THE ARCHITECTS' JOURNAL

standard contents

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

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THE ARCHITECTURAL PRESS
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Registered as a Newspaper.

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

IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1. Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 75, Eaton Place, S.W.1. Sloane 3158/1601
IIBD	Incorporated Institute of British Decorators. Drayton House, Gordon Street, W.C.1. Euston 2450
ILA	Institute of Landscape Architects. 12, Gower Street, W.C.1. Museum 1783
I of Arb.	Institute of Arbitrators, 35/37, Hastings House, 10, Norfolk Street, Strand, W.C.2. Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1. Museum 7197/5176
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3. Avenue 6851
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1. Abbey 6172
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1. Sloane 7128
IWA	Inland Waterways Association. 11, Gower Street, W.C.1. Museum 9200
LIDC	Lead Industries Development Council. Eagle House, Jermyn Street, S.W.1. Whitehall 7264/4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1. Museum 3891
MARS	MARS Group (English Branch of CIAM). Secretary: Gontran Goulden, Building Centre, 9, Conduit Street, W.1. Mayfair 8641
MOA	Ministry of Agriculture and Fisheries. 55, Whitehall, S.W.1. Whitehall 3400
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1. Mayfair 9400
MOH	Ministry of Health. Whitehall, S.W.1. Whitehall 4300
MOLGP	Ministry of Local Government and Planning. 23, Saville Row, W.1. Regent 8411
MOLNS	Ministry of Labour and National Service, 8, St. James's Square, S.W.1. Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, Victoria Embankment, W.C. Gerrard 6933
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1. Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1. Reliance 7611
NAMMC	Natural Asphalte Mine-Owners and Manufacturers Council. 94-98, Petty France, S.W.1. Abbey 1010
NAS	National Association of Shopfitters. 9, Victoria Street, S.W.1. Abbey 4813
NBR	National Buildings Record. 37, Onslow Gardens, S.W.7. Kensington 8161
NCBMP	National Council of Building Material Producers, 10,Princes Street, S.W.1.Abbey 5111
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1. Langham 4041/4054
NFBTO	National Federat on of Building Trades Operatives, Federal House, Cedars Road, Clapham, S.W.4. Macaulay 4451
NFHS	National Federation of Housing Societies. 13, Suffolk St., S.W.1. Whitehall 1693
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1. Langham 4341
NPL	National Physical Laboratory. Head Office, Teddington. Molesey 1380
NSA	National Sawmilling Association. 14, New Bridge Street, E.C.4. City 1476
NSAS	National Smoke Abatement Society. Chandos House, Buckingham Gate, S.W.1. Abbey 1359
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1. Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1. Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1. Whitehall 9936
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh. Edinburgh 20396
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1. Langham 5721
RICS	Royal Institution of Chartered Surveyors. 12, Great George St., S.W.1. Whitehall 5322/9242
RFAC	Royal Fine Art Commission. 22A, Queen Anne's Gate, S.W.1. Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1. Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2. Trafalgar 2366
RSI	Royal Sanitary Institute. 90, Buckingham Palace Road, S.W.1. Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19. Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1. Victoria 2186
SCR	Society for Cultural Relations with the USSR. 14, Kensington Square, London, W.8. Western 1571
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1. Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3. Mansion House 3921
SIA	Structural Insulation Association. 14, Moorgate, London, E.C.2. Central 4444
SIA	Society of Industrial Artists. 7, Woburn Square, W.C.1. Langham 1984
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen.
SPAE	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1. Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2. Temple Bar 5006
TDA	Timber Development Association. 21, College Hill, E.C.4. City 4771
TGC	The Gas Council. 1, Grosvenor Place. S.W.1. Sloane 4554
TPI	Town Planning Institute. 18, Ashley Place, S.W.1. Victoria 8815
TTF	Timber Trades Federation. 69, Cannon Street, E.C.4. City 4444
WDC	War Damage Commission. Devonshire House, Mayfair Place, Piccadilly, W.1. Mayfair 8866
WEDA	Welfare Equipment Development Association. 74, Victoria Street, S.W.1. Victoria 5783
ZDA	Zinc Development Association. Lincoln House, Turl Street, Oxford. Oxford 47988

John Barnes Ltd., Hampstead, *chose Tygan for the upholstery of the chairs in the restaurant of this well-known store.*

In restaurants, bars and cafés where smart appearance counts for so much in attracting custom, and durability is essential to keep down maintenance costs, Tygan woven fabric is a natural choice for the upholstery. It wears wonderfully, is washable and is available in a wide range of pleasing colours and designs.

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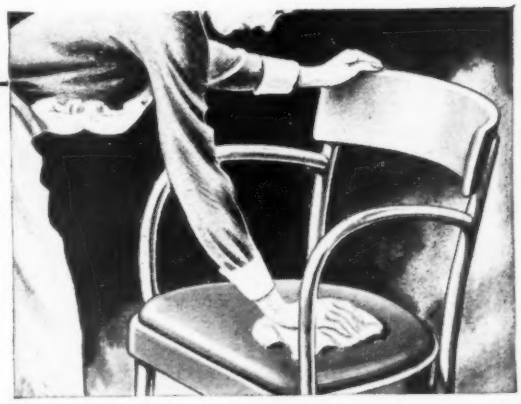
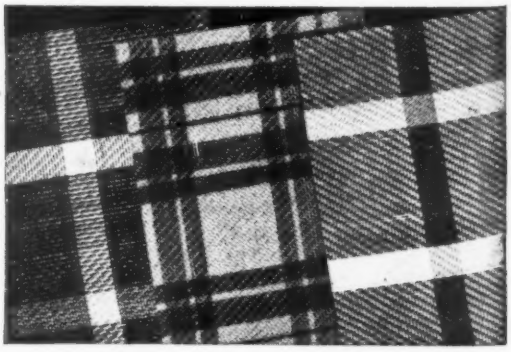


It's washable. *Tygan can be wiped clean with a damp cloth as easily as a glass-top table. Being non-absorbent it is never damp.*



Attractive colours and designs. *The lovely clear colours and smart designs in which Tygan is available afford every opportunity for the achievement of successful decorative effects.*

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Rooms of distinction with their quiet dignity and charm, attributable to simplicity of setting, owe much to the use of Walpamur Quality Paints.

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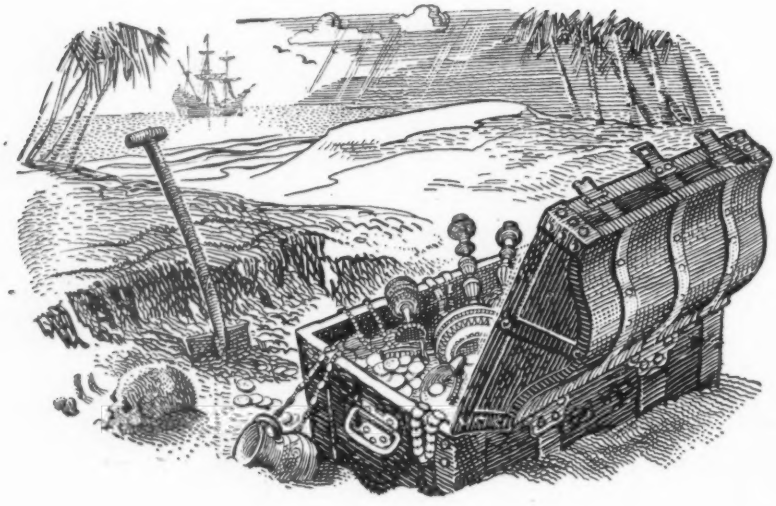
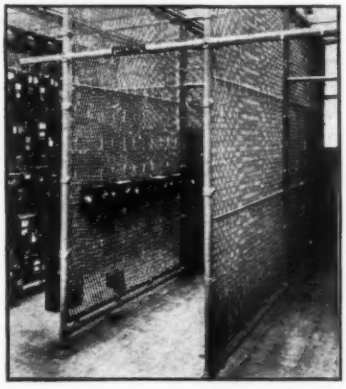
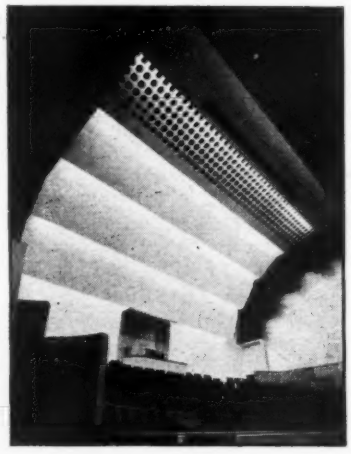


Below : "Expamet" Expanded Metal Meter Testing Frames at Paisley for South West of Scotland Electricity Board, Clyde Sub-Area.



Below : "BB" Expanded Metal Lathing used for Acoustic Proscenium Hood at Civic Halls, Wolverhampton. Architects : Messrs. E. D. Lyons & L. Israel, A/A.R.I.B.A., London.



It was Shakespeare who wrote : "the purest treasure mortal times afford, Is spotless reputation." To others, treasure merely conjures up a picture of gold and jewels found on desert islands. But, in fact, treasure is anything of real service to mankind. Consider therefore the innumerable uses of Expanded Metal which impinge upon the daily round of work and leisure, almost from the cradle to the grave.

• • •

Seen or unseen it does its job. It is hidden in the structure of a building as reinforcement for concrete or brickwork ; or as a background and "key" for the plaster which has made possible the beautiful and intricate suspended ceilings and the strong, fire and impact resisting plaster partitions. Among the countless visible uses are : guards for machinery, windows, trees, heaters and radiators; surrounds to lift shafts; ventilators; letter trays and waste paper baskets ; openwork flooring and partitions ; pedestrian barrier guards; decorative grilles for radio and loudspeaker systems.

• • •

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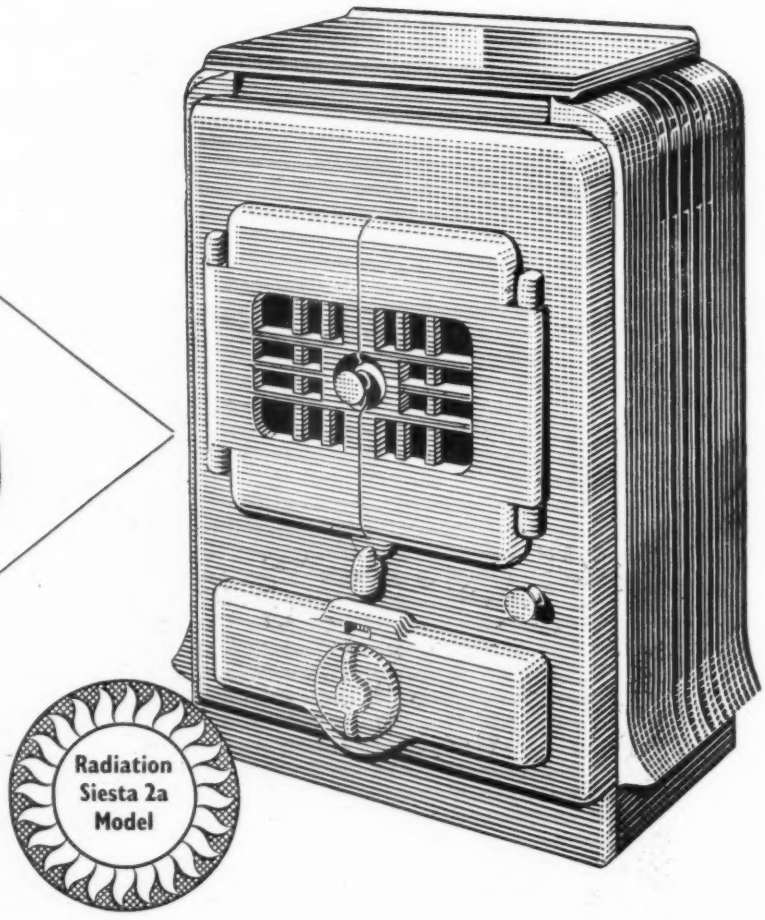
57

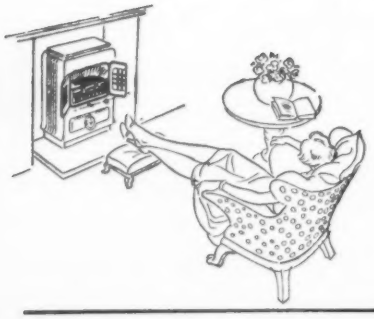
in over 200,000 homes



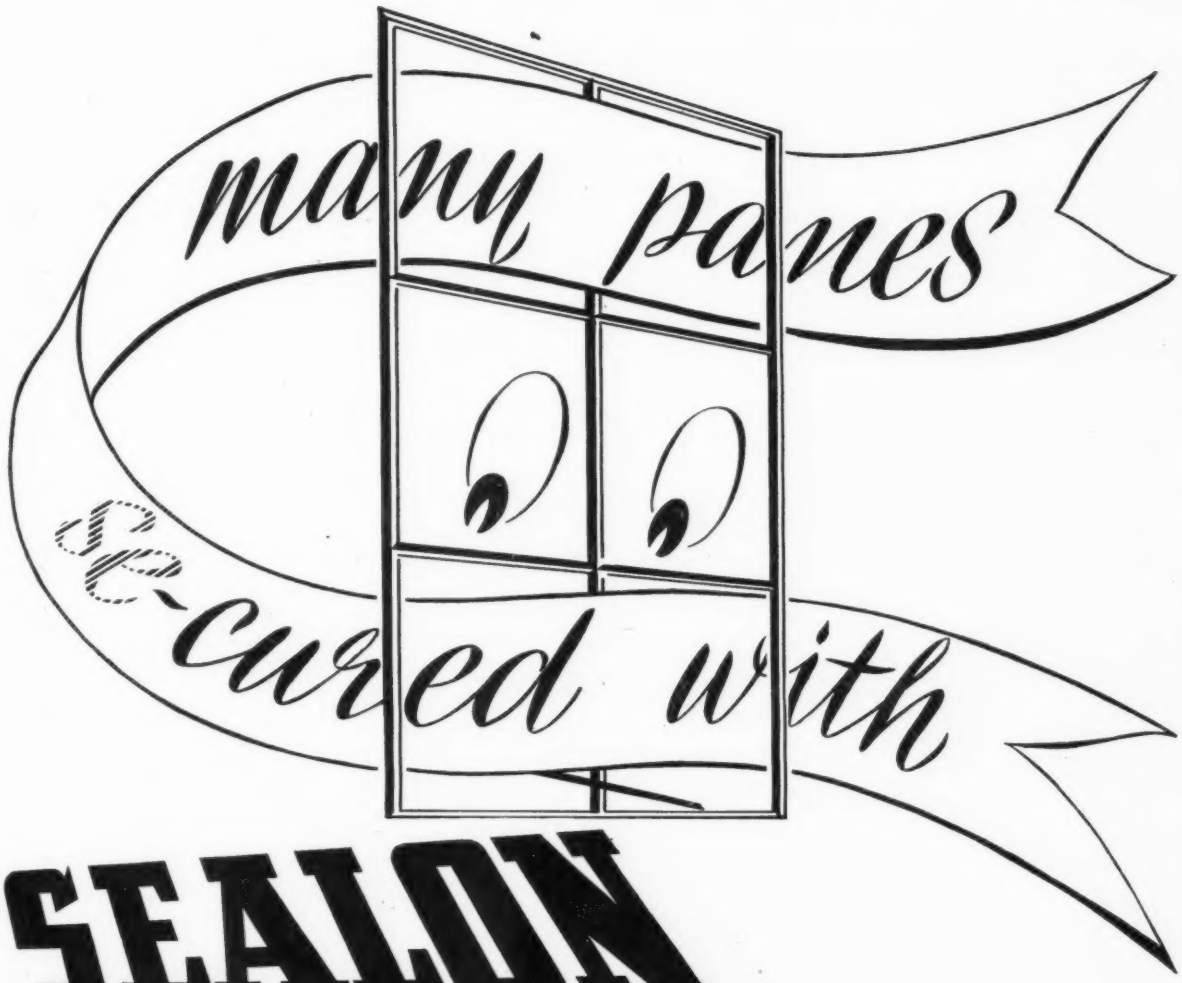
With the pressing national call for fuel economy, it was hardly surprising that Radiation 'Siesta' Model Stoves, providing the most economical form of space and water heating yet devised, should have been widely used in Government sponsored housing schemes. Economy is not, however, the only advantage of this remarkable stove; it has won genuine popularity for its cleanliness, good appearance, ease of operation and reliability. Technical details and fixing instructions will gladly be supplied. Please address enquiries to the Solid Fuel Division of Radiation Group Sales Ltd., Leeds 12.

Radiation "Siesta" 2a Model can be supplied either free-standing or built in. With or without water-heating boiler. Night and day burning on any of the usual domestic solid fuels. Capable of heating a room of up to 2,000 cu. ft. with boiler, or 3,000 cu. ft. without boiler.

The Solid Fuel Division co-ordinates the sales organisation of the three factories controlled by Radiation Ltd. producing solid fuel appliances. They are Wilsons & Mathiesons Ltd., Leeds, 12. The Eagle Range and Grate Co., Ltd., Aston, Birmingham 6 The Park Foundry (Belper) Ltd., Belper, Derbyshire.



SOLID FUEL Radiation STOVES



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metal casement PUTTY

Down in the cold Antarctic of South Georgia, at many places on the Equator or in the more temperate zones there are hundreds of installations of long standing Safely Sealed with SEALON. SEALON is supplied ready for use, keeps indefinitely when stocked, will not crack or run and may be painted in three to four days.

SEALON Metal Casement Putty is manufactured by the largest exclusive manufacturers of Putties and similar compositions in Gt. Britain.

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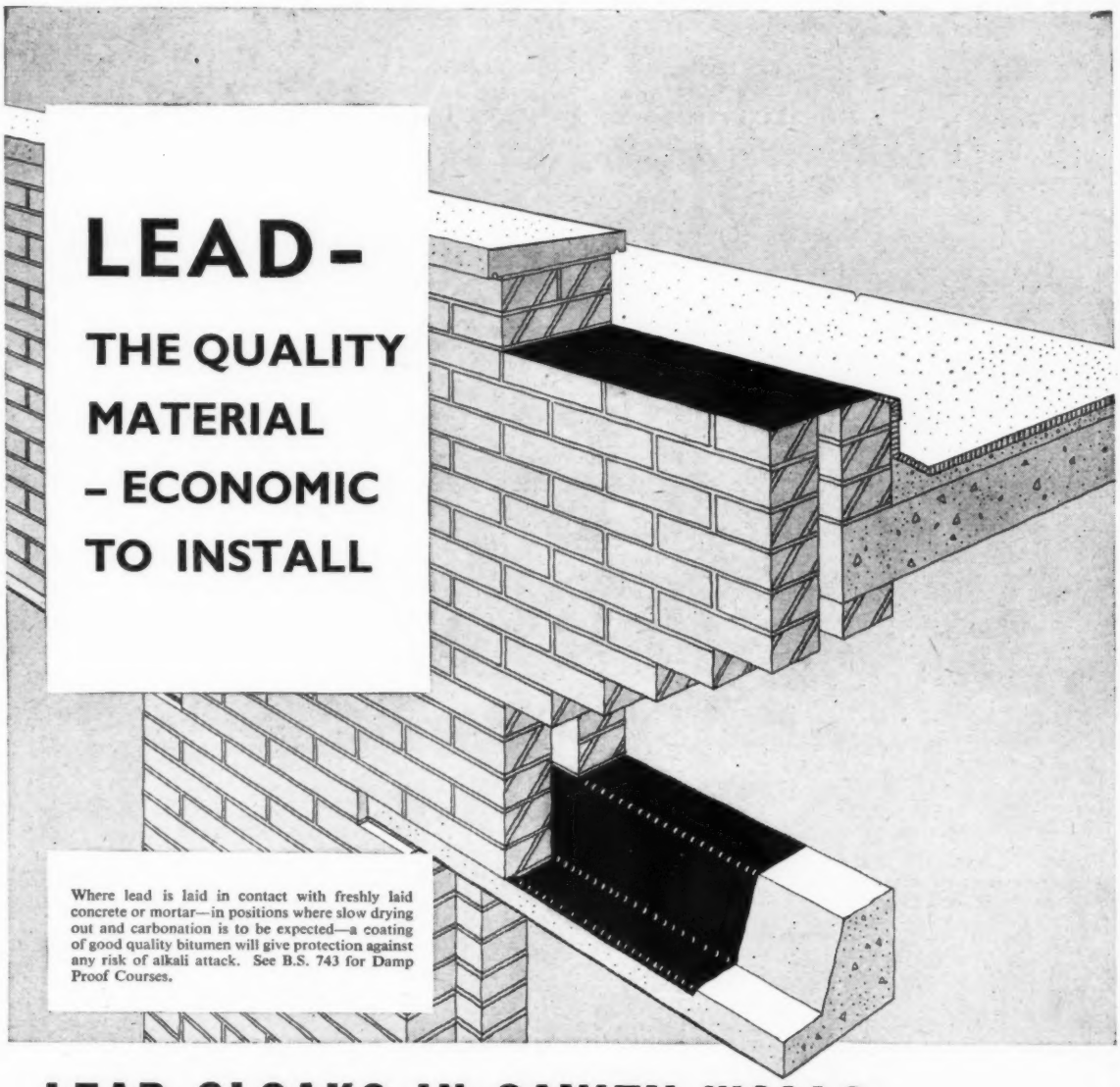

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LEAD SHEET is acknowledged as the best material for cloaks in cavity walls and similar d.p.c.'s because of its permanence. It is easily placed in position, even for difficult shapes and it stays in position without hindrance to the bricklayer or mason. It beds well with mortar without spring, and gives a high resistance to side slip.

Lead Sheet and Strip for building purposes is made to B.S. 1178.

The Technical Information Bureau of the Lead Industries Development Council exists to give assistance on problems relating to the use of lead sheet and pipe in building work. Details of its application are given in a series of information Sheets. These sheets are available to architects, surveyors, builders, plumbers and other technicians interested upon application to the Council. "Students" applications should be endorsed by an instructor or master of a technical school.

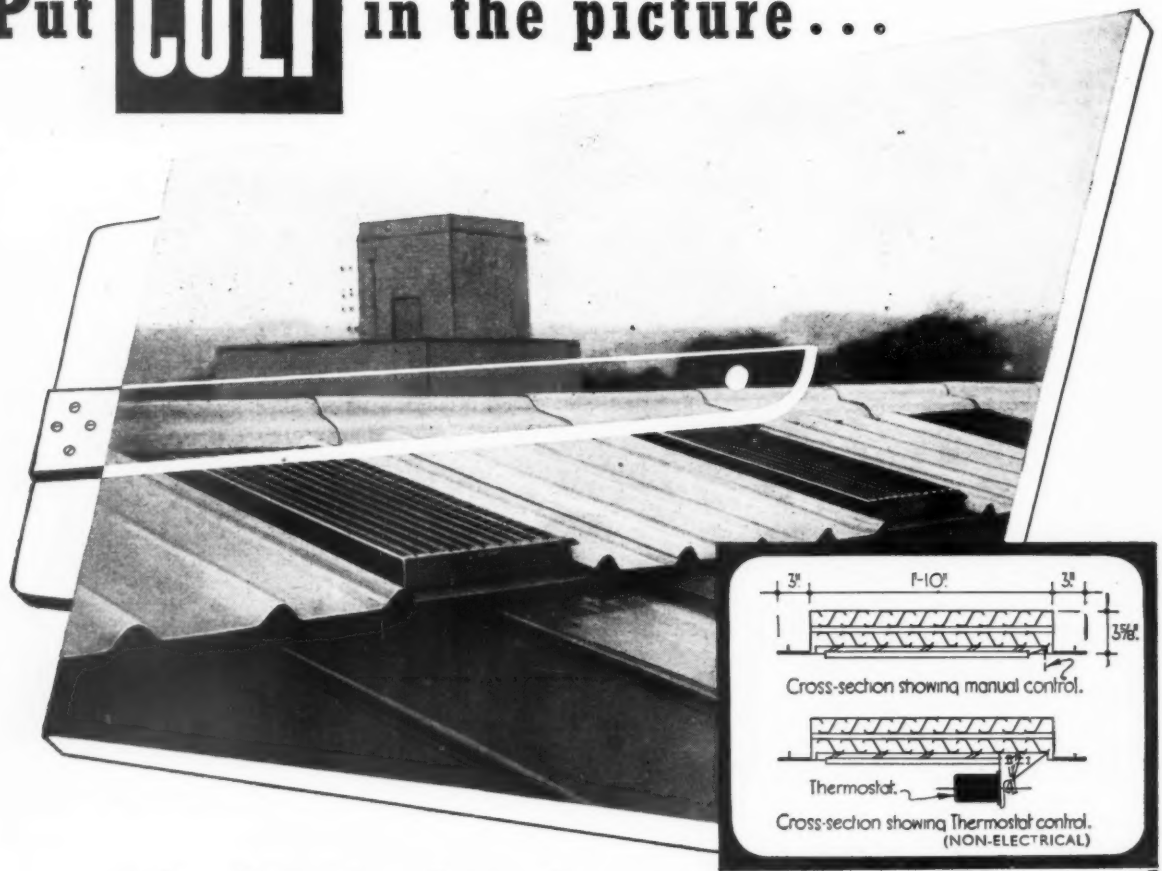
LEAD LASTS

LEAD INDUSTRIES DEVELOPMENT COUNCIL, EAGLE HOUSE, JERMYN STREET, LONDON, S.W.1

LEAD TECHNICAL INFORMATION BUREAU, 90 EBURY STREET, LONDON, S.W.1 TELEPHONE: SLOANE 0474

B94/4/51

Put COLT in the picture...



... at the drawing board stage

When you feel that your ideas are restricted by inflexible methods of ventilation — see Colt about it at once. Years of wide practical experience of every type of ventilation based on constant scientific research will enable them to solve your problem. When your designs are at their earliest stage . . . when you know what you want to do but are not absolutely certain how you will do it . . . *then* is the time to see Colt.

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Many types of Colt Ventilators are available — in separate units or complete schemes. But much more than that, Colt plan or supply or advise on individual schemes for special purposes. Over 4,000 prominent British firms benefit from Colt Ventilation.

A FREE MANUAL *with full specifications of the types of standard Colt Ventilators is available on request from Dept. T* 162

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Blots and scribbles, fingerprints and dirt are wiped off with ease when the wall is faced with "VITROLITE." Water, soap, grease, smoke, soot and all acids (except hydrofluoric) cannot affect the hard, brilliant, fire-finished surface of "VITROLITE," the modern glass facing for interior and exterior walls, made in Black, White, Green, Green Agate, Primrose, Turquoise, Shell Pink, Pearl Grey, Egg Shell.

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PILKINGTON BROTHERS LIMITED

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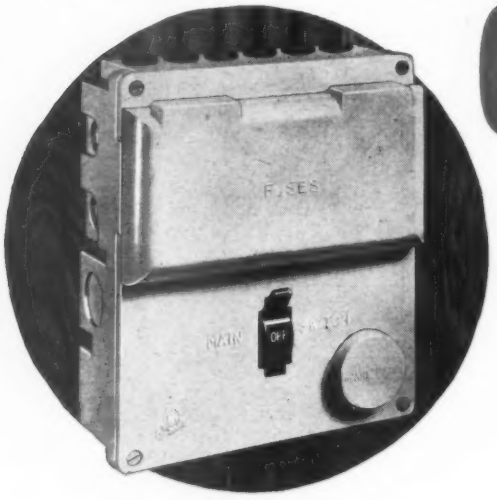
B.I. Callender's

INSULATED SWITCH AND FUSE CHAMBER

(British Patent No. 577848)

for Consumer's Services HAS THESE ADVANTAGES



1 Snap-action fuse cover hinged at top.

2 Up to eight sub-circuits with fully-protected cartridge fuses, coloured to B.S. 1361 : 1947 ; arranged in any combination of 5-amp., 15-amp. and 30-amp. ratings.

3 60-amp. double-pole main switch. Interchangeable chassis mounting allows alternative 2-switch arrangement with 1 - 60-amp. and 1 - 30-amp. double-pole switches.

4 Moulded knock-outs for cable entry in four sides and back.

5 Earth terminal.

6 Spare fuse-links.

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EASY TO INSTALL Chassis-mounted components simplify installation. Ample cabling facilities are provided.

EXTRA SAFETY Insulating case encloses all live parts.

SIMPLE IN USE Safe, quick and easy fuse replacement.

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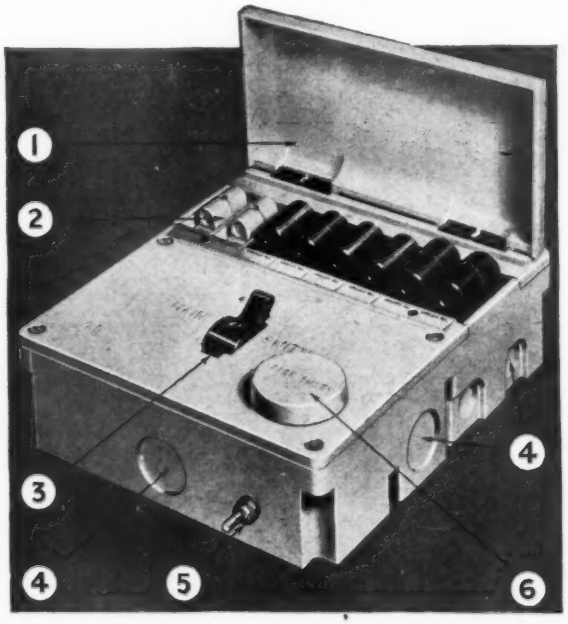

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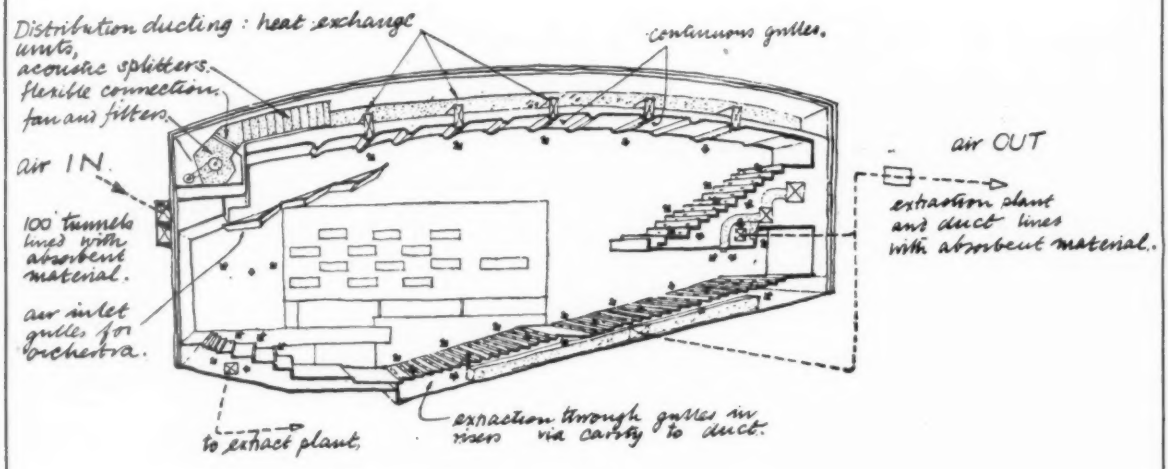
FLOORS FOR HOSPITALS

For HOSPITALS, bright and cheerful, permanently coloured tiles are needed that are hygienic and no trouble to clean. Marley Floor Tiles are colourful, silent, resilient, durable, hygienic and waterproof. They provide an inexpensive solution of the flooring problem not only for Hospitals, but also for schools. hotels, restaurants, canteens and offices. Marley Floor Tiles can be supplied immediately in any quantity and in a wide range of colours.

Cock o' the walk

The Marley Tile Company Limited, London Rd., Sevenoaks Kent. Sevenoaks 2251/8

MARLEY



SKETCH ILLUSTRATING METHOD OF AIR-CONDITIONING AUDITORIUM

Heating the Royal Festival Hall

The heating and ventilating system comprises full air-conditioning in the auditorium, and plenum ventilation with supplementary heating in various other parts of the building.

Gas boilers were chosen as being most suitable, particularly for the quick, automatic regulation of heat input provided. The estimated total load of the gas boiler plant is 33 million B.Th.U.; amongst gas fired installations it is one of the largest and probably the most efficient in the country.

Further information on the gas installation at the Royal Festival Hall may be obtained by writing to The Gas Council.

Helpful information on the many aspects of providing efficient services for cooking, hot water, space heating and refrigeration may be obtained from local Gas Undertakings.

GAS

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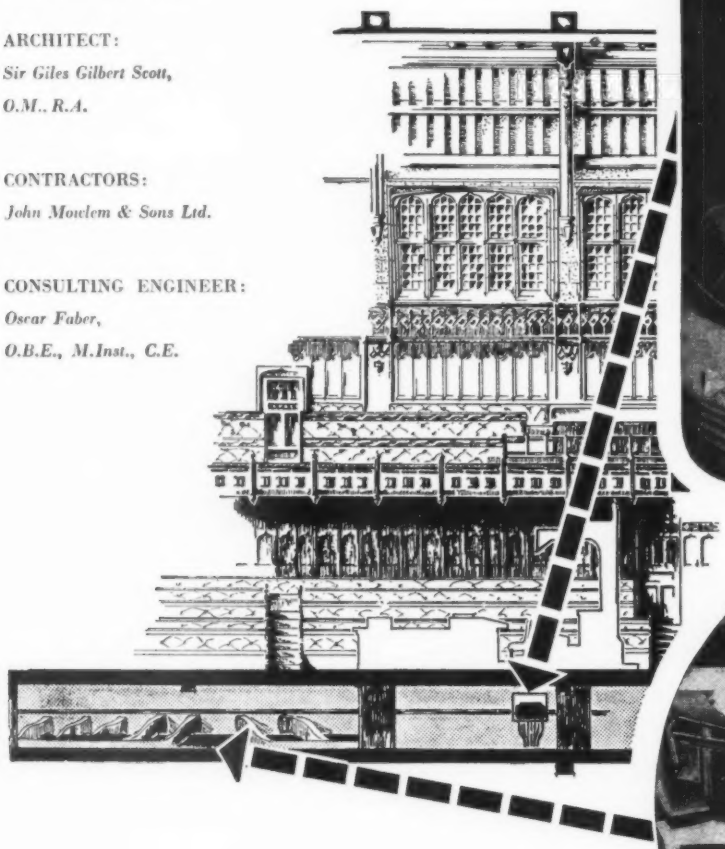

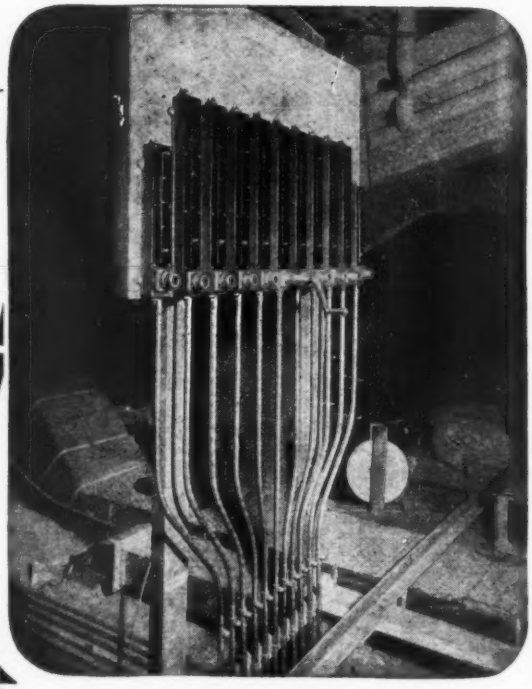

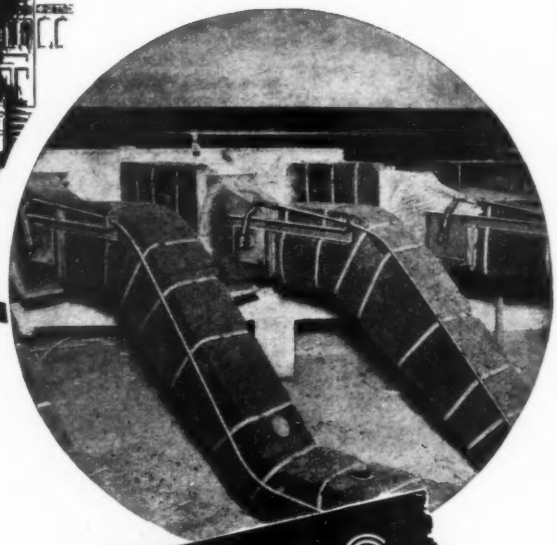

AN INSTALLATION OF ARENS GEAR FOR THE REMOTE CONTROL OF AIR-CONDITIONING BLENDERS

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ARENS CONTROLS LTD., TUNSTALL ROAD, EAST CROYDON, SURREY
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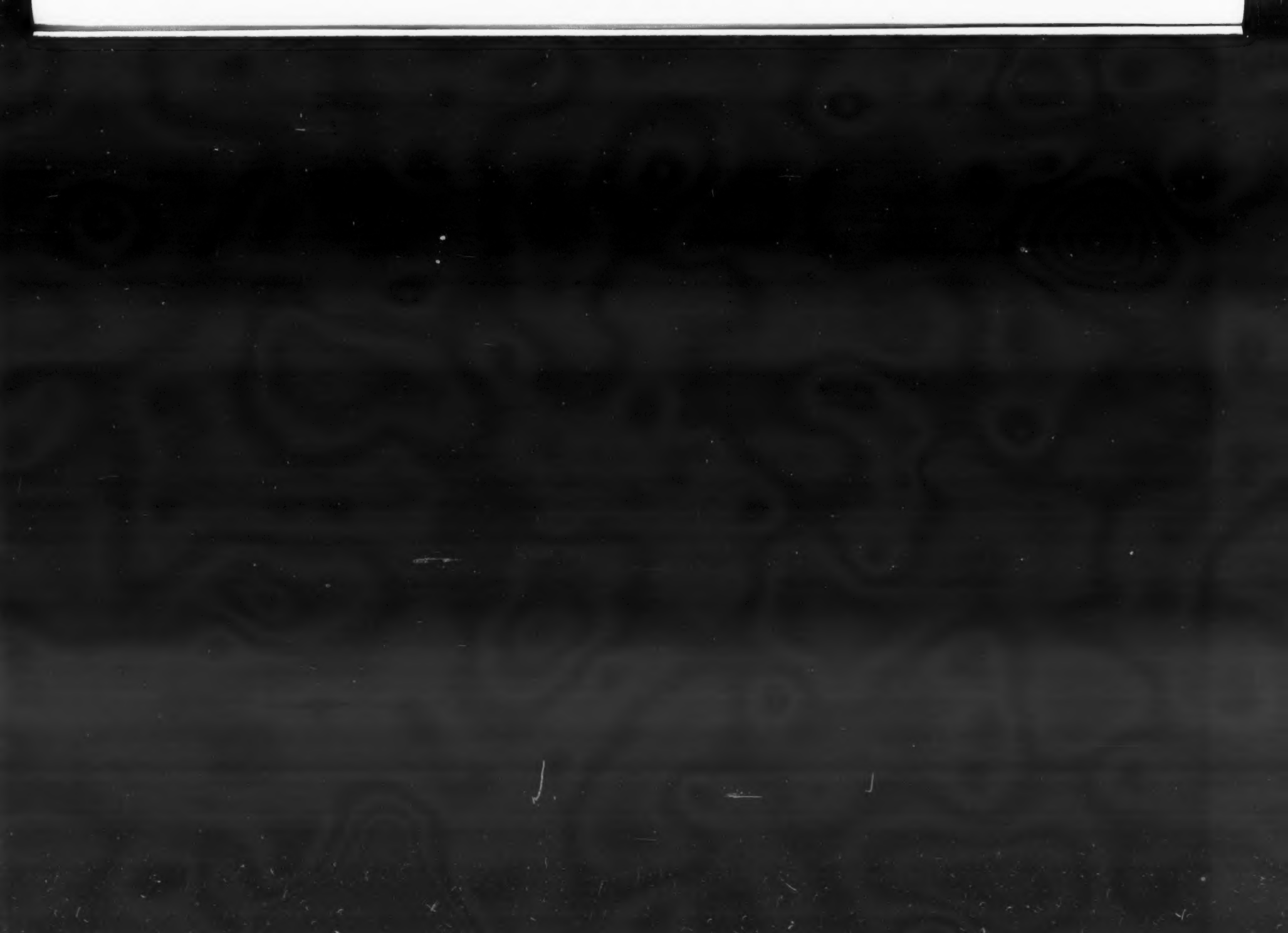
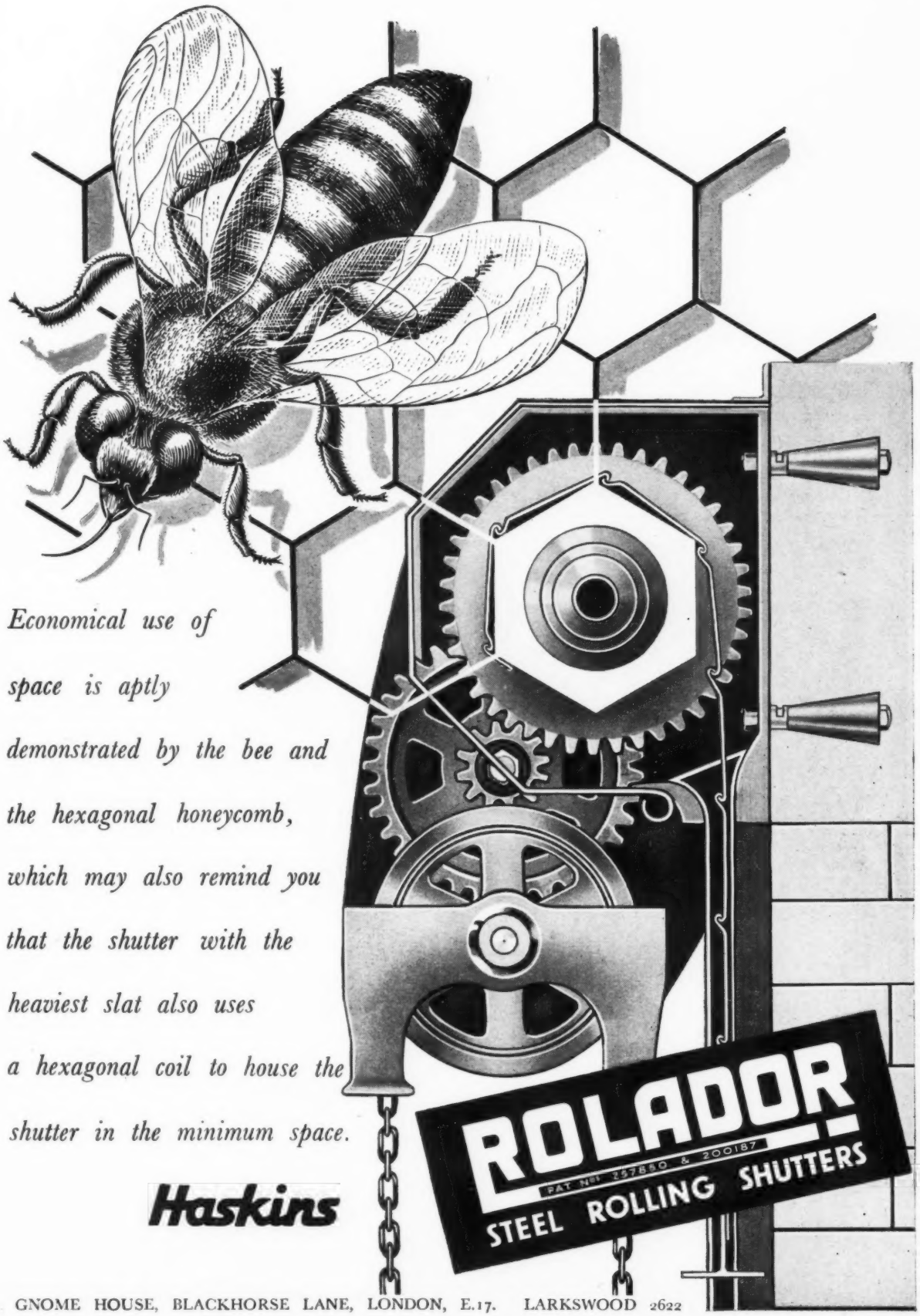
Covered by Patents





Economical use of space is aptly demonstrated by the bee and the hexagonal honeycomb, which may also remind you that the shutter with the heaviest slat also uses a hexagonal coil to house the shutter in the minimum space.

Haskins

GNOME HOUSE, BLACKHORSE LANE, LONDON, E.17. LARKSWOOD 2622

YOUR SAFEGUARD in the selection of BRICKS

When bricks are required to meet exacting conditions, remember that there are bricks and *engineering* bricks. Authentic engineering bricks are produced from special grades of clay or brick earth, found in only four regions, and vitrified during the process of burning. They combine high compressive strength, extreme toughness and resistance to abrasion with low porosity and good acid-resisting properties.

The present steel position emphasises the value of engineering bricks for load-bearing purposes.

Engineering bricks are a strictly standardised product, which may be used with the utmost confidence for all heavy-duty construction.

Specify —

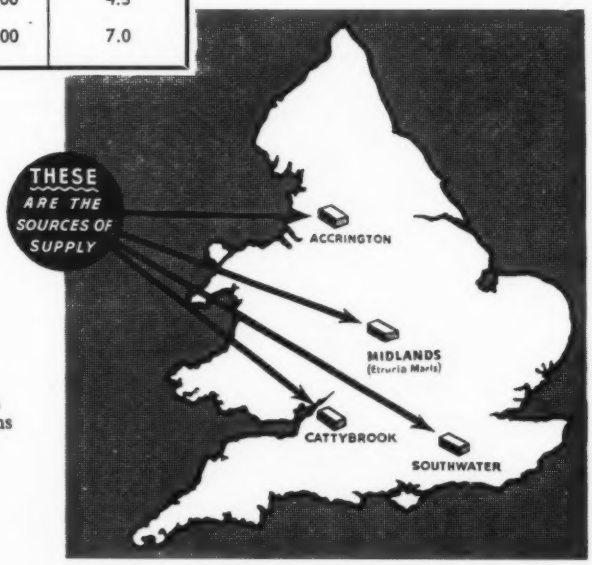
CLAY ENGINEERING BRICKS

to B.S.S. 1301—Class A or B

and

BUILD TO ENDURE

CLASS OF BRICK	MINIMUM AVERAGE STRENGTH LB./SQ. IN.	MAXIMUM AVERAGE WATER ABSORPTION % BY WEIGHT (5 HOURS BOILING TEST)
A	10,000	4.5
B	7,000	7.0



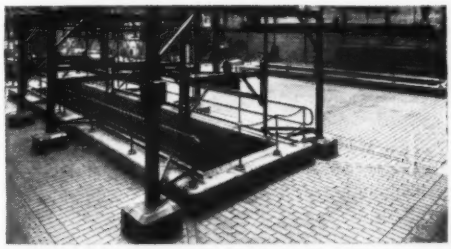
Please write for booklet, "The Properties and Appplications of Engineering Bricks."

● **POWER STATIONS**

Engineering Bricks are being widely used in the construction of new power stations for the British Electricity Authority.

● **VIADUCTS & BRIDGES**

Today, as in the early days of railroad construction, railway engineers depend upon the strength and durability of Engineering Bricks.



● **HEAVY DUTY FLOORS**

Engineering Bricks withstand impact and abrasion, and facilitate the re-siting of machinery.

● **ACID RESISTING CONSTRUCTION**

Engineering Bricks resist acids and alkalis, and are extensively used for paving, channels, pickling tanks, hopper linings, chutes, etc.

Other applications include Dock and Harbour Works, Station Platforms, Agricultural Buildings, Basements, Cellars, Loadbearing Piers, Damp-proof Courses, etc.

THE BRITISH ENGINEERING BRICK ASSOCIATION

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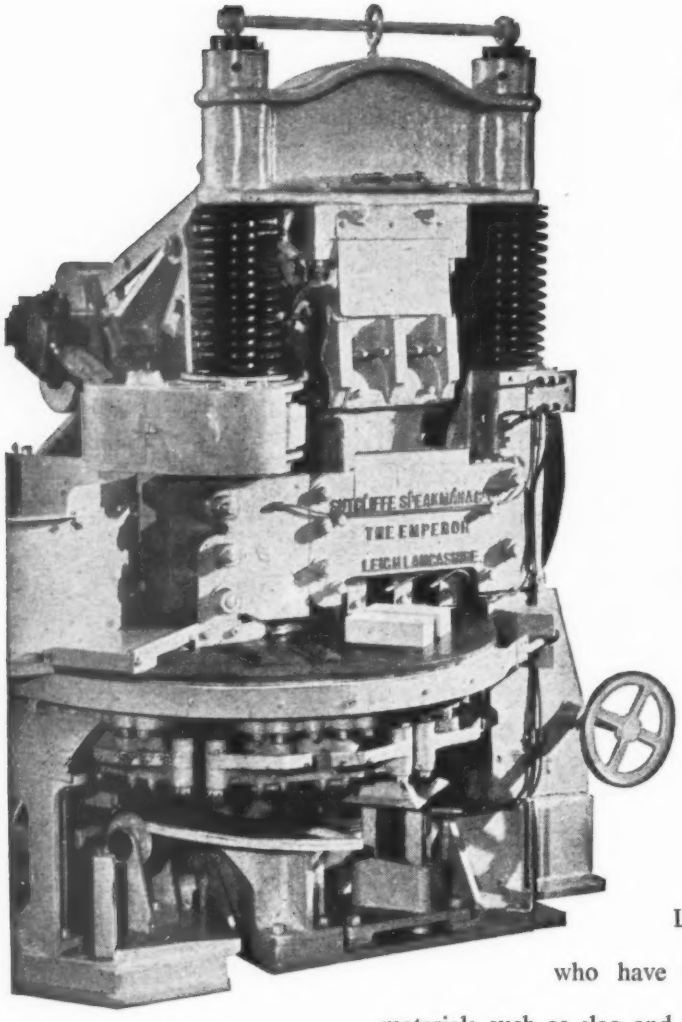

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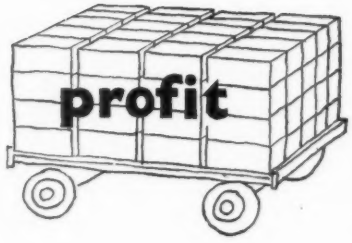

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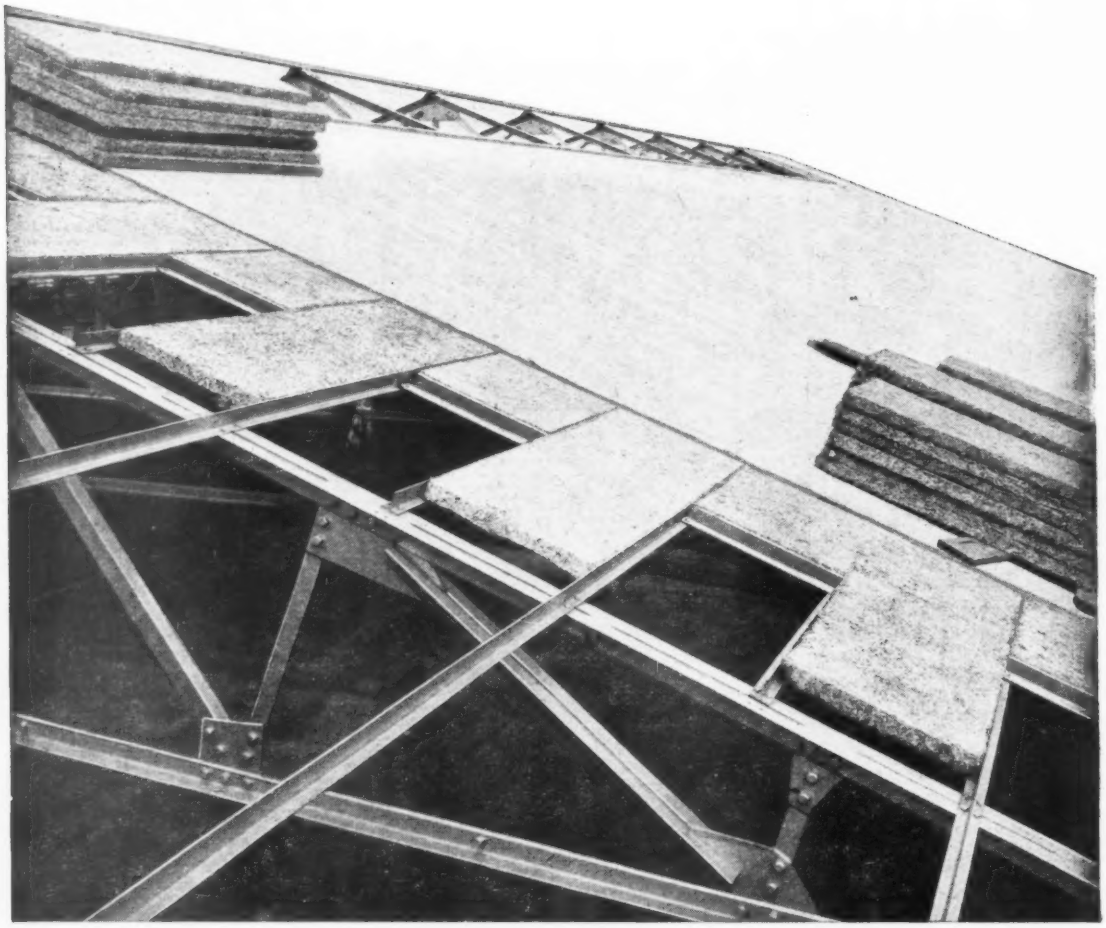

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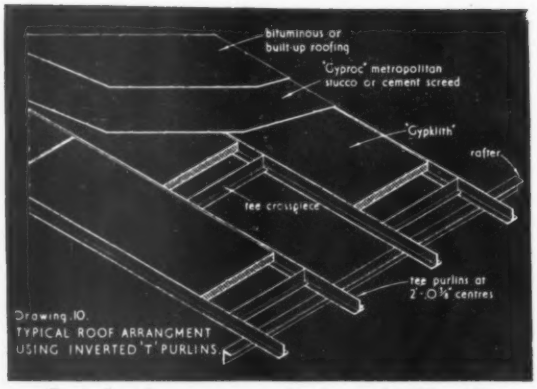

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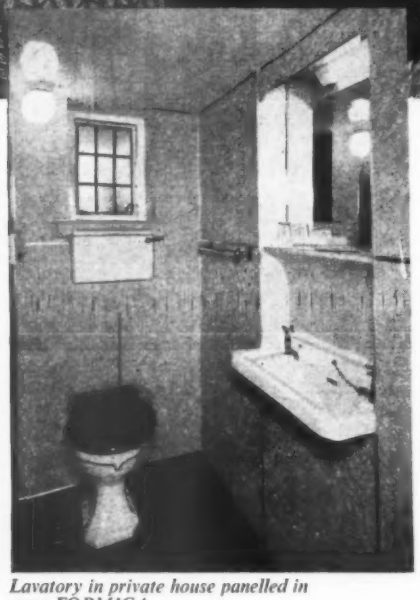

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BELFAST CONFERENCE

There were getting on for four hundred members at the British Architects Conference in Belfast last week, and if there was any obvious gap in the attendance it was a not unfamiliar one: not enough representatives of the larger private architectural firms and a dismal lack of attendance on the part of the presidents of the regional architectural associations. It was an interesting visit to make because of the unusual amount of extra-conference activity taking place, but such factors as visiting Royalty, Festival of Britain exhibitions, motor racing and easily reached scenic beauties killed the formal lecturing, and therefore the conference proper, stone dead. Of the conference improper, so to speak, everything went as smoothly as true Ulster hospitality and an extraordinary lack of licensing hours could make it.

*

One point arises from Martin S. Briggs's paper on architectural education, delivered at the inaugural meeting last Thursday. An indignant colleague tells me that twice during the meeting reference was made, darkly, to what might be said if it wasn't for the fact that there were representatives of the Press present. This remark was no doubt intended to be humorous, and little more. However, aware of the grain of truth in it, I feel confident that if a secret, unreported session would really lead to more vigorous and valuable contributions to the often vital subject under discussion, and a fuller attendance at the lectures, then all the editors of the architectural newspapers would be only too willing to forgo the pleasure of publishing them, or, at any rate, they would submit to a censorship.

*

Of other speeches made, I have little comment, save that they were invariably too long. Indeed I hear of diners at one table at the conference dinner laying bets on who would be the longest and shortest speakers—there were eight—and, as usual, the longest was the worst. The Irish ability for making speeches was not much in evidence. Vincent Kelly from Eire, though competent, could not match his efforts at the Dublin conference. Knapp Fisher coloured one English cheek by speaking of the leprechauns he hoped to find. As is so often the case, one of the best speakers was a layman, the Marquess of Hamilton, who appealed against the sterile adulation of Georgian architecture and advocated a search for Irish architecture. A policy no doubt approved by the younger members.

I have not space this week to comment as fully as I wish on the conference and the architectural extras which were so generously added to it. I will return to them later. But for the benefit of future organizers of conferences a word of warning. Do not hold too many events in the same building unless it has phenomenal qualities of design. Admittedly in Belfast suitable accommodation was, no doubt, limited by the occasion of the Royal Visit, but three consecutive evenings in the same neo-classic hotel are hardly balanced by its comforts and kind staff .

FORCED SYMMETRY

The knowledge that the exhibitors at the Royal Academy must expect to be criticized allows me to be, perhaps, more forthright than usual in my criticisms. Although I have already dealt briefly with the Royal Academy Summer Exhibition, shortage of space, among other things, prompted me to put aside one or two photographs of the exhibits which would serve, if not as cautionary tales, at least as talking points for present day design.

*

On page 723 is shown a sketch of a "Rest Precinct." Anything less restful or precinctual is hard to imagine, though, in truth, being within the environs of a church and as cold and as still as a tomb, it can lay a small claim to being both. In this design it is surely only a source of irritation to run an axial path just off the centre line of the church and it is even more annoying to block it with some form of privy or mustard pot where it is crossed by another, equally important, path. Admittedly, if one stepped off the path one would only step on to another form of paving, but surely the point of this subtle difference in stone

patterning is to provide a guide for where you walk. The absence of windbreaks, and the setting of the seats in the centre of the open spaces is no doubt done to chill the ardours of our licentious citizens.

*

You may say that I am making a mountain out of a mustard pot; I would more readily agree if I did not know from past experience how quickly such designs can be proposed, accepted and built in all their gaunt dreariness. As, for example, that little garden near St. ——— well, perhaps I'll leave that for another week.

BOGUS DESIGN FOR POWER

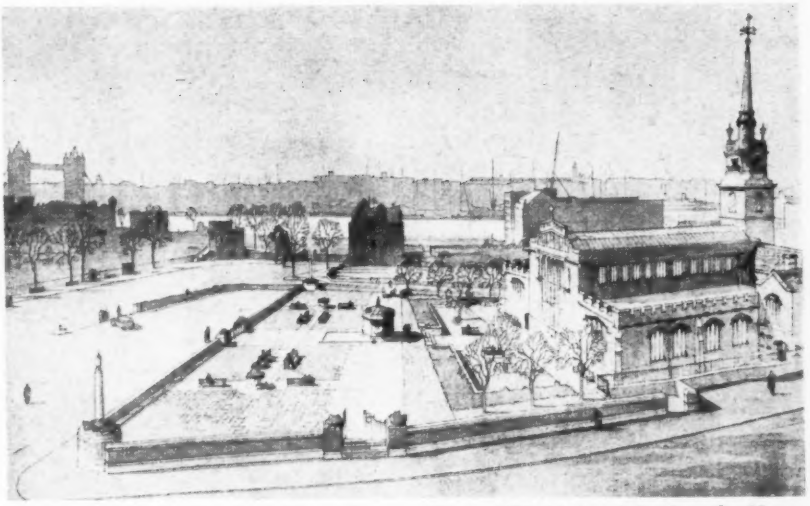
The Edinburgh Saltire Society, in its famous rooms in Gladstone's Land on the Royal Mile, is showing a little exhibition of "Design for Power," or "Architecture for Highland Power Schemes." This is sponsored by the North of Scotland Hydro-Electric Board, and the Saltire Society is to be congratulated on making possible the first public display of this kind.

*

But what a give-away it is! The pamphlet describing the works says that the Board has "a band of eminent Scottish architects to advise them on the *architectural features* (my italics) of power stations and other buildings," and that the Board's desire was "to preserve amenities and to construct buildings which did *not conflict* (mine again) with their surroundings."

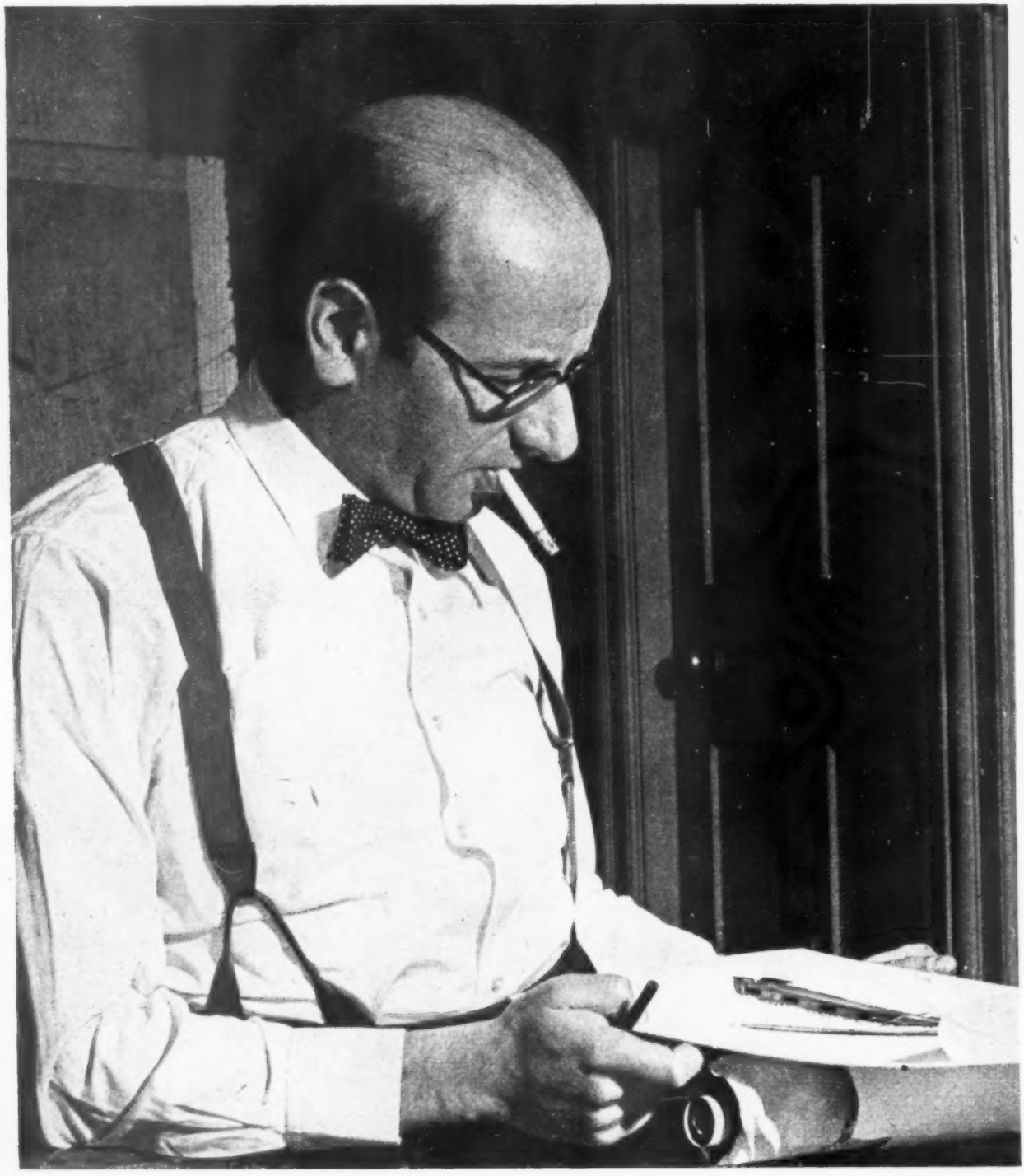
*

The Board does indeed deserve praise for reviving in a big way the stone quarrying industries and the craft of the stone mason, which have been dying very fast in the North. Although some of the masonry work, as such, seems to be very fine, the architectural handling of it is almost invariably bad. Even if we were to accept the attitude of mind which allows the challenging dynamic forms of dams and power houses to be clothed with gothic and classical motives, bearing no relation to the structure, the resulting architecture is of a most uninspiring standard — sometimes downright illiterate. If it is a revival of Scottish tradition they're after, the work illustrated is a long way short of the mark. Only the work of one architect —James Shearer, whose work is frankly fancy dress, as demonstrated by one of his sets of progress photographs—shows any sign of feeling for the Scottish tradition and the Scottish mason's craft. Of his work, the pure landscaping of the more or less underground power house at Morar, is the most successful and suggests a really sensitive handling of stone in a highland setting.



Rest Precinct on the site of an old warehouse at Tower Hill (designed by Leo O. Hannen and J. H. Markham) and reconstruction of the church of All-Hallows-by-the-Tower (designed by Lord Mottistone and Paul Paget). *See note "Forced Symmetry" on page 721.*

This photograph shows the Festival facade of the Polytechnic, Regent Street, London. No comment need be made. But it is only fair to point out that the Polytechnic School of Architecture was not consulted before this act was perpetrated. The School of Art was fully responsible.



Misha Black

Two weeks ago we published a photograph of Hugh Casson, the director of architecture for the Festival of Britain South Bank Exhibition and the co-ordinating architect for its Downstream Section. The co-ordination of the Upstream Section was in the hands of Misha Black (above), who was also deputy chairman of the Festival Offices Exhibition Presentation Panel. Mr. Black, who is well known both as an architect and an industrial designer, has contributed to many other notable exhibitions, such as the Spanish-American exhibition in Seville, in 1928, the Glasgow exhibition, in 1938, and the New York World's Fair, in 1939. From 1940 to 1945 he was the principal exhibition architect to the Ministry of Information. He was industrial design consultant to the Gas, Light and Coke Co. from 1946-48 and from 1946 has been director of the Design Research Unit. He has written a number of books.

There must be architects in Scotland who understand the potentialities of industrial architecture and could produce something frank and inspiring—and more genuinely Scottish. I hope that "Living Traditions"—the Edinburgh Festival Exhibition of Traditional Crafts and Architecture, to be opened this month—will show us some contemporary Scottish building that really is *living*.

FUNCTIONAL SCULPTURE

Basil Spence and his confrères have surpassed themselves at the FOB Industrial Power Exhibition at Glasgow. Clearly they have enjoyed themselves tremendously there—glass-house stairway under an apocalyptic deluge, giant cone causing Day of Judgment fireworks and universal alarm, primæval swamp with realistic mushy floor, wonderful model ships, numberless toy trains and, in general, imaginative landscaping with varying levels and strange, gay vistas all formed with wall boards, paint and coloured oddments within a great, dull, flat-floored hall.

*

What the show seemed to tell me was not how powerful and useful were our new ways of handling coal and water but how splendid and beautiful in form were the new tools with which we handle them. Hail, mighty turbine, so precise, pink and purposeful; you deserve the highest mound in Battersea Park. Hail, mechanical mobile, stirring luxuriously in your ecstasy of oil; you really do move. The problem of the modern sculptor has been solved at Kelvin Hall. He must avoid the art school and learn anew in the workshop.

SURELY, SURELY, MR. SWAFFER!

"On the South Bank there will remain, when the Festival is over, a concert hall," recently in *The People* Hannen Swaffer wrote. And then, pulling himself together and adjusting his syntax, Mr. Swaffer started a new paragraph. "I only wish the outside were less ugly," he wrote. "Surely, surely, someone will add an exterior that will add dignity to the Thames!" And the People of Britain nodded sagely as it brushed biscuit crumbs from the bedclothes and poured itself another cup of tea.

ASTRAGAL

The Editors

THE CRITICAL STUDENT

MARTIN S. BRIGGS, in his talk on architectural education last Thursday, at the RIBA Conference in Belfast, admitted that he was puzzled why it is peculiar to architectural students, as a class, to take so prominent a part in recent criticism of educational methods—a phenomenon not often found in students of law, medicine or art. Students' advice, he said, on improved methods of lighting in lecture rooms, and on better facilities generally or adjustments in the time-table, may be welcome and helpful. "It is when they claim to influence or dictate the curriculum . . . the trend of the teaching, the qualifications of the staff, that their status comes into the question."

There is no denying that if teaching staff are not absolutely certain what they have to teach (and, in the teaching of architecture, this is not nearly as simple to decide as it is in teaching for the other professions), then the easiest course the staff can adopt is that of the all-powerful always-right instructor duly filling up students' brains with the correct proportions of text-book information. While the tutor has the confidence of his students this method has its advantages. But if the smallest element of doubt creeps in, trouble is certain to ensue. The far more difficult approach for the uncertain tutor, but the one which offers much more potential value to the student who does not take unfair advantage of it, is the role of co-operative-partner in education. The teacher who states an architectural problem, puts forward the solutions he knows and then encourages the student to find a better solution, is offering the student greater opportunities for architectural development than he could receive from any amount of text-book teaching.

The cause for the close attention which the architectural student gives to his training today is most likely to be found in the student's realization, perhaps, even, an unconscious realization, that architecture and the whole science of building is undergoing great and radical change, and that it is more than possible that he is being taught matters which may be useless to him when he has passed his finals examination. The student may also sense that some tutors are woefully ignorant of contemporary building problems, a factor which does not encourage confidence.

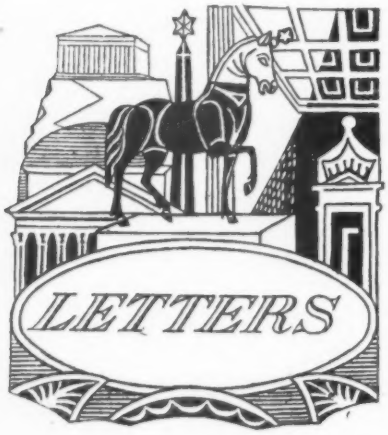
Science, as applied to problems of planning, acoustics, sound and heat insulation, structures and services, has, perhaps, arrived later to the building industry than any other. The architectural student realizes that he has a great deal of ground on which to catch up if he wants to preserve the title of architect in the true sense of the word. If he fails, an efficient building industry will not hesitate to relegate him to the role of the man who applies the decoration. It is, perhaps, a realization of this fact that prompts him to criticize the way in which he is taught.

No. 18 : Legal Editor

ORGANISATION OF THE BUILDING INDUSTRY

A few weeks ago, in connection with a report of the Tucker Committee on Taxation, we discussed what the RIBA could and should do in laying before government committees the views, interests, difficulties and grievances of the architect as a professional man. The report of the Restrictive Practices Commission on a small but not unrepresentative section of the building industry, described on page 733, raises another aspect of the same question. Should the Institute " take a view " on the organization and methods of an industry with which it is so closely associated? If so, how should it form that view, and how express it?

The main demands that the consumer makes on industry, that its techniques should be good and free to improve, and that its rates of pay, working conditions and profits should all be reasonable, are no longer matters of disagreement between the majority opinion in both political parties. Granted that, is not the Institute free to interest itself in which organizational and administrative changes within the building industry, or any section of the building industry, will benefit the consumer? Is not the Institute likewise concerned, as are the other official professional and trade bodies of the building industry, in what is loosely but comprehensively called the " public interest "? And, having gone so far, should not the Institute use the influence it possesses to press for those changes it considers desirable?



S. H. Clarke

Geoffrey Dunn

Fire Hazards

SIR,—The statement in the editorial article of your issue of April 19 that " architects need have no further fears " about the fire hazard of prestressed concrete construction might be taken to imply that architects can disregard fire hazard in this form of design. This is, of course, not so, and as the statement is linked with a reference to the work of the Joint Fire Research Organization, I think it is important to make this plain.

So far as this Organization is concerned, the present position is that during the last two years a number of individual designs have been tested, and while several of these, including the one to which reference is made in the article, have behaved well in the standard of fire resistance test, some, which were otherwise attractive, showed a very short fire resistance. The results of these tests have been prepared for publication and will shortly be available. These individual tests do not by themselves suffice for establishing a general basis of design and, in view of the importance of the subject, a programme of investigations has been started in collaboration with the Building Research Station with that in mind.

Meantime, it follows that architects should, with this as with others forms of construction, consider the possible fire hazard in connection with any proposed new design and, if necessary, take advice on the subject. The Joint Fire Research Organization will always be glad to help as far as possible.

S. H. CLARKE, *Director,*
DSIR and Fire Offices Committee
Joint Fire Research Organization.
Herts.

Horse Sense and Lack of It

SIR,—Let ASTRAGAL take heart. Madame Gullberg sent both her daughters to " learn all about wool " to the workshop of our own Mrs. Ethel Mariet of Ditching, Sussex.

Let ASTRAGAL lose heart. The untidy banner he once drew attention to, across the Hutchinson building, off Oxford Street, housing the Sporting Prints soon disappeared, but it has been replaced by a more unpleasant hoarding.

At least the banner had some slight (unintentional I am sure) atmosphere of 'ocks, 'osses and 'ands 'igh.

GEOFFREY DUNN.

Bromley.

[In our issue for April 12, ASTRAGAL, writing about Madame Gullberg's fabric designs, which were on view recently at 87, Bedford Square, W.C.1, deplored the fact that manufacturers so often go to Scandinavia for their designs when there are talented designers in this country.—ED.]

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

AA

Election of Officers and Council

Following are the results of the ballot for the election of the Officers and Council of the Architectural Association for the session June 1, 1951 - May 31, 1952, as announced last week:—President: Anthony M. Chitty. Vice-presidents: A. R. F. Anderson, Hugh Casson. Hon. secretary: the Hon. Godfrey Samuel. Hon. treasurer: Bryan Westwood. Hon. editor: Peter Shepheard. Hon. librarian: Anthony Pott. Ordinary Members of Council: G. Anthony Atkinson, W. W. Atkinson, J. M. Austin-Smith, John Brandon-Jones, D. Clarke Hall, S. E. T. Cusdin, the Hon. R. A. de Yarburgh-Bateson, G. I. Goulden, Miss Barbara Price, Raglan Squire, Prof. Basil R. Ward.

BRISTOL

New £1,100 House

Bristol Housing Committee members have had laid before them new plans for a cheaper three-bedroom house to cost £1,100—a saving of £500 per house on the present three-bedroom house which is costing Bristol ratepayers about £1,600. The city architect, J. Nelson Meredith, has told the Committee members that the house would conform to Ministry requirements.

The size of the house (semi-detached) has been cut by 100 super feet. Every room in

it has been cut in size, and so has the hall, although this will still be large enough to take a perambulator. There is a bathroom and a separate lavatory; outside stores for fuel and storage space large enough for bicycles; and the entrance will be at the side. Cupboard space has been reduced to the minimum, and consists of one large cupboard in the main bedroom. Cupboard and working space in the kitchen remains the same.

It is said that substantial saving in costs has been achieved by the method of roof construction, the orthodox roof having been abandoned in favour of an asbestos tiled roof of low pitch, requiring less timber. The design provides for a room height of eight feet, but the cost could be reduced still further if the ceilings were lowered to the Ministry's minimum height of seven feet nine inches.

Hot water will be supplied to sink, basin, and bath by a back boiler fitted to the living-room fireplace. The price has been worked out on the assumption that the site would be level, but the plans are adaptable for terracing.

Members of the Committee have studied the plans in conjunction with other designs for a three-bedroom house which won a much publicized competition recently. The winning designs were for a house costing £950, but Mr. Meredith pointed out to the Housing Committee that while that would have been the cost at the time of the design, it would today cost more than £1,000. Moreover, competition design did not conform to Ministry standards. The main difference in the designs, he said, lay in the fact that the competition design provided living and dining accommodation in one room. Another advantage of their design was the fact that they could be turned around to suit the aspect.

Meanwhile, the chairman of Bristol Housing Committee, Kenneth Brown, has declared that the city's housing development will be concentrated on the central areas of the city, despite the fact that this will mean even higher costs. The committee, he said, would do its best to offset this by investigating new designs in order to effect economies and keep rents low. "Land is rapidly being used up and has now become a major problem, but I feel it would be wrong to use up all the land on the outskirts of the city immediately. We shall have to concentrate upon the development of the areas inside the city boundary, and it must be borne in mind that multi-storey flats are more costly than houses—and not only in money, but in manpower," he commented.

Plans submitted by the city architect, Mr. Meredith, for two eight-storey blocks of flats—one of 60 flats and the other of 118—to be constructed near the city centre have been accepted in principle by the Housing Committee.

OLD LADIES' HOME

Plea for £65,000

Sixty-five thousand pounds is needed for the old ladies' home now being built in North Kensington to the design of Hastie Winch and Kelly. A plea for this money was raised at a meeting held on Tuesday at His Majesty's Theatre, on behalf of Ceci Houses (Inc.), 193, Gower Street, Euston Road, N.W.1.

IAAS

President Elected

F. W. Dean has been elected president of the Incorporated Association of Architects and Surveyors.

The annual conference of the Royal Institute of British Architects was held at Belfast from May 30 until June 2. Conference members were the guests of the Royal Society of Ulster Architects who were celebrating their Golden Jubilee. Above is the conference photograph, taken on the steps of the Parliament Buildings, Stormont, prior to the garden party held in the grounds of Stormont Castle.

RIBA

President Opens Conference at Belfast

The president of the RIBA, A. Graham Henderson, opening the Institute's annual conference last week, said that it was the first time the conference had been held in Belfast, and that it was particularly appropriate that it should be held there this year. It was the year of the golden jubilee of the Royal Society of Ulster Architects—a society which had been allied to the RIBA and represented on its council since 1923. After outlining the aims of the Institute the president defined the aspirations of the profession in the one word "quality," and spoke of his belief that the architectural profession constituted one of the greatest social forces for good.

Martin Briggs on "Architectural Education"

Martin S. Briggs, honorary secretary of the RIBA, who spoke to conference members on "Architectural Education," said he was puzzled why students, as a class, had taken so prominent a part in recent criticism. So far as he could ascertain after inquiry, this phenomenon was peculiar to the architectural profession. There seemed to be no comparable movement among students of law, medicine, surveying, accountancy, or the various branches of engineering. It seemed to be endemic among architectural students, varying in virulence as between schools but not confined to any one type of school. Was it something to do with the artistic temperament, or what was the psychological explanation? Had it any political origin or any political significance?

In theory, said the speaker, it should be a very good thing that students should display such interest and enthusiasm about their studies and their curriculum. There was a feeling of deadly earnestness about it. It was not merely high spirits, and youthful impatience with all constituted authority. If it were, it could be laughed off.

If students could suggest improved methods of lighting in lecture-rooms, better facilities for this and that, adjustments in the time-table for the sake of convenience, their advice might be welcome and helpful. It was when they claimed to influence or dictate the curriculum, the direction of the school, the trend of the teaching, the qualifications of the staff, that their status came into question.

In preparing this short paper, the speaker said he had tried to read everything published, not only by students but by older members of the RIBA, about architectural education during the past five years or so. He had not gone further back, because the Institute produced in 1946 the long Report of its "Special Committee on Architectural Education," dealing with the question in great detail. The Committee was a large and representative one, and its deliberations lasted all through the war. It held thirty-five meetings. Its conclusions were duly considered by the Council, and subsequently modified in some respects; but, generally speaking, it still represented RIBA policy, though that policy continued to be open to reform and was somewhat fluid. It would be presumptuous on his part to offer any pontificial opinion on that weighty report: it should be sufficient to say here and now that, in the main, he did agree with it.

In 1948 the RIBA had published in full the Report of the Architectural Science Board on "The Teaching of Construction," a sequel to the same Board's report on "The Place of Science in Architectural Education" (published in 1940). Of these two formidable documents he would only remark that they were, to use a hideous word, favoured by elderly leader-writers, "unexceptionable": that is, that there was nothing the matter with them, though they would have been more readable and useful if they had been half their length. But they had received careful attention.

Towards the end of 1948, a storm suddenly had blown up from the Left. The body known as MARS (Modern Architectural Research Group), in collaboration with the Architectural Students' Association, had issued a first instalment of a long report on architectural education. This interim report consisted of a historical survey, followed by elaborate statistics from which the deduction was drawn that the RIBA was far more interested in the students of the recognized schools than in candidates who took its external examinations; that, in fact, the latter group far outnumbered the former; and that —to put it bluntly—the RIBA did not care a hoot about their education, which they acquired as best they could in the highways and hedges. This report had had a splendid press. It had been welcomed by every man who had a grudge against the Institute, and the statistics had been swallowed whole—even greedily.

The RIBA had at once taken up the implied challenge, and within two months had published in their *Journal* (Vol. LVI, January, 1949) full corrective statistics to prove that the MARS figures were both inaccurate and misleading, thereby rendering the sensational deductions made from them completely invalid.

Mr. Briggs went on to say that this brought him to the main point of his paper: namely, the present relation of the Institute to the recognized schools on the one hand and to the external students on the other. He believed that this question was of special interest in Belfast at the present time.

These recognized schools were of various types. Some formed departments of universities, others of art schools, others again of technical colleges or polytechnics, and two were independent of academic or municipal control. This diversity of type was healthy, and the RIBA had resolutely declined to favour any one type (although it had often been pressed to do so), relying on its Board to see that uniformity of *standard*—not uniformity of *organization*—was preserved as between the different types. The staff and students of each type were always prone to argue that theirs was "the one and only"; but, in fact, it was possible to find advantages and disadvantages in each type.

A university school, at first sight, appeared to have certain obvious advantages over all the others. It should be able to provide excellent social and cultural contacts, even if it does not possess residential facilities. The Senate should be able to exercise a benebicent control over its curriculum, preventing eccentricities and discouraging wild experiments. A University could often provide links with a faculty of fine art on the one hand, and with science and engineering on the other. The very name implied a broad outlook. Nevertheless, it might be donnish and academic, confined to its ivory tower, bound by archaic and cumbrous regulations, oblivious of modern needs, and distrustful of technical specialization.

A municipal school of art provided contacts with other artists of all types, and—whether one admitted it or not—an architect *was* an artist too. There was, or should be, something inspiring and exciting about working in an art school. Conversely, the social and cultural atmosphere was often very narrow and specialized, and facilities for study in the structural and scientific side of the curriculum were often inadequate.

These facilities were usually more satisfactory in a technical college or a polytechnic, particularly if the institution possessed a building department. Work in such colleges was often more realistic and practical than in either of the two types mentioned, but there was always the danger that it might be too realistic, too near the ground, and might thus lack inspiration.

Independent schools had the merits and defects of their autonomy. They were free to experiment, to adopt pioneer methods, to make quick and frequent changes of policy. Many of the best and most vigorous features of architectural education were derived from this source. "The dead hand of officialdom," as it was sometimes called, hardly touched them in their work, which was often excellent. But this very freedom was liable to become licence. The steadying hand of the Senate or the City Education Officer was never there to clap on the brake, or to prevent amateurs in education from making mistakes that had been made in other fields long before. Moreover, financial stability was only maintained by the charging of high fees to students.

Two main criticisms were heard about recognized schools he said. They often came from people who knew very little about them or who, for some reason, were jealous of them. The first was that they were given an unfair advantage by the RIBA in their internal examinations, which—being mainly conducted by the teaching staff—favoured their own students and were below the standard of the more difficult and far more impartial external examinations.

The second charge was that a student on leaving a recognized school, after five years, generally made an incompetent assistant in an office, that he was conceited as well as utterly ignorant of practical matters, and that he was not worth the extortionate salary he demanded. The implication was that the recognized schools are unable or unwilling to accept the facts of life, that the teachers have their heads so much in the clouds that they neither know nor care what goes on in the ordinary architect's workaday world, whether in private practice or in official employment.

Many of these strictures were untrue or unreasonable, and the implications need not be accepted. During a five-years full-time course a student *should* learn something more than elementary building construction, he *should* have an opportunity to spread his wings (if any), and he *should* be trained as a potential architect rather than a permanent hack. But, in spite of this, some of the schools could do more than they were doing in preparing their students for entry into a very harsh and unkind world. There was hardly anything that one learned in an office that could not be worked into a five-years curriculum, though there were many desirable things in a five-years curriculum that one seldom encountered in the average office, public or private. By setting less ambitious programmes of design in the later years of the course, and by devoting more attention to working drawings and details of small buildings, the schools could dispose of these hostile criticisms.

Many architects must have been asked frequently by anxious parents whether architectural training was more effectively obtained in a recognized school or in an office. He himself would recommend a recognized school, if there happened to be one within reach, geographically and financially. But he certainly would not condemn the pupilage system, root and branch, as something completely outmoded. There were some architects' offices to which he would sooner send a son or daughter than some recognized schools, and that was not entirely for architectural reasons. He would have some regard for the atmosphere of the school—and by that he did not mean simply social status. The atmosphere should be healthy, and the products of the school should be sane and civilized Britons, not cosmopolitan cranks with one-track minds.

Undoubtedly an articled pupil saw more of the sordid routine work of architecture in an office than he could do in a school; but if the office was a large one, he would only see a corner of the practice and very little of the actual procedure; that was all done far above his head, by "the boss," or by a

manager who dealt with the business side of things. It was most unlikely that he would ever overhear an interview with a client, and he might never be sent out on a job. A small private office gave him a far better insight into such matters than a large one. As for a public office, he just did not know how a junior managed to learn much about practice or procedure there, even in some of those enlightened municipal offices where the staff was organized in groups or teams, each undertaking a specific job. So much depended upon the personality of the chief, at any rate in the case of a private practitioner, that comparison between pupilage and a recognized school could not be very useful.

The speaker then turned to the non-recognized schools. The RIBA had recently classified these, not very euphoniously, as "Listed Schools" and "Facilities Schools." The former category comprised schools which, while not granted the exemption enjoyed by recognized schools, did provide a fairly comprehensive *full-time* curriculum. Thus they formed an alternative to recognized schools for *full-time* students, not for articled pupils, though they might also provide evening and part-time day classes for such pupils. The "Facilities Schools" were so called because they provided reasonably comprehensive facilities in evening and part-time day courses, and were able to help articled pupils and others very considerably. Then, besides the "Facilities Schools," there were many others where a measure of education was obtainable in evening classes, certainly better than nothing; and finally there were correspondence courses run by private individuals or firms.

Students from all these sources, except the recognized schools, took the RIBA external examinations. The Institute was sometimes accused of being too conservative in its policy of restricting the number of recognized schools to a couple of dozen for all Britain, and those confined to the cities and largest towns. That policy was, however, common to other professions, and it seemed quite sound. The award of recognition conferred great privileges and great responsibilities on a school: it should not be handed out too freely. Moreover, an architectural school could not function effectively, or be able to maintain an adequate staff, unless it had a substantial group of students in each year of the course. Since the war, all schools of all grades had been flooded with students whose training was in arrears and was being paid for by the State. Even now it was impossible to foresee exactly what were likely to be the "normal" numbers in each school.

Mr. Briggs closed by commenting on some current problems of architectural education. There were two arguments, he said, in favour of continuing historical studies, including the study of the Orders. The first was that architecture was, and always had been, a plant of slow growth, with its roots firmly embedded in tradition; and that study of its evolution was valuable, even in modern practice. Secondly, an architect's ordinary practice comprised much work besides designing new buildings; it involved the extension or modification of old ones. Such work could not be handled sympathetically or even competently without a full knowledge of the historical styles. A special post-graduate course in the conservation of old buildings had started at University College, London; but quite apart from those who undertook specialized work of that sort, and therefore needed intensive training for it, almost every architect was bound to encounter similar problems.

The teaching of construction, in all its aspects and in all its stages, seemed to be one of the most difficult problems of all. It had become infinitely more difficult since the war. The only kind of building that was now permitted was building in its lowest terms, quite apart from applied ornament. Almost everything was cut to the bone, and generally it was only the cheapest type of

HARLOW NEW TOWN EXHIBITION

The exhibition of both proposed and completed work at the Harlow New Town (organised by the General Manager, W. Eric Adams) is illustrated on this page and the two following pages. We hope, at a later date, to illustrate some of the work shown here in greater detail. The Harlow Development Corporation is responsible for developing a new town for a population of 80,000, *some* 23 *miles north-east of London. It is being built as an entirely self-contained community, providing a wide variety of homes and occupations as well as cultural, educational, health, shopping and entertainment facilities. The Master Plan for the town received the approval of the MOTCP in March,* 1949, *and work began in the first of the new neighbourhoods, known as Mark Hall North, in the early spring of* 1950. *Work in this neighbourhood, including housing designed by Frederick Gibberd, Fry, Drew and Partners and the Harlow Design Group, is now being developed under contracts amounting to nearly* £2,000,000. *Above is a photograph of the ten-storey block of one and two-room*

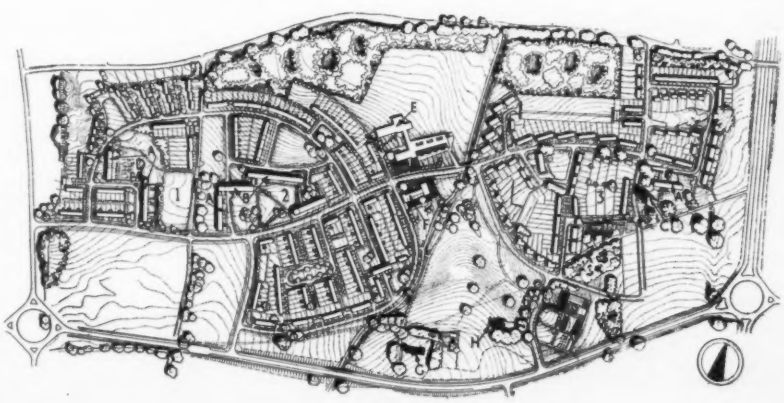
KEY

Area 1. Housing by Harlow Design Unit.

Area 2. Housing by Fry, Drew and Partners.

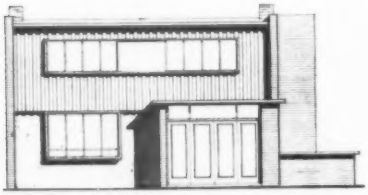
Area 3. Housing by Frederick Gibberd.

A. 3-storey Flats.
B. 4-storey Flats.
C. 10-storey Flats.
D. Tenants clubroom.
E. Primary school.
F. Shops, Hall, Public house.
G. Existing church.
H. Mark Hall.

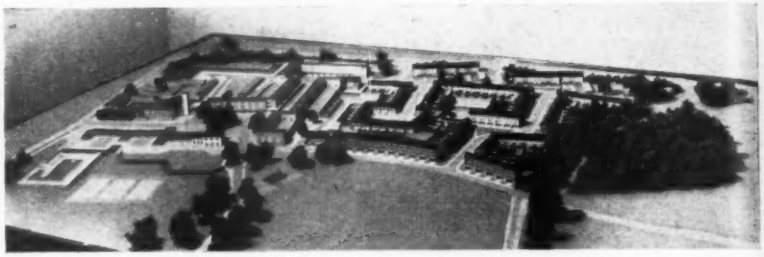


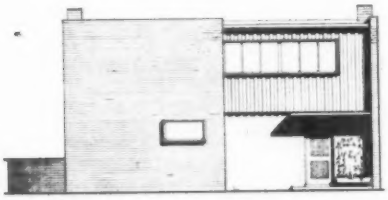
Site plan of Mark Hall North area

EXHIBITION OF PROPOSED AND COMPLETED BUILDINGS AT H



South Elevation

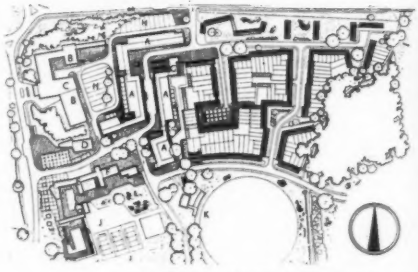




North Elevation

KEY

A. Shops.
B. Service industry.
C. Service garage.
D. Methodist Church.
E. Health centre.
F. Community Group.
G. Public house.
H. Car park.
J. Central recreation.
K. Cricket field.

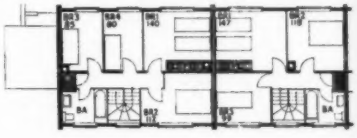


Site Plan of Neighbourhood Centre

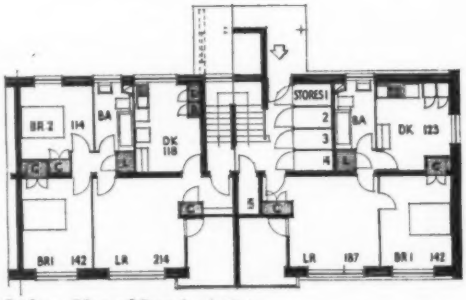
Ground floor plan [Scale : $\frac{1}{8}$" = 1' 0"]

First floor plan

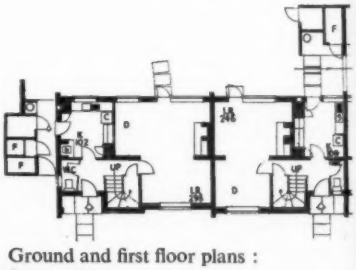
and terrace houses, designed by Fry, Drew and Partners. Above, neighbourhood centre for Mark Hall and Netteswell areas, showing adjoining housing. Left and above left are elevations and plans of a four-bedroom detached house, designed by Alexander J. McCowan of the Harlow



flats designed by Frederick Gibberd, on the top floors of which the exhibition is housed. On the right of the photograph can be seen a three-storey block designed by the same architect. At the bottom of this page are seen three-storey flats (left)



Left : Plan of Standard Flat
Right : Plan of One Bedroom Flat

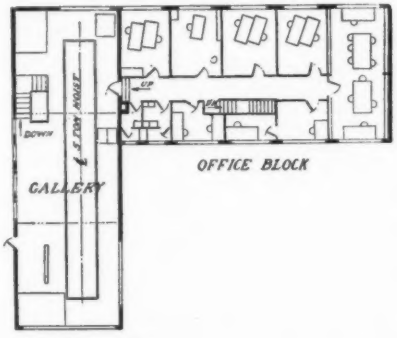


Ground and first floor plans : Terrace Houses

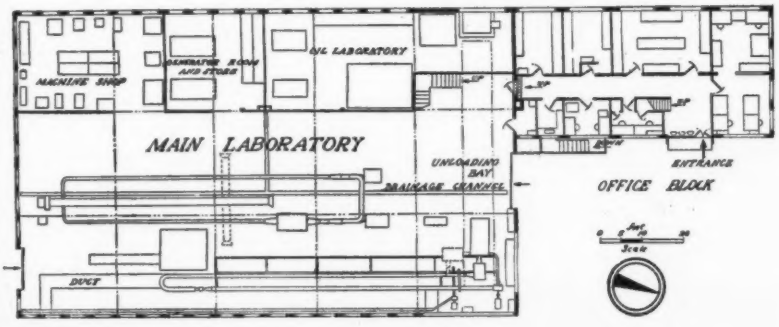
HARLOW NEW TOWN

Model of primary school

Design Group, for higher-income occupants. These houses, which will have 11-in. cavity walls faced with buff-coloured bricks, vertical elm strip boarding and rendering, will be built in a groups of six in one of the housing areas. Above : school designed by Richard Sheppard and Partners for the Mark Hall North area on a site indicated on the site plan on page 730. Below is a view, from the north, of the first factory to be built on the industrial estate for the British Hydromechanics Research Association. It was opened on May 24. This building consists of a laboratory, of about 14,000 sq. ft., and office accommodation, and was designed by G. T. Goalen of the Harlow Design Group. Steel-frame construction, monitor roof lighting, walls of 4½-in. brick outer skin ; 2-in. cavity and 2-in. hollow block inner skin. The roof is of precast concrete units and the ground floor is solid concrete. Colour scheme ; light cream walls ; grey stanchions ; laboratory partition wall, brick red ; main ceiling, light blue ; shutter doors, royal blue.



First floor plan



Ground floor plan

construction that was approved by the controlling authorities.

Admittedly some so-called "traditional" construction was permitted, but only under the most stringent conditions. Were we to regard this state of affairs as transient or permanent?

Recently the speaker had to review a new edition of a very popular manual of building construction, and he looked with interest to see how the new editor had solved this problem. The book had been lengthened by approximately 50 per cent.! Some obsolete drawings of cast-iron columns and girders had been omitted; a great deal of excellent new information had been added; revision had been thorough; but most of the old favourites had been retained, including trussed timber partitions and all the usual types of roof-truss. That was all very well for use by a practising architect, but how much of it should be included in a student's course, which remained the same length as before?

Frederick Wylie on "Industrial Buildings"

On June 1 Frederick Wylie read a paper on "Industrial Buildings" at the RIBA Conference.

The phenomenal growth of interest in the subject in the past 20 years could be accounted for in various ways, he said, but they all boiled down to this; that as a generation we had become acutely conscious of the methods by which most of the things we ate, wore and used were made, and by which we pay our way in a troubled world. If a label was ever put on our time it might well be that this was the age of mass production. Another reason, in this country at least, was that by and large we were compelled by our straitened circumstances to restrict our building activities to the essential tasks of housing, schools, hospitals, and factories; and consequently had little else to talk about when we got together.

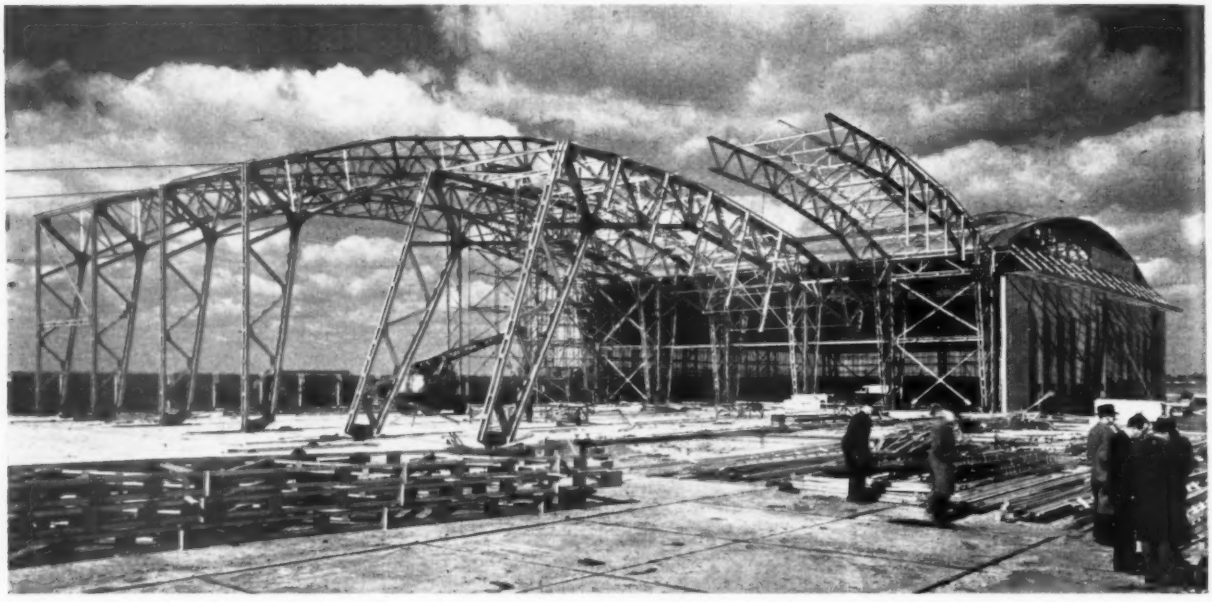
The speaker went on to say something about the background of the development of industrial buildings in the United Kingdom. And before passing to contemporary work—factories erected within the last 30 years—he spoke of the industrial estates which were now a prominent feature of industrial life in Great Britain. These estates were a comparatively modern development, although in a way they were only a logical outcome of the tendency to form in clusters which industries—and particularly industries related to one another—had always shown. The important thing to bear in mind, however, was that they were controlled hives, and not the huge shapeless swarms that the 19th century bequeathed to us. Mr. Wylie described a number of such estates and went on to discuss contemporary industrial work in some detail. He pointed out, in passing, that not a few of the office elevations of factories erected during the past 20 years showed evidence that yet another historical style was with us and that many a design was being strained to include one or other of those features that were so challenging when they were used for the first time by Gropius or Ostberg or Dudok. Even our random rubble walls nowadays paid homage to Corbusier.

American Architects' Visit

Last week, members of the American Institute of Architects with their wives, comprising a party of 20, arrived at London Airport for a four-day visit to Britain to study British architecture.

Under the guidance of the RIBA they saw many aspects of British architecture, and visited the Festival exhibitions, including the Poplar "live" exhibition.

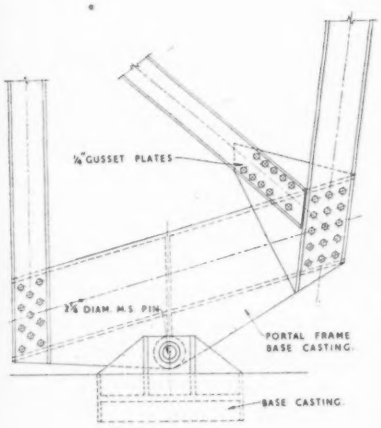
THE FIRST AIRCRAFT HANGAR IN ALUMINIUM ALLOY,



This three-bay aircraft hangar at London Airport for the Ministry of Civil Aviation illustrates one of the uses of light alloy in the construction of large buildings. Specification : clear span of each bay, 125 ft. ; length, 110 ft. ; door height, 30 ft. Structure to withstand snow load of 15 lb. sq. ft. ; wind load of 25 lb. sq. ft. in addition to self weight. Instead of steel, of which there is a shortage, aluminium alloy was used in a structure specially designed by the SMD Engineering Company of Almin, Ltd. Twelve half portal frames are required for each bay and these are mainly constructed of durable channel sections, battened together 6½ in. apart : internal members are fitted between with gusset plates. The half

LONDON AIRPORT

frames are assembled on the site and hinged at the bases by high tensile steel pins. The pins pivot in aluminium-alloy castings which are bolted to the foundation blocks (opposite and detail below). In this way 90 per cent. of the assembly work can be done on the ground, saving time and cost. Each unit weighs about 3 tons. Units are hoisted into position in pairs by means of winches (facing page above). All other



components which cannot be handled by a 30-ft. jib crane—doors, top door guides, wind girder, etc.—are hoisted by tackle fixed to the erected portals. Folding doors are operated electrically. Glazing is in the central gables and transverse lanterns along the front verge. Walls and gables are faced with aluminium-alloy sheet dipped in a special chromatic process. This gives a finish of pale egg-shell blue, but is also a good key for paint. There is a 4-in. air space between the alloy sheet and the internal asbestos wall facing. Roof is corrugated alloy sheet covered with fibre board and bitumen felt. Weight of building is approximately 312 tons, made up as follows: structure, 95 tons; sheeting, 7 tons; insulation, 10 tons; doors, 48 tons; glazing, 52 tons; decking, 100 tons.

For sub-contractors and material suppliers, see page 750.

MOLGP

Rebuilding of Gray's Inn Square

The Minister of Local Government and Planning, Hugh Dalton, has given planning permission to the Honourable Society of Gray's Inn for the future rebuilding of South Square and Gray's Inn Square according to the plans submitted by Edward Maufe on behalf of the Benchers. This will enable the Society to rebuild its library and chapel and a number of sets of chambers. It had been agreed that the plans as submitted need not conflict with a proposal for the widening of Gray's Inn Road.

LCC

New Sayes Court Opened at Greenwich

A new Sayes Court was opened at Greenwich last week. All that remained of the original Court—John Evelyn's historic 17th century estate—by the end of the last war was a small public garden of less than 2 acres. This was managed for the LCC by the Greenwich Metropolitan Borough Council. Adjoining the garden were the sites of blitzed houses.

The new Sayes Court covers the area of the public garden and the adjoining blitzed sites. A garden has been provided. This has seats and shelter from cold winds and prominence has been given to the famous mulberry tree on the site. There is a paddling pool, play equipment for children and a "dry" playground. In addition, a play room 30 ft. 9 in. by 15 ft. 9 in. with low windows has been built. It is electrically heated with thermostatic control. Plans were prepared in the Parks Department of the LCC under the supervision of the chief officer, L. A. Huddart.

DIARY

Exhibition of Drawings by Thomas Matthews Rooke (1842-1942). At 66, Portland Place, W.1. (Sponsor, RIBA.) Weekdays: 10 a.m. to 7 p.m. Saturdays: 10 a.m. to 5 p.m. UNTIL JUNE 14

Exhibition of Contemporary Architecture (Members' Work). Herbert Gallery, Coventry. (Sponsor, Coventry Society of Architects.) Monday to Friday, 10 a.m. to 8 p.m. Saturdays, 10 a.m. to 5 p.m. UNTIL JUNE 30.

Exhibition of Old Books, Maps, Prints, Engravings and Rare Documents. At 98, Gloucester Place, W.1. (Sponsor, Institute of Quantity Surveyors.) Daily (excepting Sundays and Bank Holidays): 2 p.m. to 5 p.m. UNTIL SEPT. 29

Harlow New Town Festival Exhibition. At Harlow. Monday to Friday: 10 a.m. to 4.30 p.m. Saturdays: by special arrangement. (Sponsor, Harlow Development Corporation.) UNTIL SEPTEMBER

FOB South Bank Exhibition. Daily 10.30 a.m. to 11.30 p.m. Sundays, 12.30 p.m. to 11 p.m. UNTIL SEPT. 30

Exhibition of Exhibitions. At Royal Society of Arts, John Adam Street, W.C.2. Mondays to Saturdays, 10 a.m. to 6 p.m. (Wednesdays, 10 a.m. to 8 p.m.) UNTIL SEPT. 30

FOB Exhibition of Architecture. At Lansbury, Poplar. Weekdays, 10.30 a.m. to 8 p.m. Sundays, 12.30 p.m. to 8 p.m. UNTIL SEPT. 30

Exhibition of Science. At the Science Museum, South Kensington. Weekdays (except Tuesdays and Saturdays), 12 noon to 10 p.m. Tuesdays and Saturdays, 10 a.m. to 6 p.m Sundays, 2.30 p.m. to 6 p.m. UNTIL SEPT. 30

1851 *Centenary Exhibition.* At Victoria and Albert Museum, South Kensington. Weekdays, 10 a.m. to 6 p.m. Sundays, 2.30 p.m. to 6 p.m. UNTIL OCT. 11

The Man in the Street. Sir Charles Tennyson. At AGM of CVE, Housing Centre, 13, Suffolk Street, S.W.1. 2.15 p.m. JUNE 14

The Architectural Significance of 1851. R. Furneaux Jordan. At 66, Portland Place, (Sponsor, AA.) 6 p.m. JUNE 19

This feature covers aspects of legislation, parliamentary news or statutory rules and regulations which are of special significance to the architectural profession.

ERNEST WATKINS

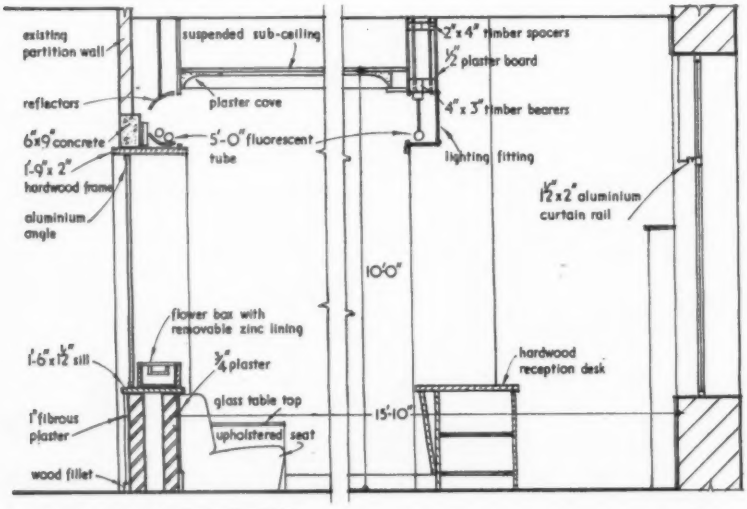
The Architect and Current Affairs

The second report of the Monopolies and Restrictive Practices Commission has recently been published. The first report dealt with dental supplies. The second deals with what are comprehensively described as "rainwater goods"; in fact, the Commission's inquiry was confined to iron castings of rainwater pipes and gutters, soil pipes and smoke pipes. As a result, so the Commission states on the authority of the MOW, it investigated an industry which supplies about 58 per cent. of the goods of these classes used in the building trades (asbestos cement, 22 per cent., and pressed steel, 13 per cent., normally supply the bulk of the remainder). The industry is of direct professional interest to the architect, as adviser to the building owner, both because of its product and because its organization is part of the distribution system which handles a high proportion of all the fittings that go into each building.

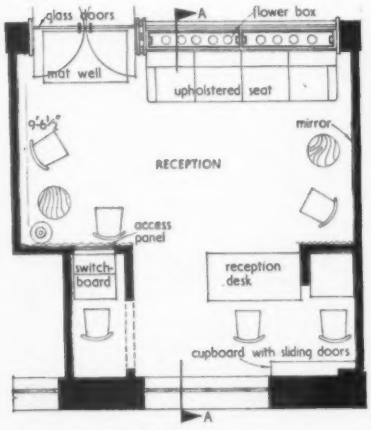
The conclusions in the report tell most of the story. Both the manufacturing and

OFFICES IN REGENT STREET, LONDON.

The reception office of the International Wool Secretariat in Dorland House, Lower Regent Street, has been redesigned by Halfhide and Partners. This room has been opened up to the second floor staircase hall, as seen in the photograph below. The armourplate glass window and doors, and the illuminated engraved motif in the fanlight are seen above from the inside. The general contractors were J. Styles & Son, Ltd. Sub-contractors on page 750.



Section A-A [Scale: ½" = 1' 0"]



Plan [Scale: ½" = 1' 0"]

the distributing sides of the industry are operated on the basis of restrictive agreements. The Rainwater Agreements "set up a minimum price ring covering nine-tenths of the trade and are supported by exclusive dealing arrangements." On the other hand, these agreements cover iron castings only. They do not extend to asbestos cement goods; negotiations to extend them as far as that came to nothing and are not to be revived. While the profits made by individual foundries vary, the "average profits have not been high in the industry"—but that must be matched against the existence of a Government price control. The taxable profits for 1948 of the Allied Ironfounders' Group (which supplies about one-third of the total requirements of the home market) were 14·9 per cent. of their net sales, and those of thirteen other concerns averaged 11 per cent. The gross margin of the merchandising side of the trade can be put at roughly 20 per cent.

The industry defends its present organization mainly on these grounds. By these restrictions, it claims, the industry is enabled to produce efficiently the rainwater goods the public requires, to pay good wages, provide decent conditions and to earn a reasonable profit. The Union (the Foundry Workers) argues that improvements in productivity have been to the advantage of the employer, not to that of the worker or consumer, but does not advocate a return to the price competition of the pre-war period. The Commission itself considers that production by low cost methods is retarded owing to the impossibility of a successful manufacturer expanding his own share in the market, and that there is no incentive towards standardization or specialization by individual producers. Its most specific recommendation is that the existing agreements should be modified by the elimination of those provisions which prevent any non-signatory to the agreements from buying at the prices and with the discounts available to the signatories. The industry itself offered to accept some government supervision of prices; these two alterations in practice would, so the Commission feels, redress the balance.

That is the report. It is not startling. It does not tell those concerned in the building trade very much that they did not know already; nor does it make any sharp attack on, or propose any drastic remedy for, existing practices. But it does assemble much useful information and figures not otherwise easily available. And it probes to the centre of the problem of restrictive practices in industry. It is not so much that restrictive practices enable an industry—this industry, anyhow— to make an excessive profit (the iron casting section of the industry is always faced with competition from products in other materials). But an industry which settles down to operate indefinitely on the foundation of a shared market and the exclusion of the newcomer loses the incentives to progress that are given by competition.

From that point it is very easy to drop into party politics. One party claims that, when that state of affairs is reached, the industry is the equivalent of a privately owned and managed monopoly and that that, *ex hypothesis*, is bad. The other claims that competition is inevitably present in any industry which remains under private ownership. Are either right? What happens to the consumer when employer and employee say, in effect, that they do not want competition, that they prefer the comforts of a monopolistic state of affairs, and confine their argumentations between themselves to who shall run the monopoly?

Is that drifting into politics or escaping from reality? The report impinges on a field in which political parties have their views and their set solutions. It does not lead one to the conclusion that the remedies proposed by either political party are the most effective remedies for present ills.

HANGAR AND OFFICES

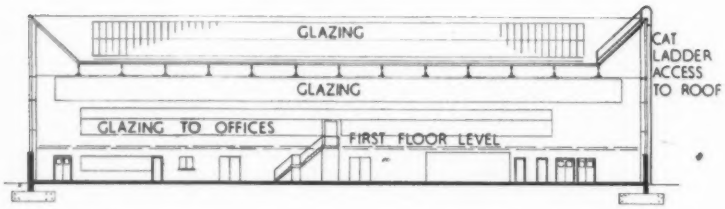
at COLLINSTOWN AIRPORT, DUBLIN

designed by HUGH ROBERTS and DAVIES

consulting engineers G. A. DODD and PARTNERS

The new hangar, illustrated below and on the following pages, has been designed for the maintenance of the aeroplanes used by Aer Lingus, the Irish air line. On the south side of the hangar and facing the entrance to the airport is a two-storey block, the ground floor of which is used for stores and workshops and the first floor for offices for the air line operational staff, who were previously housed in the main terminal building.

Looking north, with the offices in the foreground.



Section A-A

Ground and first floor plans [Scale : $\frac{1}{16}$" = 1' 0"]

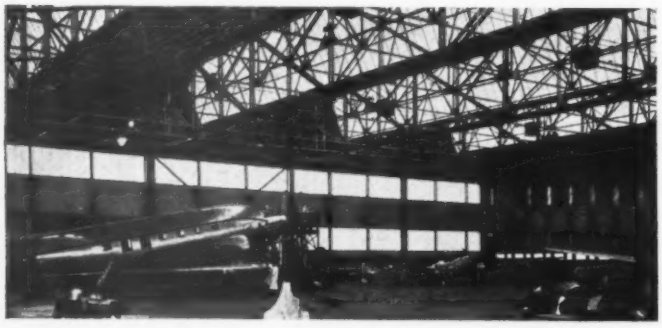
SITE.—The site of the new hangar had to conform to a long-term planning scheme for the development of the airport, and is the first part of a large scheme envisaged in connection with an Irish transatlantic service. It was decided not to divert the main roadway at this stage of the development and the amount of land available was therefore limited. The size of the building was affected by the type of machine in use.

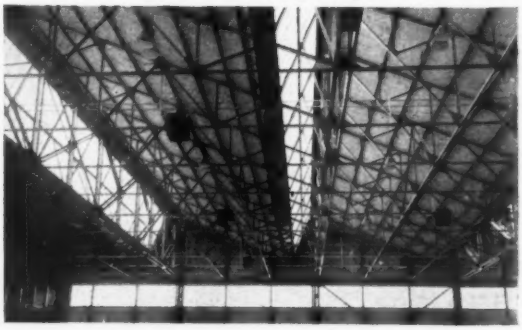
PLAN.—There are sliding-folding doors, up to a height of 30 ft., at the north end of the hangar. At the opposite end the offices occupied by the staff which deals with servicing have windows overlooking the hangar floor from first floor level.

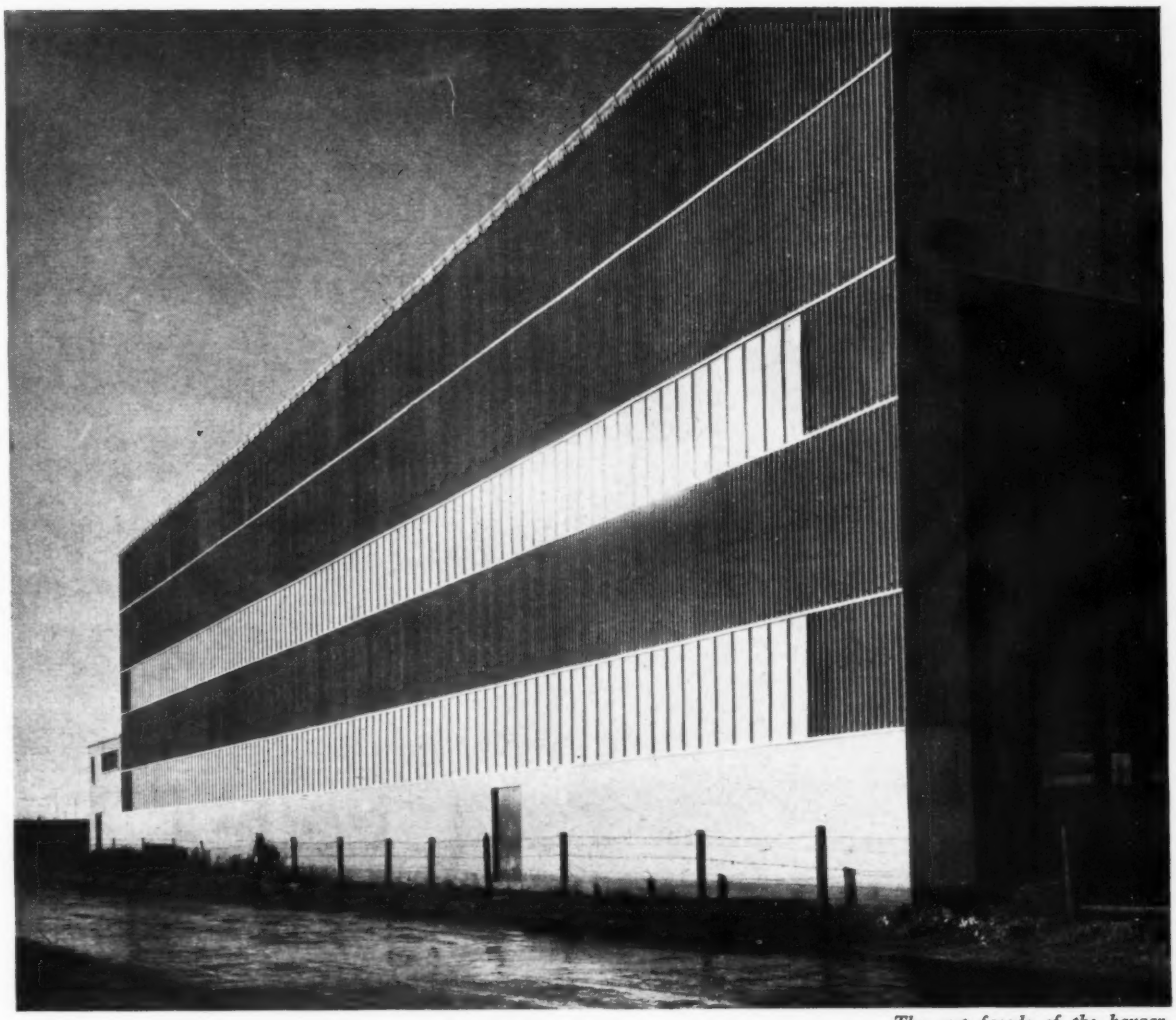
HANGAR AND OFFICES

at COLLINSTOWN AIRPORT, DUBLIN
designed by HUGH ROBERTS and DAVIES

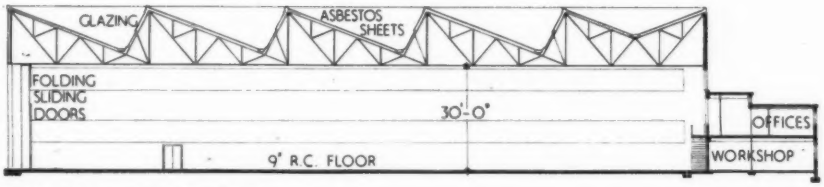
Below left, interior of the main hangar. Below, close-up of the hangar roof.







The east facade of the hangar, looking south-west. On the right are the 30-ft. high sliding-folding doors.



Section B-B [Scale: $\frac{1}{16}$" = 1' 0"]

CONSTRUCTION.—The building is steel-framed and the hangar roof is a combination of lattice girders and north lights. This was found to be the most economic way of providing the required span of 175 ft. The offices, which are also steel framed, have precast concrete floors and roofs of a type now being made for the first time in Eire.

FINISHES.—Wherever possible, materials used were manufactured locally. External cladding is of asbestos sheeting and internal cladding (in the hangar) is of insulation board. Special Z type aluminium flashing is used on the horizontal joints of the aluminium sheeting. The office walls are of concrete blocks, rendered externally, and the windows are of aluminium. The external rendering has been made to match the colour of the terminal and other buildings. Most of the offices are formed by movable metal partitions to facilitate future changes in layout. Floors in the offices, in the staff entrance and on the stairs have cork tiles.

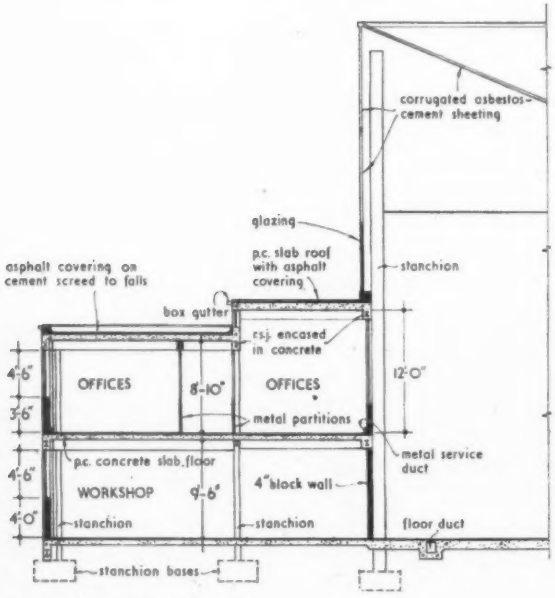
The clerestory glazing above the office windows overlooking the main hangar floor.

HANGAR AND OFFICES

at COLLINSTOWN AIRPORT, DUBLIN
designed by HUGH ROBERTS and DAVIES

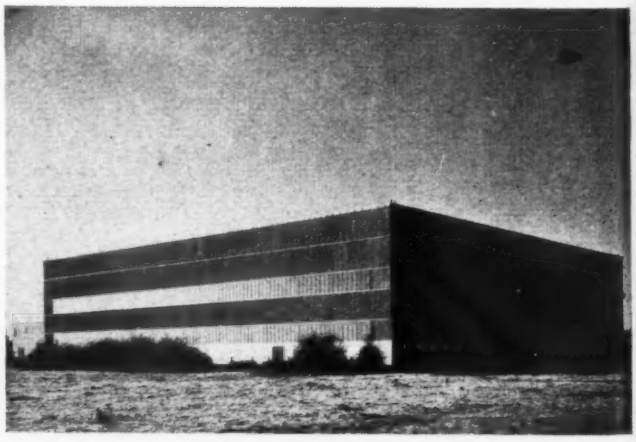
SERVICES.—Compressed air and electrical services, such as low-voltage supplies, are carried in ducts in the hangar floor. Heating is by means of unit heaters in the hangar roof and radiators in the office block. Circular washing fountains are accessible from the hangar floor area.

The general contractors were John Sisk & Son (Dublin), Ltd. For sub-contractors, see page 750.



Section C-C [Scale: ⅛" = 1'0"]

A general view of the east and north facades.

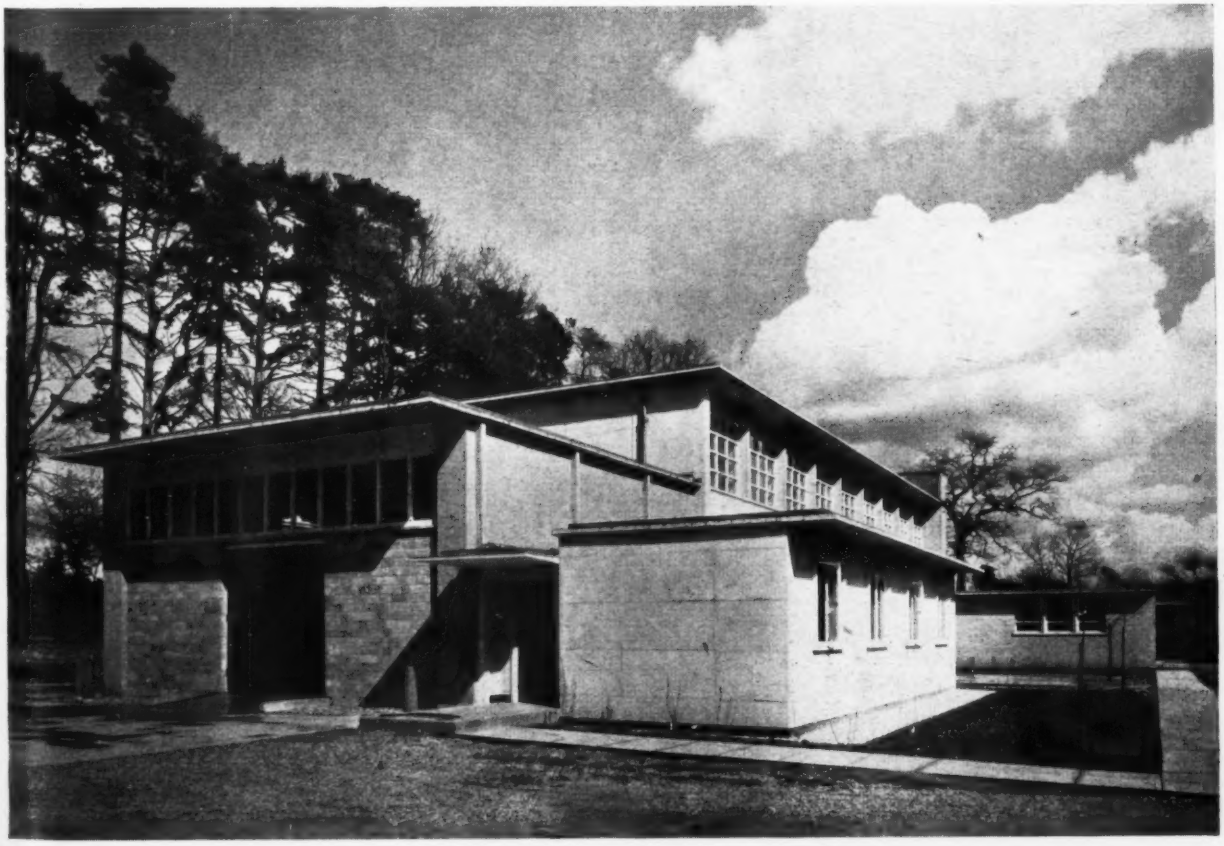


STRUCTURES LABORATORY

at WEXHAM SPRINGS, SLOUGH, BUCKINGHAMSHIRE
originally designed by the late CHRISTOPHER NICHOLSON
executive architects: HUGH CASSON and NEVILLE CONDER

The new structures laboratory, which now forms a major part of the Cement and Concrete Association's research station at Wexham Springs, was opened by the new Minister of Works, George Brown, on May 10. Wexham Springs, formerly a private estate, was acquired by the association in 1947, and the house and its various outbuildings were converted into laboratories. This building, which is the first stage of a larger scheme of extensions, houses the structures laboratory, a precast concrete products workshop and offices and lavatory accommodation for the Structures Section staff.

View from south-west.



Above, the east entrance to the structures laboratory.

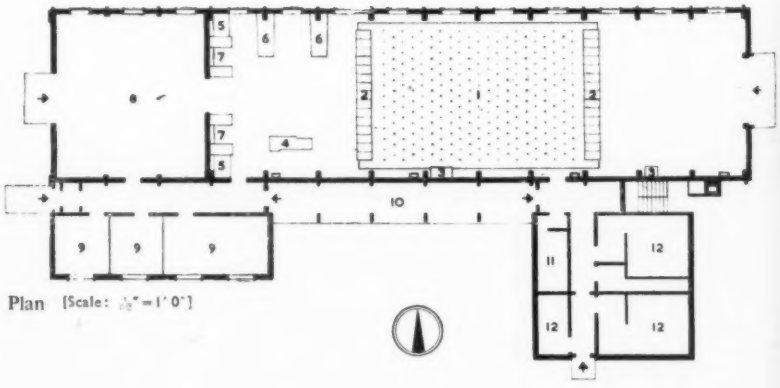
STRUCTURES LABORATORY

at WEXHAM SPRINGS, SLOUGH
originally designed by the late CHRISTOPHER NICHOLSON
executive architects: HUGH CASSON and NEVILLE CONDER

PLAN :—The structures laboratory itself is 26 ft. high; the smaller laboratory adjoining it, which will be used for experimental work on problems concerned with precast concrete development, is only 14 ft. 3 in. high. The small block containing the research staff offices projects from the main body of the structure at the south-west end; another projecting block, containing stores and lavatories, balances it at the south-east end. These two small wings are linked by a covered way.

CONSTRUCTION :—With the exception of the offices and lavatory blocks, where the walls are load bearing, the building has a reinforced concrete frame. The columns, spaced at 10-ft. centres, were cast *in situ* and, besides carrying the roof, they support, at 15 ft. 5 in. above floor level, longitudinal beams for the running rails of an overhead hand-operated crane. The main roof beams, which were precast and pretensioned on the Hoyer system, have an unsupported span of 29 ft. 6 in. They were tied to the column heads by means of ½-in. diameter bars left projecting from the ends of the main beams and the tops of the columns. The intervening space was concreted *in situ*, with a projection which forms the flat overhanging eaves. Tee-shaped precast and prestressed roof joists span between the main beams, and the infilling consists of concrete blocks (not reinforced). Roofs of the precast products laboratory, and of offices and lavatory wings, are all of 4-in. thick reinforced concrete slabs placed *in situ*. Non-load-bearing walls, some of stock bricks, some of hollow concrete blocks, are carried on ground beams spanning between the foundations of the columns. The floor of the precast laboratory and the test floor of the structures laboratory are structurally isolated by impregnated felt strips so that

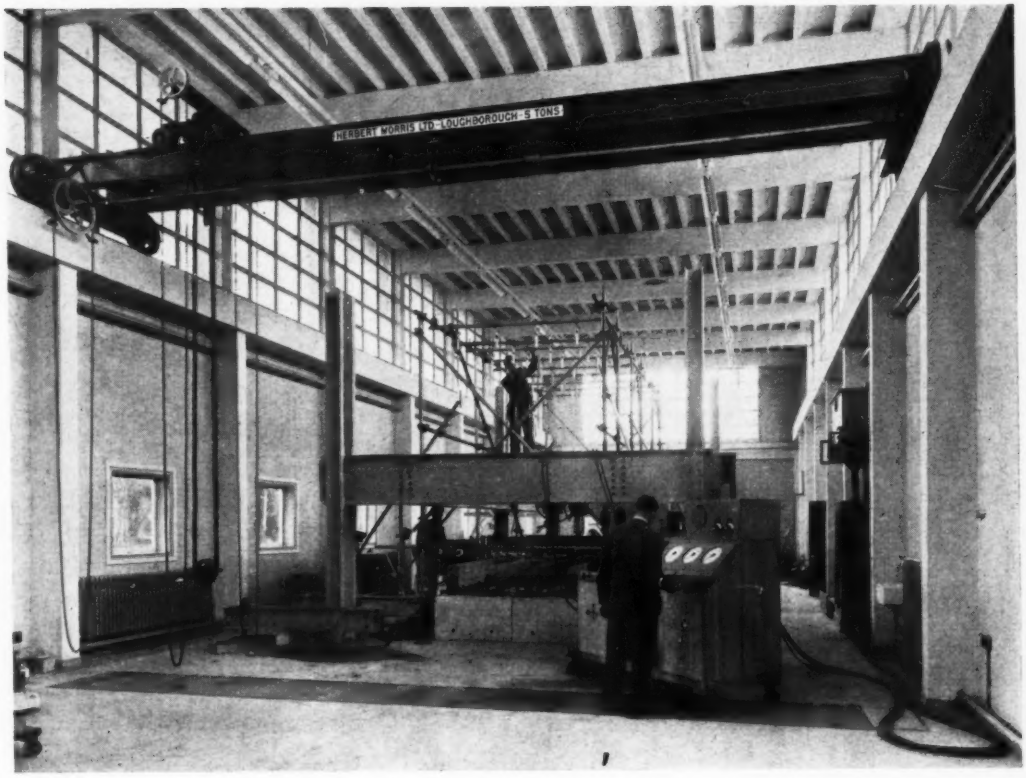
Left, the covered way, as seen from the south-west.



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

KEY

1 Test floor
2 Prestressing duct
3 Hydraulic pump and tank
4 Testing machine
5 Instrument bench
6 Desk
7 Cupboards
8 Precast products shop
9 Offices
10 Covered way
11 Ladies' lavatory
12 Gentlemen's lavatory

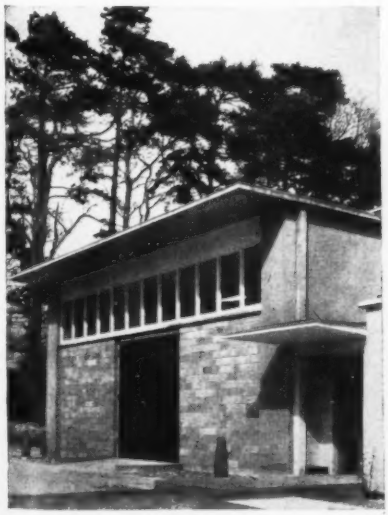


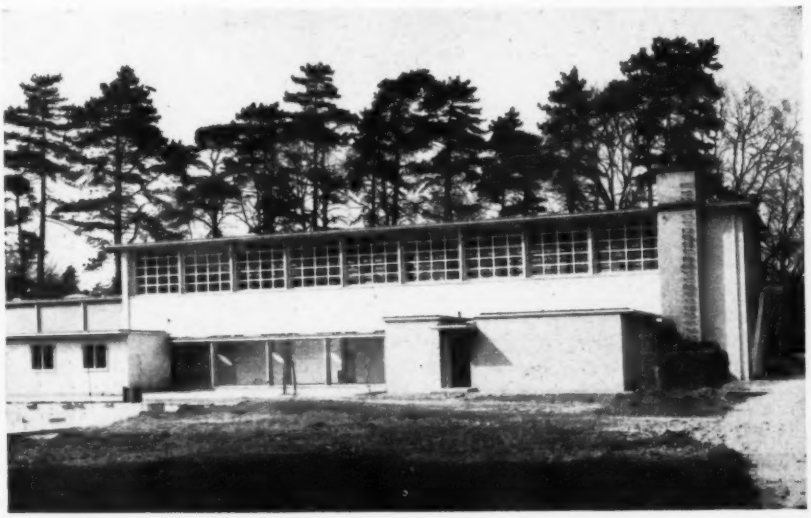
Interior of the structures laboratory looking east. The roof construction can be seen clearly here.

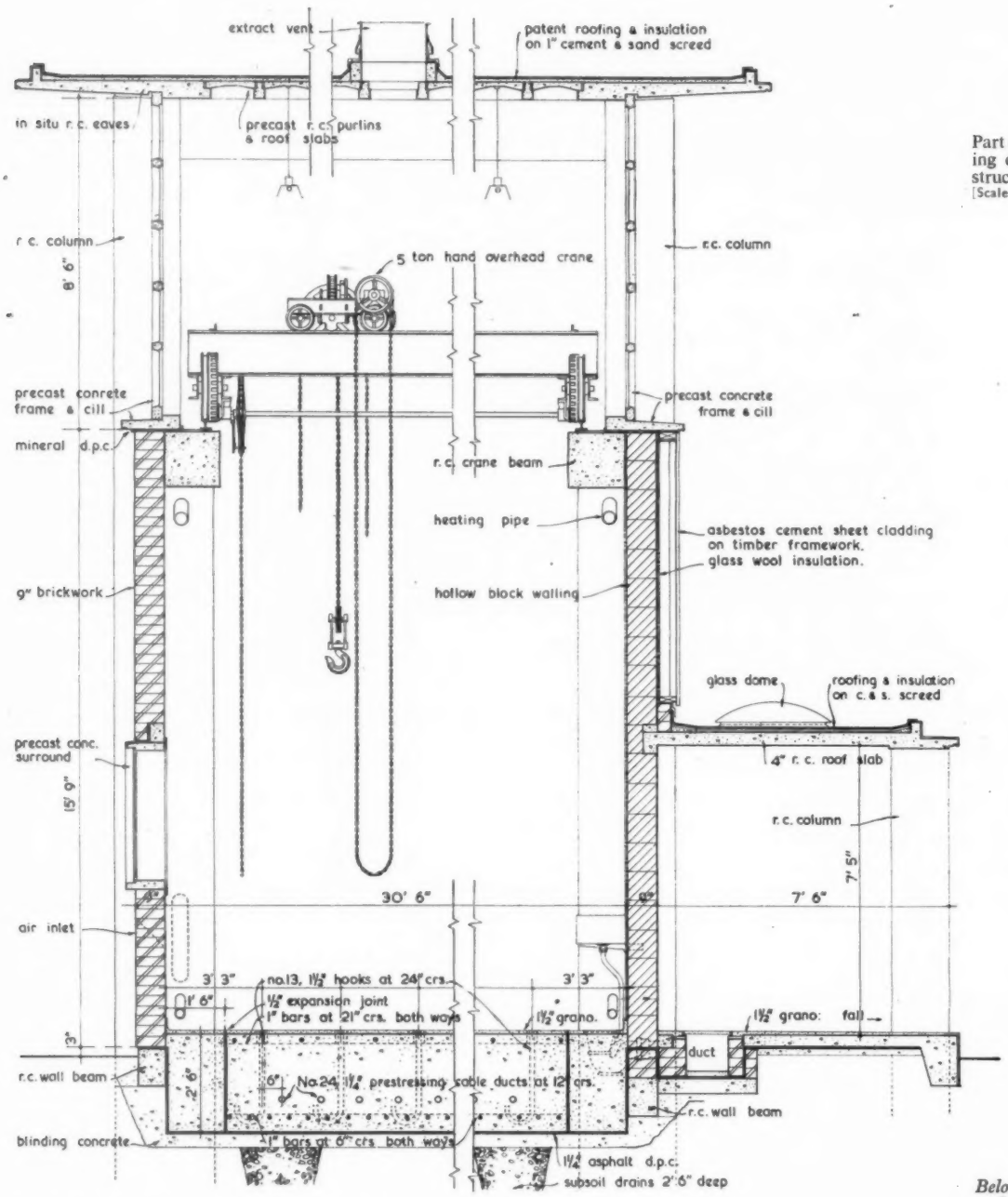
movement is not restrained and the transference of impact noise and vibration is prevented. The test floor, 2 ft. 6 in. thick, is specially constructed for large-scale experimental work, and ducts for the passage of prestressing cables have been incorporated in it, so that the floor can be post-tensioned if necessary.

FINISHES :—Surface finishes throughout are nearly all products of cement, and the new building has been used to demonstrate a wide variety of surface finishes and cement renderings. These will be described in detail in next week's issue of the JOURNAL. The roof of the covered way is left untreated, but the columns which support it have a tooled finish. The lower portion of the south wall is faced with precast slabs in a variety of different textures. The end wall of the products shop is of precast blocks with a special exposed aggregate finish. The office wing is faced with large precast slabs, tooled and resembling Portland stone in colour. Internally : laboratories, cement paint throughout (except west wall of structures laboratory—white cement-lime-sand rendering) ; floors, granolithic concrete. Offices, plastered ceilings and walls, plastic surfaced partitions, plastic

Below, the main, south elevation. Below left, the west entrances.







Part cross section, looking east, through main structures laboratory. [Scale : ¼" = 1' 0"]

STRUCTURES LABORATORY

at WEXHAM SPRINGS, SLOUGH

originally designed by the late CHRISTOPHER NICHOLSON

executive architects : HUGH CASSON and NEVILLE CONDER

floor tiles. Lavatories, floor, terrazzo; walls, terrazzo up to height of 6 ft., plaster above; ceilings, plaster; partitions, metal-faced plywood.

SERVICES :—Heating is by means of a low-pressure hot water system, thermostatically controlled, with automatic stokers. Extractor fans provide ventilation.

The general contractors were Holland & Hannen and Cubitts Ltd. For sub-contractors, see page 750.

Below, under the covered way, looking east; note the tooled finish to the columns.

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

TECHNICAL SECTION

In his article last August P. H. Parkin mentioned "Haas effect" and the possibility of using electrical delays to increase the realism of speech reinforcement systems. In the following article, A. G. Thomson describes the latest developments of this theory and experiments which have been carried out by BRS.*

PROGRESS IN SPEECH REINFORCEMENT

By A. G. Thomson

During the past twenty years great progress has been made in the development of equipment for speech reinforcement. Microphones, amplifiers and loudspeakers are now very efficient, and technically there is no reason why speech should not be reproduced intelligibly and naturally in any hall or on any open-air site. The majority of installations present little difficulty, because a single loudspeaker is usually sufficient. However, in large halls or on open-air sites, the original source of sound has to be relayed by two or more loudspeakers in order that it may be heard clearly by every member of the audience. As a rule, it is not difficult to reproduce speech intelligibly using a number of loudspeakers, but to do so naturally and without straining the listener presents problems which, till recently, have not been fully understood.

HIGH LEVEL AND LOW LEVEL SYSTEMS

For installations serving a fairly large area two alternative systems may be employed. In what is known as the "high level" system the loudspeakers are mounted close together in a "bank," their aggregate volume being greater than that of the original source of sound. In the "low level" system a number of loudspeakers are distributed throughout the hall, usually on either side. Both systems have certain advantages and drawbacks. The high level system is simpler and cheaper and, if the loudspeakers are located behind the person talking, there is a natural time delay which makes the sound appear to be coming from the speaker. On the other hand, to reach the people at the back of the audience the level of sound must be high and, due to feedback into the microphone, it may be difficult to enable the sound to reach all the listeners, without the loudspeakers becoming too loud for the people at the front. Another objection is that sound travels a long way in the open air, so that the use of the high level system in public parks and other open-air sites is a frequent source of complaints. For this reason, the low level system is often preferred in public parks. But a serious disadvantage of the latter system is that, due to the number of loudspeakers, the feeling of direction is apt to be lost, so that the voice seems to be coming from the nearest loudspeaker, instead of from the stage or platform. Moreover, in Cathedrals and other large buildings which are reverberant, speech reproduction may be adversely affected by the reverberating sounds.

An ideal loudspeaker system should reproduce the speaker's voice so naturally that the audience would not realise that loudspeakers were being used. This ideal has almost been achieved at the Royal Festival Hall, where listeners at the back have expressed surprise that voices from the stage should be powerful enough to reach them clearly. This installation was carried out under the guidance of members of the BRS, who have been carrying out important investigations in the field of speech reinforcement.

BRS FIELD WORK

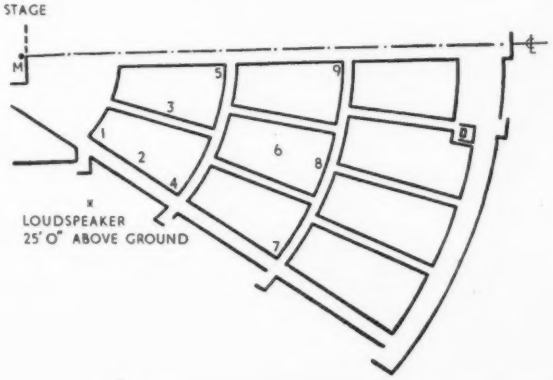
In their field work the BRS investigates specific problems, such as those presented by St. Paul's Cathedral, where reverberation interferes very seriously with speech reproduction. Consideration is given to the possibility of improving the existing system by ensuring that the frequency responses of the loudspeakers are correct. This work is based on what is known as the Beranek curve, which indicates that speech reinforcement should be only 6 db. down at 200 and 6,000 c.p.s. To illustrate the practical implications of these limitations, it might be mentioned that middle C on the piano has a frequency of 260 c.p.s., while that of the top note on a piano is about 6,000 c.p.s.

By altering the frequency responses to conform with the requirements of the Beranek curve, it may be possible to obtain satisfactory performance in terms of intelligible reproduction of speech, yet the sound may still appear to be coming from the nearest loudspeaker instead of from the actual source. No installation can be regarded as satisfactory if words spoken from a pulpit, stage or platform appear, to some sections of the audience, to come from loudspeakers located behind them or at their side. Obviously, realism would be enormously enhanced if this directional effect could be eliminated.

THE ELIMINATION OF DIRECTIONAL EFFECTS

German investigators found that, if two loudspeakers are reproducing speech, the voice will appear to be coming from the loudspeaker which is nearest to the listener. They approached the problem, therefore, by introducing delays in order to compensate for the varying distances through which sound from the source and sound from the loudspeakers had to travel before reaching the listeners. Subsequent research showed that the delays should be slightly increased in order to give an advantage to the actual source. Haas discovered that a delayed echo would not be heard as a separate source, provided that the delay was not more than 35 milliseconds and the echoed sound not more than seven decibels louder than the original direct source.

If the dimensions of the hall permit, the echo can be delayed sufficiently by placing the loudspeaker farther from the audience than the person speaking, in which case it is important to make certain that no feed-back into the microphone occurs. If the hall is sufficiently lofty, a simple and effective arrangement is to install the loudspeaker more or less above the microphone or source. The height must be such that the loudspeaker is farther from the audience than the direct source. An interesting point in this connec-



Half plan of the LCC open air theatre in Finsbury Park, showing the positions of the loudspeaker and nine observers.

The BRS mobile laboratory at the open air theatre in Finsbury Park testing the reinforcement system designed by Parkin and Scholes.

* Speech Reinforcement Systems, by P. H. Parkin. AJ, August 24, 1950.

tion is that direction cannot be so easily distinguished on a vertical line as on a horizontal plane. Therefore, if loudspeakers are required on each side of the hall, the directional effect can be reduced considerably by installing them sufficiently high.

A simple example given by Parkin illustrates very clearly the effects of delayed echoes on speech reinforcement systems. If, in a rectangular hall, with a speaker using a microphone at the centre of the platform, there are two loudspeakers on either side of the platform, then most of the audience will hear one or other of the loudspeakers a few milliseconds before they hear the direct voice. Thus the sound will appear to them to be coming from one or other of the loudspeakers which, particularly for those near the front, is obviously unnatural. On the other hand, if a loudspeaker is placed, say, 20 feet above the speaker, all the audience will hear the direct voice first. The sound will then appear to be coming from the human speaker, unless the loudspeaker is received at an intensity of more than seven decibels greater than that of the direct voice.

If the dimensions of a hall do not permit the installation of a high level system or, if for the reasons given above, a low level system is preferred, the delay must be introduced electrically. By providing a succession of delays between each pair of loudspeakers, it is possible to control directional effect so rigidly that, from every point of the hall or open-air theatre, the voice appears to come from the stage. The total volume of the sound at the back of the hall can actually be doubled, without listeners being aware of the fact that the sound is coming from loudspeakers mounted in the wall behind them. When a number of loudspeakers are installed, however, disturbance effects are introduced and these must also be taken into consideration.

THE FINSBURY PARK EXPERIMENTS

In the light of the most up-to-date knowledge available, "ideal" speech reinforcement systems have been designed by two members of the staff of the BRS, P. H. Parkin and W. E. Scholes. These systems have been tried experimentally with results which confirm the theoretical conclusions of the investigators. In order to avoid the complications of room acoustics an open-air site was selected for the experiments—the LCC open-air theatre at Finsbury Park. The existing system at Finsbury Park uses two loudspeakers, one on each side of the stage. Formerly, the sound seemed to be coming from these loudspeakers, but when Parkin and Scholes introduced their system of delays it seemed to come from the stage. The investigators also set up their own speech reinforcement system, which operated at a slightly lower volume, a network of loudspeakers being distributed throughout the site, with successively longer delays between each pair of speakers.

Teams of observers were distributed throughout the theatre, a different team being employed each night. During part of the performance the system was used without the delays, but during two different parts of the same act delays were introduced. The observers knew that these changes would be made, but were not told which system would be operating at any given time.

Their reports confirmed closely the theoretical calculations of the investigators. In practice, of course, the fact that they see the human speaker and expect the sound to come from him has an important influence on the listeners, so it is possible that appreciable deviations from the theoretical ideal may be permissible.

The results of the tests at Finsbury Park indicate that the limitations of existing speech reinforcement systems can be overcome by the methods developed at the BRS. The necessary equipment, however, is not yet available commercially. The apparatus used by the investigators is complex and delicate and requires more constant attention than would be possible in commercial use. It is understood, however, that leading electrical firms are investigating the possibility of producing equipment suitable for the purpose, and doubtless it is only a question of time before ideal reproduction can be achieved in commercial installations.

STEREOPHONIC REPRODUCTION OF MUSIC

The investigators at the BRS are only concerned with speech. Once music is put through a loudspeaker distortion occurs and an entirely new series of problems is presented. The main difficulty is that music is not suitable for single-channel reproduction, for a single microphone cannot take the place of two human ears. A system of stereophonic reproduction has been developed, however, which is based on the use of two microphones installed at approximately the same distance apart as are human ears. It then becomes necessary to arrange for the sound from the left-hand microphone to be transferred to the right of the auditorium and sound from the right-hand instrument to the left. This can be achieved by using two loudspeakers, but for perfect reproduction earphones are essential. Dutch and French experts have broadcast music amplified by this system over the radio, but two transmitters and also two receivers are required. An enormous increase in realism is achieved, however, by using a semi-stereophonic system with two loudspeakers.

Acknowledgment is made to the BRS for the information on which this article is based, and for permission to reproduce the two illustrations, both of which are Crown Copyright Reserved. The diagram of the open-air theatre at Finsbury Park is reproduced by permission of "Wireless World," in which it originally appeared.

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

QUESTIONS AND ANSWERS

3041 SUPPLEMENTARY LICENCES

Q *I should be most grateful for your guidance in the solution of the Building Licensing conundrum set out below.*

I am engaged on the conversion of a property into flats which is being carried out on the basis of a Lump Sum Contract.

The works are nearly completed, and I have now been informed by the builder that in order to complete the work he must have a further building licence for about £500.

The legitimate extra works amount to a very small part of this figure, the remainder claimed being due to the builder's negligence in not providing adequate site supervision as required by the contract, and to his non-compliance with the terms concerning subletting, variations, etc., despite the fact that his notice was several times drawn to these matters.

What would be the proper procedure? Would the application for and possible acquisition of the additional licence be tantamount to the acceptance of these additional costs? How can such costs be justified to the licencing authority? On the assumption that the builder has legitimately expended this money in connection with this contract, how can I insist that he completes the work if by so doing he will be exceeding the existing building licence figure on his own accounts?

A In a lump sum contract a building owner is not concerned with any costs incurred by the builder due to his bad organization of the job. Any excess over the licensed amount due to this cause would not be the subject of an application for a supplementary licence by the building owner's architect.

A supplementary licence would be necessary for variations which increase the cost over the licensed amount. If these variations are outside the scope of the licence the application should state the reason. If the excess cost is due to a rise in wages or materials and therefore not outside the scope of the licence, then the application for a supplementary licence should make this clear. If the variations have already been carried out the licensing authority cannot issue a retrospective licence, but the building owner can himself apply for an endorsement of the original licence with the excess.

If the builder does not complete the contract after being required to do so, then the building owner could employ another builder and deduct the cost from the contract sum. A supplementary licence for excess due to this procedure would be necessary.

An application for a supplementary licence would therefore be confined to excess cost due to variations on the contract, due either to work outside the scope of the licence or to rise in wages or materials for work within the scope of the licence.

3042 USE OF FLUE BY AN ADJOINING OWNER

Q *Our client has purchased a property, which we are converting for him, which has a party wall as one boundary. On this party wall there is a chimney stack projecting 13½ in. on his side of the party wall on the ground floor, with the normal fireplace opening and what appears to be the stack on the floor above, measuring 13½ in. × 18 in., projecting from the party wall. One chimney pot in line with this appears through the roof.*

On lighting a fire in the fireplace the smoke could gain no outlet and, on investigation, the flue was found to have been blocked off. This flue is apparently being used by the adjoining owner and, though we have not been able to inspect his side of the party wall, it seems fairly obvious that he has some form of fireplace on the other side which he has turned into our client's flue and has been using since 1932.

Has our client any right to reclaim the flue or to demand from the adjoining owner the cost of a new flue for himself?

A On the facts stated it appears that the fireplace and chimney stack belong to the property purchased by your client. If it is the case that the adjoining owner has tapped the purchaser's flue in order to connect a fireplace on the adjoining owner's side of the party wall, then, in my opinion, the adjoining owner should be called upon to discontinue the use of the flue and reconnect it to the purchaser's fireplace.

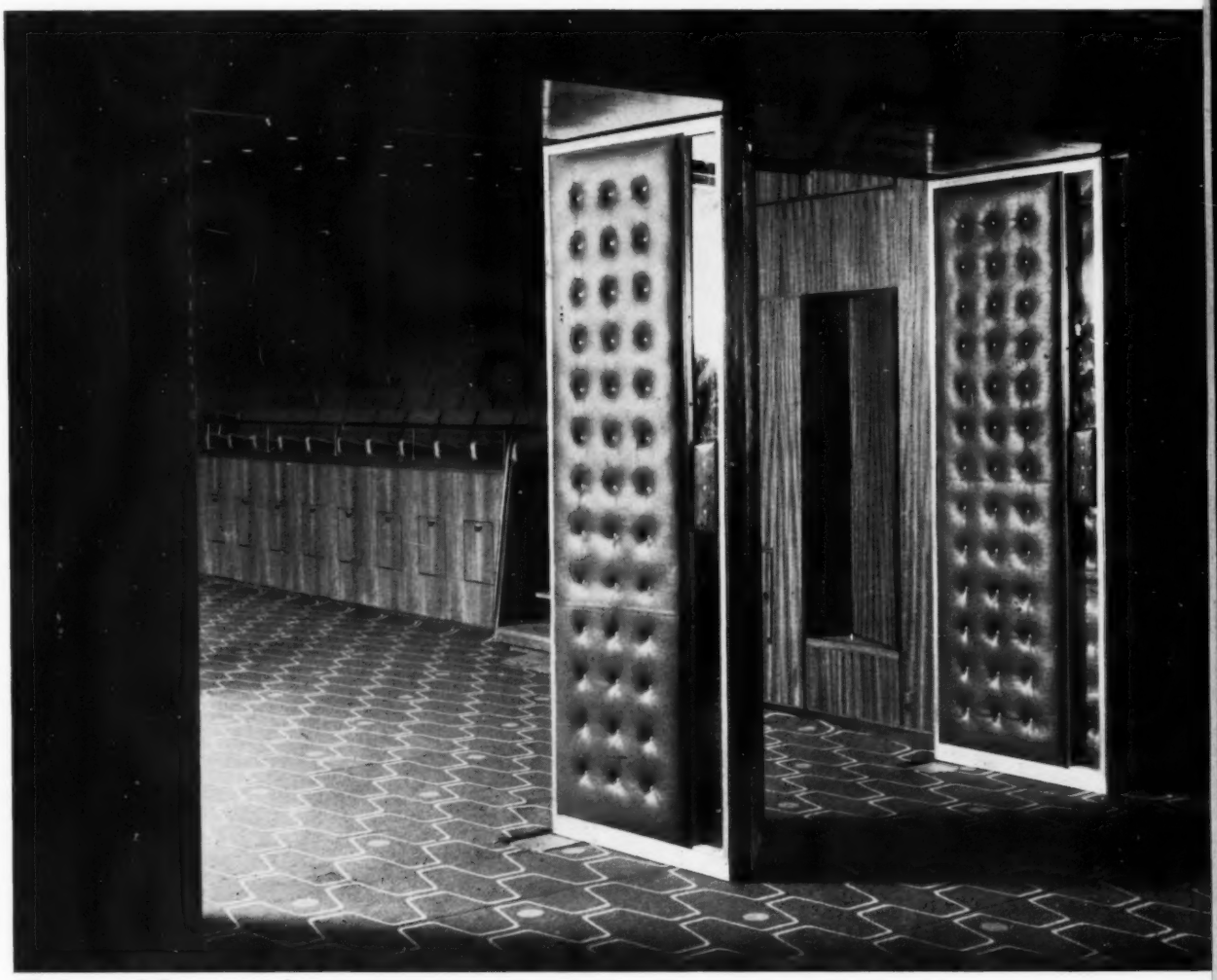
If any claim to the use of the flue is made by the adjoining owner, he would have to show agreement by the previous owner of the purchaser's property, as an easement cannot be acquired surreptitiously. Even though the flue has been in use by the adjoining owner since 1932 and may therefore be approaching the necessary 20 years for the acquisition of an easement, a surreptitious use would, in my opinion, defeat any such claim.

WORKING DETAIL

DOORS:

AUDITORIUM ENTRANCE DOORS: ROYAL FESTIVAL HALL

Robert H. Matthew and J. L. Martin, Architect and Deputy Architect, L.C.C.: Edwin Williams, senior architect-in-charge: Peter Moro associated architect.



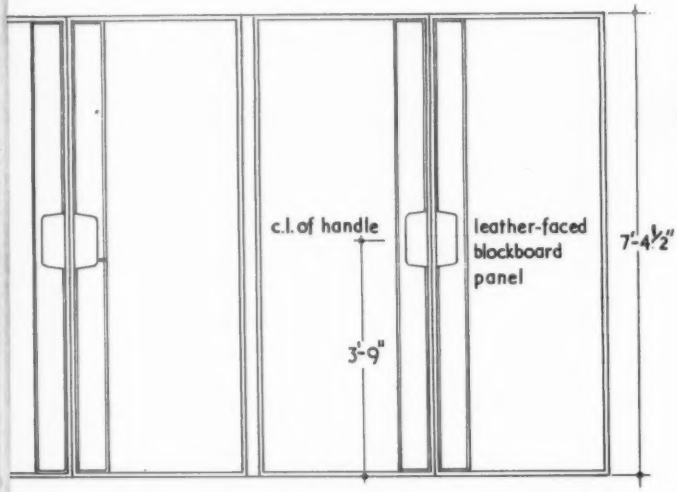
The doors are built up on a steel channel frame covered with extruded aluminium alloy sections. The padded leather facings are fixed to plywood on a blockboard core.

WORKING DETAIL

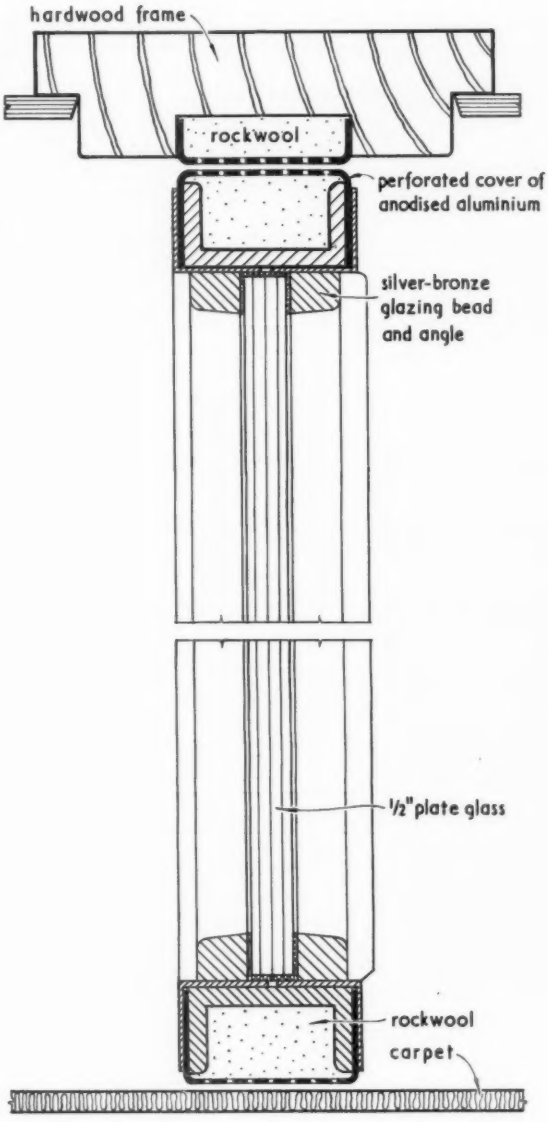
DOORS: 3

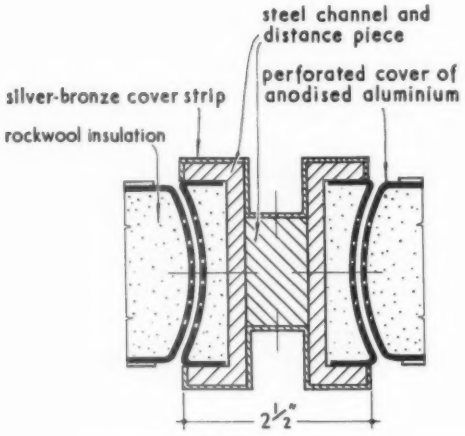
AUDITORIUM ENTRANCE DOORS: ROYAL FESTIVAL HALL

obert H. Matthew and J. L. Martin, Architect and Deputy Architect, L.C.C.: Edwin Williams, senior architect-in-charge: Peter Moro, ssociated architect.



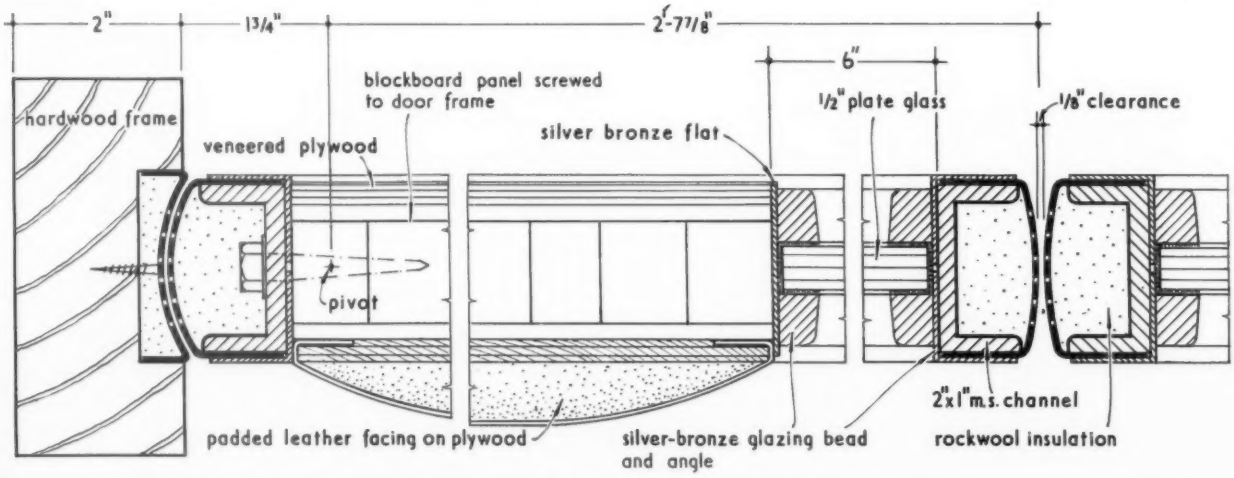
PART ELEVATION OF DOORS scale 3/8" = 1'-0"





SECTION THROUGH CENTRE POST. scale ½ full size

SECTION THROUGH DOOR scale ½ full size



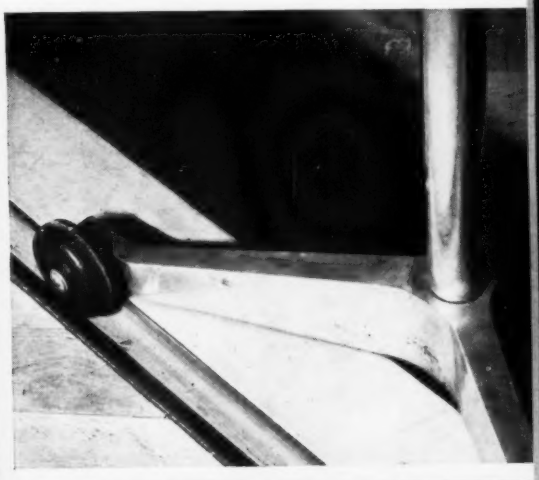
PLAN THROUGH DOORS AND FRAME. scale ½ full size

WORKING DETAIL

FURNITURE AND FITTINGS: 5

MUSIC STAND: ROYAL FESTIVAL HALL

Robert H. Matthew and J. L. Martin, Architect and Deputy Architect, L.C.C.: Edwin Williams, senior architect-in-charge: Peter Moro, associated architect.

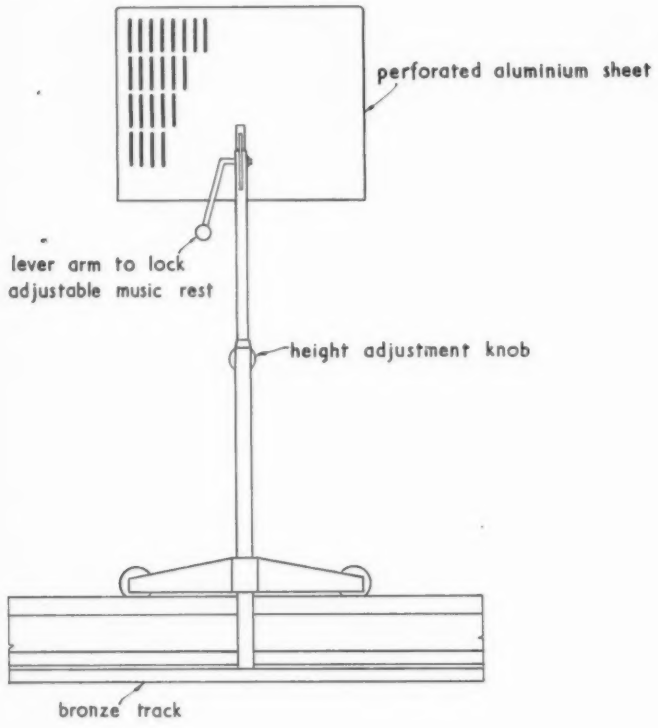


The aluminium alloy stand is supported on two wheels and a guide running in tracks along the front edge of the platform.

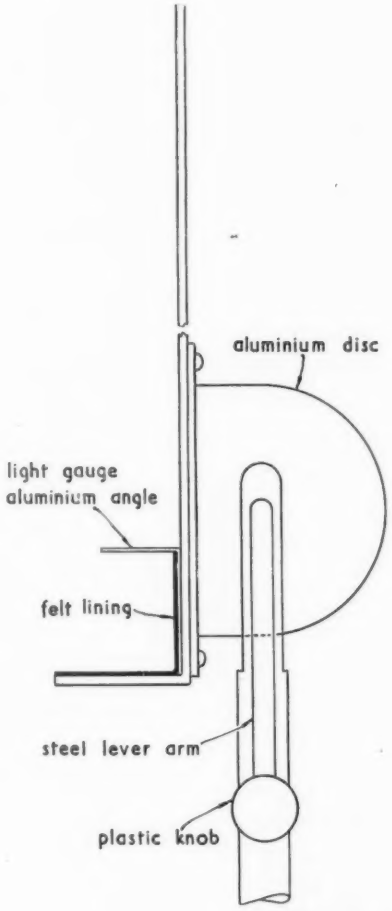
WORKING DETAIL **FURNITURE AND FITTINGS: 5**

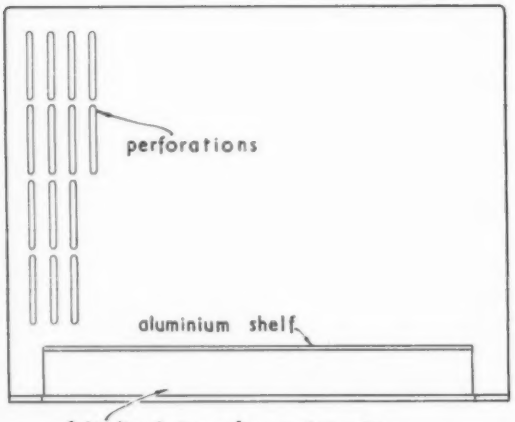
MUSIC STAND: ROYAL FESTIVAL HALL

Robert H. Matthew and J. L. Martin, Architect and Deputy Architect, L.C.C.: Edwin Williams, senior architect-in-charge: Peter Moro, associated architect.



ELEVATION TO AUDITORIUM. scale 1"= 1'-0"

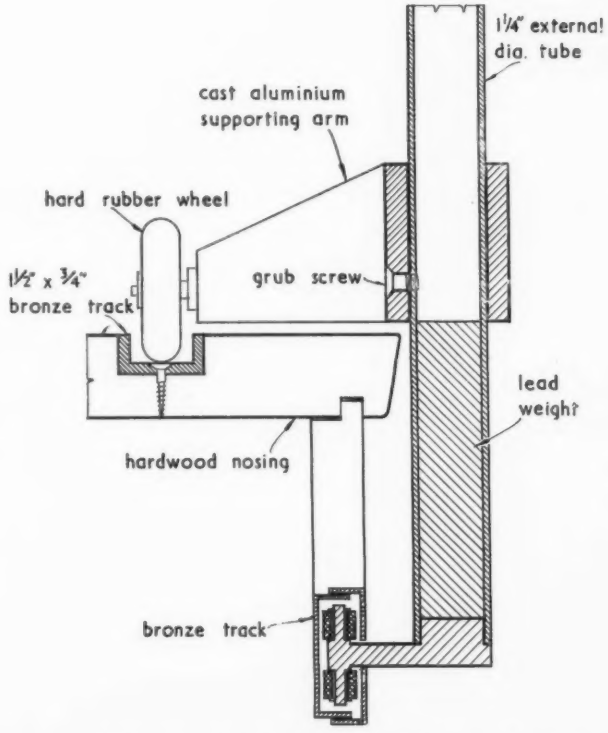




elevation

plan

DETAIL OF MUSIC REST.
scale 2"= 1'-0"



ELEVATION AND PART SECTION THRO' STAND.
scale ⅜"= 1"

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INFORMATION CENTRE

6.28 planning : social and recreational
PUBLIC SPORTS GROUNDS

The Layout and Design of Public Sports Grounds. Derek J. Hall (Journal of the Institution of Municipal Engineers, April, 1951, pp. 809-830.)

Informative paper by a municipal engineer on the siting, construction and cost of layout of playing fields, playgrounds, cycle and running tracks, tennis courts, etc., illustrated.

The paper deals with relevant legislation, type of site surveys required, dimensions of pitches and courts to suit different sexes and/or age groups and the grouping of different pitches on one site.

The author stresses the importance of good orientation if the nuisance caused by the setting sun is to be avoided but agrees that ideal orientation may not be possible where the surface contours would (1) entail excessive excavation, hence high cost; (2) cause fatigue to the players, or (3) affect the run of the ball during play. A grade of 1:40 to 1:45 should be considered as the maximum; with a higher gradient, a pitch may have to be sited to suit the surface irrespective of orientation.

Reference is made to the useful orientation diagram, prepared by the National Playing Fields Association, reproduced on the right. Another interesting diagram, reproduced below, shows the sight lines for spectators at a football match at the various levels of the normal stand. The pertinent comment is added that, wherever possible, a stand should be sited so that the spectators are shielded from the prevailing rain-bearing wind by the back of the stand. For organized sports events the author considers that the provision of urinals can be on a basis of one urinal to 500 persons. For anyone concerned with the construction of a sports ground, the notes on construction and costs are worth perusing.

10.84 design : building types
INFANTS' SCHOOLS

Schools for the Very Young. Heinrick H. Walchter and Elizabeth Walchter. (F. W. Dodge Corporation. 1951. $6·50.)

A study of the history, requirements and contemporary solutions to "pre-school" buildings. 190 pp. generously illustrated.

This book is the result of an American study of school requirements for children up to the age of five. It begins with an historical note on educational methods, describing various types of schools, their history, philosophy and characteristics. Life and work in such schools are then described, followed by chapters on layout and design, the relationship of the school to community planning and the planning of outdoor play spaces.

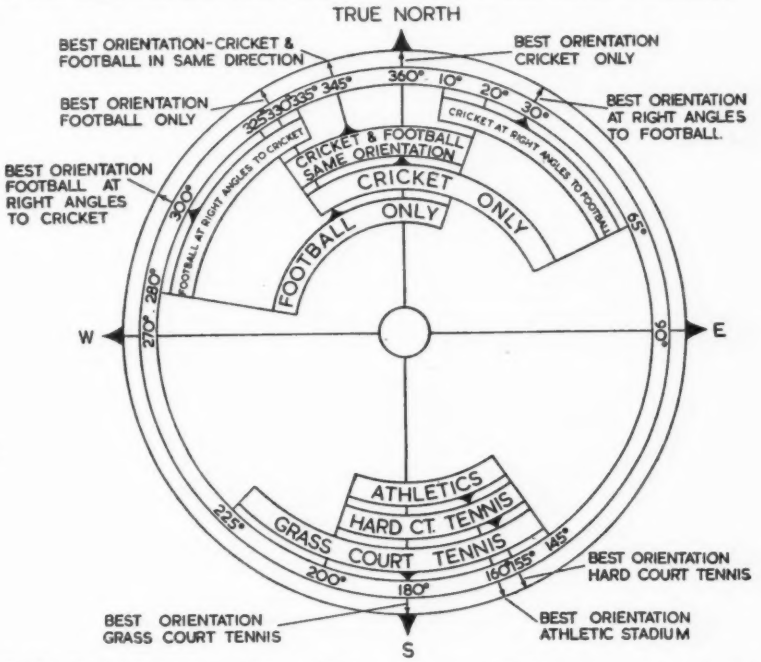
The authors have obviously made a wide study of their subject and the book contains a good deal of interest to both architects and laymen, although it is irritating in its verbosity and could well have been much shorter. The illustrations are good in themselves but tend to be confined mainly to American examples. The final chapter on techniques is too general to be of much interest to architects, though no doubt it serves as a useful introduction for the uninitiated.

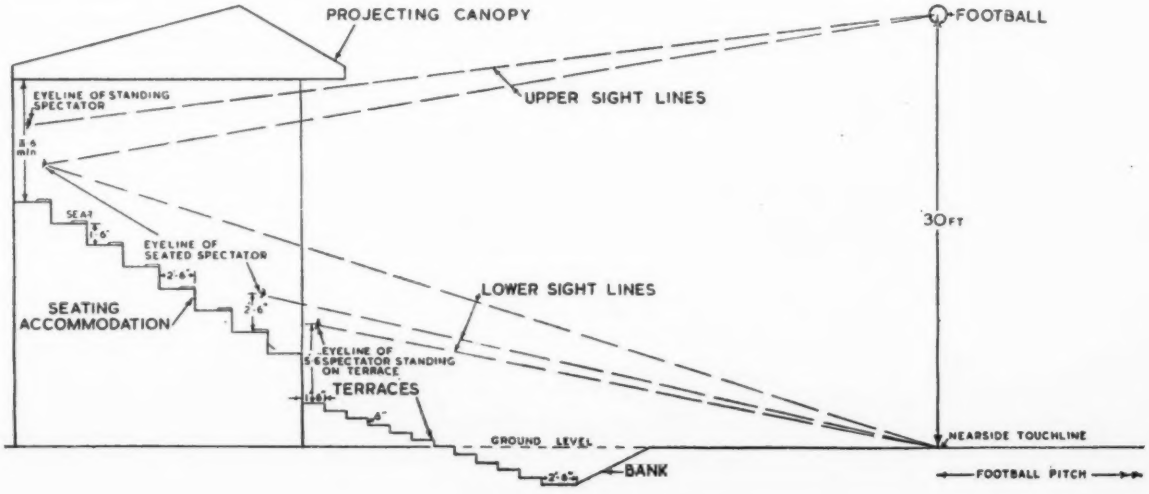
Although a little disappointing in some respects, this is a book which cannot be ignored, since it contains the results of a serious and extensive study of the subject by two obvious enthusiasts.

12.50 materials : metal
ANALYSIS OF IRON AND STEEL

Standard Methods of Analysis of Iron, Steel and Ferro-alloys. (The United Steel Companies Ltd., Sheffield, 1951. 17s. 6d. 169 pp.)

This is the fourth edition of a volume first published in 1933. It gives the methods of analysis actually in use in the laboratories of the largest producers of steel in the Commonwealth. Of little interest to architects.





Public Sports Grounds. Above, orientation diagram. Below, cross section through stand, showing sight lines. See 6.28.

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Bison slabs are laid on the external wall and the shuttering fixed for the cantilever. Cantilever reinforcement is then placed between the slabs and the whole filled with fine concrete in one operation.

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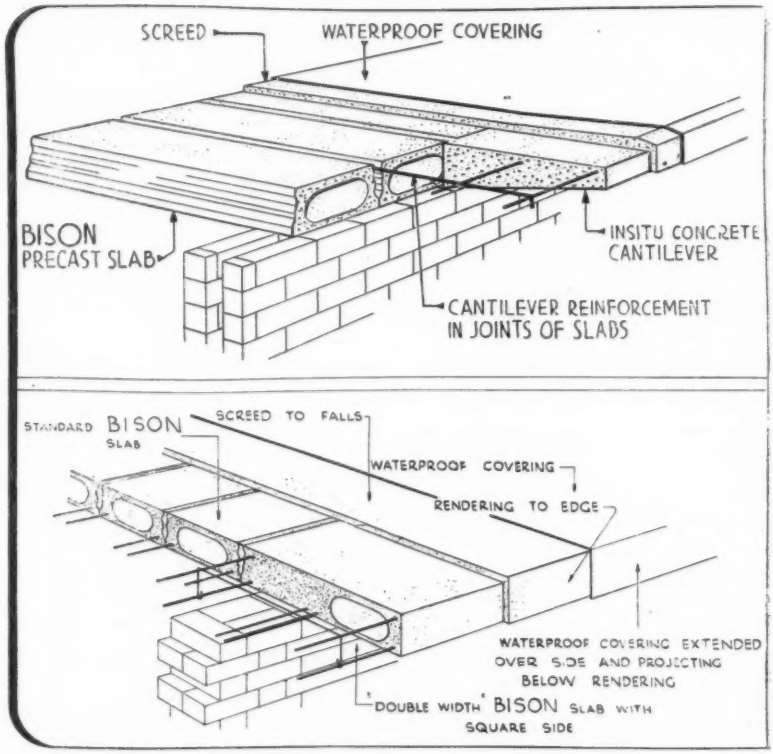

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13.69 materials : timber
FLOORING

Resistance to Wear of Muhimbi as Flooring. F. H. Armstrong. (Wood, April, 1951.)

Second of series on flooring timbers. General description, photographs, results of FPRL tests. Hardwearing, hard and heavy, reddish-brown colour with light and dark markings.

15.88 materials : applied finishes and treatments
MILDEW

Mildew Growths on Building Surfaces. V. M. Webb. (Building Topics, April, 1951.)

Short article describing conditions where mildew may occur, type of finish most likely to be attacked, how to eradicate, fungicides.

15.89 materials : applied finishes and treatments
PAINT

Paint Film Defects: Their Causes and Cure. Manfred Hess. (Chapman & Hall. 1951. 50s.)

A highly specialized book but valuable for occasional reference by architects. 543 pp., excellent index and good photographs.

This is an English version of a standard German work written shortly before the war. It has been enlarged and revised to bring it up to date and into line with British conditions. While far too specialized for general use, it has been prepared as a reference book and, as such, should be valuable for occasional use by architects and builders.

17.74 construction : general
LIGHT STEEL CONSTRUCTION

Stahlleichtbau (*Light Steel Construction*). (Deutscher Stahlbau-Vedband, Bad Pyrmont [Germany], 1950.)

Theory and practice in this comparatively new field condensed into an up-to-date textbook. 76 pp., 42 illustrations, 8 tables.

The use of light-gauge steel sheet sections can effect a considerable saving in the use of steel tonnage; so too can the use of tubular construction. Whether or not the increased ratio of wages to cost of materials which results will outweigh this advantage is an economic problem and the answer will depend on the circumstances under which these methods of construction are used. We have drawn attention recently to structures built with light steel framework, of which the school at Coventry is an outstanding example (see 19.109: 15.2.51). In this case, 10-gauge steel strip pressed into special shapes was used, but floor units and other structural members of 16-gauge steel (approx. $\frac{1}{16}$ in. thick) and even less have been used successfully.

This book is of some importance. Various aspects of the design, construction and maintenance of light steel structures are described thoroughly. The main types of construction dealt with are those using light-gauge sheets pressed into shape and forming the chords and diagonals of lattice girders, full-web plate girders, and tubular steel. Methods of joining the members are discussed, including fusion welding, spot welding (electric resistance), and the traditional methods of bolting and riveting. Protection against corrosion is of great importance with these forms of constructon and various types of protective coatings are described. An appendix gives the latest German draft regulations (DIN 4115) for this type of work.

Architects and structural engineers will find this little book useful, as some of its suggestions go far beyond those which have been published in this country, or in the USA.

17.75 construction : general
ALUMINIUM STRUCTURES

The Use of Aluminium Alloys in Structural Engineering. An Introductory Survey. (The Aluminium Development Association, Nov. 1950, 2s. 6d.)

A well written and well printed pamphlet which indicates at a glance the potential field for aluminium alloy structures. Of interest to the practising architect. 43 pp.

The introduction is followed by a classification of various structural alloys of aluminium, giving the properties of these alloys in various forms, such as extruded sections, tubes, forgings and castings. Design aspects of the subject are covered in three pages, but the architect will quickly realize what a vast field has been opened up to him. The illustrations include such impressive aluminium structures as the Brabazon hangar doors, 65 ft. in height, the 290-ft. span arch of the Arvida bridge in Canada and, of course, the roof of the Dome of Discovery, 365 ft. in diameter.

17.76 construction : general
TIMBER

The Royal Reception Suite. (Wood, April, 1951.)

Short description with drawings and photographs. Interesting construction of laminated wood arches with covering of stressed skin plywood.

20.195 construction : complete structures
MONOGRAPH : ROBERT MAILLART

Max Bill (*Les Editions d'Architecture S.A., Zurich* [*Switzerland*], 1949).

A collection of some of Maillart's writings, with drawings and photographs of his outstanding designs. Of equal interest to architects and structural engineers, showing modern achievements in reinforced concrete. 180 pp., 247 illustrations.

Robert Maillart was a gifted engineer who knew how to combine structural performance with aesthetic effects. He led the way in applying structural analysis to a comparatively new material—reinforced concrete—creating forms and silhouettes of extraordinary lightness and elegance. Maillart, who died in 1940, 68 years old, was primarily a designer of bridges, and the bulk of the illustrations in this book are of reinforced concrete bridges. There are not many simply supported beams amongst them for they are mostly arches of the 2-pin and 3-pin type, continuous beams and cantilever bridges. Only a small part of this book deals with buildings and miscellaneous structures designed by Maillart, but each of them is a proof of his originality. Multi-storey industrial buildings of reinforced concrete are illustrated, various types of flat slab construction of mushroom shape, a 215-ft. span concrete arch roof with the flat slab roof of the garage below acting as a tie, and of course the famous parabolic concrete shell, only 2¾ in. thick, at the Zurich exhibition of 1939.

It is not generally known that Maillart was also intensely interested in the progress of building technique; for instance, in the design of completely flat roofs, with a permanent cover of water, keeping the top floor rooms cool in summer and reducing maintenance costs. He designed and built

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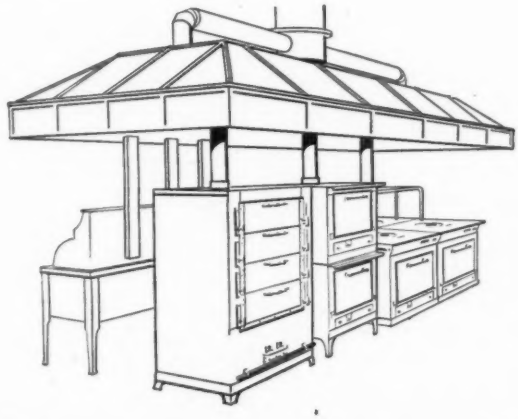

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such roofs in Switzerland as early as 1905, and 30 years later they were still watertight having required no maintenance during this period.

The explanatory text, including many of Maillart's articles published in technical journals, is in three languages—English, French and German—and the illustrations are excellent.

23.147 heating and ventilation
LIQUID MEDIUM

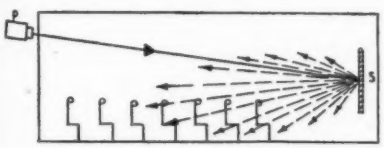
Heating by Means of Tetra Cresyl Silicate. R. A. Rose. (Journal of the Institution of Heating and Ventilating Engineers, Feb., 1951.)

Paper describing the use of Tetra Cresyl Silicate as a vehicle for heat at 400° F., with particular reference to an installation in a gin distillery.

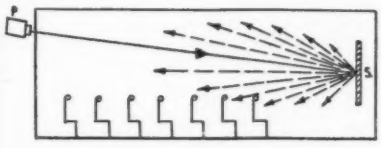
Although primarily of importance to heating engineers, this paper will be of interest to those architects who concern themselves with heating problems, and especially those who carry out industrial work.

Hitherto, whenever a centralised system for providing process or space heat at high temperatures has been required, steam or high pressure hot water has been used. Attempts to use various substances with boiling points higher than water for heat transfer have not been successful, often because of the instability of the substance when heated, corrosion problems, or similar difficulties. Much research has gone into the selection of a suitable liquid.

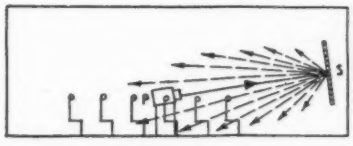
This paper describes the use of Tetra Cresyl Silicate for this purpose. The properties (and, in the discussion, the cost) of this substance are given, together with details of an installation in a gin distillery where it is used in place of direct firing of the stills.



ELEVATION
SILVER SCREEN



ELEVATION
BEADED SCREEN



ELEVATION
SILVER OR BEADED SCREEN

The effect of the use of silver and beaded screens on the position of the projector. (*See* 26.88.)

26.88 services and equipment: miscellaneous
VISUAL AIDS FOR SCHOOLS

Installation of Optical Projection Equipment in Educational Establishments. BS Draft Code of Practice 412. (British Standards Institution, 1951. Price 5s.)

Types of equipment. Planning requirements. installation, room darkening, acoustics. Seating.

The varied requirements of different school authorities probably result from the recent rapid increase in the use of films, film strips, etc., in educational buildings. This Code is useful as a general study of the subject. It deals not only with the various pieces of apparatus and their installation but with the architecturally important requirements about viewing angles, projection rooms, lighting conditions, types of screens, etc. A most useful reference for all concerned with school building.

CURRENT TECHNIQUE

This feature appears from time to time in order to bring to readers' notice new constructional ideas, worthy of more widespread adoption.

PLASTERING OLD PAINTED BRICKWORK

An unusual method of plastering existing brick walls has been developed making use of the National Coal Board's by-product "Synthaprufe." The problem arose last year at the Whittington Hospital, St. Mary's Wing, Highgate, London (North-West Metropolitan Regional Hospital Board), where the hospital authorities wished to provide a plaster finish to old painted brick walls, with glazed tile dados. (Fig. 1 shows the condition of the walls before treatment.)

This is a perennial problem of hospital authorities, who often take over barrack-like buildings (sometimes, workhouses) and convert them to hospital wards. It is usually an expensive job. Architraves, skirtings and services must be removed (and replaced after) by men of the respective trades and the brickwork must be hacked, rendered and set. The total cost of such work (excluding decorations) is usually between 30s. and 42s. per sq. yd.

The Architect to the Hospital Board suggested that "Synthaprufe" might be used instead of rendering, thereby not only saving the hacking, but eliminating the need for removing the architraves, etc., for the total thickness of the "Synthaprufe" and the setting coat of plaster would be little more than ¼ in. Tests with "Synthaprufe" having proved satisfactory, the following procedure was adopted and is recommended to any architect faced with a similar problem:

First, the walls were well washed down, to remove any loose particles, dust, etc., and one coat of "Synthaprufe" was applied (Fig. 2). After a few hours had been allowed, so that this coat could set, a second coat was brushed on and was heavily blinded with granite dust about twenty minutes later, while it was still tacky (Fig. 3). Then, after an interval of 12 hours or so, the application of a ⅛-in. setting coat of gypsum plaster completed the operation. Judging by the results, the process appears to have been successful (Fig. 4); the covering capacity of the "Synthaprufe" was 36 sq. yds. per gallon for each coat, and the cost was low; for the complete operation (not including decorations), roughly 5s. 6d. per sq. yd.

The architect was a little worried lest the "Synthaprufe" should "bleed" through a thin coat of plaster and spoil the decorations, but twelve months have now elapsed since the work was done and this has not occurred. Since the use of "Synthaprufe," granite dust and a single coat of plaster costs less than normal plastering, it has been suggested that this technique might be used for housing schemes.

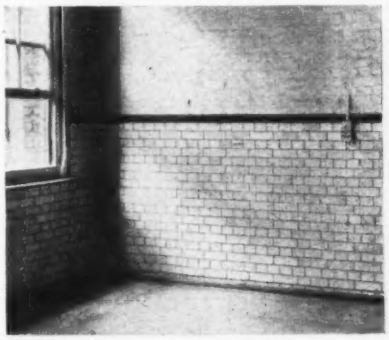


Fig. 1.

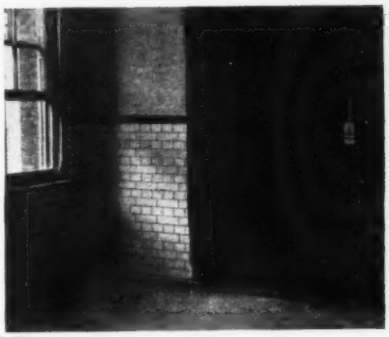


Fig. 2.

Fig. 3.

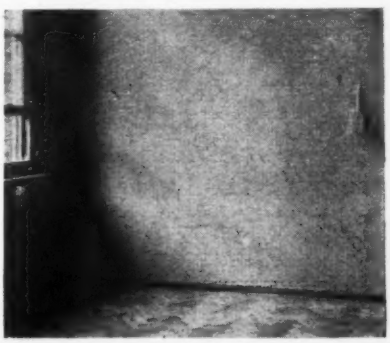


Fig. 4.

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

THE INDUSTRY

By Brian Grant

RUST REMOVAL

In essentials the "Derustit" process may be described as "electro plating in reverse"; the parts to be "de-rusted" being placed in a series of chemical baths through which a heavy electric current is passed. From the samples shown at a recent exhibition, it would appear that even the most heavily rusted components can be restored almost to new, and a great deal of work has already been done on equipment for the services which had rusted while in store. Most architects, of course, are dealing with new goods, but it is worth remembering this process if one is engaged on alteration jobs, or reinstatement after a fire, where machinery may have been damaged by water or chemicals. It may be possible to restore production far more quickly in this way than by waiting for replacements. (*Derustit Services Ltd., Paragon Works, Angel Street, Dudley, Worcs.*)

REFUSE DISPOSAL

Quite a number of manufacturers are now producing gas or electrically operated automatic machines for the disposal of such things as dressings and swabs. The latest is the Hygienette, illustrated on the right, which is an electrically-operated unit with a current consumption of 960 watts. It is available in all standard AC and DC voltages. The electrical destruction cycle starts as soon as the top door is opened, and the ash is removed in the drawer at the bottom. Standard finish is ivory and black with chromium plated fittings, and dimensions are 20 in. high by 10 in. wide by 6 in. deep. Three types are produced for surface, semi sunk or fully recessed installation. Fixing is by means of a wall plate so that the whole unit can, if necessary, be quickly removed for adjustments. (*Hygienette Manufacturing Co., 39 Victoria Street, London, S.W.1.*)

DUAL CAPACITY LIFTS

Periodically, many factories have to move, from one floor to another, equipment which is considerably heavier than that normally handled in the course of their day-to-day business. In the past this has presented a problem, as the only lifts designed to take heavy loads were relatively slow goods lifts which, if installed for general use, would slow down the flow of goods normally handled.

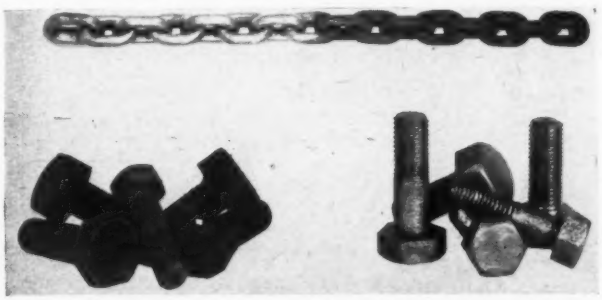
To solve this problem, attempts were made to design a lift capable of raising heavy loads at slow speed and lighter loads at a higher speed. An early solution was to gain access to the pit of the lift and attach additional weights beneath the counterweight. This involved a further trip to the motor room in order to adjust the winding machine, which was fitted with a back gear similar to that on a lathe. Although successful, this method required the services of a number of men for an appreciable period and wasted a considerable number of man-hours.

The Express Lift Co. Ltd. has overcome this difficulty. With their "Dual Capacity" goods lift the attendant can effect the change-over in a few minutes, without leaving the lift car. This lift is designed to raise loads of 2 tons at 150 ft. p.m. or 5 tons at 50 ft. p.m. The counterweight is balanced for the maximum load of 5 tons.

For normal working, *i.e.*, for lifting 2 tons at 150 ft. p.m., a weight of 1½ tons is carried beneath the car in a specially developed release mechanism. In order to balance the lift for loads up to 5 tons, this weight is deposited in a cradle at the bottom of the lift pit. To do this, the attendant takes the car right down to the pit; he then withdraws a trap in the car floor and moves a small lever which operates the release mechanism.

The system is fully electrically interlocked to ensure that the weight carried beneath the car cannot be released unless the lift car is at the pit bottom. Furthermore, the lift cannot start unless the release mechanism is properly reconnected and it cannot run at the higher speed unless the weight is in position under the car.

The lift is operated on the "Trulevel" power system which is varied to suit the dual capacity feature. The levelling system operates with both lifting capacities, the lift stopping from a levelling speed of 12 ft. p.m. Two motors are used—a single speed squirrel cage motor and a two-speed pole changer. The single speed motor is permanently connected to the worm shaft but the pole changer is connected to the "Trulevel" clutch. The single speed motor provides full speed running for 2 tons at 150 ft. p.m. The high speed winding of the pole changer provides full speed running for 5 tons at 50 ft. p.m. and the slow speed winding of the pole changer provides the levelling speed at both capacities. (*The General Electric Co. Ltd., Magnet House. Kingsway, London, W.C.2.*)



Examples of the results of the Derustit process.

Hygienette fully automatic electric toilet incinerator, in standard finish of ivory and black, with chromium-plated fittings.

MATERIALS FOR INSULATION

The Structural Insulation Association has produced a useful little booklet, on *How to Insulate Buildings*, for distribution at the Technical Information Bureau at the Poplar Live Architecture Exhibition. After a short introduction, the booklet consists mainly of tables giving the U factors provided by different types of construction for the walls, floors and roofs (both flat and pitched) of houses. This is followed by an alphabetical list of the more usual insulating materials, from aerated concrete and aluminium foil to vermiculite and woodwool, with their physical properties. Finally, there is a table of U factors for typical types of construction used in industrial buildings. A useful little booklet which should be kept for reference. (*The Structural Insulation Association, National House, 14 Moorgate, London, E.C.2.*)

GAS HEATING OF LARGE BUILDINGS

To show that there is little or no justification for the lack of up-to-date heating systems in domestic and public buildings, is the aim of "*Gas and the Warming of Large Buildings*" (*Part 1: Central Plant*)—the fourth booklet in a series on the commercial uses of gas. The booklet discusses the various methods of heat distribution which can now be used—pipes, radiators, convectors, flat panels, radiant panels and unit heaters, and also the different varieties of boilers and hot water-, steam- and air-heating systems which are available with gas firing. It contains many illustrations of gas-fired plant, suitable for all kinds of premises, together with pictures of well-known buildings which are heated by gas. These include schools, town halls, business and industrial premises, hotels, stores, cinemas, churches, public halls and, of course, blocks of flats. (*The Gas Council, Grosvenor Place, London, S.W.1.*)

Readers requiring up-to-date information on building products and services may complete and post this form to The Architects' Journal, 9, 11 and 13, Queen Anne's Gate, S.W.1.

ENQUIRY FORM

I am interested in the following advertisements appearing in this issue of "The Architects' Journal." (BLOCK LETTERS, and list in alphabetical order of manufacturers names please).

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Please ask manufacturers to send further particulars to:—

NAME.....

PROFESSION or TRADE

.....

ADDRESS.....

.....

.....

A.J. 7.6.51

Buildings Illustrated

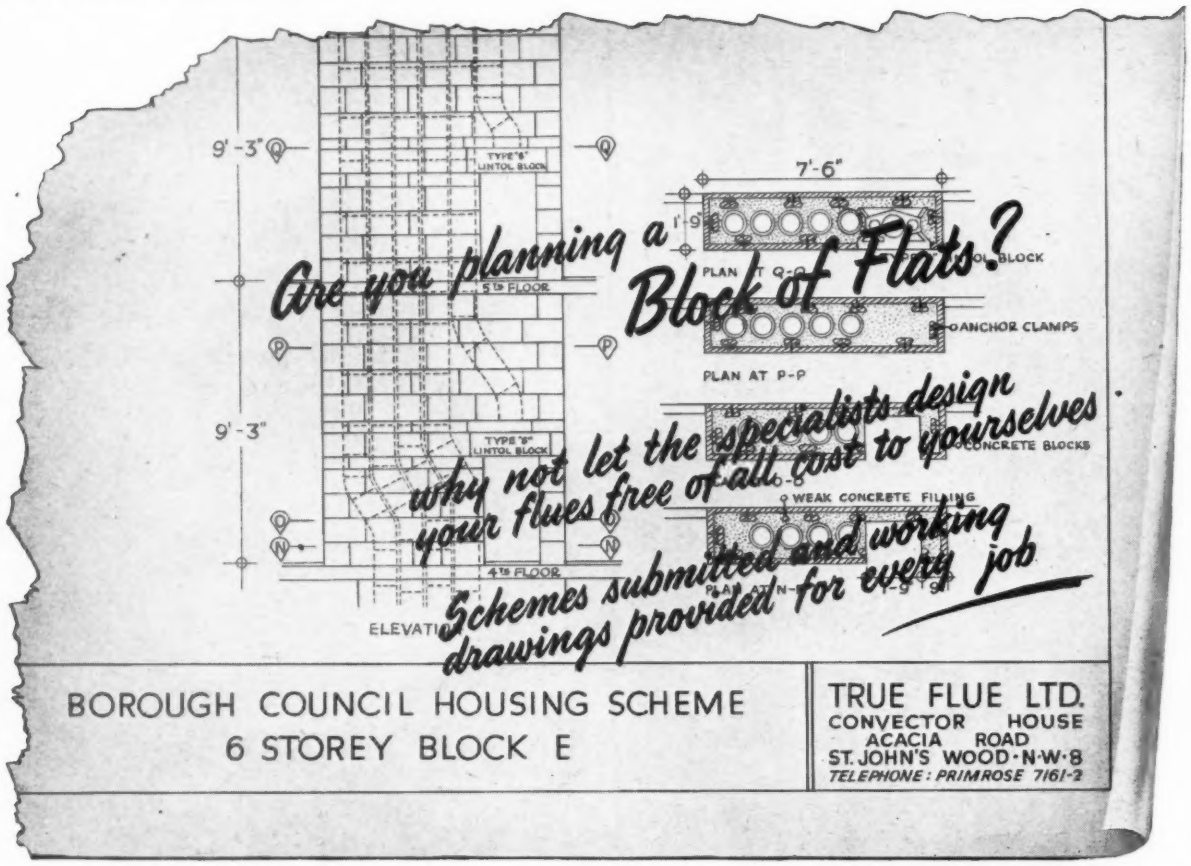
The First Aircraft Hangar in Aluminium. (Page 732.) General Contractors and Designers: SMD of the Associated Light Metal Industries Group. Sub-contractors: Roof decking, Wm. Briggs & Sons Ltd.; glazing, Williams & Williams Ltd.; interior lining, Eastwoods Ltd.; doors in first bay, Educational Supply Association Ltd.; foundations, Geo. Wimpey & Co. Ltd.; extrusions, Southern Forge Ltd.; castings, Renfrew Foundries Ltd.; plate, T.I. Aluminium Ltd.; and sheet, British Aluminium Co. Ltd.; aluminium foil, Ardor Insulation Co.; asbestos wall lining, Cape Asbestos Co. Ltd.

Hangar and Offices, Collinstown Airport, Dublin. (Pages 735-738.) Architects: Hugh Roberts & Davies, F./A.R.I.B.A. Consulting Structural Engineer: G. A. Dodd & Partners, A.M.I.STRUCT.E. Heating Consultant: F. Tierney, A.M.I.H.V.E. Electrical Consultant: A. N. Irens, M.I.E.E. Quantity Surveyor: Noel Dooley, F.R.I.C.S. General Contractor: John Sisk & Son (Dublin) Ltd. Sub-contractors: Structural steel, Redpath Brown & Co. Ltd.; patent glazing, casements, Williams & Williams Ltd.; central heating, G. N. Haden & Sons Ltd.; electric wiring, Electricity Supply Board; folding gates, Bostwick Gate Co. Ltd.; folding doors, Educational Supply Association Ltd.; "Bison" floors, Concrete Ltd.

Structures Laboratory at Slough. (Pages 739-742.) Architect: The late Christopher Nicholson, M.A., F.R.I.B.A. (assistant: Eleanor Michell, A.R.I.B.A.). Associate architects: Hugh Casson, M.A., F.R.I.B.A., Neville Conder, A.R.I.B.A. Consulting engineer: W. A. Fairhurst, M.I.STRUCT.E. General contractors: Holland & Hannen and Cubitts Ltd. Sub-contractors: bituminous felt roofing, Wm. Briggs & Sons, Ltd.; electrical installation, T. Clarke & Co. Ltd.; cork wall lining to offices, Elisol Ltd.; sliding doors, Esavian Ltd.; plumbing and cast iron drains, Engineering Service Installations Ltd.; asphalting, Faldo Asphalte Co. Ltd.; glazing, Faulkner Greene & Co. Ltd.; heating and ventilating, C. B. Jackson & Co. Ltd.; painting, T. H. Kenyon & Sons Ltd.; reconstructed Portland stone, domes and windows, Lenscrete Ltd.; floor tiling, Marley Tile Co. Ltd.; travelling crane, Herbert Morris Ltd.; terrazzo, Mosiac & Terrazzo Precast Co. Ltd.; plastering, W. Miller Ltd.; joinery, Allen & Ensor; sanitary fittings, John Bolding & Sons Ltd.; prestressed concrete, Concrete Development Co. Ltd.; special holding down bolts for thickened floor slab, Concrete & Structural Products Ltd.; sand and aggregates, Cranford Sand & Ballast Co. Ltd.; steel reinforcement, General Steel & Iron Co. Ltd.; steel windows, Henry Hope Ltd.; hollow concrete blocks, Hunter Owens & Co. Ltd.; bricks, Eastwoods Ltd.; cement, J. & W. Henderson; steel duct covers, Meadow Foundry Co. Ltd.; sewage disposal plant, Tuke & Bell Ltd.; apron wall sheeting, Turners Asbestos Cement Co. Ltd.; steel faced doors and w.c. compartments, Venesta Ltd.; ironmongery, Yannedis & Co. Ltd.; fitted furniture, Sotos Ltd.

Corrections

The firm of constructional engineers, S. & C. Walmsley Ltd., was omitted from the list of sub-contractors for the Dome of Discovery, Festival of Britain, 1951 (AJ, May 24, 1951).



Another VOLEX installation . . .

Reproduced by courtesy of Messrs. F. Perkins Ltd., of Peterborough

The VOLEX WARM AIR SYSTEM

is recognised as the most efficient and economical system of Heating and Ventilation for Schools, Clinics, Churches, Shops, Offices, Factories, Workshops and all buildings where a pleasant equable atmosphere — essential to health and efficiency — is required. It maintains an even temperature and draughtless ventilation all the year round, and the air in the building can be changed as often as desired according to the processes carried on. The heaters are made either for gas-firing, hand-firing, worm feed stokers or oil-firing.

Ventilate as you heat

Sole Makers: T. E. SALTER LIMITED TIPTON STAFFS. *Telephone:* TIPTON 1657/1658

CLASSIFIED ADVERTISEMENTS

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

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

Public and Official Announcements

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

LONDON COUNTY COUNCIL.

Applications are invited for positions of ARCHITECTURAL ASSISTANT (salaries up to £580 basic a year) in the Housing and Valuation Department. Commencing salaries will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Acts, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

All rates of pay up to £600 a year (basic) are at present subject to an addition of 10 per cent.

Successful candidates will be required to assist in the design, layout and preparation of working drawings for housing schemes, cottages and multi-storey flats), and will be employed in the Housing Architect's Division.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope required and quote reference A.A.1). Canvassing disqualifies. (816) 2615

CITY OF COVENTRY.
ARCHITECTURAL AND PLANNING DEPARTMENT.

In view of considerable expansion in the Housing and Schools Programme in Coventry, additional architectural staff is required, and applications are invited from Associate Members of the Royal Institute of British Architects.

Vacancies exist on the establishment on Grades A.P.T., V; A.P.T., VI, and A.P.T., VII, and applications for these proposed apointments should be made on the forms available from the undersigned, to be returned not later than 18th June, 1951.

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

D. E. E. GIBSON,
City Architect and Planning Officer.
1a, Warwick Row, Coventry.
22nd May, 1951. 2701

LIVERPOOL REGIONAL HOSPITAL BOARD.

Applications are invited for the permanent pensionable appointment of ASSISTANT QUANTITY SURVEYOR, in the Regional Architect's Department (Quantity Surveyor's Section), situated at 88, Church Street, Liverpool, 1.

Applicants should preferably be Corporate Members of the Royal Institute of Chartered Surveyors, having passed the Final Examination in the Quantities Sub-Division, and should have had experience in "taking-off" and settling Contractor's Final Accounts.

The work to be undertaken will include the preparation of Bills of Quantities for work carried out by the Department, in addition to other duties concerned with Private Architects and Quantity Surveyors.

Salary £635, rising by annual increments of £25 to a maximum of £710 per annum, in accordance with A.P.T., Grade VII. (The salary scales are at present under review.)

Applications, stating age, education, qualifications, experience, present and previous appointments, salary, together with the names and addresses of three referees, should be sent to the undersigned at 19, James Street, Liverpool, 2, not later than 18th June, 1951.

VINCENT COLLINGE,
Secretary to the Board.
2667

CAMBRIDGESHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of a CHIEF DRAUGHTSMAN, on Grade A.P.T., V, of the National Joint Council's Scales (salary £570 to £620 per annum).

Candidates must be capable surveyors and levellers and have considerable knowledge and experience of the preparation of Town Planning maps of all kinds, including mapping from air photography, map reproduction methods, and map and plan filing systems, and will be required to supervise staff in these and other duties.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, the Council's Conditions of Service, and to the successful candidate satisfactorily passing a medical examination. Financial assistance, up to £2 weekly for a period not exceeding six months, may be given if the person appointed cannot obtain housing accommodation and has to maintain his own present residence in addition to the expense of lodgings in Cambridge.

Applications, stating age, past and present appointments (with dates), experience, qualifications, present salary and the names of two referees, should be received by the undersigned not later than 18th June, 1951.

CHARLES PHYTHIAN,
Clerk of the County Council.
Shire Hall, Castle Hill, Cambridge. 2723

CITY OF CARDIFF EDUCATION COMMITTEE.
THE TECHNICAL COLLEGE.
Principal: DR. A. HARVEY.

Welsh School of Architecture: Applications are invited for the post of ASSISTANT LECTURER AND STUDIO INSTRUCTOR in this department of the College. Candidates should have been trained in a recognised School of Architecture and be Associates of the R.I.B.A.

The salary will be in accordance with that for Assistants, Grade B, £450×£25—£725, plus allowances for degree (or degree equivalent) and training, the minimum starting salary being thus £564 per annum.

Forms of application, together with further particulars, may be obtained from the undersigned, to whom they should be returned as soon as possible.

ROBERT E. PRESSWOOD,
Director of Education.
City Hall, Cardiff. 2719

SINGAPORE IMPROVEMENT TRUST.
PLANNING OFFICERS.

1. Two Planning Officers (A and B) are required by the Singapore Improvement Trust, the appointments in the first instance being on a three-year agreement. Age preferably under 30 years.

2. Applicants for both posts must be qualified as A.M.T.P.I. Additional requirements are as follows: Post A, experience as a statutory planning officer with a Local Planning Authority; post B, Architectural training, and should preferably be an A.R.I.B.A.

3. Salary scale, $500-$1,000 per month, the point of entry depending on the age, qualifications and experience of the appointee. Expatriation allowance $110-$190 per month, according to basic salary. Cost-of-living allowance 70 per cent. of the first $200 p.m. of basic salary, plus (i) single officers 30 per cent. of next $100 and 20 per cent. of next $400 of basic salary (max. allowance $250 p.m.); (ii) married officers (no children) 45 per cent. of next $400 and 35 per cent. of next $100 of basic salary (max. allowance $355 p.m.); (iii) married officers (with children), 65 per cent. of next $500 p.m. of basic salary (max. allowance $465 p.m.). An allowance will be paid to cover cost of duty transport. All allowances are subject to revision. $1 (Malayan) = 2s 4d. For example a married officer (with children) on a basic salary of $590 p.m. would draw equivalent of £1,530 per annum, including present allowances.

4. Strict medical examination.

5. Provident Fund, to which the appointee must contribute 7½ per cent. of basic salary; the Trust contributes a minimum of 7½ per cent., rising by stages to 20 per cent. after 20 years' service.

6. Leave and passages in accordance with Regulations.

7. Quarters (with heavy furniture) are provided at a rental of 8 per cent. of salary, or a housing allowance (12 per cent. of salary) paid in lieu.

8. Applications in duplicate, with full personal and technical information, and copies of three recent testimonials, to Messrs. Peirce & Williams (Agents to the Trust), 1, Victoria Street, London, S.W.1, before Tuesday, 3rd July, 1951. 2772

BOROUGH OF ILKESTON.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of an Architectural Assistant in the Department of the Borough Surveyor, at a salary ranging from General Division to A.P.T., III, of the National Scale of Salaries, according to training, experience and qualifications.

Applicants should preferably have passed the Intermediate Examination of the Royal Institute of British Architects, and previous Local Government service will be an advantage.

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

Forms of application, conditions of appointment, and any other information can be obtained from A. O. Marshall, M.I.Mun.E., M.I.Struct.E., F.I.A.A., Borough Surveyor and Water Engineer, Town Hall, Ilkeston, to whom the applications are to be submitted by 16th June, 1951.

J. YATES,
Town Clerk.
Town Hall, Ilkeston.
31st May, 1951. 2773

STAFFORDSHIRE COUNTY COUNCIL.
EDUCATION COMMITTEE.

Applications are invited for the following appointments on the Staff of the Architect's Department:—

SPECIFICATION WRITERS (TWO).
MEASURING SURVEYORS (TWO).

Salary for both appointments will be in accordance with Grade IV of the A.P.T. Division of the National Scales (£530×£15—£575 per annum).

The appointments will be subject to the terms and conditions of service of the National Joint Council for Local Authorities' Administrative, Technical and Clerical Services, and to the terms and conditions of Local Government and Other Officers' Superannuation Act, 1937. For further particulars, application should be made to the Director of Education (A), County Education Offices, Earl Street, Stafford, to whom applications, stating age, qualifications and previous experience, and accompanied by two recent testimonials, should be addressed, to be received not later than 16th June.

T. H. EVANS,
Clerk of the County Council.
2778

WILTSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following superannuable appointments:—

(*a*) ASSISTANT ARCHITECT. Salary £545-£710.

(*b*) ASSISTANT ARCHITECT. Salary £570-£620.

(*c*) ASSISTANT ARCHITECT. Salary £500-£545.

Applicants for (*a*) and (*b*) should be Members of the R.I.B.A. and for (*c*) should have passed the R.I.B.A. Intermediate Examination.

Canvassing disqualifies.

Forms of application obtainable from the undersigned should be returned within 14 days of the appearance of this advertisement.

P. A. SELBORNE STRINGER,
Clerk of the Council.
County Hall, Trowbridge.
May, 1951. 2732

CITY OF COVENTRY ARCHITECTURAL AND PLANNING DEPARTMENT.
APPOINTMENT OF CLERKS OF WORKS.

Applications are invited for the appointment on a temporary basis of persons with an extensive building experience in the capacity of Clerks of Works for the inspection and supervision of building under the control of the Housing Committee.

The salary grade is according to A.P.T., III, of the National Scales (£500, rising by annual increments of £15 to a maximum of £545).

Applications must be made on forms obtainable from the undersigned, and should be returned completed, together with copies of not more than two recent testimonials, or names of two persons to whom reference may be made, not later than Saturday, 16th June, 1951.

D. E. E. GIBSON,
City Architect and Planning Officer.
1a, Warwick Row, Coventry. 2771

COUNTY BOROUGH OF SOUTHAMPTON.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the following appointments:—

(*a*) ASSISTANT ARCHITECT. Grade A.P.T., VI (£645-£710).

(*b*) JUNIOR ARCHITECTURAL ASSISTANT. General Division (£150-£425).

Applicants for (*a*) must have had experience in housing design, layout, construction, and the administration of contracts, and must be Associate Members of the Royal Institute of British Architects.

Applicants for (*b*) must be in possession of the School Leaving Certificate, and preference will be given to candidates with some Architectural Drawing Office experience.

The appointments will be subject to the Scheme of Conditions of Service of the National Joint Council for Local Authorities for Administrative, Technical, Professional and Clerical Services; to the Local Government Superannuation Act, 1937; to the successful applicants passing a medical examination, and to termination by (*a*) one month's notice, (*b*) one week's notice, on either side.

Applications, stating age, experience, qualifications, and war service (if any) together with copies of three recent testimonials, should be submitted to the Borough Engineer and Surveyor, Civic Centre, Southampton, not later than Monday, 18th June, 1951.

R. RONALD H. MEGGESON,
Town Clerk.
Civic Centre, Southampton.
May, 1951. 2730

CITY OF LIVERPOOL EDUCATION COMMITTEE.
COLLEGE OF BUILDING,
CLARENCE STREET, LIVERPOOL, 3.
Principal: T. E. HALL, Dip.Arch., A.R.I.B.A.

Applications are invited for the following full-time appointments. Duties to commence 1st September, 1951:—

(*a*) ASSISTANT, to teach SURVEYING SUBJECTS to the standard of the Final Examinations of the Royal Institution of Chartered Surveyors, in Full-time and Part-time courses.

(*b*) ASSISTANT, to teach HEATING AND VENTILATING ENGINEERING SUBJECTS to the standard of the Final Examinations of the Institution of Heating and Ventilating Engineers and the City and Guilds of London Institute in Full-time Building and Part-time Heating and Ventilating Engineering courses.

Candidates must possess the appropriate professional qualifications and professional or industrial experience. Teaching experience is desirable, but not essential.

Salary in accordance with the Burnham Technical Scale, 1951, and the grading for the above posts will be not less than Assistant, Grade B, £450×£25 to £725 (men); £405×£20 to £580 (women); plus appropriate allowances for training and graduation.

The correct position at entry will be determined by the length of industrial, teaching and War service of the candidate.

Application forms and further particulars may be obtained from H. S. Magnay, M.A., Director of Education, 14, Sir Thomas Street, Liverpool, 1, to whom completed applications should be returned within two weeks of the appearance of this advertisement.

THOMAS ALKER,
Town Clerk and Clerk to the Local Education Authority. (2617)
2740

CARSHALTON URBAN DISTRICT COUNCIL.
APPOINTMENT OF TOWN PLANNING ASSISTANT.

Applications are invited for the appointment of a Town Planning Assistant, in the Engineer and Surveyor's Department, at a salary in accordance with Grades A.P.T., V-VI, of the National Scales, plus London "weighting."

Applicants must have had good experience in the application and administration of the Town and Country Planning Acts, and hold the Final Examination Certificate of the Town Planning Institute, and preferably, in addition, hold either an engineering or architectural qualification.

The appointment will be subject to (*a*) the provisions of the National Scheme of Conditions of Service; (*b*) the passing of a medical examination for superannuation purposes, and (*c*) one month's notice on either side.

The Council cannot provide the successful applicant with housing accommodation.

Applications, on forms to be obtained of the undersigned, must be returned, together with the names of three referees, not later than Monday, the 18th June, 1951.

Canvassing in any form will be a disqualification.

J. W. WRIGHT,
Clerk of the Council.

District Council Offices, The Grove,
Carshalton, Surrey. 2725

CITY OF LIVERPOOL.
ARCHITECTURAL AND HOUSING DEPARTMENT.

Applications are invited for the following appointments :—

GENERAL ARCHITECTURAL SECTION :

(*a*) THREE SECOND ASSISTANT ARCHITECTS. Salary £685-£760 per annum (A.P.T., Grade VIII).

(*b*) ONE ASSISTANT ARCHITECT. Salary £595-£660 per annum (A.P.T., Grade VI).

(*c*) ONE ASSISTANT ARCHITECT. Salary £520-£570 per annum (A.P.T., Grade V).

(*d*) FIVE ARCHITECTURAL ASSISTANTS. Salary within the range £390-£525 per annum (A.P.T., Grade I-IV), according to qualifications and experience.

(*e*) ONE HEATING AND LIGHTING ENGINEER. Salary £635-£710 per annum 9.P.T., Grade VII).

(*f*) ONE ASSISTANT STRUCTURAL ENGINEER. Salary £520-£570 per annum (A.P.T., Grade V).

(*g*) TWO TECHNICAL ASSISTANTS. Salary £390-£435 per annum (A.P.T., Grade I).

HOUSING SECTION :

(*h*) ONE ASSISTANT ARCHITECT. Salary £520-£570 per annum (A.P.T., Grade V).

REDEVELOPMENT SECTION :

(*i*) ONE SENIOR ASSISTANT ARCHITECT. Salary £635-£710 per annum (A.P.T., Grade VII).

(*j*) ONE ASSISTANT ARCHITECT. Salary £595-£660 per annum (A.P.T., Grade VI).

Candidates for :—

(*a*), (*b*), (*c*). Must be Registered Architects, preferably qualified A.R.I.B.A., with experience in modern design and construction of all types of public buildings, particularly schools.

(*d*) Must have had a good architectural training, and preferably have passed the Intermediate Examination of the R.I.B.A. Some office experience is desirable.

(*e*) Must be Members of the Institution of Heating and Ventilating Engineers, and have considerable experience in design and execution of heating installations for public buildings. A knowledge of lighting installations would be an additional qualification.

(*f*) Must be Members of the Institution of Structural Engineers, or equivalent, and be experienced in design and detailed construction of steel and reinforced concrete as required in modern buildings.

(*g*) Must be capable draughtsmen, with office experience, knowledge of building procedure, and should be able to make surveys of buildings and assist generally in the work of an architectural drawing office.

(*b*) Must be Registered Architects, preferably qualified A.R.I.B.A., with housing experience.

(*i*), (*j*) Must be Registered Architects, preferably qualified A.R.I.B.A. and/or A.M.T.P.I., and should possess planning experience and an aptitude for the detailed redevelopment of central areas.

Application forms, obtainable from the City Architect and Director of Housing, Blackburn Chambers, Dale Street, Liverpool, 2, must be returned to him by 23rd June, 1951.

The appointments are superannuable and subject to the Standing Orders of the City Council. Canvassing disqualifies.

THOMAS ALKER,
Town Clerk.

Municipal Buildings, Liverpool, 2.
May, 1951. (2613) 2729

BOROUGH OF WATFORD.
APPOINTMENT OF ASSISTANTS.

Applications are invited for the following appointments :—

ONE ASSISTANT ARCHITECT. Grade VI or VII, according to qualifications and experience.

ONE ARCHITECTURAL ASSISTANT. Grade IV.

Application forms may be obtained from the undersigned, to whom they must be returned by Friday, 15th June, 1951.

F. C. SAGE,
Borough Engineer, Surveyor and Architect.

Town Hall, Watford.
May, 1951. 2740

CITY OF SHEFFIELD.
CITY ARCHITECT'S DEPARTMENT
(W. G. Davies, F.R.I.B.A., City Architect).

Applications are invited for the following appointments :—

QUANTITY SURVEYORS :

SENIOR ASSISTANT. Grade VIII (£685-£760 per annum).

SENIOR ASSISTANT. Grade VI (£595-£660 per annum).

ASSISTANTS. Grade V (£520-£570 per annum).

The above salaries do not include the increases recently recommended by the National Joint Council now under consideration by the City Council.

All applicants must hold the qualification of A.R.I.C.S. or A.I.Q.S.

The appointments will be subject to one month's notice on either side, to be given in writing at any time, and to the terms and conditions of service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services, as applied by the City Council to their Official Staff.

The appointments will also be subject to the provisions of the Local Government Superannuation Act, 1937, and candidates must not be more than 40 years of age or otherwise have previous Local Government service carrying a transfer value within the meaning of the Act.

The successful candidates will be required to pass a medical examination.

Applicants should furnish the following particulars :—

(*a*) Position applied for. (*b*) Name. (*c*) Address. (*d*) Age. (*e*) Education and training. (*f*) Qualifications. (*g*) Present position and salary and date when appointed. (*h*) Previous positions, with salaries and dates. (*i*) Particulars of experience. (*j*) When able to take up appointment.

Applications, suitably endorsed, and with two recent testimonials or the names of two persons to whom reference can be made, are to be submitted to the undersigned not later than the 12th June, 1951.

Canvassing, directly or indirectly, is a disqualification.

JOHN HEYS,
Town Clerk.

Town Hall, Sheffield, 1.
25th May, 1951. 2743

COUNTY BOROUGH OF NORTHAMPTON.

Applications for the following permanent posts stating post applied for, age, qualifications, experience, past and present appointments and salary, with names of two persons for reference, should reach J. L. Womersley, A.R.I.B.A., A.M.T.P.I., Borough Architect and Town Planning Officer, Guildhall, Northampton, by 16th June. Canvassing will disqualify :—

(*a*) ASSISTANT ARCHITECT, A.P.T., V (£570-£620). To work in Education and General Section. Applicants must be Registered Architects and have sound design ability and experienced in preparation of working drawings and estimates.

(*b*) TOWN PLANNING ASSISTANT, A.P.T., V (£570-£620). Applicants must be capable of producing first-class presentation drawings of the Development Plan and of working on re-development schemes for central area. T.P.I. Final Examination or equivalent qualification and experience in a planning office required.

C. E. VIVIAN ROWE, *Town Clerk.*
2742

ISLE OF ELY COUNTY COUNCIL.

Applications are invited for the undermentioned appointments on the staff of the County Architect :—

SENIOR QUANTITY SURVEYOR. Grade A.P.T., VIII (£735-£810 per annum).

SENIOR ARCHITECT. Grade A.P.T., VIII (£735-£810 per annum).

FIRST ASSISTANT ARCHITECT. Grade A.P.T., VI (£645-£710 per annum).

SECOND ASSISTANT ARCHITECT. Grade A.P.T., Va (£600-£660 per annum).

The appointments are permanent and are subject to the provisions of the National Scheme of Conditions of Service, the Local Government Superannuation Act, 1937, and to the passing of a medical examination.

Excellent experience is available over the whole range of County Council building work.

Forms of application may be obtained from the County Architect, County Hall, March, Cambs., and are to be returned not later than Monday, 2nd July, 1951.

R. F. G. THURLOW,
Clerk of the County Council.

County Hall, March.
28th May, 1951. 2741

GLAMORGAN COUNTY COUNCIL.

Applications are invited for the following permanent appointments, at Headquarters, County Hall, Cardiff :—

TWO PLANNING ASSISTANTS. Up to Grade A.P.T., IV and VI—according to qualifications and experience.

The appointments are subject to the National Joint Council Scheme of Conditions of Service.

Applications, stating age, training, qualifications, experience and present salary, and accompanied by two testimonials, should be sent to the County Planning Officer, Mr. E. John Powell, at this address, and received not later than 23rd June, 1951.

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

Glamorgan County Hall, Cardiff.
29th May, 1951. 2759

COUNTY BOROUGH OF WEST HAM.
BOROUGH ARCHITECT AND PLANNING OFFICER'S DEPARTMENT.

Applications are invited for the following post on the permanent establishment of the Department, in connection with the Reconstruction Programme of the Borough :—

SENIOR ASSISTANT ARCHITECT. A.P.T., Grade VIII (£735×£25—£810 p.a., plus London allowance).

Applicants should be A.R.I.B.A., having considerable experience in large Housing and/or Education works, and should be capable of taking complete charge of Contracts.

Application forms (returnable by 18th June, 1951), obtained from Borough Architect and Planning Officer, Thomas E. North, F.R.I.B.A., 70, West Ham Lane, E.15. 2679

WAR DEPARTMENT.

Applications are invited for the following vacancies in the Fortifications and Works Directorate at Chessington, Surrey :—

(1) ASSISTANT ARCHITECT

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

(2) LEADING DRAUGHTSMAN (ARCHITECTURAL).

Must have had a recognised training with considerable experience in an Architect's office.

(3) DRAUGHTSMEN (ARCHITECTURAL).

Must have had a recognised training and good experience in an Architect's office.

Candidates for all posts should be under 50 years of age.

Salaries for the posts are :—

Post 1 : £448-£720 per annum.
Post 2 : £540-£645 per annum.
Post 3 : £320-£545 per annum.

Starting salary will be fixed according to age, qualifications and experience. Annual increases are payable, subject to satisfactory service.

The posts are temporary, but most of them have long-term possibilities, and open competitions are held periodically to fill established posts.

The work is varied and interesting and offers valuable experience.

The offices are set in pleasant surroundings, and good canteen facilities exist.

Apply in writing only, stating age, nationality, and full details of qualifications and experience, to the War Office (C.5(A)), Room 504, Northumberland House, Northumberland Avenue, London, W.C.2. 2717

STAFFORDSHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.

Applications are invited from suitably qualified persons for three appointments of SENIOR PLANNING ASSISTANTS, A.P.T., Grades VII-VIII, salary £685 to £810, in the County Planning Department.

Applications should give details of age, education and training, qualifications, present and previous appointments and experience, and should include copies of two recent testimonials and the names of two other persons to whom reference can be made. Applications should be sent to D. W. Riley, County Planning Officer, 41a, Eastgate Street, Stafford, not later than the 12th June, 1951.

T. H. EVANS,
Clerk of the County Council.
2731

COUNTY BOROUGH OF WALLASEY.

Applications are invited for the undermentioned appointments in the Borough Architect's Department :—

ONE ARCHITECTURAL ASSISTANT. Grade A.P.T., Va (£600-£660).

TWO ARCHITECTURAL ASSISTANTS. Grade A.P.T., V (£570-£620).

THREE ARCHITECTURAL ASSISTANTS. Grade A.P.T., II (£470-£515).

ONE ARCHITECTURAL ASSISTANT. General Grade (£150-£425).

Forms of application and Conditions of Appointment may be obtained from the Borough Architect, Town Hall, Wallasey, to whom completed applications should be returned by not later than 15th June, 1951.

A. G. HARRISON,
Town Clerk.
2724

MERSEYSIDE AND NORTH WALES ELECTRICITY BOARD.
NO. 1 SUB-AREA.

Applications are invited for the appointment of an ENGINEERING DRAUGHTSMAN (ARCHITECTURAL) in the Engineering Department at the Headquarters of No. 1 Sub-Area, 24, Hatton Garden, Liverpool, 3.

Applicants should possess experience of general building work and of reinforced concrete structures and foundations, and have obtained at least the Ordinary National Certificate in Building or similar qualifications.

The salary payable will be £450 per annum, and will be provisional and subject to any upward adjustment necessary to conform with the Salary Scales later to be agreed with the appropriate Staff Organisation.

The appointment will be superannuable and subject to a medical examination.

Forms of application may be obtained from the Manager, No. 1 Sub-Area, Merseyside and North Wales Electricity Board, 24, Hatton Garden, Liverpool, 3, and should be returned to him in an envelope endorsed "Engineering Draughtsman (Architectural)," so as to be received not later than 11th June, 1951.

JAMES RANKIN,
Secretary.
2718

METROPOLITAN BOROUGH OF BERMONDSEY.

Applications are invited for permanent superannuable appointment of SENIOR ASSISTANT ARCHITECT, Grade A.P.T., VI to VII (£645-£760 per annum), according to age and experience. Candidates must be Members of R.I.B.A. (or hold equivalent qualifications).

Application forms and further particulars may be obtained from the undersigned. Forms and names of referees to be returned by Monday, 18th June, 1951.

S. E. FREEMAN,
Town Clerk.

Municipal Offices, Spa Road,
Bermondsey, S.E.16.
1st June, 1951. 2746

CITY OF SHEFFIELD.
CITY ENGINEER AND SURVEYOR'S DEPARTMENT.
SENIOR PLANNING ASSISTANTS (GRADE VIII).

Applications are invited, from persons with Town Planning experience, and who are suitably qualified, for positions of Senior Planning Assistant, Grade VIII (£685-£760), on the staff of the City Engineer and Surveyor and Planning Officer (J. M. Collie, C.B.E., M.I.Mun.E.).

An increase of £50 throughout the scale is at present under consideration.

Qualifications: A.M.T.P.I., or A.M.I.C.E., or A.R.I.B.A., or A.R.I.C.S. or Engineering Degree, or A.M.I.Mun.E.

The appointments will be subject to one month's notice on either side, to be given in writing at any time, and to the terms and conditions of service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services as applied by the City Council to their official staff.

The appointments will also be subject to the provisions of the Local Government Superannuation Act, 1937, and candidates must not be more than 40 years of age or otherwise have previous service carrying a transfer value within the meaning of the Act.

The successful candidates will be required to pass a medical examination.

Applicants should furnish the following particulars:—

(*a*) Name. (*b*) Address. (*c*) Whether married. (*d*) Age. (*e*) Education and training. (*f*) Qualifications. (*g*) Present position and salary and date when appointed. (*h*) Previous positions, with salaries and dates. (*i*) Particulars of experience. (*j*) When able to take up appointment.

Applications, suitably endorsed, and with the names of two persons to whom reference can be made, are to be submitted to the undersigned not later than Saturday, 16th June, 1951.

Canvassing, directly or indirectly, is a disqualification.

JOHN HEYS,
Town Clerk.

Town Hall, Sheffield, 1. 2745

CITY OF SHEFFIELD.
CITY ARCHITECT'S DEPARTMENT
(W. G. Davies, F.R.I.B.A., City Architect).

Applications are invited for the following appointments:—

(*a*) SENIOR ASSISTANT ARCHITECT. Grade VII (£635-£710 per annum).

(*b*) SENIOR ASSISTANT ARCHITECTS. Grade VI (£595-£660 per annum).

(*c*) ASSISTANT ARCHITECTS. Grade Va (£550-£615 per annum).

(*d*) ASSISTANT ARCHITECTS. Grade V (£520-£570 per annum).

The above salaries do not include the increases recently recommended by the National Joint Council, and now under consideration by the City Council.

All applicants for the above vacancies must be Associates R.I.B.A.

Vacancies exist in the Education, Housing, and General sections of the Department.

The appointments will be subject to one month's notice on either side, to be given in writing at any time, and to the terms and conditions of service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services, as applied by the City Council to their Official Staff.

The appointments will also be subject to the provisions of the Local Government Superannuation Act, 1937, and candidates must not be more than 40 years of age or otherwise have previous Local Government service carrying a transfer value within the meaning of the Act.

The successful candidates will be required to pass a medical examination.

Applicants should furnish the following particulars:—

(*a*) Position applied for. (*b*) Name. (*c*) Address. (*d*) Age. (*e*) Education and trainfng. (*f*) Qualifications. (*g*) Present position and salary and date when appointed. (*h*) Previous positions, with salaries and dates. (*i*) Particulars of experience. (*j*) When able to take up appointment.

Applications, suitably endorsed, and with two recent testimonials or the names of two persons to whom reference can be made, are to be submitted to the undersigned not later than the 12th June, 1951.

Canvassing, directly or indirectly, is a disqualification.

JOHN HEYS,
Town Clerk.

Town Hall, Sheffield, 1.
25th May, 1951. 2744

TETTENHALL URBAN DISTRICT COUNCIL.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Architectural Assistant, on the Staff of the Engineer and Surveyor, at a salary within Grade V of the A.P.T. Division of the National Grade of Salaries (£570-£620).

Applicants should be suitably qualified, with good experience in connection with the design of houses and estate development, and should be competent to prepare plans and specifications in connection with same.

The Council will give consideration to the provision of suitable housing accommodation to the successful applicant, if required.

Applications, setting out details of qualifications and experience, accompanied by one copy testimonial and the names of two persons to whom reference can be made, should be sent to J. W. Mason, M.I.Mun.E., M.T.P.I., Engineer and Surveyor, not later than Tuesday, 12th June.

Canvassing, directly or indirectly, will be a disqualification.

JOHN HINCKES,
Clerk of the Council.

Council Offices, Upper Green,
Tettenhall, Staffs.
25th May, 1951. 2721

CITY AND COUNTY OF THE CITY OF EXETER.

Applications are invited for the appointment of HEATING ENGINEERING ASSISTANT on the permanent staff of the City Architect's Department. Salary within A.P.T., Grades III-IV (£450-£525 p.a.).

Forms of Application and further particulars and conditions of appointment may be obtained from H. B. Rowe, F.R.I.B.A., A.M.I.Struct.E., City Architect, Municipal Offices, Exeter.

Completed forms must be received by him not later than 30th June, 1951.

C. J. NEWMAN,
Town Clerk.

Exeter.
June, 1951. 2720

CUMBERLAND COUNTY COUNCIL.
PLANNING DRAUGHTSMEN (£440-£575).

Applications are invited for the above appointments from Draughtsmen with previous experience in a Planning Department. Salary within the above limits determined according to previous experience and capabilities. Further particulars as to duties may be obtained on request from the County Planning Officer, Citadel Chambers, Carlisle, to whom completed forms are to be returned by Monday, the 25th June, 1951.

G. N. C. SWIFT,
Clerk of the County Council.

The Courts, Carlisle. 2756

BOROUGH OF WORTHING.
BOROUGH ENGINEER'S DEPARTMENT.
ARCHITECTURAL STAFF.

Applications are invited for TWO ARCHITECTURAL ASSISTANTS, on Grade A.P.T., IV (£530-£575 per annum), in the Architectural Section of the Borough Engineer's Department.

Applicants should be suitably qualified, having passed at least the Intermediate Examination of the R.I.B.A. and have had experience in the design and preparation of working drawings for work carried out by Local Authorities, including school buildings.

The appointments are subject to the National Scheme of Conditions of Service of Local Government Officers, to the Local Government Superannuation Act, 1937, and to the successful applicants passing satisfactorily a medical examination.

Applications, endorsed "Architectural Assistant," stating age, status, qualifications, experience, present and past appointments with dates, and accompanied by at least two copies of testimonials, should be sent to the Borough Engineer and Surveyor, Town Hall, Worthing, so as to reach him not later than Friday, 22nd June, 1951.

ERNEST G. TOWNSEND,
Town Clerk.

Town Hall, Worthing.
28th May, 1951. 2758

CORPORATION OF LONDON.
CITY PLANNING OFFICE.
2ND CLASS PLANNING ASSISTANT.

Applications are invited for the above post in the Civic Design Section of the City Planning Office, at a salary of £550 per annum, rising by annual increments of £25 to £700, plus a cost-of-living addition of 15 per cent. on the first £400 and 7½ per cent. on salary over £400. Increments are payable in the discretion of the Corporation, and subject to satisfactory service.

The duties will include the design of layouts for central areas. Previous experience with a Local Authority is not essential. Preference will be given to students of the Royal Institute of British Architects or Town Planning Institute.

The appointment will be subject to a medical examination and to contribution to the Corporation of London Superannuation Fund, which provides for the payment, in appropriate circumstances, of superannuation allowances to officers and dependants, and pensions to widows and children; further details of which will be supplied on request.

Applications, stating age, qualifications, experience, present position and salary, accompanied by the address of two referees, should be sent to the City Planning Officer, 55-61, Moorgate, E.C.2, to arrive not later than the 30th June, 1951.

PICKFORD.
2762

CITY OF ROCHESTER.
ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment in the City Surveyor's Department, at a salary in accordance with Grade III-Grade IV (Administrative, Professional and Technical Division) of the National Scale of Salaries, *viz.*, £500-£575 per annum, according to qualifications and experience.

Preference will be given to candidates who have passed the Intermediate Examination of the Royal Institute of British Architects.

A good general experience is desirable, particularly in the preparation of drawings and specifications for Municipal Housing Schemes. A knowledge of quantities would be an advantage.

In an appropriate case the City Council will provide the successful applicant with suitable housing accommodation.

The appointment will be subject to:—

(1) The Scheme of Conditions of Service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services.

(2) The Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

(3) One month's notice on either side.

Applications, stating age, qualifications and experience, together with names and addresses of three persons to whom reference may be made, should be received by the undersigned not later than the 25th June, 1951.

Canvassing, directly or indirectly, will be deemed a disqualification, and applicants must state whether to their knowledge they are related to any member or senior officer of the Council.

W. LAW,
City Surveyor.

66, Maidstone Road, Rochester.
30th May, 1951. 2754

BRACKNELL DEVELOPMENT CORPORATION.
CHIEF ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments in the Quantity Surveying Section of the Chief Architect's Department:—

(*a*) SENIOR QUANTITY SURVEYOR. Grade III (£750×£50—£900).

Candidates should be Corporate Members of the R.I.C.S. (Sub-Division III, Quantities) and have had considerable experience in the preparation of Bills of Quantities, Interim Valuations and Final Accounts.

(*b*) QUANTITY SURVEYOR. Grade IV (£550×£40—£750).

Candidates should be Corporate Members of the R.I.C.S. (Sub-Division III, Quantities) and have had considerable experience in "taking off" dimensions for all classes of work. The commencing salary will be determined in accordance with the successful candidate's training and experience.

(*c*) ASSISTANT QUANTITY SURVEYOR. Grade VI (£420×£20—£520).

Candidates should have passed the Intermediate Examination of the R.I.C.S. (Sub-Division III, Quantities), and have had considerable experience in "working up" dimensions.

The position will be superannuable under the Local Government Superannuation Act, 1937, and will be conditional on the successful candidate's passing a medical examination.

Candidates are required to state if they are, to their knowledge, related to any member of the Corporation or staff.

Applications, in envelopes suitably endorsed, must give full particulars as to age, qualifications and experience, together with the names of two persons to whom reference can be made, and reach the General Manager, Bracknell Development Corporation, Farley Hall, Binfield, Bracknell, Berks., on or before Wednesday, 20th June, 1951. 2753

BURGH OF MUSSELBURGH.

ARCHITECTURAL ASSISTANT (JUNIOR) required for Architectural Department of Burgh Surveyor's office, Musselburgh. Salary scale £430 per annum, rising to £475 per annum.

Applications, stating age and experience, to be lodged with the Town Clerk, Musselburgh, not later than 23rd June. 2786

NATIONAL COAL BOARD (SCOTTISH DIVISION).

Vacancies exist in Edinburgh for qualified and unqualified Architectural Staff. There are exceptional opportunities for gaining experience in a wide field of contemporary design and construction, as well as building administration. Details of the vacancies are given hereunder. The point of entry into the relevant salary scales will depend on the qualifications and experience of the successful applicants. Applications, giving full details of age, qualifications, experience (in chronological order), present post and salary, should be forwarded to the Establishments Officer, 1, Eglinton Crescent, Edinburgh, within 7 days. Copies of two recent testimonials should be enclosed.

ARCHITECT, Grade I. Salary scale £700×£25 to £875. Required qualification: A.R.I.B.A.

ARCHITECT, Grade II. Salary scale £450×£25 to £700. Required qualification: A.R.I.B.A.

ARCHITECTURAL ASSISTANT, Grade I. Salary scale £410×£20 to £550.

ARCHITECTURAL ASSISTANT, Grade II. Salary scale £300×£20 to £440.

Candidates for the Assistants' posts should have passed, or be working for, the Inter. R.I.B.A. Examination, and have some office experience. 2785

BEDFORDSHIRE COUNTY COUNCIL.

Applications are invited for the posts of :—

(*a*) SENIOR ASSISTANT ARCHITECT. A.P.T., Grade VIII (£735-£810 per annum).

(*b*) ARCHITECTURAL ASSISTANTS. A.P.T., Grade IV (£530-£575 per annum), in the County Architect's Department.

Applicants for the post of Senior Assistant Architect should be Associate Members of the Royal Institute of British Architects, and the person appointed will be required to take charge of a group of Assistant Architects working on Educational Buildings.

Previous Local Government experience is not essential, but applicants should be keenly interested in contemporary design.

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

Application forms can be obtained from the undersigned, and must be returned, together with two recent testimonials or the names of referees, not later than 25th June, 1951.

D. H. LINES,
Deputy Clerk of the County Council.

Shire Hall, Bedford.
28th May, 1951. 2782

YIEWSLEY AND WEST DRAYTON URBAN DISTRICT COUNCIL.

Appointment of :—

(1) ENGINEERING ASSISTANT.
(2) ARCHITECTURAL ASSISTANT.

The above-named Council invite applications for the posts of Engineering Assistant and Architectural Assistant on their established staff.

In the case of the Engineering Assistant, the salary payable will be in accordance with paragraph 21 (12) of the National Scheme of Conditions of Service, i.e., Grades A.P.T., III-V, according to qualifications and experience. It will be an advantage if applicants possess the Final Diploma of the R.I. Chartered Surveyors (Building Sub-Division).

The salary payable to the Architectural Assistant will be in accordance with Grade A.P.T., III, and applicants should have the qualification and experience appropriate to that Grade.

London "weighting" salary is also payable.

The successful applicants will be required to :—

(*a*) Pass a medical examination;
(*b*) contribute to the Superannuation Fund maintained by the Council; and
(*c*) be, or become on appointment, a member of an appropriate Trade Union or other recognised negotiating body.

The appointments will be subject to the provisions of the National Scheme of Conditions of Service.

Housing accommodation will be provided if, in the opinion of the Council, it is required.

Application forms may be obtained from the Engineer and Surveyor to the Council, Mr. W. T. Morgan, F.R.I.C.S., etc., to whom they must be returned appropriately endorsed not later than 5 p.m. on Tuesday, 3rd July, 1951.

EDWARD C. BARLOW,
Clerk of the Council.

Council Offices, Yiewsley, Middx.
29th May, 1951 2757

WAR DEPARTMENT.

Applications are invited from suitably qualified persons for civilian posts of Clerks of Works (E. or M.), Clerks of Works (Con.), and Quantity Surveying Assistants, in Royal Engineers Works Services in the Far East, Middle East and B.A.O.R. Appointments are temporary and for period of two years, with possibility of extension. Minimum qualifications required :—

CLERKS OF WORKS (ELECTRICAL OR MECHANICAL). Reference No. F.A.349. Ordinary National Certificate in Electrical and/or Mechanical Engineering or equivalent qualifications. After apprenticeship, at least three years with an Engineering firm giving good comprehensive experience, or not less than three years as a supervisor of labour chargehand or technical officer in the Industry.

CLERKS OF WORKS (CONSTRUCTIONAL). Reference No. F.A.350. Ordinary National Certificate or equivalent qualifications. Apprenticeship as craftsman with three years' experience as Foreman of Trade, General Foreman or Clerk of Works. General office experience in estimating, costing and management.

QUANTITY SURVEYING ASSISTANTS. Reference No. F.A.311. City and Guilds 3rd Year Certificate on quantities and building construction, or equivalent qualifications. Five years' training and experience with a Quantity Surveyor or Building Contractor (or Government Department or Local Authority).

Salary range : £460 to £575 (free of United Kingdom income tax). Commencing salary according to age, qualifications and experience. Yearly increments. In addition Foreign Service Allowance, variable, is payable which is not liable to United Kingdom income tax. An initial outfit grant of £30 is also payable, in certain cases. Successful married applicants will be expected to proceed unaccompanied, but may apply on arrival for passage for family at public expense if accommodation is found. Candidates for all posts should be under 50 years of age.

Applications, stating age, qualifications and experience, location preferred, and quoting reference numbers as shown above, should be forwarded to London Appointments Office, Ministry of Labour and National Service, 1-6, Tavistock Square, London, W.C.1, within 14 days of the appearance of this advertisement. In no circumstances should original testimonials be forwarded. Only candidates selected for interview will be advised. 2774

BATTERSEA BOROUGH COUNCIL.
APPOINTMENT OF ARCHITECTURAL DRAUGHTSMAN.

Applications are invited for the above-mentioned appointment on the Council's permanent staff in A.P.T., Grades I-II, of the National Joint Council's Scale of Salaries.

Forms of application may be obtained from the Borough Engineer and Surveyor, Town Hall, Battersea, S.W.11, by sending a stamped envelope, and should be returned to the undersigned by Monday, 18th June, 1951.

R. G. BERRY,
Town Clerk.

Town Hall Battersea, S.W.11.
May, 1951. 2722

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.
CITY ARCHITECT'S DEPARTMENT.

Applications are invited from suitably qualified persons for the under-mentioned appointments in the Education Section of the Department :—

(*a*) ONE SENIOR ASSISTANT ARCHITECT. Salary £635 per annum, rising to £710 per annum (A.P.T., Grade VII).

(*b*) ONE ASSISTANT ARCHITECT. Salary £480 per annum, rising to £525 per annum (A.P.T., Grade IV).

Applicants for the post of Senior Assistant Architect, Grade VII, should be Associates of the Royal Institute of British Architects, having considerable aptitude in the design and construction of contemporary buildings. Previous experience of educational buildings is desirable, but not essential.

The work of the Section includes, in addition to the normal school programme, the design and erection of a large Grammar School and a new Central College of Technology. The successful applicants for both posts may be engaged wholly upon the new College of Technology.

The appointments will be subject to the National Conditions of Service as adopted by the City Council; to the provisions of the Local Government Superannuation Act, 1937, and to one month's notice on either side. The successful candidates will be required to pass a medical examination.

Applications, stating position applied for, age, particulars of training, qualifications, experience, present and past appointments, together with copies of two recent testimonials and the names and addresses of two persons to whom reference may be made, should be addressed to George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle-upon-Tyne, 1, not later than 21st June, 1951.

JOHN ATKINSON,
Town Clerk.

Town Hall, Newcastle-upon-Tyne, 1.
30th May, 1951. 2755

COUNTY BOROUGH OF BURY.

Applications are invited for the position of ARCHITECTURAL ASSISTANT in the Borough Engineer's Department. Salary not exceeding A.P.T., III (£500-£545). The commencing salary will be determined in accordance with the qualifications and experience of the applicant and the salary scales prescribed for this position by the National Joint Council.

The appointment is subject to the Local Government Superannuation Act, 1937, and to medical examination.

Applications, stating age, details of training, qualifications and experience, together with the names and addresses of two persons to whom reference may be made, should reach me not later than the 23rd June, 1951.

EDWARD S. SMITH,
Town Clerk.

Town Hall, Bury.
2nd June, 1951. 2776

BASILDON NEW TOWN.

Architects are invited to apply for the post of SENIOR ARCHITECT on the staff of the Chief Architect-Planner to the Corporation, Noel Tweddell, A.R.I.B.A.

Applicants, who should be over 35 years of age, will be responsible for design of large scale housing and/or industrial contracts, and must have had recent experience of this work and the management of such building contracts. A variety of work, including town planning, will be available later. The appointment, which is superannuable, will be made within the salary range £1,000-£1,200 per annum, according to age and experience. Subsistence allowances are payable in addition to salary in approved cases until arrangements are made for family accommodation locally. Application should be made (on the special form obtainable from the Chief Architect) to the General Manager, Basildon Development Corporation, Gifford House, Pitsea, Essex, by 25th June, 1951. 2775

Tenders for Contracts

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

COUNTY BOROUGH OF READING.
TO BUILDERS AND CONTRACTORS.

The Corporation of Reading invite tenders for the erection of Two Pairs of Houses in Eastern Avenue, Reading.

The General Conditions of Contract and Drawings may be inspected at the office of the Borough Architect, Town Hall, Reading, and Bills of Quantities. Form of Tender and endorsed envelope may be obtained on application to him, accompanied by a cheque (made payable to the Reading Corporation) for two guineas, which will be refunded on receipt of a *bona fide* tender.

Tenders must be delivered to the undersigned not later than Monday, the 25th June, 1951.

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

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

G. F. DARLOW,
Town Clerk.

Town Hall, Reading.
7th June, 1951. 2760

COUNTY BOROUGH OF READING.
TO BUILDERS AND CONTRACTORS.

The Corporation of Reading invite tenders for the works of conversion of Nos. 1-4, Southern Hill, Redlands Road, Reading, into a Hostel for Aged Persons.

The plans have been prepared by Messrs. Sainsbury & Chamberlain, Chartered Architects, of 14, Cross Street, Reading, and may be inspected at their office, together with the General Conditions of Contract.

A copy of the Bills of Quantities, Form of Tender and endorsed envelope can be obtained on application to the Borough Architect, Town Hall, Reading, accompanied by a cheque (made payable to the Reading Corporation) for two guineas, which will be refunded upon receipt of a *bona fide* tender.

Tenders must be delivered to me at my office not later than Wednesday, the 4th July, 1951.

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

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

G. F. DARLOW,
Town Clerk.

Town Hall, Reading.
8th June, 1951. 2761

EAST RIDING OF YORKSHIRE COUNTY COUNCIL.
PROPOSED WITHERNSEA COUNTY SECONDARY SCHOOL.

Tenders are invited for the general contract in connection with the erection of permanent buildings to accommodate approximately 600 scholars.

Applications for Bills of Quantities should be made to the County Architect, County Hall, Beverley, accompanied by a deposit of three guineas, which sum will be returned on receipt of a *bona fide* tender. The cheque to be made payable to the East Riding County Treasurer.

Tenders are to be delivered to the undersigned not later than 4 p.m. on Wednesday, 4th July, 1951, in a plain sealed envelope supplied by the Council, endorsed "Tender—Proposed Withernsea County Secondary School," and which shall not bear any name or mark indicating the sender.

The Council does not bind itself to accept the lowest or any tender.

T. STEPHENSON,
Clerk of the Council.

28th May, 1951. 2747

Partnership

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

CONSULTING CIVIL ENGINEER, with own staff and large clientel, requires Partnership with Architect. Box 2768.

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Article 3.—Participants in said competition shall have to visit Izmir for purposes of studies and investigations for at least a fortnight during the first three months subsequent to the formal announcement of the said competition. Such participants shall have to request and obtain from the Municipality of Izmir a certificate indicating their studies and sojourn in that city. The Municipality of Izmir shall extend all possible facilities to participants during their sojourn there.

Article 4.—The period of competition shall be seven months, starting on 1st May and ending 1st December, 1951.

Article 5.—Subsequent to the closing of the competition period, a group of chosen judges shall decide upon the First, Second and Third Winners, and Honourable Mention shall be

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The above-mentioned prizes shall be net, free from all taxation, and shall be paid to winners by the Iller Bank.

Artfcle 6.—Specifications pertaining to said competition and relative supplements shall be available to prospective participants at 50 T.L. per copy, obtainable either directly or by letter (enclosing money order), from the General Directorate of the Iller Bank (address to read: Iller Bankasi Genel Mudurtugu), Ankara; or from the Mayor's Office (adress to read: Belediye Baskanligi), Izmir; or from the Turkish Architects' Association (address to read: Türk Yüksek Mimarlar Birligi), Istanbul. Persons interested in participating in said competition subsequent to their perusal of said specifications shall then cable to the Iller Bank (cable address to read: Ilbank, Ankara), to have their names registered, 20 T.L. paid for the purchases of said specifications and relative supplements shall be retained as cost of the preparation of specifications, whereas the remaining 30 T.L. shall be refunded to participants in said competition after this competition has been completed. Prospective participants in said competitions who may be residing outside Turkey shall be able to procure said specifications and relative supplements for the equivalent of 50 T.L. in the currency of whatever country they happen to reside in, from the Turkish Embassy or Legation accredited to that country. 2784

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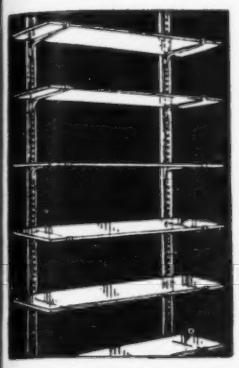

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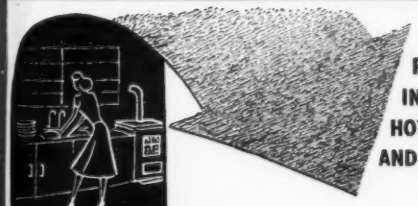

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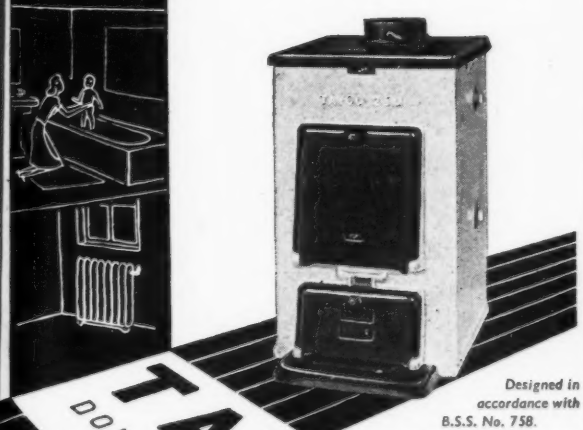

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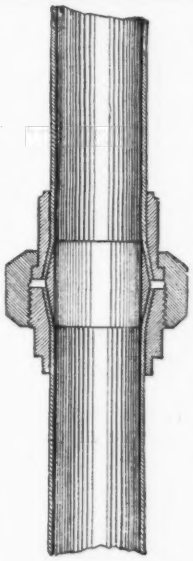

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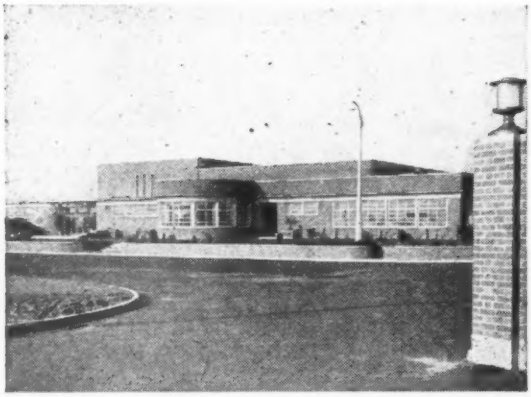

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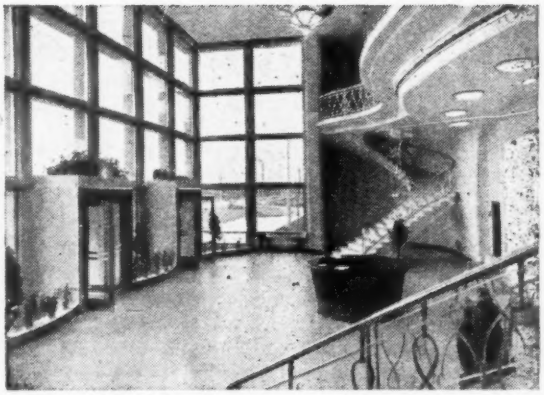

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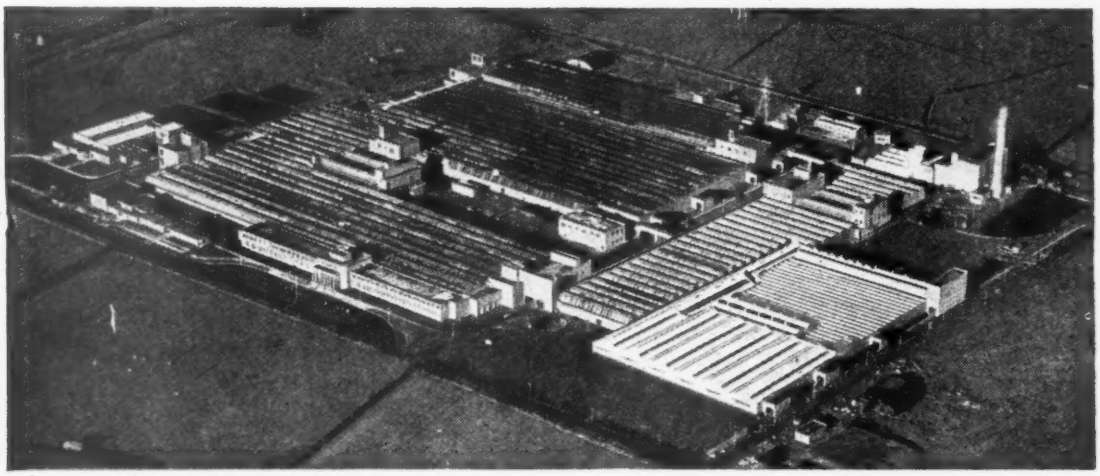

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