

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

IAAS	Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1.	Sloane 3158
ICE	Institution of Civil Engineers. Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers. 1, Grosvenor Place, S.W.1.	Sloane 8606
IHVE	Institution of Heating and Ventilating Engineers. 72/74, Victoria Street, S.W.1.	Victoria 0146/7
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
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197
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
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). 46, Sheffield Terrace, W.8.	Park 7678
MOA	Ministry of Agriculture and Fisheries. 55, Whitehall, S.W.1.	Whitehall 3400
MOE	Ministry of Education. Belgrave Square, S.W.1.	Sloane 4522
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.	Abbey 5111
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Langham 4041
NFBTO	National Federation of Building Trades Operatives. 8, Rosebery Houses, Brems Buildings, E.C.4	Holborn 1881
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
NHTPC	National Housing and Town Planning Council. 41, Russell Square, W.C.1.	Museum 1264
NPL	National Physical Laboratory. Head Office, Teddington.	Molesley 1380
NRIAD	National Register of Industrial Art Designers. National Gallery, Trafalgar Square, W.C.2.	Whitehall 2415
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
PWB	Post War Building, Directorate of. Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
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
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19.	Wimbledon 5101
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Welbeck 5721
RICS	Royal Institution of Chartered Surveyors. 12, Great George Street, S.W.1.	Whitehall 5322
RFAC	Royal Fine Art Commission. 6, Burlington Gardens, W.1.	Regent 1446
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
SBPM	Society of British Paint Manufacturers. 20, Piccadilly, London, W.1.	Regent 6347
SCR	Society for Cultural Relations with the USSR. 98 Gower Street, W.C.1.	Euston 6272/3
SFMA	School Furniture Manufacturers' Association. 13, New Square, Lincoln's Inn, W.C.	Chancery 5313
SIA	Society of Industrial Artists. Room 243, Empire House, St. Martin's-le-Grand, E.C.1.	Metropolitan 8344
SNTPC	Scottish National Town Planning Council. 11, Drumsheugh Gardens, Edinburgh, 3	
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 6146 (3 lines)
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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[Vol. 106

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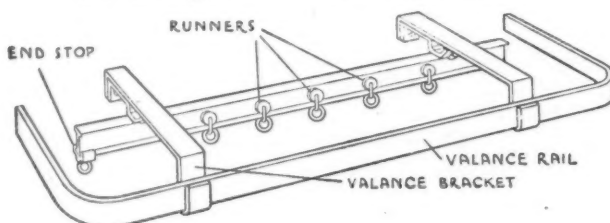
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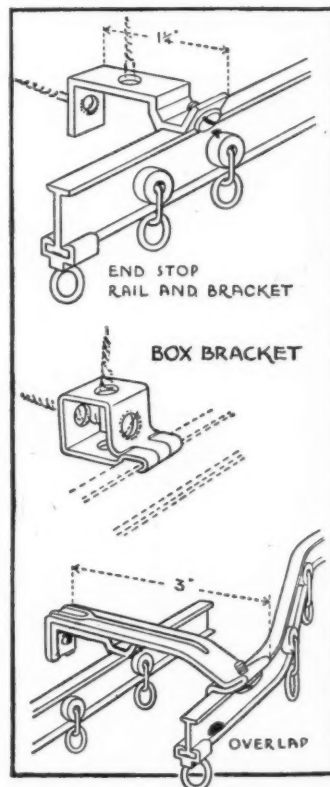
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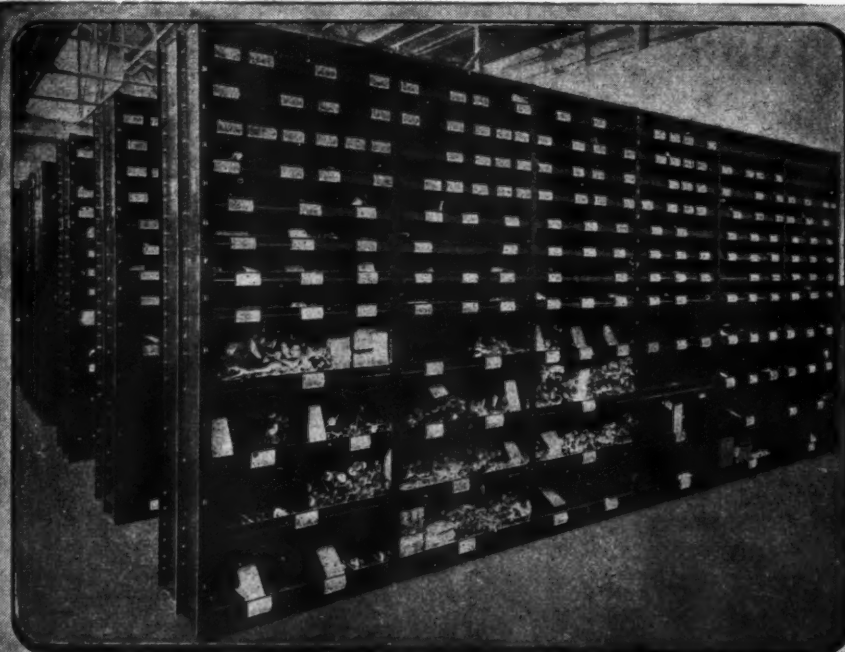
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Our word "sanitation" is derived from the Latin: "sanitas"—meaning "health." Roman drainage systems, baths, aqueducts and fountains were remarkable technical achievements which have evoked the wonder and praise of subsequent ages. The "thermae" or public baths were centres of social life where citizens met to discuss politics, religion, literature and everyday affairs.

Almost all public baths and many private villas were heated by flues in the walls and beneath the floors, containing terra cotta pipes—such as shown in our illustration—through which hot air was distributed.

Vitrified stoneware pipes were used to convey water supplies, and terra cotta pipes to drain unhealthy marshes. Many of these are still in use—as serviceable as when they were first laid nearly 2,000 years ago.

Roman brick and tile-work was equally durable. The central tower of St. Alban's Abbey, for example, was built by the Normans of Roman bricks taken from the dismantled walls of Verulamium. Terra cotta, sometimes painted with unfired pigments, was used in building and embellishing many temples and public

buildings, especially for columns, capitals, mouldings and cornices. Friezes and panels, moulded in bas-relief, were often fixed to the walls with leaden nails. Life-size statuary and smaller figures for votive purposes were also made in terra cotta.

Magnificent mosaic pavements, many inspired by Greek designs, were a striking feature of Roman architecture. They were constructed with amazing patience and skill from pieces of coloured marble, jasper, agate, porphyry, glass and other materials. Fragments of baked clay were used to form the reds, buffs and browns—and it is a further tribute to the durability of pottery that in many villas which have been excavated the pottery portions, unlike the rest, show hardly any signs of wear.



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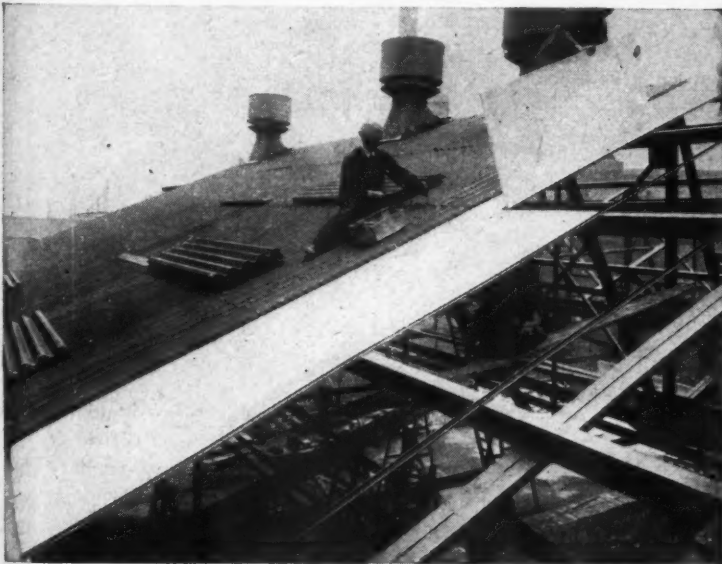
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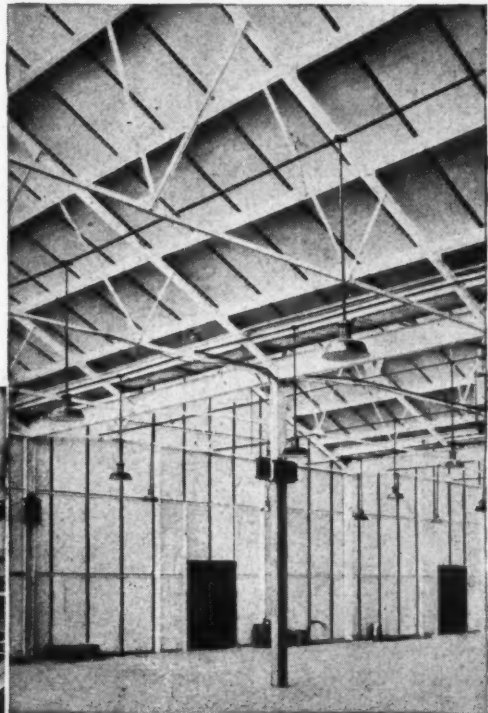
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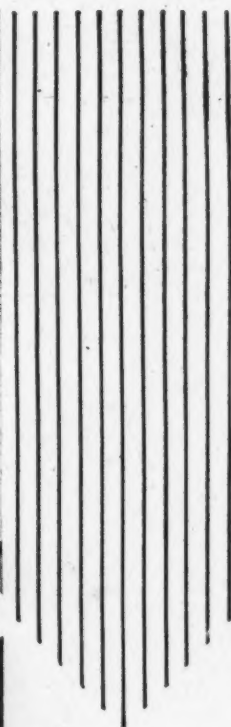
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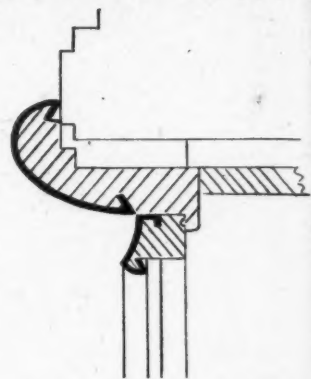
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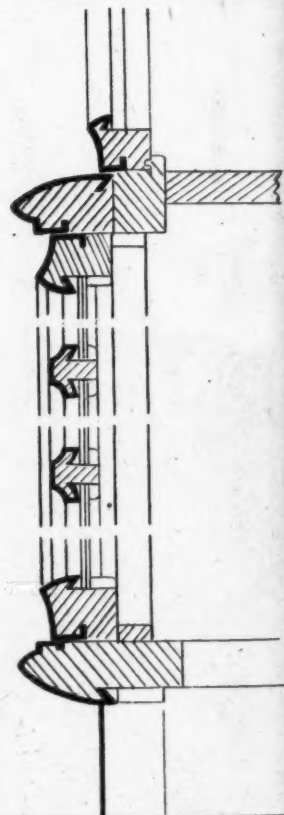
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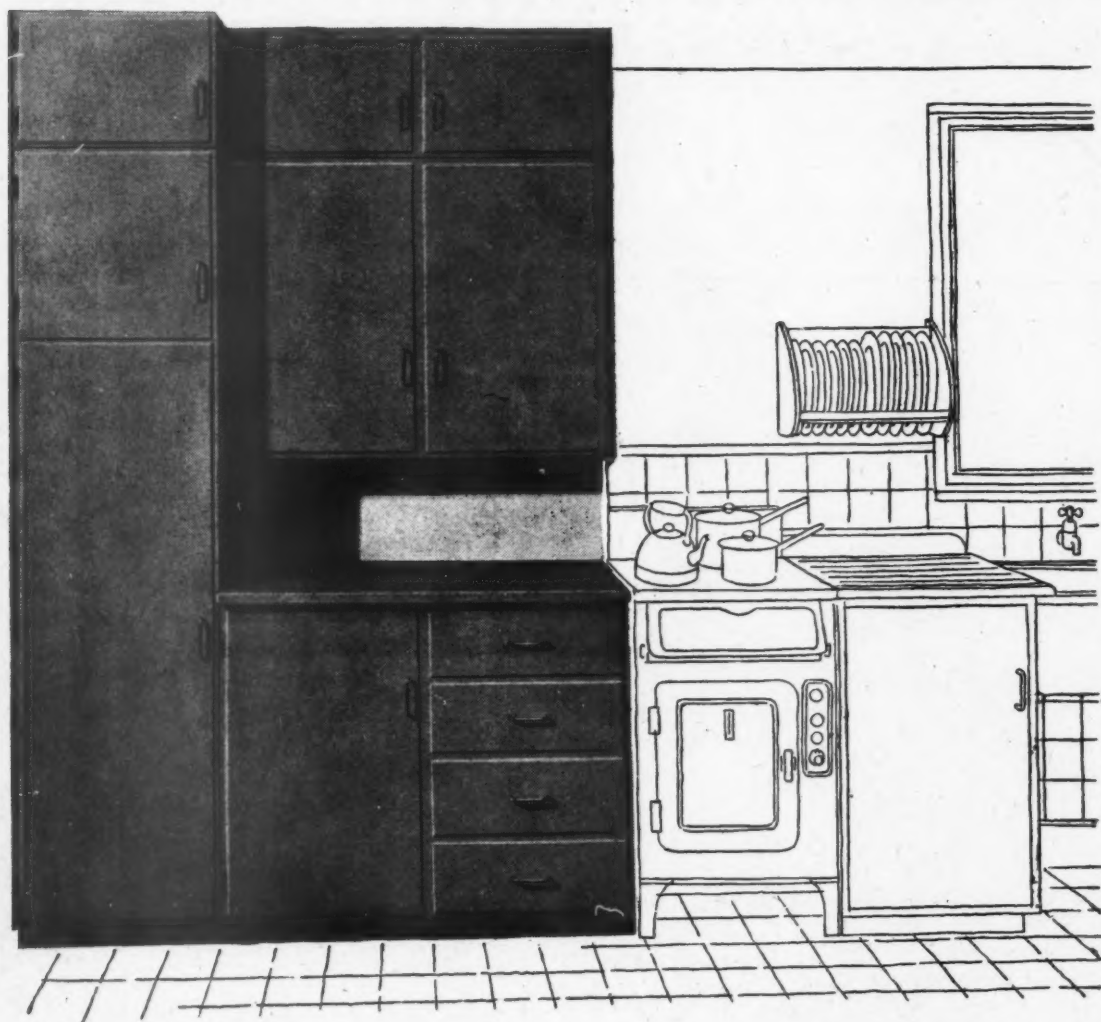
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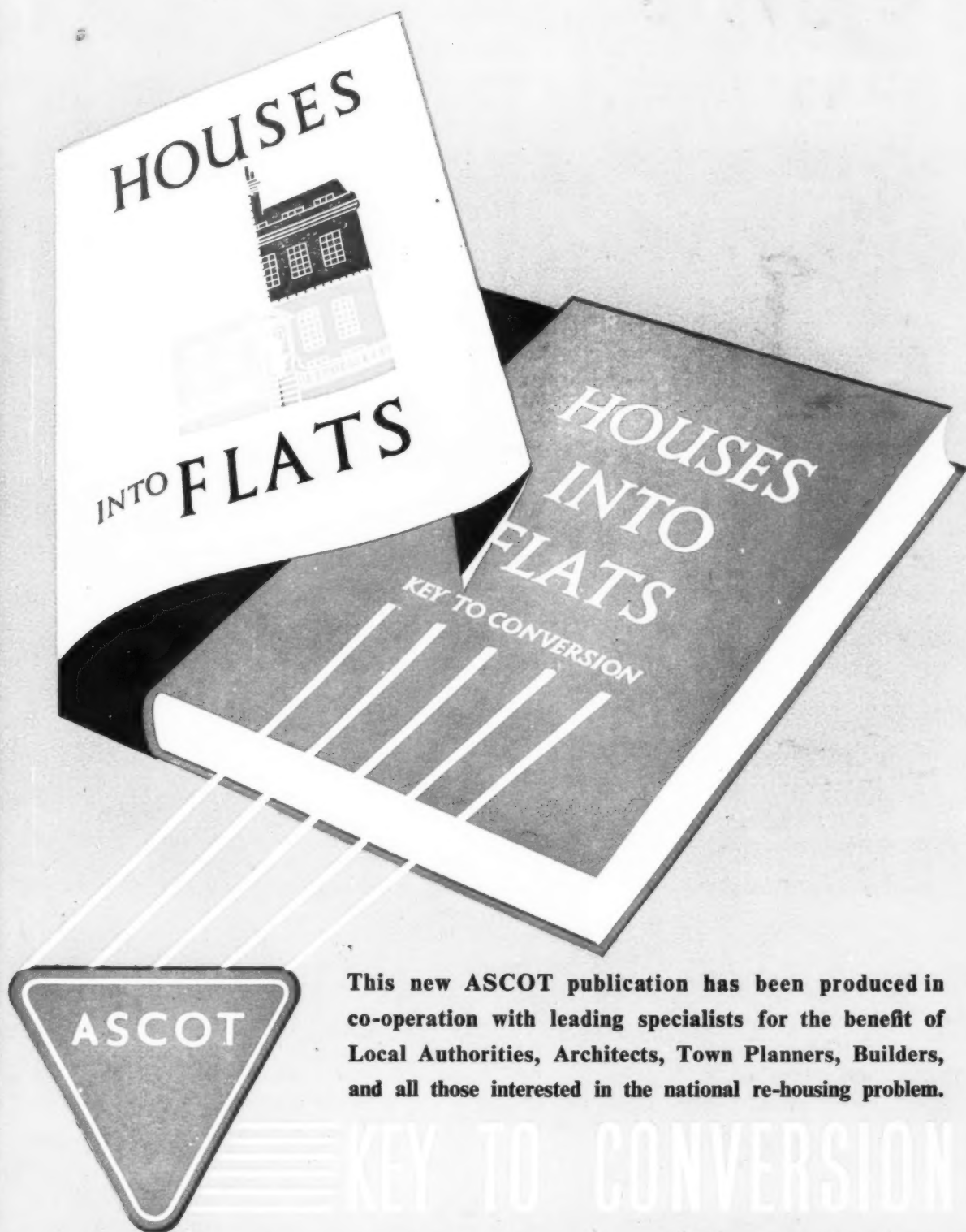
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GREATER LONDON PLAN	No. 2 (a)	CITY OF NORWICH PLAN	No. 4
COUNTY OF LONDON PLAN	No. 2 (b)	EXETER PHOENIX	No. 5
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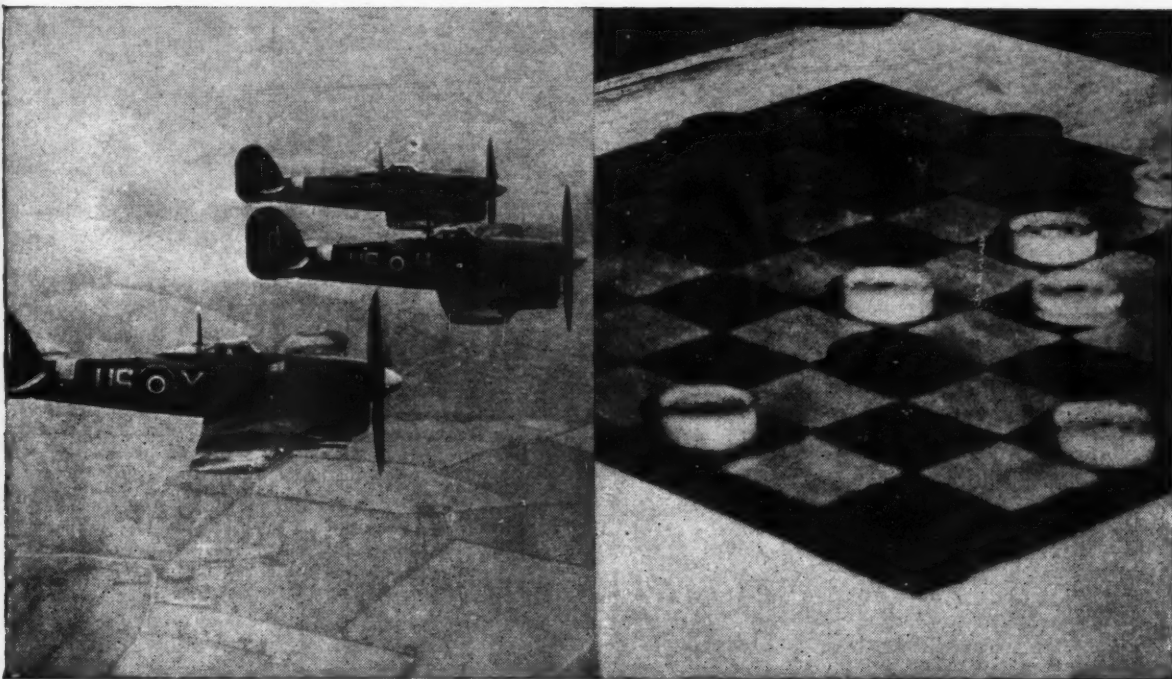
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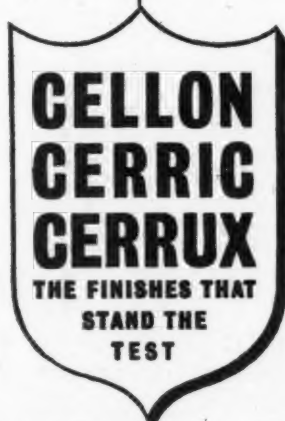


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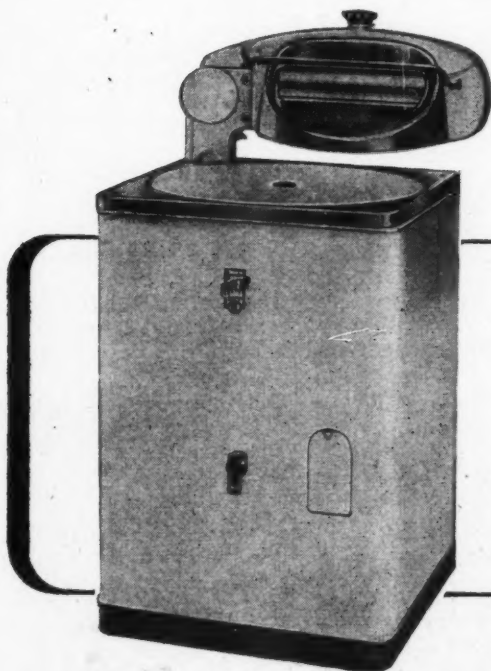
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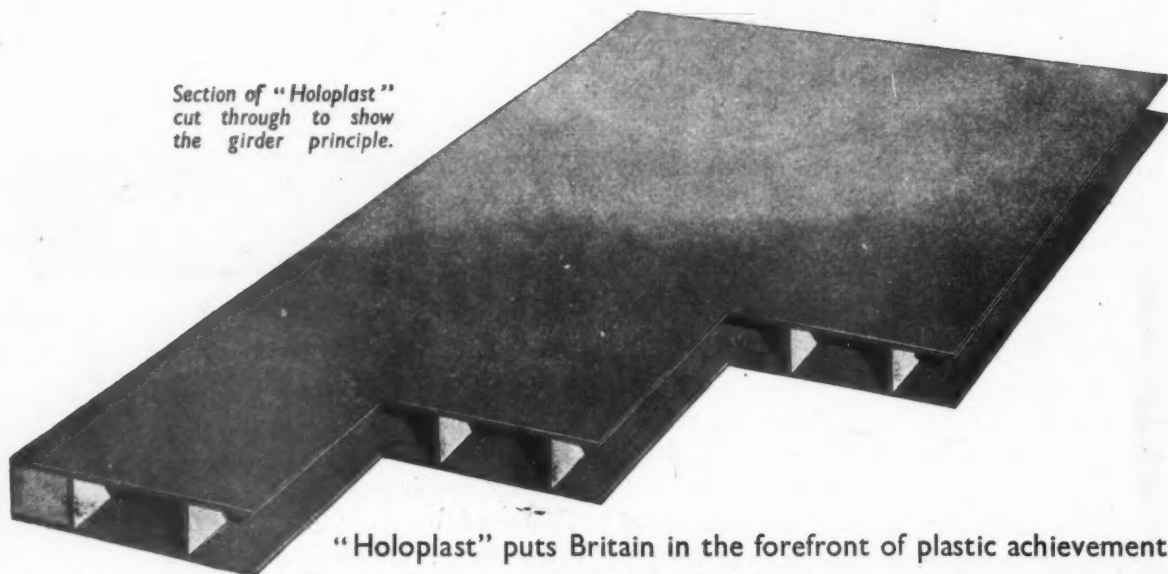
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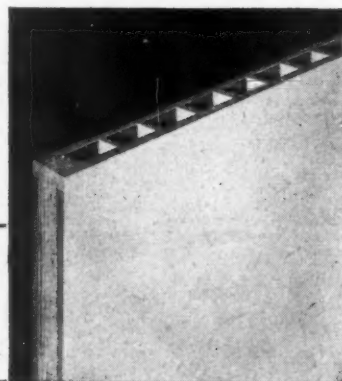
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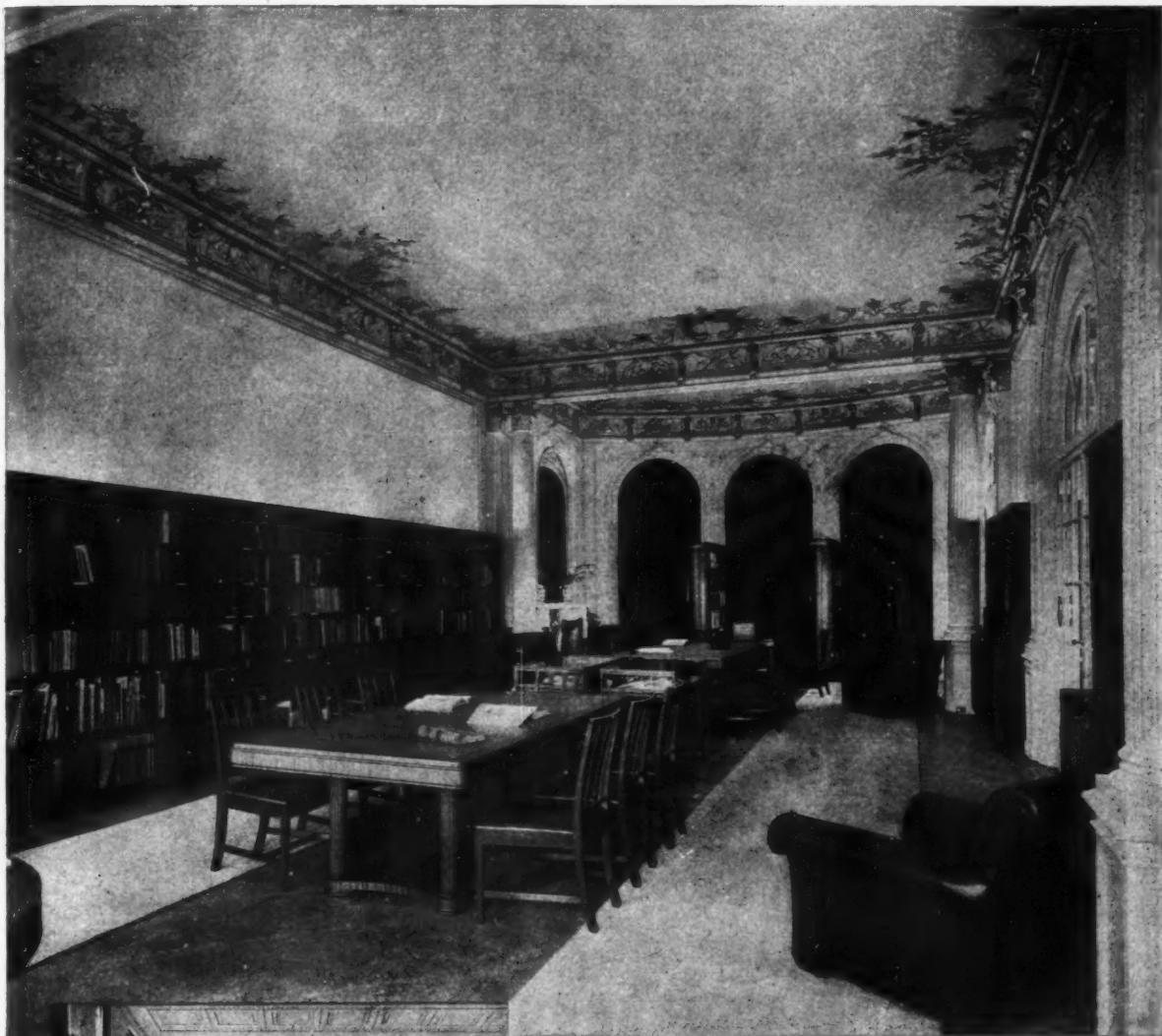
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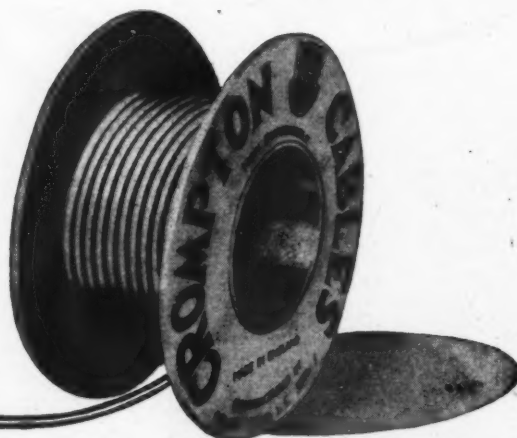
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## A HOUSE BUILT ON EXPORTS

WE in the wood trade are as keen as any to see our export figures rise. We know that it's what we sell abroad that earns the cash to pay for the wood we have to import. And while we're naturally sorry it's temporarily scarce we take a little comfort from being in the same boat with other importers of key raw materials—fuel-oil, certain types of steel, and the like. But that doesn't help us with to-day's shortages. Right now, commonsense tells us it might pay to study modern principles of timber usage; maybe we could pick up a dodge or two to make our limited supplies do a better job. That's where Travis & Arnold's Technical consultant comes in—and stays in. He may be able to help you in your current difficulties—and you and he certainly ought to get together for the future. When there's more timber you'll have more scope to introduce new ideas in utilisation—so keep your eye on Timber Technology!

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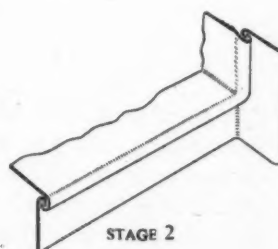
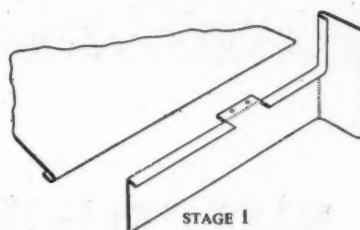
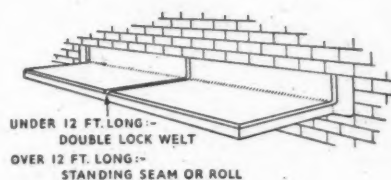
# THE FLASHING MYSTERY

We could swear that if you were to write down the properties wanted in a flashing material, what you wrote would be a pretty close description of copper. And yet (here's the mystery) plumbers don't always use it for flashings.

After all — take durability. You will not find a more durable metal than copper. Or efficiency. What is more secure against wind and weather? Economy? Well, 26 s.w.g., for any flashing, costs less than 18·7d. per square foot, even now. Ease of installation? This is so important, it calls for an actual example:

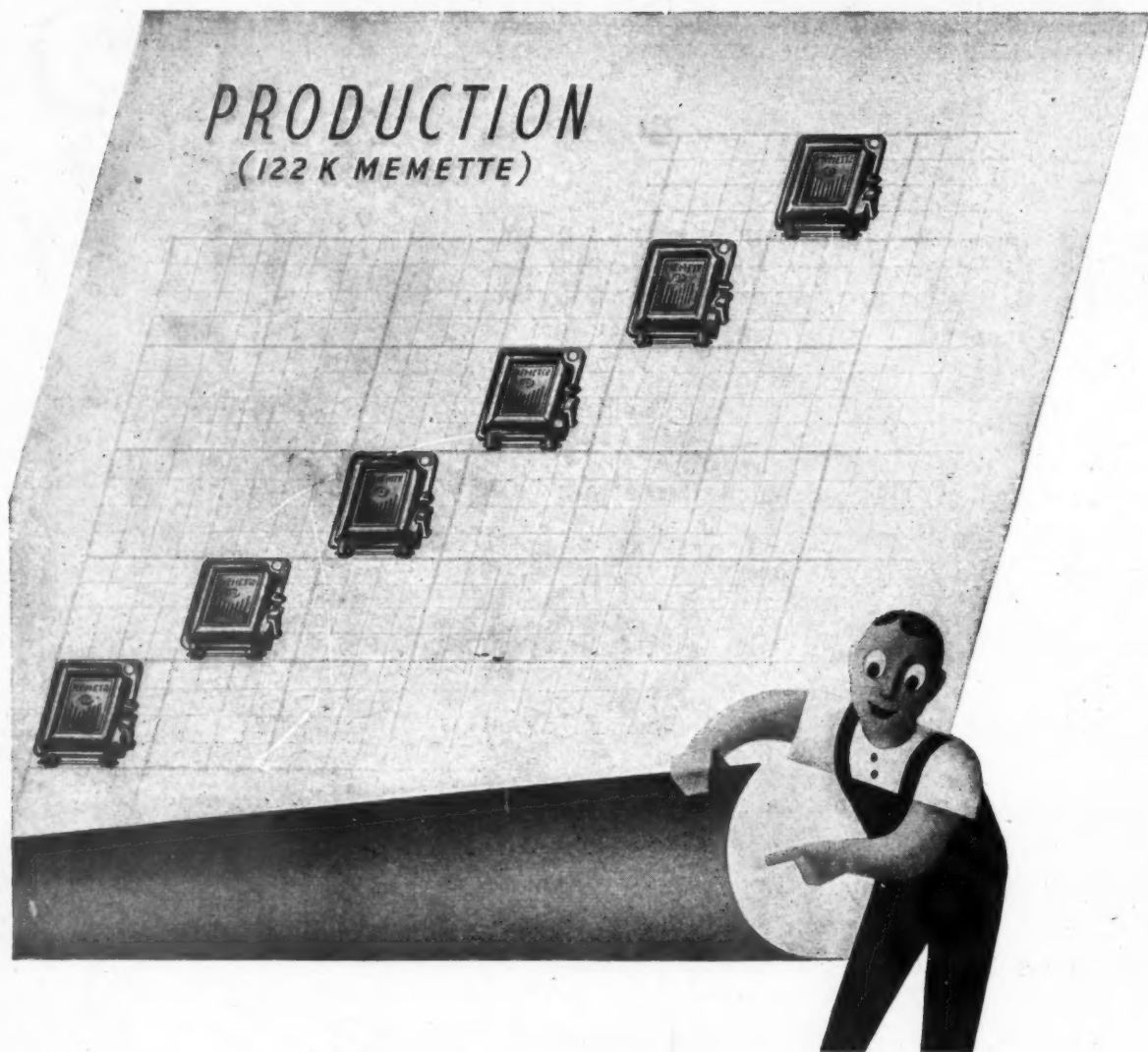
*Here is one method of making canopies, door hoods and bay windows in copper, the ease and simplicity of which at a glance will be apparent to the qualified man.*

ANY QUESTIONS by architects, builders, plumbers and others interested in the use of copper flashings, and in any application of copper sheet, strip and tube in building and plumbing, are cordially invited.



## COPPER DEVELOPMENT ASSOCIATION

*A non-trading organisation, maintained by the British Copper Industry to supply publications, information and advice, free, to all users of copper. Grand Buildings, Trafalgar Square, W.C.2.*  
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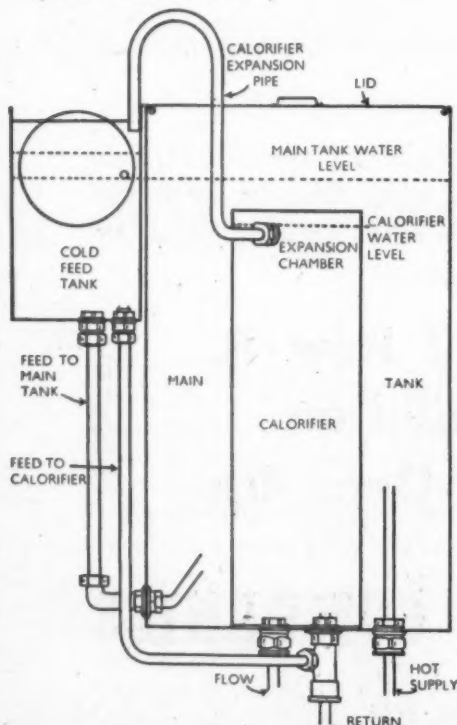
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**IN A NUTSHELL** In ten concise, yet comprehensive publications, the Timber Development Association has put much of the story of wood in a nutshell. The booklets listed below are available on request to the **T.D.A. Publicity Manager, 75, Cannon Street, London, E.C.4.**

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**If you have any constructional problems regarding the use of wood for any project you can be sure of receiving every assistance from the Director of Constructional Research.**

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**YES, WE CAN DESIGN IT**

**AND MAKE IT TOO!**

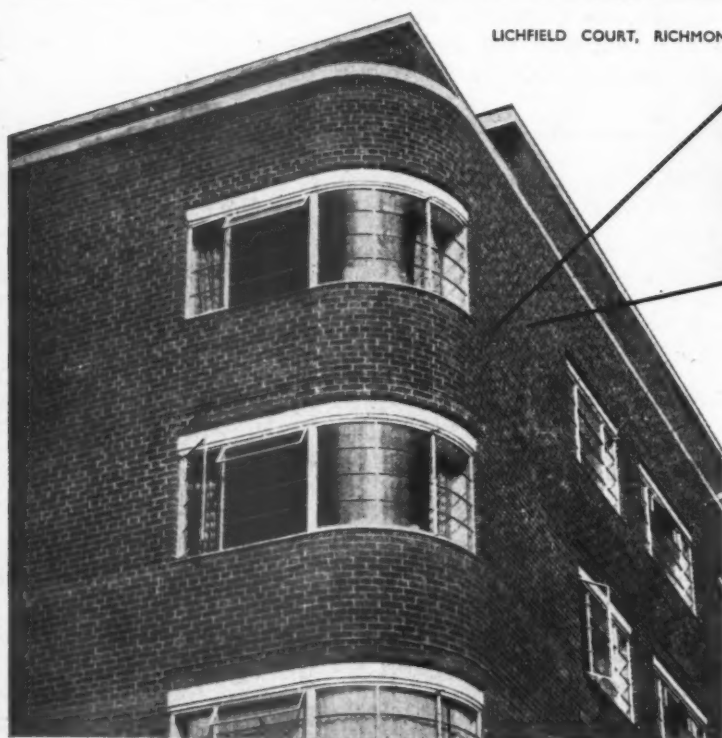
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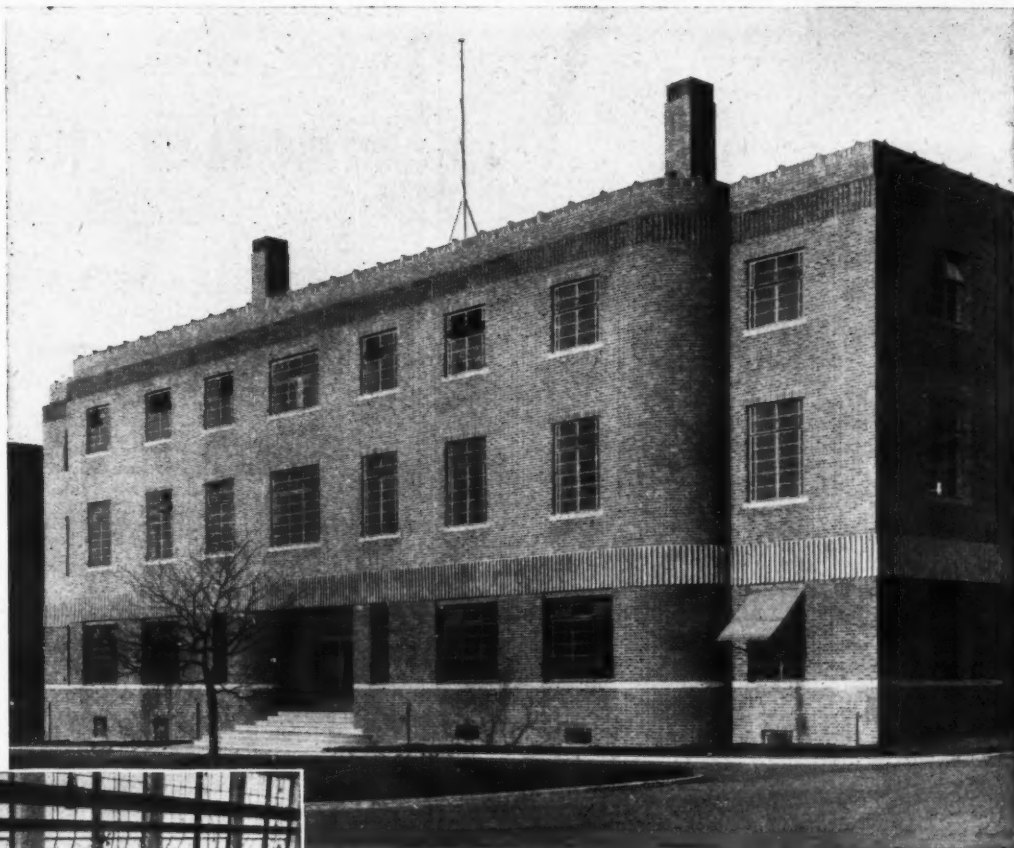
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- Intimate bond between mortar and brickwork.
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A feature of these offices and factory is the 4 ft. fluted band of Empire Stone encircling the entire building, a total girth of over 3000 ft. The stone was cast in a light red tint to tone with the brickwork.

The smaller inset photograph shows a section of the Empire Stone drawing office, where a staff of skilled draughtsmen are employed, who, working from Architects plans, produce the necessary drawings from which each individual stone is accurately cast.

## Empire Stone Company Limited

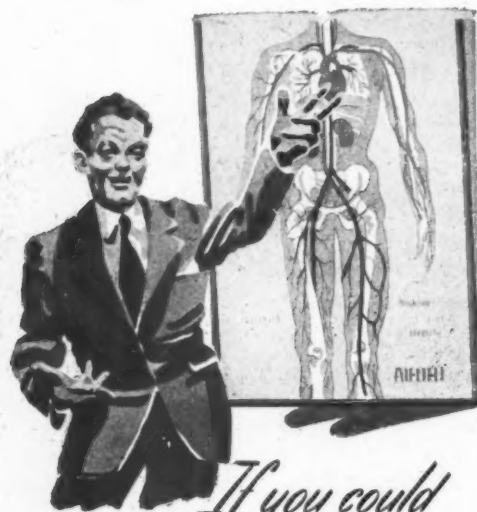
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## COMPANY MEETING.

# MAGNET JOINERY

## INCREASED PROFIT

The 11th annual general meeting of Magnet Joinery Ltd. was held at Bradford on July 7. Mr. Tom Duxbury said: The accounts show a profit from Magnet Joinery of £40,792, and from the Magnet Timber of £70,911, a total of £111,703 for the year.

This profit of £111,703 is against a profit of £74,350 last year. This increase of profit has been produced by a 50 per cent. increased turnover or out-put, not by increased charges, and is in spite of a fall of practically one per cent. in our margin of profits caused by reduced prices on our finished products.

The reason for the large profits in Magnet Timber Limited as compared with the profits shown by the parent company is that the subsidiary completed its change over from war time conditions to peace time trading almost by the commencement of the year under review, and has hence had an opportunity of earning its full trading profits.

The parent company had, however, much greater changes to make from this change over from war to peace. These changes over have not yet been quite completed, but they are nearly through. In spite of this it has well maintained its last year's profits. In the current year subject to what I have to say later about maintenance of a supply of raw materials and demand for the company's products, I have every reason for hoping that there will not be this difference in profits in the two companies once the joinery company has completed its change over.

The issue of shares by your company last year has, as you will see from the figures before you, enabled your two companies to carry substantial stocks of raw materials and finished goods and to give ample credits without excessive calls upon their bankers for facilities for as you will see from the accounts the stocks held by the two companies amount to £216,926, the debtors of the two companies amount to £162,925, whilst the creditors of the two companies apart from taxation only amount to £56,858, and your bank accommodation to £15,516.

During the year under review your company has sold part of its premises at Birmingham, realising a capital profit of £5,519 therefrom, and has purchased larger premises there which have been fitted up for both storage and factory work, and has equipped the same with the necessary plant and tools, and hopes to commence manufacturing there in the next few weeks so that your company will then have three factories working as against two in the period under review.

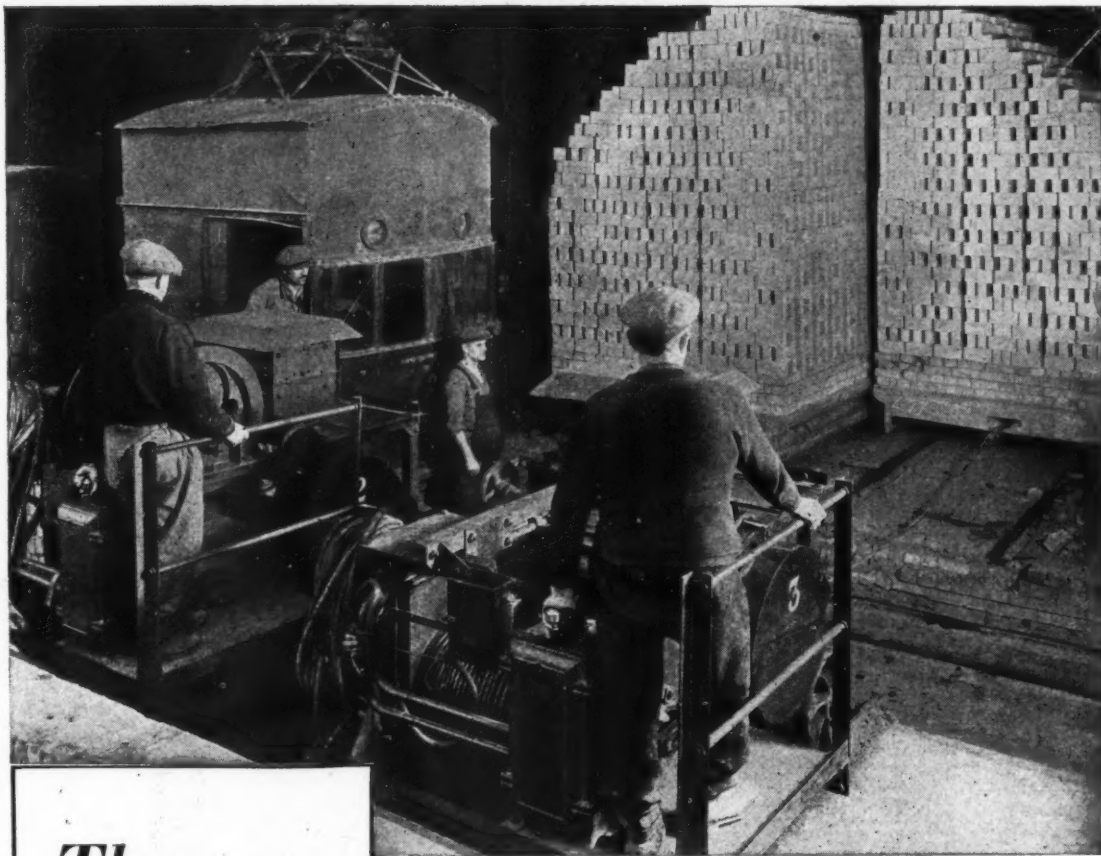
## THE OUTLOOK

Your Knaresborough saw-mill is still maintaining its satisfactory results and has materially assisted your two factories with their supplies of raw materials. From the foregoing you will realise that in normal times your company's outlook for the future would be extremely satisfactory, but we are extremely short of raw materials and we cannot expect an alleviation of this position within the next twelve months at least.

The interim dividend paid in December last and the Preference dividend for the year absorbs £11,970, and your directors recommend for confirmation at this meeting, a final dividend of 50 p.c. on the issued Ordinary share capital of the company, which will absorb a further £19,250 net, leaving a balance of £7,518 to be added to undistributed profits. With the carry forward in Profit and Loss Accounts of both companies and other reserves you will see the company have in general reserve from earned profits the sum of £70,426, which is in excess of the issued Ordinary capital of your company. In addition, there is a capital reserve produced by last year's issue of shares, and the realisation of the Birmingham property of £131,435, so that your company is in an extremely strong financial position, and it has an extremely satisfactory liquid position.

The report was adopted.





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*Element*  
*in the*  
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**Industry**

A touch of the lever brings these trolleys of bricks (each weighing 15 tons) gliding from the kilns. Fourteen days ago they entered the chamber loaded with green bricks. Machinery, under the watchful supervision of skilled operatives, has brought them steadily through the various stages of the burning process. In London Brick Company works, manual labour is applied only where the job cannot be done by machinery. The operatives enjoy the best possible working conditions, and every facility for recreational activities.

Benefits enjoyed by London Brick Company employees include: Profit Sharing Bonus Scheme, introduced in 1926; Holidays with Pay, introduced in 1930; Pensions and Life Assurance Schemes, introduced in 1936; the Model Village and Social Centre at Stewartby; Canteens; comprehensive indoor and outdoor recreational facilities; sports grounds; club premises; welfare departments; safety and first-aid organisations.



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L.B.37.

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Another in the series of fine, modern  
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erected the steelwork.*



*Architects:  
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*Boulton & Paul Limited*

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In common with every other periodical this JOURNAL is rationed to a small part of its pre-war needs of paper. Thus a balance has to be struck between circulation and number of pages. We regret that unless a reader is a subscriber we cannot guarantee that he will get a copy of the JOURNAL. Newsagents now cannot supply the JOURNAL except to a "firm order."

Subscription rates: by post in the U.K. or abroad, £1 15s. 6d. 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 15s. each; carriage 1s. extra. Goods advertised in the JOURNAL and made of raw material now in short supply, are not necessarily available for export.



## DIARY FOR JULY AUGUST AND SEPTEMBER

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 as given in the glossary of abbreviations on the front cover.

**CANTERBURY.** *City of Canterbury College of Art, Department of Architecture. Exhibition of Students' Work.* Professor A. B. Knapp Fisher, Chairman of the Board of Architectural Education, will speak at 3.30 p.m. 10 a.m. to 8 p.m.

JULY 23

**DARMSTADT.** *International Congress for Engineering Education at Darmstadt.* An International Meeting, dealing with problems of technical education. Eminent scientists and engineers from all countries will present papers. (Sponsor, Technische Hochschule, Darmstadt.)

JULY 31-AUG. 9

**HYDE.** *Ideas on Design in the Home Exhibition.* At Bayley Hall. (Sponsor, Arts Council.)

JULY 19-AUG. 2

**LEAMINGTON SPA.** *Town and Country Planning Association Conference and Royal Leamington Spa Development Exhibition.* At the Town Hall, Morning session of Conference, July 23: *Health and Holiday Resorts*; afternoon, *The National Plan and Royal Leamington Spa: Which Way to Prosperity?* Among the speakers will be R. L. Reiss; E. H. Doubleday, County Planning Officer for Warwickshire; Professor Sir Patrick Abercrombie; C. H. James, R.A.; Lt.-Col. J. R. Oxenham, Regional Planning Officer; F. C. Thomas, Mid-Warwickshire Divisional (Education) Executive; Miss D. W. Lane, Warwickshire Rural Community Council; H. G. Burgis, Leamington Chamber of Trade; Major J. Blower, Leamington and Warwick Hotels Association; J. Smith, Personnel Manager, Lockheed Hydraulic Brake Co.; and Miss A. Makin, Leamington Townswomen's Guild. The exhibition will be opened by Lewis Silkin, M.P., Minister of Town and Country Planning, on July 19. (Sponsors, TCPA and Borough of Royal Leamington Spa.)

JULY 19-23

**LEICESTER.** *Building Science Exhibition.* At the City Museum and Art Gallery. (Sponsor, Department of Scientific and Industrial Research.)

UNTIL JULY 19

**LONDON.** *Infra-Red Heating by Gas Exhibition.* At Gas Industry House, 1, Grosvenor Place, London, S.W.1. (Sponsor, British Gas Council.)

UNTIL JULY 31

*Windmills.* Exhibition of photographs at Heal's Mansard Gallery, 196, Tottenham Court Road, W.1. (Sponsors, Windmill and Watermill Section of SPAB in collaboration with Heal and Son, Ltd.) 9 a.m. to 5.30 p.m. daily, Saturday 1 p.m.

UNTIL JULY 26

*Regional Conference of Local Authorities, in London and the Home Counties.* At the County Hall, London. The Conference will consider Housing and Town and Country Subjects. (Sponsor, NHTPC.) 10.45 a.m.

JULY 17

*AA School of Architecture. Annual Prize-Giving and Opening of Exhibition of Students' Work.* At 34, Bedford Square, W.C.1. Opening address by Robert Atkinson. (Sponsor, AA.) 3.30 p.m.

JULY 18

*AA School of Architecture Exhibition of Students' Work.* At 34, Bedford Square, W.C.1. (Sponsor, AA.) 10 a.m. to 6 p.m.

JULY 19-31

*Eleventh Public Works Roads and Transport Congress.* At Olympia, London.

JULY 21 to 25

*South-East Essex Technical College and School of Art. Exhibition of students' architectural drawings.* At the Building Centre, 9, Conduit Street, W.1.

JULY 21-30

*Alexander Block. Sociology of Housing.* At the Housing Centre, 13, Suffolk Street, S.W.1. (Sponsor, HC.) Buffet lunch 12.45 p.m., 2s. 6d. Talk 1.15 p.m., 6d.

JULY 22

*London Master Builders' Association Luncheon.* At the Connaught Rooms. Guest of honour, C. W. Key, Minister of Works. (Sponsor, LMBA.)

JULY 24

**MAIDSTONE.** *J. C. Browne. Paint.* At the Maidstone Technical Institute. (Sponsor, South-Eastern Society of Architects, Tunbridge Wells Chapter, Maidstone Group.) 7 p.m.

AUG. 20

**MANCHESTER.** *Builders' Plant, Equipment, Tools and New Materials.* Exhibition at the Government Building Trade Training Centre, Denton, Manchester. The aim of the exhibition is to bring to the notice of all engaged in the industry, the small plant, equipment, etc., which has been designed to help speed up production and also to help in meeting the universal shortage of labour. (Sponsor, The Building and Civil Engineering Joint Committee under the chairmanship of the Regional Director, Ministry of Works.)

JULY 17-26

**OXFORD.** *Building Science Exhibition.* At the Electricity Showrooms. (Sponsor, DSIR.)

JULY 28-AUG. 9

**READING.** *Town and Country Planning Summer School.* At Reading University. (Sponsor, Town Planning Institute.)

UNTIL JULY 23

**SURBITON.** *Art in England. Summer School.* At Hillcroft College, South Bank, Surbiton, Surrey.

JULY 26-AUG. 9

## NEWS

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*Though no feature in the JOURNAL is without value for someone, there are often good reasons why certain news calls for special emphasis. The JOURNAL's starring system is designed to give this emphasis, but without prejudice to the unstarred items which are often no less important.*

★ 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 Georgian Group: By taking two or three GEORGIAN TERRACE HOUSES at a time and converting them into flats, living room could be provided at far less cost than by creating new estates.*

Members of the Georgian Group held their annual meeting at the Royal Institution under the chairmanship of Lord Rosse. An address was given by the French Ambassador, who spoke of the methods used in France to conserve buildings of architectural merit and historical importance. The annual report shows that the past year has been one of much activity for the group, whose assistance or intervention was called for on 44 occasions in order to save Georgian buildings from threatened destruction or to give advice about their preservation. The Georgian Group has also taken an interest in the problem of the "horizontal conversion" of Georgian terrace houses to provide flats or maisonettes without destroying their architectural character. There are hundreds of these houses, the report states, distinguished in design and still sound in construction, which are no longer in demand for single family occupation. By taking them two or three at a time and skilfully converting them into flats and maisonettes, living room could be provided at far less overall cost than by the creation of new housing estates.



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# From AN ARCHITECT'S Commonplace Book

CIVILIZATION AND BARBARITY. [From Before the Romantics, an Anthology, compiled by Geoffrey Grigson.] I persuade myself, that the bountiful and gracious Author of Man's Being and Faculties, and all Things else, delights in the Beauty of his Creation, and is well pleased with the Industry of Man, in adorning the earth with Beautiful Cities and Castles ; with pleasant Villages and Country-Houses, with regular Gardens and Orchards, and Plantations of all Sorts of Shrubs and Herbs, and Fruits, for Meat, Medicine, or moderate Delight ; with Shady Woods and Groves, and Walks set with Rows of elegant Trees ; with Pastures clothed with Flocks and Valleys cover'd with Corn, and Meadows burdened with Grass, and whatever else differenceth a civil and well cultivated Region, from a barren and desolate Wilderness. If a Country thus planted and adorn'd, thus polished and civilized, thus improved to the Height by all Manner of Culture for the Support and Sustenance, and convenient Entertainment of innumerable Multitudes of People, be not to be preferred before a barbarous and inhospitable *Scythia*, without Houses, without Plantations, without Corn-fields or Vineyards, where the roving Hords of the savage and truculent Inhabitants transfer themselves from Place to Place in Wagons, as they can find Pasture and Forage for their Cattle, and live upon Milk, and Flesh roasted in the Sun, at the Pomels of their Saddles ; or a rude and unpolished *America*, peopled with slothful and naked *Indians*, instead of well-built Houses, living in pitiful Huts and Cabbins, made of Poles set endways ; then surely the brute Beasts Condition, and Manner of Living, to which, what we have mention'd doth nearly approach, is to be esteem'd better than Man's, and Wit and Reason was in vain bestowed on him. *John Ray* (1627-1705).

*An inquiry into Dover Town Council's APPLICATION for a declaratory order for 250 acres in the centre of the town has been opened at Dover by Mr. Elliott Fitzgibbon an inspector of the Ministry of Town and Country Planning.*

The council's application is in connection with the planning scheme prepared by its borough engineer in conjunction with Sir Patrick Abercrombie. If the order is granted all property in the 250 acres will be subject to compulsory purchase at any time within 20 years, the period estimated for the completion of the scheme. The Dover Chamber of Commerce has maintained that its acquisition would impede the economic recovery of the town and cause loss and worry to property owners; and that the cost would be beyond the means of the town. The Town Clerk said that it was a misconception that the order would be used to enable them to acquire straight away anything like all the land comprised in the application, but it was necessary to ensure long-term planning.

★

*Recommendations that COVENTRY'S NEW CATHEDRAL should be built in the English Gothic tradition, of red sandstone, and as near as is practicable on the site of St. Michael's are made by Lord Harlech's commission, which published its report last week.*

The commission agrees with the committee of the Central Council for the Care of Churches, presided over by Lord Esher in 1941, that the design of the new work should not be copied from the old, but should not be in violent contrast. The commission was appointed last December to take evidence and advise how best to provide a new cathedral to replace that which—with the exception of the tower and spire—was destroyed by the enemy in November, 1940. The report states that Coventry will be rebuilt round the cathedral, and the commission maintains that to leave standing the great tower and spire—for centuries Coventry's outstanding landmark—without the church which they were built to mark, would be a

dereliction of duty and an acquiescence in the destruction wrought by the forces of oppression and evil. The tower and spire will remain, but the condition of the outer walls makes it unsafe to incorporate them in a new building.

*From the AA COUNCIL'S REPORT for 1946-7: During the early part of the session primary consideration was given to the provision of sufficient school accommodation for the many ex-service men and women returning to complete their architectural training.*

By September a temporary building had been erected in Morwell Street, at the rear of the main studio block, and space was available in all the Association's premises to house nearly 500 students. The teaching staff was increased, and under the direction of the Principal, Mr. R. Gordon Brown, some 440 students were enrolled for the opening of the school year. On December 31, the Refresher Course closed. This course, attended by 81 members, was instituted in September, 1945, for the benefit of qualified

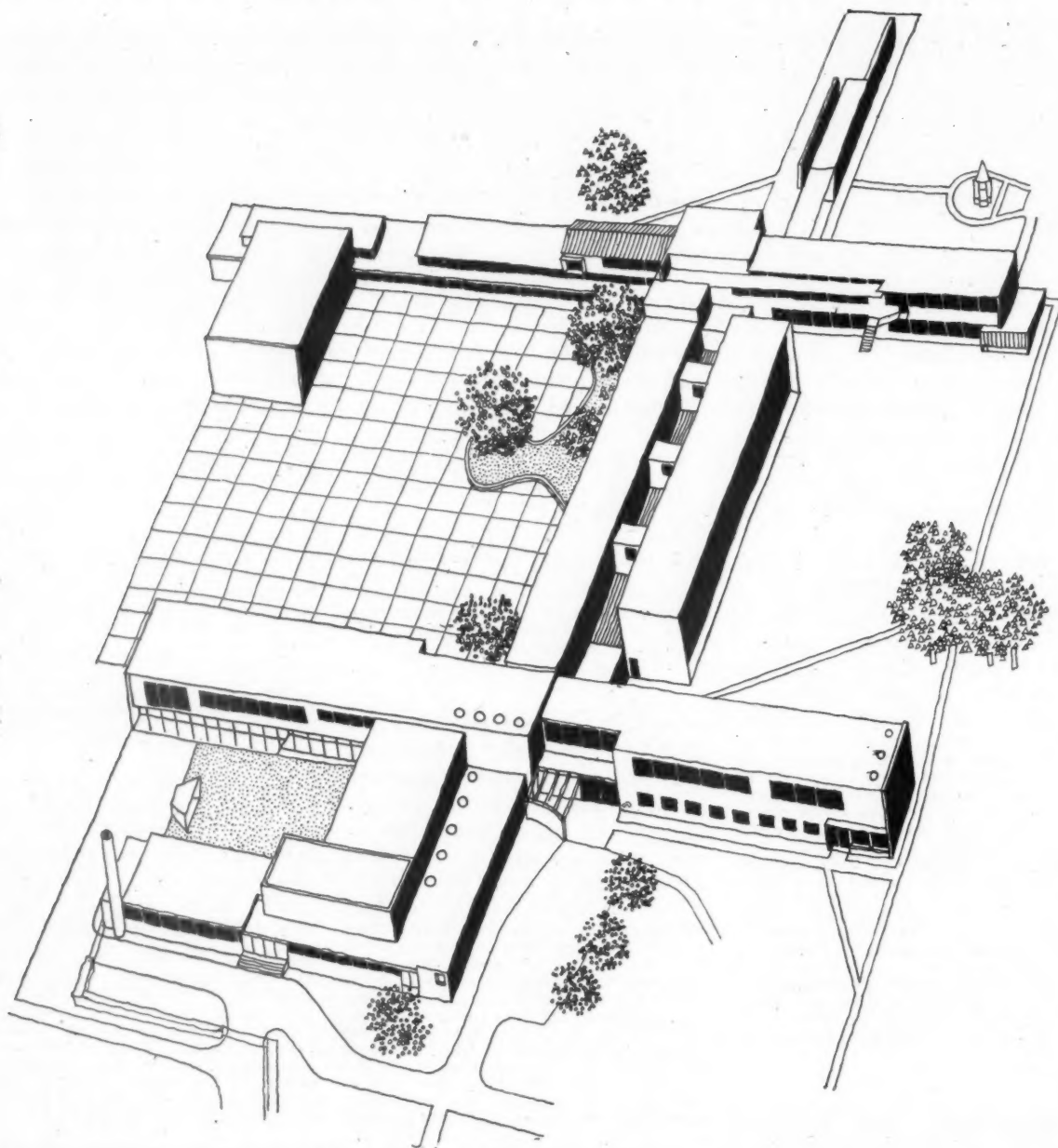
architects returning from the Forces. Careful consideration was given to the repair of the premises at Nos. 34, 35 and 36, Bedford Square and to the repair and re-conditioning of the furniture and equipment, and works amounting to over £6,000 were authorized, the execution of the programme being dependent upon the issue of the necessary building licences. The club room and catering service was augmented and the members' accommodation was reinstated at its prewar standard.

*The Minister of Health, in a letter to housing authorities, emphasizes the need for absolute ECONOMY IN THE USE OF TIMBER although softwood imports will be higher this year than last year.*

Mr. Bevan expects that total imports of softwood during 1947 will be at least 1,100,000 standards. This compares with 728,000 standards in 1946, but is less than half the annual imports in the years immediately before the war. A large proportion of this year's shipments will not arrive in time to meet the peak demand for building timber this summer.



*Part of a model of the plan for the reconstruction of Croydon now under consideration by the Town Council. New roads, passing under and over existing roads, will be built; industry will be segregated; new schools and housing estates will go up, and over 5,000 acres will be preserved as public open space. Provision is also made for a new road to cross the centre of the town on a viaduct three-quarters of a mile long and 50 feet high. The viaduct is not envisaged in the present reconstruction plan, although provision is made for its inclusion at a later date if the need for its construction arises.*



## Jobs in the making: Secondary School at Stevenage

The proposed school at Stevenage by F. R. S. Yorke is planned to accommodate some 450 boys and girls ranging between the ages of 11 and 16. Besides classrooms and laboratories, there will be an assembly hall with stage, library, gymnasium, community centres with games room, cafeteria, discussion room and exhibition space. The hall and handicrafts shop will be used by the school and by

adults in the evenings. Heating will be mainly by copper pipes laid under the composition block flooring. The school will be set in some seventeen acres of playing fields. It will be constructed with a light steel frame clad externally with pre-cast concrete slabs. Flank walls without windows are to be of stock bricks. Plans and photographs of a model of the school appear on pages 53 to 55.

★

*The special problems of HOUSE BUILDING IN THE STONE DISTRICTS are to be investigated by a committee set up under the auspices of the Housing Centre in close co-operation with the CPRE.*

The present urgent need for housing may seriously affect the character of stone villages unless everyone concerned with housing, locally and nationally, is awake to the facts of the position. The Committee will consider whether in fact stone as a building material is as economical and speedy as other materials. Regional representatives will sit on the Committee together

with representatives of other interested organisations and observers from Government Departments. Any information relative to this subject would be gratefully received by the Secretary of the Committee at the Housing Centre, 13, Suffolk Street, Haymarket, London, S.W.1. Offers of help in local investigation would be very welcome.

★ *During the past months the GWR has been studying the visual APPEARANCE OF ITS STATIONS.*

Railway engineers, architects and display specialists have been carrying out experiments at Ealing Broadway Station and as a result all new station nameboards will be on a red and white background with specially designed easy-reading lettering. They will be at eye level and spaced along platforms about a carriage length apart. Attention will be given to the character and grouping of posters and they will not be obstructed by seats and automatic machines. Booking halls are to be arranged to give more daylight, better circulating facilities, and they will be devoid of commercial advertisements.

*The Minister of Town and Country Planning has appointed the following as members of the development corporation for the establishment of a new town at AYCLIFFE, County Durham: Lord Beveridge (chairman), Mr. W. N. Davis (vice-chairman), Mr. A. J. Alsop, Mrs. Cahill, Mr. G. C. Gibson, Mr. T. H. Summerson, and Mr. T. Benfold.*

*Sir George Gater has been appointed CHAIRMAN OF THE BUILDING APPRENTICESHIP AND TRAINING COUNCIL in succession to Sir Malcolm Trustram Eve, who has lately resigned.*

Sir George Gater has had extensive administrative experience in the Civil Service and Local Government. He was Assistant Director of Education in Nottinghamshire (1912-14), Director of Education in Lancashire (1919-24), and Education Officer to the London County Council (1924-33). From 1933-39 he was Clerk of the London County Council. In 1939 he was appointed Permanent Under Secretary of State for the Colonies. During the war he was seconded as Permanent Secretary, first to the Ministry of Supply and later to the Ministry of Home Security. From 1942 he was at the Colonial Office until his retirement early this year. See last week's issue.



*Sir George Gater, the new Chairman of the Building Apprenticeship and Training Council.*

## STAFFING UP

THE new Town and Country Planning Bill will place many additional responsibilities on the Ministry of Town and Country Planning. County Councils, formerly handing over responsibility to consultant town planners will now have to undertake the work through their own Town Planning departments, and will inevitably look to the Ministry for guidance. Attention has frequently been drawn to a serious shortage of adequately qualified and experienced town-planners and the County Planning officers will, while gaining the necessary experience, lean heavily on the Ministry for support and assistance.

The need for the Ministry to build up a team of able and experienced advisers is therefore urgent. There are, however, many pitfalls which must be avoided if such a team is to perform the tasks that await it. The mere collection of names will achieve nothing. The Scientific Advisory Committee of the Ministry of Works has failed, on the whole, to live up to its promise, in spite of the many brilliant individuals that compose it. The mistake must not be repeated, however tempting it may be, to shelter behind academic or scientific brilliance.

In the first flush of enthusiasm attending the setting up of the Ministry of Planning, a number of research workers were appointed and have probably done a great deal of excellent work. Very little material has been published, and the effects of their labours are scarcely observable in the efforts of local authorities, and it must be admitted in some cases outside consultants do not appear to have profited by the accumulating body of planning knowledge. During recent months there has been a tendency to regard sociologists, geologists and others engaged in research work as rather unnecessary luxuries. The original team has been melting away, at the time when its need is becoming increasingly urgent. It is gratifying, therefore, to see the advertisement appearing in *The Times* recently, inviting applications from those qualified in geography, economics and geology. Research is to be carried out on "subjects such as population, regional and economic geography, communications and services, and natural resources." The appointments are senior ones and command reasonable salaries. It should, therefore, be possible to get the right men. For a Government department, this first step is perhaps the easiest. When appointed, the new officers should be used, and their skill and knowledge should not be confined to dossiers and reports marked "for internal circulation only." Nothing is more dispiriting to a man who has knowledge that he wishes to devote to the service of the people than the endless circulating of notes and comments. The Planning Officer will need advice and information in a form that he can digest and use. The temptation to expand the field of study and increase the complexity of the programme is well-nigh irresistible to those concerned with research related to planning. The temptation must be resisted or those who are desperately in need of help will receive little of moment.



It is satisfactory to note that the majority of the appointments are for officers to work at regional headquarters. There is no need to emphasise the dangers of excessive centralisation where local planning problems are involved. Local customs, conditions and traditions, particularly in a country so varied in its topography and geology as our own, are of fundamental importance, and cannot be adequately appreciated in the seclusion of St. James' Square. Though knowledge is essential, understanding is a greater need.



*The Architects' Journal*

9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1

Phone: Whitehall 0611

## N O T E S & T O P I C S

### YOUNG MOTHER RILEY VERSUS MR. MARSHALL

From a recent issue of *Art Outlook* I learn that the indefatigable Maude K. Riley is once more on the war-path against the State Department. (You remember case No. 1 of the German masterpieces removed to USA "for safe keeping" and still there?) This time the trouble has been caused by an order from Mr. Marshall cancelling a projected goodwill European tour of modern American pictures. The order was given apparently under strong pressure from the American Red-Witch-hunters. For months past the Hearst press in particular has been campaigning against good American dollars being spent on "communistic and degenerate art" . . . which illustrates the "alien elements of American life." "This sort of art," said a Hearst editorial recently, "is Red-linked."

Clearly the Hearst editors are not familiar with contemporary Russian painting, which is usually full of such desirable qualities as impeccable sentiment, large areas of bright, durable colours, spirited action, and frames worth goodness knows how much. But whether modern painting is or is not "Red-linked," the entry of politics into the art world is wholly deplorable and an inevitable prelude to the most melancholy and degraded consequences. The next steps are the fostering of an approved "official" art, the discouragement of experiment and originality, the murder of an artist's integrity. The results of such a policy can to-day be seen in the galleries of Munich and Moscow.

President Truman has publicly confessed his abhorrence of advanced painting and presumably cannot be depended upon to reverse Mr. Marshall's decision. But Miss Riley is a stout fighter, and it will not be her fault if the next cultural exhibition of American art looks like a consignment of calendars. Stay in that garden, Maude, you're doing fine, and we wish you luck.

### DEEP PICTURES

In a few years the Editor, with each copy of the AJ, may present you with a "lenticular viewing grid." Clap this on the illustrations and you will see the buildings of that day stand up like glossy models on the page. Prophecy prompted by the recent trade exhibition in London of "Deep Pictures," the last thing in stereoscopic photography. The spectator no longer has to mask himself or adjust apparatus to merge the various viewpoints. The glazed viewing grid in contact with the surface of the print is just like the glass on any framed favourite. You look into tanks in which satiny creatures, human, animal

or vegetable, lean towards you in all the glory of three dimensions.

In long-distance views the distance is there but made up of flat screens one behind the other. Daguerre would have been interested, but he need not have been shamed by M. Maurice Bonnet's invention. This is another vision of reality with a charm all its own. If Daguerre's figures shimmer flatly in everlasting hazy afternoon of fading sunlight, M. Bonnet's "Deep Pictures" show us solid objects all made of lustrous velvet living in some fluid atmosphere thick with gloss and varnish. A brave new world. "Du beau, du bon, de Bonnet," as the French would say.

### BERLIN PREFABS.

From Berlin comes news of a planning and building exhibition. Prefabricated houses were to the fore, and five different types were on display. These were initiated by the Berlin Agency for Scientific Research and Development of Building, and were designed for export as well as local demand. This necessitated the elimination of all traditional heavy materials, and a new plastic material has been used called "polymerisat," with "ipor tea," a urea-resin form material, for insulation. The houses are to have electric heating fitted between the insulation and interior wall layers. The five types were named "Deutschland" (771 sq. ft.), "England" (839 sq. ft.), "Amerika" (792 sq. ft.), "Russland" (743 sq. ft.) and "Frankreich" (675 sq. ft.) — presumably according to the country for which they were intended. It is interesting to compare the accommodation, in terms of superficial area, of the various types. "England" has the highest standard, and it is probably true to say that the others equally well reflect the standards of housing in their respective countries. All the houses are rectangular, except the French, which are circular in shape.

### LONDON TOPOGRAPHY

The London Topographical Society has been holding a double exhibition at the Guildhall. A selection from a large series of water-colours done by John Crowther between 1879 and 1890 record a capital already half devoured before the bombs came. I noted



especially the Christ's Hospital drawings, the streets of gabled low-browed shops in Bermondsey, and such ruralities as the thatched white-washed cottages at Shepherd's Bush. Neat, pretty and painstakingly accurate, these are good browsing ground. Covering a much greater range are the publications of the Society, including reprints of the standard maps and views of all periods and of less-known property surveys and descriptive drawings. During its existence the Society has made a mass of material easily available to the research student.

#### NO MAN OF STRAW

The photograph below is reproduced from a recent copy of the *Geographical Magazine* and is of Mr. George Cox, the bricklayer Mayor of Holborn. Mr. Cox is 45 years old, is Labour mayor of a borough with a Conservative MP, and is accustomed to laying between 700 and 800 bricks a day. This being about double the official rate is reflective of Mr. Cox's energetic approach, and now, thanks largely to his enthusiasm, Holborn has a bachelor laundry, a children's library, a teenage club and a well-advanced housing programme.

#### BUILDING IS YOUR BUSINESS

Highly recommended reading for all clients—and that means everybody—is Mark Hartland Thomas' new little book *Building is Your Business* (Allen Wingate, Ltd., 7s. 6d. net). In



Holborn's bricklayer mayor. See Astragal.

his preface the author states that the book has been written to furnish the layman with information upon some of the problems and capabilities of building, and thus to encourage a critical interest in them. This is done with admirable clarity, without shirking controversy or the essential technicalities, and without, thank goodness, any of that cosy facetiousness in which so many technical writers so mistakenly wrap their information. He explains who and what are architects and specifications, engineers and contracts, clerks of works and P.C. sums.

He describes the qualities of the principal building materials, tells you how to read a plan and how to become an architect. He discusses architectural science and architecture as an art. The book is well illustrated with drawings and photographs and has been smartly designed by Peter Ray, and though the field it covers is as familiar to every architect as the scarred face of his own drawing board, we might all of us with advantage make it our business to read *Building is Your Business*.

#### OTHER PUBLICATIONS RECEIVED

*Miniature Building Construction* (Percival Marshall, Ltd., 8s. 6d. net) is a chatty and informative text-book written principally for those wishing to construct scenic backgrounds for model railways. It is generously illustrated with drawings and photographs of suburban villas, cottages, engine-houses, shops, pubs, fences, and scenery, and contains useful advice on tools, methods, and equipment. The author, Mr. John Ahern, is as enthusiastic as he is observant, and though no modernist ("the ultra-modern style present special problems to the model-maker"), he is, even more modishly, a Sharawag ("ugliness can sometimes be used to good effect"). The 1946 *Report of the Incorporated Church Building Society* (2s. net) records a good year's work, illustrates a new church at Salisbury designed by Robert Potter, appeals for more subscriptions to help the society's work, and announces the publication of a new 7s. 6d. book to be called *Fifty Modern Churches* (copies reserved on request).

ASTRAGAL



## LETTERS

F. J. S. Clarke

H. J. Reifenberg, Dipl. Ing. Arch.

D. T. Richards

Bernard H. Cox, F.S.I., L.R.I.B.A.

### Committee on House Building Costs

SIR,—I am directed by this Committee, which has been recently appointed by the Minister of Health, to ask for the assistance of your readers in tracing pre-war priced Bills of Quantities for small houses. It was, as is well known, not common to use Bills of Quantities for local authority houses at this period, and the Committee has had great difficulty in finding Bills for three-bedroomed houses costing less than £500 during the years 1935-39.

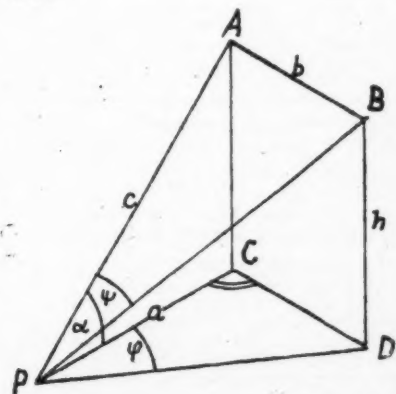
It would be of great assistance to the Committee if any priced Bills of this sort (accompanied if possible by plans and specifications) could be sent to the Secretary of the Committee at the Ministry of Health, Whitehall. All documents will of course be returned after examination.

F. J. S. CLARKE,

Secretary to the Minister of Health's Committee on House Building Costs.  
London.

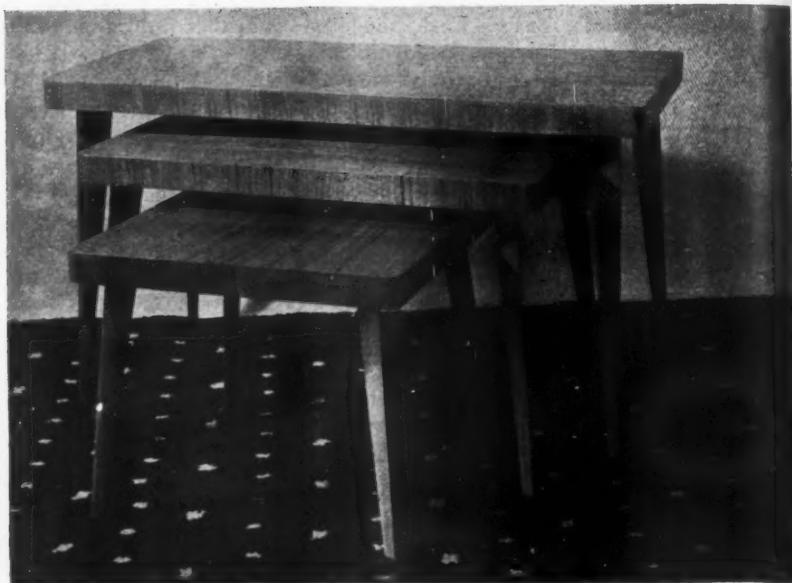
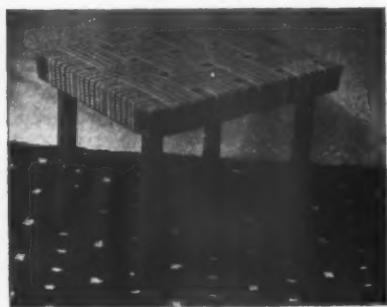
### A Formula for Calculating Daylight Factors

SIR,—So far, graphical methods only have been used for the computation of daylight factors. In the following it is shown how daylight factors can be calculated exactly by means of a mathematical formula, which can be applied wherever obstructing outlines consist of horizontals of any direction and verticals only. This should cover most cases.



Let AB be the horizontal outline of an obstruction of a height (h) above P and at

## WOOD FURNITURE BY GEOFFREY DUNN



Several small pieces of furniture in wood have lately been designed by Geoffrey Dunn and are in limited production. The three dwarf tables are made from ply-wood off-cuts veneered in one of sixteen alternative woods ranging from blue elm to Australian silky oak. The tapered legs are of oak or sycamore. The drawer unit of the bedside table is attached five inches below a walnut top to four tapered legs and provides a shelf. Veneered on all sides this piece is suitable to stand free for use in a living room. The stool has a birch frame with a parti-coloured web seat. The price of the stool, left top, is £4 12s. 6d.; the tables, right top, £6, £5 and £3 14s.; the bedside table, left bottom, £15 2s. 6d. The furniture is made by Dunn's of Bromley.

a distance (a) from P, PCD being a right angle and  $APC = \alpha$  being the angle of obstruction. Then the daylight factor at P for the sector CPD =  $\phi$  of the celestial sphere is

$$DF = \cos \alpha \frac{\phi^{\circ}}{360^{\circ}} \quad (I)$$

where  $\psi = APB$  can be calculated from

$$\tan \psi = \frac{b}{c} \quad (II)$$

or

$$\tan \psi = \cos \alpha \tan \phi \quad (III)$$

Where the obstructing outline does not end at A, the corresponding DF can be calculated as a sum or difference of two sectors as the case may be. The total DF for P is arrived at by forming the sum of the DFs of all sectors. The loss of daylight by window heads is calculated in the same way and subtracted.

London

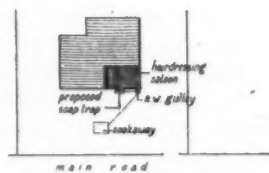
H. J. REIFENBERG

## Disposal of Soapy Water

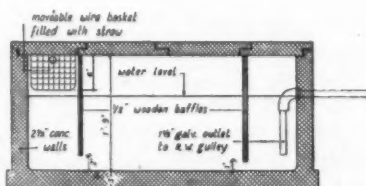
SIR,—My client wants to move her hair-dressing business to a village house where there is no public sewer. She specializes in permanent waving, and uses on an average 50 gallons of water per week for washing hair, etc. Her problem is the disposal of this water, which is soapy, and contains much lather.

The most convenient way is to run it into the rain-water gully, which is connected

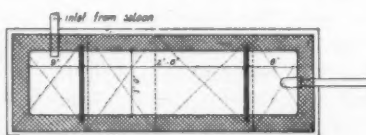
to a soakaway, as shown on the attached key plan, but I fear that the nature of the



KEY PLAN



LONG. SECTION



PLAN

water will soon block the drain, and make the soakaway ineffective.

I have suggested using a soap trap, as shown on the attached sketch, and would be grateful for any readers' criticism of this suggestion, also of its dimensions. Should this be considered ineffective, what method of disposal of the water could be suggested, without undue expense? It is my client's intention to build a separate saloon when building restrictions are lifted, and the present work will therefore be of a temporary nature, say for a couple of years. Llanddarog.

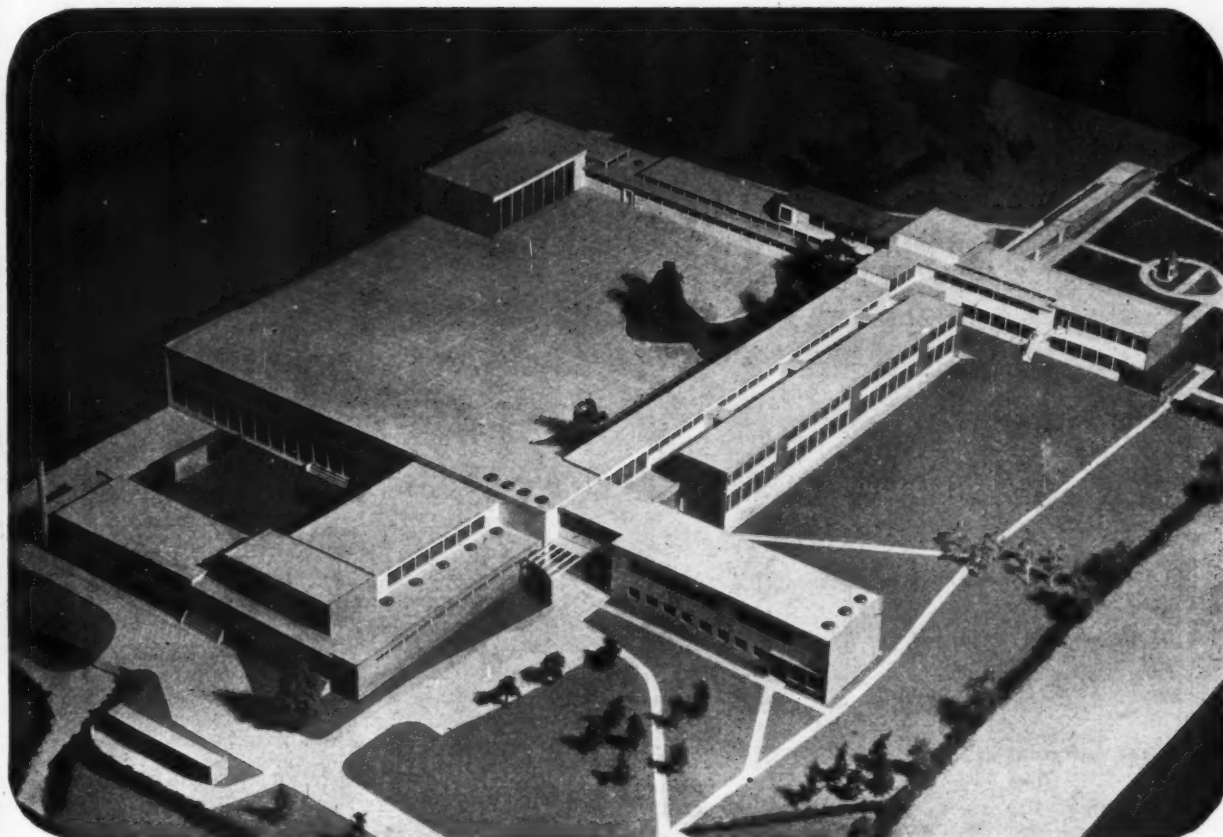
D. T. RICHARDS.

## RIBA Elections

SIR,—Mr. Judson is to be congratulated on having drawn attention to the undemocratic nature of representation on the RIBA Council. Mr. Penn's suggested solution is a sensible one, so far as it goes but if, as he states, apart from Fellows and Associates the remaining members consist of officers and representatives of Allied Societies, there would seem to be no room for Licentiate, whom I and two colleagues have the honour to represent. In doing so, we can claim to speak for a greater number of members *pro rata* than anyone else on the Council. For an examination of the constitution of the Council and the latest membership figures reveals that each Fellow represents 110 members, each Associate 584 members and each Licentiate 948 members.

London

BERNARD H. COX



# SCHOOL AT STEVENAGE

## FOR HERTFORDSHIRE COUNTY COUNCIL

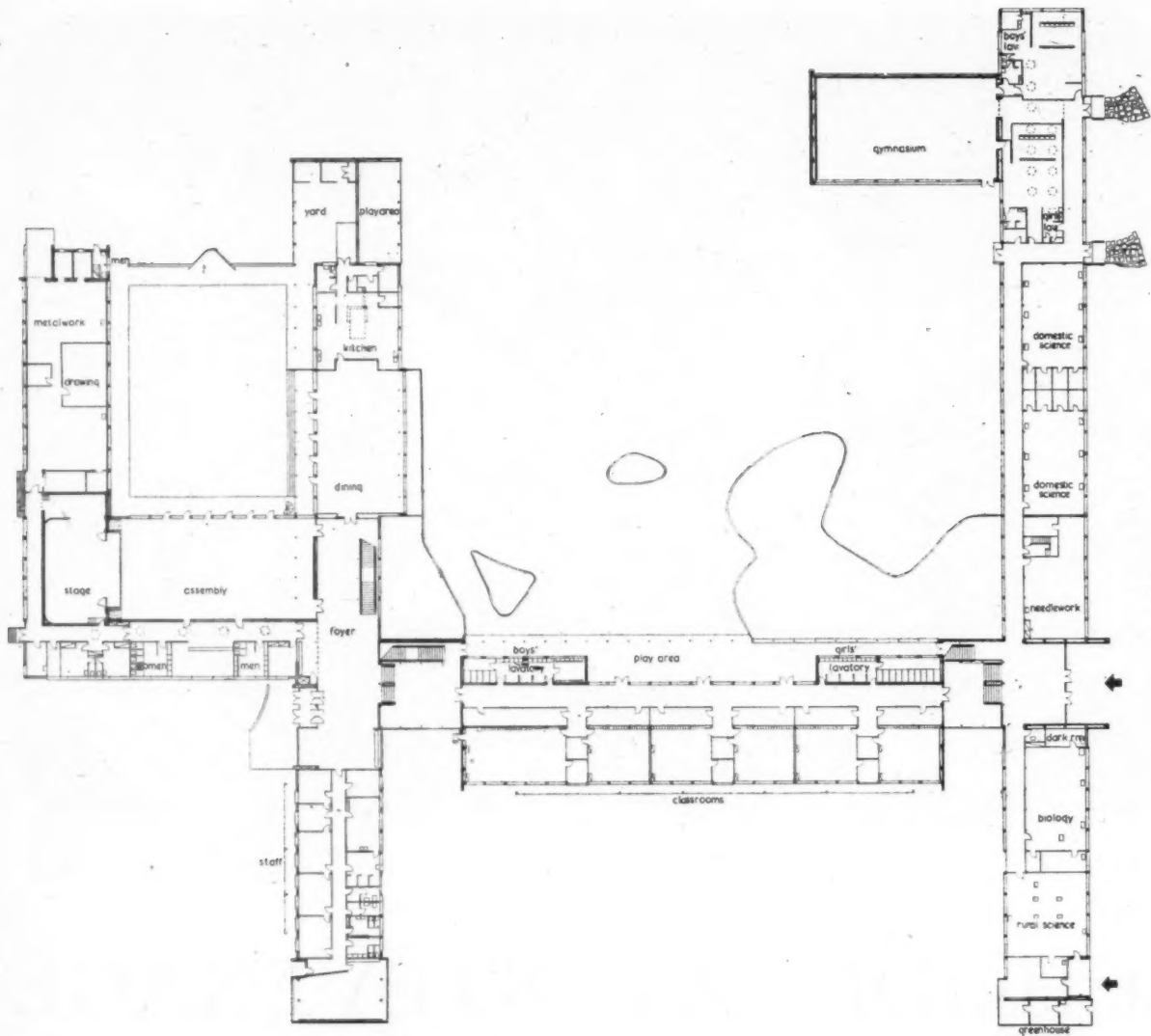
BY F. R. S. YORKE



*Above : A general view.  
Left : A small court  
yard outside the dining  
and assembly halls.*

**GENERAL.** — This Secondary Modern School at Stevenage is to be situated at Waltean Road, Stevenage, and is designed to accommodate 450 boys and girls. The scheme includes adult and youth community centres with games room, cafeteria, discussion room, and exhibition space. There is a fall of ten feet across the site, and the building is planned on three levels with a four foot drop between the east entrance and the class room block, and a 2 ft. 8 in. drop between the class room and west entrance.

**PLANNING.** — The classroom block is planned with short approach corridors and connecting



GROUND FLOOR PLAN

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

corridors to class rooms so that cross ventilation and clerestory and lighting can be obtained to all class rooms on both floors. The hall and handicrafts shop will be used by the school and by adults in the evenings.

**CONSTRUCTION.**—The building is to be constructed with a light steel frame clad externally with pre-cast concrete slabs. Flank walls without windows are to be of stock bricks. The first floor and roof slabs are to be pre-cast concrete units, holed for electric conduits, with inset wood blocks for ceiling fixtures. The roof is covered with insulation board, built-up bituminous roofing felt and white marble chippings. Eaves soffits are to be in fibrous plaster.

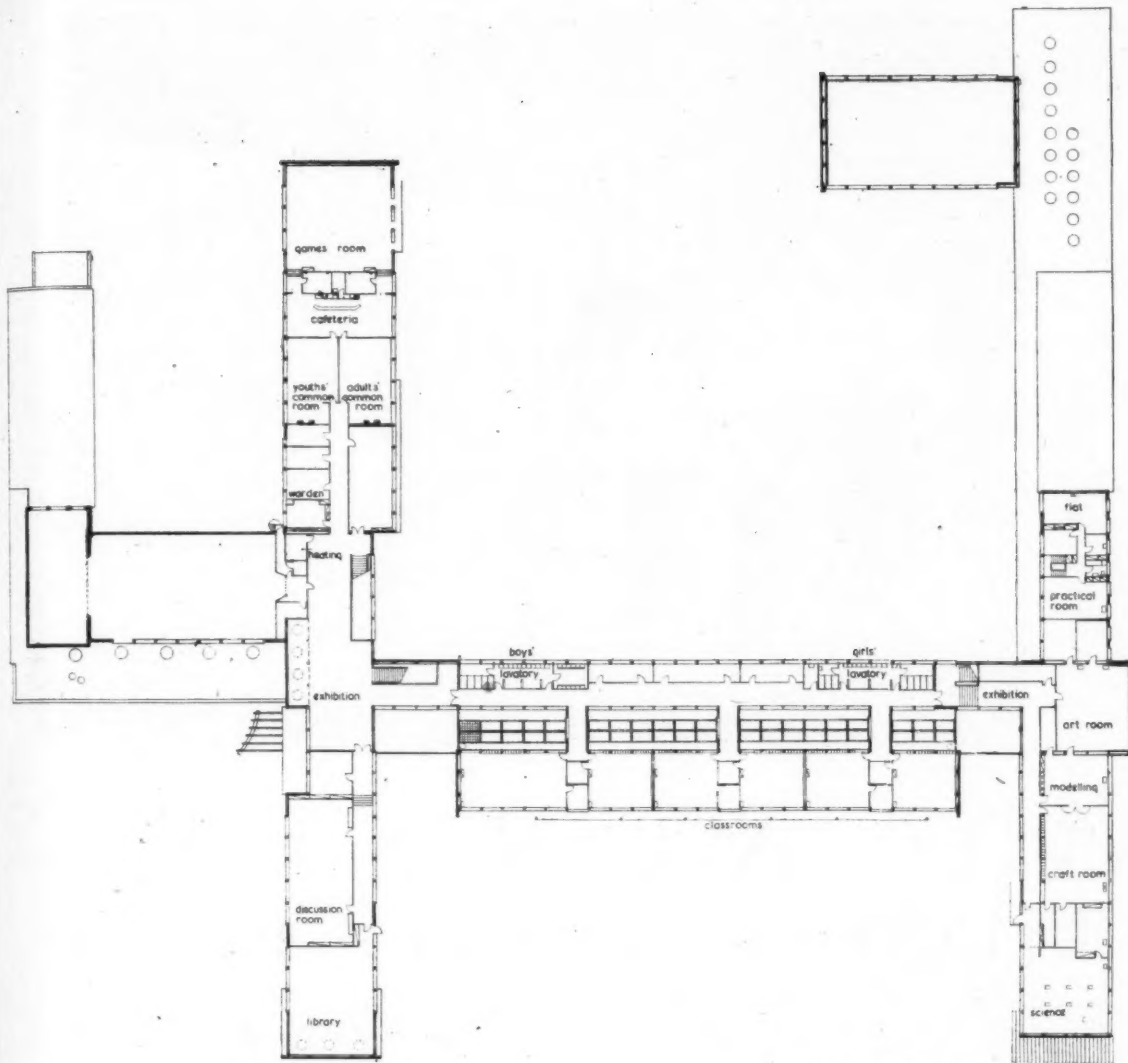
Right: The main entrance.



SECTION

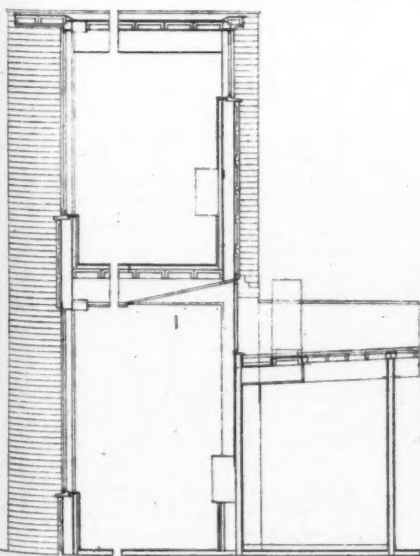
SCHE





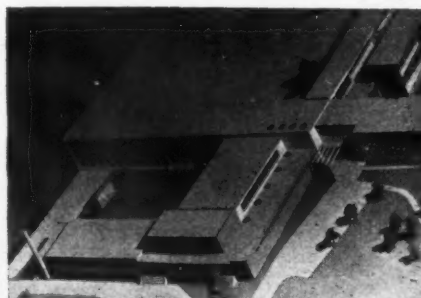
FIRST FLOOR PLAN

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



SECTION

[Scale:  $\frac{3}{8}$ " = 1'-0"]

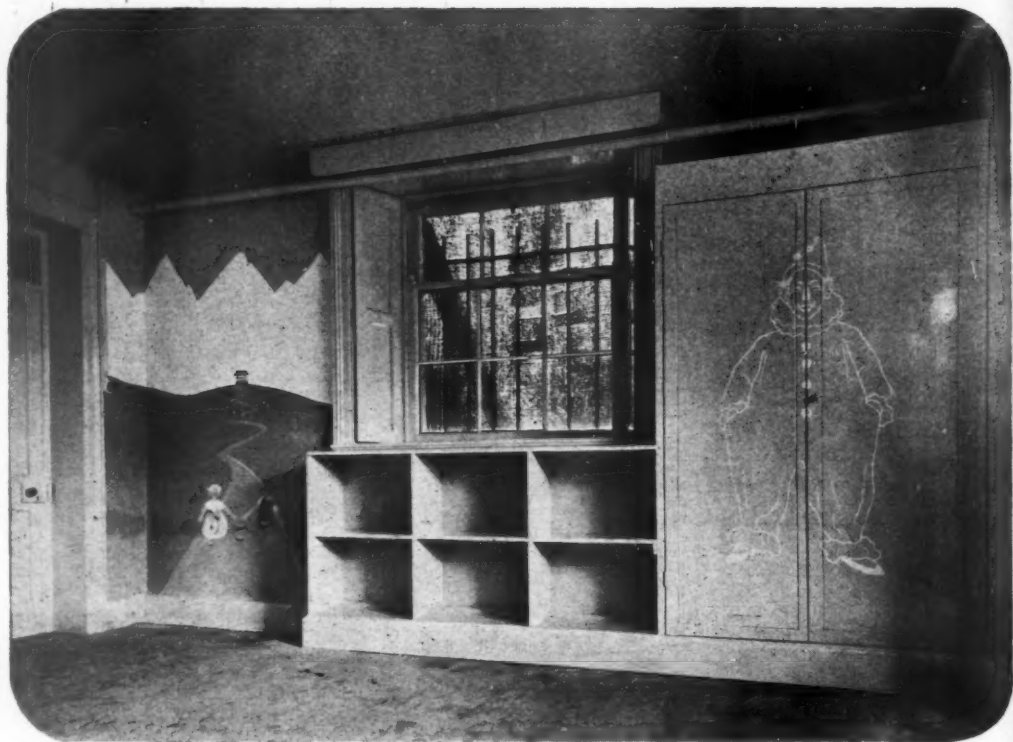


Above: The stage end of the assembly hall, and the various handicraft shops.

**FINISHES.**—Floors generally are to be composition blocks, under which copper pipes are embedded to provide heating from an oil-fired boiler. Floors to lavatories and cloakrooms are to be clay tiles. Walls in class rooms are to be tiled to cill height, above which will be cork insets for pinning up drawings and maps. Ceilings will be wood wool for sound absorption. Windows are to be steel casements, some of which will be fitted with light-proof blinds, depending on the purpose of the room.

SCHOOL AT STEVENAGE DESIGNED BY F. R. S. YORKE

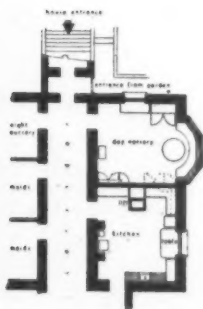
Right: One of the walls of the nursery showing the cupboard. The line drawing is in white on a blue ground. Bottom left: The clocktower motif was inspired by the fact that an electric clock was required by the client. Bottom right: Cupboards are kept at high and low levels for the use of nurse and children respectively.



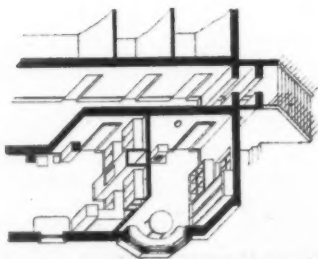
# DAY NURSERY

## AT KILLINEY, COUNTY DUBLIN

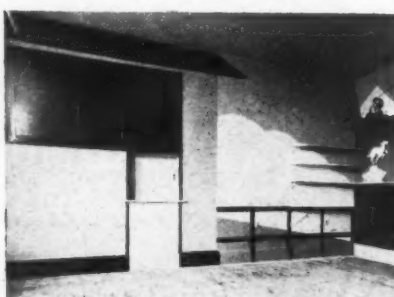
DESIGNED BY  
JAMES M. BRENNAN



PLAN



AXONOMETRIC SKETCH

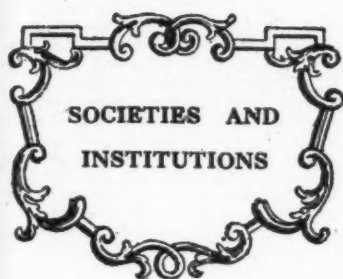


This nursery is in the basement of a house at Killiney, Co. Dublin, and was designed to allow easy access from the kitchen and night nursery.

Furniture is built in, one set of cupboards near floor level for the children, and another for the nurse at a higher level. All woodwork is finished in oil paint. The line drawing of the clown on the cupboard door is in white on a sky blue surface.

The walls are finished with interlining paper, painted with distemper; the brighter colourings in poster colour, the whole surface being treated with a specially prepared colourless varnish. The Tyrolean village scene was inspired by the fact that a clock tower would be a simple way of incorporating the electric clock required by the client.

The nursery is heated by an Otto type stove.



*Speeches and lectures delivered before societies as well as reports of their activities, are dealt with under this title, which includes trade associations, Government departments, Parliament and professional societies. To economize space the bodies concerned are represented by their initials, but a glossary of abbreviations will be found on the front cover. Except where inverted commas are used, the reports are summaries, and not verbatim.*

## AGPS

### Sound Absorption and Reverberation

June 26. At the RIBA, 66, Portland Place, W.1. First summer symposium of the Acoustics Group of the Physical Society on REVERBERATION AND SOUND ABSORPTION. The chief papers were: Professor P. V. Bruel, of the Chalmers Technical University, Gothenburg, PANEL ABSORBENTS OF THE HELMHOLTZ TYPE, and Mr. J. Moir, of the British Thompson-Houston Co., Rugby, REVERBERATION TIME AS AN INDEX OF ROOM PERFORMANCE.

**Professor P. V. Bruel:** Virtually all the important ways of absorbing sound were discussed, but emphasis was placed mainly upon absorption by resonators, to which he has given considerable personal study.

The paper commenced with a brief description of the characteristics of porous materials (*i.e.*, materials such as felt and glass silk), and it was noticed that when placed against solid walls they absorb preferentially at high frequencies unless used in considerable thicknesses. If they are hung a short distance from a wall they absorb preferentially at a frequency which is related to that distance. Very high absorption (about 95 per cent.) can be obtained over a wide range of frequencies by several layers of cloth at different spacings in front of one another, but this is used for special purposes only.

The next class dealt with was membrane absorbers, consisting of air-tight materials such as oil-cloth, plywood, etc., spaced some distance from a wall. Frequently the space contains a porous absorbent. The absorption is caused by the air pressure in the sound wave putting the vibrating system, consisting of membrane and air-space, into vibration. To maintain the movement energy is taken from the waves, and where the system has a natural frequency similar to that of the sound reaching it, the amplitude of vibration will be greatest and absorption at a maximum. It is possible to calculate the natural frequency of the system, but the power of absorption cannot be very precisely anticipated. The chief characteristic of membrane systems is the vigorous absorption at low frequencies, and for this reason they are frequently associated with porous materials having absorption at high frequencies to give accurate control over reverberation.

The third class discussed was termed resonance absorbers, and he distinguished between (a) absorbers built of single resonators, (b) absorbers comprising a coupled resonator system, (c) absorbers consisting of slit resonators, one dimension of which is larger than the wave-length.

The theory of single resonators was referred to extensively, and it was shown that it is possible to obtain maximum absorption in any frequency range by appropriate selection of the area of cross-section, the volume of the resonator or the effective length of its neck. The damping of the resonator is procured partly by friction of the air-particles against the sides of the neck, and finally by artificial damping in the resonator. The length of the neck is important in increasing friction and increases are obtained also by putting metallic net or other porous screens in the opening. Artificial damping is formed by filling part of the volume with a porous absorbent.

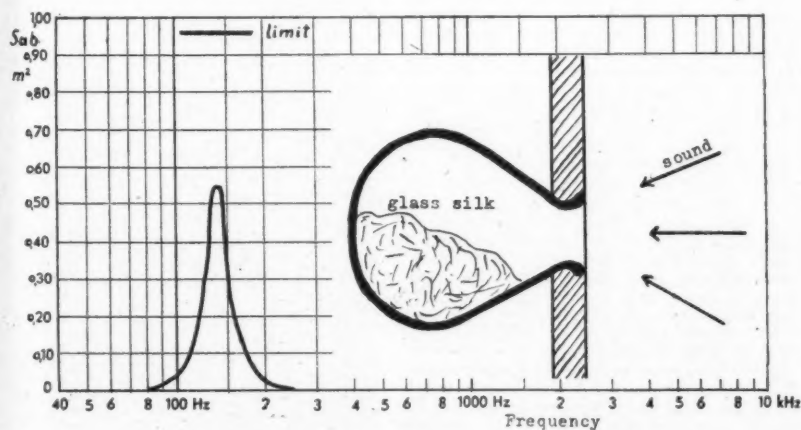


fig. 1



fig. 2

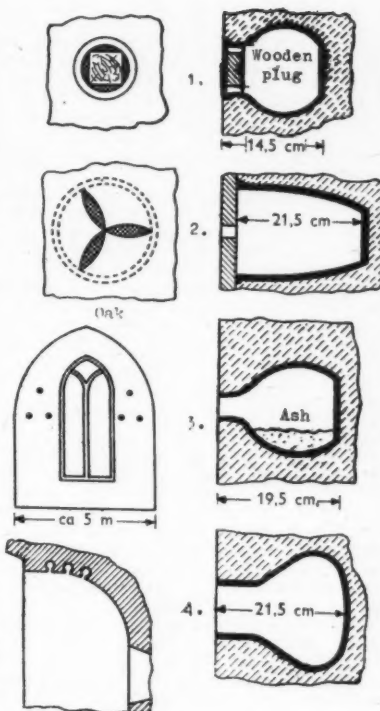


fig. 3

A typical Helmholtz resonator and its curve of absorption is illustrated by Fig. 1, and some more resonators made for laboratory study are shown in Fig. 2. Professor Bruel described how he is controlling the reverberation of a new lecture hall by incorporating 2,400 milk bottles in the concrete of the walls and roof (which prompted Hartland Thomas later to remark that these could be considered very hygienic absorbers because they could easily be washed out). Very interesting also were the descriptions of resonators which have been found in old Scandinavian churches (Fig. 3) (Bagenal reported finding some in Norwich too), and the speaker speculated on the use of similar resonators in ancient Greek theatres. He concluded that these had the function of lengthening the reverberation time in open-air conditions (otherwise too dead), and showed that the re-radiated sound could probably give up to nearly 1 second of artificial reverberation.

An adaptable form of resonator for modern use was described in which the volumes were given by nests of stout



plywood boxes of various sizes, with a hole on the exposed face of each. The hole forms the neck of the resonator and can be lengthened easily by the use of a metal tube to give any desired tuning.

It was suggested that the individual resonators will generally be used for low frequencies because of their size and spacing, but for higher frequencies one would use the second category, coupled resonators, which can be formed simply by perforated holes in an air-tight panel. The volume is then the space between the panel and the firm back wall. A typical absorption curve and resonator panel is shown in Fig. 4. The resonators require to be vigorously damped if absorption is to be good, and this may be secured as before by porous absorbents in the air-space, or by placing a thin, but not air-tight, layer of cloth material or paper immediately behind the holes. Professor Bruel has exploited this idea by developing a cheap cardboard panel with paper backing, having edges which can be turned up to space the panel the correct distance from the wall. The edges are provided with thermoplastic glue and can be quickly fixed by soldering iron or high-frequency gun. The cardboard is made fire-and-moisture-resistant.

The last category was the slit resonators, where the holes, instead of being smaller than the wavelength, are made very long. The mechanism of absorption is not greatly different from the resonators with holes. Two very elegant treatments are illustrated here (Figs. 5 and 6); but indeed one was much struck by the architectural elegance of many of the ideas.

**J. Moir :** Reverberation time as an index of the acoustic quality of a room showed that we have now entered a period of studies devoted not merely to the avoidance of bad room acoustics, which was about all that had been achieved hitherto, but to the positive anticipation of very high quality.

The historical development of the original ideas propounded by W. C. Sabine was briefly reviewed. The assumption had been made that sound waves were dispersed quite uniformly in a room, and that the sounds generated in the room would decay fairly smoothly according to the amount of absorption which took place at each boundary surface encountered by the waves as they were reflected back and forth. On this idea was based Sabine's well-known formula, and the opinion that there was an optimum reverberation time related to the volume of a room. In the early 1930's modifications of this formula were produced which were based on appreciation of the fact that the decay process took place discontinuously with the impact of each "wave packet" on a boundary. At the same time McNair derived a relation between rever-

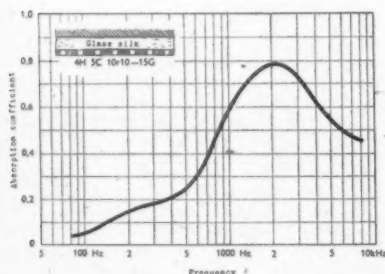


fig. 4



fig. 5

beration time at 500 cycles per second and at other frequencies on the assumption that all frequencies should decay in loudness at the same rate, and this has since been the usual criterion of design.

Nevertheless, investigators observed that halls designed to have "good" acoustics according to this criterion were not, in fact, always found to be good. For instance, sound was found decayed at different rates in different places, according to the shape of the hall and the distribution of absorbents. The problems had not been satisfactorily examined when the late war broke out and interrupted work of this kind.

The mechanism of absorption is now understood better, and was described by Mr. Moir somewhat as follows. The process of decay is dominated by the existence of numerous oscillatory modes into which the sound energy gravitates during the decay; that is to say that the body of air in a room has its own vibration characteristics (rather like the vibrating air in an organ pipe)—that these are excited when sounds are generated in a room, and that it is mainly the decay of the energy in these vibrations or modes which we hear as reverberation, rather than the decay of the original sound. It follows that the reverberant sound may not resemble the original very closely.

The natural frequencies or modes of vibration of a room are related to the distances between opposite surfaces, and the rate of decay of energy in any mode is almost entirely controlled by the dissipation presented to that mode. Thus for oscillation between the end walls of a room absorbents on the side walls would have little effect, because the sound would be moving parallel to them. There may be a considerable number of significant mode frequencies for each of the three main axes in an ordinary rectangular room, and the decay will be very complex. What one will hear at any point will be interaction between the modes, which will result in the appearance of "beats"—a very familiar effect in music.

So much for the energy given to the air. Some energy will also be imparted to the walls, floor and ceiling, which have resonances of their own, chiefly in the lower frequency range, and in the course of their vibration they, too, will give off sound. This will modify the decay, and it may be important in filling in gaps in the distribution of mode frequencies, especially in small rooms. The author suspects that the acoustic excellence of wood panelling may in part be the result of exceptional "gap filling" properties, i.e., very complex resonances extending, perhaps, over an extensive range.

All this meant that the absorption coefficient found for any material in a laboratory is only going to be a very rough guide to its efficacy in practice, because so much depends on how it is used. Some suggestions were made for the specification of absorption properties in other terms more directly related to the mechanism of decay in rooms, but it was pointed out that the difficulty of the mathematics and our comparative ignorance of criteria of what was best would mean that the existing basis of design, modified by experience (and presumably an understanding of the true mechanism of decay) was likely to continue in use for some time to come.

Reverberation can add to loudness because, if sounds are repeated quickly enough, the hearing mechanism "adds them up." Reflections coming later than about 0.07 to 0.1 sec. are likely to be heard separately, and loudness and quality are mainly affected by what happens up to this point. During this period sounds having energies 30 decibels below the total will contribute nothing to loudness, and perhaps nothing to quality either, and the present definition of reverberation time ("the time required for the average sound energy density to decrease to one millionth (60 db) of its initial intensity") as specifying too great a decrease was criticised. As an average of the first 30 db. decay is more likely to be representative of room performance, and the greater decay is less valuable because it may contain unimportant information likely to dilute the important early effects.

All this indicates that experimental technique requires modification to make possible more precise exploration of the initial decay, and the author described an apparatus developed by himself and C. A. Mason in which a pulse sound, having a wave form of definite shape is sent out over a loudspeaker, and the distortion of the shape and the decay at various positions in an auditorium is studied with the aid of a cathode ray oscillograph. The apparatus was described in greater detail and demonstrated later by Mr. Mason, and some measurements with it were illustrated which brought out important differences. The author notes that precise distinctions between "good" and "bad" types of decay for different acoustic needs were not yet understood, and he suggested a special panel of the Acoustics Group, including expert musical opinion, should be organised to examine the problem.

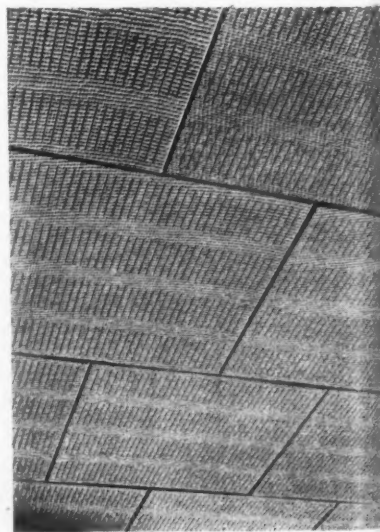
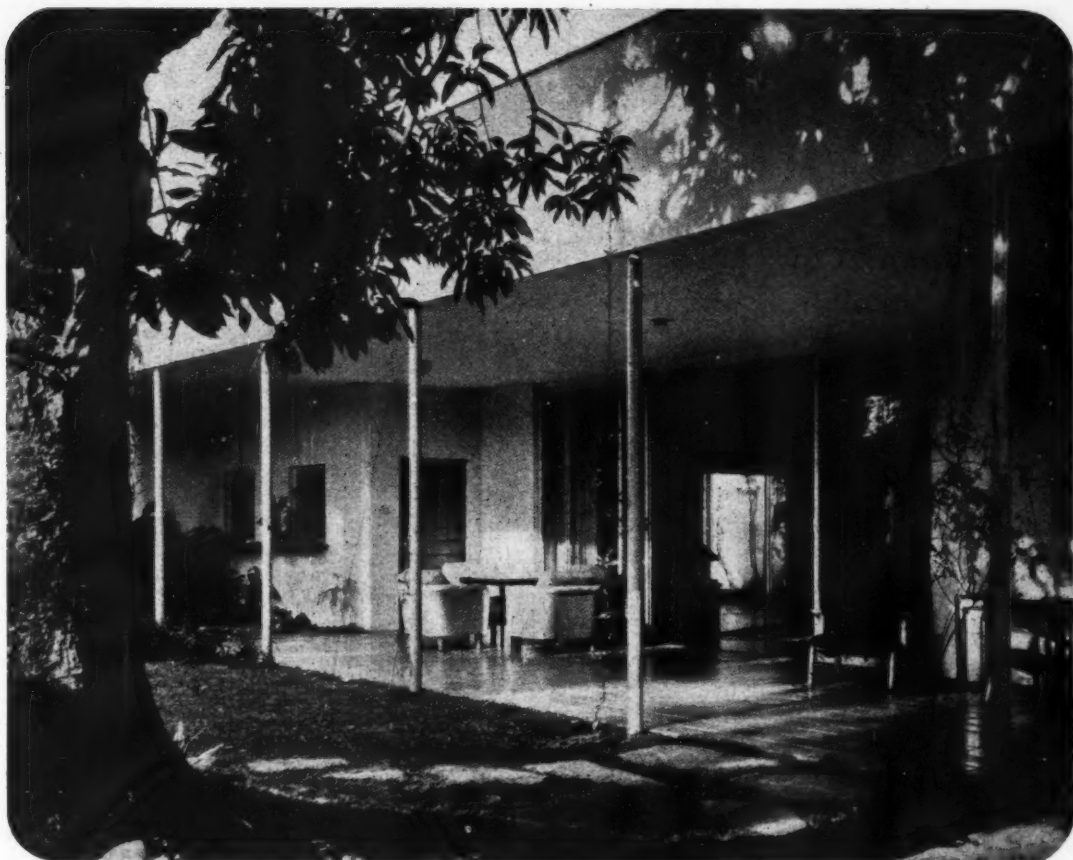


fig. 6





# P A T I O

## HOUSE AT SÃO PAULO, BRAZIL

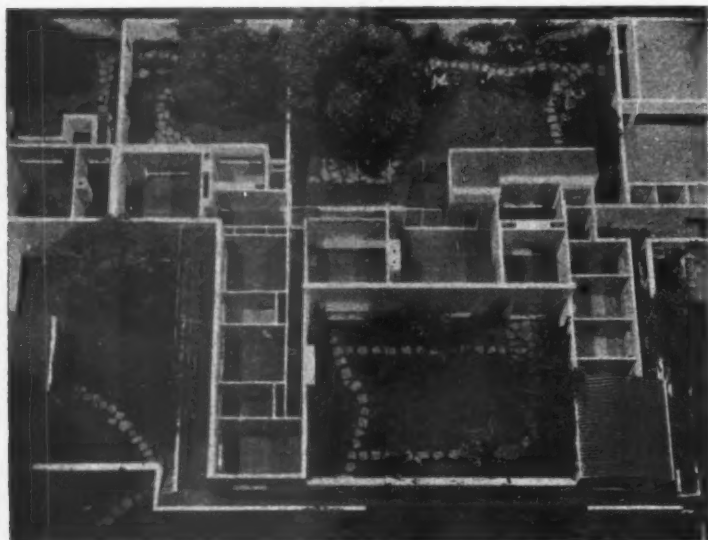
DESIGNED BY BERNARD RUDOLFSKY



This house is situated in a residential district of São Paulo at an altitude of 2,500 feet above sea level. Patio houses are unusual in this city, as local government regulations prevent them from becoming popular. In order to comply with these regulations, it was necessary to waste a strip of land 25 feet deep. By mutual consent of the architect and client, the external appearance of the house was to take second place to the internal arrangement.

*Top. Part of the 75' 0" long porch.  
Left. Another view of the porch.*

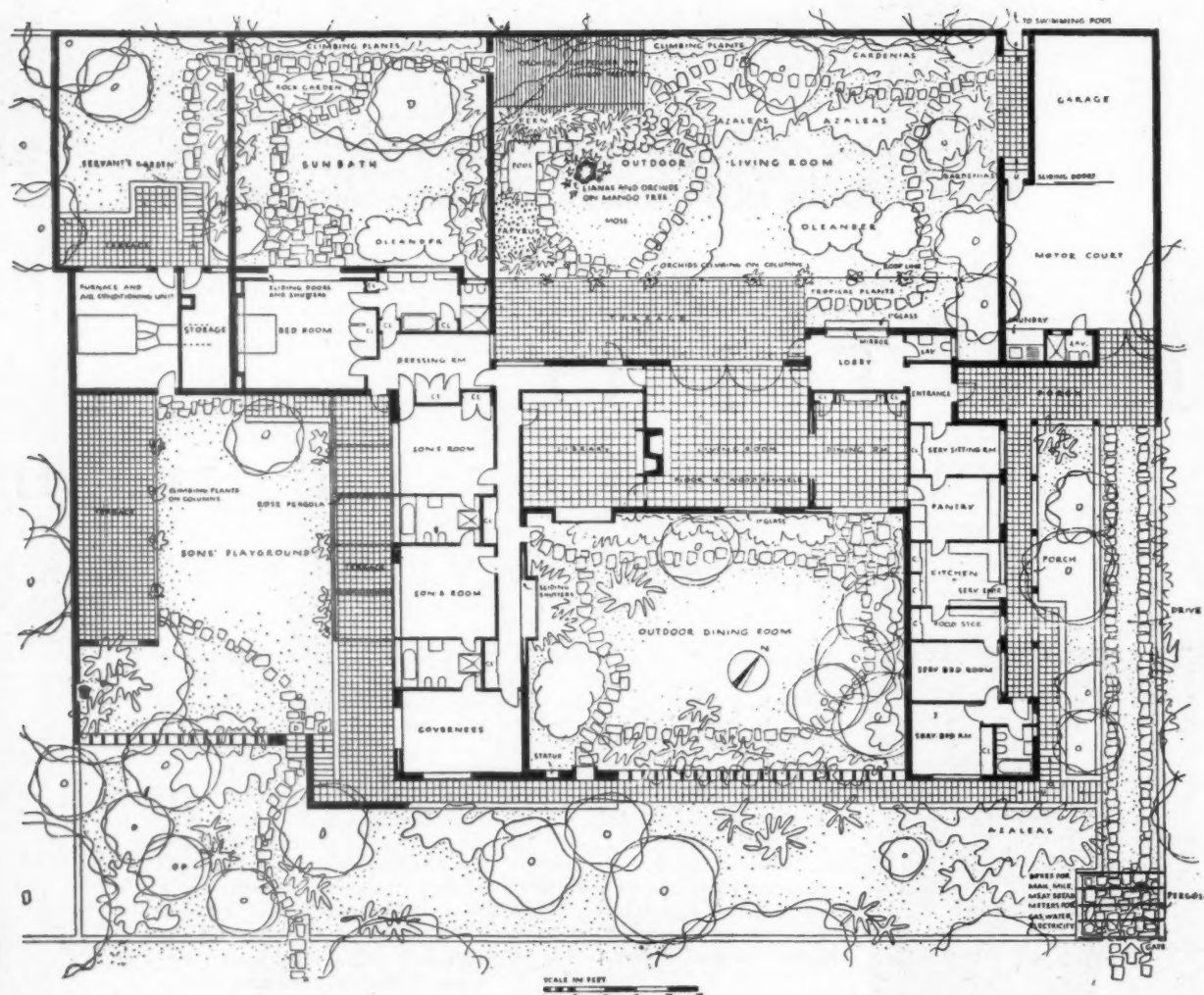
The house is laid out as a single-storey building, and was planned to achieve informality, while at the same time affording the owner the maximum of privacy. The basis of the plan is a sequence of rooms, some of which are provided with their own gardens in which extensive use has been made of tropical trees and shrubs to provide shade during the hottest season of the year. A separate wing is provided for the servants, adjoining the main entrance. This wing houses servants' sitting and bedrooms, kitchen and pantry. The site is surrounded by a high wall pierced at intervals by wooden grilles to give the passers-by an occasional glimpse



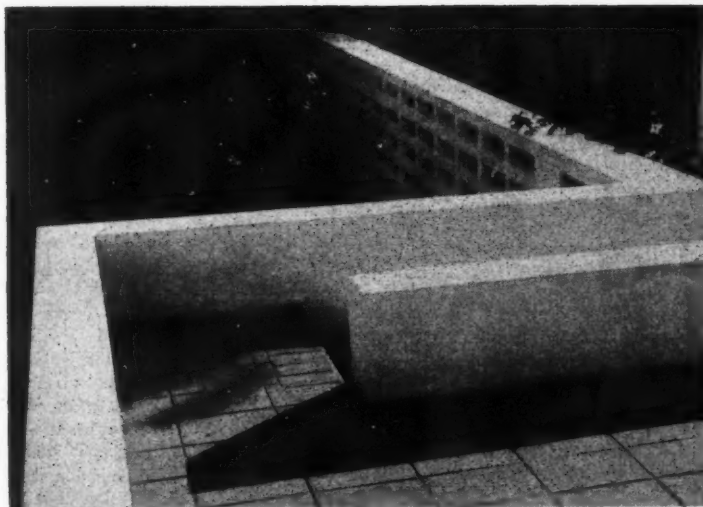
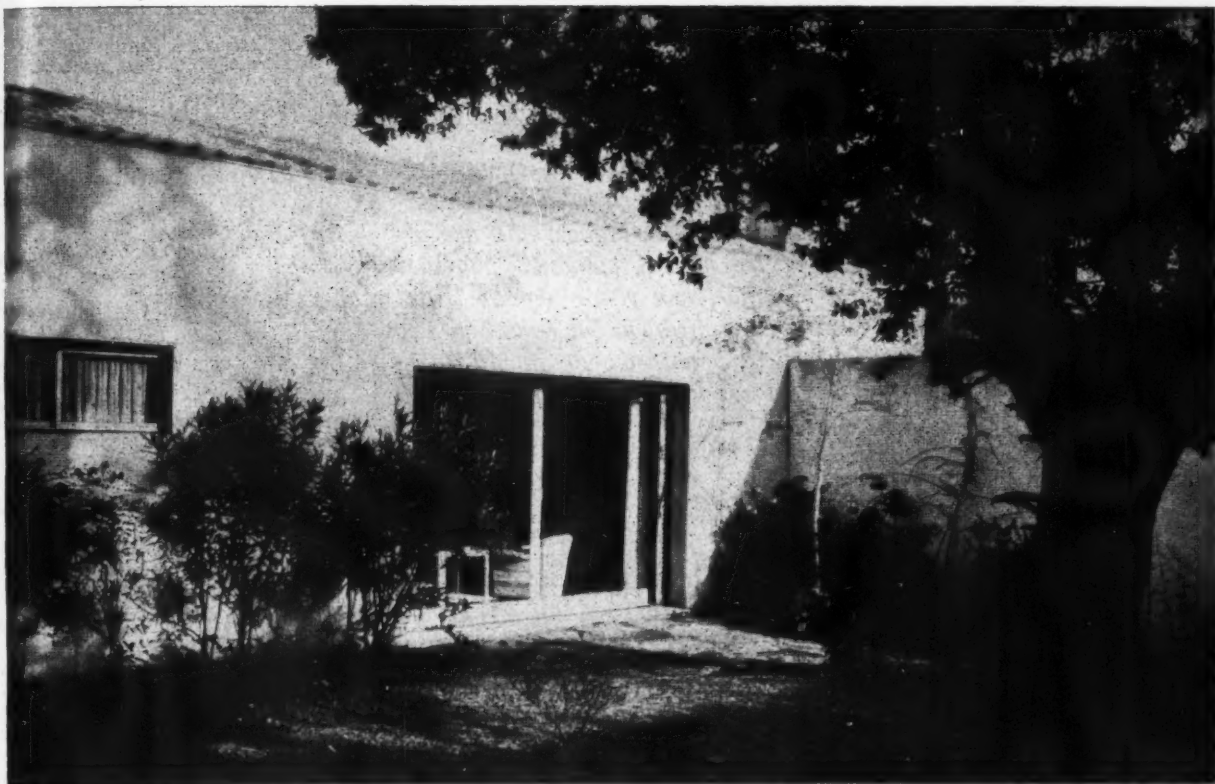
Left. A model of the house.

of the gardens beyond. A private garden for the use of the servants adjoins the heating and ventilating chamber.

The house is provided throughout with air conditioning and humidity control, but these are normally only considered necessary during the height of summer. Bay windows have three-foot deep reveals faced with Roman travertine, and are fitted with heavy sliding wooden shutters.



PATIO HOUSE AT SÃO PAULO, BRAZIL:



Top. Small patio in front of the owner's bedroom. Right. The children's patio showing the pierced walls. Bottom right. Extensive use has been made of tropical plants and trees to provide shade during the hottest season. Above. One of the other patios. The door in the background gives access to another garden.

DESIGNED BY BERNARD RUDOLFSKY



## TECHNICAL SECTION

*The function of this feature is to supply a digest of, and commentary on, current information of interest to architects as recorded in technical publications and statements of every kind throughout the world. Items are prepared by specialists of the highest authority who are not on the permanent staff of the Journal, and views expressed are disinterested and objective. Items are printed on one side of the paper only to permit of cutting out and pasting up in classified order in readers' files. The Editors welcome information on all developments from any source.*

### INFORMATION CENTRE

*To enable items to be filed all information is classified under the following headings:*

1 SOCIOLOGY. 2 PLANNING: General. 3 PLANNING: Regional and National. 4 PLANNING: Urban and Rural. 5 PLANNING: Public Utilities. 6 PLANNING: Social and Recreational. 7 PRACTICE. 8 SURVEYING, SPECIFICATION. 9 DESIGN: General. 10 DESIGN: Building Types. 11 MATERIALS: General. 12 MATERIALS: Metal. 13 MATERIALS: Timber. 14 MATERIALS: Concrete. 15 MATERIALS: Applied Finishes, Treatments. 16 MATERIALS: Miscellaneous. 17 CONSTRUCTION: General. 18 CONSTRUCTION: Theory. 19 CONSTRUCTION: Details. 20 CONSTRUCTION: Complete Structures. 21 CONSTRUCTION: Miscellaneous. 22 SOUND INSULATION, ACOUSTICS. 23 HEATING, VENTILATION. 24 LIGHTING. 25 WATER SUPPLY, SANITATION. 26 SERVICES, EQUIPMENT: Miscellaneous. 27 FURNITURE, FITTINGS. 28 MISCELLANEOUS.

#### 1.2 sociology

##### CARE OF OLD PEOPLE

*Old People: Report . . . on the Problems of Ageing and the Care of Old People.* Survey Committee under the Chairmanship of B. Seebohm Rowntree. (Geoffrey Cumberlege, Oxford University Press, for the Trustees of the Nuffield Foundation, 1947, 3s. 6d.)

General introduction. Incomes of old people. Housing and living conditions. Homes and institutions. Recreation. Old people and employment. Medical evidence. Important contribution to proper understanding of social problems connected with care of old people. Appendices. Some illustrations.

The work undertaken by the survey committee under its terms of reference was two-fold. First they studied the provisions made for the aged in Public Assistance Institutions, in Homes provided by public and voluntary agencies, in almshouses, and in other houses built specially for old people. Secondly they made a number of special field surveys on the way of life of independent old people, for the overwhelming proportion of aged persons—probably as many as 95 per cent.—live independent lives either in their own homes or as lodgers in the homes of their children or others.

The report is full of new information and constructive ideas, and provides the planner and sociologist with a wealth of statistical data, with important facts regarding social survey procedure and technique and with invaluable planning background material.

The chapter dealing with housing and living conditions and the Committee's conclusions and recommendations in connection therewith contain much valuable information for the

architect. There is evidence that in future a much higher proportion of houses should be built for old people than in the past. When the national house-building programme is completed, about 5 per cent. of all houses should be suited to and available for the aged. The exact number in any given area should be decided only after a survey by the local authority, and consideration should be given to the need for building houses for the aged in small groups interspersed with family houses. Recommendations are put forward with regard to siting, to living accommodation in urban and rural districts, to the conversion of large houses in order to supplement other arrangements for housing old people, and to the modernisation of almshouses.

Further recommendations deal with small homes and institutions for certain classes of old people, with homes for those with small private means, with the care of the long-term sick, and with the provision of recreational facilities.

#### 3.5 planning: regional and national DEVELOPMENT AREAS

*The Administration of Development Areas: Second Report together with the Minutes of Evidence taken before Sub-Committee C. Select Committee on Estimates.* (HMSO, 1947. 4s. 6d.)

Important document in connection with national planning of industrial location. Detailed background information on administration covering special areas, Distribution of Industry Act, 1945, Distribution of Industry and Regional Division of Board of Trade, industrial estate companies, development of voluntary organizations to stimulate industry and employment, Regional Boards for industry, and organization of research into effective location of industry. Development progress. Estimate of total potential employment. Erection of standard factories in advance of demand. Development of derelict land in North-Eastern area. Estimate of costs. Committee's conclusions discussing programme delays and administrative difficulties. Suggested improvements.

#### 6.8 planning: social and recreational LAND FOR PLAYING FIELDS

*Memorandum on the Selection of Land for the Purpose of a Playing Field.* P. Maud. (National Playing Fields Association, 1946, 6d.)

Some useful notes on desiderata of land for playing fields. Area. Situation. Shape, etc. Flooding. Configuration, surface and soil. Ridge and furrow. No illustrations.

The Association recommends that the minimum playing field area per 1,000 population of a borough, district or parish should be not less than six acres permanently preserved. This area may include up to two acres of privately owned land to provide recreation for schools and clubs. A list of those facilities which can be accommodated in an area of six acres is provided.

The best situation of a playing field is as near the centre of a built-up area as possible. Where this cannot be achieved it is suggested to provide an additional separate area for the small child population in a central position, because too great a distance of the field from the local school makes short visits of smaller children for games within the school curriculum impossible. Road frontage except for the purpose of providing access is of little advantage to a playing field as such. Entrances should be so situated that they will eliminate short-cut tracks across the field. Convenient access to sewer and water services should be an important consideration.

A rectangular shape is the best for layout. It is important that the width of the field for team games should be sufficient to take at least the minimum length of a football pitch with space behind the goals. The minimum aimed at should be between 100 and 120 yards with a minimum length of 140 yards in order to accommodate a cricket table.

Other recommendations deal briefly with flood prevention, with surface treatment and soil conditions, and with considerations to be taken into account where the area is ridge and furrow.

#### 13.10 materials: timber

##### WOOD BATTENS: ROOFING

*Wood Battens for Slating and Tiling.* BS. 1318: 1946. (British Standards Institution, 1s.)

Covers species and quality of timbers, packing, considers battens for roofing with tiles, pantiles, slates and other small dimension rigid roof coverings.

#### 15.9, materials: applied finishes and treatments PAINTING WALL BOARDS

*Painting and Distemping Wall and Ceiling Boards and Slabs.* Draft BS. Code of Practice. CP(B) 607. 1946. (British Standards Institution, 1s.)

Deals with painting and distemping of fibre building board, gypsum, plasterboard, wood wool cement slabs, acoustic boards, magnesite bound units and sheet plastics. Read in conjunction with Code 2.4 *Decoration Painting*.

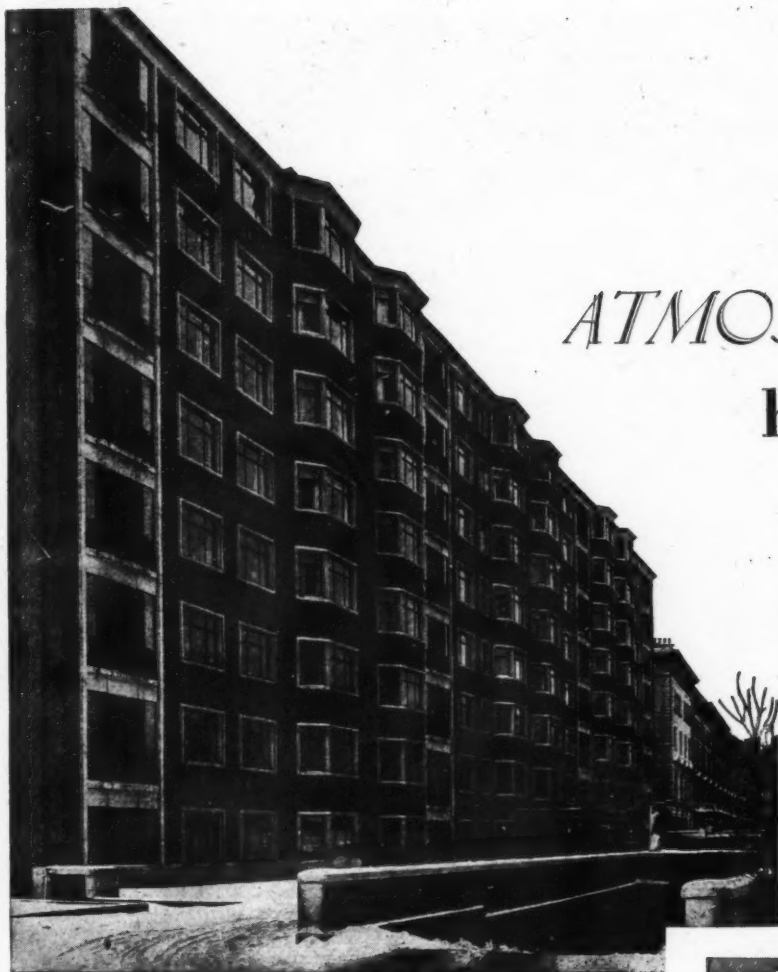
This short code emphasises the need for special care in priming and filling fibre building boards and summarizes briefly the present state of knowledge concerning the reduction of fire risk associated with this type of board. One clause is devoted to the recommended treatment of acoustic varieties of insulating board.

#### 17.14 construction: general HOUSE CONSTRUCTION: RESEARCH

*Scientific Research on Alternative Methods of Construction for Permanent Houses.* R. Fitzmaurice (Deputy Chief Scientific Adviser, MOW.) (RIBA Journal, Part I, April, Part II, May, 1947.)

Consideration of the problem, outline of MOW methods of investigation including detailed study of site man hours. Standards of requirement. Part II contains descriptions of eleven types of houses which have been investigated on a considerable scale and gives some information on their merits. An important and valuable summary of recent experiments in alternative forms of construction.





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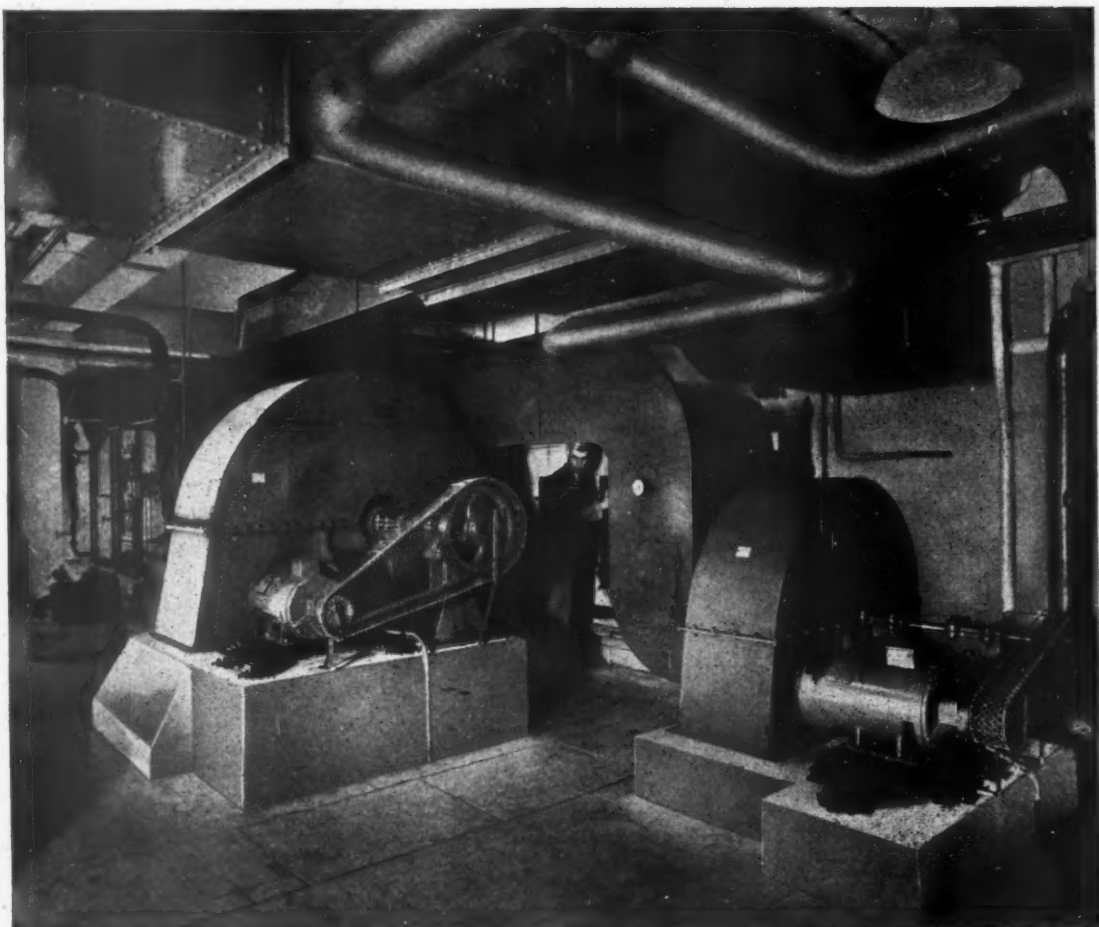
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These two papers provide the latest official information on methods of house construction. They are interesting as a description of much hard work done by MOW and may surprise some people who are yet unaware of the magnitude of the effort put into official investigations. Most of the systems of construction have previously been illustrated elsewhere, but here there is some useful indication of results being obtained in large-scale trials. The study of man hour requirements is not yet complete but even so there is enough information for an official pronouncement to the effect that good, comfortable and durable houses can be produced with appreciably less site labour than traditional houses and that some of these are likely to be no more expensive than traditional houses.

Anyone interested in using new forms of house construction should read these papers before doing any other preliminary work as certain essential fundamental points are brought out.

## 20.26 construction: complete structures LARGE SCALE HOUSING

*New Construction Technique Reduces Cost of Large-Scale Housing in New York.* John P. Riley. (Civil Engineering [USA], May, 1947, pp. 32-36, 74-75.)

Improvements in design and building technique and co-operation between authority and contractor allow savings in 14 storey reinforced concrete framed construction.

The principles described in this article were developed by the New York Housing Authority in constructing 14 large-scale schemes to house 57,000 persons at a cost of \$90 millions for land and buildings. The authority's aim is economy not cheapness. It uses controlled concrete by preparing design mixes before a job starts; this brings saving in cement and in space because of the reduced size of members. The use of plywood forms makes it possible to obtain a perfectly presentable ceiling by painting the soffit of the floor slab instead of plastering.

It was found that framed buildings of six storeys with cavity walls were comparatively cheaper than three- and four-storey buildings with load bearing walls. In view of the high cost of land and piled foundations full economy could only be realized by increasing the number of floors. Thus buildings of 10 to 13 storeys were erected. It is

considered that the economic limit of reinforced concrete framed buildings is 14 storeys. This is based on the working limit at which concrete can be efficiently placed by crane and bucket. It is believed that in 16 storey buildings, which should be erected in a 1900 family scheme, steel framed construction will be more economical.

Concrete column dimensions are held to 11½ in. square instead of 12 in. because an 11½ in. column can be formed with one 4 ft. width of plywood.

Further structural details (e.g., slab-band floor system) are described in *Engineering News Record*, (USA), April 17, 1947, pp. 584-5.

## 20.27 construction: complete structures TWO-STOREY PRE-FAB. I

*The "Alcrete" Two-Storey Permanent Prefabricated House.* (The Bristol Aeroplane Company, Housing, Limited.)

Semi-detached two-storey house built round prefabricated service unit. Ground floor wall panels load bearing, cast into light metal frame. Outer skin ½ in. thick exposed aggregate, bonded to the infill of cellular concrete. Inner plaster lining applied in factory. Bitumen vapour barrier between plaster and concrete. Outer skin of first-floor panels of light alloys. Roof prefabricated in five sections, each complete with outer skin and ceiling. (See also No. 20.23.)

## 21.7 construction: miscellaneous BUILDING REPAIRS

*Repair of Damaged Buildings.* (Building Research Station. [See No. 2776:10.10.46.] Further leaflets issued free of charge.)

No. 16A. Removal of fabric-bitumen from roof lights.

No. 20. Restoration of masonry.

No. 23. Reinforced concrete beams damaged by explosion.

No. 24. Reinforced concrete beams damaged by fire.

No. 16A suggests an alternative method to that recommended in No. 16.

No. 20 is confined to superficial damage.

The methods described do not differ from those used in the ordinary course of restoration.

No. 23 discusses the type of damage caused to reinforced concrete beams by explosion. The significance of the various types of cracks from the point of view of load-bearing capacity depends to a great extent on the span:depth ratio. In most cases new concrete has to be added, either poured or placed with a trowel or shot on with the cement gun. It is essential that all loose material should be removed, the old surface thoroughly cleaned, good bond ensured between old and new concrete. Reinforcement should as far as possible be re-used in its original position. Additional reinforcement may be added to the existing bars, allowing ample lap for the transfer of load between them. Wiring the bars together so that they are in contact should not be encouraged, since with this arrangement the concrete cannot pass and the bond is liable to be poor.

Good workmanship and strict supervision are essential in all this kind of work.

No. 24 covers similar ground as No. 18 (See No. 2399:21.2.46) and No. 23. In an appendix the effect of heating on the cold strengths of various steels is given. The diagrams reveal that particular caution is necessary with hard drawn wire to BS.785. The original material has a substantially higher strength than mild steel but if it is exposed to a temperature of 600° C. its strength and yield point after cooling down is much lower than that of mild steel. The behaviour of cold twisted bar to BS.1144 is far more favourable even after having been exposed to a temperature of 800° C.

## 22.11 sound insulation and acoustics THEATRE ACOUSTICS

*Acoustical Tests in the Scala Theatre of Milan.* E. Paolini. (J. Acous. Soc. Am., March, 1947, p. 346.)

Reverberation and articulation measurements said to confirm good opinion. Useful facts for interested architects. Illustrated graph and plan.

The acoustic characteristics of the Scala Theatre have usually been regarded as good. The original theatre was virtually destroyed in 1943, and after reconstruction on the old pattern some acoustic measurements have been made. Tests with short sound pulses gave rise to as many as five echoes in some places, separated by 0.15 sec., but this does not seem to be thought very objectionable. Articulation tests are said to indicate an intelligibility for words and sentences of 95-100 per cent. though in places the syllable intelligibility dropped to 70 per cent. The reverberation curve showed a decay period of about 2 sec. at 125 c.p.s., 1.4 sec. at 500 c.p.s., and 1.2 at 3,000 c.p.s. With full audience it is thought these figures would be reduced to 0.1 to 0.15 sec. The stage curtain was drawn during tests.

It is claimed that these results confirm the good opinion held by expert critics. The information does not really seem full enough or sufficiently closely examined to justify this opinion. For instance, the several echoes which were noted might have corresponded to the points where intelligibility was low, and by modern standards this might be regarded as an unnecessary defect.

## 23.31 heating and ventilation AIR FILTRATION

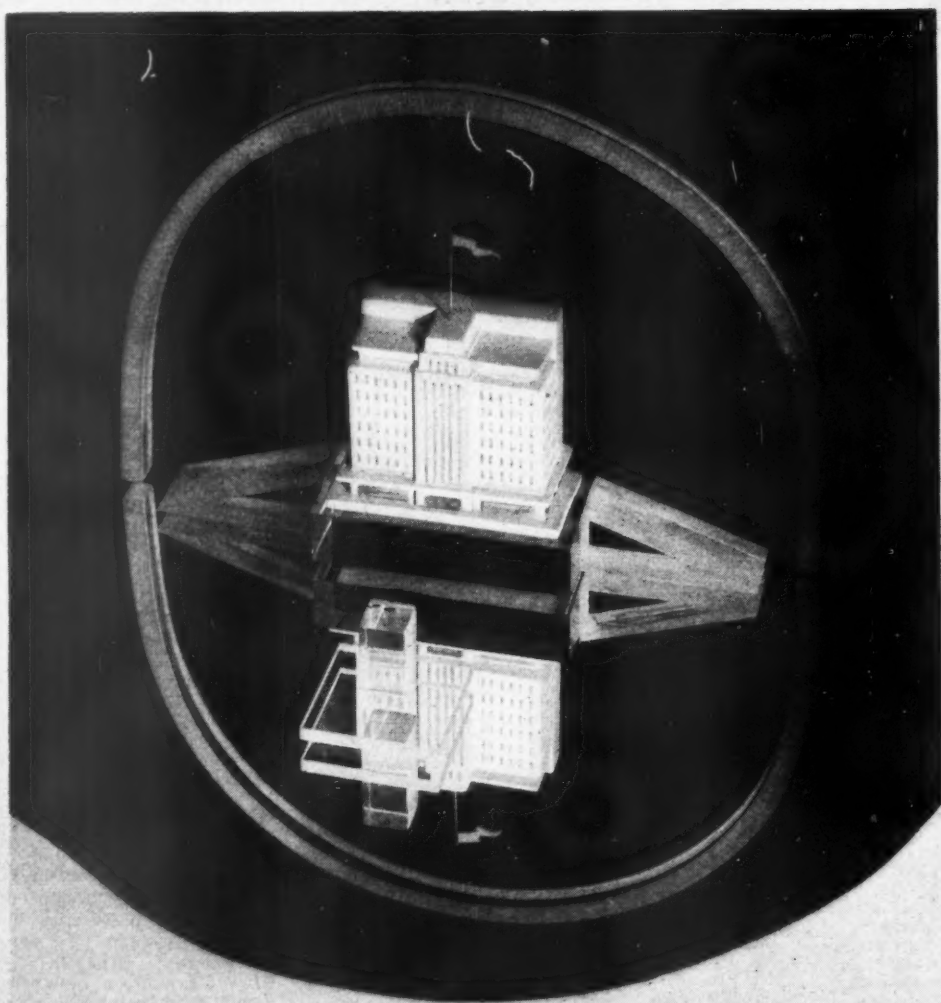
*Air Filtration.* Neville S. Billington and D. W. Saunders. (J. Inst. of Heating and Ventilating Engineers, Vol. 15, April, 1947.)

Review of functions of air filtration installations. Summary of literature, especially American. Description of recent work at Building Research Station.



R.C. framed construction USA. See 20.26.





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Highly technical paper giving latest information on types and performance of air filters, particularly in relation to ventilating plant. 45 pp. Illustrated. Bibliography.

### 23.32 heating and ventilation SWIMMING BATHS

*Heating and Ventilation of Swimming Baths.* W. W. Nobbs. (The Surveyor, May 9, 1947, Vol. CVI, p. 243, also Municipal Engineering, May 16, 1947, Vol. CXIX, p. 235.)

Total heat requirements of a typical building containing large bath 100 ft. x 35 ft., a smaller bath, slipper and other special baths, laundry, café, and other auxiliaries are discussed. For general heating author favours combination of radiant heating to deal with heat loss from building fabric and plenum ventilation to cover air losses; one complete air change per hour is suggested for main bath hall, where condensation is a special problem. Earliest consultation between architect and heating engineer regarded as essential. Extracts from a paper read to National Association of Bath Superintendents; brief but informative.

### 24.29 lighting COLOUR IN INDUSTRY

*Colour in Factories.* H. D. Murray. (Light and Lighting [USA], March, 1947, p. 49.)

Classification of backgrounds; using colour contrasts; colour and comfort. Good paper.

The author stated that in general a fairly uniform brightness in the field of view is desirable, and the immediate background of an object—for instance, a tool on a lathe—should not differ much in brightness from the object itself. Contrasts, which are essential, should therefore be obtained generally by different colours of similar brightness.

The author classifies factories for colour study as follows:—

- (a) where work is all of similar colours;
- (b) where work of different colours is done, but on each machine the work is the same colour all the time;
- (c) where work of all colours may be done on all machines (as for instance in textiles).

For groups (a) and (b) the working parts of machines should be coloured in contrast to the work; the remainder of the machines either similarly or differently. In general the main body of all machines in a room should be the same colour. For factories in group (c) immediate backgrounds should be coloured a pale green (?) or neutral. Strong colours impair colour discrimination, and backgrounds should be less saturated colours than the work.

The author reported American findings that yellows are least liked, and colours for the factory as a whole might be governed by psychological preferences such as this. It was suggested that where the work has a predominant strong colour, the general background should be complementary to suppress after images. Brightness should increase, according to Mr. Murray, from floor to ceiling, with the latter not less than 75 per cent.

Suggestions were reported that the tone of the walls should be related to average maintained temperatures, with cool colours to compensate high temperature, and conversely. There is no reason to doubt that this might be useful.

The author described experiments subjecting people to a variety of colour contrasts. Results enabled him to classify contrasts according to the interest aroused and according to preference. Yellows obtained a low

interest. Work should have a high interest and the room in general a low interest.

The paper was read to the Colour Group of the Physical Society.

### 24.30 lighting BRIGHTNESS DISTRIBUTION

*Brightness Distribution in Rooms.* Report No. 4 of a Committee of the IES, Amer. (Illum. Engineering [USA], February, 1947, p. 180.)

Formulae and tables for the precalculation of brightness in rooms. Significant but technical. Illus. graphs.

The differences in brightness which occur from place to place in rooms are among the most important criteria of good illumination. Professional lighting engineers in this country have devoted little or no attention to the subject if one is to take their literature as a guide, but in the USA it is now the subject of much attention. Some studies have been made of measured brightness, but the present report gives a method of precalculation by formulae, with tables in which many results of using the formulae are incorporated. It is a study which the architect should note for its significance and which engineers should study to obtain mastery. It does not seem likely to affect directly day to day work at this stage.

### 25.23 water supply and sanitation EQUIPMENT FOR SCHOOLS

*Sanitary Equipment for Schools (Fireclay).* BS/MOE 1-7: 1947. (British Standards Institution, April, 7s. 6d.)

Dimensional and qualitative standards for complete range of special school sanitary equipment in fireclay; section of general series of standards for school furniture overshadowed by P.W.B.S. No. 2.

The sanitary fittings covered here are as follows:—

MOE 1 Lavatory basins, single and in ranges, with taps, wastes and other fittings. Sizes are 18 in. x 12 in. (Nursery), 22 in. x 16 in. (Junior), 24 in. x 18 in. (Secondary). Alternative types of support are specified for overall heights of 22 in., 27 in., and 31 in. respectively.

MOE 2 Lavatory troughs 3 ft., 4 ft., and 5 ft. long x 15 in. wide, for mounting singly or in ranges to heights as in MOE 1.

MOE 3 Drinking fountains, wall-mounting, with jet mechanism. Projection 16 in. from wall.

MOE 4 Sinks with weir overflow, 10 in. deep, 24 in. x 18 in., 30 in. x 18 in., and 36 in. x 24 in.; tub sink 24 in. x 21 in. x 15 in. deep; slop hopper suites with flushing cisterns. Hardwood pads and bucket gratings for fitting to sinks are provided for.

MOE 5 Shower bath trays 30 in. square x 7 in. deep.

MOE 6 Urinal ranges, stall type (as favoured by P.W.B.S. Committee), circular back and 6 in. tread block. Widths 18 in. (Primary), 21 in. or 24 in. (Secondary); height 45 in. With automatic flushing cistern to flush 1 gallon per stall and flush pipes.

MOE 7 W.C. suites with continuous flushing trough and open form plastic seats. Pans are of washdown pattern in two types, Type A with inspection eye to the trap and enclosed back to wall, Type B without. Heights from floor are 8 in., 10 in., 12 in., and 14 in. Type A only being available in the two larger sizes. The projection from the wall is 24 in. maximum, and 26 in. for the 14 in. height. (The "toddlers' type" illustrated in P.W.B.S. No. 2 has not been included.)

In all cases freedom of design is left to the maker within the dimensional limits given; all the fittings are fully illustrated. This Standard is essential to all concerned with school design.

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## QUESTIONS AND ANSWERS

### 2902 HOUSING EQUIPMENT

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**A.** There are no regulations or bye-laws specifying the minimum standard of equipment for houses qualifying for a Government grant.

The equipment varies according to the type of house and the area in which it is to be built and recommendations for each area are contained in the various Government publications dealing with housing, such as *Housing Manual* (price 2s. 3d. including postage), *Housing Manual Technical Appendices* (price 1s. 8d. including postage) and *Design of Dwellings* (price 1s. 2d. including postage). These publications are all obtainable from HM Stationery Office, York House, Kingsway, London, W.C.2.

## Announcements

Last month Sir Stafford Cripps, President of the Board of Trade, formally opened the new factory for the National Cash Register Company at Dundee. Speaking at a luncheon given by the Lord Provost and Corporation of Dundee to celebrate the opening, Colonel E. A. Deeds, Chairman of the Board, said that the factory in its entirety embodies more than 100,000 square feet of floor space and that foot for foot it is the most modern National Cash Register factory in the world.

In 1945 Messrs. W. T. Henley's Telegraph Works Company, Ltd., acquired a factory at Birtley, County Durham, and have since been producing certain classes of electric cables at this small factory to augment the output from their southern factories at North Woolwich and Gravesend. They have now acquired an extensive site at Newtown, a little way to the south of Birtley. On this site, which is situated in a Government development area, a start has already been made on the civil engineering work. Arrangements have been made to proceed with the erection of the new cable factory as quickly as possible.

The RIBA Prizes and Studentships Pamphlet for 1947-48 has now been issued. The pamphlet contains full information upon the various Prizes and Studentships, together with, where applicable, the detailed programmes for the competitions. Copies are obtainable at the RIBA, price 2s., exclusive of postage.

Mr. W. A. Fairhurst, M.I.STRUCT.E., has been appointed Technical Director of the Cement and Concrete Association. The immediate Past Chairman of the Scottish Branch,

Institution of Structural Engineers, he is (and remains) senior partner of F. A. Macdonald and Partners, Glasgow. He is the author of *Arch Design Simplified and Reinforced Concrete Bridges*.

Mr. Paul Boissevain, DIP.ARCH., and Miss Barbara Osmond, A.R.I.B.A., have entered into partnership, and they will practice under the title of Boissevain and Osmond, at 65, Portland Place, W.1.; Tel. No. Welbeck 7406.

Mr. Douglas W. Dickenson, A.R.I.B.A., DIP. ARCH. (DUNELM), has been appointed a Principal Assistant Architect on the staff of the Buildings Department of the Kent County Council. He relinquishes the position of Senior Assistant Architect in the County Architect's Department of the Northumberland County Council, where he has been since 1935, and previous to which he had been in the County Architect's Department of the London County Council. He was educated in the Newcastle Royal Grammar School and studied at Durham University School of Architecture.

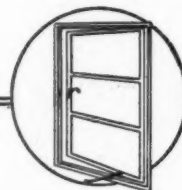
Young ex-service men taking an intensive Ministry of Labour course in building at Burton-on-Trent were invited by Lt.-Col. S. R. Sharp to study the modern high-speed joinery production methods employed at the works of Messrs. Sharp Bros. and Knight, Ltd. Burton, of which he is managing director. The men, whose training was interrupted by the war, displayed keen interest in the whole process from the drying kilns to the finished products, and were impressed by the manner in which the present-day difficulties and shortages are being tackled, and by the regard paid to the welfare of the employees in such matters as air conditioning of workshops, and first-class canteen and sports facilities.

The London offices of Messrs. Evered & Co., Ltd., of Surrey Works, Smethwick 40,

Staffs, is now 23, Albemarle Street, London, W.1.

## Obituary

We regret to announce the death of Mr. A. N. Paterson, Scottish architect and painter in water-colours. As a member of the firm of A. N. Paterson and Stoddart he was responsible for the design of many banks, offices, factories, schools, churches, and war memorials in Scotland. His principal works in Glasgow include the Eye Infirmary, University Press offices, the National Bank of Scotland, St. Enoch Square, and the club house for the Liberal Club, since remodelled for the Scottish National Academy of Music. This last was a competition design, as were also those for the Carnegie Aquarium buildings of the Scottish National Zoological Society, Edinburgh, and the Gourrock municipal buildings. He was also responsible for a great deal of domestic work and decoration throughout the west of Scotland and in Edinburgh. Paterson had been a member of the council of the Royal Institute of British architects, president of the Glasgow Architectural Association, of the Glasgow Institute of Architects, and of the Royal Incorporation of Architects in Scotland, and a member of the Ancient Monuments Board for Scotland. Born in Glasgow in 1862, he was educated at Glasgow Academy and University and attended the Ecole des Beaux Arts, Paris, from 1883 to 1886. Afterwards he worked in the offices of Sir John Burnet, Sir Robert Edis and Sir Aston Webb, P.R.A. He began practice in Glasgow in 1891, having been elected associate of the Royal Institute of British Architects the previous year. He became F.R.I.B.A. in 1910 and retired in 1933.



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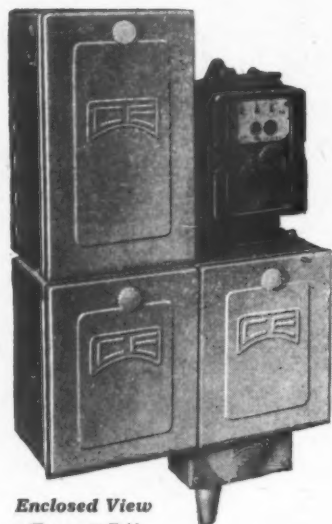
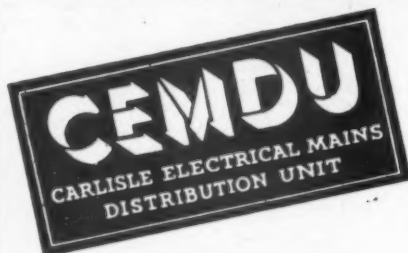
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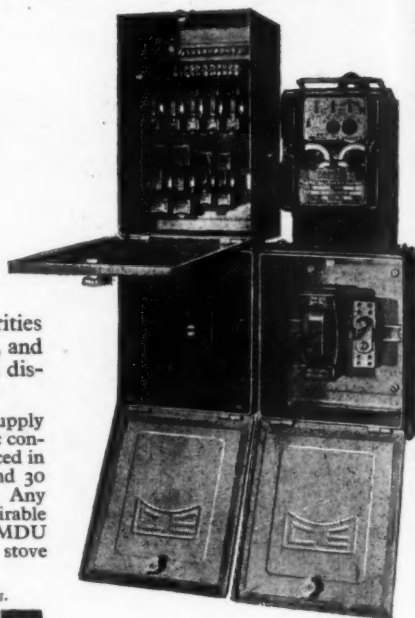
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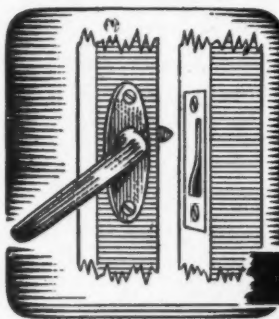
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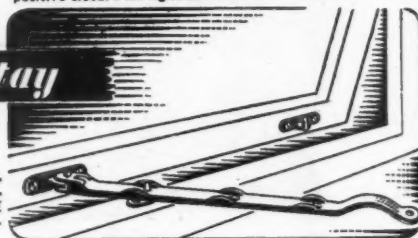
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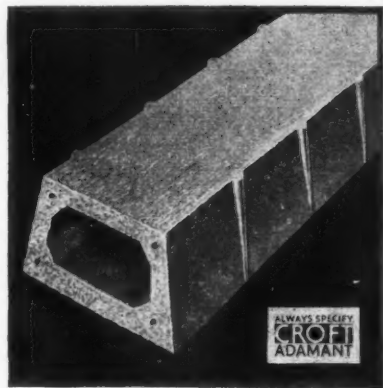
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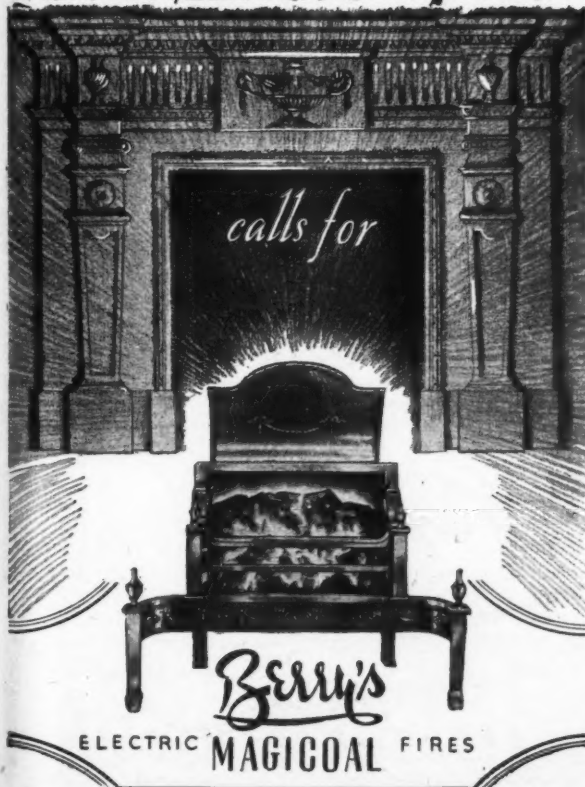
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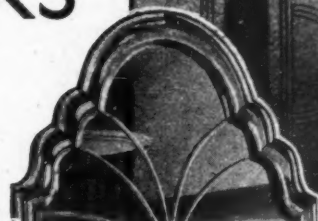
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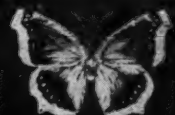
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## CLASSIFIED ADVERTISEMENTS

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

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

## Public and Official Announcements

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

THE INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS maintains a register of qualified architects and surveyors (including assistants) requiring posts, and invites applications from public authorities and private practitioners having staff vacancies. ADDRESS: 75, ETON PLACE, LONDON, S.W.1. TEL. SLOANE 5515. 991

LONDON COUNTY COUNCIL.  
COUNTY OF LONDON PLAN-VACANCIES  
FOR PLANNING STAFF.

Applications are invited for positions in the following grades:—  
PLANNING OFFICER, Grade III, up to £700 a year.

TECHNICAL ASSISTANT, up to £580 a year. Commencing rate according to qualifications and experience. Opportunities for competing for permanent appointment and promotion. Successful candidates will be supernumerary.

The planning work involved includes assistance in the detailed development of Reconstruction Area schemes and the preparation of revised zoning plans.

A knowledge of current town planning legislation is desirable in all cases, and candidates for Grade III positions should possess architectural, surveying or town planning qualifications.

Application forms obtainable from Architect to the Council, County Hall, S.E.1 (enclose stamped addressed envelope, returnable not later than 10 days from this date.

Canvassing disqualifies. (1680) 535

SURREY COUNTY COUNCIL.  
APPOINTMENT OF STRUCTURAL  
ENGINEER.

Applications are invited for the appointment of Structural Engineer, at a commencing salary of £900, rising by annual increments of £25 to £1,000, inclusive.

The Engineer appointed should have an appropriate degree of a British University and/or be a qualified member of the Institution of Civil Engineers or Institution of Structural Engineers. Applicants should have an adequate experience in the design of steelwork for buildings, and the design of reinforced concrete buildings, in conformity with modern practice, and full details of this experience should be given with application, which should state clearly the applicant's age, present position, and present salary.

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

Applications, accompanied by copies of three recent testimonials, should be sent to the County Architect, Surrey County Council, County Hall, Kingston-on-Thames, not later than 31st July, 1947.

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

DUDLEY AUKLAND,

Clerk of the Council.  
County Hall, Kingston-on-Thames. 510

THE CORPORATION OF THE CITY OF  
GLASGOW.

Applications are invited for the appointment of a DEPUTY CHIEF in the Town Planning Section of the City Engineer's Department.

Candidates must hold one or more of the recognized professional qualifications listed below, have an intimate knowledge of, and experience in, the operation of the Town and Country Planning Acts and the Restriction of Ribbon Development Act, and should preferably have experience in the preparation of redevelopment plans for built-up areas.

The salary applicable to the appointment is £750 × £20—£850 per annum (consolidated). (The successful applicant will, subject to satisfactory service, have favourable consideration in filling the vacancy which will ensue upon the retirement, at a fairly early date, of the Chief of the Town Planning Section.)

The appointment is subject to the provisions of the Corporation's Superannuation Scheme, and the successful candidate will require to pass a medical examination.

The professional qualifications recognized are:—University Degree in Civil Engineering or Architecture, A.M.I.C.E., A.M.I.Mun.E., A.R.I.B.A., Dip.Arch., A.M.T.P.I.

Applications, stating age, qualifications, and full details of experience, together with copies of three recent testimonials, and endorsed "Deputy Chief Town Planning Section," should reach the undersigned not later than 30th August, 1947.

ROBERT BRUCE, B.Sc., M.I.C.E.,

M.L.Mun.E.,

Master of Works and City Engineer. 853

COUNTY BOROUGH OF GREAT YARMOUTH.  
BOROUGH ENGINEER'S DEPARTMENT.  
APPOINTMENT OF CHIEF ARCHITECTURAL  
ASSISTANT.

Applications are invited for the appointment of Chief Architectural Assistant, in the Borough Engineer's Department, at a salary in accordance with A.P.T., Grade VI, of the National Conditions of Service, commencing at £535 per annum, rising to £600 per annum, plus cost-of-living bonus (at present £59 16s.).

A car allowance at the rate of £60 per annum will be paid in connection with this appointment.

Applicants must have had considerable experience of design and construction, particularly in relation to housing, schools and public buildings, and must be Associates of the Royal Institution of British Architects.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should be enclosed in an envelope endorsed "Appointment of Chief Architectural Assistant," and must reach the undersigned not later than noon on Monday, the 28th July, 1947.

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

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

FARRA CONWAY,

Town Clerk.

Town Hall, Great Yarmouth.

1st July, 1947. 826

COUNTY BOROUGH OF NEWPORT, MON.  
BOROUGH ARCHITECT'S DEPARTMENT.  
APPOINTMENT OF A TEMPORARY CLERK  
OF WORKS.

Applications are invited for the above post in connection with the Control of Civil Building—Defence Regulation 56A. The successful candidate will be required to inspect and report upon all buildings, etc., in connection therewith.

The salary for this position will be in accordance with Grade II, A.P. and T. Division of the National Scheme for Local Government Officers, namely, £360-£405 per annum, plus the current cost-of-living bonus, at present £59 16s. per annum.

The appointment will be subject to the Corporation's Condition of Service and Superannuation Scheme, and the successful candidate will be required to pass a medical examination.

In accordance with the Town Council's resolution, the successful candidate (if married and residing outside the Borough) will be offered, if required, the tenancy of a temporary bungalow in Newport for the duration of service with the Newport Corporation.

Applications, accompanied by two recent testimonials, must reach me not later than Monday, the 21st July, 1947.

JOHNSON BLACKETT, F.R.I.B.A.,

Borough Architect.

Town Hall, Newport, Mon.

28th June, 1947. 811

BEDFORDSHIRE COUNTY COUNCIL.  
APPOINTMENT OF COUNTY PLANNING  
OFFICER.

Applications are invited for the permanent appointment of County Planning Officer.

The salary will be £1,250 per annum, rising by annual increments of £50 to a maximum of £1,500 per annum, plus cost-of-living bonus (at present £59 16s. per annum).

The successful candidate must provide a motor car for use in connection with his duties, in respect of which an allowance under the Council's scale will be paid to him.

He will be required to reside in the County. Candidates must be Corporate Members of the Town Planning Institute, and have had considerable experience in the preparation and administration of planning schemes. Preference will be given to persons who also possess a recognized qualification in architecture, civil engineering, or surveying.

The person appointed will be required to devote the whole of his time to the service of the Council, and will not be allowed to engage in private practice.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and to the passing of a medical examination.

The appointment will be terminable by three months' notice on either side, and will be subject to the Scheme of Conditions of Service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services.

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

Application forms, which may be obtained from the undersigned, must be completed and returned in envelopes marked "County Planning Officer," not later than 15th August, 1947.

J. B. GRAHAM,

Clerk of the County Council.

Shire Hall, Bedford.

2nd July, 1947. 824

COUNTY BOROUGH OF SUNDERLAND.  
EDUCATION COMMITTEE.

Applications are invited for the post of ARCHITECTURAL ASSISTANT. Salary in accordance with Grades A.P.T., III or IV, of the National Scales of Salaries, i.e., £390—£415—£435, or £420—£445—£465, according to experience, plus cost-of-living bonus at present £59 16s. 3d. Applicants must be Associate Members of the R.I.B.A. or hold equivalent academic qualifications.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and to the selected candidate passing a medical examination as required by the Council.

Applications, giving full particulars, qualifications, experience, age, present and previous appointments, accompanied by copies of not more than three recent testimonials, and addressed to the undersigned not later than 31st July, 1947.

W. THOMPSON,

Director of Education.

Education Offices, 15, John Street,

Sunderland.

2nd July, 1947. 835

MANCHESTER MUNICIPAL COLLEGE OF  
TECHNOLOGY  
(FACULTY OF TECHNOLOGY IN THE  
UNIVERSITY OF MANCHESTER).  
APPOINTMENT OF LECTURER IN  
BUILDING.

The Governing Body invites applications for a Lectureship in Building, with the title and status of Lecturer in the University of Manchester.

Candidates should be graduates of a British University or Associates of the Royal Institute of British Architects or Professional Associates of the Surveyors' Institution (Quantities Division), and should have experience in Building Construction.

Salary scale: £550 per annum, rising by annual increments of £20 to £735 per annum. Commencing salary according to qualifications.

Conditions of appointment and form of application may be obtained from The Registrar, College of Technology, Manchester, 1. The last day for the receipt of application is Monday, 28th July, 1947.

Canvassing, either directly or indirectly, will disqualify a candidate for appointment.

J. E. MYERS,

Principal of the College. 840

SALOP COUNTY COUNCIL.  
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments to establish posts in the Department:—

## (1) ARCHITECTURAL.

(a) SECTION HEAD. A.P.T., Grade VI.

Salary £535 × £20 × £25 to £600 per annum.

(b) SENIOR ASSISTANT. A.P.T., Grade V.

Salary £460 × £15 × £20 to £510 per annum.

(c) JUNIOR ASSISTANT. A.P.T., Grades I-II.

Salary £330 × £15 to £405 per annum.

A cost-of-living bonus, at present £59 16s. per annum, will be payable in addition to the salary scales above.

Applicants for posts (a) and (b) must be Registered Architects and members of the R.I.B.A.

Applicants for post (c) must have had previous experience in an Architect's office, and preference will be given to candidates who have passed or are about to sit for the R.I.B.A. Intermediate examination.

## (2) QUANTITY SURVEYING.

(a) SENIOR ASSISTANT. A.P.T., Grades IV-V.

Salary £420 × £15 × £20 to £510 per annum.

(b) ASSISTANT. A.P.T., Grades II-III.

Salary £360 × £15 to £435 per annum.

A cost-of-living bonus, at present £59 16s. per annum, will be payable in addition to the salary scales above.

Applicants for post (a) must be experienced in the preparation of bills of quantities and the settlement of accounts, and the successful candidate must have passed the final examination of the R.I.C.S. (Quantities Sub-Division) before proceeding to Grade V.

Applicants for post (b) must be capable of abstracting and billing and assisting in the settlement of accounts.

## (3) ENGINEERING.

SENIOR ASSISTANT ENGINEER. A.P.T.,

Grades IV-V. Salary £420 × £15 × £20 to £510 per annum, plus cost-of-living bonus, at present

£59 16s. per annum.

Applicants must be experienced in the preparation of heating and electrical schemes, and the successful candidate must have passed the final examination of the Institution of Heating and Ventilating Engineers or equivalent before proceeding to Grade V.

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

Application forms for any of the appointments may be obtained from the County Architect, A. G. CHANT, F.R.I.B.A., 5, Belmont, Shrewsbury, to whom the forms must be returned, accompanied by copies of not more than three recent testimonials, not later than Friday, 8th August, 1947. When applying for forms, applicants must clearly state for which appointment they wish to make application.

G. O. GODBER,

Clerk of the Council.

Shirehall, Shrewsbury.

July, 1947. 848



**COUNTY BOROUGH OF SOUTH SHIELDS.**  
Applications are invited from persons with suitable academic qualifications and experience for the following appointments in the Borough Engineer's Department:—

- (1) CHIEF ASSISTANT (ENGINEERING). Salary A.P.T., VII, £575-£650, plus bonus.
- (2) CHIEF ASSISTANT (TOWN PLANNING). Salary A.P.T., VI, £535-£600, plus bonus.
- (3) CHIEF ASSISTANT (QUANTITY SURVEYOR). Salary A.P.T., VI, £535-£600, plus bonus.
- (4) FIRST ASSISTANT (ARCHITECTURAL). Salary A.P.T., V, £460-£510.

Canvassing members of the Council will disqualify as applicant, and any relationship to any member or senior officer of the Council must be disclosed.

Application forms may be obtained from the Borough Engineer (Lt.-Col. John Reid, O.B.E., M.I.C.E.), Town Hall, South Shields, to whom they should be returned in a sealed envelope endorsed, not later than 31st July, 1947.

HAROLD AXLEY,

Town Clerk.

Town Hall, South Shields.

1st July, 1947.

844

# COUNTY BOROUGH OF DERBY.

## BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointment on the permanent staff, in accordance with the National Scale of Salaries:—  
ONE ASSISTANT ARCHITECT, Grade VI. Salary £535-£600 per annum, plus cost-of-living bonus, at present £59 16s. (male).

Applicants should be Associate R.I.B.A., with good experience of work undertaken by a Local Authority.

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

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 copies of two recent testimonials, to arrive not later than Friday, 25th July, 1947.

Canvassing, directly or indirectly, will be a disqualification.

C. ASHTON,

Town Clerk.

Market Place, Derby.

843

# EDINBURGH COLLEGE OF ART.

Applications are invited for the following appointments on the Teaching Staff of the College—duties to commence, if possible, on 1st October, 1947:—

- (1) HEAD OF THE SCHOOL. Salary £1,000.
- (2) ASSISTANTS, Grade I. Salary scale £600-£750.

do. Grade II. Salary scale

£450-£500.  
Applicants for these appointments are required to possess the professional qualifications and experience as well as some knowledge of educational practice. Teaching experience is desirable though not essential.

Full particulars as to conditions of service and duties along with forms of application, may be had from the Registrar and Secretary, College of Art, Lauriston Place, Edinburgh, 3, with whom applications must be lodged not later than 31st July, 1947.

842

# WARSP URBAN DISTRICT COUNCIL. APPOINTMENT OF DEPUTY ENGINEER AND SURVEYOR.

Applications are invited for the appointment of Deputy Engineer and Surveyor, at a salary in accordance with Grade III of the National Scale of Salaries (£390-£435), commencing at £390 per annum, plus cost-of-living bonus, which is at present £59 16s. per annum. It is anticipated that the tenancy of a house could be offered to the successful applicant, should he so desire.

Applicants should be Associate Members by examination of the Institution of Municipal Engineers or hold an equivalent qualification, and should have had experience in the work of a Municipal Engineering Department, particularly in housing and sewage disposal work. The appointment will be subject to the National Joint Council's Scheme of Conditions of Service, to the provisions of the Local Government Superannuation Act, 1937, to the passing of a medical examination, and to one month's notice on either side.

Applications, stating age, qualifications, appointments held, particulars of experience, together with the names and addresses of three referees, should be delivered to the undersigned, endorsed Deputy Engineer and Surveyor, not later than Monday, 11th August, 1947.

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

Canvassing, either directly or indirectly, will disqualify.

A. H. COUPE,

Clerk of the Council.

Town Hall, Warsop, near Mansfield, Notts.

4th July, 1947.

841

# UNIVERSITY OF CAMBRIDGE SCHOOL OF ARCHITECTURE.

Applications are invited for the post of FACULTY ASSISTANT LECTURER. The applicant must be an Associate of the R.I.B.A., capable of giving instruction in Architectural Drawing and Design, and qualified to lecture on Building Construction. Ability to lecture on the Theory of Structures is desirable though not essential.

Particulars of stipend and duties may be obtained from the Secretary of the Faculty Board of Fine Arts, 1, Scroope Terrace, Cambridge. Applications must reach this address not later than Saturday, August 1, 1947.

873

# SOUTHAMPTON COUNTY BOROUGH.

## BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments:—

- (1) ASSISTANT ARCHITECT, Grade V, £460-£510 per annum.
- (2) ASSISTANT ARCHITECT, Grade IV, £420-£465 per annum.

The Borough Architect is responsible for all architectural work carried out by the Council, including the housing, education and public health programmes, and opportunity is given for varied experience, dependent on ability. Preference will be given to candidates who have passed examinations for membership of the Royal Institute of British Architects.

- (3) ASSISTANT PLANNING OFFICER, Grade IV, £420-£465 per annum.

Candidates should have a professional qualification in architecture, engineering, or surveying, and should have passed some or all of the examinations leading to Associate Membership of the Town Planning Institute.

The above posts are permanent and pensionable, and there is in addition a cost-of-living bonus amounting to £59 19s. 3d. per annum.

Applications, giving full particulars of age, qualifications and experience, and enclosing copies of two recent testimonials, should be sent to Denis Winston, M.A., B.Arch., A.R.I.B.A., M.T.P.I., Civic Centre, Southampton, to reach the above on or before 11th August, 1947.

869

# NORFOLK COUNTY COUNCIL.

## COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of an ASSISTANT QUANTITY SURVEYOR, in the County Architect's Department, at a commencing salary of £360 p.a., rising by three annual increments of £15 to a maximum of £405, plus cost-of-living bonus, at present at the rate of £59 16s. p.a. The appointment is subject to the Local Government Superannuation Acts.

Candidates should be capable of abstracting and billing, and checking final accounts. Some experience of specification writing, estimating, and taking off would be an advantage.

Applications, stating age, qualifications, and experience, together with the names of three persons to whom reference may be made, should be addressed to Mr. C. H. Thurston, L.R.I.B.A., F.S.I., County Architect, 25, Thorpe Road, Norwich, not later than Friday, 25th July, 1947.

H. OSWALD BROWN,

Clerk of the Council.

County Offices, Thorpe Road, Norwich.

868

# BOROUGH OF CHELMSFORD.

## ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the following permanent appointments within the scale stated, plus cost-of-living bonus, at present £59 16s.

- (a) QUANTITY SURVEYOR, Grade V, salary £460-£510.
- (b) ARCHITECTURAL ASSISTANT, Grade IV (special maximum £480), £420-£480.
- (c) ARCHITECTURAL ASSISTANT, Grade III, salary £390-£435.

Applicants must have the recognized qualifications and experience for the various appointments, which are subject to the provisions and conditions of service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services, and will be terminable by one month's notice on either side.

Applications, stating age, qualifications, present and previous appointments, and general experience, together with copies of three recent testimonials, should be forwarded to reach the undersigned by not later than Monday, 21st July, 1947. Canvassing in any form will disqualify.

VINCENT J. WILLIS, M.I.Mun.E.,

Borough Engineer and Surveyor.

Municipal Offices, Duke Street, Chelmsford.

7th July, 1947.

866

# LONDON COUNTY COUNCIL.

## ARCHITECTURAL ASSISTANTS.

Applications are invited for positions of Architectural Assistants, in the Housing and Valuation Department, at consolidated salaries of up to £580 a year. Commencing salaries will be determined according to qualifications and experience, and qualified candidates will be eligible for appointment to the permanent staff of the department on the occurrence of vacancies. Engagement will involve contribution to the Council's Superannuation and Provident Fund.

Successful candidates will be required to undertake work in connection with the design and development of housing schemes (cottages and multi-storey flats).

Forms of application may be obtained from the Director of Housing and Valuer, The County Hall, Westminster Bridge, S.E.1 (stamped addressed foolscap envelope required).

Canvassing disqualifies. (1050).

741

# LONDON COUNTY COUNCIL. VACANCIES FOR ARCHITECTURAL STAFF IN THE ARCHITECT'S DEPARTMENT.

Applications are invited for a number of positions in the following grades:—

- ARCHITECT (Grade III), £550-£700 a year (professional qualifications required).
- TECHNICAL ASSISTANT (Section A), £440-£520 a year.
- TECHNICAL ASSISTANT (Section B). Up to

167s. 6d. per week.

Commencing rates will be according to qualifications and experience.

Required for work in connection with the design and erection of new schools and other buildings, and structural alterations to existing buildings.

A number of technical assistants also required for the preparation of specifications and estimates for works of cleaning and painting, war damage repairs, and alterations at schools and other buildings.

Successful candidates are required to contribute to the Council's Superannuation and Provident Fund, and will be eligible for permanent appointment and for advancement to higher positions, according to merit.

Other things being equal, ex-Service men and women will receive special consideration.

Application forms may be obtained from the Architect to the Council, County Hall, Westminster Bridge, London, S.E.1, enclosing stamped addressed foolscap envelope.

Canvassing disqualifies. (1405)

891

# CITY AND COUNTY OF THE CITY OF EXETER.

Applications are invited for the appointment of SENIOR ASSISTANT ARCHITECT, Education Section, on the Temporary Staff of the City Architect's Department, for a period of not less than two years' duration.

The salary will be at inclusive one of £750 per annum, rising by one increment of £50 to £800 per annum. Housing accommodation will be found for the successful applicant.

Candidates should be Associate Members of the Royal Institute of British Architects, or hold equivalent qualifications, and must be fully experienced in modern Educational work.

The appointment will be subject to one month's notice on either side.

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

Applications, stating age, qualifications, previous and present appointments and salaries, and full details of experience, and the earliest possible date when available, together with copies of recent testimonials, should be sent to H. B. Rows, F.R.I.B.A., A.M.I.Struc.E., City Architect, 2, Southernhay West, Exeter, not later than Wednesday, 23rd July, 1947.

C. J. NEWMAN,

Town Clerk.

Exeter.

1st July, 1947.

839

# BOROUGH OF BROMLEY.

Applications are invited for the appointment of ARCHITECTURAL ASSISTANT (Grade II), at a salary in accordance with A.P.T. Division, Grade III (£410-£455), plus bonus, at present £59 16s. Applicants must be Registered Architects, and preferably Associate Members of the Royal Institute of British Architects.

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

Applications, stating age, experience and qualifications, accompanied by copies of not more than three recent testimonials, should be sent to the Borough Engineer at these offices, to reach him not later than Saturday, 26th July, 1947.

Canvassing, directly or indirectly, will be a disqualification.

S. CRITCHLEY AUTY,

Town Clerk.

Municipal Offices, Bromley, Kent.

2nd July, 1947.

837

# SOUTHAMPTON COUNTY BOROUGH.

## BOROUGH ARCHITECT'S DEPARTMENT.

### APPOINTMENT OF BRANCH ARCHITECT-HOUSING.

Applications are invited for the appointment of Branch Architect for Housing in the Borough Architect's Department, at a salary of £625-£700, plus cost-of-living bonus, amounting to £59 19s. 3d. per annum. The post will be permanent and pensionable.

The Council has a large and varied housing programme, which includes the redevelopment of central residential areas as well as the layout of self-contained neighbourhoods on the outskirts of the Borough. The Branch Architect would be responsible for the organization and control of all work in connection with this programme. He should have a special knowledge of housing and actual experience in carrying out contracts of considerable size. Preference will be given to members of the Royal Institute of British Architects who have also a qualification in town planning.

Applications, giving full particulars of age, qualifications and experience, and the names and addresses of three persons to whom reference may be made, should be sent to Denis Winston, M.A., B.Arch., A.R.I.B.A., M.T.P.I., Civic Centre, Southampton, to reach the above on or before 11th August, 1947.

861



**BOROUGH OF TAUNTON.**

Applications are invited for the appointment of SENIOR ARCHITECTURAL ASSISTANT, in the Borough Housing Architect's Department, at a salary in accordance with Grade V, A.P. and T. Division of the National Scale of Salaries, £460 to £510 per annum, plus cost-of-living bonus, at present £59 16s. per annum.

Applicants requiring housing accommodation should state so in their applications.

Candidates should be Associate Members of the Royal Institute of British Architects or hold equivalent qualifications, and must be experienced in the architectural work of a municipal authority.

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

Applications, stating age, qualifications, previous and present appointments and salaries, full details of experience and the earliest date when available, together with copies of recent testimonials, should be sent to C. Bacon, A.R.I.B.A., Borough Housing Architect, No. 2, Baldwin Road, Taunton, not later than Wednesday, 30th July, 1947.

Canvassing, directly or indirectly, will disqualify.

L. ATWELL,  
Town Clerk.

Municipal Buildings, Taunton.  
18th July, 1947.

880

**MONMOUTHSHIRE COUNTY COUNCIL.**

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

(a) Six Permanent ARCHITECTURAL ASSISTANTS, at a salary in accordance with Grade V of the Administrative, Professional, and Technical Division of the National Joint Council's Scheme, viz., £460 per annum, rising by two annual increments of £15, and one of £20, to a maximum of £510, plus cost-of-living bonus, at present £59 16s.

(b) Two Permanent ASSISTANT QUANTITY SURVEYORS, at a salary in accordance with Grade IV of the Administrative, Professional and Technical Division of the National Joint Council's Scheme, viz., £420 per annum, rising by annual increments of £15, to a maximum of £465 per annum, plus cost-of-living bonus, at present £59 16s. per annum.

Candidates for (a) must have a knowledge of design and construction, particularly in relation to schools, public buildings, police stations, etc., and must be Associate Members of the Royal Institute of British Architects, and for (b) should be members of the Surveyors' Institution (Quantity Section), and have had wide experience in preparing estimates and bills of quantities and

in dealing with Contractors' accounts, etc. The appointment will be subject to the Local Government Superannuation Act, 1937, and to the Regulations of the Council in force from time to time governing their Administrative, Technical and Clerical Staff, and will be determinable by one month's notice on either side. The successful candidates will be required to pass a medical examination. Forms of application and conditions of service can be obtained from the undersigned. Applications, stating age, experience and qualifications, together with copies of three recent testimonials, must be delivered to Mr. Colin L. Jones, F.R.I.B.A., County Architect, Queen's Hill, Newport, Mon., not later than 28th July, 1947.

VERNON LAWRENCE,

Clerk of the Council.  
County Hall, Newport, Mon.

883

**CROWN AGENTS FOR THE COLONIES.**

Applications from qualified candidates are invited for the following post:—

QUANTITY SURVEYOR required by Government of Uganda, Public Works Department, for one tour of 2 to 3 years, with prospect of permanency. Commencing salary according to war service, qualifications and experience, and if necessary well above the minimum, in the scale £450, rising to £840 a year, plus cost-of-living allowance, which on a salary of £450 is between £30 and £162, according to number of dependants. Outfit allowance £30. Free passages and quarters. Candidates should be qualified Quantity Surveyors, with considerable experience in measurement of work and adjustment of variations in large building contracts and preparation of specifications and quantities. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/N/16618 on both letter and envelope.

879

**BUCKS COUNTY COUNCIL.  
ARCHITECT'S DEPARTMENT.**

Applications are invited for the following appointments:—

(a) ARCHITECTURAL ASSISTANT, A.P. and T. Division, Grade V, £460-£510 p.a., plus bonus, at present £59 16s. p.a.

(b) ARCHITECTURAL ASSISTANT, A.P. and T. Division, Grade IV, £420-£465 p.a., plus bonus.

(c) ARCHITECTURAL ASSISTANT, A.P. and T. Division, Grade I, £330-£375 p.a., plus bonus.

Details of these appointments and form of application may be obtained from F. A. C. Maunders, R.S., Dip.Arch., F.R.I.B.A., A.M.T.P.I., County Architect, County Offices, Aylesbury, to whom applications must be delivered not later than 28th July, 1947.

877

**UNIVERSITY COLLEGE OF HULL.**

Applications are invited for the appointment of CLERK OF WORKS (BUILDING). Salary from £600 to £900, according to qualifications and experience. Special appointment necessitated by the College's building plans for 1947-52. Particulars from the Registrar, to whom application should be made not later than 15th August, 1947, 5th July, 1947.

874

**METROPOLITAN BOROUGH OF  
PADDINGTON.  
APPOINTMENT OF SUPERINTENDENT OF  
WORKS (WORKS SECTION), HOUSING  
DEPARTMENT.**

The Council invite applications for the appointment of Superintendent of Works (Works Section), Housing Department, at a salary in accordance with Grade VIII of the A.P.T. Division of the National Joint Council's Scheme of Conditions of Service, viz., £625, rising by annual increments of £25 to £700 per annum, plus London weighting (£20 p.a.), and cost-of-living bonus (at present £59 16s. p.a.).

The duties of the appointment will involve supervision of the works side of the whole of the Council's building programme (including large new housing schemes and works of adaptation and conversion) being executed both by contract and by direct labour.

Applicants, who should not be over 50 years of age, must have had good all-round experience of the building trades and of the control and management of such a building organization, either with a local authority or with a commercial undertaking.

The successful candidate will be required to produce a certificate of birth; pass an examination by the Council's medical examiner, and devote the whole of his time to the duties of his office. The appointment will be subject to the Conditions of Service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services, and to the provisions of the Paddington Borough Council (Superannuation and Pensions) Acts.

Applications, stating (a) age, (b) qualifications, (c) present appointment, (d) previous appointments, and (e) experience, and giving the names of three persons to whom reference may be made, should be sent in an envelope marked "Appointment of Superintendent of Works," so as to be received by the undersigned not later than Monday, 1st September, 1947.

Canvassing, either directly or indirectly, will disqualify.

W. H. BENTLEY,  
Town Clerk.

Town Hall, Paddington, W.2.  
July, 1947.

850



## the new leather plastic flooring

Ritzide is a jointless flooring with a high bituminous content and as a result is unusually resilient. Luxurious in appearance, Ritzide Flooring is particularly indicated where exceptionally severe conditions of wear are to be expected—in factories, public buildings, licensed premises, cinemas, private dwellings. Ritzide is fire-proof and damp-proof; self-polishing; non-cracking and non-slip.

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Samples and Prices sent gladly on request.

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Leatherfloor Ltd., Finsbury Pavement House, 120 Moorgate, London, E.C.2. Phone: MONARCH 1155  
Works: Inch Mill, Arbroath, Angus, Scotland.

# LEEDS SCHOOL OF ARCHITECTURE (LEEDS COLLEGE OF ART).

Applications are invited for the post of SENIOR ASSISTANT, at the Leeds School of Architecture.

Candidates should have been trained in a recognized school of architecture and be Associates of the R.I.B.A.

Salary scales: Men, £500-£25-£750; women, £400-£20-£600. Additions to the scales for architectural school training.

Further particulars and application forms may be obtained by sending stamped addressed foolscap envelope to the Director of Education, Education Offices, Leeds, 1. 849

## URBAN DISTRICT COUNCIL OF BILLERICAY.

### APPOINTMENT OF ARCHITECTURAL ASSISTANT (ESTABLISHED).

Applications are invited for the appointment of Architectural Assistant (Established), at a commencing salary of £390 per annum, rising by annual increments of £15 to £435 per annum, or £420 per annum, rising by annual increments of £15 to £465 per annum, according to qualifications. Applicants must at least have passed the Intermediate examination of the R.I.B.A. or equivalent, and the higher salary will only be granted to qualified architects. The above salary will also carry cost-of-living bonus, at present £59 16s. per annum, and the post is subject to the scheme of conditions of service.

Applications, on forms to be obtained from the Surveyor, Council Offices, Billericay, should be forwarded to the undersigned not later than the 2nd August, 1947, and endorsed appropriately.

A. HATT,

Clerk of the Council.  
Council Offices, 98, High Street, Billericay. 881

### MINISTRY OF EDUCATION.

Applications are invited from men and women, between 23 and 40 years of age, who served in H.M. Forces or were employed full-time in other work of national importance during the war, for admission to courses of training as full-time TEACHERS OF TECHNICAL OR COMMERCIAL SUBJECTS in Colleges of Further Education or in Secondary Technical Schools.

Applicants should have good qualifications of the order of Higher National Certificates or Final Examination of the City and Guilds of London Institute in any of the following:—Building, Commerce, Engineering, Office Arts, Textiles, Mining, Bakery and Confectionery, Institutional Management, Catering, Housecraft, Needle Trades or Arts and Crafts. A candidate who desires to teach a trade which is not the subject of a generally recognized examination should have had five years' post-apprenticeship experience, of which two years should have been in a responsible position. Candidates may be required to undergo written and practical tests.

Training will be given in the principles and practice of teaching and in the methods of teaching special subjects. The course will be of 6-9 months' duration. There will be no fees, and students will be eligible for maintenance grants for the period of the course.

Application should be made on Form 203 R.E., which may be obtained from the Secretary (Teachers R.E.), Ministry of Education, 14-22, Lennox Gardens, London, S.W.1. 851

### VACANCIES FOR TEMPORARY ASSISTANT ARCHITECTS IN THE OFFICE OF PUBLIC WORKS, DUBLIN.

Qualifications: Candidates must hold a recognized University degree in Architecture or an equivalent academic qualification, and have had satisfactory architectural experience.

Salary: Salary to be determined according to qualifications and experience, will be within the range of £9 10s. to £13 a week (men) and £7 10s. to £10 10s. a week (women).

Female candidates must be unmarried or widows.

If a sufficient number of candidates resident in Great Britain is forthcoming, arrangements may be made to interview them at a suitable centre in Great Britain.

Application forms, obtainable from the Secretary, Office of Public Works, 51, St. Stephen's Green, Dublin, must, when completed, reach that office not later than 5 p.m. on 6th August, 1947, which is the latest time for the receipt of applications. 834

### Architectural Appointments Vacant

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

**ARCHITECTURAL ASSISTANT** required immediately in busy London office. Working drawings, details, surveys, specifications and supervision of work. State age, qualifications, experience and salary required to Box 864.

**ARCHITECTURAL ASSISTANTS** required by London Architects, with large general practice; excellent prospects. Write, stating experience and salary required. Box 907.

**CAPABLE ASSISTANT** required for general practice in Cumberland, Westmorland, and North Lancashire; able to carry contracts through with very little supervision. C. B. Martindale, A.R.I.B.A., Cathedral Chambers, Castle Street, Carlisle. 611

**ARCHITECTURAL ASSISTANTS** required immediately, with sound knowledge of construction, and preferably experienced in industrial work and capable of preparing complete working drawings. Write, stating age, experience, and qualifications, to Elliott, Cox & Partners, Coastal Chambers, 172, Buckingham Palace Road, London, S.W.1. 761

**APPLICATIONS** are invited by the Co-operative Wholesale Society, Ltd., for appointments as ASSISTANT ARCHITECTS; applicants should be good draughtsmen, with a sound knowledge of general construction, and experience in commercial and industrial work will be an advantage; salary £420 to £500 per annum, plus cost-of-living bonus of £74 per annum, or £500 to £600 per annum, plus cost-of-living bonus of £100 per annum, according to experience and qualifications; good prospects of promotion for competent assistants; successful candidates will be required to pass a medical examination for entry into compulsory superannuation scheme. Applications, stating educational qualifications and experience, to be addressed to the C.W.S., Ltd., Architect's Dept., 1, Balloon Street, Manchester, 4. 753

**APPLICATIONS** are invited by the Co-operative Wholesale Society, Ltd., for appointments of STRUCTURAL ENGINEERING ASSISTANTS, in their Manchester Architect's Department; applicants should have experience in the design and detailing of structural steel, reinforced concrete, and foundation works; salary up to £500 per annum, according to qualifications, plus cost-of-living bonus of £74 per annum; good prospects of promotion for competent assistants; successful candidates will be required to pass a medical examination for entry into compulsory superannuation scheme. Applications, stating age, qualifications and experience, to C.W.S., Ltd., Architect's Department, 1, Balloon Street, Manchester, 4. 754

**ARCHITECTURAL ASSISTANT** required; R.I.B.A. Intermediate standard; good draughtsman. Apply, stating age, experience, and salary required, to Farmer & Dark, Chartered Architects, Terminal House, Grosvenor Gardens, London, S.W.1. 819

**JUNIOR ASSISTANT** required; age 16-17; straight from school; interested in architecture. Apply, stating age, general education, and salary required, to Farmer & Dark, Chartered Architects, Terminal House, Grosvenor Gardens, London, S.W.1. 820

**LEEDS**—Required Architect; qualified experienced assistant for busy general practice; permanent; future partnership prospect for suitable candidate. Also Junior Assistant, with some experience. Apply Shipley, 53, Park Lane, Leeds, 1. 783

**TWO ASSISTANTS** of R.I.B.A. Final Standard are required immediately for work on a large industrial development involving many different types of building; salary according to ability. Scherrer & Hicks, Chartered Architects, 10, Dover Street, W.1. (Tel.: Regent 7602). 784

**COMPETENT ASSISTANT** required in the Architects' Department of a Company in Birmingham; permanency. Applicants should give details of experience, age, and salary required to Box 782.

**NORTHERN RHODESIA**—Qualified Architect/Architectural Draughtsman and Qualified Quantity Surveyor required by a prosperous Firm of Architects in Northern Rhodesia. Salaries range from £500 to £720 per annum, according to ability, qualifications and experience, with possibility of an interest in the business if placed in charge of Branch Office; applications should give a brief outline of training and experience, age, married or single. Replies to be sent by Air Mail to Lallemand & Williams, Chartered Architects, P.O. Box 105, Kitwe, Northern Rhodesia. 754

**ASSISTANT ARCHITECTS** required, preferably commercial and industrial experience; salary up to £500, according to qualifications, plus cost-of-living bonus; superannuation scheme. Application, stating age, experience and qualifications, with testimonials, to C.W.S., Ltd., Architect's Dept., 99, Leman Street, London, E.1. 765

**ASSISTANTS** required (20-23 years); capable draughtsmen; surveys, working drawings, specifications, etc., busy private practice. Clark, 44, Great Russell Street, W.C.1. Museum 4400. 866

**ARCHITECT**, with widely distributed Scottish practice, requires experienced SENIOR ASSISTANT at once on works of considerable architectural interest; good prospects for suitable applicant; salary by mutual agreement. Please reply, stating age, and particulars of experience. 862

**WE** are requiring, at Glasgow, Manchester and Birmingham experienced reinforced concrete DETAILERS and DRAUGHTSMEN; positions are of responsibility, and will be permanent. Please write, giving full details, to The Trussed Concrete Steel Co., Ltd., 6, Collingham Gardens, Earl's Court, S.W.5. 864

**ENGINEERS**, with thorough experience in design of reinforced concrete structures, preferably with University degree and/or A.M.I.C.E., or other professional qualifications required; required at Glasgow, Manchester and Birmingham; positions are of responsibility and will be permanent. Please write, giving full details, to The Trussed Concrete Steel Co., Ltd., 6, Collingham Gardens, Earl's Court, S.W.5. 863

**QUALIFIED ARCHITECT AND SURVEYOR** (R.I.B.A.), fully conversant with Business Property, required to take full executive charge of London office practising extensively in the Provinces; applicants should be between 35/40, and have the ability and personality to carry responsibility; excellent salary and prospects offered. Apply L., Box 867.

**DRAUGHTSMAN** wanted in Architect's office of a Bank; applicants must be good draughtsmen, able to measure up buildings and plot surveys. Reply, stating age, training, experience, qualifications and salary required, to Box 870.

**JUNIOR ARCHITECTURAL DRAUGHTSMAN** required in South-West London Architect's office; R.I.B.A. qualifications not necessary, but experience in working drawings essential. Write, stating experience and salary required, Roper, Son & Chapman, Architects, 163, High Street, Hounslow. 873

**ARCHITECTURAL ASSISTANTS** (male or female) required in private office, for work in Factories and Schools; temporary appointments considered. Applications to William Ellis, F.R.I.B.A., Barclays Bank Buildings, St. Helena, Lancs. 827

**APPLICATIONS** are invited by a well-known firm of Building Contractors in N.W. London for an ARCHITECTURAL ASSISTANT, in their Architect's Department; applicants should be to final R.I.B.A. standard, preferably with experience in House and Factory design. Box 845.

**ASSISTANT PLANNING ENGINEER** required by large commercial Company; age 25/35; to co-ordinate work of Architect and Service Engineer on new building projects and supervise material control; A.M.Inst.C.E., A.R.I.B.A., A.M.I.Mun. & Cy.E., F.S.I., or equivalent qualification desirable, but suitable practical experience will qualify for consideration; general knowledge of preparation of plans and site construction of buildings, drainage, roads, water supply and kindred services; salary according to qualifications and experience, minimum £500 p.a.; provident fund benefits; work-London. Apply, Quoting Dept. H.396. 897

**ARCHITECTURAL ASSISTANTS** required in offices in North Kent and High Holborn; men or women with office experience and of R.I.B.A. Intermediate standard preferred; state age, experience, and salary required. 846

**ARCHITECTURAL DRAUGHTSMAN**, with experience in surveying and planning, required immediately; salary in accordance with age and ability. Apply in writing to the Architects, Mackeson & Co., Ltd., Brewery, Hythe, Kent. 860

**WANTED**, for a Railway Civil Engineer's Office in Edinburgh, Temporary ARCHITECTURAL ASSISTANTS, capable of preparing working drawings from rough sketches, estimating and supervising works in progress. State age, qualifications, and salary, expected. Box 855.



**IMPERIAL CHEMICAL INDUSTRIES, LTD.** require the services of **GENERAL CIVIL ENGINEERING DESIGNER DRAUGHTSMEN** for the development of a large industrial site at Wilton, near Middlesbrough; applicants should have had experience of drainage works, water distribution systems and road works; a knowledge of surveying is desirable. Application forms may be obtained from the Personnel Manager, Imperial Chemical Industries, Ltd., Wilton Works, P.O. Box 54, Middlesbrough, Yorks. 858

**QUANTITY SURVEYORS** and **ASSISTANT QUANTITY SURVEYORS** are urgently required by several Government Departments for temporary posts, at salaries ranging from £300-£800 p.a., according to qualifications and experience; vacancies exist in most parts of the United Kingdom and occasionally overseas. Applications for these vacancies should be made to Ministry of Labour and National Service, Technical and Scientific Register, Room 377, York House, Kingsway, London, W.C.2. quoting Ref. J/Q.S. 856

**ASSISTANT ARCHITECTS** and **ARCHITECTURAL ASSISTANTS** are required by several Government Departments for temporary service in most parts of the United Kingdom and occasionally overseas, at salaries ranging from £350 to £900 p.a., according to qualifications and experience. Applicants, who should have had at least five years' approved training experience, should write, quoting J/A, to the Ministry of Labour and National Service, Technical and Scientific Register, Room 377, York House, Kingsway, London, W.C.2. 857

**NOTTINGHAM** Architects require experienced Quantity Surveyor; state age, experience, salary, and full particulars. Box 875.

**JUNIOR and SENIOR ARCHITECTS' ASSISTANTS** required; salary £350 to £700; also **WORKER-UP** for Quantity Surveyor's Department. For particulars apply to Harold Marsh, L.R.I.B.A., 14, King Street, King's Lyne. 855

**LONDON** Architect requires **ARCHITECTURAL DRAFTSMAN**, in consulting office at Reigate, for specialist detail work. Write, stating age, experience, and salary, to Box 882.

**EXCEPTIONAL** opportunity arises for enthusiastic, young, qualified **ARCHITECT**, on head office staff of group of property companies; must be thoroughly experienced all branches, with especial flair for conversion and estate development; must be able to shoulder heavy responsibilities and carry through complete schemes without supervision. Write, stating fullest details of qualifications, experience, age, previous employers, and salary expected. Box A155/L, W. H. Smith & Son, Strand House, London, W.C.2. 878

**QUANTITY SURVEYORS** required for service in Middle East to join large established Contractor's staff; age under 40; salary (including allowances), £1,400 per annum; 27 months' contract, with opportunity of extension. Please give fullest details of experience, age, condition, etc., in replying to Box 876.

### Architectural Appointments Wanted

**ARCHITECT'S ASSISTANT** (21) requires post in London Architect's office; 4 years' office experience; 2 years R.I.B.A. evening course. Box 365.

**JUNIOR DRAUGHTSMAN** seeks position in London or South; one year office experience, two years studying architecture; age 18; not liable to military service. Box 367.

**ASSISTANT** requires position, Leicester or Coventry area; four years' office experience; own car; awaiting final examination results; keen and capable all branches; free immediately. Box 366.

**QUANTITY SURVEYOR'S ASSISTANT** (24), ex-Service, and taking Inter. R.I.C.S., 1948, seeks progressive position in professional office; reasonable all round knowledge, including familiarity with land survey work; prepared to commence at moderate salary. Box 368.

**A. R.I.B.A.**, 37 (ex-Capt. R.E.), seeks appointment with view to Partnership, or responsible position, with progressive commercial concern; extensive experience; competent designer. Box 369.

### Other Appointments Vacant

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

**REINFORCED CONCRETE DRAUGHTSMAN** capable of designing and detailing heavy industrial foundation work and framed structures. Applicants must be capable of simple design and have had good experience in detailing reinforcement for continuous structures. Salary according to age and experience. Write stating age and qualifications and giving details of experience, also when available, to Box 727.

### Other Appointments Wanted

4 lines or under, 2s. 6d.; each additional line, 1s.

**EVENING** or week-end work, preferably at home, required by capable Assistant (35); surveys, sketches, working drawings, etc. 822

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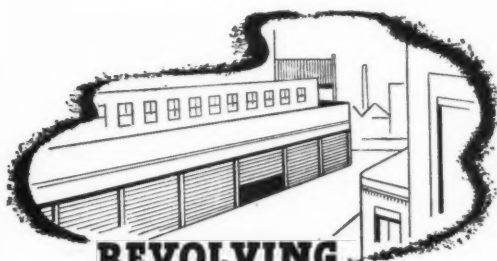
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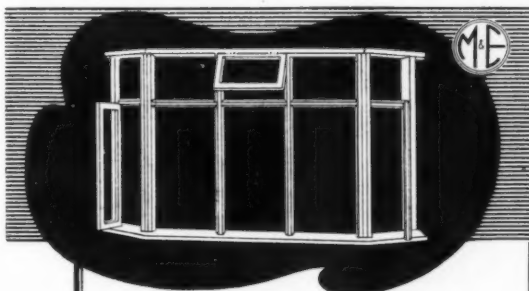
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