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

IEE	Institution of Electrical Engineers. Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers. 1, Grosvenor Place, S.W.1.	Sloane 8606
IHVE	Institution of Heating and Ventilating Engineers. 75, Eaton Place, S.W.1.	Sloane 3158
IIBD	Incorporated Institute of British Decorators. Drayton House, Gordon Street, W.C.1.	Euston 2450
ILA	Institute of Landscape Architects. 12, Gower Street, W.C.1.	Museum 1783
I of Arb.	Institute of Arbitrators, 35/37, Hastings House, 10, Norfolk Street, Strand, W.C.2.	Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197
IR	Institute of Refrigeration. Empire House, St. Martin's-le-Grand, E.C.1	Monarch 7391
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1.	Abbey 6172
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Sloane 7128-29
IWA	Inland Waterways Association. 11, Gower Street, W.C.1.	Museum 9200
LIDC	Lead Industries Development Council. Eagle House, Jermyn Street, S.W.1.	Whitehall 7264
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	Museum 3891
MARS	MARS Group (English Branch of CIAM). 34, Gordon Square, W.C.1.	Euston 2158-9
MOA	Ministry of Agriculture and Fisheries. 55, Whitehall, S.W.1.	Whitehall 3400
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1.	Mayfair 9400
MOH	Ministry of Health. Whitehall, S.W.1.	Whitehall 4300
MOLNS	Ministry of Labour and National Service. St. James's Square, S.W.1.	Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, Victoria Embankment, W.C.	Gerrard 6933
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1.	Abbey 7711
MOTCP	Ministry of Town and Country Planning. 32-33, St. James's Square, S.W.1.	Whitehall 8411
MOW	Ministry of Works. Lambeth Bridge House, S.E.1.	Reliance 7611
NAMMC	Natural Asphalte Mine-Owners and Manufacturers Council. 94, Petty France, S.W.1.	Abbey 1010
NAS	National Association of Shopfitters. 9, Victoria Street, S.W.1.	Abbey 5277/8
NBR	National Buildings Record. 37, Onslow Gardens, S.W.7.	Kensington 8161
NCBMP	National Council of Building Material Producers. 2, Caxton Street, S.W.1.	Abbey5111
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Langham 4041
NFBTO	National Federation of Building Trades Operatives, Federal House, Cedars Road, Clapham, S.W.4.	Macaulay 4451
NFHS	National Federation of Housing Societies. 13, Suffolk St., S.W.1.	Whitehall 2881/2/3
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1.	Langham 4041
NPL	National Physical Laboratory. Head Office, Teddington.	Molesey 1380
NSAS	National Smoke Abatement Society. Chandos House, Buckingham Gate, S.W.1.	Abbey 1359
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1.	Whitehall 0211/2
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1.	Whitehall 9936
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh.	Edinburgh 20396
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Langham 5721/7
RICS	Royal Institution of Chartered Surveyors. 12, Great George St.,S.W.1.	Whitehall5322
RFAC	Royal Fine Art Commission. 22a, Queen Anne's Gate, S.W.1.	Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1.	Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Temple Bar 8274
RSI	Royal Sanitary Institute. 90, Buckingham Palace Road, S.W.1.	Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19.	Wimbledon 5101
SBPM	Society of British Paint Manufacturers. 20, Piccadilly, London, W.1.	Regent 6347
SCR	Society for Cultural Relations with the USSR. 14, Kensington Square, London, W.8.	Western 1571
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1.	Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3.	Mansion House 3921
SIA	Structural Insulation Association. 14, Moorgate, London, E.C.2.	Central 4444
SIA	Society of Industrial Artists. Room 243, Empire House, St. Martin's-le-Grand, E.C.1.	Metropolitan 8344
SNHTPC	Scottish National Housing & Town Planning Council. Hon. sec., Robert Pollock, Town Clerk, Rutherglen.	
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2.	Temple Bar 5006
TDA	Timber Development Association. 75, Cannon Street, E.C.4.	City 4771 (6 lines)
TGC	The Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
TPI	Town Planning Institute. 18, Ashley Place, S.W.1.	Victoria 8815
TTF	Timber Trades Federation. 81, Cannon Street, E.C.4.	City 1476
WDC	War Damage Commission. Devonshire House, Mayfair Place, Piccadilly, W.1.	Mayfair 8866
WEDA	Welfare Equipment Development Association. 61, St. Paul's Churchyard, E.C.4.	City 4263/4
ZDA	Zinc Development Association. Lincoln House, Turl Street, Oxford.	Oxford 47988

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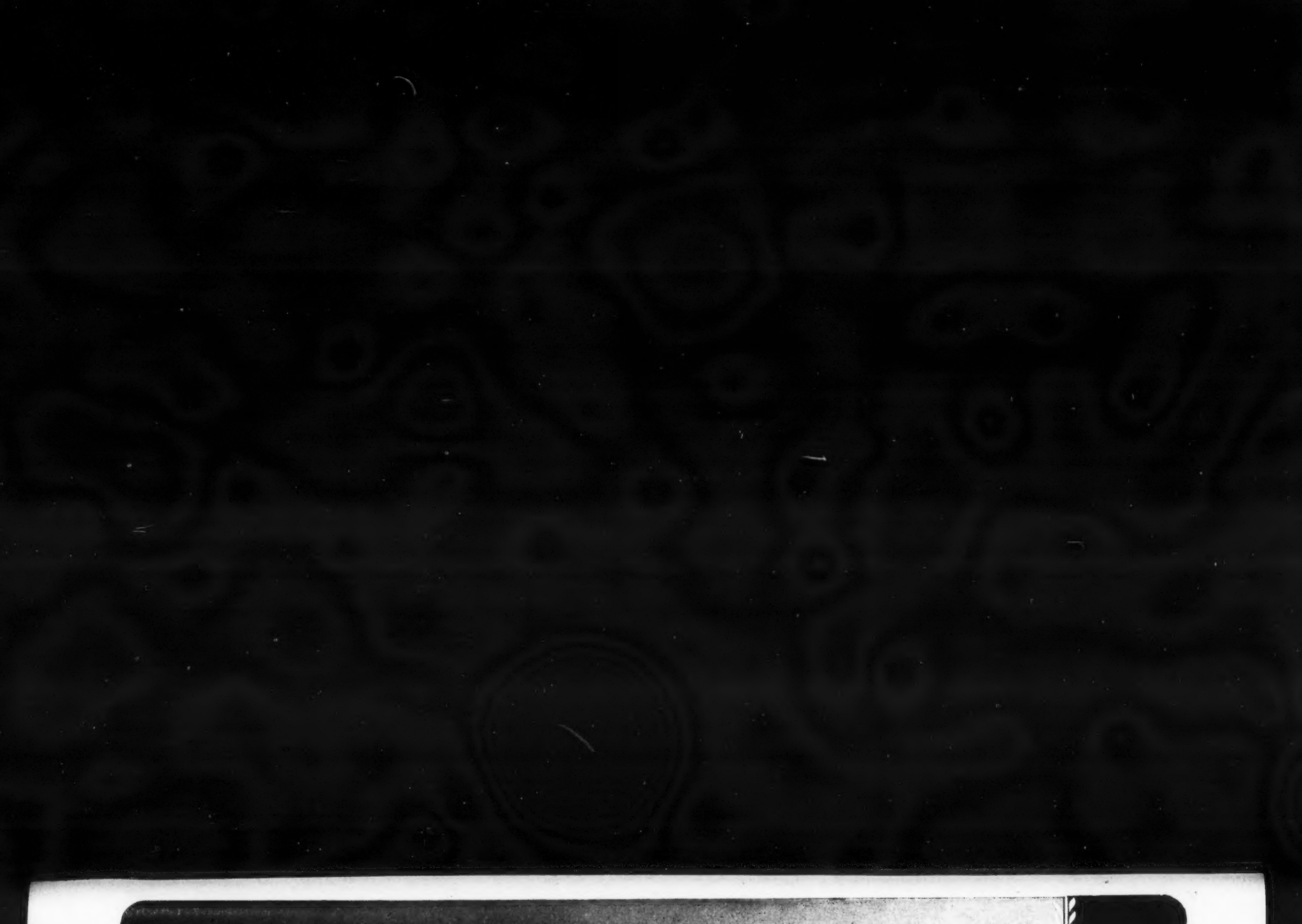

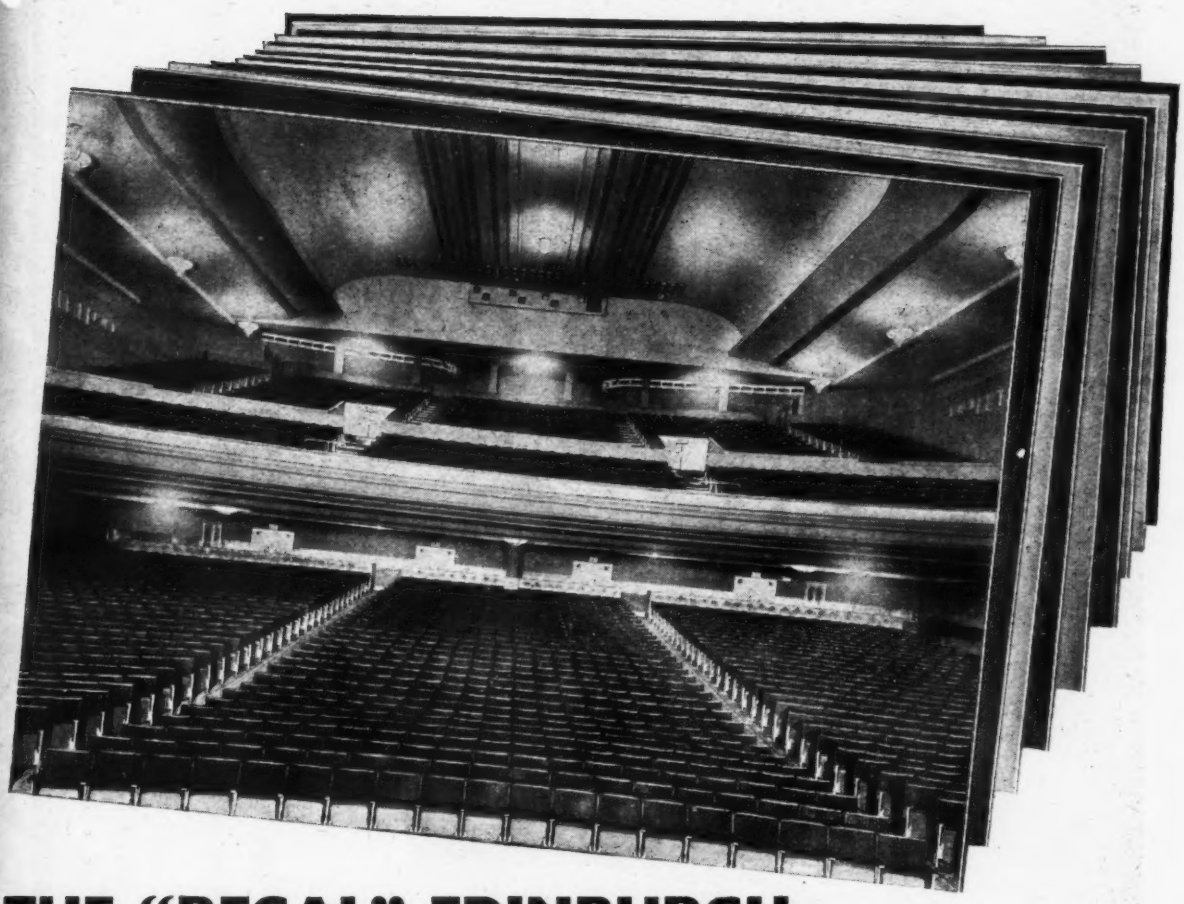

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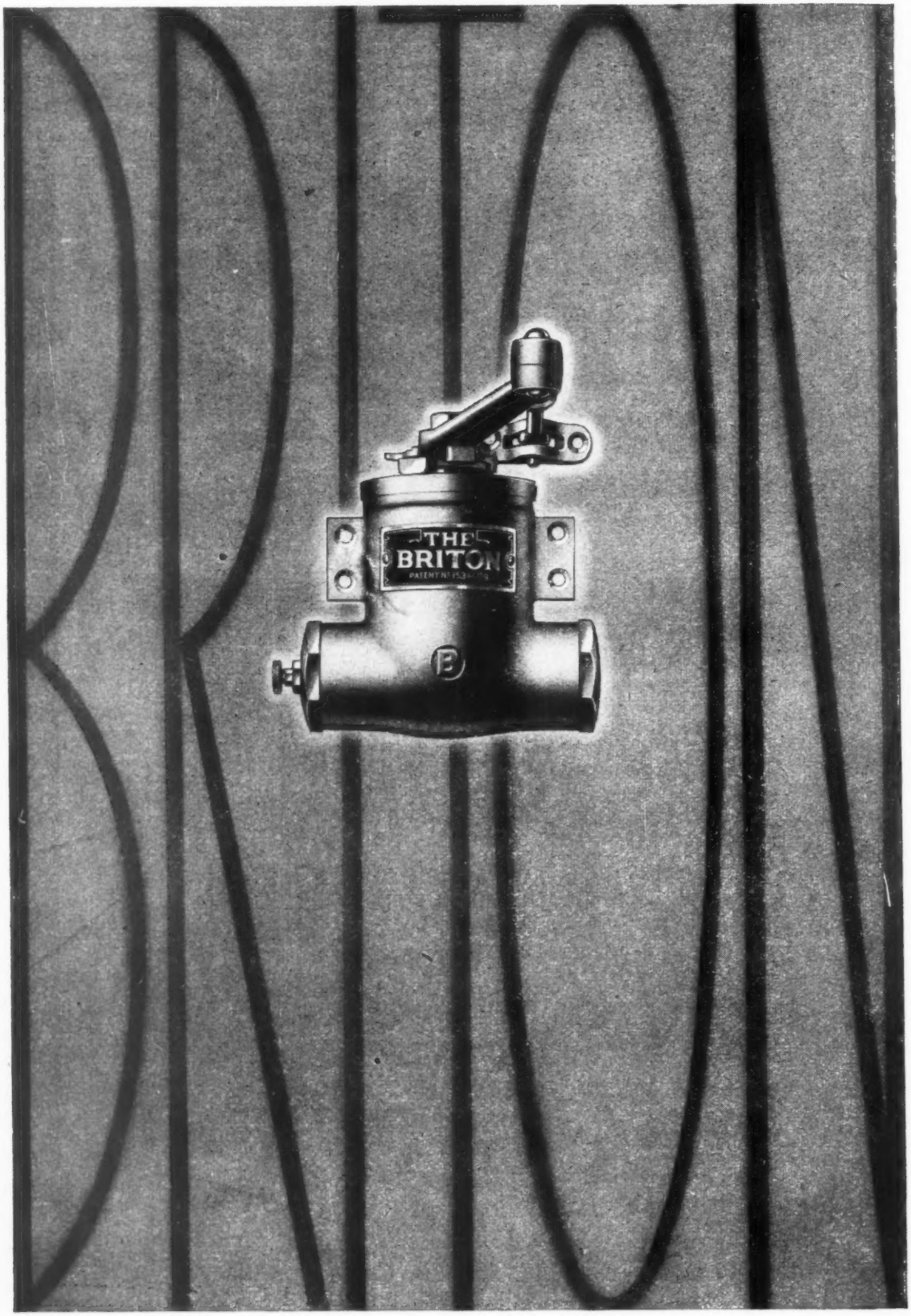

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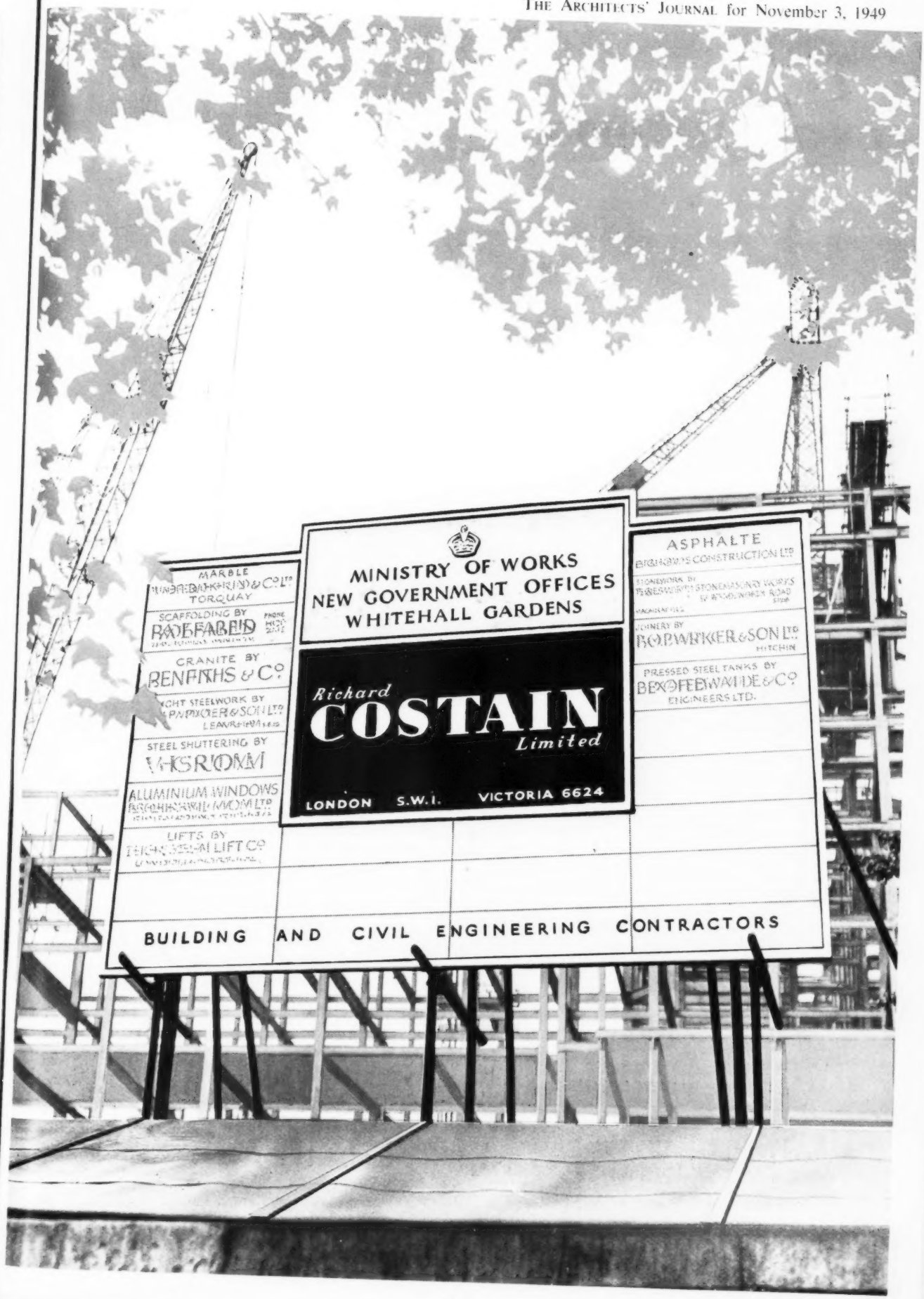
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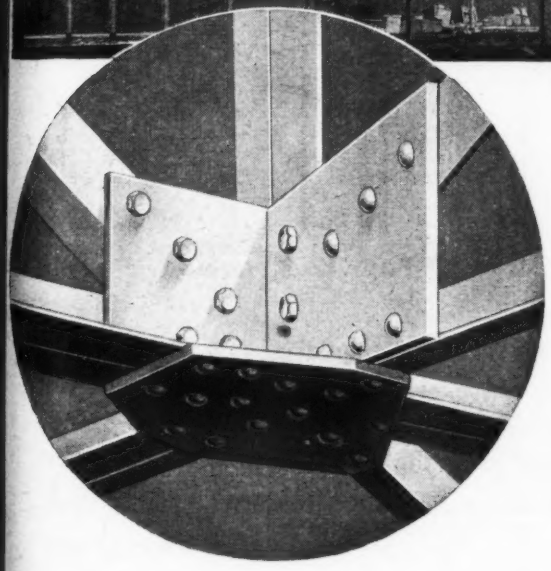

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THE CONSTRUCTOR

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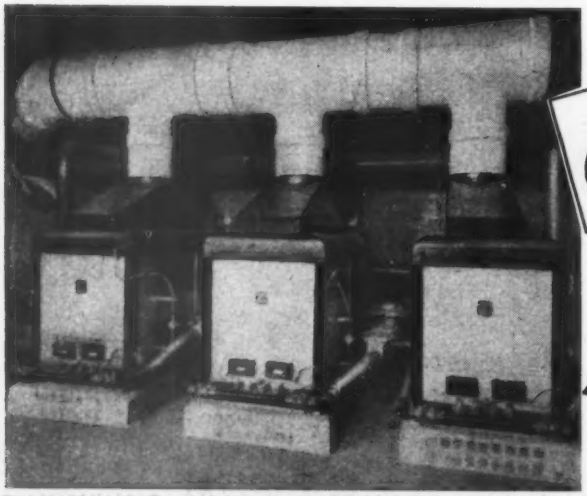

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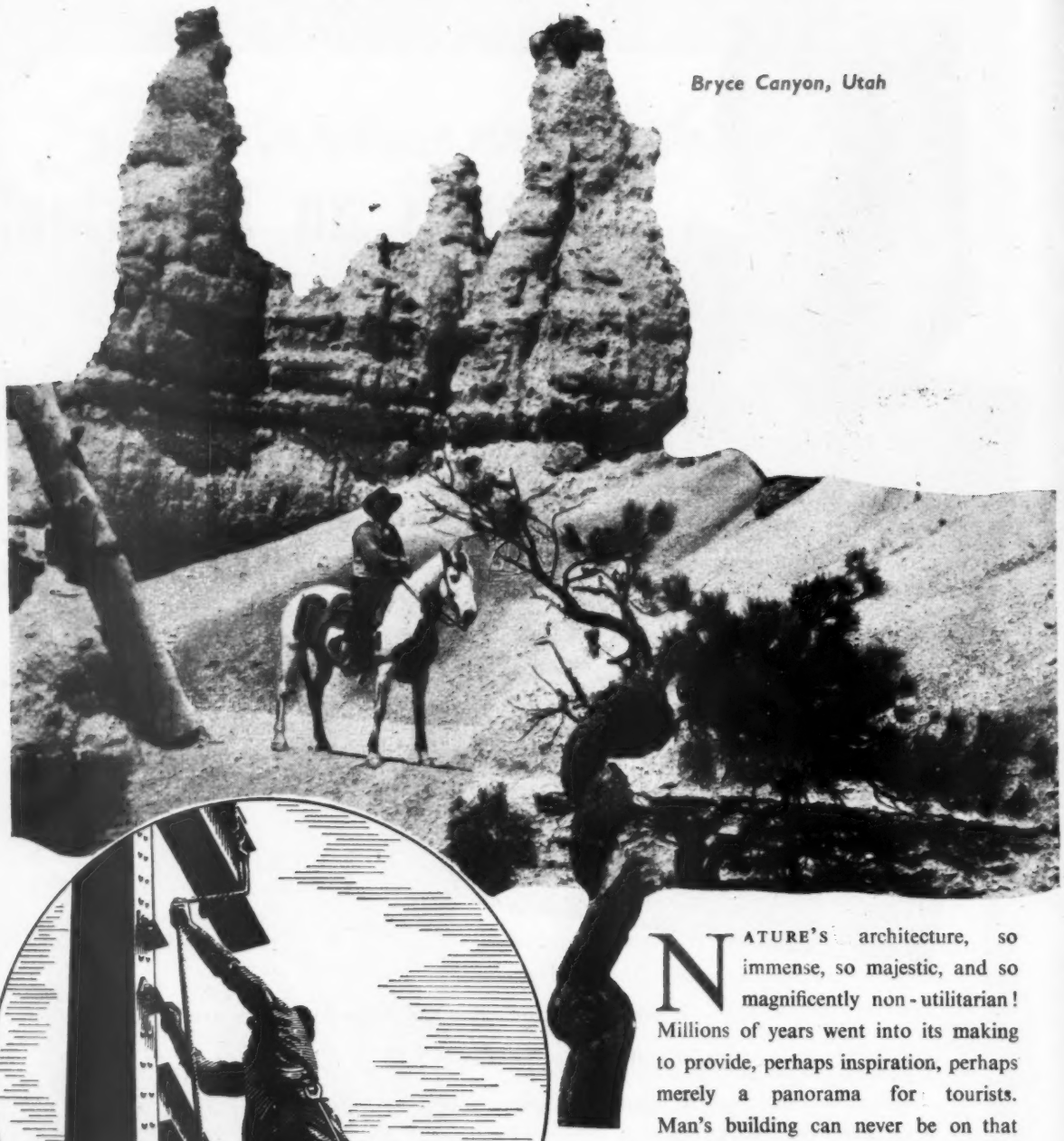

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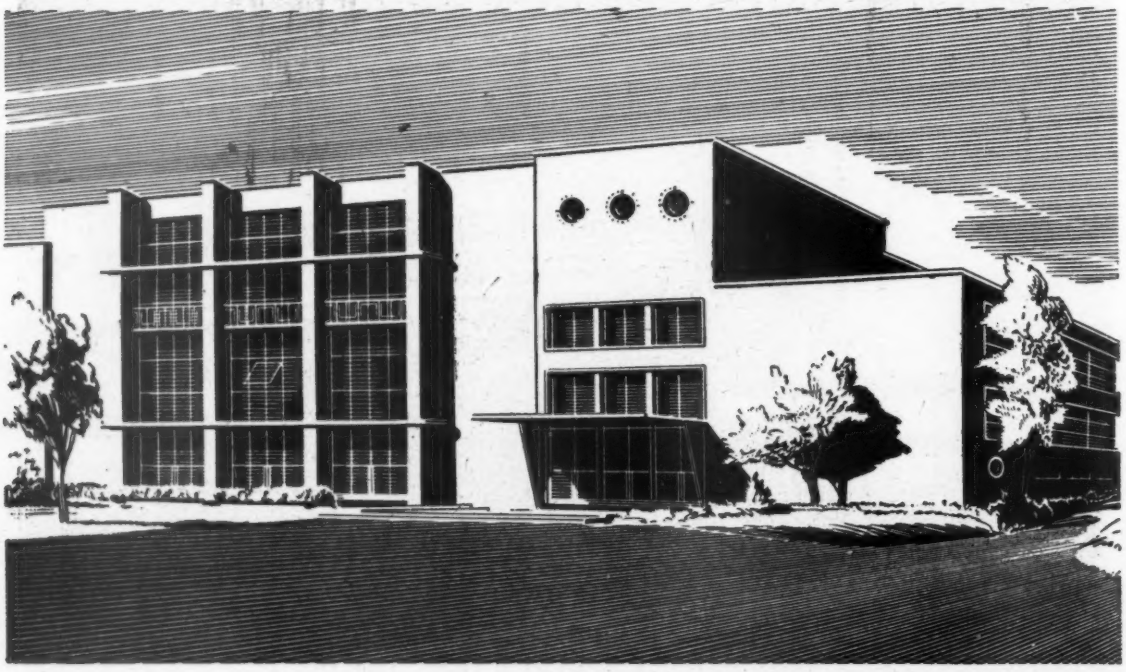

Chatham—Fort Luton County Primary School, for the Kent Education Committee. Architects: Messrs. Read and McDermott, F.R.I.B.A., in collaboration with S. H. Loweth, Esq., F.S.A., F.R.I.B.A., Kent County Architect.

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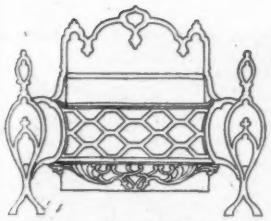
★ *Visit our Stand at the Building Trades Exhibition (November 17th—December 1st)—Stand No. 30, Row B.*



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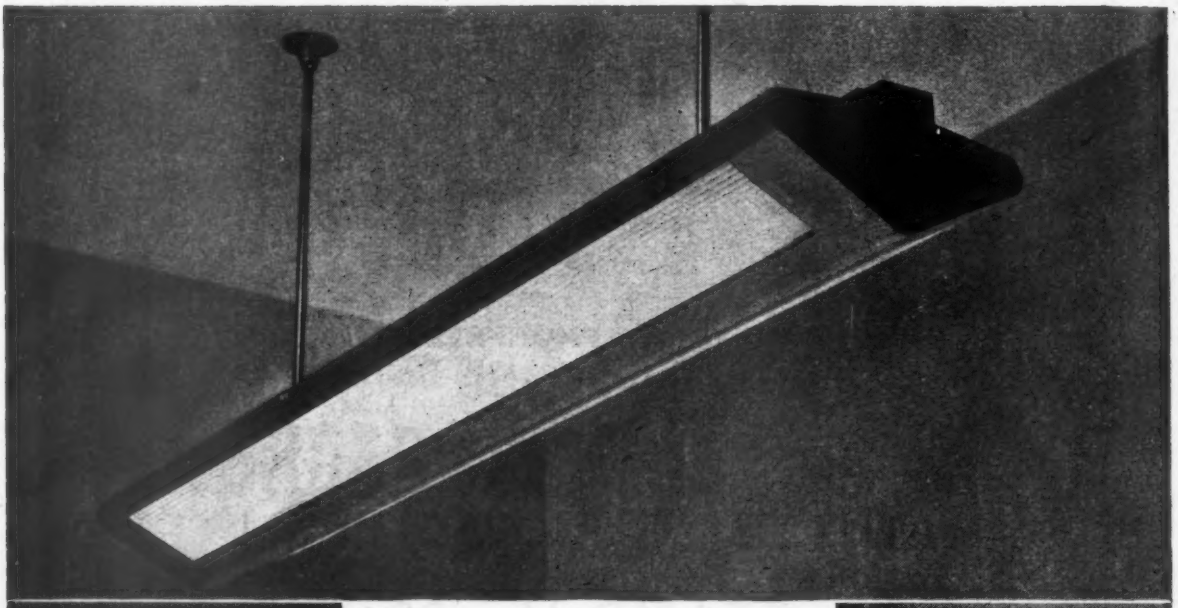

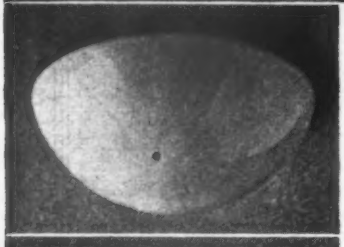

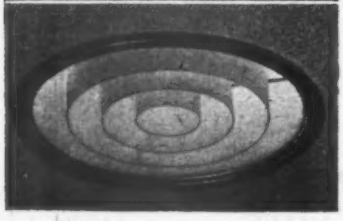

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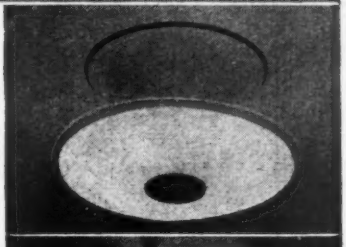

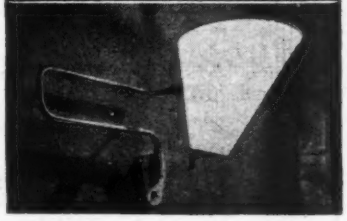

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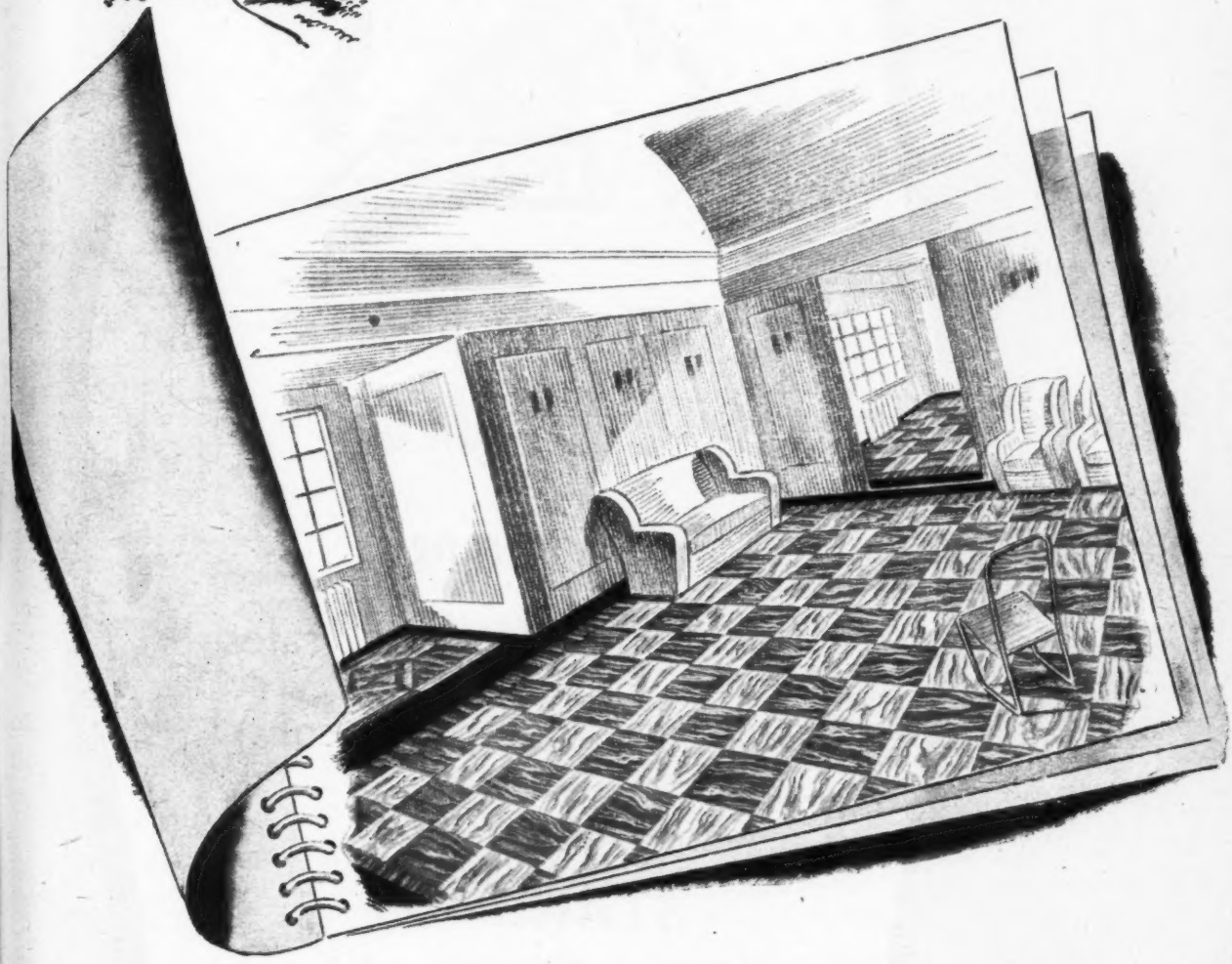

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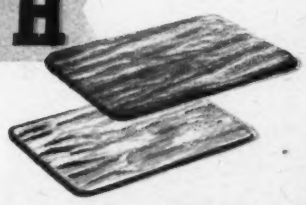

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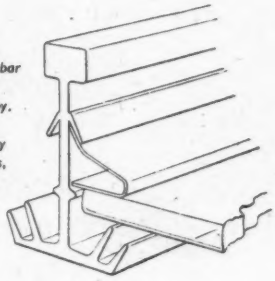
PROFILE: the Aluminex Patent Glazing Bar and its applications

If it is true that the function of a patent glazing system is "to hold glass permanently in place, in any plane, over any given area by the simplest possible means", then it is by this exacting standard that the Aluminex patent glazing system should be judged.

The examination may most conveniently begin with the profile of the Aluminex aluminium alloy glazing bar. It is a shape completely determined by its function. Nothing about it is by intention ornamental nor is any part of it attributable to an afterthought. It is, in other words, good functional design and by virtue of that, has a pleasing appearance. It consists of a main web with a strengthening ridge at the top holding a necessary weight of metal in balance. From the "spine" emerge ribs on each side to hold the continuous glazing cover strip, ribs to serve as anti-capilliary stops for the glass and supporting flanges to receive the weight of the glass. There are further flanges to form drainage and condensation channels.



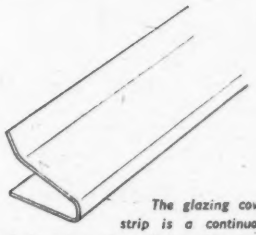
This Aluminex patent glazing bar is of extruded aluminium alloy. The glass is held in place by the cover strips, one of which is seen here in position.

The role of the glazing cover strip

Complementary to the glazing bar is the glazing cover strip. This is a continuous strip of aluminium alloy rolled into a springy wedge shape which is compressed and pushed into place between the upper rib on the glazing bar and the surface of the glass. It holds the glass without aid from putty, screws, cord seatings or flashings. It fits tightly but "gives" in response to thermal movement sufficiently to make a firm and safe grip for the glass in all conditions.

The glazing bar and cover strip, as well as all the minor fittings are made of an alloy of aluminium, silicon and magnesium in which the proportion of silicon and magnesium is specially determined in order to obtain the maximum resistance to corrosion. (It has been found that the composition of an aluminium alloy is the major factor in the control of corrosion, anodizing and the other surfacing processes being of secondary importance.)

In the case of this alloy the weathering process rapidly produces an extremely hard patina on the surface which thereafter remains static and protects the metal.



The glazing cover strip is a continuous springy strip of aluminium alloy rolled to this shape.

These two basic components of the Aluminex glazing system — the glazing bar and the cover strip — have been designed to fulfil the requirement of the definition, that glazing should be done "by the simplest possible means". As for the other requirements, it has been shown that to ensure security in any plane we have a firm glass holding device and for permanence a corrosion-resistant alloy.

Aluminex — a method of construction

But examination of many of the applications of the Aluminex patent glazing system suggests a larger claim. Aluminex in fact has been used not merely as a glazing system but as a method of construction in its own right.

It is difficult, for instance, to think of the glazed stretch 1,052 ft. x 50 ft. on the northern side of the Brabazon hangar at Filton as a window (even as the "biggest composite plate glass window in the world", as it has been called.) It is more properly, a "glass wall", and the Aluminex glazing is an integral part of the structure of the building.

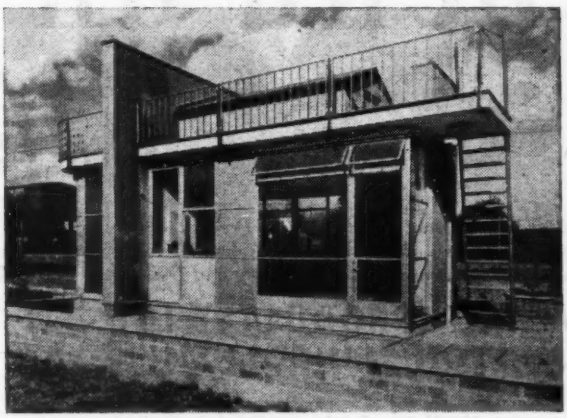
An extension of this idea, although on a much smaller scale, is to be seen in the I.C.I. Experimental building at Witton. Here, as part of the general intention to test the application of non-ferrous metals in various fields, the South West wall is entirely built on a skeleton of Aluminex casement sections. The spaces between the bars are in some cases not glazed but fitted with a variety of solid panels. This construction can best be described as a "grid wall" of a new type, yet it is in fact only an application of the *Aluminex method of construction.*

The possibilities of double glazing

By means of modified types of the glazing bar, the Aluminex system provides double glazing which gives a high degree of insulation and freedom from internal condensation. The problems of providing light cladding to suitable buildings can therefore, it is clear, be approached with this system of construction in mind.

In fact, in the hands of an architect of imagination, this young, yet accepted, method of construction has exciting possibilities. This is particularly so in the treatment of industrial and similar buildings where the maximum of light is required. The company may be relied upon for enthusiastic co-operation in all such developments and invites communications from all architects who might like to discuss ideas and projects in this field.

Aluminex Division *of Williams & Williams Limited, Reliance Works, Chester. Telephone: Chester* 3600 *(7 lines). Telegrams: Reliance, Chester.*



The Experimental building of the I.C.I. Metals Division at Witton. The wall grid seen here holds both solid and glazed panels.

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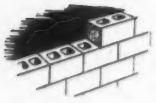
At every stage in the development of  materials  and processes there are those who cry, "Halt, this is good enough." Dow-Mac  marches on. Before you decide the destination of your next  concrete product enquiry think what a main line railway sleeper of Dow-Mac  *pre-stressed* concrete is designed to withstand.

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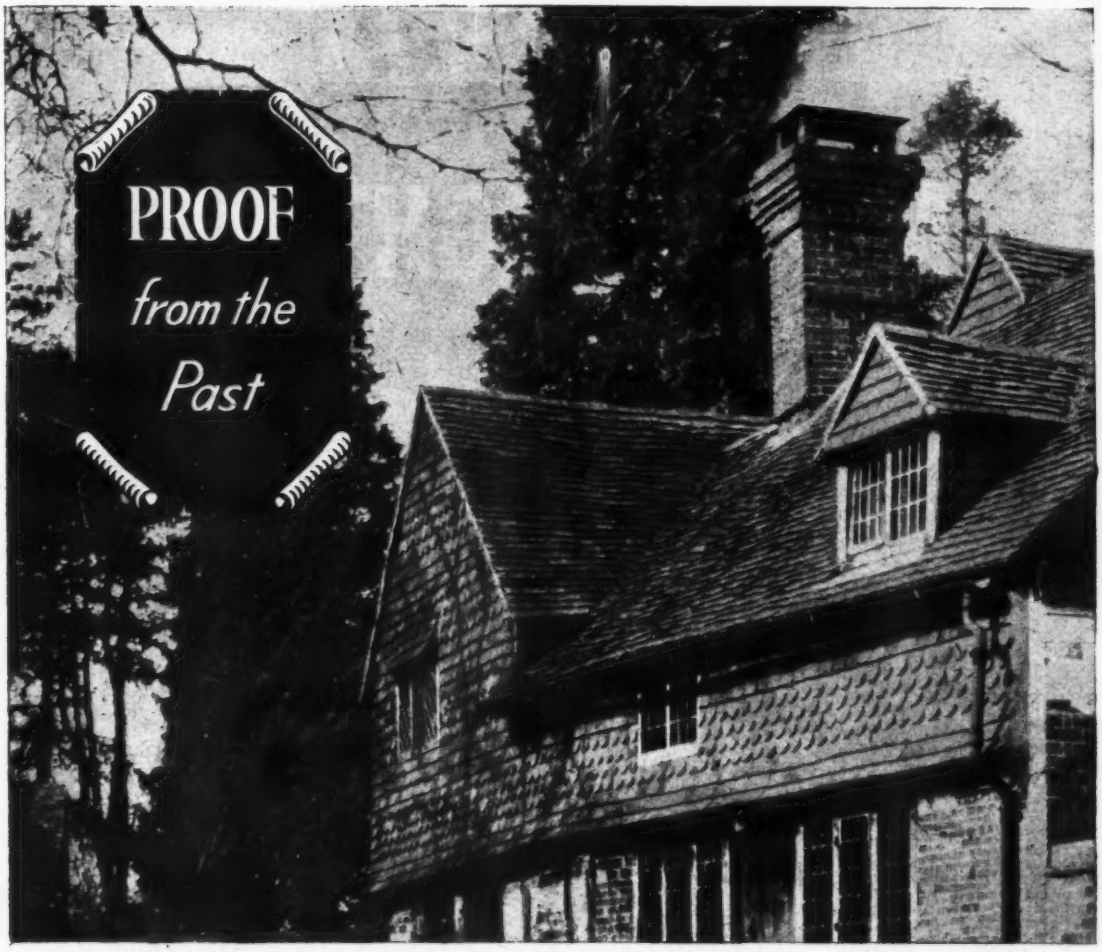

BUILDING TRADES EXHIBITION
OLYMPIA—NOV. 17—DEC. 1
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GRAND HALL

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DEFY TIME AND WEATHER: SPECIFY

CLAY

Roofing Tiles

Issued by The National Federation of Clay Industries

In common with every other periodical, this JOURNAL *is rationed to a small part of its pre-war consumption of paper. Circulation is therefore temporarily restricted but would-be subscribers are advised to have their names put on the waiting-list. Their names will then be added to the subscription list as soon as possible. Subscription rates: by post in the U.K. or abroad, £1 15s. 0d. per annum. Single copies, 9d.; post free, 11d. Special numbers are included in subscription; single copies, 1s. 6d.; post free, 1s. 9d. Back numbers more than 12 months old (when available), double price. Volumes can be bound complete with index, in cloth cases, for 17s. 6d. each; carriage 1s. extra.*

DIARY FOR NOVEMBER DECEMBER AND JANUARY

Titles of exhibitions, lectures and papers are printed in italics. In the case of papers and lectures the authors' names come first. Sponsors are represented by the initials given in the glossary of abbreviations on the front cover.

BRIGHTON. *Annual National Housing and Planning Conference.* The Royal Pavilion, Brighton. (Sponsor, National Housing and Town Planning Council.) Nov. 24-27

LONDON. *American Housing Exhibition.* Building Centre. 10 a.m. to 5 p.m. Saturdays, 10 a.m. to 1 p.m. Nov. 3-30

AGM of Building Teachers' Conference. Twickenham Technical College. Nov. 5

T. E. North. *Reconstruction of West Ham.* Building Centre, 13, Suffolk Street, S.W.1. 6 p.m. Nov. 8

B. J. Collins. *The Technique of Planning.* The Planning Centre, 28, King Street, W.C.2. (Sponsor, TCPA.) 6.15 p.m. Nov. 9

Sir Patrick Abercrombie. Address at AGM of Housing Centre, 13, Suffolk Street, S.W.1. 5.30 p.m. Nov. 9

Noise Control. A course of 5 weekly lectures by Hope Bagenal, C. A. Mason, R. B. Grey, J. McLaren. LCC Brixton School of Building, Ferndale Road, S.W.4. 6.30 p.m. Applications by November 4. Nov. 9, 16, 23, 30, DEC. 7

Business Efficiency Exhibition. Olympia. (Sponsors, Office Appliance Trades Association). 10 a.m. to 8 p.m. daily. Nov. 9-19

J. A. F. Watson. *Presidential Address.* RICS, 12, Great George Street, S.W.1. 5.30 p.m. Nov. 14

R. Fitzmaurice. *Changes in Building Technique.* RIBA, 66, Portland Place, W.1. (Sponsor, MOW.) 6.30 p.m. Nov. 14

Lionel Brett. *Second Thoughts on Planning.* RIBA, 66, Portland Place, W.C.1. 6 p.m. Nov. 15

Janko Laurin. *Aspects of Russo-Byzantine Architecture.* 15, Lisle Street, W.C.2. (Sponsor, AIA). 8 p.m. Nov. 18

Professor C. A. Hart. *The Influence of Modern Methods of Surveying on the Advancement of Public Works Engineering and Town Planning.* University College, Gower Street, London, W.C.1. (Chadwick Public Lectures.) 2.30 p.m. Nov. 22

Building Exhibition. Olympia. Daily, 10 a.m. to 8 p.m. Nov. 17-DEC. 1

Kenneth Adamson. *Design Demonstration.* 15, Lisle Street, W.C.2. (Sponsor, AIA). 8 p.m. DEC. 1

COMPETITIONS

New Civic Hall at Guildford. Promoters: Guildford Corporation. Assessor: G. A. Jellicoe, F.R.I.B.A. Premiums: (1) £1,000. (2) £500. (3) £250. Site: Firs Estate, London Road, Guildford. The promoters require a design for (*a*) a large assembly hall, to seat 1,200 persons, to be used for civic and concert purposes, and (*b*) a small hall, to seat 500 persons, for lectures with an alternative use as a banqueting hall.
Enquiries must be received by the Town Clerk, Municipal Offices, Guildford, Surrey, with a deposit of £2 2s., to be paid by the competitor for conditions of entry. The last day for questions is November 15, 1949. Designs must be received by April 30, 1950.

Competition for designs for interior treatment of two saloon bars and two public bars. (Sponsor, The Architectural Press Ltd.) Prizes: (1) £500; (2) £250; (3) £100. Assessors: Hugh Casson; J. S. Eagles; R. Furneaux Jordan; E. B. Musman; and J. M. Richards (representing the editors of *The Architectural Review*). Questions must be addressed to "Pub Competition Questions," The Architectural Press Ltd., 9-13, Queen Anne's Gate, S.W.1, and must be received by November 15. Designs must be received by mid-day, February 28, 1950.

York Festival, 1951, Competition. The York Festival Society, Ltd., invites architects resident in Great Britain and Eire to submit designs in competition for a block of flats in Paragon Street, York, to be built by the corporation of the city of York as part of the city's housing programme. Organized in connection with York Festival of 1951 (June 2-16), when it will be open for public inspection. Premiums: £250; £150 and £75. Assessor, W. A. Eden. Conditions may be obtained, on payment of £2 2s., from Keith Thomson, York Festival, 1, Museum Street, York. Last day for questions, November 12. Designs to be received by January 18.

Design for Public Hall and Restaurant. The Whitehaven Corporation invite architects resident in this country to submit designs in competition for the Public Hall and Restaurant which they propose to erect in Whitehaven. Assessor: Harold A. Dod. Premiums: £300, £250, and £175. The last day for submitting designs, March 15, 1950. A deposit of £2 is required from competitors. Conditions may be obtained on application to the Town Clerk, Town Hall, Whitehaven, Cumberland.

NEWS

THURSDAY, November 3, 1949
No. 2856 VOL. 110

Though no feature in the JOURNAL *is without value for someone, there are often good reasons why certain news calls for special emphasis.*

★ *means spare a second for this, it will probably be worth it.*

★★ *means important news, for reasons which may or may not be obvious.*

Any feature marked with more than two stars is very big building news indeed.

The MOTCP has issued instructions regarding BUILDING NEAR AIRFIELDS.

These instructions are contained in a circular which has been issued to local planning authorities in England and Wales. It calls attention to the consultations which will be necessary before planning permission is given for buildings in the neighbourhood of airfields.

As a permanent measure, safeguarding maps will be issued for each airfield with which the local planning authority will be concerned, and consultation will be with the appropriate Flying Department indicated. Until such maps are issued, planning authorities are instructed, before granting permission for development on, or in the neighbourhood of, airfields, to consult with the Local Superintending Engineer of the Air Ministry or, in the case of naval airfields, with the Admiralty Chief Surveyor of Lands. The circular is MOTCP Circular No. 76, Town and Country Planning (Airfields), Direction, 1949 (HMSO. Price 3d.).

From AN ARCHITECT'S *Commonplace Book*

SATIRICAL RETROSPECTION. [*From* Drayneflete Revealed, *by Osbert Lancaster* (*John Murray*, 8s. 6d.).]—In the years between the wars, the whole character of the district was still further altered. In 1930, Messrs. Watlin acquired the Duke of York, which was at once rebuilt in a contemporary style which, although it at first struck those accustomed to the brassy vulgarity of the old "pub" as strangely austere, was soon generally agreed to be both socially and æsthetically an immense improvement. Two years later another even more daring example of "the Modern Movement," as it had come to be known, arose in the shape of the Odium Cinema. While some of the more old-fashioned residents might find fault with the functional directness of this great building, nothing but praise could be accorded to the modified Georgian style in which the new Council flats across the road were built at much the same date. The coming of a new age, of which the buildings round Poet's Corner were a portent, found a reflection in the poet's verse. . . . After the end of the conflict (the last war), in a misguided effort to relieve the considerable local housing shortage, an estate of prefabricated dwelling-houses was erected by the Borough Council in what had been erstwhile the shady groves and green retreats of the Littlehampton Memorial Park. Today Poet's Corner is up for sale: its owner, Bill Tipple, who on the outbreak of war had been a conscientious objector, but who, on hearing the news of the invasion of Russia, experienced a complete change of heart and immediately joined the Drayneflete section of the National Fire Service, is absent for long periods abroad in his capacity of organizing secretary of the World Congress of International Poets in Defence of Peace. The long Littlehampton connection with the town is now a thing of the past; the great race of Ffidgets is extinct. But their spirit lives on and their successors on the Borough Council are determined that the Drayneflete tradition shall at all costs be maintained.

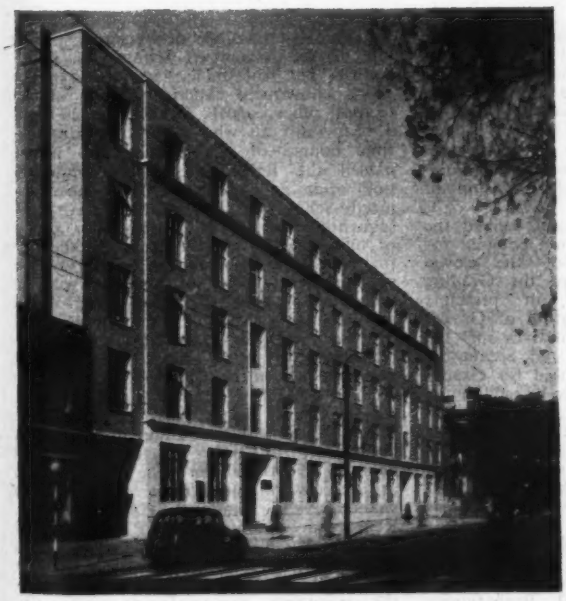
★

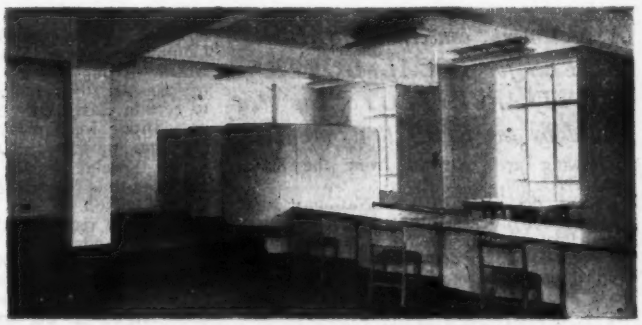
SCHOOL BUILDING COSTS are to be reduced.

Mr. George Tomlinson, the Minister of Education, gave details of the economies to be effected in education when speaking at the opening of the Arthur Mellows Village College at Glinton, near Peterborough, on October 26. It was reasonable, he said, that the educational building programme should be expected to make some contribution to the reduction in the nation's investment programme. But there must not be a reduction in the momentum which the school building programme had gathered so slowly and laboriously since the war. The Government recognized and intended to meet the statutory obligation to provide for the increasing numbers of young children coming into the schools. Estimates had already been made of the numbers of additional school places which would have to be available in three to four years time, and the present cut did not affect the Government's determination to go through with this programme. That might sound like a contradiction; how could we build as many schools with less money, less labour and less materials? The answer was simple: we must get more school places out of every £1,000 we spent on building—more school places out of every 1,000 square feet of accommodation.

Some local education authorities were building schools far more economically than others. What could be done by one authority could be done by others, and he was confident that by close co-operation and constant consultation between authorities and the Ministry the costs of school building could be reduced.

We were already irretrievably committed to a very large part of the expenditure originally allowed to us in the 1950 programme. Nevertheless, it was necessary to make a cut over the programme as a whole of something like ten per cent. in the sum expected to be spent in 1950. Where plans for schools to be started in 1950 had not yet reached an advanced stage, they could be revised to meet the new situation. On these schools costs should be reduced by about 12½ per cent. The Ministry's architects and the building teams would be very ready to help authorities wherever possible in this matter. Steps must also be taken to limit the amount which was absorbed by civil building licences, and there must be a lower ceiling for the total expenditure on small jobs.





Mr. George Isaacs, Minister of Labour and National Service, opened this new building for the Brook Green Labour Exchange on October 24. Above, entrance in Brook Green Road. Right: above, interviewing room; below, staff canteen. The architects were Yates, Cook and Derbyshire.

Industrial Development In Wales

This factory at Brynmawr for the Wales and Monmouthshire Industrial Estates Limited, was designed by the Architects' Co-operative Partnership. The project was published in the JOURNAL'S New Year number for 1947, when the late Professor Sir Charles Reilly, in his annual review of architects' work, described this factory as the most interesting scheme, constructionally, of the year. The shell concrete domes, which are the first of their kind to be erected in this country, each span an arch eighty-two feet by sixty-three feet, and are three inches thick. The factory is due to be finished in 1950. The consulting engineers are Ove N. Arup and Partners.

★★

A statement concerning SALARY SCALES for LOCAL GOVERNMENT ARCHITECTS has been issued by the RIBA to its members.

Following are extracts from the statement:—

Recent decisions of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical services lay down certain standards for the application of some of the Grades to architects and architectural assistants in municipal service. These standards became operative on the first of October.

As far back as December, 1946, the Royal Institute submitted to the National Joint Council a Memorandum, setting out its objections to the unsatisfactory manner in which the Scales were being applied to architects, and proposing certain standards for their future administration. This was followed by informal talks between representatives of the National Joint Council, NALGO, and the RIBA, on the most practical and expeditious approach which the Institute could follow to the National Joint Council for the purpose of making representations about conditions of service of its members. It was agreed, *inter alia*, that the Institute should submit an amended memorandum, but containing the same proposals as the original one, and that RIBA representatives would present and advance its recommendations, before the Committee of the National Joint Council, which, in due course, would be appointed to consider the application of the Scales to certain classes of "Specialists." Recommendations were presented at the end of last June by representatives of the Institute to the Special Classes Grading Sub-Committee, sitting under the chairmanship of Sir H. Wilson.

The RIBA recommended and defined the different standards that should be used for the application of each of the eleven Grades. At the meeting of the Grading Sub-Committee agreement in principle was reached on the application of Grades 1 to 5, but the representatives of the National Joint Council did not accept the standards which were proposed for Grades 6 to 10. Briefly, these were based on the number of professional and technical assistants which an architect was personally called upon to control and supervise. The Sub-Committee decided not to lay down any standards for these higher Grades, but to leave them to the judgment of the employing authorities.

The following provisions were finally approved by the National Joint Council, to be effective as from October 1, 1949.

Architectural Assistants:—1. Probationers of RIBA, articled pupils, learners, beginners, trainees. General Division (on an age scale basis). 2. Assistants who have attended a full time course of Architecture and have passed the RIBA. Intermediate Examination, or its equivalent, at one of the recognized Schools of Architecture, but who have had less than one year's subsequent experience in an architectural office. APT, Grade 2 (£420-£465). 3. (*a*) Assistants who have attended a full-time course of Architecture and having passed the RIBA Intermediate Examination, or its equivalent, at one of the recognized Schools of Architecture, have subsequently worked for a minimum period of one year in an architectural office, or (*b*) Assistants who, having served or are serving their articles of pupilage with an architect; or who, having worked in an architectural office for a minimum period of three years, have passed the RIBA Intermediate Examination or its equivalent at one of the recognized Schools of Architecture. APT, Grade 3 (£450-£495). 4. Assistants who, having passed the RIBA Intermediate Examination, or its equivalent, at one of the recognized Schools of Architecture, have worked in an architectural office for a period of two years. APT, Grade 4 (£480-£525). 5. Registered Architects. APT, Grade 5 (£520-£570). 6. The grading of the posts beyond the level of the qualified assistant referred to in Paragraph 5 to be left, in the meantime, to employing authorities. due regard to be paid to the duties and responsibilities of each post and to the standard of grading adopted by the National Council for the posts set out above.

The DSIR has issued a STATEMENT ON PLASTERING.

The statement is as follows:—

Building boards are being used much more extensively than pre-war as interior linings for both walls and ceilings. Sometimes they are decorated direct but often they are plastered first. The plastering is usually done successfully, but one or two types of defects may arise, such as rippled surfaces, plaster falling from ceilings, cracking, and "blowing" and "popping." It is comparatively easy to avoid these failures. The correct plaster to use next to a wallboard background is one of the gypsum plaster types, particularly a "retarded hemihydrate gypsum plaster." A number of proprietary brands of this type, specially modified for use on boards, are marketed. Since it is a high setting expansion which causes rippled surfaces, the main modification is that to produce a low one.

Set plasterwork falling from the board background can be caused by the addition of lime to the gypsum plaster. Although this is a common practice on normal backgrounds, it is incorrect on boards; it has the effect of weakening the bond between plaster and plasterboard, and some time after the plaster has been applied it may fall away. Quite a small amount of lime will cause this failure, and the remedy is simply not to add it. A lime finish can safely be obtained only by adopting two coat work, the undercoat being a gypsum plaster without lime, the finish coat containing lime. The lime must be slaked properly, otherwise unslaked particles will cause "popping" and "pitting" on the surface.

Plastering on metal lathing is sometimes followed by cracking or by the finishing coat shelling off. The cause of this is usually the use of an undercoat having a high drying shrinkage such as strong cement, or cement-lime mixtures. The shrinkage often occurs after the finishing coat has been put on, when the plaster cracks badly. It can best be avoided with cement-lime plasters by making the undercoat of a weak mix and by allowing the undercoat to dry thoroughly before applying the finish. The latter *must* then also be of a comparatively weak type. An alternative is to use a gypsum plaster for the undercoat. Such plasters have much lower drying shrinkages than cement-lime plasters and are, therefore, much less liable to produce the defect. The finish coat can be applied more quickly and a strong finish can be applied to a strong undercoat if this is desired.

NEWS IN BRIEF

Mr. A. C. Creber has been appointed architectural assistant in the works department of the Plymouth Co-operative Society.

Mr. Stanley J. Dobson, was successful in the RIBA Examination for the Office of Building Surveyor under Local Authorities held on October 5, 6 and 7.

Mr. Christoph Bon has been appointed studio instructor in the Department of Architecture, Kingston-on-Thames School of Art.

Lord Beveridge has been appointed chairman of the Peterlee New Town Development Corporation in succession to Dr. Monica Felton, now chairman of Stevenage.

Mr. Norman Stewart of Inglemire Lane, Hull, has been appointed to the Colonial Service as an assistant architect, in Kenya.

THE LATEST CRISIS

SIR STAFFORD CRIPPS followed the Prime Minister in announcing a cut of £35 millions a year in the national expenditure on housing. This will mean, the Chancellor said, a reduction "in the course of next year" in the current level of construction of houses, from about 200,000 a year to about 175,000. Thus, once again the housing programme has been one of the chief victims of national misfortune.

The official figures require some elucidation. The 25,000 reduction in numbers of houses must, moreover, refer to "starts" rather than to completions. (The number of houses likely to be *completed* in the calendar year 1949 is not likely to exceed 185,000, excluding some 5,000 aluminium houses, but they are beginning at a rate of somewhat more than 200,000 per annum—about 17,000 a month on the last published figures.) How then, are we to interpret the somewhat cryptic statement of the Chancellor that "adjustments will be made in accordance with a proper balance of priorities within the programme"? Evidently the main effect of the "cut" will be to reduce the rate of beginning houses (17,000 a month) to equality with the present rate of completions (14,500 a month); at least this much can be said in favour of the change, that it is not very violent and that it restores the equilibrium of commencements and completions.

But what of the threatened cut in private enterprise building? Is this to be taken literally or no? If most of the 25,000 houses lost from the programme are to come from private enterprise, this will halve, or more than halve, the rate of commencements now permitted in this sector. It is difficult to see just how this provision of the scheme can be enforced; some local authorities are heavily committed to licensing private builders, although over the country as a whole the permitted ration has not been attained. These authorities may be recalcitrant in enforcing any sudden change of policy. At best this part of the scheme can have a deflationary effect only after a quite considerable time.

Finally, there are the cuts in miscellaneous building, also of £35 millions. The argument for reducing this part of the programme is much stronger than that for reducing housing. But how is it going to be done? Not much more than a third of this work is now under any kind of licensing control. How can the whole of the second £35 millions economy be found out of this third? The awkward dilemma will arise for the Government that to enforce this cut at all effectively the licensing limit must again be reduced—and *that* will vastly increase the administrative costs that have been so painfully reduced. Handling licensing forms by the millions is expensive, whether done by the central government or the local authorities. The cuts then are once again problematical in their effects. Private enterprise may not, in fact, suffer as much as might be supposed, but no doubt there will be difficulties henceforth in certain areas. All licensed "miscellaneous" work (non-

industrial, but including repairs to housing) of over £100 in value will be rigorously scrutinised ; work in this section in 1950 is likely to be subject to long licensing delays ; small works of *under* £100 are bound to multiply unless and until the licensing limit is reduced. By the spring the ineffectiveness of the cuts is likely to have exposed itself ; and by then Ministers may have been forced by events into even more drastic action to reduce expenditure on investment of all kinds. Thus, while nothing very drastic is going to happen for six months, the longer term outlook for new building is more overcast than at any time since the war ended.

The Architects' Journal

9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1
Phone : Whitehall 0611

NOTES & TOPICS

ABS TOMBOLA

As usual the Architects' Benevolent Society (which is commencing its hundredth year) will be holding a Tombola at the Building Exhibition with the co-operation of Mr. H. Greville Montgomery. It hopes to raise a thousand guineas. To achieve this it needs contributions of a thousand gifts. These should be sent to the Secretary of the ABS, 66, Portland Place. Any offers?

THE ARCHITECT SKETCHES

We are all familiar with the dainty water-colours produced by architects of former days during their off moments. Nowadays they are usually too busy or too inhibited to try. Nonethe-less, there are architects who are also painters . Few, however, like Le Corbusier, regard themselves as "professional" painters. It is all rather curious, because drawing is the only means an architect has of presenting his ideas or recording his impressions. The younger generation seems to have rediscovered these possibilities; and if you have time to visit Bedford Square, you will be able to see among the "Members' Sketches" exhibition at the AA a number of brilliant drawings by recently qualified architects. One of these drawings by Oliver Cox is illustrated opposite. It is good to find such able artists are no longer contemptuous of the topographical record, as was the case a few years ago.

NO!

Mr. Silkin seems in a fair way to be a disciple of M. Vishinsky at Lake Success. He, the other day in Parliament, finally dashed the hopes of those who thought that one of the Minister's functions was to protect the country and its people from commercial rapacity. Dulcote Hill is to be eroded in the interests of limestone getting, unnecessarily and to the detriment of the magnificent setting of Wells Cathedral. Unquestionably a very black mark.

INTRO'

Back in the thirties there was one characteristic of modern architecture about which Adolf Hitler, the borough councillor and the man on the Stock Exchange were all agreed. That was the flat roof (un-Aryan, out-of-keeping and almost certainly immoral). Consequently, the justification of the flat roof was one of the first things that the propagandist of modern architecture had to tackle.

*

Today—thanks to Sven Markelius, Arne Jacobsen, Erik Moller, Frederick Gibberd, Old Uncle Karl Moser and all—the propagandist of modern architecture is relieved of that particular task. Neville Conder, in his contribution to the new trio of Art and Technics *Introductions to Architecture*,* does not find it necessary to say anything at all about the flat roof as such, and is the freer to discuss more important issues. His text is everything it should be except twice as long, while his illustrations are quite unusually well chosen.

*

Roofs (generally looked at from below) have in the past taken up a good deal of space in most writings about Tudor architecture too. But John Harvey, in his *Introduction to Tudor Architecture*, has less to say about buildings than about those who built them. His learned essay should do much to clear the fog of anonymity which hangs between most of us and the earlier periods of our country's architecture, and is to be warmly recommended to all who do not readily distinguish between John Bronde and William Burden, or William Swayne and Christopher Scoyne.

*

As for the third book in the bunch, to say that it is a characteristic production of the pen of the Professor of Architecture at the Royal Academy must be enough. Though perhaps one must add that, in spite of its being more than twice as long and costing more than twice as much as the others, it is not really twice as good.

A SAD TALE FROM BATH

An angry architect has been telling me about the state of neglect in which he found parts of Prior Park when he recently visited Bath, and for which he blames the City of Bath itself. Apparently the house—which is now a school—and its immediate grounds are pretty well looked after. But readers will remember that when Ralph Allen laid out the park he focused the view from the house down the hill on to an artificial lake and a tract of woodlands beyond it. Here, too, is the famous Palladian bridge.

*

All of these belong to the city. The woods, he tells me, are decaying, the lake becoming a swamp and, most of all, the Palladian bridge falling to pieces. It certainly seems monstrous if a city like Bath—famous the world over—cannot look after its art treasures properly. The city authorities have a great responsibility in matters of this sort that

* *An Introduction to Modern Architecture*, by Neville Conder, 10s. 6d.
An Introduction to Tudor Architecture, by John Harvey, 10s. 6d.
An Introduction to Georgian Architecture, by A. E. Richardson, 25s.

A sketch of Bath by Oliver Cox from the AA members' exhibition. (See note).

they must not be allowed to neglect. Is it significant that Bath is one of the places that still has no city architect? Nor, incidentally, have Chester or Salisbury.

DOWN TO EARTH

The MOW, realizing that Trafalgar Square was rapidly becoming popular as a scene for public ceremonies and celebrations, soon tired of prising up the paving stones and digging holes to hold flagpoles and decorative devices, so they prepared a row of no less than twenty-six permanent sockets in the open paved area in front of the National Gallery.

*

No doubt they thought that twenty-six flagpoles would be enough for any occasion. Unfortunately they relaxed too soon. Before their blisters had subsided they were called out again to put up over fifty flags in the same part of Trafalgar Square—one flag for each savings group in London. The red and grey stone pavement, already cracked, suffered very severely in the process, but this, apparently, did not matter as the area is scheduled for re-paving in the near future.

I hope it is not too late to appeal for an attractive scheme for re-paving: preferably one which incorporates scores of sockets under neat covers, to allow for hundreds of variations in display. Then perhaps we will be spared more cracked paving stones, more muddy holes for flagpoles—and, incidentally, more blisters.

HIGH IN THE SKY

I don't, by any means, always agree with Sir Alan Herbert, but I am wholeheartedly with him now in his fight to keep aircraft very much higher over London, or, for that matter, almost anywhere. If the Air Force has to have occasional exercises which involve low flying, I don't complain—much—but the procession of low flying passenger machines are quite another thing, for they destroy the only shred of privacy left. If you don't like trucks or lorries you can always go and live somewhere else, but I'm now beginning to believe that aircraft deliberately follow me about, and even if I take my persecution mania to the Orkneys, I shall probably still find I am on a trunk route to somewhere or other.

ASTRAGAL

LETTERS

G. B. J. Athoe

W. Macdonald

Louis Erdi, F.R.I.B.A.

David Boxolfe

Architects Registration Act, 1938

SIR,—In reply to Mr. L. C. Howitt, my letters to you were written in a private and not in any official capacity. It was Mr. Howitt who first introduced into this correspondence the name of a professional body, *i.e.*, the IAAS.

Mr. Howitt asserts that my first letter which, as he states, was on the subject of the legal interpretation of the word "architect" in a form of contract, contained irrelevancies. But it is he who raised, and is seeking to pursue, irrelevancies.

I do not propose to join in this chase and will, therefore, content myself by repeating that he, or any one else, who desires the information which he says he desires can, as I stated, obtain that information on application to the Architects' Registration Council and the Board of Architectural Education.

G. B. J. ATHOE

London

SIR,—The opinions of Mr. H. Meyer and Mr. Sydney Redfern, published in your issue of September 8, are most interesting. Previously to 1938, the employer and contractor could agree to the appointment of any person, whether qualified or not, to be "the architect" for the purposes of the contract, and if the employer sustained a loss from causes which only reasonable skill could have avoided, the employer could not make the architect responsible. Any person today may act as the go-between provided he is not referred to as "the architect" in the contract by word or even addressed as such by name.

In 1931, compulsion was brought about for architects to have their names entered on the register in accordance with the provisions of the Architects Registration Act, and my brief interpretation of this statute is, that a council shall keep a register of qualified architects, their history, and to institute examinations for registration. Only those persons on the register were entitled to call themselves "registered architects," but there was nothing in that Act to prevent persons who were unregistered from practising as architects, but to call themselves registered architects was a criminal offence. The 1931 Act afforded no protection to members on the register, but empowered a committee to order the removal of names from the register where members concerned had been proved guilty of criminal or unprofessional misconduct. It was a law compelling architects to pay a subscription annually, to meet the cost of their removal from the register and to help towards the cost of educating others desirous of becoming registered architects and towards the cost of their removal. Architects in those days penalized themselves to bring about the Act. It helped

HOUSING AT SUNBURY-ON-THAMES

The architects for this estate (No. 7) for Sunbury-on-Thames UDC were Basil Spence and Partners. It consists of two blocks of flats, each containing four one-bedroom flats and eight two-bedroom flats; two blocks each of six old people's dwellings; one hundred and twenty-eight two-storied houses (two and three bedrooms), arranged in pairs; and blocks of four, six and ten houses. In addition, provision has been made for twenty lock-up garages, a children's playground and a children's paddling pool in the main entrance court.

The site, which has an area of fifteen and a half acres is flat, the soil being fertile enough to offer opportunities for attractive landscaping when the houses are completed. Houses have been grouped to give a self-contained village community; the layout of streets, for which the architects were not responsible, is said to supersede the accepted pattern.

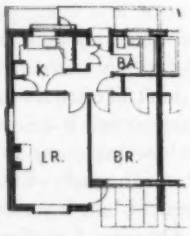
Roofs, balcony railings, canopies and trellises are of aluminium. The roofing has a twenty degrees pitch which, it is claimed, effects a great saving of materials both at the gable ends and in party walls. The twenty-two gauge, two foot wide, aluminium sheets are laid on half-inch fibre board over two inch by one inch battens at two foot centres, on five inch by two inch rafters at three foot centres. Flower boxes and creeper boxes have been provided with the aluminium trellises at the entrance doors of all the dwellings.

The external brickwork is all common flettons. To give variety the exteriors have been painted terra-cotta, blue, white and lemon. Doors are in contrasting colours. The scheme has been unified by link walls which have the colour of the adjacent houses and which screen the rear gardens from street view. Concrete surrounds to window and openings on the street elevations remain uncoloured. All the interior plastered walls and ceilings are distempered in light colours. There is a variety of internal colour schemes throughout the estate.

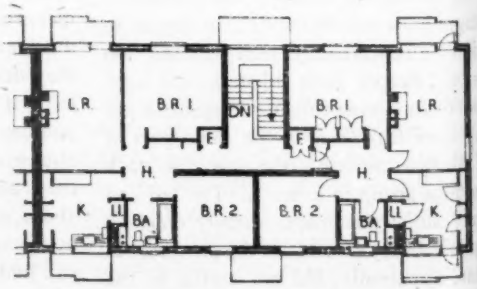
Throughout the scheme there are built-in wardrobes in all bedrooms. Kitchens are fully equipped with working top cupboards, pantries, gas boilers and heaters for hot-water supply. The living room fireplaces have tiled surrounds and terrazzo mantelpieces. Living rooms, kitchens and bedrooms have electric power points. Aluminium door fittings are used throughout the scheme.

Above, the old people's homes. Below, left, a kitchen in one of the houses. Opposite page: top, view of flats and housing estate from the south-west; centre, housing layout from the south-east, showing arrangement of houses so that each has a southerly aspect; bottom, a block of six houses.

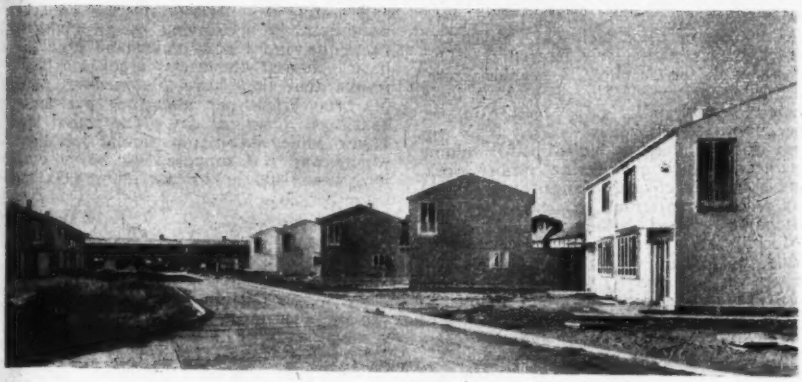
The general contractors were C. and S. Telling, Drinkwater and Partners, Gee and Co. (Contractors), Ltd., Henry Day (Merton), Ltd., John Farmer (Builders), Sunbury, and Co. Partners Building Operatives, Ltd. For list of sub-contractors see page 508.

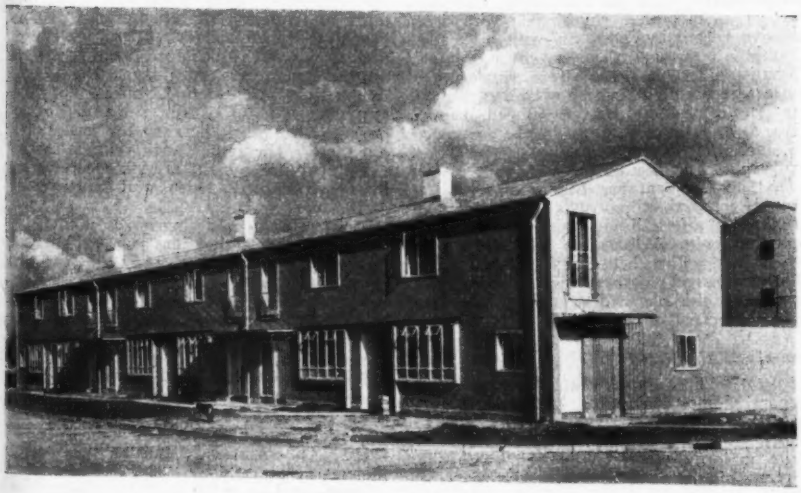


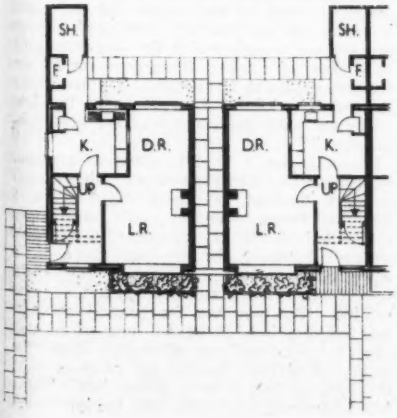
PLAN OF OLD FEOPLE'S DWELLINGS

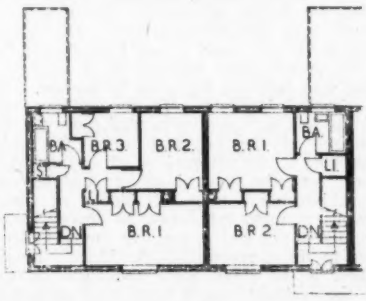


PLAN OF FLATS [Scale: $\frac{1}{16}$"=1'0"]









GROUND AND FIRST FLOOR PLANS OF TYPICAL HOUSE

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

to safeguard the public and brought about a unification of professional societies, but not the essential unification of members the profession is in great need of, in a brotherly and professional sense unto themselves a family and a power. The Architects Registration Act, 1938, afforded a little protection to registered architects by restricting the title "architect" to be used only by members on the register of architects. Section 1 of this particular Act clearly describes that it would be wrong for any unregistered person accepting an appointment where he is referred to in the contract as "the architect." An unregistered person accepting such a position would be practising under the style of "architect," and if such a position is found remunerative he would also be carrying on a business under the word "architect," two criminal offences.

W. MACDONALD

London

Private Enterprise Estates

SIR,—Further to Astragal's comments regarding private enterprise estates, it has been our experience that developers as well as some estate agents are, on the whole, alive to present-day requirements in housing, and the greatest obstacles put in the way of contemporary design and layout are certain local and town planning authorities and obsolete bye-laws. This theme has been amply belaboured in the past and it is therefore the more surprising that some counties will still prohibit any contemporary development, even if this is planned on an entirely new site well removed from any existing building.

The fact that an appeal to the Minister may cause some considerable delay and cost the client a further sum in fees, prompts promoters to take the course of least resistance, and in many cases against their personal convictions and wishes, and the consequence is ribbon development or small single houses on ¼-½-acre plots, with large undeveloped central areas, excess cost of services, road charges, higher rates, greater travelling and distribution costs, lesser amenities, higher rate of accident, and all the rest of the well known ill effects of this type of development.

Since the primary *raison d'etre* for all authorities is to safeguard the public interest, and guide the individual into constructive and desirable activities, and further, since some authorities seem to be well aware of this fact, it would seem most desirable to brush up and bring up to date all outdated codes, bye-laws, etc., so as to facilitate, instead of hindering, contemporary development.

LOUIS ERDI

London

Working Drawings

SIR,—I have been waiting for someone to write to you about a note appended to the form issued under the Town & Country Planning Act, namely Note III, Section 7, on the application to develop land. This note gives rules regarding building plans, and sub-section (*b*) states:—"Building plans should show the colour of external walls and roofs."

I was taught that colouring of working drawings or "building plans" is conventional, *i.e.*, that a light red wash means brick walls built of London Stocks, red facings or any such brick as desired; or that a cement rendered surface could be colour washed grey or pink but would still be shown yellow on my working drawings. Further examples could be found, but are not necessary.

Is this conventional code now to be superseded or does the note referred to above not mean what it appears to do?

DAVID BOXOLFE

Kent

SOCIETIES AND INSTITUTIONS

Speeches and lectures delivered before societies, as well as reports of their activities are dealt with under this title, which includes professional societies, trade associations and government departments. To save space they are represented by their initials—see front cover. Lectures cannot usually be reported in full, but the extracts given are in the speakers own words.

ABT and SCR

Professor J. D. Bernal

October 19. Lecture on BUILDING CONSTRUCTION IN THE USSR, given to members of the ABT and the SCR at the AA, 34, Bedford Square, W.C.1. The chairman was Arthur Ling.

Professor Bernal: I want to make certain very general points first. The process of building in the Soviet Union is in a state of rapid change. A great deal of what I saw going on, I was told by the architects, was already obsolete, in principle, but it was itself sufficiently new to draw very considerable lessons from. Secondly, this process of the improvement of building methods and architecture is following certain very definite general lines. That is to say, they are trying to get the maximum amount of useful floor space for dwellings, public buildings, schools and factories in the minimum time and with the minimum effort. The urgency of building is the first consideration, and methods which they know very well will be very much improved in two or three years' time are being used, because they cannot wait this number of years before starting with the improved methods.

The character of these methods were, in a curious way, very familiar to me. I thought, when I went to the Soviet Union, that I might be able to give them some useful information on the progress of building science and building technical development in this country. But I realised from my first visit to the Museum of Architectural Construction that there was very little that I could do in that respect. This Museum is very unusual. In some ways it might seem even more up-to-date than a formal exhibition of building, because techniques were in the Museum about the same time as they were in practice. The Museum was continually turning over its techniques and only had the very latest things in it. It was divided roughly into three major sections—the section of building materials; the section of building construction of the heavy kind for factories, blast furnaces, bridges, roads and other civil engineering works; and the section of housing.

I was able to spend about six hours in that Museum with the director and the very competent instructional staff who knew all about the things and had obviously seen them working in the field as well. The Museum was an operating museum: it was intended for the use of new teams of building workers and their leaders so that they could be taken round and shown all that was going on in the different parts of the Soviet Union. In that way one obtained a thorough dissemination of building techniques in a concrete way, more concrete than could be provided by the very excellent and very numerous technical publications.

A number of these technical publications struck me as particularly interesting. One of them. *Mechanisatzia*, I would recommend to everyone. (The SCR have it in their library.) It is a book on the mechanization of heavy tasks. It is not only for architecture but also for mining engineering, civil engineering, timber work, and a number of other things, but I should say a good quarter of it is taken up with mechanization of building techniques.

Mechanization is the key word for the building techniques. I think you can sum it up very simply by saying that it has had the aim, already realized, of turning the building industry into an industry of the factory type: that is, an industry which can work on a steady schedule, which has a steady flow of material and labour, and which works with an absolutely uniform rhythm. And that rhythm is very impressive. Building goes on with a steady rhythm all through the year, even though climatic differences are of a very much more severe kind than here, of course. Building goes on at 40 deg. or 50 deg. below zero at the same rate as in the summer. In fact the biggest gap was somewhere in August for the holidays.

That achievement has been realized by a complete overhauling of all the detailed mechanics of building, and another interesting point is that this has been done by a joint effort between four really distinct groups of workers: the architects, the engineers, the physical scientists, and the actual workers on the job.

DOMESTIC BUILDING

I want to talk about what might be called general domestic building, including in that not only houses but schools, public offices, shops, and so forth. They really fall into four major categories. I begin with the largest of them, a new category for the Soviet Union, the large steel-framed building, the Soviet skyscraper, about which I shall have something to say. The second group is the large urban central building —at present very much a brick load-bearing wall building but soon to become itself a framed building. Those buildings run from five to ten storeys and they line the streets of the larger towns. The third category is the category which is the largest one for the new housing schemes—the neighbourhood units of blocks of apartments running from two to three storeys, rarely more, and containing anything from ten to thirty apartments per block. Finally there is the small town and rural housing —the isolated houses and small groups of houses, semi-detached or three or four in a group.

Different methods have been employed in those different groups. I am going to begin with the most old-fashioned methods, those used for the main urban building, both large and of the neighbourhood unit type, such as are built largely in brick or in concrete blocks—in either case, a load-bearing building built with units. There they have achieved an organization which is, curiously, extremely similar to the one we were trying to get in the work we were doing in this country with the thatched barn. One of the first impressions I had when I saw some Russian building was that this was the thatched barn as large as life, or actually somewhat larger. Everything was on something like twice the scale of what we were dealing with in the thatched barn (boxes of bricks and so forth), but the principle was the same. The principle was to cut down all building operations to the minimum of actual physical work and this in order that no human being should have to move material any distance, either horizontally or, even less, vertically: to use machinery for all these purposes and to have the human being acting as a fitter only, just transferring a thing from one place to another and putting it in its right place. That has been done in bricklaying by an elaborate technique, and I now understand how they have achieved the very large bricklaying results that they have obtained—a target of 5,000 bricks per man (not per team), 25,000 per team per day. The actual level I saw achieved on a particular job there, which was not supposed to be a crack job, was 1,600 bricks per man, 8,000 per team per day.

MECHANIZATION IN CONSTRUCTION

Cranes are arranged all round the site. They are on rails and can travel round the site and pick up the mortar from the central mixing station and take up bricks as delivered by lorries, as well as picking up all the prefabricated components, such as the total floor units, plumbing units, roof units, and so on. The operation is planned like a complete military operation, where the rate at which things are taken is worked out to avoid delays and things are put down in the first place so that you do not have any cluttering up of the site and do not have to stop work because the material is not there. The actual bricklaying is carried out on the site, but the essential features are the provision of the bricks and the provision of the mortar.

Bricks are carried in boxes and it is so arranged that the sides can be knocked off with just one hand and fall, and the skips can then be returned. They fall down flat and the crane picks up half-a-dozen when they are finished. They do not clutter up the site but go back to the place where they are loaded. I think later on they are going to load these at the brickworks but at the moment they are still loaded on the site.

All this bricklaying is done by overhead work. The bricks are put on the inside: there is no scaffolding.

Cranes load up at the central mixing station and go round on the work, and the crane man on the job lifts the lever and fills up the mortar trough which lies between each two piles of bricks. That goes on all the time according to a schedule. The men have the bricks within a foot or so of the job, and they have the mortar at the same distance.

There is also a slightly different arrangement on the same principle: the mortar troughs, instead of being filled from a movable hopper, which goes above them, are filled from a temporarily movable hopper from which they are taken by a wheelbarrow device and taken round the floor. Then that is emptied, taken away and refilled. But you see the general arrangement—three lots of bricks, one of mortar, one of bricks and one of mortar round the walls. And they have a lot of people on the job, so that it is a group job. There will be four or five teams, and the job moves

very quickly. They have separate people to lay and level and plumb the walls so that the bricklayer does not have to do that job at all.

On a job like this there are five people—on two I saw closely myself there were three women and two men, and four women and one man. (There are just as many women in the building industry as men.) No. 1 takes the bricks from the pile and lays them at the inside of the wall for an inside job. At the same time she takes a special trowel blade in one operation, takes up the mortar and lays it along for twenty bricks. No. 2 lays the bricks and trowels them in, twenty at a time. No. 3 does the same thing for the inside. (The Russian has a solid brick wall, two-and-a-half bricks thick.) No. 4 lays the inner lot, and No. 5 has to do the whole job, but it is easier because there is no lining up to date for the whole set of bricks. That sort of team has achieved this rate of bricklaying.

All the other things are prefabricated. The double windows are prefabricated and already glazed. They are lowered in by the crane, set in and built round so by the time ceiling level is reached the room is enclosed and the floor units are lowered down. All the dimensions are standardized. I do not know how they fit in with other standards. The main dimensions are 2·9 and 3·9 metres. These are, I think, inside dimensions for joists and things of that sort. I saw a variety of prefabricated floors, some with joists that I would call inset, others completely prefabricated floors, and some special floors for bathrooms and kitchens.

The general principle is to have this high degree of mechanization and to work very intensely, to have a lot of people on the job and get it through quickly. A four-month period is the standard for the job, but they are shortening it by greater and greater prefabrication, I think. The latest figure I have seen is to cut down to thirty days with prefabricated wall units.

I should have said that the architectural parts are also prefabricated. There is a special institute for the production of artistic architecture by the architect himself who is responsible for the design. When he has made his design the factory executes it in large pieces, which are put into position by the crane. The machine is a servant of the architect and does not dictate to him.

PLUMBING UNITS

Standard prefabricated plumbing units are used (kitchen on one side and bathroom on the other), and all the plans are arranged for the kitchen-bathroom back-to-back plumbing arrangement. They can be placed on top of each other and screwed together at the top. The pipes are joined and the vertical plumbing unit is complete. Most of the building materials for the big housing drive are being built, I think, in only eight factories, which are turning out all kinds of material. The main material used in the north is timber, cut and joined in very special ways, and there are some very interesting uses of timber—dehydrated, compressed, and so forth. Then there is concrete, a great tendency to move towards precast units and to prestress concrete units for all the load-bearing parts. But there are a great many clay units and a limited amount of steel, which is usually kept either for some jobs like plumbing or for the true steel-framed buildings.

The present-day standard Russian flats differ in detail, but they all have about the same surface area, which is a good deal smaller than ours—about 700 ft.—but all with kitchen and bathroom in the back-to-back arrangement. There is very great use of balconies. They practically all have balconies, exterior or interior, of some sort.

Skyscrapers are now in process of being built. I saw one that had reached the twentieth storey, but I was not long enough there to see it finished. The difference between the American skyscraper and the Russian one is not in the upper part. The upper part, for all practical purposes, except for the inset towers which are similar to those of the Kremlin, is more or less the same. The base is carried out on a sweeping curve. It has a very solid appearance, but, in fact, is it designed on a rather extensively buttressed plan. The central tower is built on a kind of Eiffel Tower open structure. The idea, I was told, but I am not prepared to discuss the details, was to have an all-welded treatment, and you see here that it is in line with these buttressing parts.

The construction of one skyscraper I saw was rather interesting. It was all done by means of what I suppose you would call cranes, but there must be a name for them, and I do not know what the English name is. They are 45-ton load lifting, and they have a 60-ft. arm, and can carry the load anywhere along the scheme and swing round. The interesting point is that they lift themselves up as they go along, so they need no support other than the framework itself, and the lifting is automatic. It is controlled by the crane. They have other devices—an enormous number of things—for building of that sort.

There is an interesting point about the building of blast furnaces. In order to speed up the building of blast furnaces, the Russians erect them in sections. They assemble the sections on top of each other in two parts. They build the foundations and the lower sections in one place. The whole of the top of the blast furnace, with all the usual pipes and everything else, they build in another place about a hundred yards away, and when the foundation is ready they slip the top over the bottom and join them together. In general, they will use that form of construction wherever there is a foundation which is rather heavy and therefore takes time to settle.

I would like to say something about the more general aspects of planning. I had a certain amount of talk with the people on the general plan. I was very interested to find how well informed they were and how curious they were about the progress of the London plan, and I think the London plan has had quite an influence on the development of the Moscow plan and other plans as well. I can only really speak of Moscow because I did not discuss other plans except in a general way about new towns, about which I may have something to say. The Moscow plan is laid down more or less by the old town. It is the old form of town which has a set of concentric lines that have now become enormous boulevards, and a set of radial roads going out of them. It is the typical spider-web plan already laid down. The Kremlin is to be surrounded by gardens, and then the main streets come out from this. All the streets have been widened. They have been widened where buildings were hopelessly bad by pulling down, where only moderately bad by pushing back into the next parallel street, so that the façade of this street parallel to the main street contains buildings that used to be in front. Where the buildings are still reputable but in the wrong place they are moved back to where they should be in the general line. Some peculiar things are done with buildings. One of the finest buildings in Moscow, the Moscow Soviet Building, was the right architecture but the wrong size, so what they did was to lift it up and build three storeys underneath.

MOSCOW DEVELOPMENT

The streets are lined with very big and very fine buildings, and then outside are the larger belts of blocks, and outside again the neighbourhood units for the real domestic housing part of the town, with the factories concentrated in three or four places. All the factories have been completely removed already from the central area. Each factory area is really a subsidiary town with its own housing and its own schools, and so on. There are not very many of them, only about—I suppose—two or three hundred very large factories, and the smaller ones are being gradually amalgamated. Most of the housing is on the hills to the south-west of the town, and the flatter parts of the north will not be built on at all.

The idea has been to develop the outer areas and the main street areas first. The islands between the main streets have been left, in the first place, untouched. Only one principle operates as far as they are concerned: only buildings of historic interest or beauty are preserved. Most of the others are scheduled for total destruction. One of the curious things one notices in Moscow—and I found out the reason—is a very beautiful frontage with very fine buildings. The road has been widened, and then somewhere one finds a number of small wooden cottages, tumbledown brick buildings, and so forth, between the road and the other buildings, nestling under a fourteen-storey building. The rule is that no one can be moved until they have been found alternative housing, and so they stop there and upset the local Soviet until housing has been found for the people, and then they go. The process is one which produces the most terrific contrast between the new and the old.

The planning of those new towns, as explained to me, was very interesting. They are planned in relation to the industry carried on and the number of workers needed in various years, according to the development of the five-year plans. The architect has the job of providing the complete set-up for the people, and not only the housing, but the schools, clubs, cinemas, shops. The whole set-up has to be ready as the various stages of the main factory are built up.

OMNIPOTENT ARCHITECTS

I will end by giving you the impression it gave me so far as building in the Soviet is concerned. It is primarily an architect's job. No one tells the architect; the architect tells everybody else. And if there are people here—and I am sure there are in the Soviet Union as well—who do not like the architecture, it is the tradition of the profession that you have to criticize, and that is not particularly Soviet, except for this. There is a very deep sense, which is growing deeper and deeper in the Soviet Union—I noticed the enormous difference in fifteen years—of settling down into the solid basis of the history and tradition of their own country, and their own country is not one country but a whole set of countries, so an architect in Erivan will have a very different situation to face from an architect in Leningrad. For instance, in Leningrad an Italian renaissance style of the eighteenth century emphasizes long horizontal façades with occasional steep and sharp spires that break the intervals. The architecture in Moscow is much more varied, and Leningrad plans are mostly plans for long facades and uniform high buildings with different architectural details, but it is all a matter in which the architects try to interpret—and they consider themselves the interpreters of—the tradition of the country, so that the new country that is building up will be solidly based on the old that existed before. For that reason they have broken away from the intervening period of what they now call the formalized or functionalized period in architecture. They have gone over to a style which they maintain contains all the useful functional elements but without that same austerity in external appearance.

There has been a certain regression from the extreme classical style of columns, statues, and so on, to a somewhat modified classical style of a more—I think—baroque and Russian character, but the essential thing is that the architecture reflects the whole continuity of the life of the people.

Above, the garden elevation of the semi-detached houses; below, the entrance hall and staircase of one of the houses.

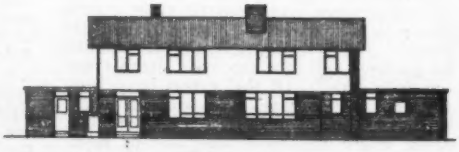
AGRICULTURAL BUILDINGS AT WYE

BY RICHARD SHEPPARD AND PARTNERS

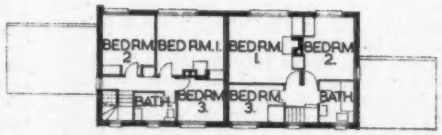
1. FOREMEN'S HOUSES

GENERAL.—The semi-detached three bedroom houses, each of which has a slightly different plan, were built on the estate of the Wye Agricultural College, to provide living quarters for the foremen.

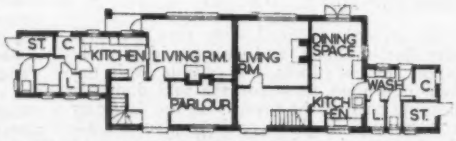
CONSTRUCTION.— The houses have 11-in. external walls, with a 4½-in. brick external skin and 2-in. cavity and 4½-in. foamed slag block interior skin. The upper part of the external brickwork has two coats of plaster with a rough cast finish. The internal walls are of 4½-in. brickwork plastered. The roof is finished with multi-red pantiles, laid on tongued and grooved boarding and felt, with 4-in. by 2-in. rafters at 16 in. centre to centre. There are 6½-in. by 1-in. asbestos cement sheeting fascia boards to the eaves, and 4-in. by 2-in. metal gutters. The



ELEVATION TO ROAD

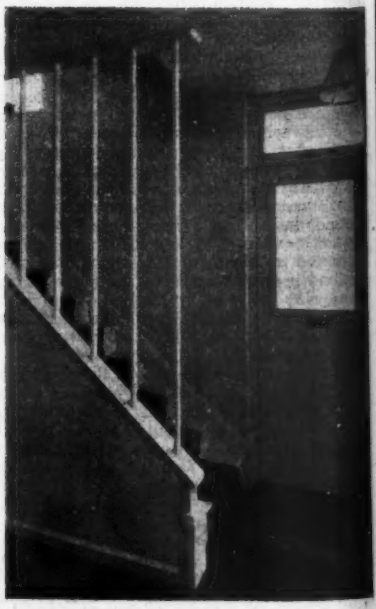


FIRST FLOOR PLAN



GROUND FLOOR PLAN

[Scale: ⅛"=1'0"]



windows have reinforced concrete lintels, timber sills internally and concrete sills externally, while at sill levels a 1-in. tile creasing in the bonding takes the rendering.

INTERNAL FINISHES.— *Ceilings:* plaster placed on joists and battens. *Skirtings:* living room, parlour and bedrooms, 3-in. by 1-in. wood skirting. *Built-in furniture:* Shelves each side of the fireplace in the living room. Bedrooms, built in cupboards. Larder; softwood shelves and one 2-in. concrete shelf. Kitchen; built-in table unit, dresser and broom cupboard and a hatch for access to the living room. The sink and draining board discharge into a 9-in. gully trap surrounded by a 3-in. concrete curb. The general contractors were Messrs. G. E. Wallis and Sons, Ltd.

The entrance front of the foremen's houses.

2. HOP RESEARCH LABORATORIES

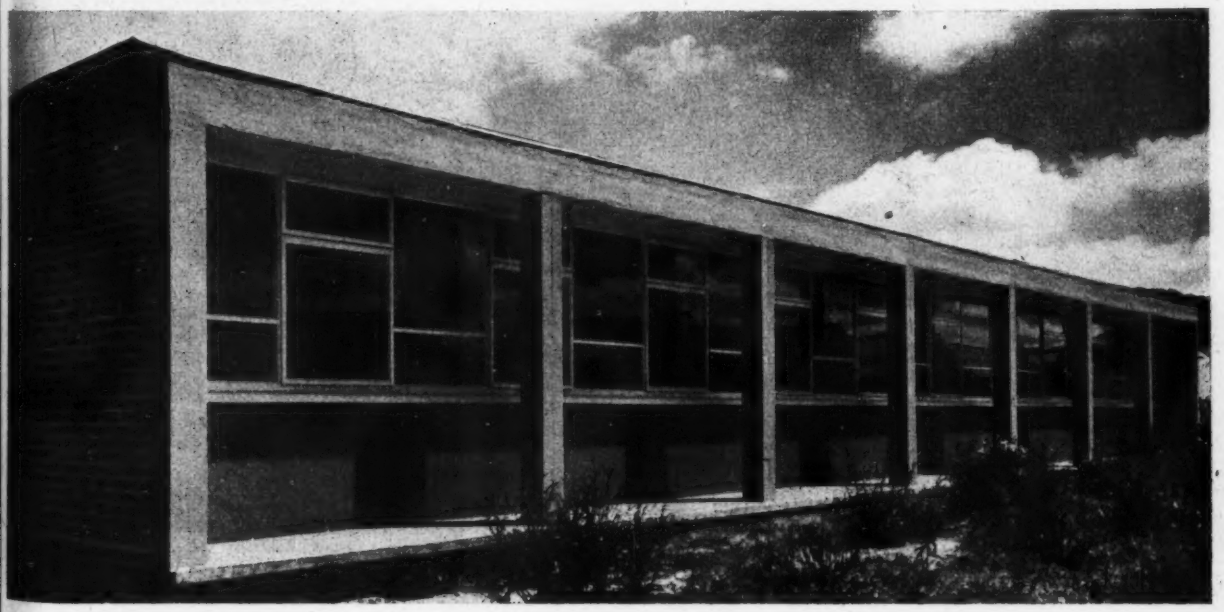
GENERAL.—To provide a one-storey building consisting of kiln room, large laboratory and offices for the experimental staff of Wye College to carry out research work. It is expected that field research buildings of a similar pattern will be required on other parts of the estate. It was proposed that standard concrete units of MOW pattern should be used but the architects were able to show that cost and steel quantities would only be exceeded by a very small amount by the present building.

SITE.—The building is next to hop fields owned by Wye College, and faces almost due south. To avoid glare and give diffused light to the laboratories the windows on the south side have been set back from the face of the wall. To the north they are brought out to the face. Owing to the temperature reached in operating the kiln room the central corridor is ventilated by means of clerestoreys.

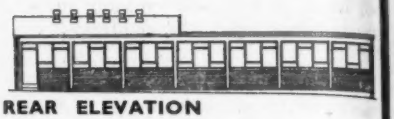
PLAN.—The building is planned so that it can be extended along its axis; this will leave the kiln room and laboratory approximately central, all activity centreing around these two rooms. The building is planned on a 10-ft. bay so that the same constructional element can be continued.

CONSTRUCTION.—The building is constructed with reinforced concrete posts as support for the reinforced concrete hollow slab roof with a 9-in. brick spine wall. The gable end walls are 11-in.

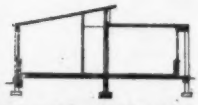
The main front of the hop research laboratories from the south.



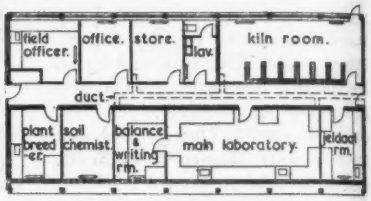
Left, the interior of one of the laboratories, showing the fittings designed by the architect.



REAR ELEVATION



CROSS SECTION



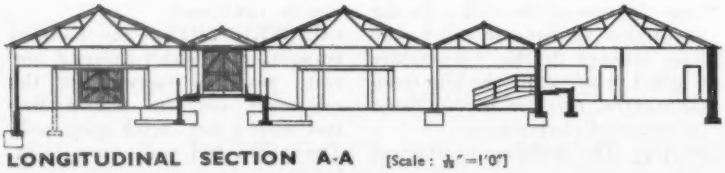
GROUND FLOOR PLAN [Scale: $\frac{1}{16}$" = 1'0"]

cavity brickwork. All internal walls and partitions are of 4½-in. sand lime brick. The floors are composed of 6-in. concrete with an asphalte membrane. The south elevation is a dwarf wall with continuous fenestration above, from sill to ceiling, set back 18 in. behind a series of eight RC columns. The roof slab is supported on the columns and this affords protection from intense sunlight.

INTERNAL FINISHES.—The concrete floors are finished in jointless acid-resisting red asphalte and all skirtings are covered in the same material. The sand lime brick partitions are finished fair face. Ceilings are finished in cement rendering. The benches in the laboratory are of waxed oak with oiled teak tops.

The general contractors were Messrs. G. E. Wallis and Sons Ltd. For list of sub-contractors see page 508.

3. DAIRY BUILDINGS



LONGITUDINAL SECTION A-A [Scale: $\frac{1}{16}$" = 1'0"]

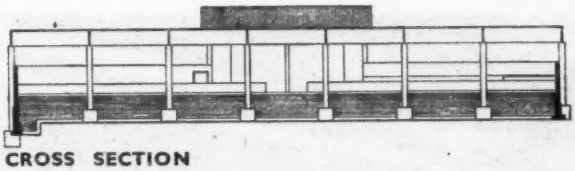
The dairy buildings with the lactory on the left.

AGRICULTURAL BUILDINGS AT WYE

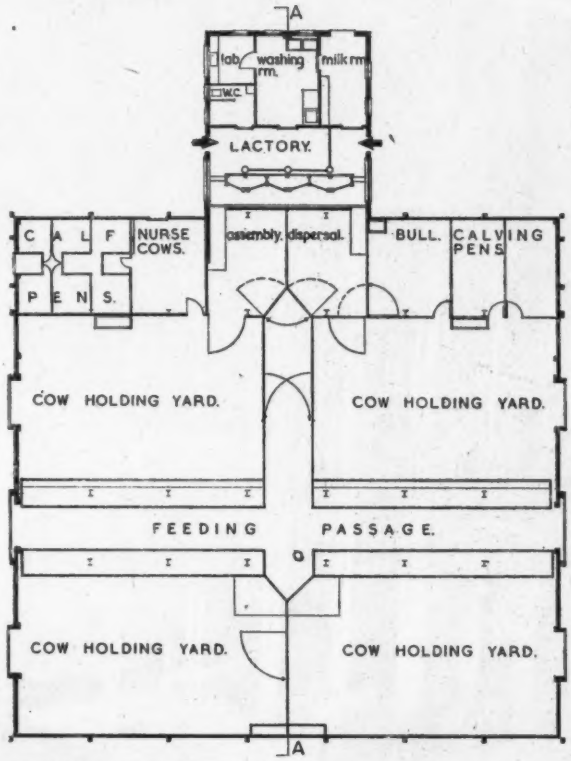
GENERAL.—The building consists of four covered courts, each accommodating 15 cows. Attached to the courts and with independent access from each, there is a two-level milking plant. A small field laboratory has been incorporated in the lactory block in addition to the engine room, wash-room and milk room.

CONSTRUCTION.—Precast concrete posts carry precast concrete eaves beams, supporting standard steel lattice-type roof trusses. Roofs are finished in corrugated asbestos sheeting and the town planning department of the local authority insisted on the roof being stained dark red in order to blend with local surroundings. Floors to the cow holding yards and bull pen are of punned earth and those to calf pens and the remainder of the rooms are of concrete finished in granolithic. Internal brick walls to yards are lime whitened and those to the remainder of the rooms are cement rendered and finished in flat paint. Windows are generally of the standard metal hopper type fitted with fly screens, and the majority of the external doors are sliding doors on metal tracks. All exposed timber is treated with copper sulphate solution to prevent rot infection. The external brick walls are finished in oil bound flat paint.

The general contractors were Messrs. Leppers, Ltd. For list of sub-contractors, see page 508.



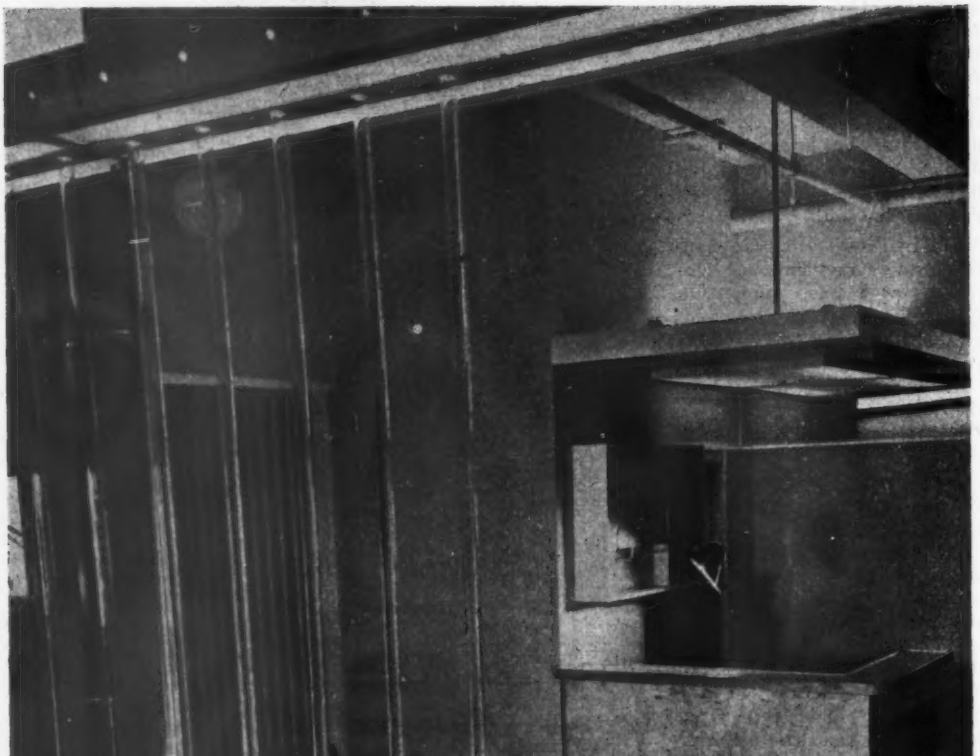
CROSS SECTION



GROUND FLOOR PLAN [Scale: $\frac{1}{16}$"=1'0"]

The interior of the pens, from feeding passage.

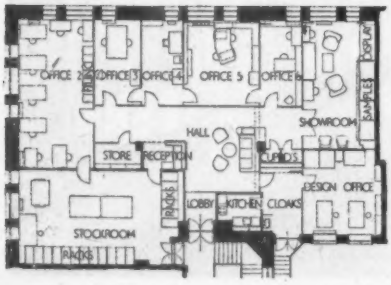
BY RICHARD SHEPPARD AND PARTNERS



The entrance hall and reception desk, seen from the showroom.

SHOWROOM, REGENT STREET, W.1

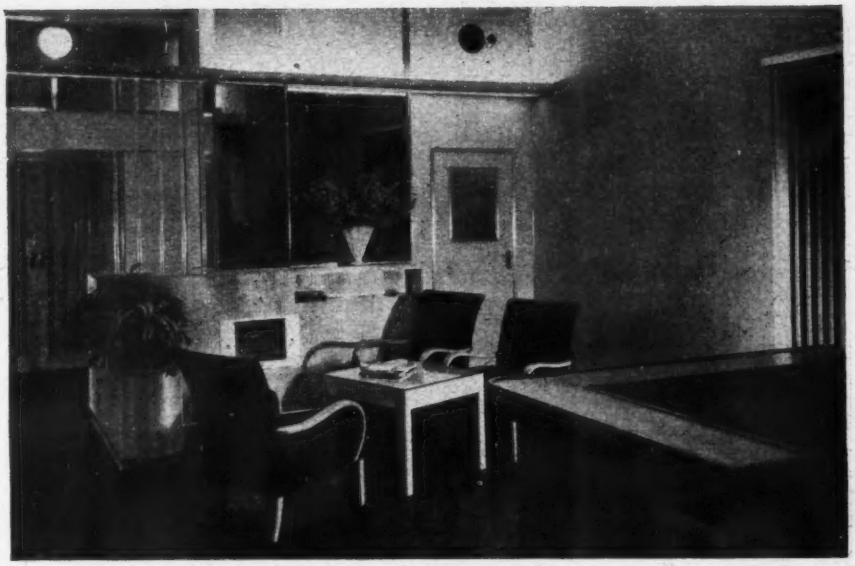
BY R. JELINEK - KARL

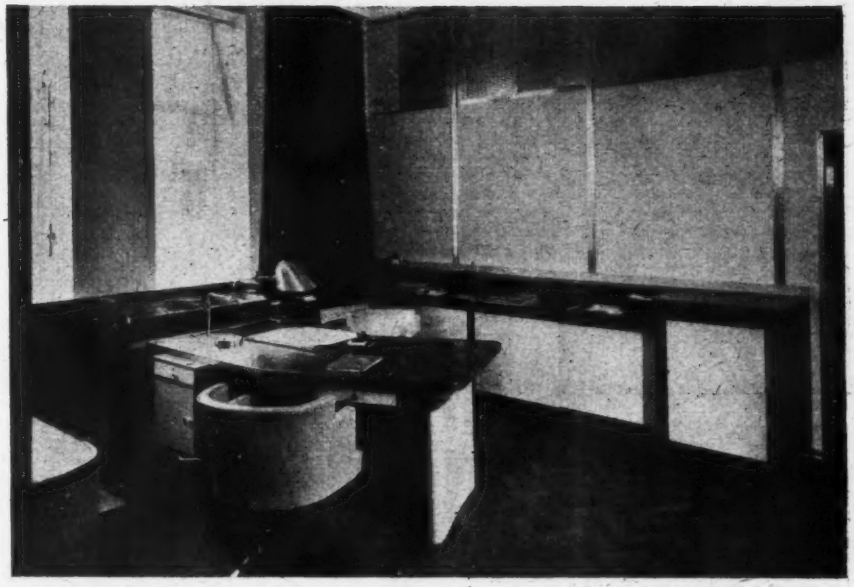


FLOOR PLAN
[Scale: $\frac{1}{8}$" = 1'0"]

GENERAL.—The floor space in an existing building, Canberra House, Regent Street, W.1, has been converted to provide office accommodation and showrooms for the Berne Silk Manufacturing Company. It was not possible to alter the elevation of the building and the existing fenestration was spaced in a manner which was unsuitable for the provision of adequate lighting in many of the offices and the entrance hall. This difficulty was overcome by the use of glazed partitions between the rooms. Plastic-faced composition board partitions were used for flexibility and to enable them to be removed if larger offices were required in the future. A special cupboard was required in the showroom for holding two hundred samples. Special cupboards were designed with sliding doors and pull-out trays, constructed on the steel filing cupboard system. The

Top, the entrance hall seen from the reception desk, showing the screen and entrance to the showroom. Centre, the managing director's office (No. 5) with built-in furniture designed by the architect. Bottom, the showroom, showing the specially designed cupboards for textile samples.

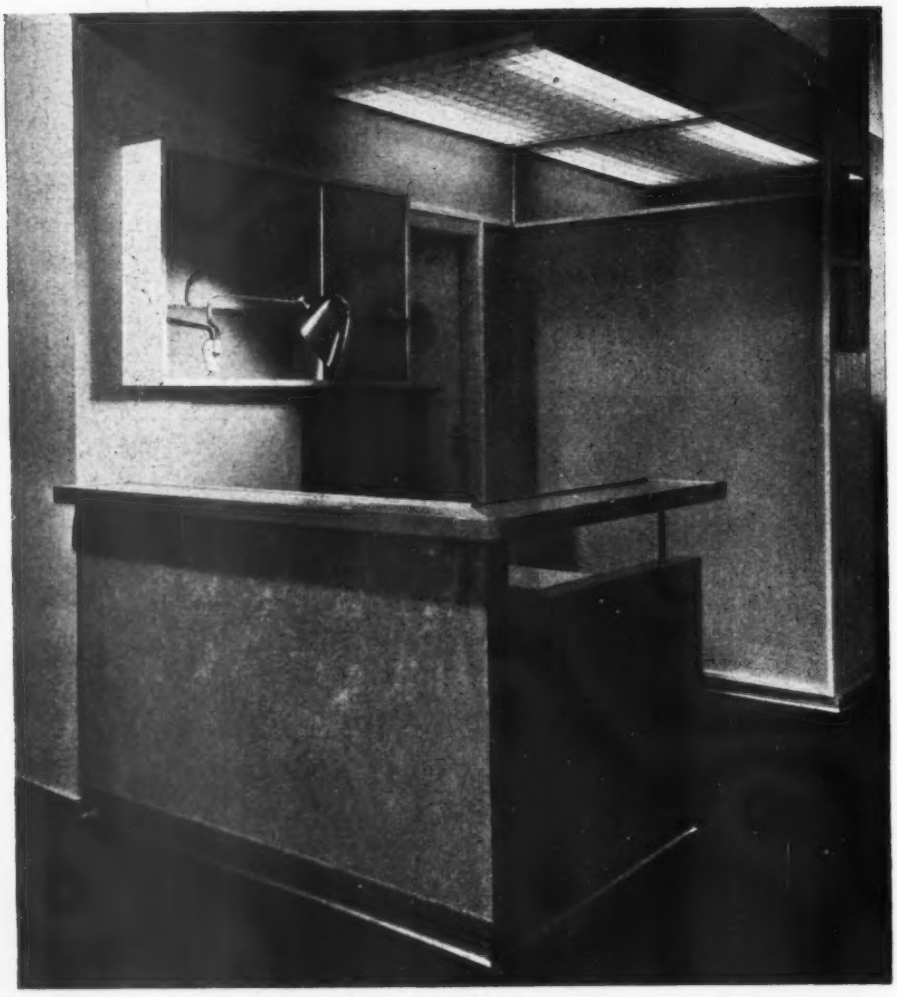




display recess in the showroom has a special light fitting and with five different lighting effects.

FINISHES.— The offices are painted with cream oil paint. Walls in the entrance lobby are pale blue. There is a terra-cotta soffit to the canopy of the reception desk, which obscures a number of fire-prevention sprinkler pipes. The partitions are spray-painted cream with fluted glass in polished-aluminium framing. The floors are of African muhuhu wood-blocks. These are overlaid with carpets in the showroom and the director's office. The furniture in the showroom is of polished sycamore; the upholstery is dark blue; the carpet is beige and curtains are sunshine yellow. The furniture in the director's office is of mahogany and sycamore, wax-polished. Mirrors are pearl and steel blue in colour; the curtains are dark blue. The chair upholstery is of natural hide. All the built-in furniture was designed by the architect. Light fittings are finished in gold and cream. The entrance lobby, approached from the staircase, is painted dark blue, relieved with contrasting vertical battens, and lighted with a spot-light.

The general contractors were Messrs. J. Kinninmont and Sons, Ltd. For list of sub-contractors, see page 508.



Left, the reception desk above which is a canopy, coloured terra-cotta, and a lighting fitting hiding sprinkler pipes. Bottom, left; another view of the managing director's office (No. 5). Right, furniture in one of the other offices.

SHOWROOM, REGENT STREET, W.1

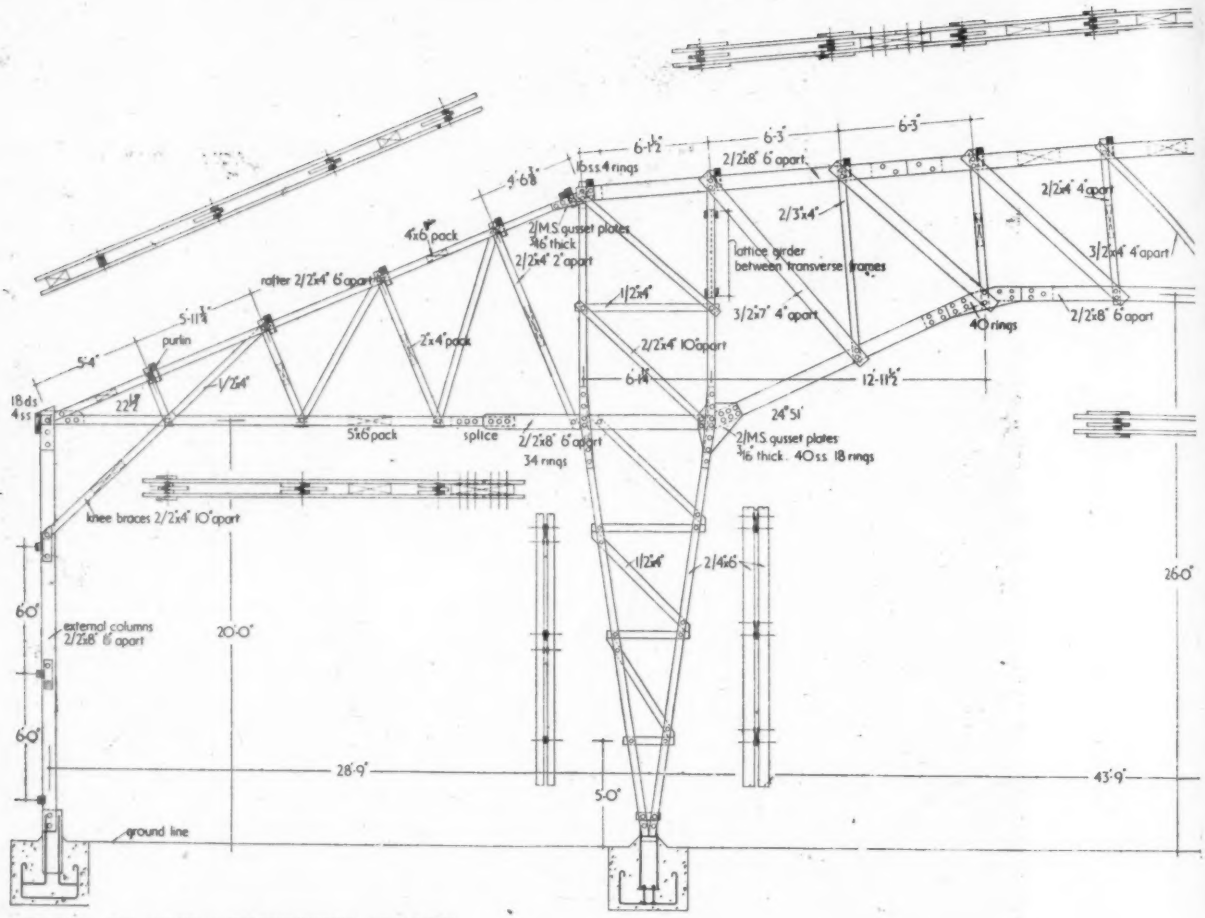
The main transverse frames.

STORAGE BUILDING, SHOREHAM

DESIGNED BY PHILLIP O. REECE

GENERAL.—This storage building, at Shoreham-on-Sea, covers an area of over half an acre. The main dimensions are: central span, 87 ft. 6 in.; side spans, 28 ft. 9 in.; overall span, 145 ft. Thirteen main transverse frames cover a total length of 180 ft., spaced at 15 ft. centres, with purlins, 6 ft. apart, spanning between them and carrying the covering of asbestos-cement sheeting. The site is exposed to south-westerly gales and the building was designed to offer the least possible wind resistance. Resistance to wind pressure on the side of the building is provided by the central arches of the main transverse frames. Wind pressure on the ends of the building is transmitted through a framing system in the roof to the side walls, which in turn transmit the loads to the foundations.

CONSTRUCTION.—A jig was built up of trestles to accommodate half a complete truss and posts from the outside wall to the centre of the span. Drilling for bolt holes and ring grooves was carried out with an electric drill set up on a bench alongside. The components were laid in the jig and the holes located with rods. The connectors were then inserted and the joints pulled up with high tensile bolts. When the "bulldog" connectors were fully embedded the high



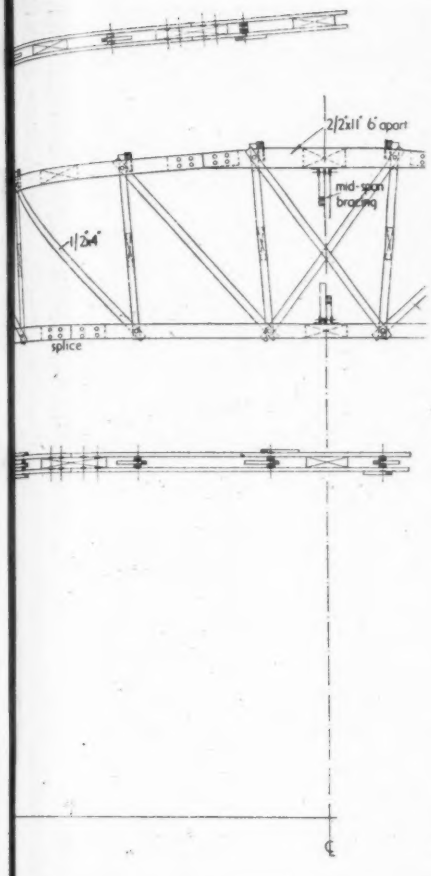
DETAIL OF THE TRANSVERSE FRAMES

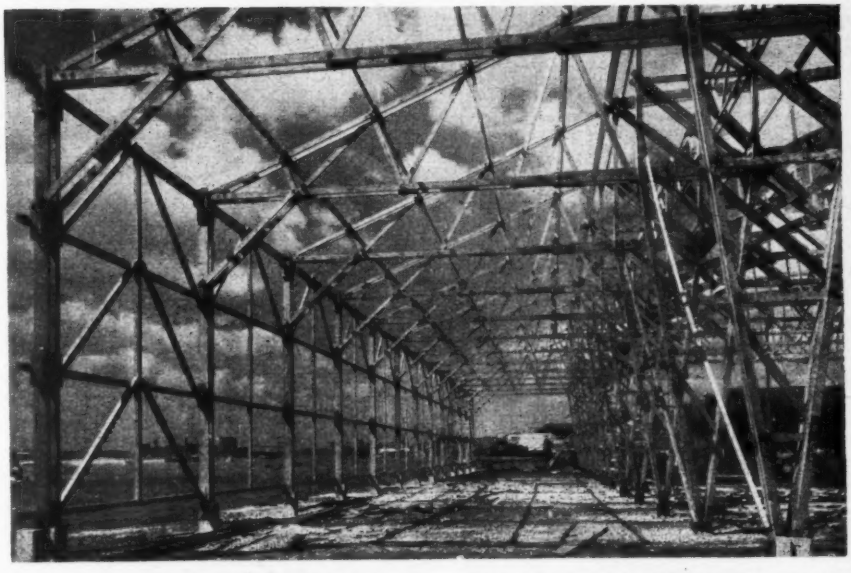
tensile bolts were withdrawn and replaced with permanent bolts. The bases for the trusses were accurately located and fixed in position in the ground. The timber columns are supported above the level of the floor, the external columns being carried on precast concrete posts and the internal columns supported on short lengths of rolled steel joists, the lower ends of which are embedded in the concrete foundations blocks. The first stage of erection was to bolt into place the outside posts, together with some of the sheeting rails to steady them. A section consisting of the outer roof span, the inner triangulated legs and the roof of the main roof truss was lifted into position. This operation was carried out for three bays on either side of the site and some of the wind bracing inserted to get accurate location. The centre section of the roof truss was then lifted into position and the joints bolted up. For all the lifting operations a single mast, 40 ft. high, was used in conjunction with a hand winch. Erection proceeded in this way throughout the length of the whole building. Wind bracing, purlins, sheeting rails, etc., were put in place so that the covering of asbestos cement sheeting could be fixed. The total quantity of timber used was 4,235 ft. cube, including a small quantity of plywood in the portal frame to the garage section and all unusable waste. This for a covered area of 27,000 ft. super works out at 0·157 ft. cube per foot super; a low figure by any standard since posts and sheeting rails are included. By the usual conversion ratio of 34 lb. per foot cube the weight of timber used per foot super of covered space is 5·34 lb. The whole of the timber was specified as untreated Douglas fir, and to render fabrication easier all components were machined to $\frac{1}{8}$ in. under nominal thickness and $\frac{1}{4}$ in. under nominal width. Most of the timber was stress-graded to 1,200 lb. per sq. in. with the exception of the purlins, which were graded to 1,400 lb. per. sq. in., tests being carried out by the Forest Products Research Laboratory.

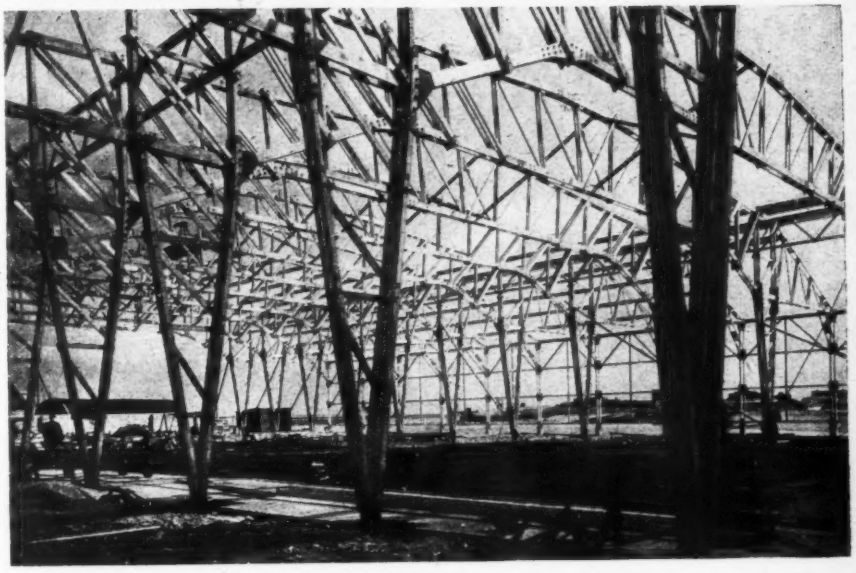
COST.—All timber was delivered graded, dressed to size and crosscut to net length. The current ex ship basis price plus costs to site was approximately 8s. 6d. per foot cube. To this must be added selection for lengths and grade, conversion, machining and crosscutting, raising the full cost to about 10s. per foot cube, the figure used in the analysis below, which shows the cost per foot super of floor area: Steel for reinforcement and post bases, 3d. Contractors' work on bases and foundations including excavations, 3½d. Connectors, bolts and glue, 5½d. Timber at 10s. per foot cube, 1s. 7d. Contractors' fabrication and erection, 1s. 11d. Owners' fabrication on purlins and portal frame, 1d. Asbestos cement roofing and sheeting, 2s. 2d. Total, 6s. 9d.

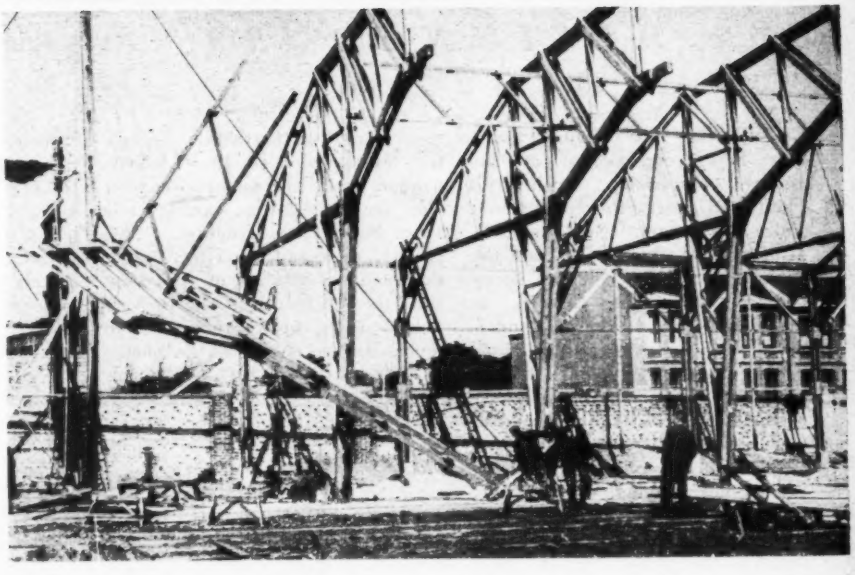
The general contractors were Messrs. John W. Ridge Ltd.

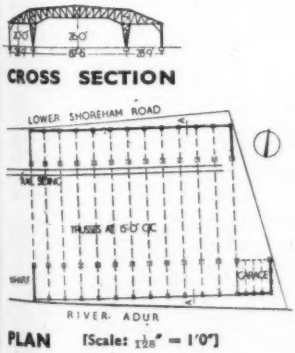
STORAGE BUILDING, SHOREHAM











Top, the trusses that form the side bays and project on each side of the central arches, which span 87 ft. 6 in. Centre, the main central arches which form the structural core of the building. Bottom, the erection of the side bays of the main transverse frames prior to the lifting of the centre portion.

BY PHILLIP O. REECE

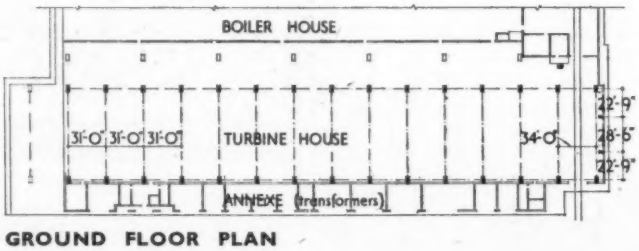
An interior view of the turbine house from the completed end of the building.

TURBINE HOUSE AT LEEDS

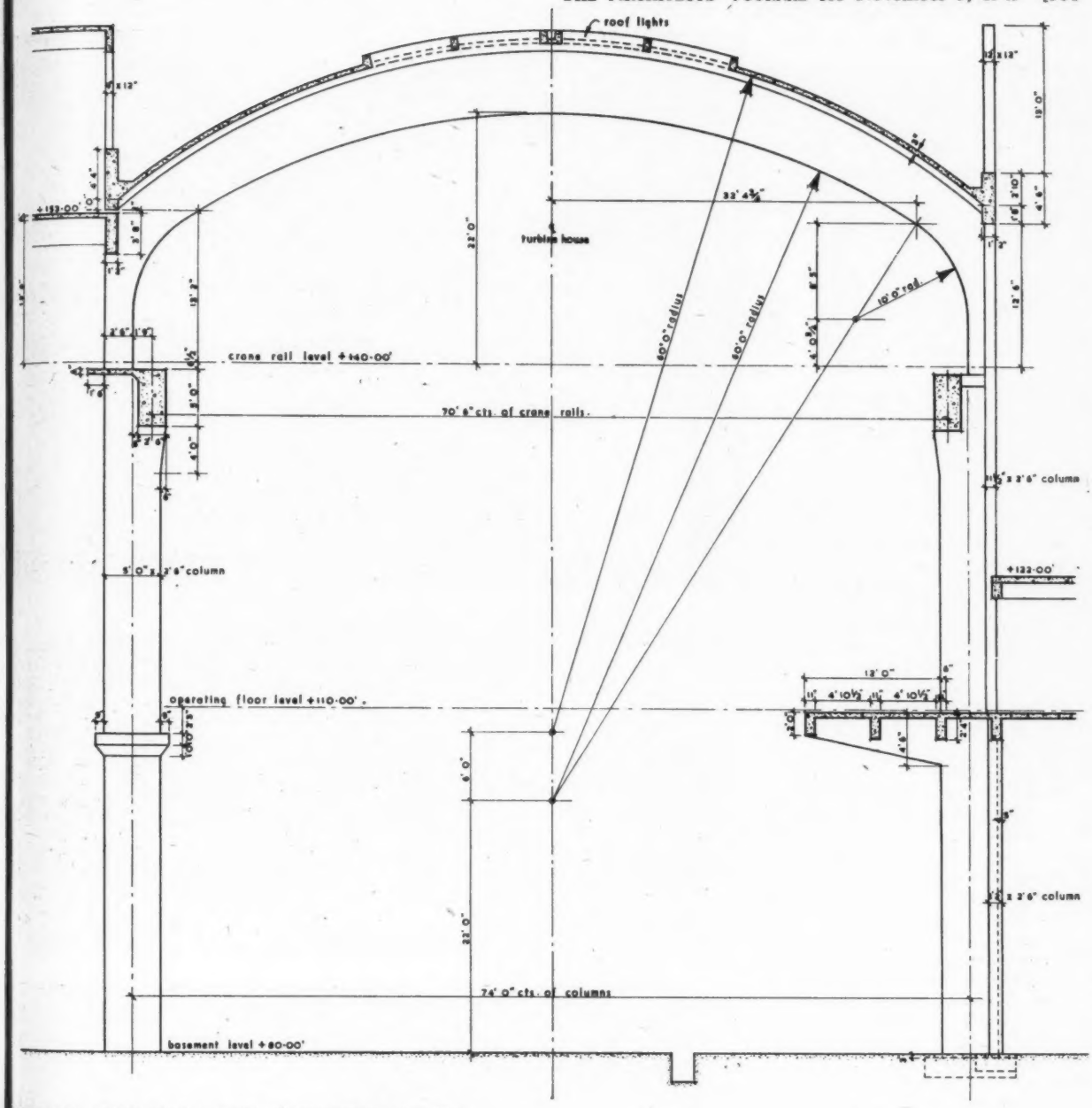
DESIGNED BY R. A. H. LIVETT

GENERAL.—The turbine house now being constructed at the British Electricity Authority's Skelton Grange Power Station, Leeds, is a reinforced concrete structure of which only half the total length is at present being constructed. This section is approximately 400 ft. long and is divided into fourteen bays each 31 ft. long by 79 ft. wide. The main structure in the turbine house consists of a series of reinforced concrete portal frames supporting a shell concrete roof. In addition the frames support, on one side, a three-storey reinforced concrete block containing the electrical controls, and on the other the main tank rooms, which are installed at roof level and which are also constructed in reinforced concrete.

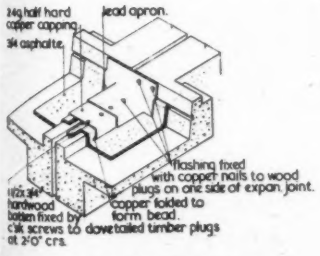
A large part of the turbine operating floor, which is 30 ft. above ground level, is also supported by the frames, being cantilevered from the main structure. An electric overhead travelling crane designed for a load of 150 tons runs the full length of the turbine house, 30 ft. above turbine floor level. In the design of the portal frames, the columns of which are 5 ft. by 2 ft. 6 in. in section below the crane beams and 2 ft. 6 in. by 1 ft. 4 in. above this level, the point of contraflexure under the various loadings comes approximately at crane level. The moments at the springings being small, the cross ribs are deeper at the centre than at the spring-



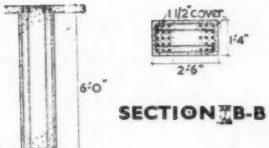
GROUND FLOOR PLAN



SECTION THROUGH THE CONCRETE VAULT

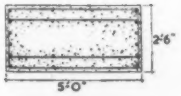


DETAIL OF EXPANSION JOINT

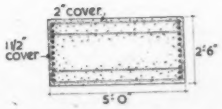


SECTION A-A

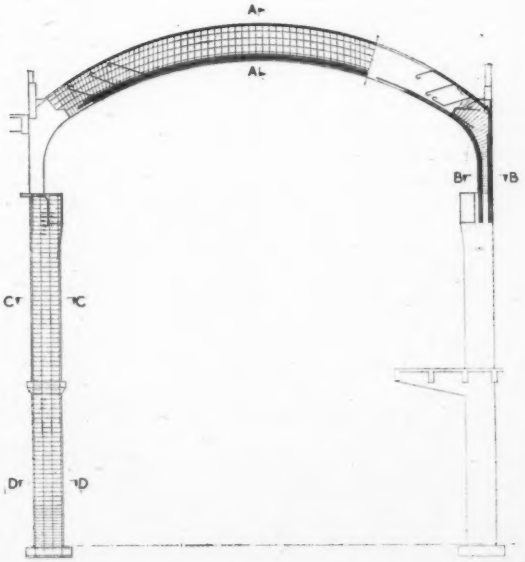
SECTION B-B



SECTION C-C

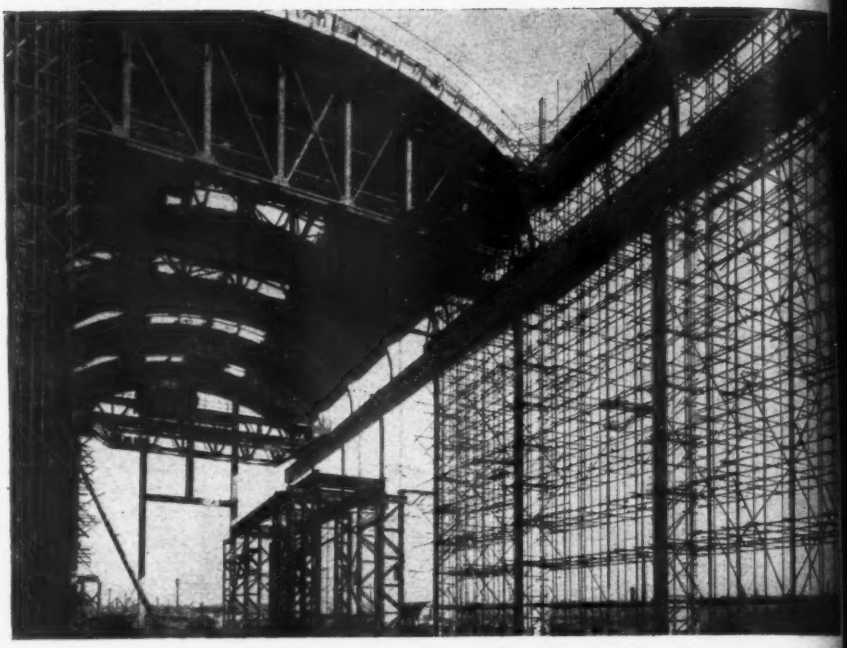


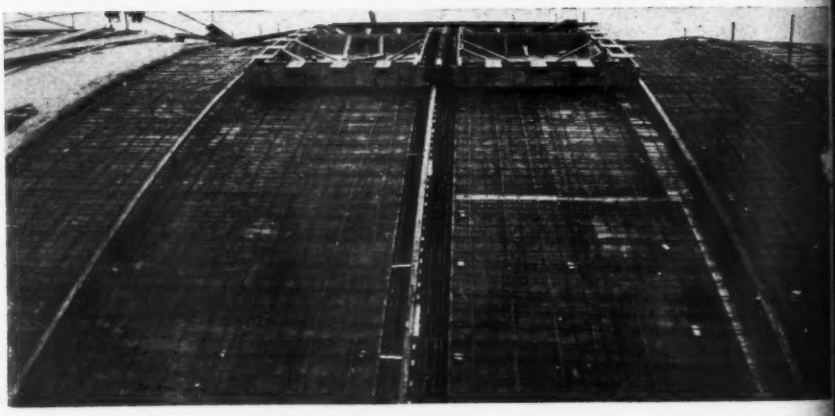
SECTION D-D

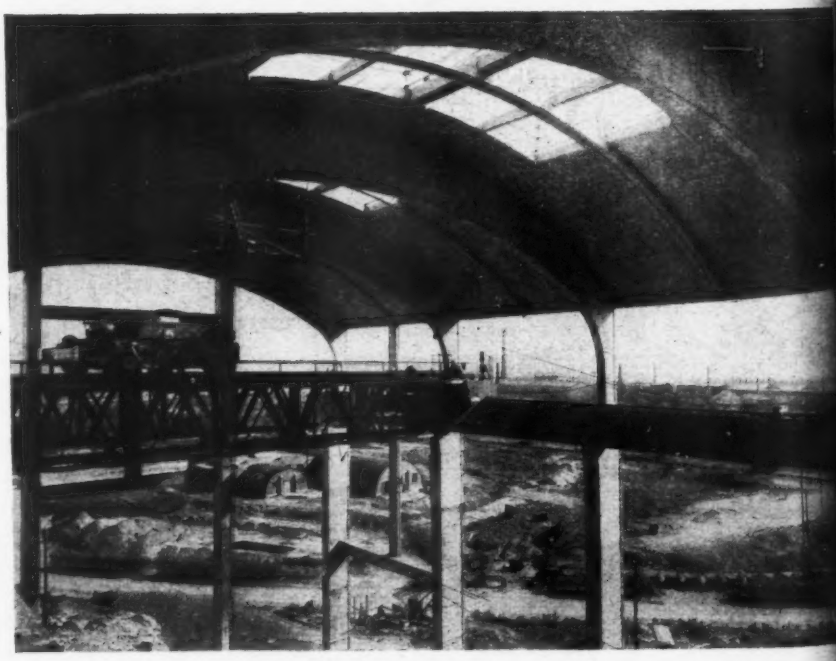


DETAILS OF THE VAULT REINFORCEMENT

Top, the travelling carriage used for the construction of the shell concrete roof; centre, exterior of the shell roof before the concrete is placed (an expansion joint between twin secondary ribs is shown); bottom, roof detail from the interior, showing expansion joint between twin secondary ribs, The roof lighting panels occur in every bay.







ings, which is an unusual arrangement in a frame of this type. In addition to the roof loading, the structure was designed for the vertical and horizontal loadings from the crane, for the weight of high brick parapets and for loads from the adjacent structures. Vertical columns are carried up above the gutter beams to stiffen the brick parapets and resist wind forces on the brickwork. In addition, fairly heavy horizontal forces due to wind on the adjoining steel-framed boiler house had to be carried on the concrete frame. Owing to the great height above ground level (88 ft. to the crown of the roof slab), it was decided to construct the roof from a travelling carriage running on the crane rails. The travelling carriage consists of two main trusses spanning the width of the building (70 ft. 6 in. between crane rails) and spaced 32 ft. apart. They are braced together by steel joists which carry working platforms and a light steel frame supporting the roof formwork. Expansion joints are provided in the roof, placed in the centre of every third bay. The columns were cast in lifts of 8 ft. and a construction joint formed in the main cross ribs just above springing level, so that the columns and edge beams at the springing could be carried out ahead of the construction of the roof. The concrete of the 3-in. thick roof slab was placed between screeds at 8 ft. centres following the curve of the arch. An opening 32 ft. by 15 ft. was left in each bay of the roof, subdivided by ribs to support eight panels of roof lights.

The consultants were Messrs. Merz and McLellan, assisted by Sir Alexander Gibb and Partners. The general contractors were Holst & Co., Ltd., who designed the building in collaboration with Chisarc and Shell "D" Limited, for whom H. G. Cousins, acted as Consulting Engineer.

TURBINE HOUSE AT LEEDS

WATER SUPPLY AND SANITATION | DETAILS | LEAD

33.C8

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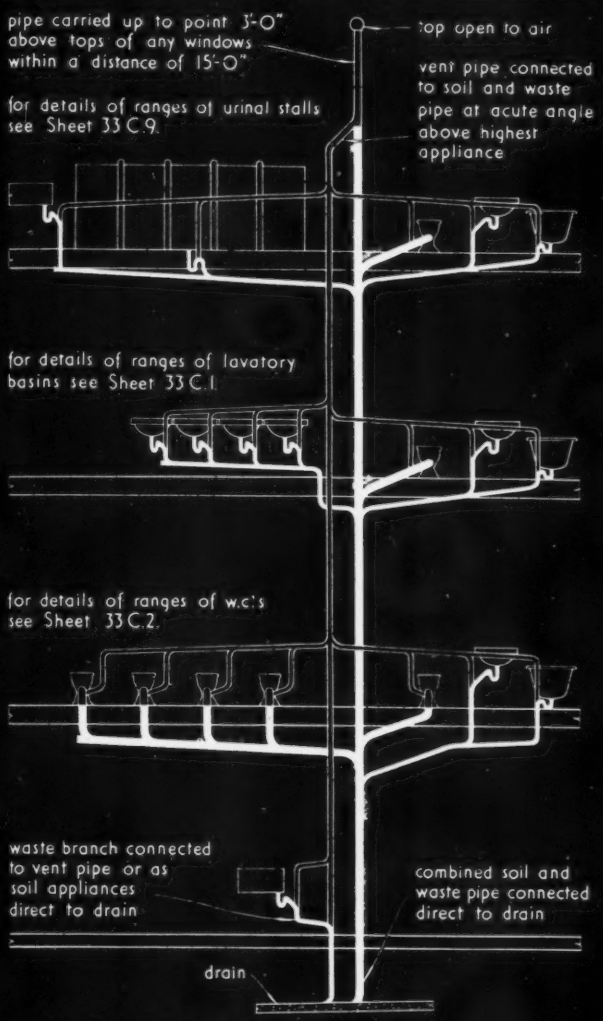
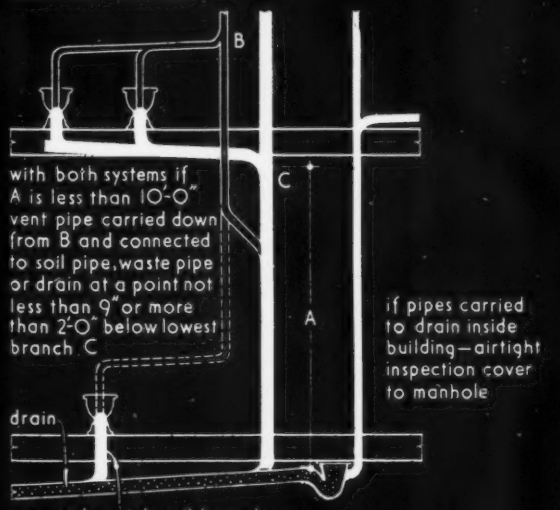
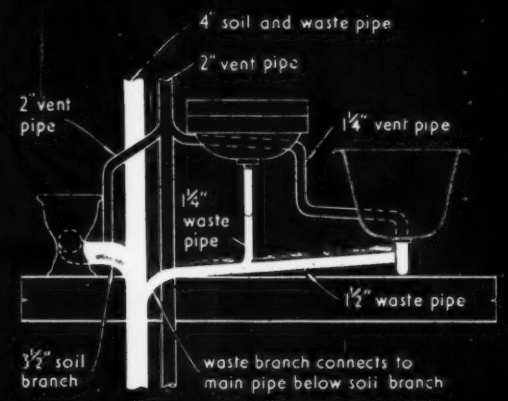


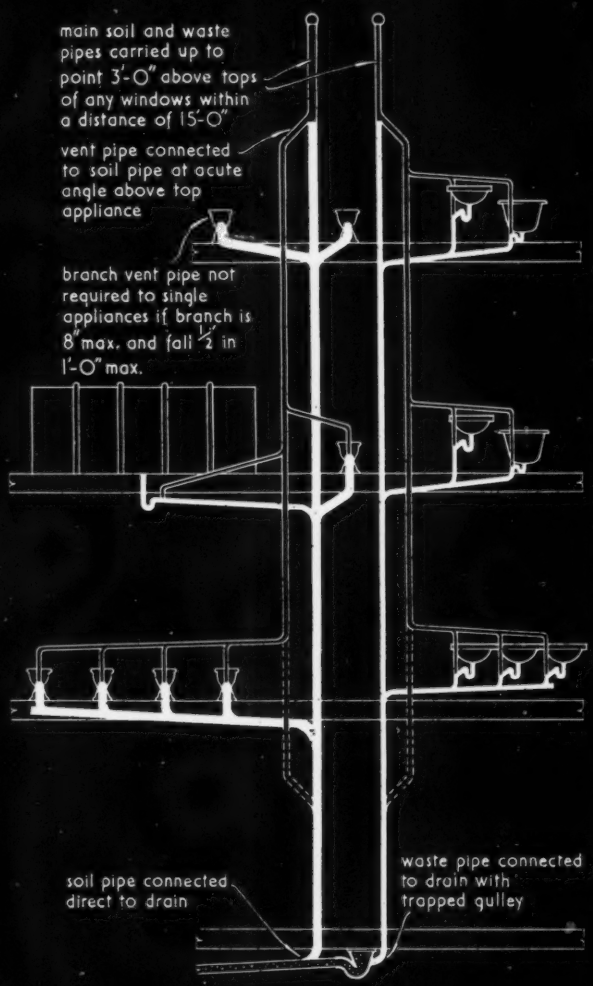
ONE-PIPE SYSTEM.



DETAIL AT DRAIN.



TYPICAL ONE-PIPE ARRANGEMENT FOR MULTI-STOREY FLATS. (to avoid long branches sinks are often branched into a separate waste stack)



TWO-PIPE SYSTEM.

INSTALLATION OF LEAD SOIL, WASTE AND VENTILATING PIPES.

Compiled from information supplied by The Lead Industries Development Council.

33.C8 INSTALLATION OF LEAD SOIL, WASTE AND VENTILATING PIPES

This Sheet sets out the general principles of soil, waste and ventilating pipe installations. The notes should be read in conjunction with those given on Sheets 33.C1, 2, 3 and 9. The manner in which these pipes should be installed is covered by local byelaws and these notes are only given as a guide to common good practice.

Definitions

Soil pipe : This refers to the pipe, up to and including the highest branch to a W.C., slop sink or urinal, conveying the discharge vertically and horizontally to where it connects to a drain.

Waste pipe : This refers to the pipe, up to and including the highest branch to a bath, lavatory basin, bidet or sink (including laboratory sinks but not slop sinks) conveying the discharge vertically and horizontally to where it connects to the inlet of a gulley on a drain.

Ventilating pipe : This refers to :—

(*a*) A separate vent pipe direct from a drain.

(*b*) The top part of any soil pipe or waste pipe which is above the highest branch connected to an appliance.

(*c*) An anti-syphon pipe which is connected at a point not less than 3 in. from the crown of a trap and carried up to a safe position or is connected with the ventilating pipe above the highest soil or waste branch.

Two-pipe and One-pipe (Combined) Systems

The two systems for the installation of soil, waste and vent pipes are the two-pipe and one-pipe (combined) systems. In the two-pipe system the soil pipe system is separate from the waste pipe system (see above definitions). In the one-pipe system they are combined with a single soil and waste stack which is connected at the foot direct to the drain similarly to the separate soil stack. The chief advantages of the one-pipe system over the two-pipe system are the reduction of the number of vertical stack pipes required and the elimination of open gullies as used at the foot of separate waste stacks.

Grouping of Appliances

Close grouping of sanitary appliances to reduce the length of branch soil, waste and ventilating pipes to a minimum is a desirable factor in disposal plumbing and it is particularly important for an economical and efficient one-pipe system. The one-pipe system is therefore suitable for multi-storey buildings, especially residential, where there are groups of appliances on each floor discharging both soil and waste effluent.

Where the grouping of appliances does not lend itself to easy connections to a single stack, it may be more expensive and tend to be less efficient to run the necessary branches than to separate the plumbing and use the two-pipe system, or possibly the use of both systems might, with some groupings of appliances, be more practicable.

Trapping and Ventilating

Details of traps and trap ventilating pipes for various appliances are given on Sheets 33.C1, 2, 3 and 9. They are essentially the same for both the two-pipe and one-pipe systems. For the one-pipe system the water seal of traps is required to be 3 in. instead of the normal 1½ in. where the outlet of the appliance and the pipe therefrom has an internal diameter of less than 3 in. The water seal of traps, where the outlet of the appliance and the pipe therefrom has an internal diameter of not less than 3 in., is 2 in. for both systems.

The use of deep seal traps with the one-pipe system is an extra precaution to maintain a water seal against drain air which is in direct contact with the water content of traps of all appliances, not only on the soil pipe side as is the case in the two-pipe system. Soil or waste pipes, either separate or combined, are carried up to a safe point and are open at the top to the air, to ventilate the drain and pipe system.

The trap ventilating pipes (anti-syphon pipes) are connected to a main ventilating pipe which is similarly carried up. A safe point is considered to be not less than 3 ft. above the level of the top of any window within a distance of 15 ft. from the open end of the pipe. The main vent pipe may be connected to the main soil or waste pipe above the highest soil or waste branch.

At the lower part of the system the vent pipe is carried down to connect to soil pipe, waste pipe or drain at not less than 9 in. or more than 2 ft. below the lowest soil or waste branch, if the distance from the drain to the lowest soil or waste branch is less than 10 ft.

Installation

All pipes should be in a position of reasonable access. Where main soil, waste and vent pipes are fixed inside a building it is preferable to provide a pipe duct with proper access.

Where waste pipes in the two-pipe system connect to the drain within a building a sealed trapped gulley should be fitted.

Rainwater pipes must not be used as soil, waste or ventilating pipes except where, in a two-storey building, a waste pipe from a bath or wash basin discharges into a hopper head fixed at first floor level.

Where soil and waste branches connect to main pipes it is usual to fit an access cover

Compiled from information supplied by :

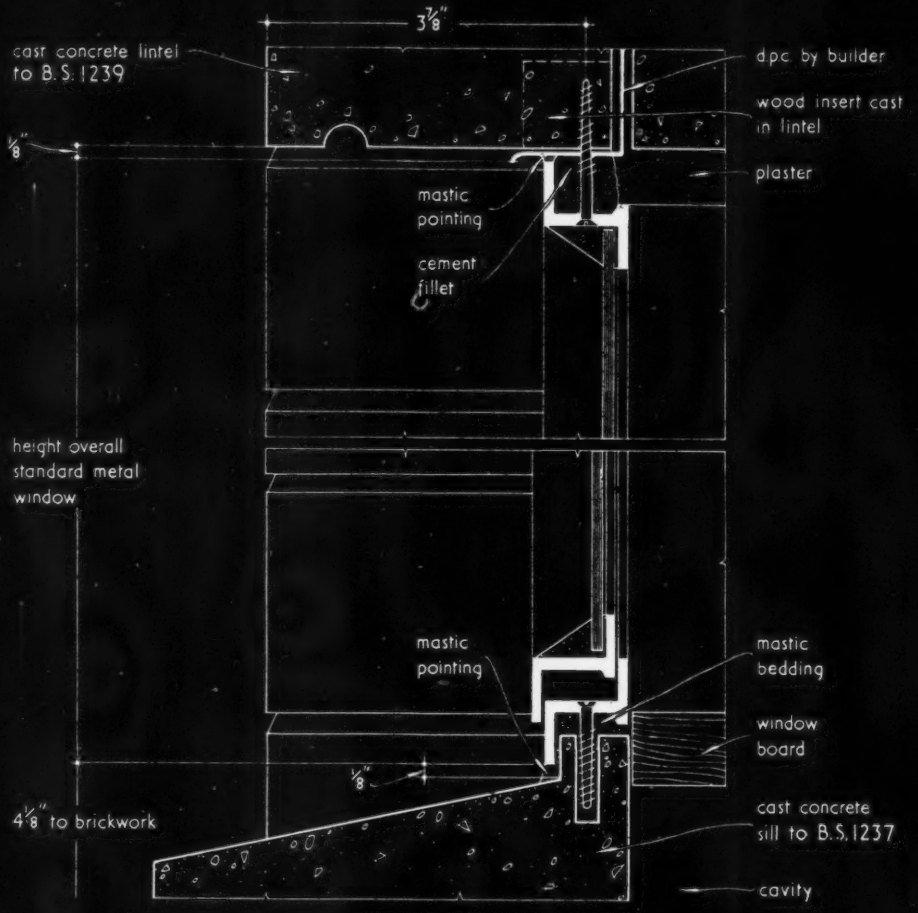
The Lead Industries Development Council.

Address : Eagle House, Jermyn Street, London. S.W.1.

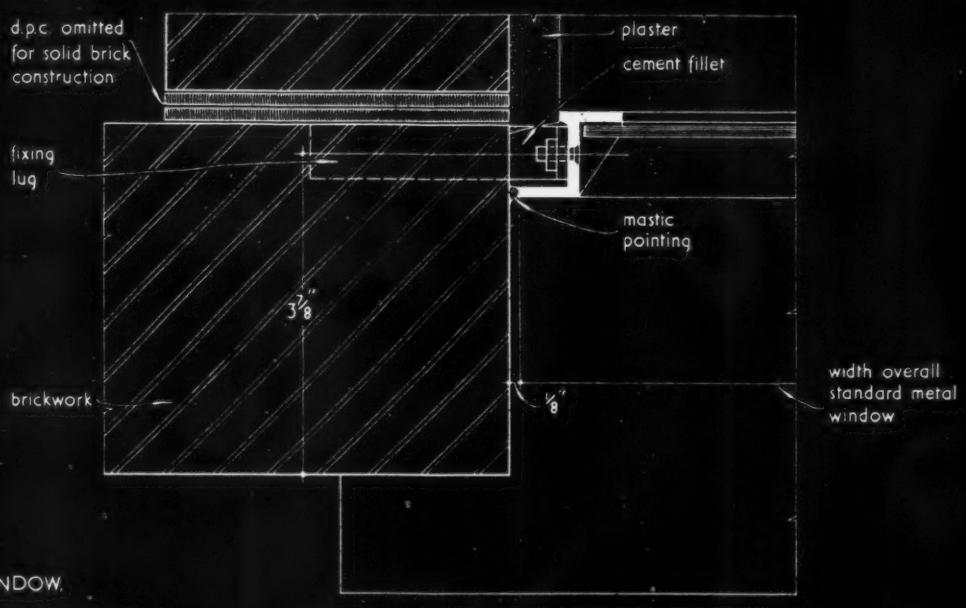
Telephone : Whitehall 7264.

WINDOWS | STEEL | APPLICATIONS

The Architects' Journal Library of Information Sheets 220. Editor: Cotterell Butler, A.R.I.B.A.



SECTION THRO' WINDOW



PLAN OF WINDOW

STANDARD METAL WINDOWS FIXED DIRECT TO 11" CAVITY OR SOLID BRICKWORK 3⅞" FROM BRICK FACE. (scale: ½ full size)

Compiled from information supplied by The British Metal Window Manufacturers Association Limited.

24.D3 STANDARD METAL WINDOWS FIXED DIRECT TO 11 in. CAVITY OR SOLID BRICKWORK 3⅞ in. FROM BRICK FACE

This Sheet gives details of fixing standard metal windows direct to 11-in. cavity or solid brickwork, the centre line of the window being 3⅞ in. from the brick face. Sheet 24.C1 illustrates the method of specifying standard metal windows and Sheets 24.C2 and 24.C3 give standard sizes and types. Further fixing details will be given in subsequent Sheets in this series.

Brickwork Openings

It should be noted that where the sill is as specified in B.S. 1237: 1945, 4¼ in. must be added to the total height and ¼ in. to the total width of the standard metal windows to determine the sizes of the actual brickwork openings.

British Standards

The cast concrete sill and lintel shown are in accordance with B.S's 1237: 1945 and 1239: 1945 respectively.

Compiled from information supplied by :

The British Metal Window Manufacturers' Association, Ltd.
Address : 2, Great Peter Street, London, S.W.1.
Telephone : Whitehall 9606.

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TECHNICAL SECTION

ACOUSTICS

A REPORT ON LECTURES GIVEN BY PROFESSOR BOLT

Professor Richard Bolt, who is in charge of the acoustics researches at the Massachusetts Institute of Technology, has recently given an important course of lectures on room acoustics at the Royal Institution.

The great problem today, as we have been told a number of times since the war, is to move on from the idea of room acoustics as exercises in geometry to something which gives a more detailed picture of the quality of the sound likely to be heard in a room. The geometrical approach is convenient, but coarse. It leads to rooms which are not bad, but not necessarily good. If we are to be able to determine in advance that a room will be acoustically good, the approach will have to be refined. Essentially this means understanding how the direct sound should be related to the reverberant sound, and how the reverberant sound should decay. Dr. Bolt is the leading authority in the field of what is called the wave theory of acoustics in rooms, by which it should eventually be possible to explain the physical and mathematical questions. His course was devoted to a review of theory, together with some discussion of its impact on practice.

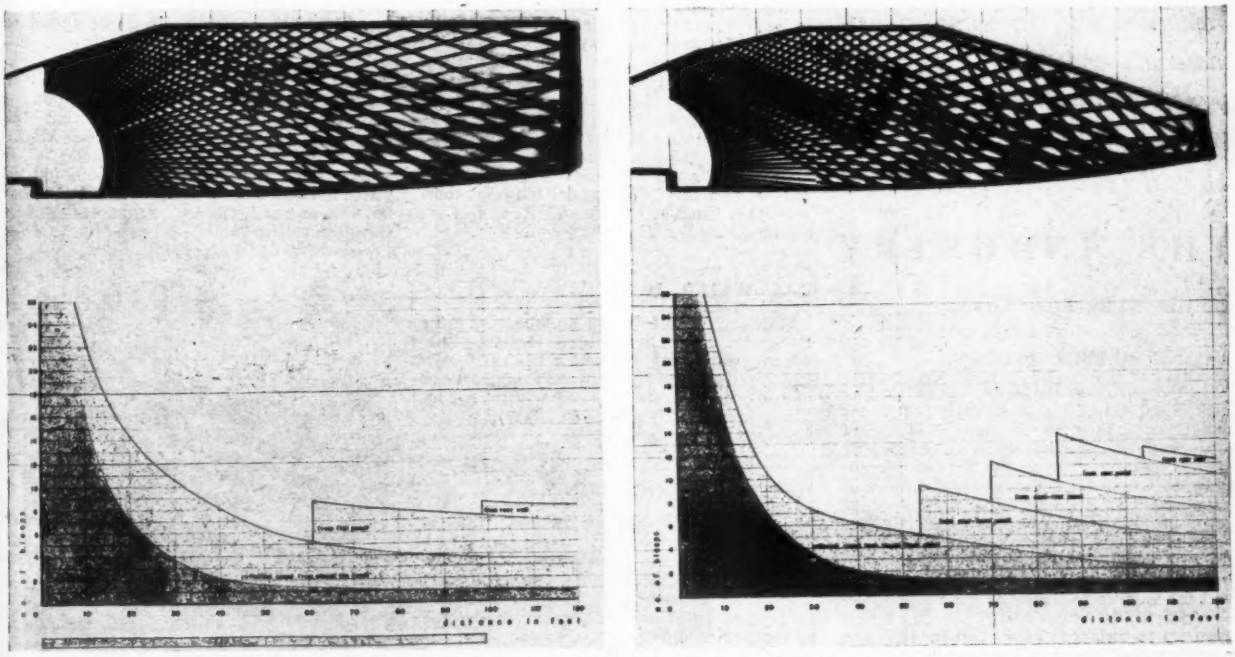
The "liveness concept" came in for considerable discussion. This has been advanced as a key criterion of design but is much argued about. It is an attempt to describe the right relation of direct to reverberant sound, together with certain kinds of fluctuations in the latter. Dr. Bolt was obviously open-minded about the validity of present attempts to define it, but there can hardly be much doubt that something like this must eventually emerge as a criterion. Everyone knows that the best seats at concerts generally are neither so near the orchestra as to get predominantly direct sound, or so far away that all is merged. The right balance between the two is one aspect of the theoretical argument, and to have as many seats as possible with the right balance may eventually be a specific aim in practice.

Diffusion was another much-discussed subject. Quite a lot of diffusion should take place in a room so that the sound energy will be spread well throughout; also diffusion seems to assist clarity and intelligibility, probably by ensuring smooth decay. Raggedness is known to be undesirable. Too much diffusion is possible, but appears improbable unless deliberate measures are taken, as sometimes happens in radio studios. Too little diffusion is not only possible but likely in modern design, both in small and large rooms because of big, flat planes. Probably we should credit baroque shapes and ornament in theatres with much more practical uses than they appear to have at first glance.

Some of the sound energy in a room finds its way into jelly-like oscillations between opposed surfaces, the frequencies being related to the dimensions of the room. These are referred to as the normal modes of vibration, and in small rooms they are prominent at frequencies near those of the male voice; thus the popularity of bathrooms for amateur singing. If the modes are widely spaced, as they are in small rooms at low frequencies, the acoustics will often be thought unpleasant. Special treatment is necessary to minimise the effects, and the designers of small radio studios have had to give much attention to the matter. In large rooms the modes are closely spaced and do not usually create difficulties.

Pulse studies are often referred to, these days, in the literature on acoustics. They were initiated in this country and Dr. Bolt believes them to be useful. They consist in sending out little blips of sound and observing, at various seat positions, the arrival of the blip and the multitude of little reflections that follow it. Analysis of these has been shown to reveal defects such as near-echoes, which are difficult to anticipate from drawings. Their value for discovering defects in existing halls is obvious, but Dr. Bolt believes they can be very useful in large-scale models to spot defects in advance of construction. This, of course, is not an aspect of wave theory so much as an extension of the orthodox geometry.

Remarks about reverberation time brought everyone on to more familiar ground, though by no means cut and dried. Before the war most people were content to aim at a so-called optimum at one "middle" frequency—500 c.p.s. Now it is always the case that reverberation is computed for a low frequency (about 100 c.p.s.) and a high (4,000 c.p.s.) also, because the right balance of the three is known to be important, or even sometimes vital. Such arguments as these are focused chiefly on the length of low frequency reverberation. It is known that it must not be too long—not more, at most than 20-50 per cent. more than the time at middle pitch—but it is also known that conditions reputed to be very good have been obtained when low frequency rever-



These two figures illustrate a series of acoustical studies with rays of light. The rays reaching the floor are counted as an approximate guide to intensity levels and the curves beneath show the results. The dark area of the graph shows direct sound and the lighter areas the contributions of reflections from various surfaces. From this it may be seen that the figure on the left (a) has a considerably smaller area in the more distant seat positions than the one on the right representing reflections (b). (a) has a substantial echo, shown by the strip at the bottom of the diagram, and (b) has none. (b) was the last and most successful in studies carried out in the acoustics course at Massachusetts Institute of Technology by Lyons, Streissguth, Tammings and Young.

beration was no longer than at mid-pitch. Perhaps exactness is not vital between these limits; we shall see.

In this connection Dr. Bolt mentioned a temporary concert hall (Arch Forum Sept. 49, p. 88) which had apparently proved exceptionally good. This consisted essentially of a heavy tent, special plywood screens over and behind the orchestra, and ramped seating for the audience. He was the consultant, but explained that within the time and budget allowed he had not expected to get more than the bare essentials. Its reputed quality had been somewhat of a surprise, especially as the low frequency reverberation must be abnormally low. It is perhaps significant that the "temporary" De Montfort Hall at Leicester, built before the first world war, which is not much more than a robust tent (being lined with wood, glass, or plaster on lath) also has a relatively short low frequency reverberation and is reputed to be very pleasant.

Naturally enough low frequency absorption has become important in practice in modern construction, because concrete and brick buildings have excessive reverberation in these regions. This has stimulated the production of the various kinds of panel and other resonator absorbents which are specially useful in taking up low frequency energy, and has directed attention to a branch of theory which previously was very weak. Dr. Bolt had something to say about these, but they need not be reviewed here for architects, because they are extensively described in a recent publication by the Physical Society's Acoustics Group.*

* 1947 Symposium on Resonant Absorbers, published by the Physical Society, 1, Lowther Gardens, Prince Consort Road, S.W.7. Price 7s. 6d.

Towards the end of his course Dr. Bolt described a number of essentially architectural studies and some interesting architectural results of their application. The old ray diagram, familiar to readers of Bagenal and Wood, was developed in a new way using simple profiles in thin sheet metal, laid on photographic paper, with the rays sent out as little beams of light. The reflections of these are recorded on the photographic paper, and by simple counting it is possible to see what relative distribution of energy from first reflections is obtained over the floor of a hall. In this way one of the guides to a good shape of ceiling is obtained, and several rooms with ceilings based on such studies were shown. Architecturally they were fascinating. The idea is particularly useful for flat-floored halls, where hearing is usually bad at the back, and for rooms where speakers may speak from any point.

A severely practical point without theoretical abstractions is the question of background noise. We usually live in a high sound level composed of an infinitude of individual noises which cannot be heard separately. Thus the difference between the stillness of night and day, or city and country. The noise level in cities has risen 100-fold in 50 years.

In a room where intelligibility of speech or music is at stake this background level plays a far bigger part in acoustical success than has ever been assumed, and in quiet passages especially it makes all the difference between strain and comfort in trying to hear, even though you are often not conscious of the background. In the "music tent" (which was described above) Dr. Bolt's protective measure was to move the parking ground half-a-mile away. In the new Concert Hall on the South Bank, as we all know, there is to be a double wall.

Dr. Bolt mentioned other cases. Thus in Britain and America there is simultaneous recognition of sound insulation as an important aid to good acoustics. No doubt we will hear of protective measures in all the new halls in due course.

From the theoretical standpoint the course has provided investigators here with a clear picture of what has been done in America in the use of wave theory, and almost certainly we can look forward now to some similar work in Britain. Much depends on University staffs in physics, and architectural schools in universities could help things along by insisting on proper attention to modern acoustics in the courses offered. This, however, can provide only the means of study and explanation. As Dr. Bolt said time and time again, the harder and less advanced side is to know what to study and explain—that is, the subjective side where we must ask and answer the vital question "what is quality" in every way we can. Here is where practising architects play an essential part. Good traditions and reliable practice cannot grow up unless contemporary halls incorporate in detail the views of competent advisers, so that modern science can be effectively tested.

Dr. Bolt gave six lectures and held three colloquia, one of which took place at the Architectural Association and was for the discussion of architectural problems.

The Course was arranged by the Physical Society Acoustics Group. It was announced at the end of the meetings that it was hoped to arrange for the publication of the lectures in the form of a book. Contributions towards the cost of Dr. Bolt's visit were acknowledged from Mr. Joseph Emberton, F.R.I.B.A., the London County Council, EMI Ltd., The BBC, and The DSIR.

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

LAYING RUBBER FLOORS

The current issue of the journal of the Fire Protection Association calls attention to the danger of explosions during the laying of any type of flooring which is fixed with rubber solution. During the last few months it appears that quite a number of explosions have occurred, almost always because some form of naked light or fire existed in the room concerned or in a room next door. All the solvents used for making rubber solution are inflammable at normal temperatures and the vapour produced as the solution becomes tacky is drawn to any source of heat even up to distances of 40 feet or so. The resultant explosion can be quite severe, and can be caused by the relatively low temperature of an electric fire as well as by a flame. The precautions to be taken are obvious, but the Fire Protection Association quotes one case in which an explosion was caused by the pilot light of a multi-point gas water heater, a source which might quite easily be overlooked.

ELECTRIC HEATERS

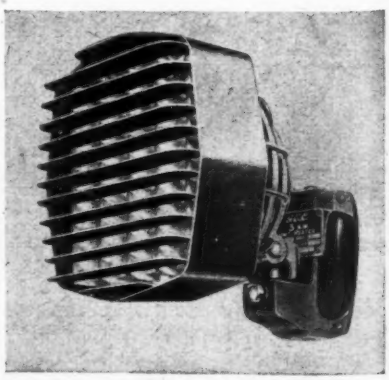
Messrs. E. K. Cole announce a reduction of approximately 12½ per cent. in the price of their Thermotube tubular heaters, and at the same time the 2-kW. inset Thermovent (Type B.2) has also been reduced in price. A new metal cased Thermovent Type A has also been announced. This can be used as a portable heater or for wall fixing. The photograph gives a reasonable idea of its appearance; standard finish is cream stove enamel and the 2-kW. model (without thermostat) is listed at £8 12s. (*E. K. Cole Ltd., Southend-on-Sea, Essex.*)

GAS WATER HEATERS

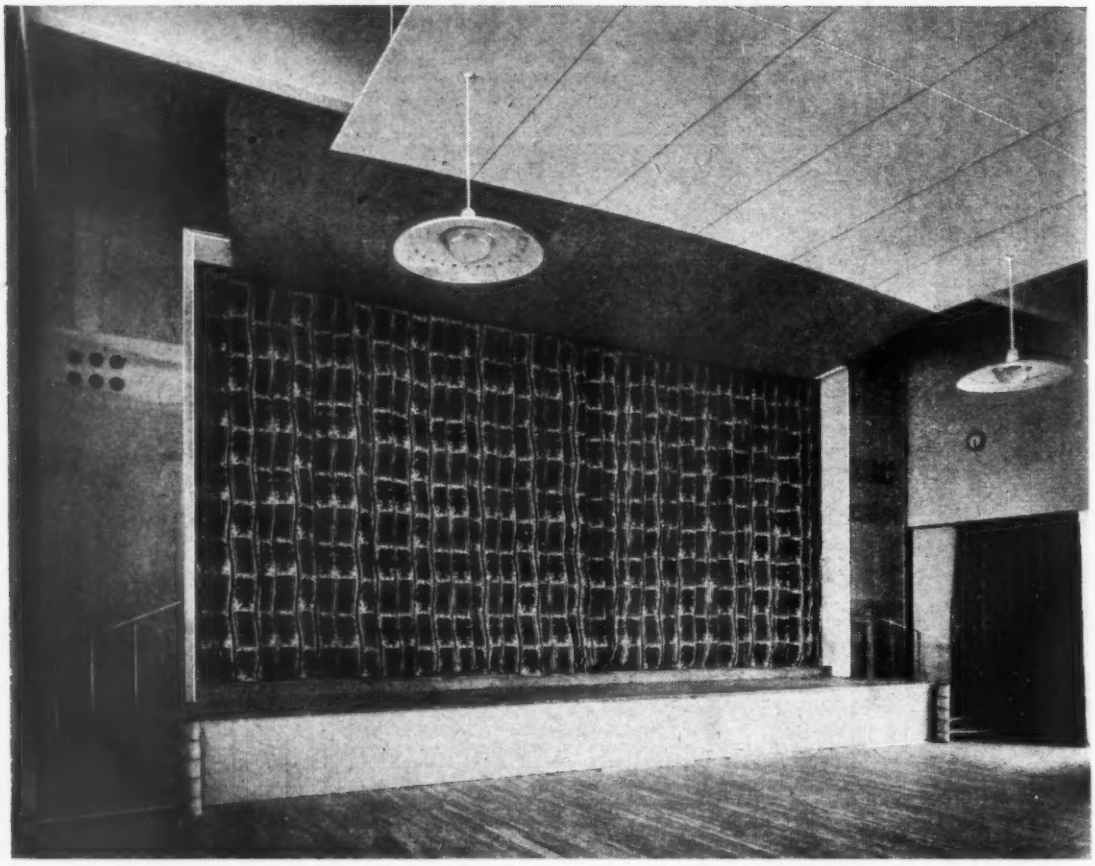
A price reduction is also announced by the Potterton Gas Division of De La Rue, whose multi-point gas water heater is now £27 18s. 7d., including purchase tax, instead of £30 8s. (*Thomas De La Rue and Co. Ltd. (Potterton Gas Division), 84, Regent Street, London, W.1.*)

HEAT RESISTING PAINT

Aluminium paint has always had a reasonably high degree of heat resistance, but a recently introduced type (Atlas No. 2845) is claimed to withstand a temperature of 600° C. without disruption of the film and with no loss of adhesion. It appears to involve no particular difficulties in use, but special care should be taken to remove grease, rust or old paint. For choice this paint should be applied to cold or moderately warm surfaces, and for the best results the temperature should not be raised for about half an hour, after which the paint will be dry. Above 300° C. a small amount of smoke is given off, but this only occurs during the first heating, and it should be noted that this paint does not reach its maximum durability until it has been subjected to heat. A paint to resist high temperatures of this kind is not normally necessary in building work except perhaps on boilers and their flues, but it seems that it would be of considerable value for factory work, and as it is used by motor-car manufacturers for painting exhaust manifolds, it may be assumed that the manufacturers' claim that it resists 600° C. is borne out in practice. Above 600° C. it appears that there is a certain amount of discoloration, but no obvious breakdown of the film, and at 1,000° C. "a thin, hard adherent glaze still remained on the panel." (*Atlas Preservative Co. Ltd., Erith, Kent.*)



The GEC 3-kW. industrial unit heater for small workrooms, canteens and offices.



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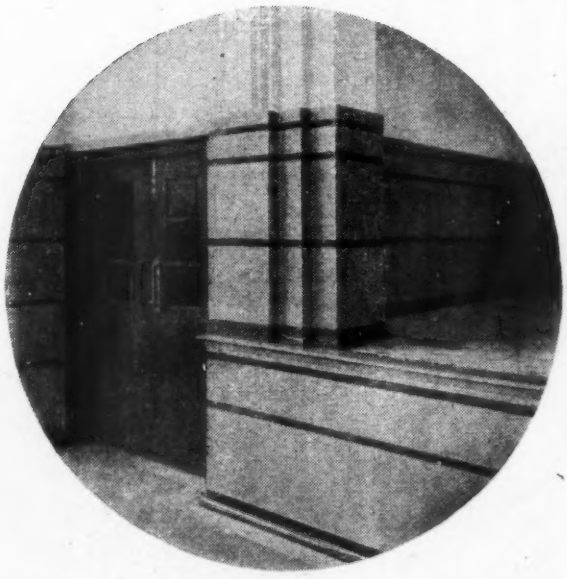

Top: STEVENAGE SCHOOL ASSEMBLY HALL
The acoustic flap is 30 feet long by 10 feet wide, and specially shaped to Architect's details, for sound control and direction to suit the building. The inner (movable) flap is 30 feet long by 3 feet wide similarly made.
Bottom: ASSEMBLY HALL, ENFIELD SCHOOL

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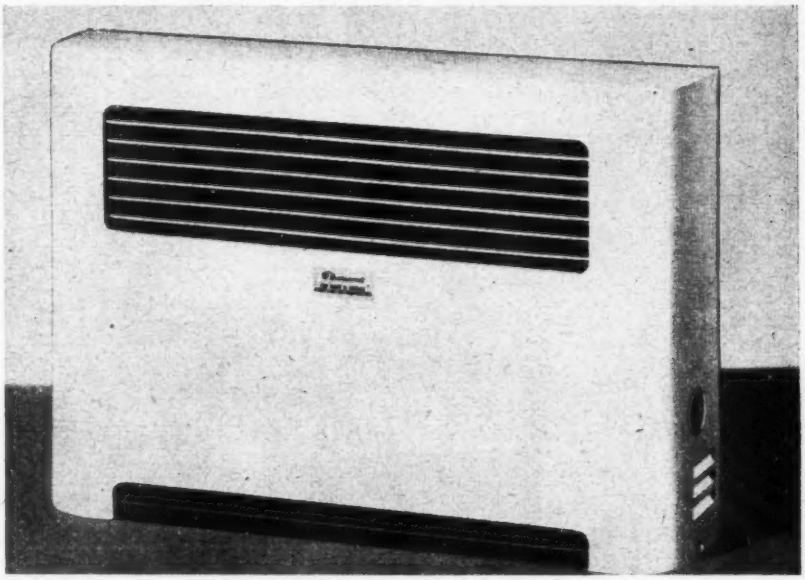
UNIT HEATERS

The GEC 3-kW. industrial unit heater is primarily designed for the heating of spaces such as offices, small workrooms, and small canteens. In addition, however, it can easily be incorporated in small drying cabinets and also used for certain drying processes.

Easily installed (the fixing bracket is an integral part of the unit), the 3-kW. unit is strongly constructed and quiet in operation. The open-coil spiral heater element, which operates at black heat, is protected against overheating by a thermal cut-out, which can be easily reset. To help ventilation during the summer, the element can be cut out, leaving only the fan operating. For this purpose a specially designed, neat and unobtrusive switch and fuse control unit can be supplied. Direct thermostatic control (without contactor) is strongly recommended. The fan motor itself is totally enclosed, fully protected from damp and dust, and is fitted with noiseless self-oiling and self-aligning bearings. The motor is suitable for running in normal ambient temperatures not exceeding 105° F.

Alterations in the direction of the flow of air from the unit can be made as required, the range of adjustment provided being 120° in the horizontal plane and 45° (below centre) in the vertical plane.

A suitable mounting height is 6 ft. from the floor to the centre of the unit heater, but satisfactory results can be obtained with a lower mounting height. Price is £12. (*The General Electric Co. Ltd., Magnet House, Kingsway, London, W.C.*2.)



A metal cased heater by E. K. Cole Ltd., for floor or wall fixing or for portable use.

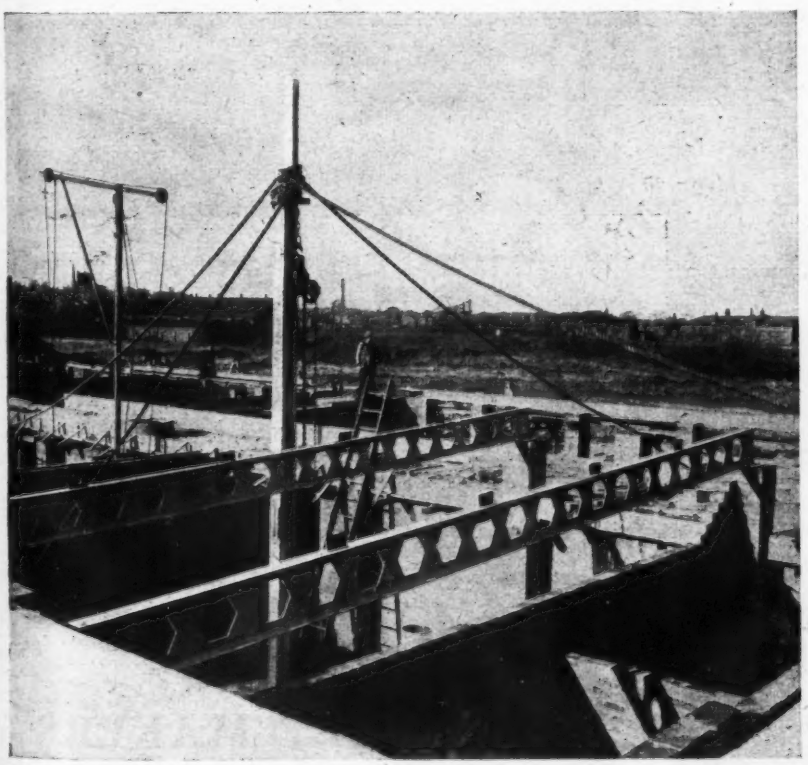
POWER FROM THE WIND

For many years it has been customary in the remoter districts of America, and to a lesser extent in this country, to use small wind-driven dynamos to provide lighting current *via* accumulators, and one generator of this type was shown at this year's BIF and described in these notes at the time. So far as current for heating or cooking is concerned the capital cost of any practical installation would be too high, particularly as it might well involve a Diesel stand-by.

It seems probable, however, that large scale units feeding into the grid might be able to show a very considerable coal economy, and the Wind Power Generation Committee of the Electrical and Research Association has been considering this problem since the beginning of last year. There is very little data to go upon: a 1,250 kW. unit sponsored by an American enthusiast ran for some time on a 2,000 ft. Vermont hill engagingly named Grandpa's Knob; the Russians had a 100 kW. unit which appears to have run successfully for 10 years at Yalta until destroyed during the war, while the Danes have generators of from 20 to 70 kW. capacity which proved very useful as war time fuel savers, and which were used in conjunction with diesel driven units.

American opinion puts the optimum size of wind-driven generators somewhere between 1,000 and 2,000 kW. In this country the investigating committee has carried out wind velocity surveys down the west coast from Orkney to Cornwall, particularly on hilltop sites where the velocity is naturally greater, and may also be increased by the contour of the land, fairly steep ridges running across the direction of the prevailing wind giving the greatest increase. This increase in wind speed is of value, since it must be remembered that the power developed is proportional to the cube of the wind speed.

Installation costs of large generators have been estimated at about £50 per kilowatt, and on suitable sites should produce annually about 3,500 to 4,500 kW./hours per kilowatt installed, the total cost of generation probably working out at the economically reasonable figure of about ½d. a unit. As a preliminary step, a pilot 100 kW. windmill is to be built for the North of Scotland Hydro-Electric Board by John Brown & Co., and this will be set up on Costa Head in the Orkneys. Estimates by Mr. T. G. N. Haldane, a Past-President of the IEE, suggest that a total installed capacity of 1,000,000 kW. of wind generators show an annual saving of 1½ to 2 million tons of coal and would not occupy land valuable for other purposes. The size of the units would be considerable, Mr. Haldane suggesting a 150 to 200 ft. tower and a 200 ft. diameter two or three-bladed propeller for a 2,000 kW. unit. Something in fact for the CPRE to protest about now, and perhaps appeal for the preservation of in a hundred years' time.



A beam similar to that manufactured by Appleby-Frodingham and illustrated in October 20 (page 443) has been designed by engineers in the Lancashire County Council architects' department. It is being used in school construction, as above, together with a development of a taper beam which is constructed by cutting diagonally the web of a 10 in. × 4½ in. RSJ, reversing the two halves, and welding them together.

Grand Hotel, Middlesbrough. *Architects : Kitchen & Co., F.R.I.B.A.*

Angel Hotel, Cardiff. *Architect : Lennox Robinson, F.R.I.B.A.*

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THE EUROPEAN HOUSING PROBLEM

by Ian Bowen

A housing sub-committee of the United Nations' Economic Commission for Europe has issued a "preliminary review" of the European Housing Problem. Chairman of the sub-committee was Britain's Robert Fitzmaurice, well known in this country for his contributions to the progress of building science.

EUROPE'S HOUSING NEEDS

Mr. Fitzmaurice's sub-committee devotes half its report to a brilliant and brief statistical summary of the housing needs of "Europe," that is of seventeen European countries, and their consequent requirements of building materials. The report then describes the shortage to which these requirements give rise. A chapter is given to the subject of the "rational utilization" of scarce materials; there is an interesting chapter on the development of housing in the Soviet Union and finally one on international collaboration on housing matters.

The statistical section of the work may be called brilliant in view of the skill with which, in a comparatively short time, the various *rapporteurs* have assembled and digested the salient statistical material of seventeen greatly diverse countries, and put this material into a readily assimilable form.

The seventeen European countries (which excluded Spain, Portugal, Yugoslavia and the USSR) suffered a loss of 2¼ million houses destroyed during the war, and a further 6¼ million were partially destroyed or damaged. This represented the equivalent of a loss of about 7·75% of the total pre-war number of houses. In the two and a half years to the end of 1947 some of this loss was made good, equivalent, in fact, to about one year's pre-war housing programme. But housing needs do not arise only as a consequence of the war. It is essential to relieve overcrowding and to replace unhealthy or unsafe dwellings.

Standards vary from country to country. If Europe were to aim merely at regaining the standards of 1939 it would need three million new dwellings. If overcrowding is to be brought down to the British 1936 standard over eleven million dwellings would be required in addition to those needed to replace war destruction. The sub-committee took 14½ million houses as the basis for working out the "necessary annual programme," which would meet the defined needs in some 22 years (in about 6 or 7 years in the Scandinavian countries and Great Britain). The lower target mentioned can be translated into a more "probable" annual programme; even this works out at a level of housing activity 55% (for Europe as a whole) above 1939 level. Thus if the real housing needs of Europe are to be satisfied, on even a very moderate standard, the scale of the problem is formidable, calling for the organization and modernization of the building industry. Unless this problem is solved, bad housing with its consequent deteriorating effect upon social life will remain for many decades.

MATERIALS REQUIRED

The materials examined in detail in this report are cement, bricks, steel, timber and glass. The shortages vary from one country to another, and the possibility of substitution of one material for another is thereby limited, as "the substitutes themselves become scarce or expensive."

Shortages of materials have not been observed for long periods. But this, as the report points out, is misleading, since "the programmes appear, in fact, to have been adjusted in advance to the materials expected to be available." This has put the actual programmes well below either the "probable" or, *a fortiori*, the "necessary" annual level. If the materials needed to improve European housing conditions are totted up, they come to figures far above any now actually being planned.

One somewhat disquieting reason for this is that "the pattern of usage of materials in house construction is not markedly different from what it was before the war. In other words the methods of building being employed are basically the same."

The report thus brings up once again the fact that there will never be a housing programme large enough to meet present needs unless a substantial proportion of the building industry adopts new techniques.

THE EXPERIENCE OF THE USSR

The report's chapter on the USSR appears to be based on reliable sources, but does not contain sufficiently detailed facts on progress to make any critical judgments possible. The chapter does however sketch in a somewhat different approach to the housing problem from that which is followed in some Western European countries.

To begin with, if the facts given here are correct, it appears that, as far as the rural areas are concerned, building is largely left in the hands of owner-occupiers, who are assisted financially by the State. Thus, though the urban plans for increased housing space are in the hands of the State or the municipalities (local Soviets), some 14½% or so of post-war housing is done by private enterprise. In this sphere, Soviet planning appears to be flexible and untrammelled by doctrinaire preoccupations.

Next, the Soviet attitude to the problem of material is far more logical and vigorous than that now prevalent in the West. A programme is decided, and the necessary targets for the manufacturers of materials are then laid down. By 1950 cement output is to increase to 10½ million tons, sawed timber to 39 million cubic metres and so forth.

Performance in 1946 was well below target, but by the end of 1948 some 60% of the house building programme (for the years 1946-50 had been completed.

Finally, the Soviet has adopted a large prefabrication programme, and is pressing on with it beyond the experimental and trial-run stage to the point at which economies of large-scale production begin to arrive. The Soviet Union has far more experience of planned production than any other country. It would be interesting to have more details of their difficulties as well as of their successes. But even the facts given in this report show that there is a need for some serious thinking on the adequacy of Western European planning.

CONCLUSION OF THE REPORT

It is perfectly plain from the statistics given in this report that "European resources are inadequate to carry out housing programmes on a scale which corresponds to real needs." This raises the ultimate problem, "of the state of the building industry and of the measures which can be taken to increase the efficiency of building operations" The game is still open; in fact it has only just begun. The organizing genius who can successfully tackle this problem will perhaps never be born; it is a task for a group of men, backed by politicians and industrial leaders who are firmly convinced of the need for new methods. What this report finally explodes is the validity of pure traditionalism as a sufficient remedy for Europe's housing problem. Nor should the social consequences of that problem be forgotten; if the Soviet Union, despite its great economic handicaps, should have more success than other nations—or at least succeed relatively to its preceding conditions—it will have gained a peaceful victory laudable in itself but dangerous to the survival of other forms of society.

THE PROGRAMME FOR THE UNITED KINGDOM

It may be helpful to consider the report's methods of argument in terms of the United Kingdom's own problem.

The assumption is that houses are built at twice the pre-war rate; for the United Kingdom this would mean an output of 711,000 houses per annum. The second assumption, that housing needs should be met in five years, would raise this to about 900,000 houses.

These figures have only to be stated for the impossibility of any early solution of the housing problem to become apparent. No "probable" figures are given for the United Kingdom, but unless a severe cut is now enforced, they might continue to run at not less than 200,000 per annum until 1952. In 1948 some 25% of the programme consisted of non-traditional (or as they are here called, non-conventional) units.

The only "shortage" reported for the United Kingdom was of builders' light castings, the reason for this being stated as "lack of skilled labour" and the remedy proposed as "mechanization of foundries."

Nothing yet has been reported from the United Kingdom to the effect that all the experimentation in non-traditional methods of construction has been, or is being, pushed to the point of mass production methods. The sub-committee's recommendation on this point was embodied some time ago in a resolution that "in order to arrive progressively at the desired result each country should take appropriate steps to create favourable conditions for the establishment and development of a section of the building industry which will specialize in mass production methods of house construction."

This resolution should not be relegated to the waste paper basket; it is just as necessary that it should be implemented in this country, which has successfully pioneered so many new building devices, as in any other country of Western Europe.

Announcements

Peglers, Ltd., Belmont Works, Doncaster, gave a private view of their film "More Than Meets the Eye," showing the various processes in the manufacture of Prestex taps, on October 18. The film may be borrowed free of charge on application to the firm at Doncaster, or at Prestex House, Marshalsea Road, S.E.1.

Mr. T. D. Hall, DIP.ARCH., A.R.I.B.A., an assistant architect to the County Borough of Tynemouth, is taking up an appointment shortly as assistant architect with Professor J. S. Allan, B.ARCH., A.R.I.B.A., M.T.P.I. Mr. William Hyslop, also an assistant architect in the department, is soon to take an appointment as assistant architect with Seaham U.D.C.

Mr. Edgar Bunce, F.R.I.B.A., of 25, Sea Road, Bexhill, has taken into partnership Mr. Lionel S. Rider, A.R.I.B.A. The practice will be carried on under the name Bunce & Rider.

The Peter Dunham Group, chartered architects, have taken into partnership, as a member of the group, Mr. M. C. Harrison, A.R.I.B.A.

Buildings Illustrated

Housing for Sunbury-on-Thames UDC, Shepperton (Site 7). (Pages 486-487.) Architects: Basil Spence & Partners. General Contractors; C. & S. Telling, Drinkwater & Partners, Gee & Co. (Contractors) Ltd., Henry Day (Merton) Ltd., John Farmer (Builders), Sunbury, Co-Partners Building Operatives Ltd. Sub-Contractors: Aluminium roofs, Hugh Twaddle & Son Ltd.; aluminium balconies, canopies and trellises, Charles Henshaw & Sons Ltd.; exterior paint, Smith & Walton Ltd.; interior paint, Brent Manufacturing Co. Ltd.; joinery and kitchen fitments, Jennings & Meacock; metal windows, Crittall Manufacturing Co. Ltd.; precast concrete surrounds, Conallcrete Ltd.; hot and cold water services, Dent & Hellyer Sanitation Ltd.; electrical work, T. Adams & Co. Ltd.; sanitary fittings, The Norland Services (Builders' Merchants) Ltd. (Fred Hodge Ltd. branch); ironmongery and fireplaces, H. & C. Davies & Co. Ltd.; hot water heaters, Ascot Gas Water Heaters; fires, boilers and cylinders, Ideal Boilers and Radiators Ltd.; fencing, Fencing (Shepperton) Ltd.

Hop Laboratories for Wye College, Wye, Kent. (Pages 491-492.) Architects: Richard Sheppard & Partners, F./A.A.R.I.B.A. General Contractors: Messrs. G. E. Wallis & Sons Ltd. Sub-contractors: Excavation, foundations, dampcourses, gas fitting, electric wiring, plumbing, casements, joinery, furniture, office fittings, water supply, Messrs. G. E. Wallis & Sons Ltd.; concrete blocks, fireproof construction, fireproof floors, Broadmead Products Ltd.; bricks, Messrs. A. H. Herbert & Co. Ltd.; special roofings, Briggs; glass, Aygee Ltd.; patent flooring, Messrs. Val de Travers Ltd.; central heating, Messrs. Thames Bank Iron Co.; gas fixtures, laboratory equipment, Messrs. Gallenkamp Ltd.; electric light fixtures, Standard; electric kiln equipment, Messrs. GEC Ltd.; sanitary fittings, Messrs. E. Vaughan Ltd.; door and window furniture, Messrs. N. F. Ramsay & Co. Ltd.

Dairy Buildings for Wye College, Wye, Kent. (Pages 492-493.) Architects: Richard Sheppard & Partners, F.A./A.R.I.B.A. General Contractors: Messrs. Leppers Ltd. Sub-contractors: excavation, dampcourses, partitions, plumbing, plaster, metalwork, joinery, Messrs. Leppers; reinforced concrete, Stent Precast Concrete Co.; bricks, Ashford Naccolt Brick Co.; special roofings, Messrs. Turners Asbestos Co.; glass, Pilkington Bros.; electric wiring, electric light fixtures, tubular fencing and gates, Wye College Maintenance Staff; door furniture, calf pens and cow yolks, Messrs. King & Co., Hitchin; casements, window furniture, Messrs. Young & Co.; sliding door gear, Messrs. Hendersons; dairy equipment, Messrs. Gascoignes, Brighton; weighbridge, W. & T. Avery Ltd.; water supply, Mid-Kent Water Co.; external colourwashed brickwork, internal distempering, Messrs. Selotone & Snowcem.

Showrooms in Regent Street. (Pages 494-496.) For Berne Silk Manufacturing Company. Architect: R. Jelinek-Karl, L.R.I.B.A. Quantity Surveyors: Robinson and Roods. General Contractor: J. Kinninmont & Sons Ltd. Sub-contractors: Concrete blocks and Holcon cellular breeze partitions, Broads Co. Ltd.; partitions, Holoplast Co. Ltd.; glass, Pilkingtons Co. Ltd.; woodblock flooring, Horsley-Smith Co. Ltd.; central heating, A. E. Rasey Ltd.; electric fires, Bratt Colbran Ltd.; electric wiring, heating, and light fittings, Troughton & Young Ltd.; ventilation plant, Vent Axia Fans; door furniture, A. J. Binns Ltd.; internal telephones, Telepone Rentals; sprinkler installation, Mather & Platt Ltd.; joinery and built-in furniture, P. H. Barker & Sons Ltd. (Hitchin); furniture, Storeys Ltd.; office fittings, Sankey-Sheldon Ltd.; built-in furniture in entrance hall, J. Kinninmont & Sons Ltd.; signs, PDR Signs Ltd.

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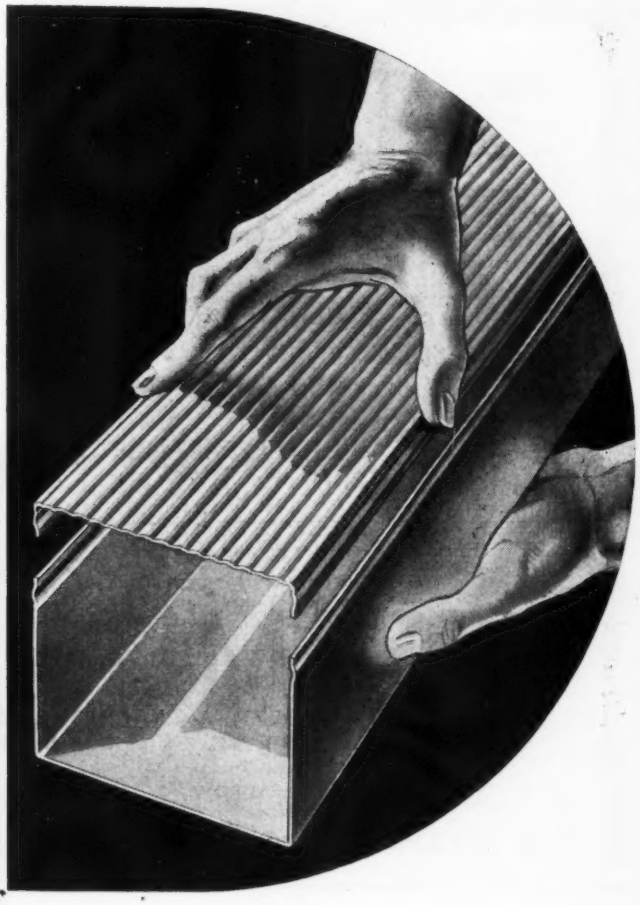

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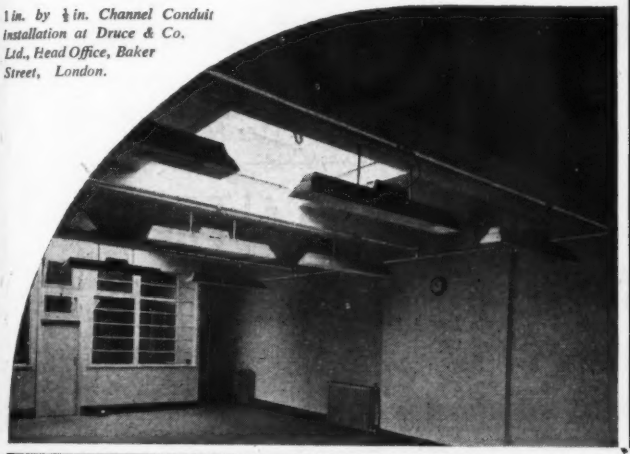

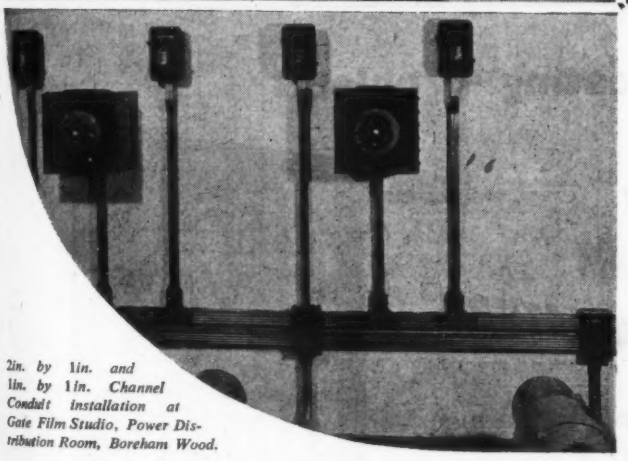

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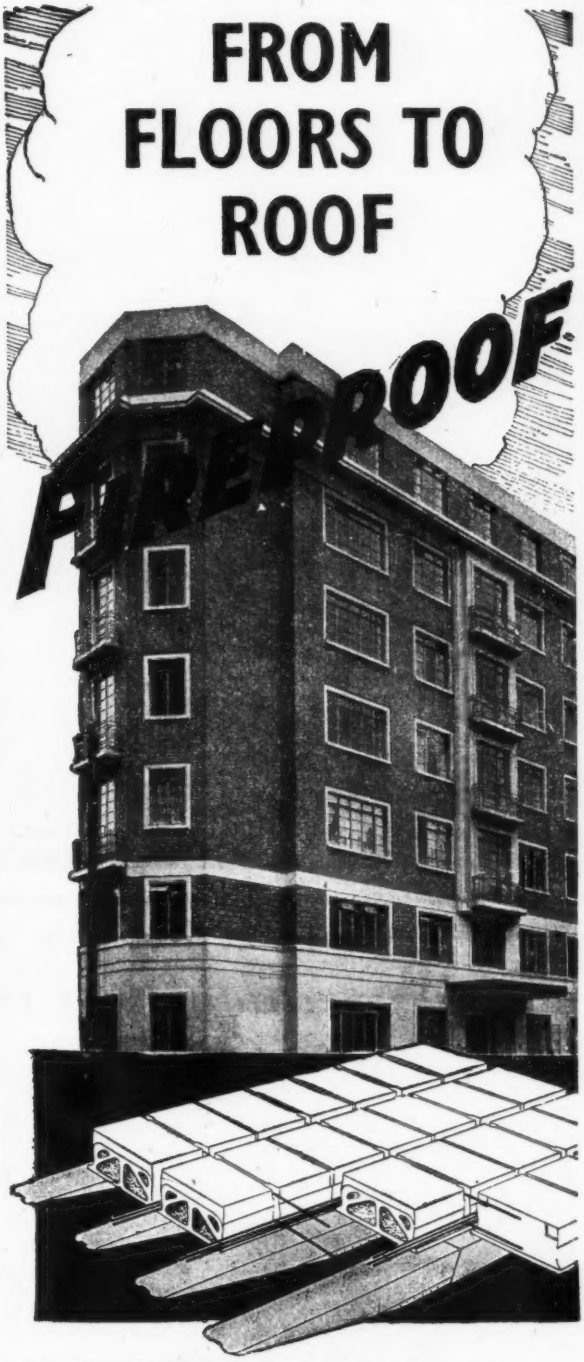

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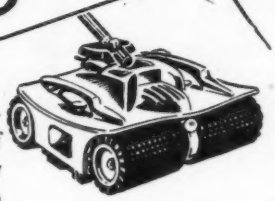

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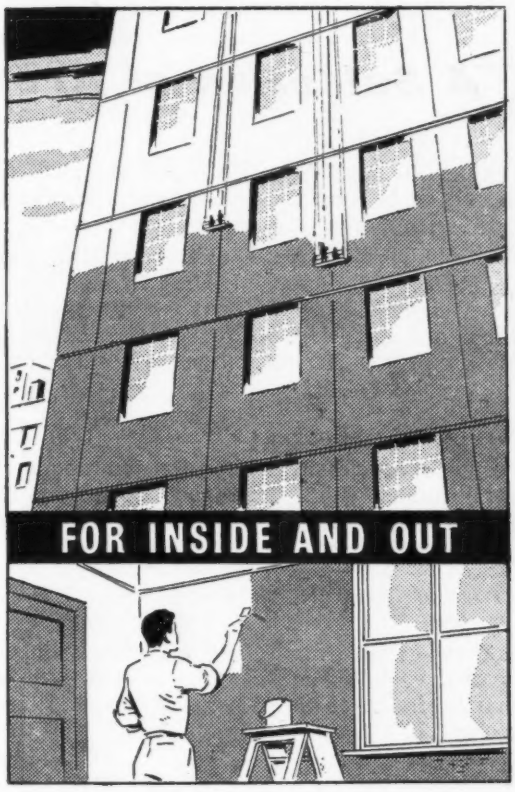

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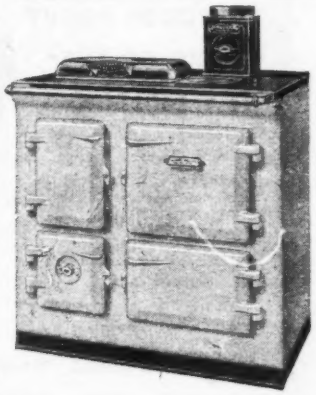

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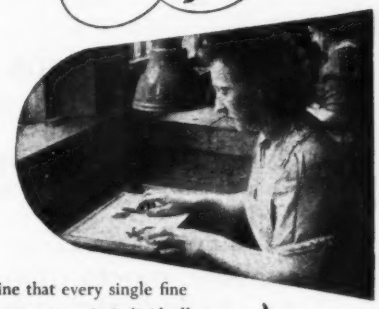

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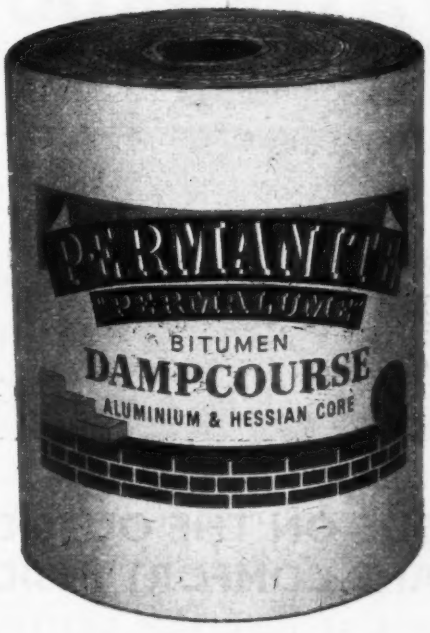

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Applications are invited for unestablished positions of (i) ARCHITECT, Grade III (salaries up to £700 a year) and (ii) ARCHITECTURAL ASSISTANTS (salaries up to £580 a year), in the Housing and Valuation Department. Commencing salaries in either grade will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Acts, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

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

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope required, and quote Ref. G.R.3). Canvassing disqualifies. (2269) 1046

MINISTRY OF WORKS.

There are vacancies in the Chief Architect's Division for ARCHITECTURAL ASSISTANTS, with recognized training and fair experience. Successful candidates will be employed in London and elsewhere on a wide variety of Public Buildings, including Atomic Energy and other Research Establishments, Telephone Exchanges, and Housing. Similar vacancies also exist for ASSISTANTS, with specialized knowledge and experience in stonemasonry, particularly in detailing and jointing of ashlar and carved stonework.

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

Although these are not established posts, some of them have long-term possibilities, and competitions are held periodically to fill established vacancies.

Apply in writing, stating age, nationality, full details of experience, and locality preferred, to Chief Architect, W.C.10/T., Ministry of Works, Abell House, London, S.W.1. 2065

ESSEX COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.

The Essex County Council invite applications for the appointment, on the established staff of the County Planning Department, of AREA PLANNING OFFICER in the North-West Essex Area Office at Braintree, at a salary not exceeding the maximum for Grade X, A.P.T.D. (£1,000 a year).

The salary will be fixed in accordance with the qualifications and experience of the applicant appointed, but will not exceed the maximum salary for the post as stated above.

Candidates must be Corporate Members of the Town Planning Institute and preferably should possess an additional recognised professional qualification. They should have an up-to-date knowledge of town and country planning practice and be experienced in the administration of an office and the handling of staff. They should also have had considerable experience with a local planning authority.

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

The Scheme of Conditions of Service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services, as from time to time amended and as adopted by the County Council, is at present applicable to persons appointed on the established staff.

Canvassing, directly or indirectly, will disqualify.

Application for this post must be made on a form to be obtained from the County Planning Adviser, Broomfield Place, Broomfield, Chelmsford, to whom it should be returned as soon as possible.

JOHN E. LIGHTBURN,
Clerk of the County Council.

County Hall,
Chelmsford.
20th October, 1949. 2505

NATIONAL COAL BOARD—EAST MIDLANDS DIVISION.

Applications are invited for the following permanent and superannuated posts in the DIVISIONAL ARCHITECT'S DEPARTMENT, in Nottingham.

(*a*) SENIOR ARCHITECT. Salary £850 by £35 to £1,150 per annum.

Applicants should be Members of the Royal Institute of British Architects, with extensive administrative and supervisory experience, and capable of taking charge of a section of Architectural work.

(*b*) ARCHITECTS, GRADE I. Salary £700 by £25 to £875 per annum.

Applicants should be Members of the Royal Institute of British Architects and have had considerable experience in the preparation of Sketch Plans, Working Drawings and Specifications, and large works of an Industrial and Welfare nature.

(*c*) QUANTITY SURVEYOR, GRADE I. Salary £700 by £25 to £875 per annum.

Applicants should preferably be Members of the R.I.C.S. and be experienced in the preparation of Bills of Quantities for all trades, and for engineering work, detailed approximate estimates, settlement of final accounts, make valuations and measurements for interim certificates, prepare specifications, etc., and have had considerable experience in a Quantity Surveyor's Office.

(*d*) ARCHITECTS, GRADE II. Salary £450 by £25 to £700 per annum.

Applicants should be Members of the R.I.B.A. and have had considerable experience in the preparation of Sketch Plans, Working Drawings and Specifications.

(*e*) QUANTITY SURVEYOR, GRADE II. Salary £450 by £25 to £700 per annum.

Applicants should preferably be Members of the R.I.C.S., with experience in the preparation of Bills of Quantities, detailed approximate Estimates, and preparation of Specifications.

(*f*) ARCHITECTURAL ASSISTANTS, GRADE I. Salary £410 by £20 to £550 per annum.

Applicants should have passed or be working for Inter. R.I.B.A. examination, and have had at least 5 years' office experience, with considerable experience of Sketch Plans and Working Drawings.

(*g*) ARCHITECTURAL ASSISTANTS, GRADE II. Salary £300 by £20 to £440 per annum.

Applicants should have passed, or be working for, the Inter. Examination R.I.B.A., and be able to assist in the preparation of Sketch Plans and Working Drawings.

(*h*) CLERK OF WORKS. Provisional salary scale £400 per annum upwards, according to qualifications and experience.

(*i*) WORKS CLERICAL OFFICER. Salary £300 by £15 to £410 per annum.

Candidates should have general clerical experience, with knowledge of building contracts.

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

Applications, stating age, education, qualifications, experience, present appointment and salary, should be submitted within 14 days of publication to the Secretary, N.C.B., East Midlands Division, Sherwood Lodge, Arnold, Notts.

Applicants should state clearly the appointment for which application is made, both in the letter and on the envelope. 2423

CITY OF BATH.
CITY ENGINEER'S DEPARTMENT.
ARCHITECTURAL SECTION.

Applications are invited for the appointment of TWO GENERAL ARCHITECTURAL ASSISTANTS, on the permanent staff of the City Engineer. Salary A.P.T., III or IV (£450-£495 or £480-£525), according to qualifications and experience.

Preference will be given to candidates who are Associate Members of the Royal Institute of British Architects or hold equivalent qualifications, and who have had experience in the design and supervision of housing estates or domestic buildings.

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

Applications, stating age, qualifications and experience, together with names and addresses of three referees, should be sent to the City Engineer, Guildhall, Bath, not later than Saturday, 12th November, 1949.

JARED E. DIXON,
Town Clerk.
2494

UNIVERSITY OF DURHAM.
KING'S COLLEGE, NEWCASTLE-UPON-TYNE.

The Council of King's College invite applications for a LECTURESHIP IN ARCHITECTURE.

The salary scale rises by annual increments of £50 to a maximum of £1,100, subject to a review at £900, and the commencing salary of the successful applicant will be fixed at a point on that scale in accordance with his qualifications and experience. The salary will not, however, be less than £600. F.S.S.U. and family allowance. Duties to commence as soon as possible.

Twelve copies of application, together with the names of three persons to whom reference may be made, should be submitted not later than 30th November, 1949, to the undersigned, from whom particulars may be made.

G. R. HANSON,
Registrar of King's College.
2540

CITY OF BIRMINGHAM EDUCATION COMMITTEE.
APPOINTMENT OF STAFF TO ARCHITECT'S BRANCH.

Applications are invited for the following appointments in the Architect's Branch of the Birmingham Education Department (Architect to the Committee: Mr. Alex. Steele, A.R.I.B.A.).

(*a*) FOUR DISTRICT ARCHITECTS.
Salary A.P.T., IX (£750×£50—£900).

Each District Architect will be responsible for various matters affecting the provision of new buildings in each of four sectors of the City, together with work in connection with extensions, adaptations, improvements and repairs to existing buildings.

Applicants should be registered Architects, having good experience in the control of major contracts.

(*b*) QUANTITY SURVEYOR.
Salary A.P.T., VII (£635×£15—£710).

Applicants should have had good general experience and will be required to prepare bills of quantities for minor contracts in addition to the checking of accounts and the general supervision of staff dealing with applications for controlled materials.

(*c*) ARCHITECTURAL ASSISTANT.
Salary A.P.T., IV (£480×£15—£525).

Applicants should have good general experience in the preparation of working drawings for major contracts and should show evidence of intention to qualify for registration.

Application forms, which may be obtained from the undersigned on receipt of a stamped addressed envelope, must be returned not later than three weeks after the appearance of this advertisement.

E. L. RUSSELL,
Chief Education Officer.
Education Office, Margaret Street,
Birmingham, 3. 2491

METROPOLITAN BOROUGH OF HAMPSTEAD.

Applications are invited for the appointment of an ARCHITECTURAL ASSISTANT, on the Temporary Staff of the Housing Architect's Section of the Borough Engineer and Surveyor's Department, at a salary in accordance with Grade V of A.P.T. Division, National Scales of Salaries, £520 to £570 per annum, plus £30 London weighting. Age limit: 45 years of age on the 1st January, 1949.

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

Applications, stating age, examination qualifications, present and past appointments, with dates and salaries, detailed particulars of experience, and accompanied by copies of three recent testimonials, or names of three referees, must be delivered to me in a sealed envelope endorsed "Architectural Assistant," not later than 12 noon on 21st November, 1949.

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

The Council are unable to provide housing accommodation.

Canvassing will disqualify.

P. H. HARROLD,
Town Clerk.

October, 1949.
Town Hall, Haverstock Hill, N.W.3. 2496

GLOUCESTERSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.
APPOINTMENT OF HEATING, VENTILATING AND ELECTRICAL ENGINEER.

Applications are invited for the appointment of a Heating, Ventilating and Electrical Engineer, in the County Architect's Department, at a salary on A.P. & T., Grade VI (£595, rising to £660 per annum).

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

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should be sent to S. E. Urwin, Esq., F.R.I.B.A., County Architect, Shire Hall, Gloucester, not later than Wednesday, 16th November, 1949, endorsed "Appointment of Heating, Ventilating and Electrical Engineer."

GUY H. DAVIS,
Clerk of the County Council.
20th October, 1949. 2556

BLACKWELL RURAL DISTRICT COUNCIL.
ARCHITECT AND HOUSING SUPERINTENDENT'S DEPARTMENT.
ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Architectural Assistant, in the Architect and Housing Superintendent's Department, at a salary of £420 per annum, rising by annual increments of £15 to £465 (Grade A.P.T., II).

Applicants should have attended a full-time course of Architecture and have passed the R.I.B.A. Intermediate Examination or its equivalent at one of the recognized Schools of Architecture, but have had less than one year's subsequent experience in an architectural office.

Applications, stating age, experience and training, accompanied by two recent testimonials, should be sent so as to reach the undersigned not later than 21st November, 1949.

R. EVANS,
Clerk to the Council.
Dale Close, 100, Chesterfield Road South,
Mansfield. 2519

COUNTY BOROUGH OF DERBY.
BOROUGH ARCHITECT'S DEPARTMENT.

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

(*a*) THREE SENIOR ASSISTANT ARCHITECTS, Grade VIII. Salary £685-£760.

Applicants must be Associate R.I.B.A., with a good knowledge of work undertaken by a Local Authority, preferably with experience in School work.

(*b*) THREE JUNIOR ARCHITECTS, Grade I/II. Salary £390-£465.

Applicants should have passed the Preliminary Examination of the R.I.B.A. and have had experience in general Architectural work.

(*c*) ONE ASSISTANT ARCHITECT (Grade III, IV and V). Salary £450-£570.

Applicants should be of R.I.B.A. Intermediate Examination standard, and have had good Architectural experience.

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

Forms of application may be obtained from Thos. W. East, F.R.I.B.A., Borough Architect, The Council House, Corporation Street, Derby, and should be returned when completed, together with a copy of one testimonial and the names of two persons to whom reference may be made, to arrive not later than Monday, 14th November, 1949.

Canvassing, directly or indirectly, will be a disqualification.

E. H. NICHOLS.
Town Clerk.
2493

GLENROTHES DEVELOPMENT CORPORATION.

Applications are invited from suitably qualified persons (under 45 years of age) for the following appointment :—

JUNIOR ASSISTANT ARCHITECT. Salary £400 × £20 to £520 per annum.

Applicants should have passed at least the Intermediate Examination of the R.I.B.A.

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

Particulars of the assistance which the Corporation will give in securing housing accommodation will be given at the time of interview.

Canvassing, directly or indirectly, of members of the Corporation will constitute an absolute disqualification.

Applications, giving full particulars of the candidate's age, qualifications and experience, together with copies of not more than three recent testimonials, must reach the undersigned not later than 26th November, 1949.

J. N. ROGER,
Secretary.

Auchmuty House, Markinch.
24th October, 1949. 2559

BIRMINGHAM REGIONAL HOSPITAL BOARD.

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

(*a*) SENIOR ASSISTANT ARCHITECT. Salary scale A.P.T., VIII, £685-£760. Applicants must have passed the Final Examination of the Royal Institute of British Architects or possess a recognized Diploma of Architecture, and should have considerable experience of the design of buildings and building procedure. The candidate appointed should be capable of controlling drawing office staff.

(*b*) ASSISTANT ARCHITECTS. Salary scale A.P.T., Va, £550-£610. Applicants must have passed the Final Examination of the Royal Institute of British Architects, or possess a recognized Diploma in Architecture, and should have considerable experience of Local Authority building projects and procedure. Experience of hospital planning and construction will be an advantage, and a sound knowledge of specifications is essential.

(*c*) ASSISTANT QUANTITY SURVEYOR. Salary scale A.P.T., Va, £550-£610. Applicants should have a recognized qualification and should have considerable experience in the taking off and preparation of Bills of Quantities and the settlement of final accounts.

The Architect's Department is an expanding branch of the Board and is responsible for the supervision of a large Capital Building programme, including new Hospital Buildings, Nurses Homes, Staff Houses, and alterations to existing buildings.

Candidates for (*a*) and (*b*) should be keen designers, with a flair for modern design, including new methods of construction and interior decoration.

The appointments are subject to the National Health Service (Superannuation) Regulations, 1947-1949, and are terminable by one month's notice by either side. Applications, stating age, qualifications, experience, and present appointment, together with the names of two referees, should be submitted to the Secretary, Birmingham Regional Hospital Board, 10, Augustus Road, Edgbaston, Birmingham, 15, not later than 17th November, 1949. Applications should state clearly the appointment for which the candidate is applying. 2515

COUNTY BOROUGH OF CARLISLE.
APPOINTMENT OF AN ASSISTANT TOWN PLANNING OFFICER (GRADE A.P.T., VII).

Applications are invited for the above appointment on the permanent staff of the City Engineer and Surveyor and Planning Officer, at a consolidated salary of £635, rising by annual increments of £25 to £710 per annum.

Applicants should be Corporate Members by examination of the Royal Institute of British Architects, or the Institutions of Civil or Municipal Engineers, and preference will be given to applicants who are also Corporate Members of the Town Planning Institute, and who have had previous Town Planning experience.

The appointment offers considerable scope for the successful applicant to gain experience in the preparation of the Development Plan, layout of Neighbourhood Units which are to be proceeded with almost immediately, re-development of small areas in central area, the control of development, etc.

The Council will, if required, allocate the successful applicant a Corporation house.

Application forms may be obtained from the City Engineer, 18, Fisher Street, Carlisle, and completed forms should be returned to me not later than Monday, 14th November, 1949.

H. D. A. ROBERTSON,
Town Clerk.

Town Clerk's Office, Fisher Street, Carlisle. 2510

CITY OF MANCHESTER.
HOUSING COMMITTEE.

Applications are invited from persons having the requisite qualifications and experience for the following appointments on the National Joint Council Scales :—

ASSISTANT ARCHITECTS. Grade VII (£635-£710 per annum).

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

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

ASSISTANT ARCHITECTS. Grade IV (£480-£525 per annum).

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

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

ASSISTANT QUANTITY SURVEYOR. Grade V (£520-£570 per annum).

The appointments are subject to the National Scheme of Service Conditions and the Standing Orders of the Council.

The successful candidates will be required to contribute to the Corporation's Superannuation Fund, and if under the age of 30 years to the Manchester Municipal Officers' Widows' and Orphans' Pension Fund.

Applications, stating age and qualifications and experience, together with copies of two testimonials, must be submitted to Mr. A. Mackenzie, L.R.I.B.A., Director of Housing, Town Hall, Manchester, 2, endorsed as to the position applied for, not later than 19th November, 1949.

Canvassing in any form is prohibited, and relationship to any member of the Council or senior officer must be disclosed to me in writing.

PHILIP B. DINGLE,
Town Clerk.

October, 1949. 2527

COUNTY BOROUGH OF TYNEMOUTH.
BOROUGH SURVEYOR'S DEPARTMENT.
STAFF.

Applications are invited for the following appointments :—

(*a*) TWO SENIOR ARCHITECTURAL ASSISTANTS. Grade VI. £595-£660.
ONE ARCHITECTURAL ASSISTANT. Grade Va, £550-£610.
ONE ARCHITECTURAL ASSISTANT. Grade V, £520-£570.

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

(*b*) ONE QUANTITY SURVEYOR. Grade VI, £595-£660.

Applicants should be Associates of the R.I.C.S., with good general experience of the preparation of Bills of Quantities and settlement of Final Accounts.

(*c*) ONE SENIOR TOWN PLANNING ASSISTANT. Grade VI. £595-£660.
ONE PLANNING ASSISTANT. Grade IV, £480-£525.

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

Housing accommodation will be provided if considered necessary.

Applications, on forms to be obtained from the Borough Surveyor, Mr. D. M. O'Herlihy, B.Sc.(Eng.), M.I.C.E., Howard Street, North Shields, together with copies of not more than three recent testimonials, should be addressed to the Borough Surveyor, to arrive by 10 a.m. on the 14th day of November, 1949.

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

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

Dated this 20th day of October, 1949.

(Sgd.) FRED. G. EGNER,
Town Clerk.

14, Northumberland Square,
North Shields. 2521

COUNTY BOROUGH OF SUNDERLAND.
BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the new appointments mentioned below on the Staff of the Borough Architect's Department :—

(1) SENIOR ARCHITECT. A.P.T., Grade II (£750 × £50—£900).

Candidates for this position must have had current experience in the design of Schools of all categories, and preference will be given to those who have specialised in this class of work.

(2) SENIOR ARCHITECT. A.P.T., Grade IX (£750 × £50—£900).

Candidates for this position must have had a wide and varied experience in design, and preference will be given to those who qualified with distinction at a recognized School of Architecture and whose work shows imagination and originality.

(3) SENIOR ARCHITECT. A.P.T., Grade IX (£750 × £50—£900).

Candidates for this position must have had wide experience in the design of estate layouts and houses, and must have had considerable experience in the Site administration of large housing projects and of the contractual work involved.

(Candidates for each of the above-mentioned posts must be Associates of the R.I.B.A., or hold equivalent qualifications, and experience in the service of a Local Authority is preferable but not essential.)

(4) QUANTITY SURVEYOR. A.P.T., Grade IX (£750 × £50—£900).

Candidates for this position should be Members of the R.I.C.S., and must be experienced in the administration and organisation of a Quantity Surveyor's office and be able to prepare Bills of Quantities off 4th scale, working drawings and preliminary details for work such as Schools, Public Buildings, etc., prepare detailed approximate estimates, make valuations and measure for interim payments, prepare statements of and settle final accounts, negotiate variations, etc.

(5) CHIEF CLERK. A.P.T., Grade V (£520-£570).

Candidates for this position must be capable of co-ordinating and administering the whole of the clerical, costing, statistical and other routine work of an Architect's Department in a Local Authority, and preference will be given to applicants with previous similar experience.

All appointments are permanent, and are subject to the Scheme of Conditions of Service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services, and to the provisions of the Local Government Superannuation Act, 1937. They are subject also to two months' notice in respect of appointments 1, 2, 3 and 4, and one month in respect of appointment 5, on either side, given from the first day of any month.

Successful candidates will be required to pass a medical examination.

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

Applications, endorsed with the name of the particular post applied for, should be sent to the undersigned not later than Thursday, 17th November, 1949.

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

G. S. McINTIRE,
Town Clerk.
2538

MIDDLESEX COUNTY COUNCIL.

CHIEF PLANNING ASSISTANT (A.P.T., VII, £665, rising to £740 per annum). Should possess good experience of planning practice and be Corporate Members of Town Planning Institute; preference given to those holding a qualification in architecture, surveying, engineering or economics. Established, pensionable post, subject to medical examination and prescribed conditions of service. Applications in writing, stating age, experience, qualifications, etc., with copies of three recent testimonials, to the undersigned by the 25th November, 1949 (quoting G.200, A.J.). Canvassing disqualifies.

C. W. RADCLIFFE,
Clerk of the County Council.

Middlesex Guildhall, Westminster, S.W.1. 2532

CITY OF COVENTRY ARCHITECTURAL DEPARTMENT.

The City Architect, Mr. Donald Gibson, invites applications for his permanent staff from persons interested in contemporary architecture, to work on schools, housing, central redevelopment, etc.

There are vacancies on the Establishment of the Department on A.P.T. Grades up to a maximum of Grade A.P.T., VII. The present vacancies are for :—

ARCHITECTS, Grades V to VII;
ARCHITECTURAL ASSISTANTS, Grades II to IV;
ASSISTANT QUANTITY SURVEYORS, Grades II to VII, and an
ASSISTANT HEATING ENGINEER, Grade III.

Will interested persons kindly apply to the City Architect for a copy of the usual form of application.

Housing accommodation may be made available in suitable cases to successful applicants for all grades if so desired.

City Architectural Department,
1A, Warwick Row, Coventry. 2550

COUNTY OF WARWICK.
ARCHITECT'S DEPARTMENT.

Applications are invited for the undermentioned appointments on the established staff :—

ASSISTANT ARCHITECTS : A.P.T., VI (salary £595 to £660); A.P.T., V (salary £520 to £570); A.P.T., IV (salary £480 to £525); A.P.T., III (salary £450 to £495); A.P.T., II (salary £420 to £465).

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

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

L. EDGAR STEPHENS,
Clerk of the Council.

Shire Hall, Warwick. 2534

ESSEX EDUCATION COMMITTEE.
MID-ESSEX TECHNICAL COLLEGE AND SCHOOL OF ART, MARKET ROAD, CHELMSFORD.

Required as from 1st January, 1950, full-time LECTURER IN ARCHITECTURE, to assist in the instruction of full-time Day and Evening Students preparing for the Inter. and Final Examinations of the R.I.B.A.

Salary £300 by £15 to £555 per annum. Increments may be awarded for approved professional experience.

Forms of application obtainable (stamped addressed foolscap envelope) from the Clerk to the Governors at the College, to whom completed application forms should be returned within 14 days of the publication of this advertisement.

D. N. BUNGEY,
Acting Chief Education Officer.

County Offices, Chelmsford. 2535

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

Required immediately part-time day LECTURERS IN QUANTITY SURVEYING, in the Department of Architecture and Building, for classes in taking off, billing, and abstracting in preparation for the Intermediate and Final Examinations of the Royal Institute of Chartered Surveyors. Monday and Thursday afternoons preferred, but it may be possible to arrange classes to suit individual applicants.

Applications (no forms) should be submitted to the Clerk of the Governors at the College.

D. N. BUNGEY,
Acting Chief Education Officer.

County Offices, Chelmsford. 2536

BRITISH ELECTRICITY AUTHORITY.
EASTERN DIVISION.

Applications are invited for the following positions in the Generation Construction Department at Divisional Headquarters in North London :—

(*a*) ASSISTANT ARCHITECTS.
Commencing salary range £636-£734, inclusive of 5 per cent. London weighting, N.J.B. Schedule, Class J, Grade 7 to 5.

(*b*) ARCHITECTURAL ASSISTANTS.
Commencing salary range £518-£636 per annum, inclusive of 5 per cent. London weighting, N.J.B. Schedule. Class J, Grade 8B to 7.

Applicants should have had experience in the design and alteration of industrial buildings.

Initial salaries will be in accordance with previous experience and qualifications.

The salaries are in accordance with the scales at present operating, but may be subject to negotiation through the medium of the Joint Board.

The appointments will be superannuable in accordance with the British Electricity Authority and Area Boards Superannuation Scheme.

Applications, stating age, experience, and present position, and endorsed with the appointment sought, should be submitted to arrive not later than 14th November, 1949, to the Divisional Controller, British Electricity Authority, Eastern Division, Northmet House, Southgate, N.14.

W. N. C. CLINCH,
Controller.

Northmet House, Southgate, N.14. 2518

BRIERLEY HILL URBAN DISTRICT COUNCIL.
APPOINTMENT OF SECOND ASSISTANT ARCHITECT.

Applications are invited from suitably qualified persons for the appointment of Second Assistant Architect, in the Architect and Housing Director's Department, at a salary in accordance with Grade VA of the A.P.T. Division (£550×£20 to £610 per annum) of the National Scales of Salaries.

The Council have in view a considerable programme of Civil Development, *e.g.*, new offices, and candidates should therefore be experienced in general Municipal work, including housing, be capable of preparing plans, specifications, etc., and supervising construction.

Applications, endorsed "Second Assistant Architect," stating age, full details of qualifications and experience, and accompanied by copies of not more than three recent testimonials, must reach the undersigned as soon as possible.

The Council is prepared to provide housing accommodation for the successful applicant, if required.

HERBERT HEX,
Clerk of the Council.

Council Offices, Moor Street, Brierley Hill.
26th September, 1949. 2556

COUNTY OF KENT.
PLANNING DEPARTMENT.
SENIOR PLANNING ASSISTANTS.

Applications are invited for posts of Senior Planning Assistants in the Planning Department. The salary scale is £520-£710 per annum. The commencing point in the scales will be fixed according to qualifications and experience. Applicants must possess an appropriate professional qualification. Preference will be given to Corporate Members of the Town Planning Institute.

Successful candidates will be employed either as Area Development Officers in charge of an Area Office under the general supervision of a Divisional Planning Officer, or as Chief Planning Assistants in the Central Office at Maidstone.

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

Applications in own handwriting, stating age, education, qualifications, previous experience, present position and salary, and the names and addresses of two persons to whom reference may be made as to professional ability and character, and endorsed "Senior Planning Assistants," must reach the County Planning Officer, County Hall, Maidstone, Kent, not later than 28th November, 1949.

W. L. PLATTS,
Clerk of the County Council.

County Hall, Maidstone.
20th October, 1949. 2526

COUNTY BOROUGH OF DARLINGTON.
BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following permanent appointments :—

(*a*) ASSISTANT QUANTITY SURVEYOR. Salary, Grade VII (£635-£710).

(*b*) ASSISTANT ARCHITECT. Salary, Grade Va (£550-£610).

Candidates for (*a*) should be experienced in the preparation of Bills of Quantities, the checking of Interim Valuations, and the settling up of Final Accounts. Preference will be given to Members of the Royal Institute of Chartered Surveyors (Quantities Division). The successful candidate will be principally employed upon the preparation of Bills of Quantities for large educational buildings.

Candidates for (*b*) should preferably have previous experience on Education and Housing work and be Members of the R.I.B.A.

The Corporation will endeavour to make flats available to the successful candidates, if required.

Applications, specifying the appointment (*a*) or (*b*), together with age, qualifications, present appointment with salary, previous appointments with dates, and names and addresses of three referees, to be sent to E. A. Tornbohm, A.R.I.B.A., A.M.T.P.I., Borough Architect, Central Buildings, Darlington, not later than Monday, the 14th November, 1949.

H. HOPKINS,
Town Clerk.

2539

BOROUGH AND COUNTY OF THE TOWN OF POOLE.
BOROUGH ENGINEER'S DEPARTMENT.

Applications are invited for the following appointments, *viz.* :—

ARCHITECTURAL ASSISTANT. At present A.P.T., Grade III, £450-£495 per annum.

The above appointment is on the permanent establishment, and will be subject to the provisions of the Local Government Superannuation Act, 1947, and to the passing of a satisfactory medical examination.

Applicants must have passed the Intermediate Examination of the R.I.B.A., and should have had experience in connection with new schools.

Canvassing, either directly or indirectly, is forbidden.

All applications must be submitted to the undersigned, together with the names of three gentlemen to whom reference may be made, and with the envelope suitably endorsed, not later than Saturday, 12th November, 1949.

WILSON KENYON,
Town Clerk.

Poole, Dorset.
October, 1949. 2554

COUNTY COUNCIL OF THE COUNTY OF STIRLING.
APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

Applications are invited for the appointment of Architectural Assistants in the County Architect's Department.

The scale of salary will be J.I.C. Scale, Grade V(a), £550-£610 per annum, which includes cost-of-living bonus.

Candidates should preferably be Associate Members of the Royal Institute of British Architects, and have had good experience in general architectural work. Experience in School Planning and Design and the Preparation of Working Drawings would be an advantage.

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

Applications, together with copies of three recent testimonials, should be forwarded (marked "Architectural Assistant") to the County Clerk, Viewforth, Stirling, within 14 days of the last appearance of this advertisement.

JAMES D. KENNEDY,
County Clerk.

County Offices, Viewforth, Stirling. 2561

SUDAN GOVERNMENT.

The PUBLIC WORKS DEPARTMENT requires an ARCHITECTURAL ASSISTANT, aged 28-40, for service in the Sudan. Duties consist of the preparing of plans in connection with a scheme for providing married accommodation in Khartoum. Candidates must have a sound architectural training and experience of general building work, and be capable of the preparation of working drawings required.

Appointment will be on one year Short Term Contract, at a salary ranging between £E.640 and £E.880. Cost-of-living allowance, varying between £E.180 and £E.390 per annum, according to number of dependants, is at present payable, and, subject to certain limitations, an outfit allowance of £E.40 is payable on appointment. There is at present no income tax in the Sudan. Free passage on appointment. Full particulars and general information may be obtained on application to : Sudan Agent in London, Wellington House, Buckingham Gate, London, S.W.1. Please mark envelopes "Architectural Assistant." 2542

NATIONAL COAL BOARD—NORTH-WESTERN DIVISION.
ARCHITECT'S BRANCH.

Applications are invited for the following permanent and superannuated posts in Manchester :—

ARCHITECTS :

(*a*) ARCHITECTS, Grade II. Salary £450×£25 to £700 p.a. Applicants should be Associate Members of the R.I.B.A., with experience in the preparation of sketch plans, working drawings, specifications, and supervision of Contracts.

(*b*) ARCHITECTURAL ASSISTANTS, Grade I. Salary £410×£20 to £550 p.a. Applicants should have recent experience in the preparation of sketch plans and full working drawings for actual Contract. Preference will be given to students of the R.I.B.A.

(*c*) ARCHITECTURAL ASSISTANTS, Grade II. Salary £300×£20 to £440 p.a. Applicants should have experience in the preparation of working drawings under supervision. A good standard of draughtsmanship will be required, and preference will be given to applicants working for the Intermediate R.I.B.A. examination.

(*d*) JUNIOR ARCHITECTURAL ASSISTANTS. Salary £100 to £338 p.a., according to age and capabilities. Applicants must show promise of becoming good architectural draughtsmen. Previous experience in an Architect's office is desirable but not essential. Preference will be given to applicants intending an architectural career.

QUANTITY SURVEYORS :

(*a*) QUANTITY SURVEYOR, Grade I. Salary £700×£25 to £875 p.a. Applicants should be Members of the R.I.C.S., with considerable experience in a Quantity Surveyor's office, and be experienced in the preparation of Bills of Quantities for all trades, detailed approximate estimates, writing specifications, valuation and measurements for interim certificates, and settlement of final accounts.

(*b*) QUANTITY SURVEYING ASSISTANTS, Grade II. Salary £300 × £20 to £440 p.a. Applicants should have experience in a Quantity Surveyor's office and be capable of working up dimensions, abstracting, writing Bills of Quantities, checking accounts, and taking site measurements under supervision. Preference will be given to applicants working for the Intermediate R.I.C.S. Examination. A knowledge of licensing procedure would be an advantage.

The point of entry into the relevant salary scales will depend on the qualifications and experience of the successful applicants. Applications, stating age, education, qualifications, experience, present appointment and salary, should be submitted within 14 days of publication to the Divisional Establishments Officer, National Coal Board, North-Western Division, 47, Peter Street, Manchester, and should state clearly the appointment for which application is made. 2546

COUNTY BOROUGH OF GATESHEAD.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.
APPOINTMENT OF TOWN PLANNING ASSISTANT.

Applications are invited for the position of Town Planning Assistant in the above Department :—

Candidates must be qualified by examination in Town Planning, and preference given where a recognized qualification in Civil Engineering or Architecture is also held. Experience in Town Planning and re-development work in built-up areas is necessary, and work on valuations will be considered an advantage.

The salary will be on A.P.T., VI (£595-£660).

The above appointment, which is terminable by one month's notice on either side, is subject to the Local Government Superannuation Acts, and the successful candidate will be required to pass a medical examination. It is the intention of the Council to provide housing accommodation if necessary, as soon as possible.

Applications, stating age, qualifications, training, experience, present and past appointments, and accompanied by not more than three recent testimonials, must be sent to A. J. McGregor, Acting Borough Surveyor, Municipal Buildings, Swinburne Street, Gateshead, 8, not later than Monday, 14th November, 1949.

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

J. W. PORTER,
Town Clerk.

Town Hall, Gateshead, 8. 2570

COUNTY BOROUGH OF BARROW-IN-FURNESS.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.
ARCHITECTURAL ASSISTANT—GRADE III OR IV.

Applications are invited for the permanent appointment of Architectural Assistant on Grade III (£450-£495 p.a.) for candidates who have passed the Intermediate Examination of the R.I.B.A. or equivalent, or Grade IV (£480-£525) for similarly qualified candidates, with at least two years' subsequent experience in an architectural office.

Housing accommodation is not available in respect of this appointment.

Conditions of appointment and forms of application may be obtained from the Borough Engineer and Surveyor, Town Hall, to whom completed applications must be returned not later than Monday, 14th November, 1949.

LAWRENCE ALLEN,
Town Clerk.

Town Hall, Barrow-in-Furness. 2566

BOROUGH OF FINCHLEY.
HOUSING AND TOWN PLANNING DEPARTMENT.

Applications are invited for the appointment of TEMPORARY JUNIOR ARCHITECTURAL ASSISTANT in the above Department at a salary in accordance with Grade II, A.P. & T. Division (£420×£15 to £465, plus £30 per annum London weighting).

Candidates must be suitably qualified and have had practical experience in housing or general architectural work.

The appointment is subject to the provisions of the National Scheme of Conditions of Service.

Applications, giving full particulars of qualifications and experience, and accompanied by copies of two testimonials (of which one at least should be recent), should be sent to the Borough Housing and Town Planning Officer, The Avenue, Finchley, N.3, by not later than first post on Tuesday, the 15th November, 1949.

R. M. FRANKLIN,
Town Clerk.

Municipal Offices, Finchley, N.3. 2564

MIDLANDS ELECTRICITY BOARD.
APPOINTMENT OF ARCHITECTURAL DRAUGHTSMEN.

Applications are invited for the following positions in the Chief Engineer's Department at Board Headquarters, Mucklow Hill, Halesowen, near Birmingham.

(1) SENIOR ARCHITECTURAL DRAUGHTSMAN.

Applicants should have had a thorough architectural training and be fully experienced in the preparation of preliminary working and detail drawings for industrial type buildings, substations, showrooms and offices. Experience in the design of reinforced concrete and steel structures would be considered an advantage.

The salary, within the range of £450-£525, according to qualifications and experience, will be provisional and subject to negotiation with such organisations as are appropriate.

(2) JUNIOR ARCHITECTURAL DRAUGHTSMAN.

Applicants should have received good technical and architectural training, some experience in an architect's office, and be capable of preparing, under supervision, detail and working drawings.

The salary, within the range £270-£450, in accordance with qualifications and experience, will be provisional and subject to negotiation with such organisations as are appropriate.

Applications, stating age, qualifications, experience, and present salary, should be forwarded to :—

The Secretary (Ref. PWC),
Midlands Electricity Board,
Mucklow Hill, Halesowen, nr. Birmingham.

A. STEPHENS,
Secretary.

2545

CITY OF PETERBOROUGH.
CITY ENGINEER AND SURVEYOR'S DEPARTMENT.
APPOINTMENT OF ASSISTANT QUANTITY SURVEYOR.

Applications are invited for the appointment of Assistant Quantity Surveyor, A.P.T., Grade IV (£480-£525 per annum).

Applicants should be students of the Royal Institution of Chartered Surveyors and should be capable of abstracting, billing, site measurement, taking off quantities for small works, and settlement of final accounts.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, and the successful applicant will be required to pass a medical examination. Applications, stating age, qualifications and experience, accompanied by copies of not more than three recent testimonials and suitably endorsed, must be delivered to the undersigned not later than 18th November, 1949.

Candidates should state whether they are related to any member or senior officer of the Council.

Canvassing, either directly or indirectly, will disqualify.

Housing accommodation is not immediately available, but the Council will, if necessary, assist so far as they are able, the successful applicant to obtain accommodation, but it must be distinctly understood that the Council do not guarantee to find either a house or living accommodation.

ARTHUR J. REEVES,
Town Hall, Peterborough. *Town Clerk.*
October, 1949. 2574

COUNTY BOROUGH OF HALIFAX.
BOROUGH ENGINEER'S DEPARTMENT.

Applications are invited for the following appointments :—

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

(2) ARCHITECTURAL ASSISTANT (General). Salary in accordance with Scale V, A.P.T. (£520-£570).

(3) ARCHITECTURAL ASSISTANT (Schools). Salary in accordance with Scale V, A.P.T. (£520-£570).

(4) ARCHITECTURAL ASSISTANT (Schools). Salary in accordance with Scale III, A.P.T. (£450-£495).

(5) TOWN PLANNING ASSISTANT (Junior). Salary in accordance with Scale I, A.P.T. (£390-£435).

(6) BUILDING INSPECTOR. Salary in accordance with Scale II, A.P.T. (£420-£465).

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

The Corporation is purchasing property for conversion into flats. These flats will be made available to persons appointed to the Architectural positions.

Applications, stating age, qualifications, present position, salary and experience, accompanied by copies of three recent testimonials, appropriately endorsed, should be delivered to the undersigned not later than Saturday, 12th November, 1949.

RICHARD de Z. HALL,
Town Clerk.

Town Hall, Halifax.
26th October, 1949. 2572

THE EAST RIDING OF YORKSHIRE COUNTY COUNCIL.

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

(*a*) CHIEF ASSISTANT ARCHITECT.
A.P.T., Grade IX, £750-£900 per annum.

Applicants must be fully qualified Architects, and have extensive experience in the outside supervision of large building contracts and a contemporary outlook on architectural design and construction. The successful candidate will be required to provide a motor car, in respect of which a mileage allowance will be paid in accordance with the Council's scale.

(*b*) SENIOR ASSISTANT ARCHITECTS.
A.P.T., Grade VIII, £685-£760 per annum.

Applicants must be fully qualified Architects, and have had experience in the design and construction of modern buildings and the administration work in connection with building contracts.

The successful applicants will be required to take charge of an Architectural section.

(*c*) ASSISTANT ARCHITECTS.
A.P.T., Grades V to VI. The salary range is £520 to £660, and each suitable applicant will be appointed to the grade appropriate to his qualifications and experience.

Applicants should have had satisfactory experience in the design and construction of modern buildings, and preference will be given to those who have appropriate professional qualifications.

The appointments, which are terminable by one month's notice on either side, are subject to the provisions of the Local Government Superannuation Act, 1937, in connection with which the successful candidate will be required to pass a medical examination.

Applications, stating age, training, qualifications, experience, and details of past and present appointments, with salary, and accompanied by copies of three testimonials, should reach the County Architect, County Hall, Beverley, not later than Friday, the 18th November, 1940.

Applicants should disclose relationship to any member or senior officer of the Council. Canvassing will be a disqualification.

T. STEPHENSON,
Clerk of the County Council.

County Hall, Beverley.
October, 1949. 2551

METROPOLITAN BOROUGH OF PADDINGTON.

Applications are invited for the following appointments in the Housing Department, Architectural Section (which also deals with all Council's building work). All appointments are on the permanent establishment of the Department. Particular stress is laid on the desirability of candidates for (*a*) and (*b*) having been engaged on and having an interest in the best contemporary Architecture.

(*a*) ASSISTANT ARCHITECT (II).
Salary A.P.T., V(a) (£550×£20—£610 per annum), plus London "weighting," according to age.

Applicants must be Registered Architects, preferably Associates of the Royal Institute of British Architects, and have had experience in Architectural design and construction of general Municipal work, including multi-storey flats; or similar experience with private firms of Architects.

(*b*) TWO ARCHITECTURAL ASSISTANTS.
Salary A.P.T., III (£450×£15—£495 per annum), plus London "weighting," according to age.

Applicants must have passed the Intermediate Examination of the Royal Institute of British Architects, be used to preparing working and detail drawings, and be good draughtsmen.

(*c*) SECOND SURVEYING ASSISTANT (Estimating).
Salary A.P.T., I and II (£390×£15—£465 per annum), plus London "weighting," according to age.

Applicants should have experience in all branches of building work, particularly in connection with the preparation of estimates and specifications for alterations to and maintenance of housing property and public buildings, including the supervision of Contract work and the preparation of final accounts. The successful candidate will be required to carry out his duties under the immediate supervision of the Surveying Assistant (Estimating). Preference will be given to candidates who have passed or are in an advanced stage of preparation for the Intermediate Examination of the Royal Institution of Chartered Surveyors (Building or Quantities Division).

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

The commencing salary will, in each case, be at an appropriate point within the grade(s), dependent upon the qualifications and experience of the successful candidate.

Applications for these appointments, stating age, qualifications, present and previous appointments, with salaries, and experience, together with the names of three authorities or persons to whom reference may be made, should be delivered to the undersigned, in an envelope clearly indicating the appointment for which application is being made, not later than noon on Monday, 21st November, 1949. No forms of application will be issued.

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

Canvassing, directly or indirectly, will disqualify.

W. H. BENTLEY,
Town Clerk.

Town Hall, Paddington, W.2.
3rd November, 1949. 2567

Tenders for Contracts

PEMBROKESHIRE COUNTY COUNCIL.
FISHGUARD GRAMMAR/MODERN SCHOOL (NEW).

Building Contractors, desirous of TENDERING for the ERECTION of the above SCHOOL, are requested to submit their applications to Walter Barrett, M.B.E., A.R.I.B.A., County Architect, County Offices, Haverfordwest, Pembrokeshire, not later than Monday, 14th November, 1949.

The buildings now to be erected comprise :—
(*a*) Grammar School—2 Form Entry.
(*b*) Assembly Hall, Heating Chamber, Dining Rooms and Kitchen, and Administrative Offices for Grammar School (2 Form Entry), and Future Modern School (3 Form Entry).

General Conditions and Bills of Quantities will be supplied on receipt of £5 5s. deposit, returnable upon receipt of a *bona-fide* Tender. Drawings, etc., can be inspected at the office of the County Architect during the usual working hours.

No Tender will be considered unless submitted in the endorsed envelope provided for the purpose, and the Council does not bind itself to accept the lowest or any Tender received.

Contracts for the following works in connection with this Project have now been let :—
(1) Preliminary Site Clearance.
(2) Provision of Works Service Road.

Contractors will be required to provide proof that they are in a position to provide the necessary labour to carry out the works.

Last day for receipt of Tenders is first post, Tuesday, 6th December, 1949.

D. T. JONES,
Clerk to the Education Committee.

County Offices, Haverfordwest, Pembs.
24th October, 1949. 2558

Competitions

6 lines or under, 10s.; each additional line, 1s. 6d.

COMPETITION FOR PROPOSED WAR MEMORIAL BUILDINGS.

The Association of Old Victorians invites Architects of British nationality to submit designs in Competition for proposed War Memorial Buildings in the form of a small Art School at Victoria College, Jersey, C.I.

The Assessor nominated by the President of the Royal Institute of British Architects is Mr. A. E. O. Geens, F.R.I.B.A.

The last day for submitting designs is 3rd April, 1950.

The premiums will be £75, £50 and £25.

Conditions of the Competition may be obtained on payment of a deposit of £1 from the undersigned. The deposit is returnable under the Conditions governing Architectural Competitions, as issued by the Royal Institute of British Architects.

A. H. WORRALL, ESQ.,
Hon. Treasurer.

The Association of Old Victorians,
25, Cleveland Road, Jersey, C.I. 2511

Partnership and Financial

6 lines or under, 10s.; each additional line, 1s. 6d.

BUSY Architect in West End, with important contracts, would consider Partner able to put up capital to assist financing of Practice. Box 2537.

Architectural Appointments Vacant

4 lines or under, 5s.; each additional line, 1s. 6d.

ARCHITECTURAL ASSISTANTS required immediately for interesting and varied work on Schools, Hospitals, University Buildings, Housing, etc.; salary dependent on experience and qualifications. Apply personally by telephone or in writing. Pite Son & Fairweather, Chartered Architects, 6, Queen Anne's Gate, Westminster, S.W.1. Whitehall 8576. 1862

ARCHITECTURAL ASSISTANT and also ARCHITECTURAL DRAUGHTSMAN required in established practice, mainly business premises over whole country; pleasant conditions; permanent and good prospects. Apply with all particulars to North & Partners, Queen Street Chambers, Maidenhead. 2192

ARCHITECTS' ASSISTANTS required in the Architects' Dept., F. W. Woolworth & Co., Ltd., head office, 1/5, New Bond Street, London, W.1. Applicants should write in giving full details of training, qualifications, experience, and salary required, to H. Winbourne, F.R.I.B.A., Architect. 2408

ARCHITECTURAL ASSISTANT, of Intermediate standard, required for country practice, engaged on private housing and agricultural work. Apply, giving particulars of experience, qualifications and salary required, to Cecil Ogden & Son, Chartered Architects, Surveyors, Ullesthorpe, near Rugby. 2422

COMPETENT ASSISTANT, experienced in licensed premises, required for country office; flat can be provided at end of year. Reply, with full details of experience and salary required, to Box 2223.

ARCHITECTURAL ASSISTANT required, by Gollins, Melvin & Partners, A./A.R.I.B.A.; capable working drawings; salary £450-£550, according to experience; 5-day week; permanent situation. Telephone Museum 0883 for appointment. 2461

EAST MIDLANDS.—ASSISTANT, Inter. Final standard, required at once for private Architect's office; work mainly domestic. Box 2453.

ARCHITECTURAL ASSISTANT required; of Intermediate R.I.B.A. standard, and with some previous experience in an Architect's office; salary according to ability. Write, stating age and experience, to Staff Office, Handley Page, Ltd., Cricklewood, N.W.2. 2450

LONDON Provincial Architect requires keen ARCHITECTURAL ASSISTANT in Falmouth/Truro district branch office; able to make surveys, produce up to and including working drawings and specifications, and undertake supervision; state age, experience, and salary required. Box 2446.

SENIOR ARCHITECT required for responsible post in private practice in Derby; interest in contemporary design essential; good premises and working conditions; salary from £500 to £700, according to experience; share of profits. S. Morrison, A.R.I.B.A., Derwent House, 39, Full Street, Derby. 2468

SENIOR ARCHITECTURAL ASSISTANTS required immediately; good salary and prospects; 5-day week. Write J. M. Sheppard & Partners, 38, Bedford Place, W.C.1, giving particulars of age, qualifications, experience, and salary required. 2487

LONDON Firm of Chartered Architects require immediately an ARCHITECTURAL ASSISTANT, age approximately 25-30 years, in connection with permanent Council Housing, Shops, Factory, etc.; salary in accordance with qualifications and experience; opportunity for responsible man. Apply, giving full details, to Lawrence Farman & Partners, 258, Upper Richmond Road, Barnes, S.W.14. 2489

ARCHITECT.—Experienced SENIOR ASSISTANT required for large Hospital and Medical School practice in London; permanency; good salary. W. H. Watkins, Gray, F.R.I.B.A., & Partners, 19, Grosvenor Place, S.W.1. Telephone: SLOane 1840. 2501

EXPERIENCED WORKER-UP required for Quantity Surveyor's Dept. of Builders' office, with experience of site measurement of subcontractor's accounts. Apply, giving full particulars of experience, age, and salary required, to Comben & Wakeling, Ltd., 603/605, Kenton Road, Kenton, Harrow, Middlesex. 2471

JUNIOR ARCHITECTURAL ASSISTANT wanted urgently. Apply, stating age, qualifications, experience, salary required, etc., with testimonials, to Buttrick & Buttrick, F./A.R.I.B.A., 43, Oswald Road, Scunthorpe, Lincolnshire. 2472

ASSISTANTS required in the Architect's Dept. of a Multiple Company in Birmingham; experienced in design, alteration and maintenance of Industrial Buildings, preparation of surveys, working drawings, and specifications; commencing salary £480-£560 per annum, according to age and experience; the appointments are of a permanent nature and offer good prospects. Applicants are requested to send details of training, experience, to Box 2480.

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

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

ASSISTANT, unqualified but with good practical experience, Intermediate standard, wanted in Suffolk Architect's office; 5-day week. Full particulars to Box 2479.

EXPERIENCED GENERAL ASSISTANT wanted in commercial Architect's office in Guildford for preparing working and detailed drawings; good draughtsmanship and knowledge of construction essential; interesting and varied work in many parts of the country; salary £450-£500, according to experience and ability. 2484

WANTED, by old-established firm of Civil Engineering Contractors operating principally in Midlands, CIVIL ENGINEER or ARCHITECT experienced in Reinforced Concrete Construction, also with experience in compiling estimates; salary will be in accordance with experience of the applicant and for the right man above the four figure mark; a splendid opportunity for a progressive position with a firm of standing. Box 2543.

ARCHITECT'S ASSISTANT required; liberal salary; permanent position. Write fully, stating age, training, experience, Staff Office, Busbys (Bfd.), Ltd., Manningham Lane, Bradford. 2542

A VACANCY occurs in a busy Architect's and Surveyor's office for an ASSISTANT; first-class opportunity for right man; rapidly expanding practice, mainly concerned with licensed premises; essential qualifications are good draughtsmanship and previous private office experience. Reply, with full details, to Messrs. J. W. Hammond, 20, North Street, Romford, Essex. 2531

SCHERRER & HICKS, M.A., FF.R.I.B.A., 19, Cavendish Square, W.1 (Museum 1106) require TWO ASSISTANTS; 2nd or 3rd year evening school standard; salary according to ability. 2514

ARCHITECTURAL ASSISTANT required in small London office; R.I.B.A. Intermediate standard; salary according to experience. Write, giving particulars, to Box 2513.

SOUTHAMPTON.—W. H. Saunders & Son have a vacancy in their Head Office for a medium grade ARCHITECTURAL ASSISTANT; permanent progressive post; interesting and varied work. Applications, with full particulars, to 1, Carlton Crescent, Southampton. 2512

AMENDED ADVERTISEMENT.

ASSISTANTS required for general practice on the South Coast; salary £350-£450 per annum, according to age and experience. Apply, giving full particulars, to B. Stevens & Partners, 31, Cornfield Road, Eastbourne. 2401

AT their offices at 81, Piccadilly, Arcon, Chartered Architects, have vacancies for TWO ARCHITECTURAL ASSISTANTS, at a salary of £500 per annum. 2552

ARCHITECTURAL ASSISTANTS, of Intermediate Examination or higher standard, are required to work with qualified Architects on interesting industrial and commercial projects at home and abroad, under the direction of J. W. Wilson, F.R.I.B.A., A.M.T.P.I., Company Architect. Reply, quoting age and experience, to Personnel Dept., Dunlop Rubber Co., Ltd., Erdington, Birmingham, 24. 2553

ARCHITECTURAL ASSISTANTS required for Chief Architect's Department at Havering; applicants should have reached Intermediate standard of R.I.B.A., be good draughtsmen, and possess a sound knowledge of building construction; canteen facilities available. Apply in writing, stating age, qualifications and experience, to Chief Staff Architect, Ilford, Ltd., Romford, Essex. 2557

ARCHITECTURAL ASSISTANT or SURVEYOR required immediately to work S.W. London area; able to prepare Schedules, Specifications, War Damage, Supervision of Contract Work. Write, stating age, experience and salary required, to Box 2560.

ARCHITECTURAL DRAUGHTSMAN for Display and Exhibition; Inter. R.I.B.A. standard; capable of producing accurate working details and coloured perspectives. Write, stating age, experience and salary required, to Charles Kenrick, Ltd., 15, Berners Street, W.1. 2568

ARCHITECTURAL DRAUGHTSMAN required in Maidstone branch office of London firm of Chartered Architects, preferably having completed National Service training; age 20-25 years; salary according to experience and qualifications. Apply to Lawrence Farman & Partners, 258, Upper Richmond Road, London, S.W.14. 2569

WANTED, for Railway Civil Engineer's Office, in Edinburgh, temporary ARCHITECTURAL ASSISTANT; capable of preparing working drawings from rough sketches, estimating, and supervising works in progress; salary according to qualifications and experience. 2522

WANTED, for Railway Civil Engineer's Office, in Glasgow, temporary ARCHITECTURAL ASSISTANT; capable of preparing working drawings from rough sketches, estimating, and supervising works in progress; salary according to qualifications and experience. 2523

ARCHITECTURAL ASSISTANT required; standard of R.I.B.A. Intermediate, with sound knowledge of building construction; salary £500 p.a. Hargreaves & Reed, 17, Crook Log, Bexleyheath, Kent. 2571

ARCHITECTURAL ASSISTANT required; with at least 5 years' office experience and R.I.B.A. Intermediate standard. Welch & Lander, FF.R.I.B.A., 38, Gloucester Place, W.1. Welbeck 6551. 2549

Other Appointments Vacant

4 lines or under, 5s., each additional line, 1s. 6d.

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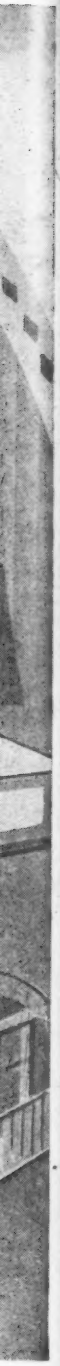

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