

C. V. THORNTON,
Town Clerk.

1772

CROWN AGENTS FOR THE COLONIES.

MEASURING SURVEYOR required by the Gold Coast Government, Public Works Department, for the construction of the Kumasi Central Hospital for two tours of 13 to 24 months each. Fixed consolidated salary between £1,000 and £1,200 a year, according to qualifications and experience. Free passages. Liberal leave on full salary. Candidates should be capable of measuring and checking work in progress, variations, preparation of interim valuations, and recording and checking contractor's claims data.

Apply at once by letter, stating age, full names in block letters, 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.27191.A, on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications, and will communicate only with applicants selected for further consideration.

1777

BOROUGH OF REDCAR.

APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the above-mentioned permanent appointment on the staff of the Borough Engineer Surveyor and Water Engineer at a salary in accordance with Grade A.P.T. IV (£480-£525). The appointment will be subject to the terms of the National Joint Council's Scheme of Conditions of Service, to the Local Government Superannuation Act, 1937, and the successful candidate will be required to undergo a medical examination.

Applicants should be experienced in the preparation of designs, working drawings, specifications, quantities and estimates for architectural and housing work, and should have passed the Intermediate Examination of the Royal Institution of British Architects.

Suitable housing accommodation will be provided for the successful applicant, if required.

Applications, stating age, qualifications and experience, and accompanied by three copies of recent testimonials, and appropriately endorsed, are to be delivered to R. Hilton, Esq., A.M.I.C.E., Borough Engineer, Municipal Buildings, Redcar, Yorks., not later than noon on Saturday, 10th February, 1951.

Canvassing, directly or indirectly, will disqualify.

H. CALDWELL,
Town Clerk.

Municipal Buildings, Redcar. 1773

January, 1951.

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**BOROUGH OF ILFORD.
APPOINTMENT OF ARCHITECTURAL ASSISTANT, A.P.T. GRADE VII.**

Applications are invited for the following appointment on the staff of the Borough Engineer's Department:—

- ARCHITECTURAL ASSISTANT.** Permanent staff. Salary in accordance with A.P.T., Grade VII, £635-£725-£710 per annum, plus London weighting.

Candidates should be Chartered Architects and Corporate Members of the Royal Institute of British Architects, and have a thorough knowledge of architectural works, with practical experience in the design and development of public buildings of all types, the preparation of specifications, and be capable of supervising and controlling contracts. The work will not be connected with post-war Housing schemes, or the construction of Schools.

The Council is prepared to consider (if necessary) the question of housing accommodation in connection with the appointment.

The above appointment is whole-time (private practice being prohibited), is subject to one month's notice on either side, to the provisions of the Local Government Superannuation Acts, the National Scheme of Conditions of Service, and medical examination.

Forms of application may be obtained from the Borough Engineer and Surveyor, Town Hall, Ilford, and should be returned to the undersigned not later than the 10th February, 1951.

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

K. F. B. NICHOLLS,
Town Clerk.

Town Hall, Ilford. 1731

January, 1951.

WELWYN GARDEN CITY AND HATFIELD DEVELOPMENT CORPORATIONS.

SENIOR ASSISTANT QUANTITY SURVEYOR.

Applications are invited for the appointment of Senior Assistant Quantity Surveyor, at a salary of £850 per annum.

Applicants should be experienced in taking-off quantities for housing schemes, commercial, industrial and public buildings, and in the preparation of Bills of Quantities, Estimates, Certificate Valuations and Final Accounts. Applicants should also be competent to supervise and take responsibility for such work under the direction of the Senior Quantity Surveyor.

Preference will be given to Members of the Royal Institution of Chartered Surveyors.

The appointment is superannuable and terminable by one month's notice on either side.

The successful applicant will be assisted in obtaining housing accommodation if required.

Applications, giving age, qualifications, and full details of present and past experience, salaries and appointments held, together with the names of three persons to whom reference may be made, should be addressed to the General Manager at Midland Bank Chambers, Welwyn Garden City, Herts., and be received by Saturday, 17th February.

1729

CROWN AGENTS FOR THE COLONIES.

QUANTITY SURVEYOR required by the Mauritius Government for one tour of 3 years in the first instance. Fixed salary, according to qualifications and experience, payable in local currency equivalent at the present Government rate of exchange to between £750 and £900 a year, plus cost-of-living allowance up to £180 a year. Gratuity, on satisfactory completion of services. Free passages. Liberal leave on full salary. Candidates should have had considerable experience of the normal duties of a Quantity Surveyor.

Apply at once by letter, stating age, full names in block letters, 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.26930.A, on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications, and will communicate only with applicants selected for further consideration.

1728

BOROUGH OF TOTTENHAM.

BOROUGH ENGINEER'S DEPARTMENT.

Applications are invited for the following vacant established posts, at salaries in accordance with the National Scales:—

- (a) ARCHITECTS. Grade A.P.T., VI or VII. £595-£660 or £635-£710.

- (b) ARCHITECTURAL ASSISTANT. Grade A.P.T., II, III or IV, £420-£465, £450-£495, or £480-£525.

Plus London weighting allowance, according to age.

Qualifications Required:—
Post (a): Applicants must hold an appropriate final professional qualification and have had at least 5 years' practical experience (including the period spent on theoretical training).

Post (b): The terms of the decisions of the National Joint Council for Local Authorities' Professional Services, dated 26th July, 1949, will apply, particulars of which will be forwarded with the application form.

The Council cannot offer housing accommodation.

Forms of application may be obtained from the Borough Engineer, Town Hall, N.15, to whom they should be returned not later than 12th February, 1951.

M. LINDSAY TAYLOR,
Town Clerk.

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ARCHITECTURAL DRAUGHTSMEN.

DEPARTMENT OF HEALTH FOR SCOTLAND invite applications from experienced Draughtsmen for three temporary posts of Architectural Draughtsman. The successful candidates will be employed on designs for traditional housing, multi-storey flats and non-traditional forms of house construction. Salary range £292-£510 (women £440). Form of application obtainable from Establishment Officer, Department of Health for Scotland (Room 30), St. Andrews House, Edinburgh, 1, must be returned by 24th February, 1951. 1748

RURAL DISTRICT COUNCIL OF GLOUCESTER.

ERECTION OF STABLES HOUSES, SITE WORKS AND SEWAGE DISPOSAL WORKS AT QUEDELEY.

The Council are desirous of proceeding with the above-mentioned works, and plans showing the extent of such works may be obtained from the Council's Architects, Messrs. Carrus-Wilson & Demuth, F. & L.R.I.B.A., The Cottage, Green Lane, Hardwicke, Glos.

Contractors wishing to tender for the works should make application to the Council's Architects on or before 12th February, 1951. Applications to the Architects must be accompanied by particulars of previous works of a similar nature executed by the Contractor.

W. J. KNIGHT,

Clerk to the Council.

Berkeley Chambers, Gloucester.

1751

CITY OF SHEFFIELD.

CITY ARCHITECT'S DEPARTMENT. Applications are invited for the following appointments:—

QUANTITY SURVEYORS:
Two Senior Quantity Surveyors. Grade VIII (£685-£760).

Applicants must have a wide experience in all classes of work, they should also be capable of working on their own initiative with only administrative supervision.

ASSISTANT QUANTITY SURVEYORS:
Grade V (£520-£570). Qualification: A.R.I.C.S. or A.I.Q.S.

Grade IV (£480-£525). Qualification: A.I.Q.S. or Inter. R.I.C.S.

All appointments will be subject to one month's notice on either side, and to the provisions of the Local Government Superannuation Act, 1937. Candidates must be under 40 years of age, or otherwise have previous local government service carrying a transfer value within the meaning of the Act, and the persons appointed will be required to pass a medical examination.

Canvassing will disqualify.
Applications must be made on the special form to be obtained from W. G. Davies, Esq., F.R.I.B.A., City Architect, Town Hall, Sheffield, 1, and should be returned to the undersigned not later than the first post on Monday, the 12th February, 1951.

JOHN HEYS,

Town Clerk.

Town Hall, Sheffield, 1.

1750

LONDON ELECTRICITY BOARD.

Applications are invited for the following appointments in the Architect's Section of the Chief Engineer's Department in Central London:—

(a) **ARCHITECTURAL ASSISTANTS.** Commencing salary will be from £500 per annum, dependent upon qualifications and experience.

Applicants should be studying for or have passed an intermediate examination of the R.I.B.A. be capable draughtsmen, and have had seven or eight years' experience in an Architect's office.

(b) **DRAUGHTSMEN.** Commencing salary will be from £350 per annum, dependent upon ability and experience.

Applicants should be neat draughtsmen, and preferably have had several years' experience in an Architect's office.

The salaries for the above posts are provisional pending granting of the posts under the National Agreement of the appropriate negotiating body.

Application forms, obtainable from Establishment Officer, 46, New Broad Street, E.C.2, on receipt of an addressed foolscap envelope, to be returned duly completed within 7 days. Please quote Ref. ES1/1138/A on envelope and all correspondence. 1761

CORPORATION OF GLASGOW—HOUSING DEPARTMENT.

APPOINTMENT OF TEMPORARY CLERK OF WORKS.

MOSS HEIGHTS—MULTI-STOREY FLATS. Applications are invited from experienced Clerks of Works to supervise the erection of the above flats.

Applicants should have considerable experience in the erection of large blocks of multi-storey flats, and should be thoroughly conversant with reinforced concrete construction and the supervision of mechanical and electrical services. The appointment will be for the duration of the work, and is likely to be in the vicinity of two years. The salary will be determined by qualifications and experience, and will be not less than £650 per annum.

Application Forms and Conditions of Employment should be obtained from the undersigned, to whom they are returnable on or before Wednesday, 14th February, 1951.

A. G. JURY,

Director of Housing.

20, Trongate, Glasgow, C.1

1752

CITY AND COUNTY OF BRISTOL.

CITY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of a **SENIOR ASSISTANT ARCHITECT**, Grade VI (£595×20×220×225-£660 per annum), on the permanent staff.

Applicants should be Associate Members of the Royal Institute of British Architects or hold equivalent qualifications, and have good general experience in design and construction.

The appointment is subject to the provisions of Local Government Superannuation Acts, 1937 and 1939, and the successful applicant will be required to pass a medical examination. Appointment terminable by one month's notice in writing on either side.

Housing accommodation provided if necessary at an economic rent.

Applications, giving full details, including age, training, qualifications, experience, present position and salary, and the names of two referees, must be delivered to the undersigned by Monday, 5th February, 1951.

J. NELSON MEREDITH, F.R.I.B.A.,

City Architect.

Eagle House, Colston Avenue, Bristol, 1. 1750

COUNTY BOROUGH OF TYNEMOUTH.

BOROUGH SURVEYOR'S DEPARTMENT.

STAFF.

Applications are invited for the following appointments:—

(a) **SENIOR ARCHITECTURAL ASSISTANT.** Grade VI, £595-£660.

Applicants should be Associates of the R.I.B.A. and have had good general architectural experience.

(b) **JUNIOR ARCHITECTURAL ASSISTANT.** Grade II, £420-£465.

Applicants should have attended a full-time course of Architecture and have passed the R.I.B.A. Intermediate examination of its equivalent.

(c) **SENIOR TOWN PLANNING ASSISTANT.** Grade VI, £595-£660.

Applicants should be Associates of the Town Planning Institute and should have experience of basic surveys, etc.

(d) **PLANNING ASSISTANT.** Grade V, £520-£570.

Applicants should be Associates of the Town Planning Institute or its equivalent.

(e) **JUNIOR PLANNING ASSISTANT.** Grade I-II, £390-£465.

Applicants should be studying for an examination of the Town Planning Institute and have had some experience of planning work.

HOUSING ACCOMMODATION:

The Corporation will be prepared to assist in the provision of housing accommodation in cases of difficulty in respect of appointments (a) and (c) above.

Applications, on forms to be obtained from the Borough Surveyor, Mr. D. M. O'Herlihy, B.Sc.(Eng.), M.A.E., 14, Northumberland Square, North Shields, together with copies of not more than three recent testimonials, should be addressed to the Borough Surveyor, to arrive by 10 a.m. on the 24th day of February, 1951.

All appointments are subject to the National Scheme of Conditions of Service, the Local Government Superannuation Act, 1937, a medical examination, and one month's notice on either side.

Canvassing, either directly or indirectly, will disqualify, and applicants must state whether or not to their knowledge they are related to any member of the Council or to a holder of any senior office under the Council.

Dated this 26th day of January, 1951.

(Sgd.) FRED. G. EGNER,

Town Clerk.

14, Northumberland Square, North Shields. 1776

WELSH REGIONAL HOSPITAL BOARD.

Applications are invited for the following appointments on the permanent staff of the Architect's Division:—

(a) **ONE ASSISTANT ARCHITECT.** A.P.T., VIII. Salary £685-£760.

(b) **TWO ASSISTANT ARCHITECTS.** A.P.T., VI. Salary £595-£660.

(c) **TWO ASSISTANT ARCHITECTS.** A.P.T., III. Salary £450-£495.

(d) **ONE ASSISTANT QUANTITY SURVEYOR.** A.P.T., IV. Salary £480-£525.

Candidates for posts (a) and (b) must be registered Architects and have passed the Final Examination of the Royal Institute of British Architects. They should have had a wide experience in planning and construction and in the preparation of working drawings, etc. Experience in the planning and design of important hospital buildings would be an advantage.

Candidates for (c) should hold the Intermediate Certificate of the Royal Institute of British Architects, should be good draughtsmen, and should be accustomed to preparing working and detailed drawings and specifications.

Candidates for (d) should hold the Intermediate Certificate of the Royal Institute of Chartered Surveyors, and should have had experience in the preparation of Bills of Materials, detailed estimates of cost, and the settling of final accounts.

The above appointments are superannuable, and are terminable by one month's notice on either side.

Applications, stating present appointment, age, qualifications and experience, with the names of two referees, should be addressed to the Secretary of the Board, Temple of Peace and Health, Cathays Park, Cardiff, to reach him not later than 20th February, 1951. 1775

GOVERNMENT OF NORTHERN IRELAND.

CIVIL SERVICE COMMISSION.

Applications are invited for the post of **SENIOR QUANTITY SURVEYOR**, in the Works Division, Ministry of Finance, Northern Ireland. Subject to a probationary period of two years, the post will be permanent and pensionable. Candidates must be British subjects, ordinarily resident in the United Kingdom.

Qualifications: Candidates must be Fellows or Associates of the Royal Institution of Chartered Surveyors (Quantity Section). They must be thoroughly proficient in all branches of quantity surveying, including the preparation of Bills of Materials, approximate estimates, diapidations, the interpretation of contract documents, and the settlement of large and intricate final accounts. Experience in a Quantity Surveyor's office and in the supervision of staff is an essential qualification; experience in engineering as well as architectural services will be an advantage.

Remuneration: The salary scale attaching to the appointment is £950×2.50-£1,100 per annum.

Preference will be given to suitably qualified candidates who served with H.M. Forces during wartime, provided the Commissioners are satisfied that such candidates can, or within a reasonable time will, be able to hit the post efficiently.

Applications must be made on the prescribed form, which may be obtained from the Secretary, Civil Service Commission, Stormont, Belfast, and must be returned, duly completed, with copies of two recent testimonials so as to reach him not later than 27th February, 1951. 1771

Partnership

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

ARCHITECT, with 23 years' experience in all classes of architectural works, seeks Junior Partnership with established London Architect. Box 1665.

A R.I.B.A., Dip.T.P. (Lond.), with 16 years' wide experience on housing, schools, flats, industrial work, etc., seeks Partnership or position leading thereto. Any interesting proposition considered. Please reply to Box 1753.

Architectural Appointments Vacant

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

FULLY qualified **ARCHITECTURAL ASSISTANT** required for West End office. Capable of handling contracts. State qualifications, experience, and salary required. Box 1586.

ARCHITECTURAL DRAUGHTSMAN required immediately. Interesting and varied work. 5-day week. Apply in writing, stating age and experience, to the Austin Motor Co., Ltd., Longbridge, Birmingham (Personnel Dept.). 1666

CO-OPERATIVE WHOLESALE SOCIETY, LTD.,

ARCHITECT'S DEPARTMENT, LONDON.

APPLICATIONS are invited for the following:—

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. Experience in shopping premises and light industrial work would be an advantage.

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 and qualifications, to the Chief Architect, Co-operative Wholesale Society, Ltd., 99, Leam Street, London, E.1. 1701

TWO qualified **ARCHITECTURAL ASSISTANTS**, with experience in design and working drawings, required in private practitioner's office, Glasgow. Salary £500 to £700, according to qualifications. Box 1712.

NORMAN & DAWBARN require an **ARCHITECTURAL ASSISTANT** of intermediate standard. Salary by arrangement. Apply in writing, stating what available, and giving age, particulars of training and experience, to 5, Gower Street, W.C.1. 1704

ARCHITECT'S ASSISTANT required for ecclesiastical and general practice. Apply, stating age, experience, and salary required, to Robert Potter, F.R.I.B.A., 21, The Close, Salisbury. 1752

ARCHITECTURAL ASSISTANT, preferably qualified, required urgently by City (London) Architect. Small general practice. Write, giving full particulars, to Box 1755.

SOUTHAMPTON.—Busy firm of Architects require **ASSISTANT ARCHITECT**, with some office experience; alternatively medium grade **ASSISTANT** of at least intermediate standard, with sound knowledge of design of commercial and industrial buildings. Applications, giving full particulars, including qualifications, experience, and salary required, to Box 1756.

AN ARCHITECTURAL DRAUGHTSMAN is required by the National Gas and Oil Engine Co., Ltd., Ashton-under-Lyne. Candidates should apply in writing, giving as much information as possible as to previous experience, age, etc., and should address their applications to the Personnel Manager. 1754

REQUIRED ARCHITECTURAL ASSISTANT. capable of undertaking working drawings and detail for prefabricated house export project. Apply **Barnard & Smith**, 50, Knightsbridge Court, Sloane Street, S.W.1. Telephone SLOane 0351. 1734

SINGLE ASSISTANT. Intermediate standard. car driver, required for live country office. Experienced measured surveys. Full details with salary required to Box 1765.

NAIROBI.—Qualified **SENIOR ASSISTANT**, preferably over 30 and single. Salary £750x £100 to £650. Further particulars from Overseas Architect's Service, 5, Welldon Crescent, Harrow, Middx. 1766

ARCHITECTURAL ASSISTANTS required, of intermediate standard, for work on new schools, industrial buildings, hospital extensions, etc. Write, giving full particulars, to **Johns and Slater**, F./A.R.I.B.A., 32, Foundation Street, Ipswich. 1764

JUNIOR ARCHITECTURAL ASSISTANT required by firm of West End Architects engaged on hospital, laboratory, and other work. 2nd or 3rd year night-school student of recognised Architectural School. Write Box 1746, or telephone Welbeck 8962.

ASSISTANCE required submission original but practical design for Coventry Cathedral in reinforced concrete. Fees and details to **BM/GARD**, London, W.C.1. 1737

JUNIOR ARCHITECTURAL ASSISTANT required. Poulton & Freeman, F./R.I.B.A., 15, Robert Adam Street, W.1. (WEL. 8896.) 1744

ARCHITECTURAL ASSISTANT, between Inter. and Final standard, required N.E. London office. Varied and interesting work of a contemporary nature, mainly industrial and commercial. Write experience, age, and salary required to Box 1735.

APPLICATIONS are invited for position as **SENIOR ARCHITECTURAL ASSISTANT** in office of Architect, British Railways, King's Cross Station, London, N.1. Applicants should be Associates of R.I.B.A., good contemporary designers, able to take responsibility for day-to-day conduct of major contracts. Salary range £12 to £14 per week, according to qualifications and experience. The Department is engaged on design and construction of industrial, commercial and domestic buildings, and offers varied and interesting work. Applications should be addressed to Civil Engineer, Staff Section, Eastern Region, British Railways, King's Cross Station, London, N.1. 1736

QUANTITY SURVEYORS require **ASSISTANT** for Branch Office, Harrow, with experience in taking off, measuring, and working up. Reply in writing, stating age, experience, and salary required, **George Lewis & Son**, 49, Sheepcote Road, Harrow, Middlesex. 1774

QUALIFIED ARCHITECTURAL ASSISTANT required for large London office. Must be fully experienced and able to take complete charge of jobs. Good prospects for keen man. Apply Box 1773.

ARCHITECTURAL ASSISTANT wanted. Salary in accordance with Whitley Council Scales for Health Service employees, A.P.T., V (£520 to £570 per annum). Applications, with particulars of qualifications and experience, and names of two referees, should be lodged by 19th February, 1951, with the Secretary, Northern Regional Hospital Board, Raigmore Hospital, Inverness. 1772

AN exceptional opportunity exists for experienced and competent **ASSISTANT ARCHITECTS** and **ARCHITECTURAL ASSISTANTS** in the Design Section of an organisation currently engaged on a large-scale export programme of prefabricated houses. Initiative, enthusiasm, and an ability to work as part of a team are essential attributes. Applications should be accompanied by full details of experience and qualifications to Box 1770.

Architectural Appointments Wanted

ASSISTANT ARCHITECT, qualified, 12 months' experience, requires progressive position in London area. Box 81.

YOUNG LADY ASSISTANT, with drawing office and secretarial experience, requires position with Architect. London, or within 50 miles. Box 80.

Other Appointments Vacant

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

CAST STONE ESTIMATOR required by well-established firm in the Midlands. Past experience essential. Age up to 50 acceptable. Please write, giving details of past experience and salary required. Box 1757.

Services Offered

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

R.I.B.A. and Assistants specialise in Perspectives and Sketches. Please reply to Box 1692.

ARCHITECT, qualified in Poland, with good knowledge of British practice, offers spare-time assistance, London area. Sketch Design, Working Drawings, Surveys. Box 1706.

PERSPECTIVES in all mediums. Professional Artist, many years with London Architect producing only perspectives, can now accept free lance commissions. Quotations and drafts returned in few hours. **F. RANDALL FORWARD**, Diploma Fine Art, London University, etc., 9, Elliott Avenue, Southwold, Suffolk. 1708

FULLY experienced **ASSISTANT**, Chartered, looks for change requiring considerable responsibility. Post leading to junior or salaried partnership preferred. Not London. Box 1755.

LADY SECRETARY desires change of employment in S.W.1 district. Architectural and Surveyor's experience. Box 1745.

ARCHITECTURAL Perspectives in any medium. No satisfaction—no money. **Roger Hallett**, 17, West Mail, Notting Hill Gate, W.8. 1722

EXPERIENCED ASSISTANT seeks spare-time work. Sketch Plans, Working Drawings, Details of Tracings, etc. Box 1768.

ARCHITECTURAL MODELS and Dioramas. **Edward J. Ashenden**, A.R.C.A., 35, Chenit Studios, 183, Kings Road, S.W.3. Tel.: Flax 6103. 2566

FRAMING AND MOUNTING of Drawings and Plans is a special service offered to Architects by **The Rowley Gallery, Ltd.**, 87, Campden Street, Kensington Church Street, W.8. Park 4349. 3000

FREE-LANCE Surveyor offers Services to Architects requiring accurate surveys of land and buildings, levelling, contouring, etc.; own car and complete equipment. 2772

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BOND STREET.—Partly-furnished Room and telephone service offered to Surveyor or Architect requiring accommodation in this area. Low rent, including heating and lighting. Write Box PF.32022, Samson Clark's, 57-61, Mortimer Street, W.1. 1733

WEST END.—Good address. Maisonette of 2 rec., 2 bed, kitchen and bathroom, and first floor. Professional offices of approx. 600 sq. ft. To let as a whole at £500 p.a. No premium. Apply Box 1575.

Educational Announcements

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

R.I.B.A. EXAMS.—**Mr. L. Stuart Stanley**, M.A., F.R.I.B.A., M.T.P.I., Dist. in I.P. (Tutor in the Sch. of Arch. Lond. Univ.) prepares students by correspondence tuition. 15, North Road, N.6. MUU. 8104.

I.A.A.S. FORTHCOMING EXAMINATIONS. The Incorporated Association of Architects and Surveyors will hold examination in the following sections during the week commencing 28th May, 1951:— Architectural (Intermediate and Final); Quantity Surveying (Intermediate and Final); Building Surveying—Municipal (Intermediate and Final); Building Surveying—Non-Municipal (Intermediate and Final); Fire Surveying (Direct Associateship).

The normal centres for examinations are London, Birmingham, Bristol, Cardiff, Edinburgh, Glasgow, Liverpool, Norwich, Nottingham, Southampton and York.

The closing date for receipt of candidates' applications (on permission to sit (which must be made on the prescribed form) will be Monday, 2nd April, 1951.

Copies of syllabuses, application forms and other information are obtainable from the Assistant Secretary, I.A.A.S., 75, Eaton Place, London, S.W.1. 1758

R.I.B.A. EXAMS.—**Mr. L. Stuart Stanley**, M.A., F.R.I.B.A., M.T.P.I., Dist. in T.P. (Tutor in the Sch. of Arch. Lond. Univ.) and **Mr. G. A. Crockett**, B.A., A.R.I.B.A., A.M.T.P.I., F.R.S.A., Donaldson Medallist, prepare Students by correspondence tuition. **Stuart Stanley & Crockett**, 10, Adelaide Street, Strand, W.C.2. TEM. 1603/4.

UNIVERSITY OF LONDON.

A course of two Lectures, entitled "Thoughts on Architecture To-day," will be given by **Michael Waterhouse**, P.P.R.I.B.A., at 5.30 p.m. on 8th and 15th February, at University of London, Senate Square (entrance from Malet Street or Russell Square, W.C.1).

Admission free, without ticket.

JAMES HENDERSON, Academic Registrar. 1241



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21 Queenstown Road S.W.8.

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Alphabetical Index to Advertisers

| | PAGE | | PAGE | | PAGE |
|--|---------|--|--------|---|---------|
| Abbey Building Supplies Co. | lxxi | Evode, Ltd. | lx | National Federation of Clay Industries, The. | lxviii |
| Acerington Brick & Tile Co. | lxxvii | Findlay, Alex. & Co., Ltd. | lxx | Necus, W. & M., Ltd. | lxxi |
| Adamite Co., Ltd. | lxxvii | Finewood Products, Ltd. | lxxi | North British Chemical Co., Ltd. | lv |
| Allied Guilds. | lxxvii | Fordham Pressings, Ltd. | xxx | Old Bleach Furnishings, Ltd. | lxx |
| Anderson Construction Co., Ltd. | lxxi | French, Thomas, & Sons, Ltd. | lxxvii | Peglers, Ltd. | lxxii |
| Architectural Press Ltd., The. | lxxiv | Gibson, Arthur L., & Co., Ltd. | lxxvii | Phillips Lamps. | lxxvii |
| Automatic Pressings, Ltd. | lxxiv | Glow-worm Boilers, Ltd. | lxxvii | Pilkington Bros., Ltd. | xxi |
| Bath Cabinet Makers & Artcraft, Ltd. | lxxiv | Gyproc Products, Ltd. | lx | Pollock Bros. (London), Ltd. | xxv |
| Benham & Sons, Ltd. | lxiv | Halder, J. & Co., Ltd. | lxiii | Pritchett & Gold E.P.S. Co., Ltd. | xxv |
| Benger, Lewis (Great Britain), Ltd. | lxvii | Hall, J. & E., Ltd. | lx | Rentokil, Ltd. | lxxvii |
| Berry, Z. D., & Sons, Ltd. | lxvii | Hall, Robt. H., & Co., Ltd. | lx | Rolyat Tank Co., Ltd., The. | ii |
| Birmingham & Blackburn Construction Co., Ltd. | lxxviii | Hammond & Champness, Ltd. | lxxiii | Rownsun Drew & Clydesdale, Ltd. | lxxviii |
| Booth, John, & Sons (Bolton), Ltd. | xxiv | Harvey, G. A., & Co. (London), Ltd. | lxxix | Ruberoid Co., Ltd. | lxv |
| Box, C. W. | lxxvi | Hollis Bros., Ltd. | xvi | Sadd, John, & Sons, Ltd. | xx |
| Briggs, Wm., & Son, Ltd. | lxxix | Hollway, W. F., & Brother, Ltd. | l | Sankey, J. H., & Son, Ltd. | xi |
| British Challenge Glazing Co., Ltd., The. | xxxix | Hope, Henry, & Sons, Ltd. | lxiii | Scaffolding (Ot. Britain), Ltd. | xiv |
| British Insulated Callenders Cables, Ltd. | xii | Horseley, Smith, Ltd. | lxiii | Seconastic, Ltd. | xv |
| British Paints, Ltd. | lxiii | Hotpoint Electric Appliance Co., Ltd. | lxvii | Shannon, Ltd., The. | lxi |
| Britnise Electrical Co., Ltd. | xxxvi | Hydro Engineering. | lxvii | Sharnan, R. W., Ltd. | lxvi |
| Broad & Co., Ltd. | lxv | Ibstock Brick & Tile Co., Ltd. | lxvii | Sissons, W. & G., Ltd. | lxix |
| Brooks Air & Heat Systems, Ltd. | xxxiv | Imperial Chemical Industries, Ltd. | lxvii | Smith Fireproof Floors, Ltd. | ii |
| Brown, Donald (Brownall), Ltd. | lxvi | Institute of Registered Architects. | lxvii | Smith, G. H., & Partners. | lxiv |
| Bryant, C., & Son, Ltd. | v | International Correspondence Schools. | lxvii | Smith & Pearson, Ltd. | lxv |
| Building Industries Services, Ltd. | lxxvii | Jenson & Nicholson, Ltd. | xxix | Smith & Wellstood, Ltd. | lxxix |
| Carter & Co., Ltd. | xxxii | Johanson Floors. | li | South on Lime Association, The. | xvi |
| Celcon, Ltd. | x | Kerner-Greenwood & Co., Ltd. | lxviii | Stramit Boards, Ltd. | lvi |
| Cement Marketing Co., Ltd., The. | xix | Kingfisher, Ltd. | lxviii | Sundaala Board Co., Ltd. | lxvi |
| Cole, E. K., Ltd. | lxvii | King, George W., Ltd. | lxviii | Taylor, R., & Co. (Ironfounders), Ltd. | lxvi |
| College of Estate Management. | lxvii | Kwikform, Ltd. | lxviii | Temple Varnish Co., Ltd., The. | lxvii |
| Colt Ventilation, Ltd. | iii | Labig, John, & Son, Ltd. | lxviii | Thorn, J., & Sons, Ltd. | lxvii |
| Commercial Marble & Tiles, Ltd. | lxvi | Leatherfor, Ltd. | lxviii | Thorp, J. B. | lxvii |
| Crabtree, J. A., & Co., Ltd. | lx | Leigh, W. & J., Ltd. | lxviii | T.M.C. Harwell (Sales), Ltd. | lxv |
| Dawmays, Ltd. | vi | Lever, James, & Sons, Ltd. | lxviii | Tri-tol, Ltd. | lxv |
| De la Rue, Thomas, & Co., Ltd. | lxviii | Litholeum Manufacturers' Association. | lxviii | Tripart Foundry, Ltd. | lxv |
| Dorman Long & Co., Ltd. | lxviii | Liotex Asbestos Flooring Co., Ltd. | lxviii | Troughton & Young (Lighting), Ltd. | lxv |
| Dreadnought Fireproof Doors (1930), Ltd. | lxviii | Loft Ladders, Ltd. | lxviii | True Fluor, Ltd. | lxvii |
| Dunlop Rubber Co., Ltd. | lxviii | Luxfer, Ltd. | lxviii | Turners Asbestos Cement Co., Ltd. | lxvii |
| Durable Asphalt Co., Ltd. | lxviii | M. Andrews & Forbes, Ltd. | lxviii | United Paint Co., Ltd., The. | lxvii |
| Eastwoods, Ltd. | lxviii | Mallinson, Wm., & Sons, Ltd. | lxviii | Vermiculite, Ltd. | lxvii |
| Ebor Concrete, Ltd. | lxviii | Mander Bros., Ltd. | lxviii | Versil, Ltd. | lxvii |
| Edgar, Wm., & Son, Ltd. | lxviii | Maple & Co., Ltd. | lxviii | Wales Dove Bitumastic, Ltd. | lxvii |
| Elgood, E. J., Ltd. | lxviii | Murray & Scott, Ltd., The. | lxviii | Ward, Thomas W., Ltd. | lxvii |
| Ellis School of Architecture, The. | lxviii | Mellows & Co., Ltd. | lxviii | Wardle Engineering Co., Ltd. | lxvii |
| Ellison, George, Ltd. | lxviii | Metal Sections, Ltd. | lxviii | West, A., & Partners, Ltd. | lxvii |
| English Joinery Manufacturers' Association (Inc.) | lxviii | Mills Scaffold Co., Ltd. | lxviii | Wheeler, F. H., & Co., Ltd. | lxvii |
| | | Morris, Herbert, Ltd. | lxviii | Whittle, R. W., Ltd. | lxvii |
| | | Mumford Bailey & Preston, Ltd. | lxviii | Zinc Alloy Rust Proofing Co., Ltd. | lxviii |

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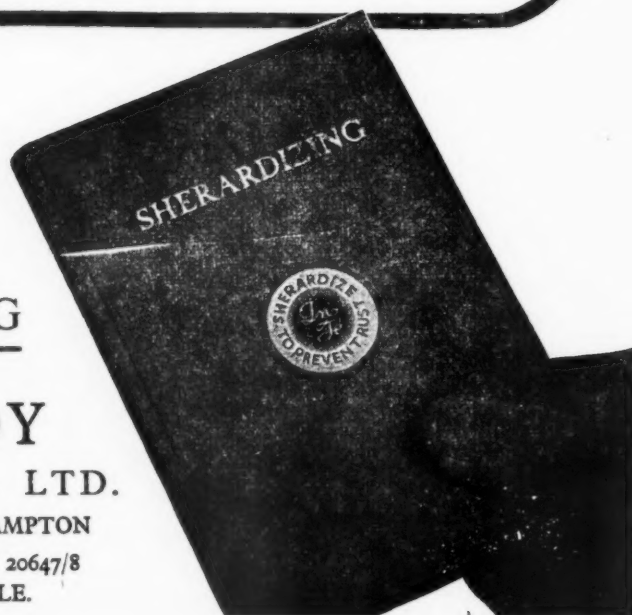
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PAGE

xviii
lxxi
lv
lxx
lxii
lxxvii
xxd
xliv
xxv
lxxvii
ii
lxviii
xlv
xx
xi
xiv
xv
lxi
lxvi
lxxx
ii
lxiv
lxv
lxxxix
xvi
lvi
lxvi
lvii
lxxiv
lxxxvii
lix
iv
lvii
xxii
lxxi
lxi
lviii
vii
lxix
xxxii
lxx
lx
lxxxviii

ST

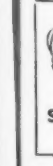
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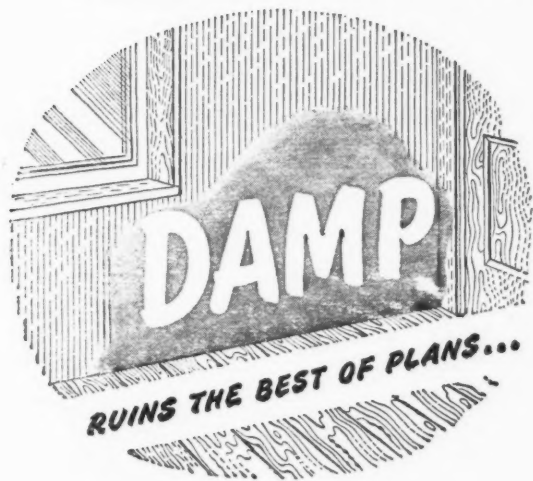


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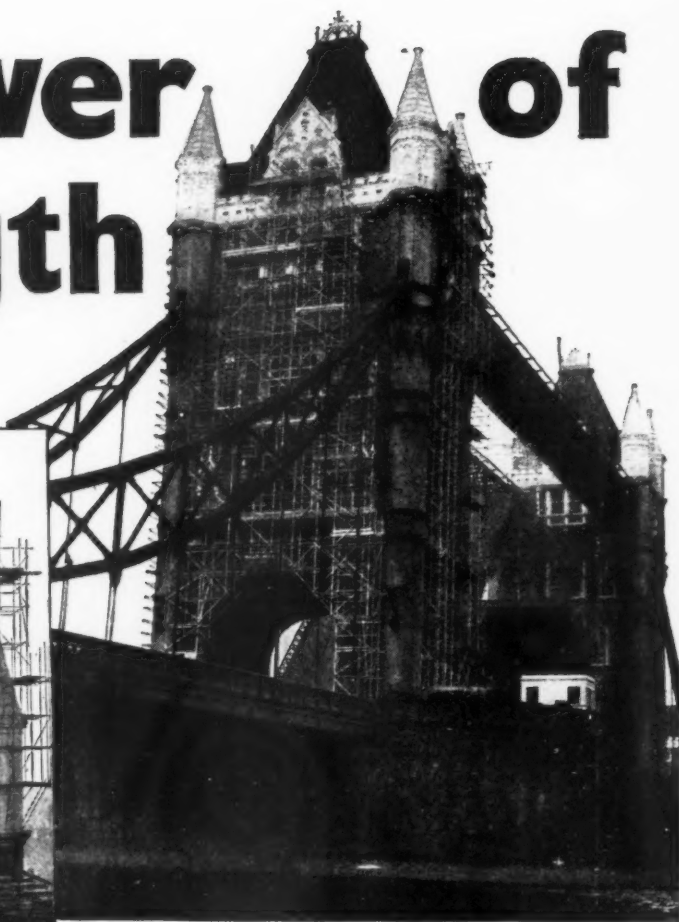
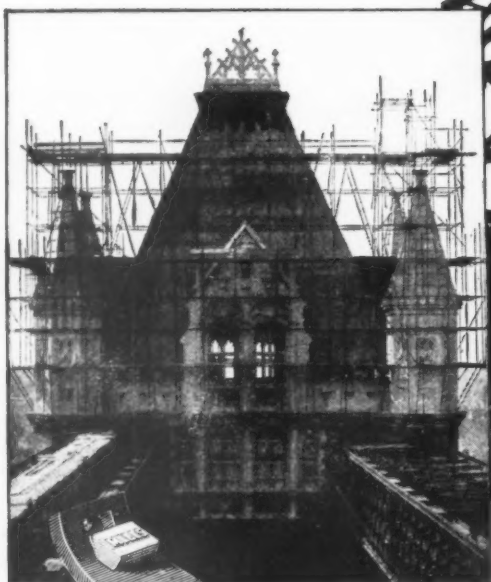
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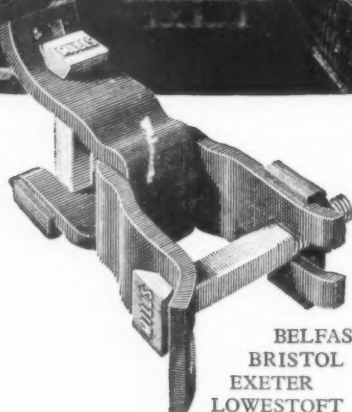
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