THE ARCHITECTS' JOURNAL

No. 3072] [VOL. 119

THE ARCHITECTURAL PRESS

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

Price 1s. 0d.

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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy. : W. Marlborough Whitehead, " Dyneley," Castle Hill Avenue, Berkhampstead, Herts.	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 5, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
APRR	Association for Planning and Regional Reconstruction. 34, Gordon Square, W.C.1.	Euston 2158-9
ArchSA	Architectural Students' Association. 34/36, Bedford Square, W.C.1.	
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 8738
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BIAE	British Institute of Adult Education. 29, Tavistock Square, W.C.1.	Euston 5385
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRDB	British Rubber Development Board. Market Buildings, Mark Lane, E.C.3.	Mansion House 9383
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 2246
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 9000
BTE	Building Trades Exhibition. 4, Vernon Place, W.C.1.	Holborn 8146/7
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Newport 5491
CAS	County Architects' Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Chichester 3001
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611
CDA	Copper Development Association. Kendals Hall, Radlett, Herts.	Radlett 5616
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7, Zurich, Switzerland.	
COID	Council of Industrial Design. Tilbury House, Petty France, S.W.1.	Abbey 7080
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DPT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
EJMA	English Joinery Manufacturers' Association (Incorporated), Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 67, Oxford Street, W.1.	Gerrard 0021
FASS	Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, S.W.1.	Abbey 7232
FBBDO	Fibre Building Board Development Organisation, Ltd., Melbourne House, Aldwych, W.C.2.	Temple Bar 4561
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4041
FS (Eng.)	Faculty of Surveyors of England. 67, Oxford Street, W.1.	Gerrard 0021
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 27, Grosvenor Place, S.W.1.	Sloane 2844
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1.	Sloane 5615
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215

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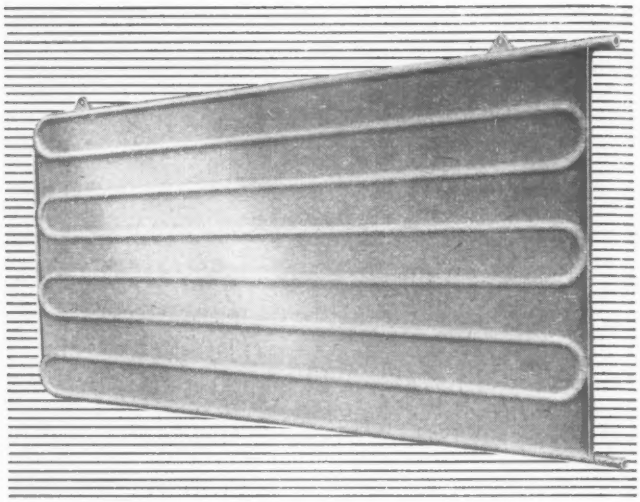

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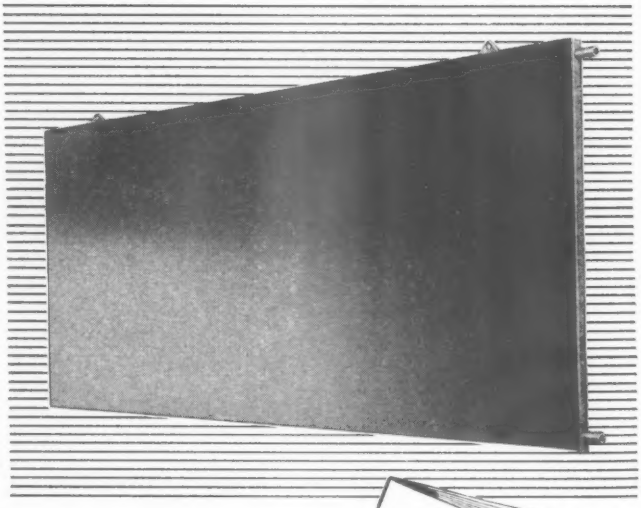

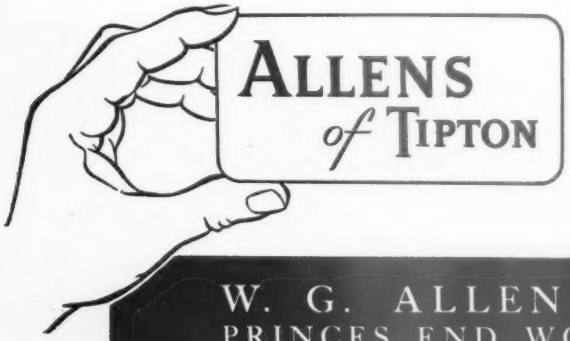

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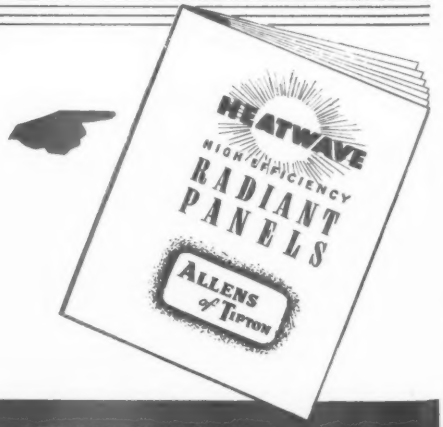

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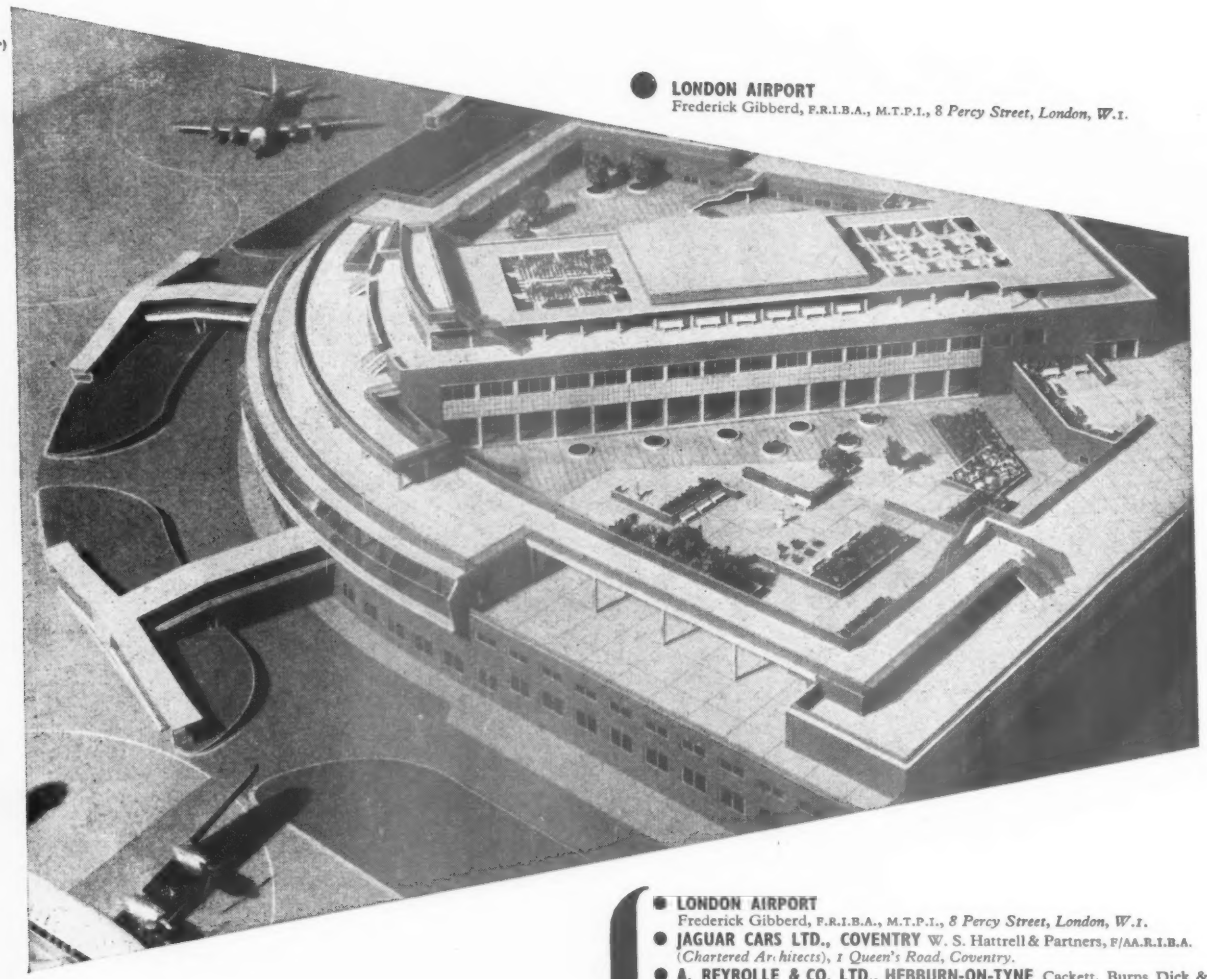

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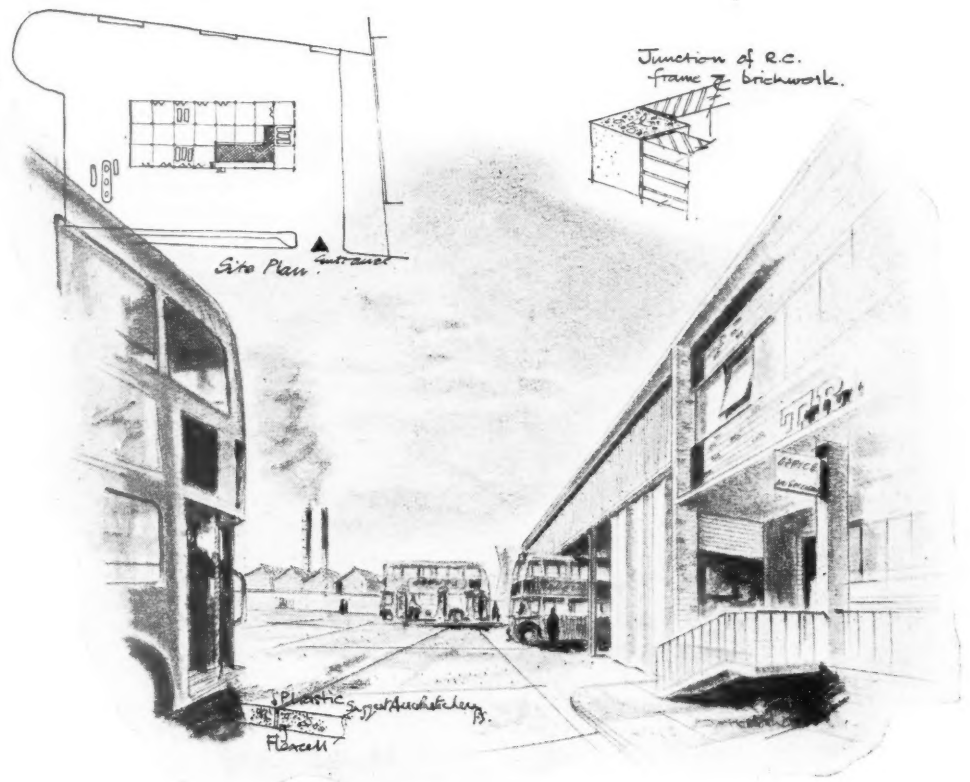

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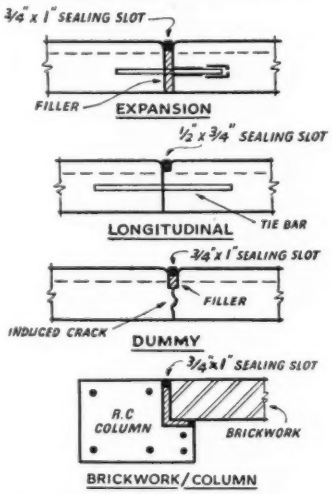

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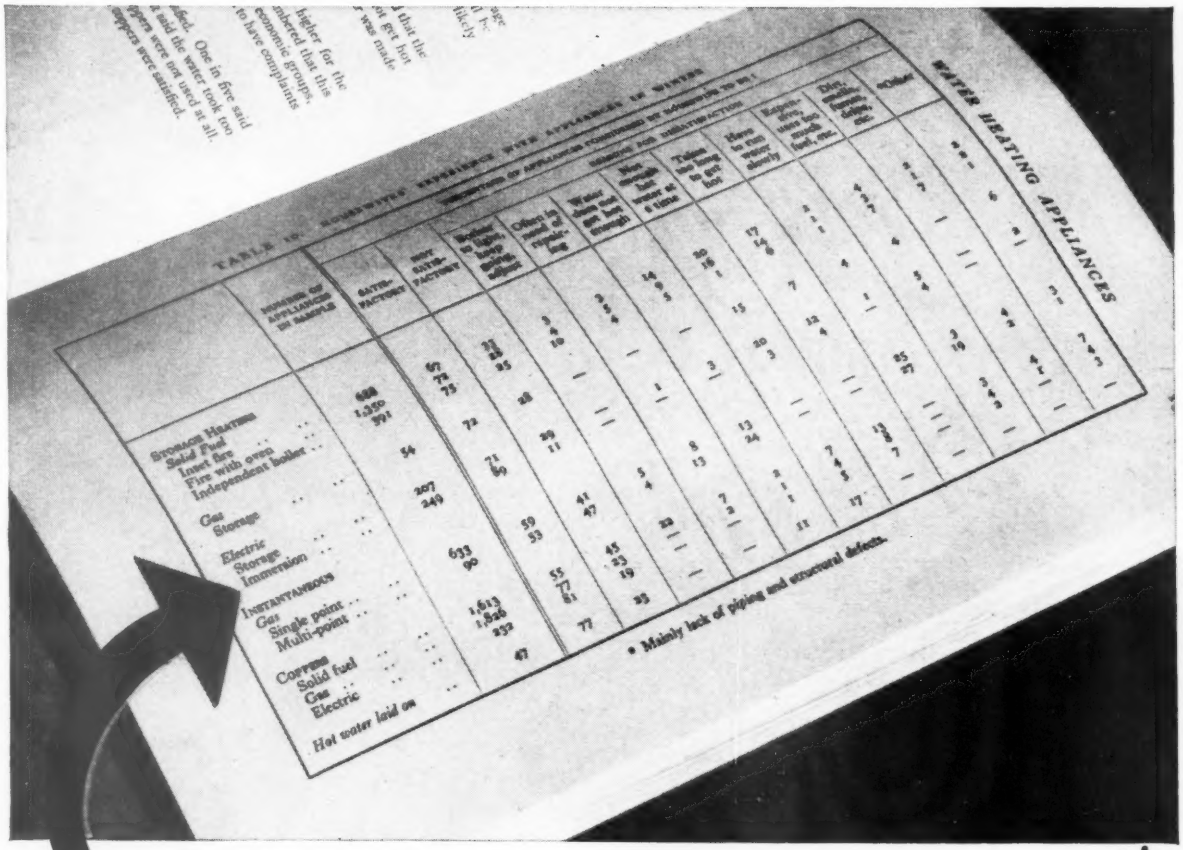

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* National Building Studies Special Report No. 8 "An Inquiry into Domestic Hot Water Supply in Great Britain" (H.M. Stationery Office)

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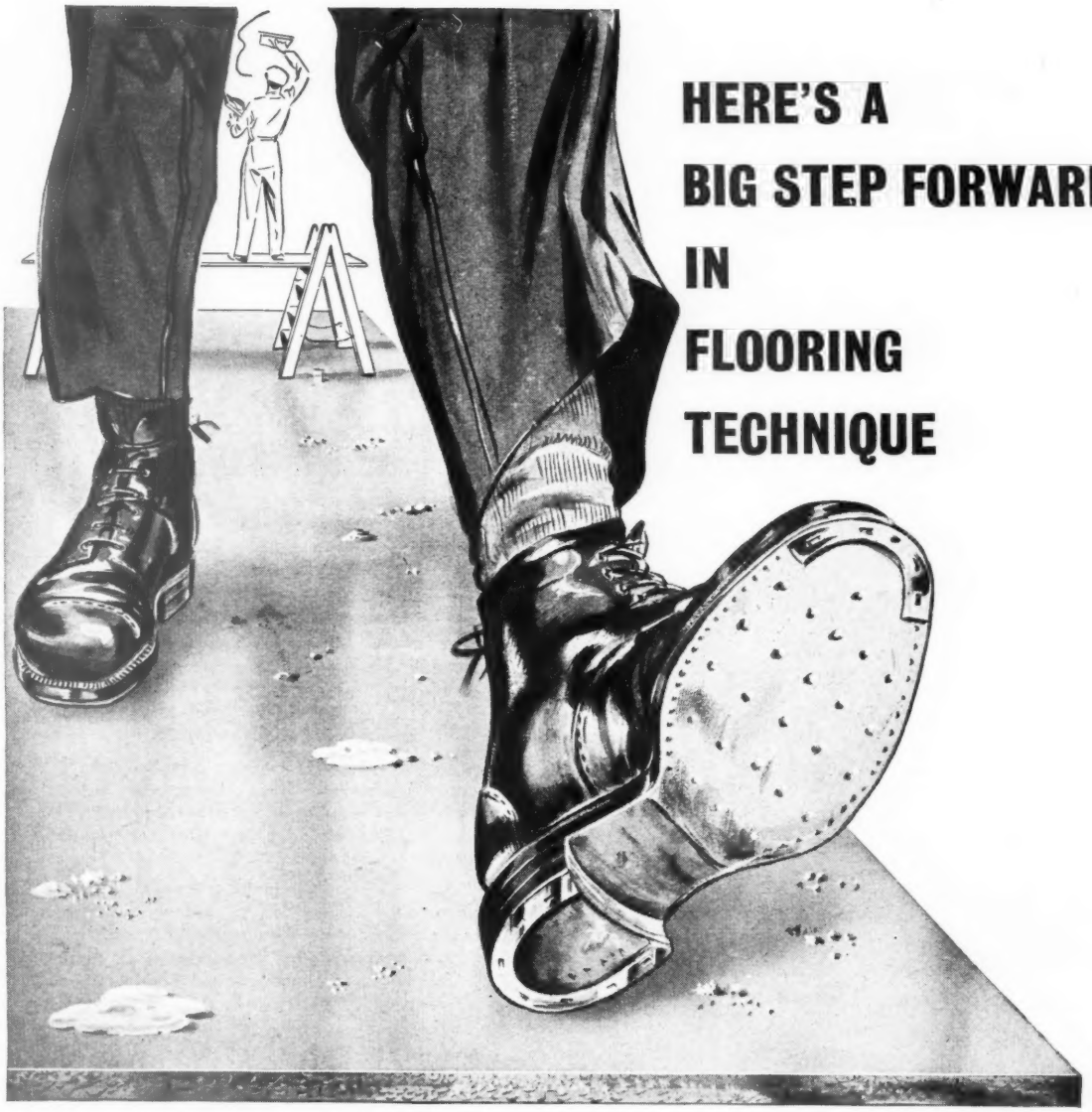

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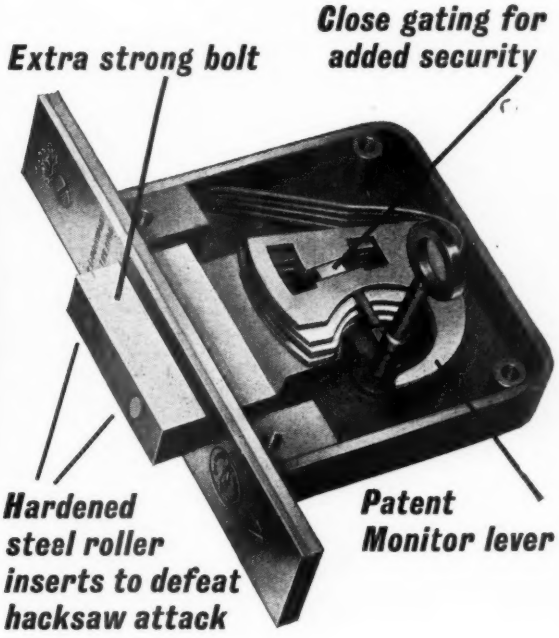

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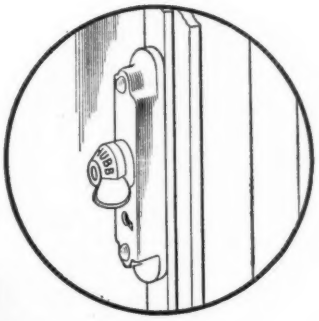

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BY ANTHONY GROSS

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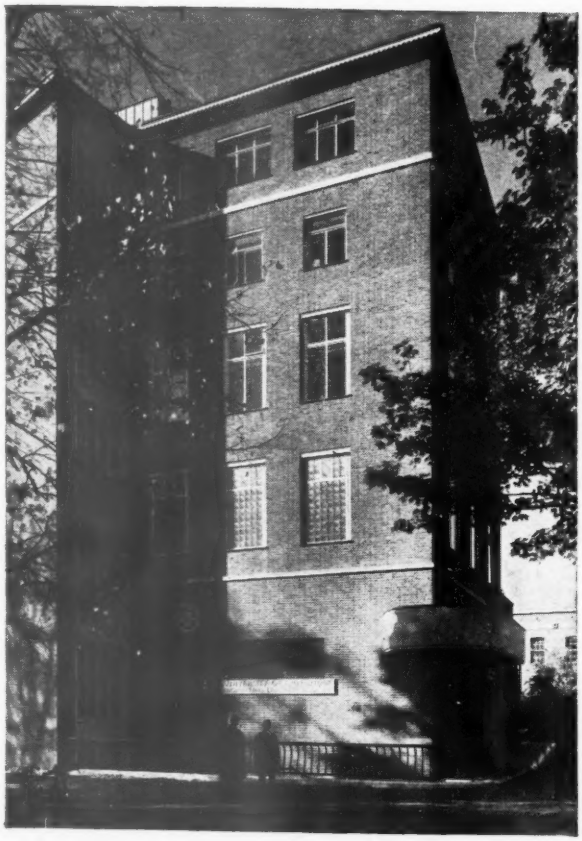

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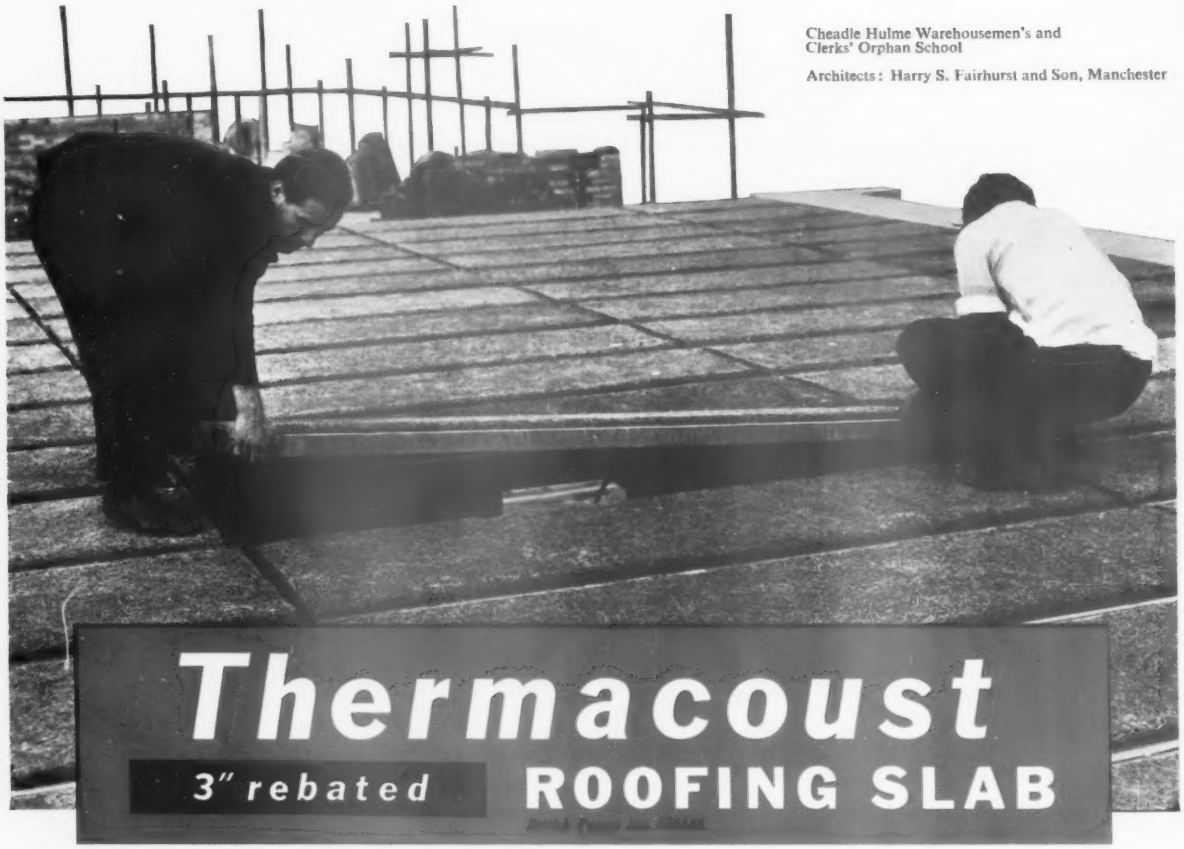

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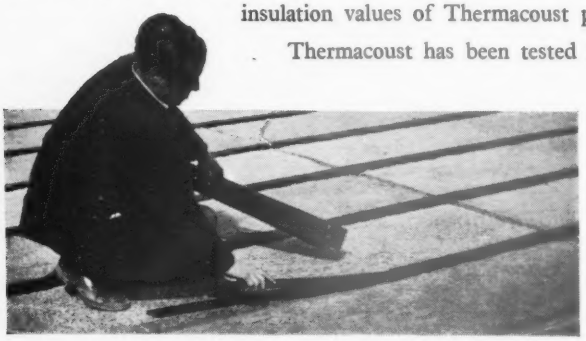

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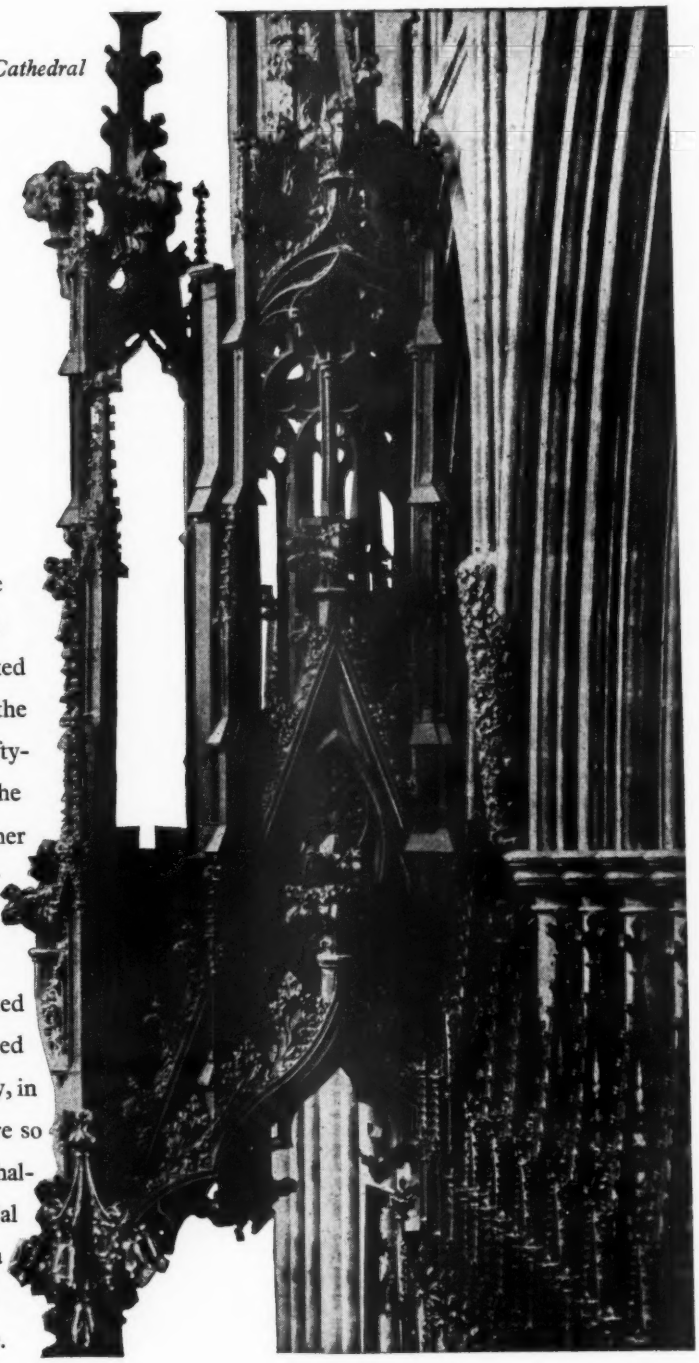
Exeter Cathedral



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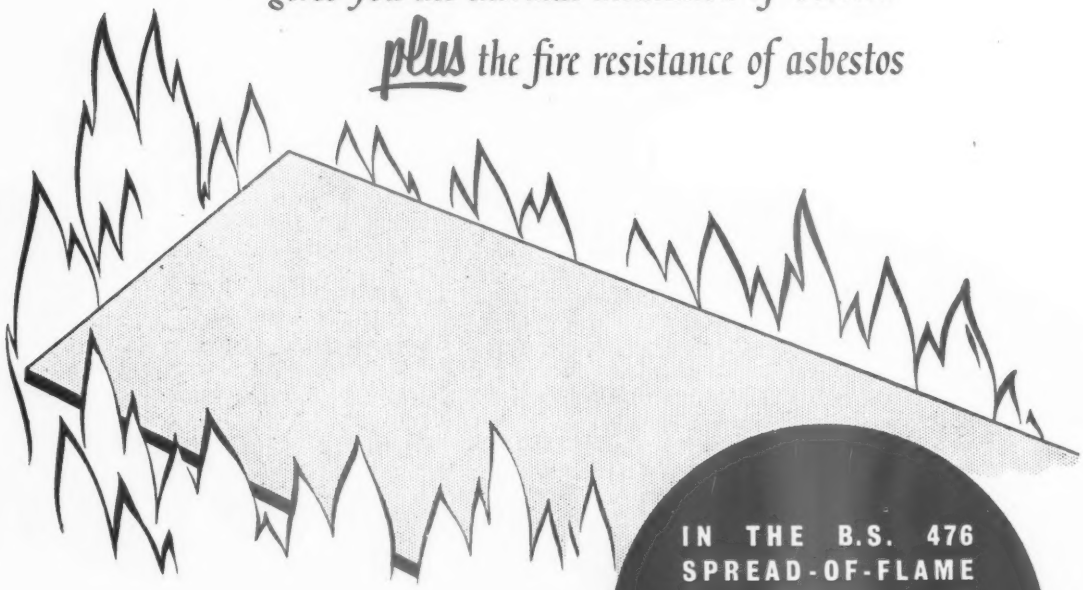

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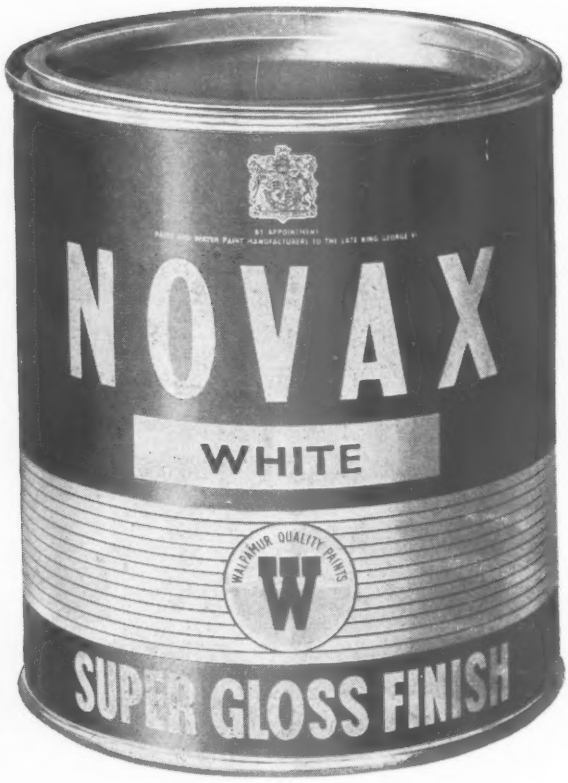

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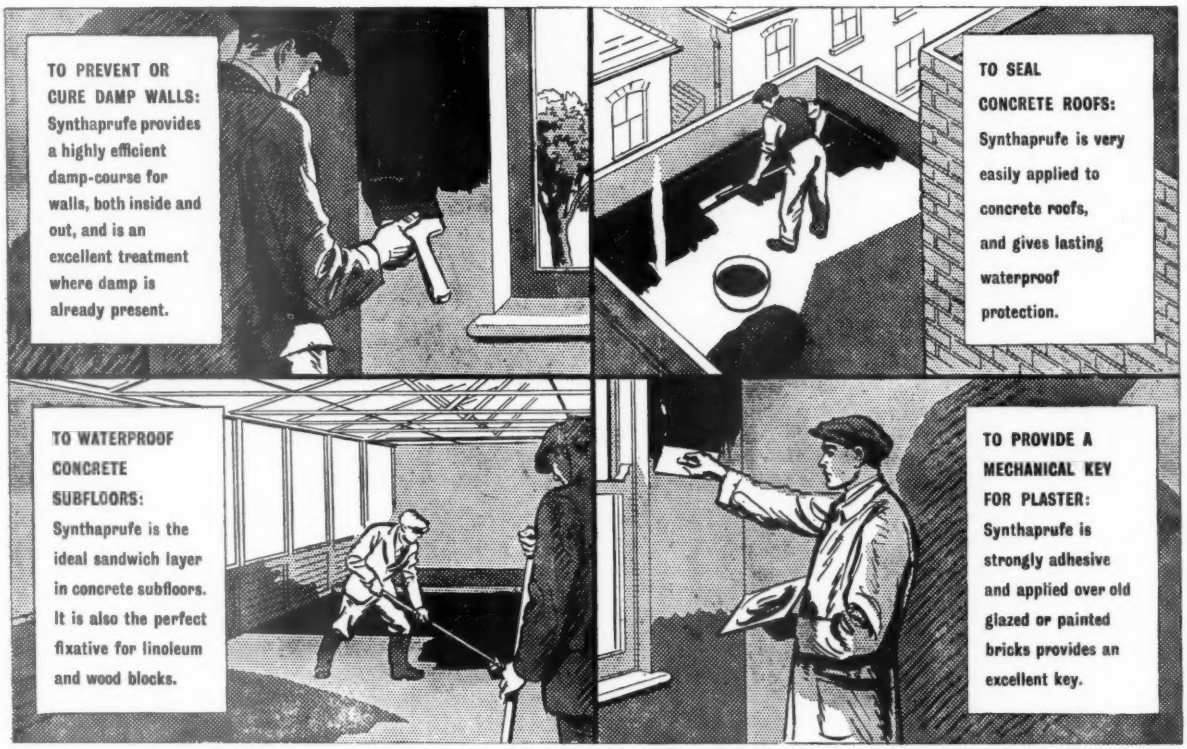

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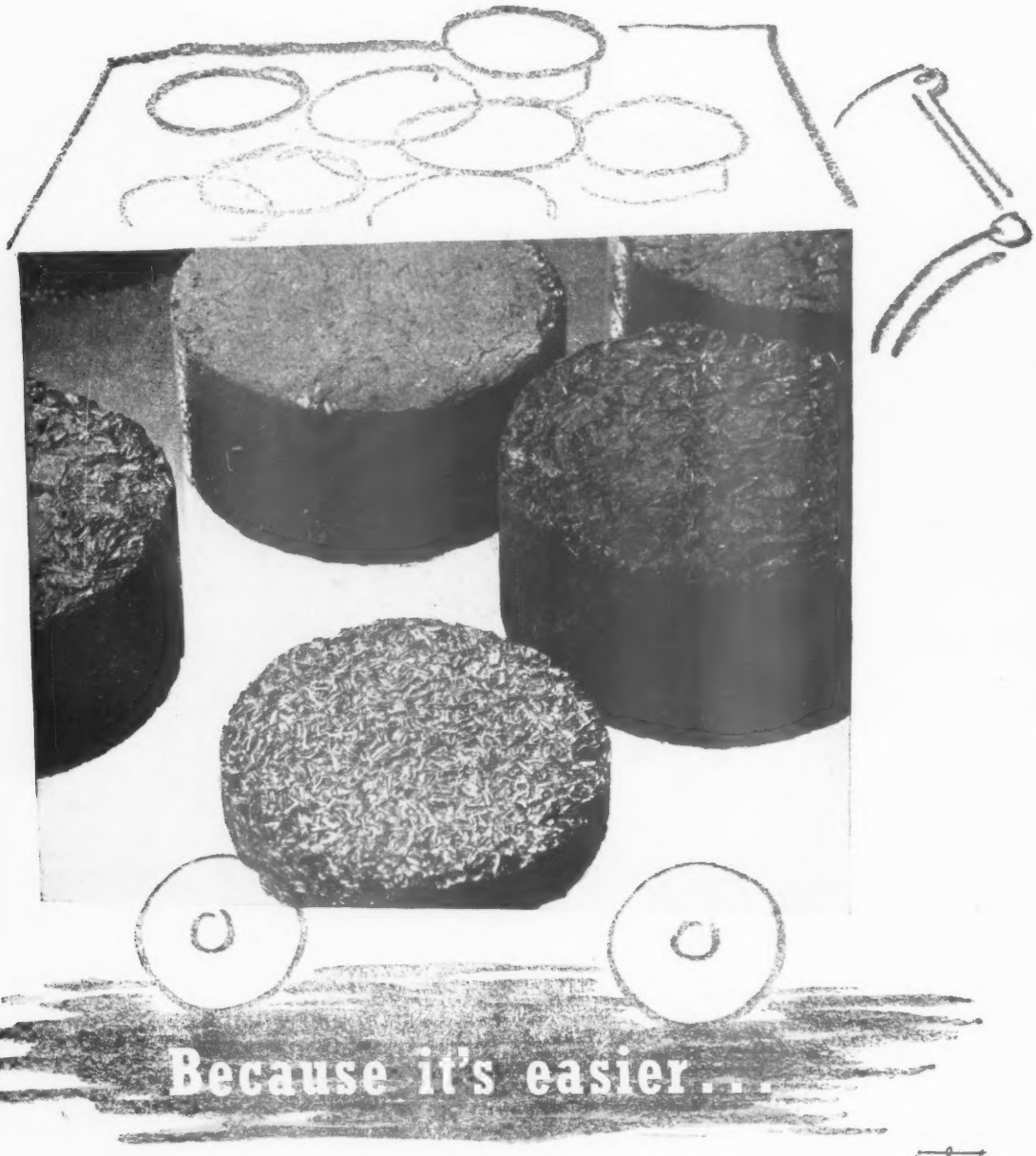

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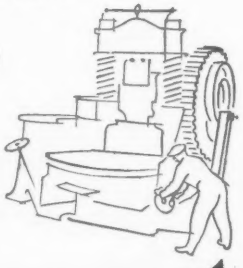

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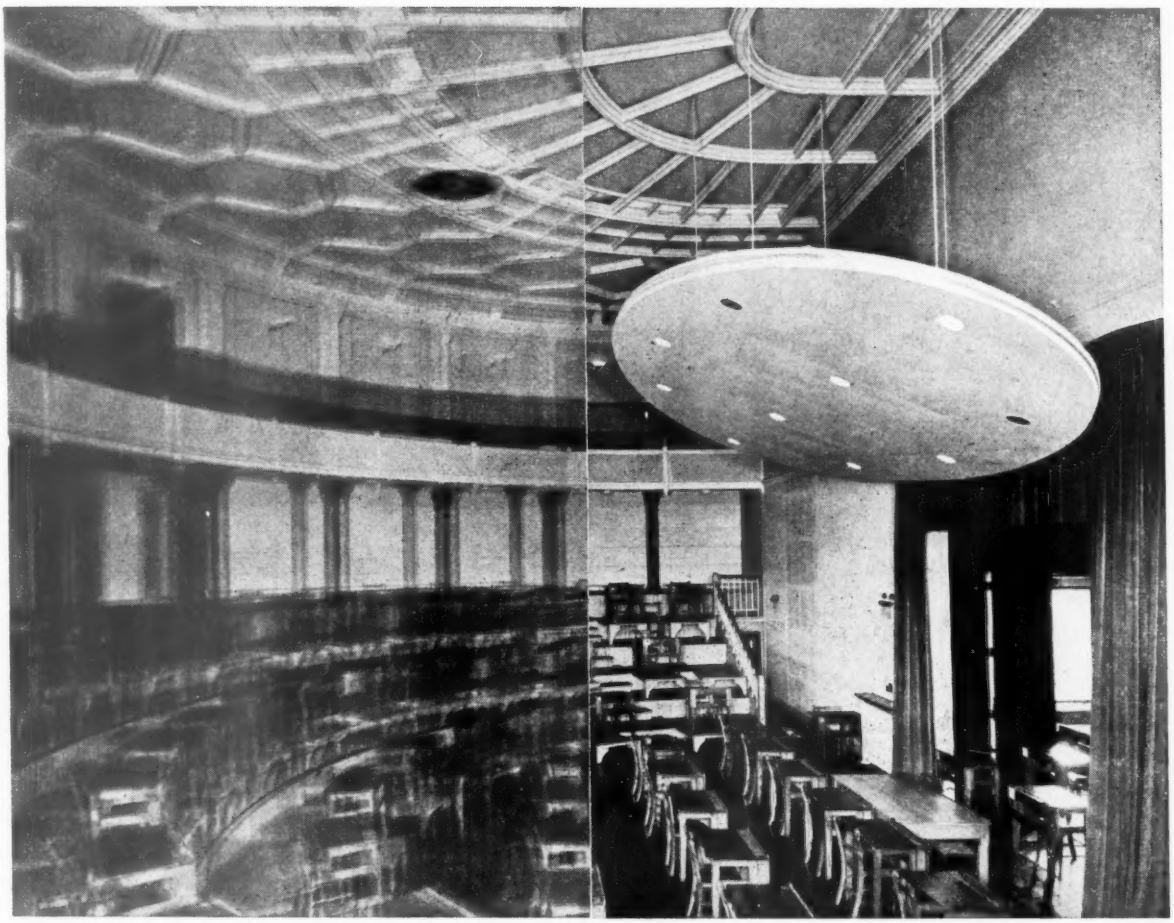

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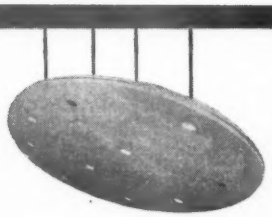

Elliptical Sound Reflector

The Elliptical Sound Reflector was an unusual and interesting feature of this sound insulation job. It is suspended above the lecturer's platform and is designed to project the lecturer's words to all parts of the theatre.

IN THE ARTS THEATRE at the University of Liverpool, students can now hang on the lecturer's words. No strain, no misunderstandings since Newalls went to work. For here sprayed 'Limpet' Asbestos has been applied to the entire ceiling area, curved rear wall panels and balcony front. At promenade level, Newalls (Regd. Brand) Paxtiles* have been installed on the curved rear wall panels and from the ceiling is suspended a large elliptical sound reflector.

Acoustically correct, yet without detracting from the character of the building, this is an example of the service provided by Newalls, extending from the planning, through the manufacture of insulating materials and to their effective installation.

* Paxtiles are manufactured of asbestos fibre, faced with a layer of asbestos millboard and then perforated.

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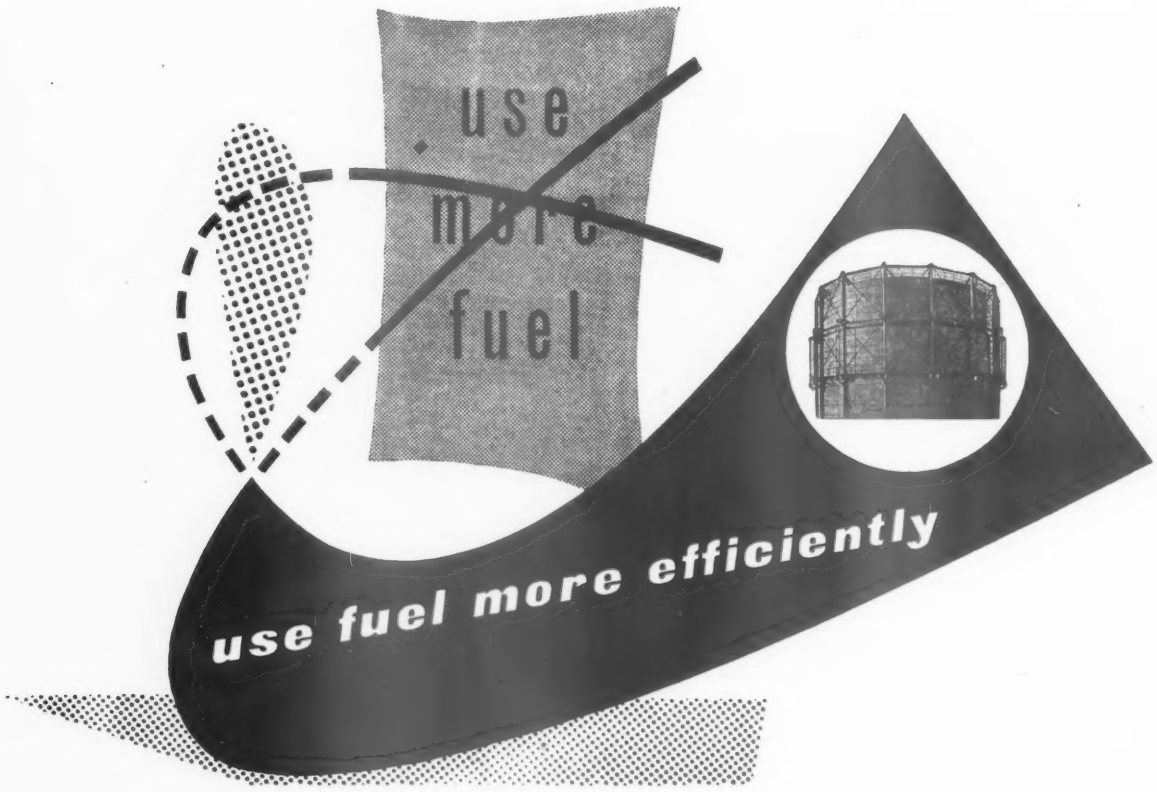

Cut-throat salesmanship has little relevance to present day publicity for a fuel industry. If there is to be any possibility of achieving the improved standards of heating visualised in post-war building studies and reports, the resources of each fuel industry must be used to solve those parts of the total problem of fuel usage to which they can make the most effective contribution.

The recommended uses of Gas in the domestic field are clear cut. It is normally complementary to solid fuel for general winter space heating and water heating, representing the greatest economy in fuel when used for supplementary and intermittent space heating, summer water heating, all-the-year-round cooking, clothes washing and drying, and refrigeration. Used for these purposes it makes the most efficient use of the coal required to produce it.

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But, whether it is the heating of individual houses or large public buildings, Gas and Coke have their parts to play and the Gas Industry is anxious to co-operate to the full with those who desire to find the best way of achieving improved standards of heating with the most economical use of basic fuel resources.

Where to go for information about Gas

If you are considering the use of Gas, however tentatively, your first move should be to get in touch with the Gas Undertaking serving the area in which the job is situated. Through it you have access to the combined technical resources of the entire Gas Industry. The following list gives the addresses and telephone numbers of the Area Boards. Where there is any uncertainty as to which Area Board is concerned, The Gas Council will be pleased to give you the correct address.

Scottish Gas Board: 26, Drumsheugh Gardens, Edinburgh, 3. Edinburgh 34331/5. *Northern Gas Board:* 30, Grainger Street, Newcastle-upon-Tyne, 1. Newcastle-upon-Tyne 26101. *North Western Gas Board:* Bridgewater House, 60, Whitworth Street, Manchester, 1. Manchester Central 8121. *North Eastern Gas Board:* Bridge Street, Leeds, 2. Leeds 32571/8. *East Midlands Gas Board:* Beverley House, University Road, Leicester. Leicester 23201/5. *West Midlands Gas Board:* 6, Augustus Road, Edgbaston, Birmingham, 15. Edgbaston 3616. *Wales Gas Board:* 1 and 2, Windsor Place, Cardiff. Cardiff 28621. *Eastern Gas Board:* 2, The Abbey Garden, London, S.W.1. Trafalgar 5173/7. *North Thames Gas Board:* 30, Kensington Church Street, London, W.8. Western 8141. *South Eastern Gas Board:* Katharine Street, Croydon, Surrey. Croydon 4466. *Southern Gas Board:* 164, Above Bar, Southampton. Southampton 76362. *South Western Gas Board:* 9a, Quiet Street, Bath. Bath 60411/5.

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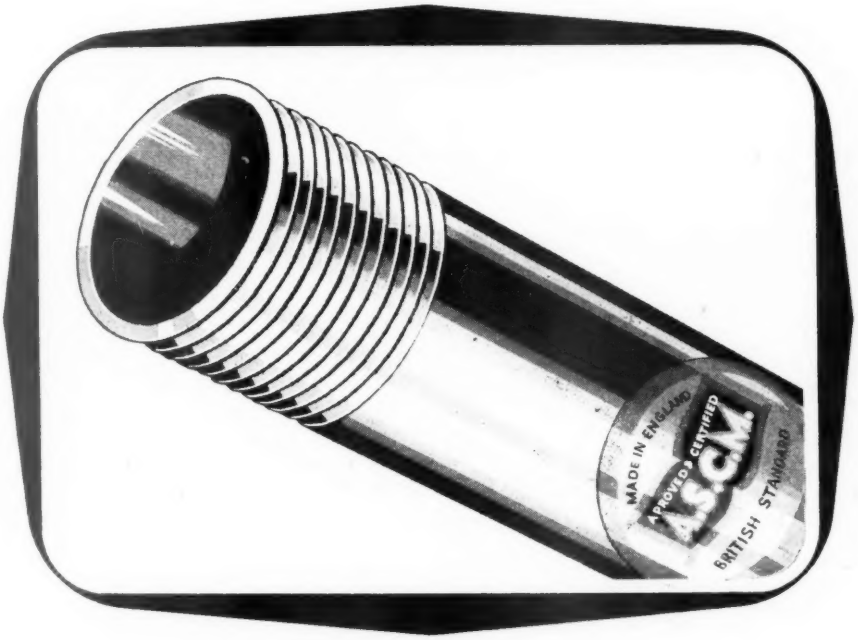

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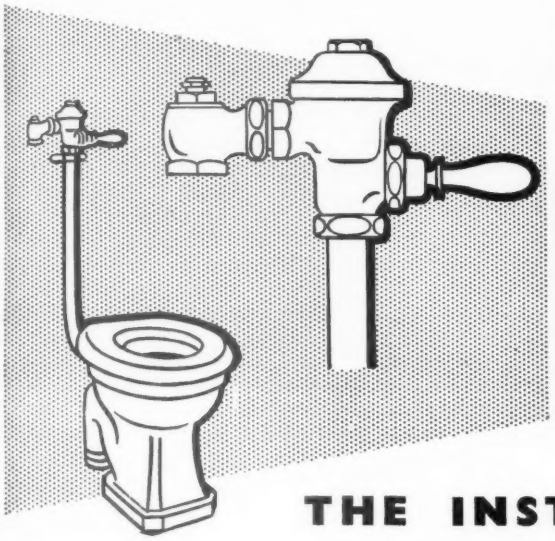

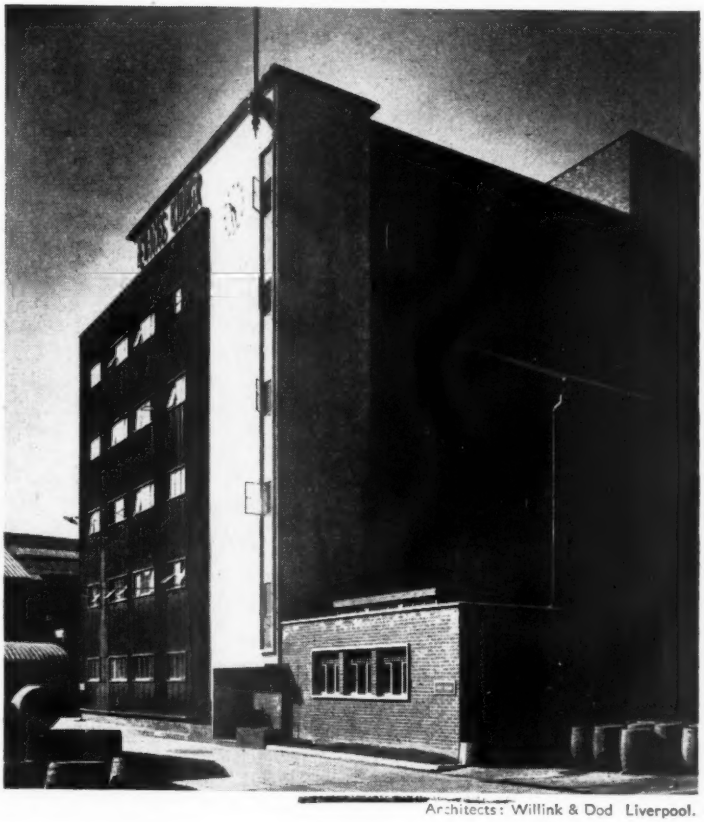

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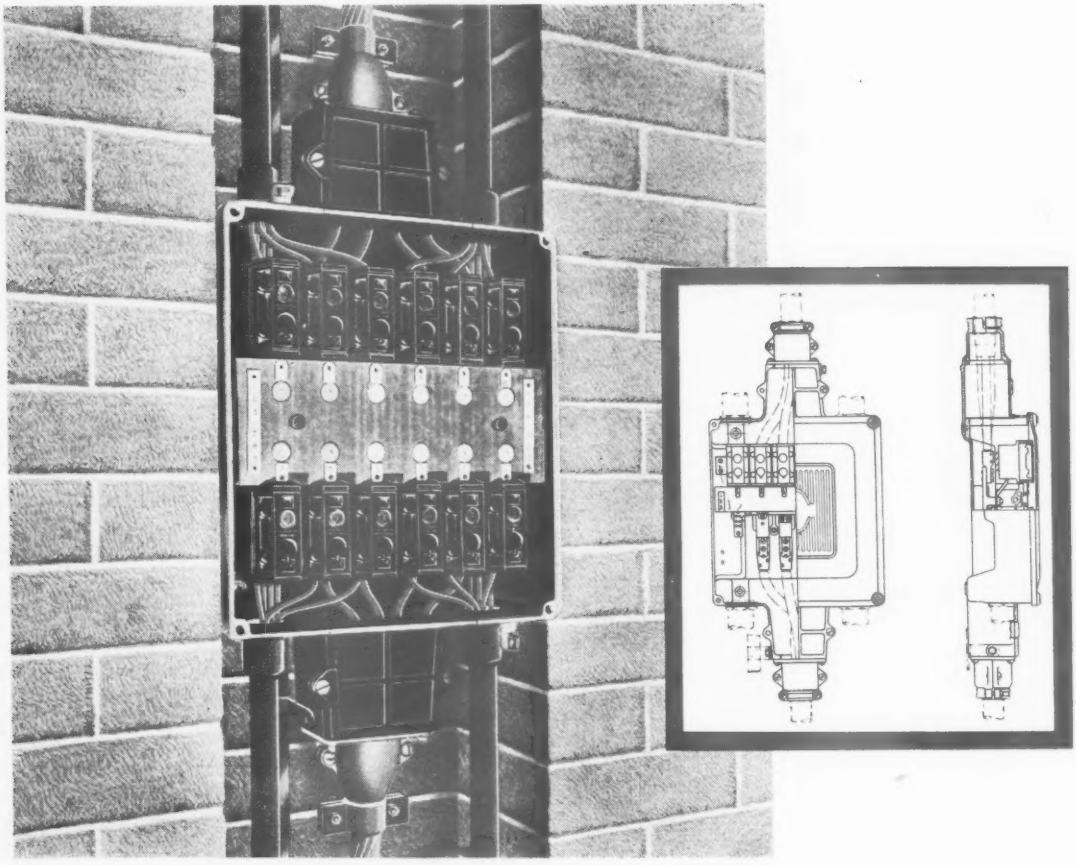

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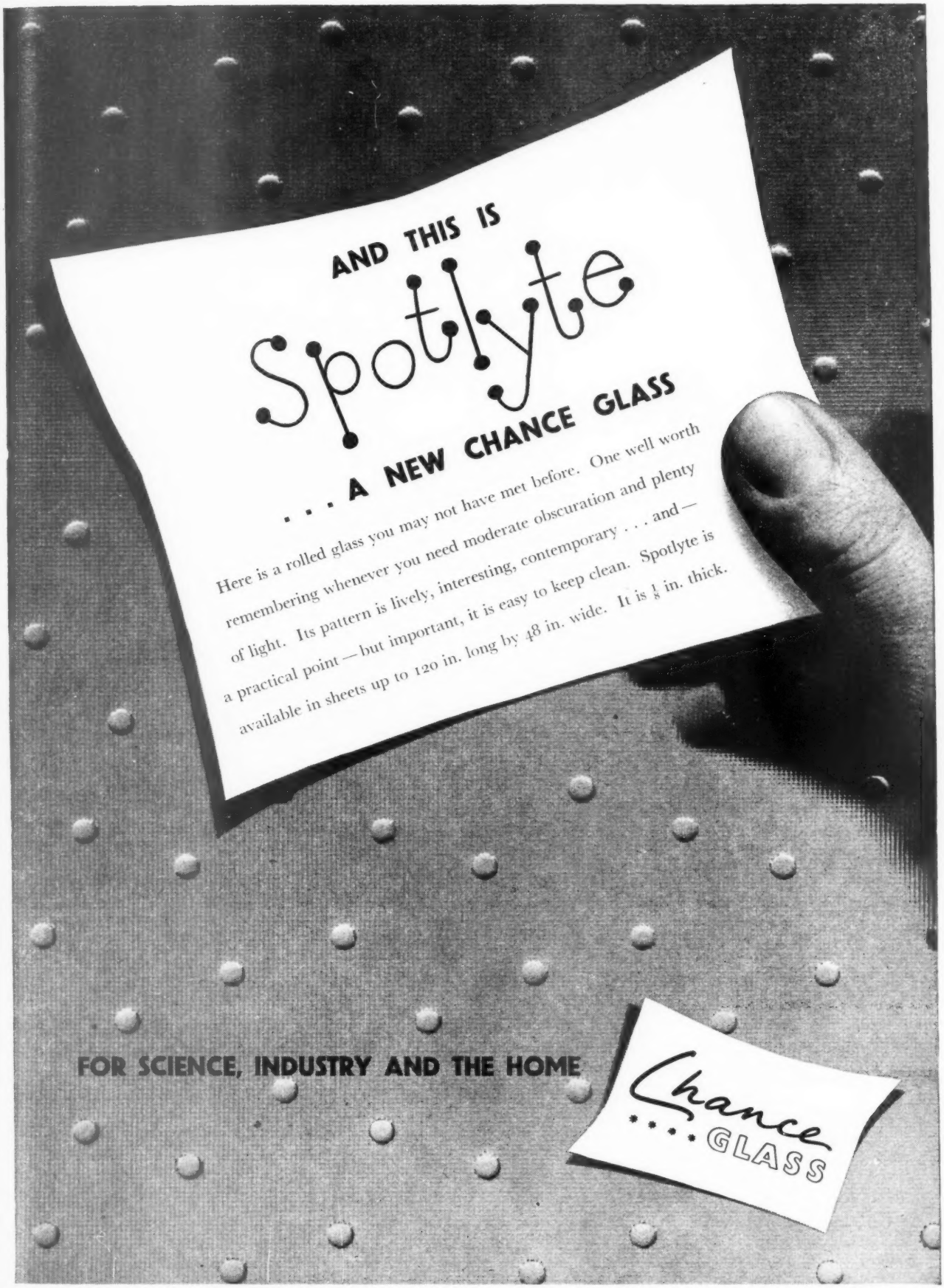

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AJ

THE ARCHITECTS' JOURNAL

9, 11 & 13, Queen Anne's Gate, Westminster, London, S.W.1 Whitehall 0611

No. 3072 January 14, 1954 VOL. 119

Subscription rates: by post in the U.K. or abroad, £2 10s. 0d. per annum. Single copies, 1s.; post free, 1s. 3d. Special numbers are included in Subscriptions; single copies 2s. post free 2s, 3d. Back numbers more than 12 months old (when available), double price. Half yearly volumes can be bound complete with index in cloth cases for 25s. 0d.; carriage, 1s. extra.

FEES AGAIN

A certain amount of dissatisfaction seems to be building up over the RIBA scale of fees, brought to a head, no doubt, by the recent changes. One of the main grumbles seems to be that the rate for domestic work is too low to make the job worth while. True, no doubt, but the RIBA scale, so far as I know, is a *minimum*, and anyone may ask for 10 per cent. or whatever he thinks his efforts are worth. I know several architects—admittedly only a few and those not in rural areas—who do this, and who have found clients prepared to pay. But shall we, like some other sections of the building industry, be pricing ourselves out of the market? Nowadays you don't get all that much house for £4,000; can clients be persuaded that what we can do for them is worth £400? Some, no doubt, but if we still believe that *all* building should be done by architects it's no good putting fees *up*. Isn't there a local association in Queensland (or is it New South Wales?) selling standard plans and elevations for 10 guineas or so? I don't pretend to know whether this is the real answer, but I'm sure we ought to think very hard before we decide that it isn't. There are complaints from time to time about advertisements for "sets of house plans" in local papers, and the results are usually pretty frightful; is it perhaps time we stopped being so superciliously "professional" and did the same thing properly ourselves? At any rate, read Henry Braddock's views on page 36 and let the JOURNAL editors have your views.

AR PREVIEW

The old joke about there never being any architecture in *The Architectural Review* will get a nasty dent from the current issue which is devoted entirely to previews of buildings now on British drawing-boards. It is doubtful if any country has ever had its current state of architectural opinion quite so broadly surveyed (everything is in, except small housing) and future generations of historians, educationists and people looking for something to have a revival of, will thank the editors of the JOURNAL'S august contemporary for a great service rendered.

*

The immediate temptation (and the editorial foreword makes it quite clear that one is supposed to feel tempted) is to make sweeping generalizations about the present state of British architectural thought; to announce that everyone has a raging passion for pilotis, panel walls, random-walling, point-blocks, or some such. But, of course, it is not, as ASTRAGAL'S MP always says, as simple as all that. Any resemblance between an air-port building and a power-station can only be superficial in the worst sense of the word—and yet—and yet—it is amazing how English it all looks, even when you can see that there has been a little crafty cribbing from this or that foreign source. It really seems as if "English Post-War" may really be a style after all and not, as hitherto, merely a term of abuse.

SPIKES AND STONES

The remarks at the John Betjeman evening at the RIBA—reported very briefly in last week's AJ—struck a responsive chord in ASTRAGAL'S heart. The first, from our beloved Mr. B. himself, was an appeal for more "spikes" in contemporary architecture. Roof lines, he remarked, are today usually unadventurously flat, no more than plates upon which rest the "half-opened parcels" of lift and tank enclosures. "Where," he asked, with tears (of anger or despair?) in his eyes, "are the spires and minarets of the City and of Imperial Institute Road? or even of County Hall and Queen Anne's mansions?" Pressed out flat, I fear, must be the answer, by the real-estate kings to whom architecture is only a snob word for lettable floor space. Who, after all, can let off a turret or a minaret at a profitable rental—let alone such follies as cupolas, open to the sky and actually enclosing no lettable space whatsoever?

Nevertheless, ASTRAGAL echoes most warmly this *cri de cœur*, suspecting, as he does so, that part of the unrelenting unspikiness of modern building is due to the complete inability of most architects to design a spike. The poor chaps faced with such a problem, and lacking the precedent of Mies or Corb as lifebelts, flounder helplessly in a sea of philosophical excuses—always the camouflage for cowardice and ignorance upon the drawing board. The fact that most architects secretly *like* spikes, I think, is shown by the fact that in the perspectives and photographs of their solemn cubes they usually contrive to fit somewhere into the picture a church spire or an 18th century obelisk (*i.e.*, see current issue of the *Architectural Record's* account of the new Gropius scheme for Boston and that splendid open-work spire in the foreground by ———? Or any photograph of 5th Avenue, New York, always with that church of St. ——— (where is my memory?) in silhouette against the skyscraper flank).

*

The second chord-striking remark that evening (from Sir Patrick Abercrombie) was a suggestion much more easy, perhaps, to achieve. "For too long," he said, "the courtyard in front of St. James's Palace has been a visual affront . . . a patch of miserable asphalte. Why cannot we have it paved in some more suitable material —be it bricks, stones or setts—a material, in other words, worthy of its position? " Hear, Hear ! murmured ASTRAGAL, and don't listen to War Office complaints about boots slipping during the Changing of the Guard. They've got sergeants who can look after that sort of thing. Can't we have it done, Sir David, as a welcome home to the Queen?

*

Returning to Mr. Betjeman—as all of us sooner or later do, even if we are disguised as Kay Hammond—it was gratifying to see so large an attendance for his lecture and to hear him extol with his customary blend of mischief and affection the architectural glories of the past (1850-1914). As the stern faces of Mountford and Butterfield gazed at us from the screen our Mr. B. reminded us—it was a chilling experience—that the great men of those days might each have built in his lifetime seventy buildings, while each of us would be lucky to build seven. Moral—unspoken but implied —is: "Better make them good. The old boys could afford an off-day . . . you can't." The fact that our Mr. B. is getting a rather distinguished and statesmanlike appearance—thick greying hair above a stiff white collar, noble brow above a blazing eye and black cravat . . . added weight to this warning, and ASTRAGAL saw many a more thoughtful face disappearing later into the grey fog of Portland Place.

Some readers may remember receiving in 1951 *a Christmas card from the editors of the* JOURNAL *very similar to the above, except that the name of the noted working men's tailor was "the original Charles Bates of C. Greenburg." ASTRAGAL has now received the following self-explanatory letter, which accompanied the advertising pamphlet reproduced here: "Sir, I have had my attention drawn to what I understand was intended as a Christmas and New Year Greetings Card by your paper. Attached thereto is what is represented to be a reproduction of an advertisement stated to be published about* 1860. *That advertisement states that Charles Bates had been with Mr. C. Greenburg, and the last named was my Father. In the year* 1860 *my Father would have been six years old, and it is therefore difficult to know how a Mr. Bates could have come from him. The wording of Mr. Bates' advertisement follows pretty closely the wording which my Father used. They were, however, not advertisements in the ordinary sense, but were pamphlets distributed in the Public thoroughfares. I might mention in passing that one of my sons is in his fifth year to qualify as an Architect and I hope that his opinion of the* ARCHITECTS' JOURNAL *does not suffer as a result of your mis-statement. Yours sincerely, A. L. Greenbury."*

THE VICIOUS CIRCULAR

The Nursery School Association is holding a pleasant little exhibition of schools

Sao Paulo : Fourth Centenary

The fourth centenary of Sao Paulo, second city of Brazil, will be celebrated with an exhibition which will be everything one expects from a country of bold designers, and from the fastest-growing city of the southern hemisphere. The design team, which includes Niemeyer, Cavalcanti and Kneese de Mello, with Roberto Burle-Marx for the planting, has produced the science-fiction landscape which is shown in the model above—walks shaded by vast concrete canopies, connecting buildings whose staggering scale will be appreciated when it is realized that the pilotis in the photograph, left, belong to the relatively insignificant-looking nine-storey office block in the top right-hand corner of the model.

at their headquarters at 1, Park Crescent, which ends this week, and ASTRAGAL advises all architects who are interested in school architecture to visit it. The nursery school has been notably lacking in our post-war picture, in spite of the fact that the Education Act of 1944 made it obligatory (in no other country is this so) for local authorities to provide such schools as part of the primary education programme. The truth of the matter is that the MOE Circular 155 of 1947 to all intents and purposes suspended the building of nursery schools and classes, except where a need to release women for export industry could be shown, thus implying an expediency which gives to infant education a gruesome twist.

CHANGES IN PURCHASE TAX

Since ASTRAGAL neither gives nor receives "articles of precious metal," some of the many changes in purchase tax do not affect him very much. Others, on the other hand, do, and sometimes in quite the wrong way. That PT on electrical heating appliances should now be the same as on gas equipment (50 per cent.) seems only sensible now that we are getting however many megawatts it is of extra generating capacity per year. Good.

*

No tax on umbrella parts, good again, for the complete one ASTRAGAL lost at a recent meeting of an august architectural society is now worth less than he thought at the time. But to put 25 per cent. on "tiles, strips and blocks of a kind suitable for laying on, or fixing, to floors or sub-floors" seems quite indefensible, as it will inevitably add to the cost of housing when we are all trying as hard as we can to get it down. Perhaps it is no more than a form of compensation for the softwood industry, for now, after 15 years when timber ground floors have been illegal, other types of floor are now statutorily almost impossible. Notice, too, the peculiar "suitable for laying," etc.; this seems to leave a large loophole for the Treasury, for there are materials (*e.g.*, hardboard) which still remain *suitable* for laying on floors even if fixed to walls or ceilings. But these are mere quibbles: let us rejoice that the tax on garden ornaments is down from 75 to 50 per cent. and nip out for another set of toadstools.

ASTRAGAL

POINTS FROM THIS ISSUE

The Editors

PROFESSIONAL FEES

THE R.I.B.A. has just issued its Scale of Charges in a revised form under the title of Conditions of Engagement and Scale of Professional Charges. A number of points both about the new scale and the method of publishing it are causing concern to some Members.

The revised version has been issued to the Press and has already been published in full in various technical journals and has been commented on in the daily Press. All this before the ordinary member of the Institute has had any opportunity to comment on the proposals. Moreover the ordinary member was not even aware of the fact that the scale was under revision and had not had any opportunity to put forward his views before publication of what seems to be a document on which final decisions have in effect already been made. It is true that the procedure adopted conforms to the requirements of the Institute's By-laws in that the published document is open for comment up to January 30, but since the statement to the Press which appears alongside the "draft" also says that the new Scale will be confirmed by the Council at a meeting on February 2, subject to consideration of any comments or criticisms which may be received by members, it at least strongly suggests that it has been decided in advance not to consider any such comments in great detail.

Criticism can also be made of the revised scale itself. Doubtless there would be differences of opinion between members about actual rates for various services but more important even than these is a general point. Nowhere does the new scale suggest, let alone make it clear, that the rates are *minimum* rates. In fact it does not seem to leave an opening for agreement between client and architect for fees at any other rate than the standard one. This is a very serious point indeed. In the case of time payments surely it cannot be expected that an architect of long experience and considerable reputation will receive only the same payment per hour for his services as that acceptable to the youngest Associate straight from an architectural school.

Even in the case of new works, paid for on a normal percentage basis, a strong case could be made for sometimes charging at a higher than standard rate. Certain architects are known to produce a consistently high standard of work. To do this usually requires more time and trouble, as fine design, good

detailing and efficient organization do not "just happen." If an architect feels very strongly about his work and gives the necessary extra time and trouble which produces a particularly high standard of result, is he not entitled to be recognized for this by a higher standard of payment if he can get it? Some architects might be quite prepared deliberately to restrict their volume of work in order to have time to give really personal attention to each job in all its stages, if they felt that by doing so they would not be unduly penalised financially. It may be said that any recognition of such differences between members of the profession would cut right across the basis of any Scale of Charges but it is common practice in other professions, for example with barristers and surgeons.

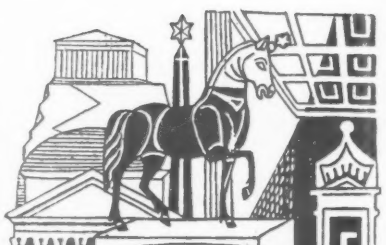
NEW NURSERY SCHOOLS

A new idea in school buildings is put forward by the Nursery School Association at their exhibition* : part-time nursery schools. The proposal is that if, instead of taking 40 young children for the whole day, a nursery school took a group of 30 children in the morning and another group of 30 in the afternoon, the school building need be less elaborate than a normal nursery school (there would be no meal to prepare and no provision need be made for sleeping) and the cost per place would be less. Although there is a desperate need for full nursery education, many children would benefit almost as much from only two or three hours a day in a nursery school. The smaller building could also, with some much-needed collaboration between the education and the housing authorities, be incorporated more easily in housing areas, which is where the need is greatest, and when practicable, could be built into the structure of new blocks of flats. A project for such a part-time nursery school is shown at the exhibition and reproduced opposite.

The exhibition draws attention to the present plight of the Nursery School Movement. Scarcely a dozen nurseries have been built since the end of the war, yet the 1944 Education Act made it an obligation for Local Education Authorities to provide nursery schools where there was a demand for them. That so few have yet been built is the result of a circular issued in 1947 in which the MOE stated that because of the "present stringent circumstances" he could not sanction the provision of new nursery schools "for the time being," except where required to assist the employment of married women in industry—educationally the worst possible reason.

Unless some action is taken soon, sites will be hard to find on the housing estates where they are most needed. Is it not time that this ban was removed and at least a start made on this important building programme? Or have educationists at the Ministry changed their mind on the value of these schools?

* Different kinds of Nursery Schools, at 1, Park Crescent, W.1., until January 16, 10.30 a.m.—4.30 p.m.



Henry Braddock, A.R.I.B.A.

A. B. Grove and G. F. Chadwick A./A.M.T.P.I., A./A.I.L.A.

Part Timer

Charles Barratt

The New Scale of Professional Charges

SIR,—Once again the vexed question of architects' fees is raised by the publication in the RIBA *Journal* of the Council's new proposals. Wherever the question of a fee arises for works of a cost range which includes the small dwelling of between 900 sq. ft. and 1,500 sq. ft. the architect is always placed in an embarrassing position.

Referring to the Scale of Charges 2 (*a*) and (*b*), I suggest that the fees at 10 per cent. on work of £200 graduated to 6 per cent. at £4,000 are both too high and too low. Too low for a conscientious architect and too high for that hard-done-by member of the public who wishes to invest in an individual house of character. Whatever the level of fee for work at these lower costs, they will always remain a matter of bitter argument so long as the fee is too low to allow an architect to undertake private houses with any hope of a profit, and too high to be an attractive proposition to that section of the public who would otherwise be only too willing to use our services.

For this reason, I suggest that a method be devised whereby work of this special nature is separated from the normal scale of fees as follows:—

Architects should voluntarily design, detail and cost a maximum of three different types of house from 900 sq. ft. to 1,500 sq. ft. and submit them to the RIBA, either under competition rules or for the general approval of a Committee who would co-ordinate the information provided. The RIBA to then publish a book, or file, containing these schemes which would be deposited throughout the country with all local authorities and libraries, or other places where they could be under control, so that constant revision and addition could easily be dealt with. Public attention would be drawn to the arrangement through the Press.

All enquiries from the public would go

to the RIBA, who would act as a clearing house, where *supervising* architects would be suggested and contacted. All fees would be made payable to the RIBA on the following basis:—

2 per cent. plus a royalty approved by the RIBA (this to include cost of providing copies of drawings, etc.).

The RIBA would then deal with the fees as follows:—

The RIBA would retain a percentage of the royalty for administration and publishing services.

The supervising architect would receive 2 per cent.

The author of design and working drawings, etc., would get a royalty less a percentage to the RIBA.

There would be special terms for a number of houses built by a developer. Thus, while the scale of fees now proposed by the RIBA on a house costing £3,000 would be about 7 per cent. or £210, under my proposal they would be only £102, made up in the following way: at 2 per cent., £60, the royalty, say, £42, total £102.

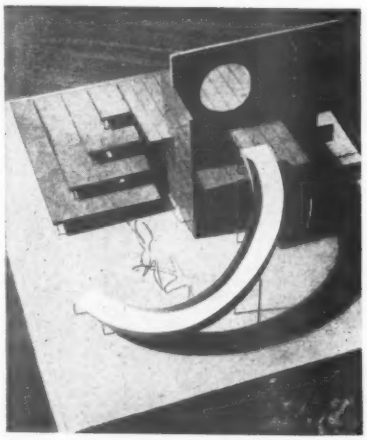
Public appreciation of architecture begins in the house. There are many people who possess the ability to appreciate and who wish to possess that something which a skilled designer can give them. We must make it economically possible for them to take advantage of what we can give them.

HENRY BRADDOCK.

London.

Play Areas

SIR,—If ASTRAGAL had taken the trouble to read our essay in the Housing Centre Review issue on Play Areas, he would have seen why two competitors, at any rate, discount the value of "brightly coloured lorries" and other impedimentia similar to those in some of the LCC and other play areas. We consider such fixed unalterable equipment to



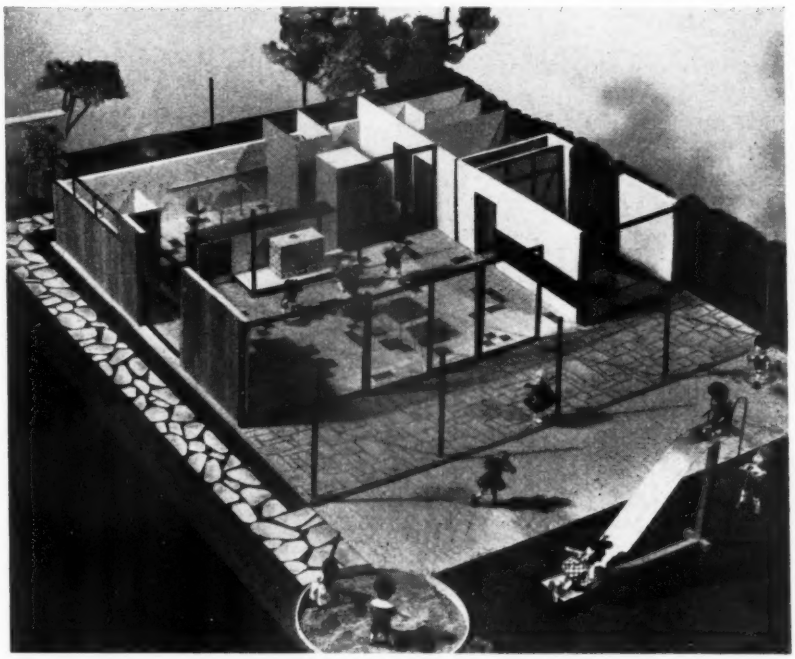
An example of a children's play structure, designed by A. B. Grove and G. F. Chadwick who reply, above, to ASTRAGAL'S *comments on a recent* Housing Centre Review *article on children's play areas.*

have far fewer play potentialities, in the type of area under review, than other equipment which offers greater scope for the child's imagination, although it may not have such a great appeal to the adults who do not have to use it. Had he also visited the Housing Centre last month he would have seen at least one design for a prefabricated play sculpture or "play construction" which could be produced at must less cost (an important factor mentioned in the competition conditions), than the "crawling" sculpture which ASTRAGAL missed so much. A photograph of a model of such a construction, suitable for small children, is enclosed.

A. B. GROVE, G. F. CHADWICK.

Hemel Hempstead.

BUILDINGS IN THE NEWS



Experimental Nursery School

The model above is of a proposed experimental part-time nursery school, designed by John Stillman and John Eastwick Field, on view at the Nursery School Association's exhibition at 1, *Park Crescent. In the foreground is the playroom, with beyond, the cloakrooms. On the right is the staff accommodation. See also this week's second leading article.*

Festival Building Converted

The photograph below shows the recently completed Freight Building for B.E.A. at the Waterloo Air Terminal. Originally designed by H. T. Cadbury-Brown as part of the Festival of Britain, this building has been altered by Sir John Burnet, Tait and Partners to provide storage and handling space for air freight, with offices and staff accommodation on the original mezzanine galleries. External new brickwork matches the original, exposed steelwork has been painted black, glazing bars white.

Official Architects' Salaries

SIR,—It appears to your correspondent "Rotarian," writing in the JOURNAL of December 31, that spare time work by official architects does not stand examination on any grounds. He might, however, be interested to know at least *why* it is "rampant." It is a form of extra work reluctantly undertaken in order to *subsidise* the inadequate salaries paid to many qualified architects. I suggest that the only satisfactory way to prevent spare time work is to pay official salaried architects the proper salaries merited by them as highly skilled professional men. However, I have not noticed very much enthusiasm for this move on the part of many of "Rotarian's" fellow private architects.

PART TIMER.

Sheffield.

"Professional Councillors"

SIR,—The attention of the Planning and Redevelopment Committee has been drawn to an article on the rebuilding of Coventry which appeared in the AJ for October 8. In the course of the article your contributor, under the heading of "Professional Councillors" makes the following statement:—"It seems that being a local Councillor is becoming an ever more arduous activity. How is it, then, one wonders, that engineers, who represents the largest body of men in the Council, can afford to give up the time?

The answer is one that probably very few people realise; they are mainly trade union officials; thus in fact, if not in name, they are virtually professional Councillors."

This statement has caused members of the Commiteee some distress, for many of them are only able to carry out their work for the local authority at some considerable financial sacrifice, and I was asked to write officially refuting the statement that the majority of the Committee members (or for that matter, the majority of the Council members) are full-time paid trade union officials. It would be, indeed, very difficult to justify the expression "virtually professional Councillors" for, although a large number of the members of the Council are associated in one way or another with the engineering industries, very few of them indeed are full-time trade union officials.

CHARLES BARRATT.

Coventry.

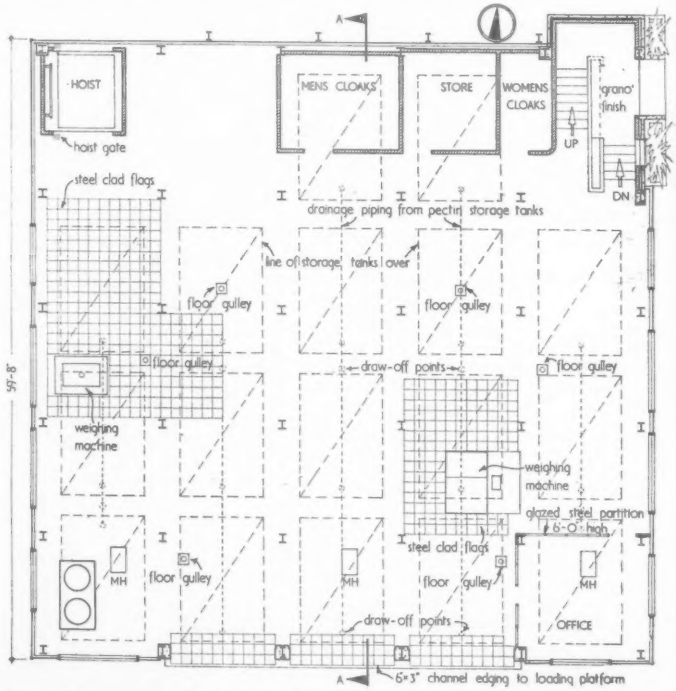
RIBA

Prizes for Young Architects

At a general meeting of the RIBA on January 5, the Council's Deed of Award giving the results of the competitions for

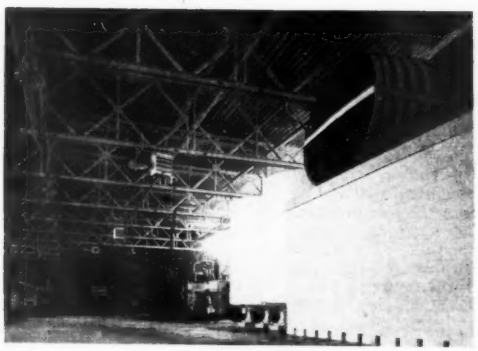
CIDER FACTORY AT HEREFORD

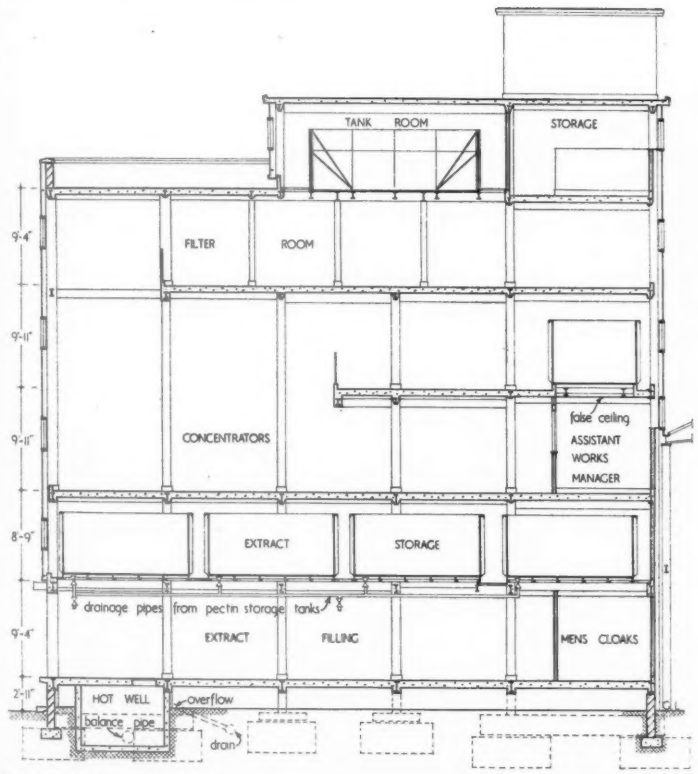
On this page and opposite is illustrated a new cider and pectin factory at Hereford for Wm. Evans & Co. (Hereford & Devon), Ltd., designed by Willink and Dod (architect-in-charge, M. G. Gilling, assistant architect, K. G. Edwards). The photograph above shows the pectin building from the north-east; on the opposite page,



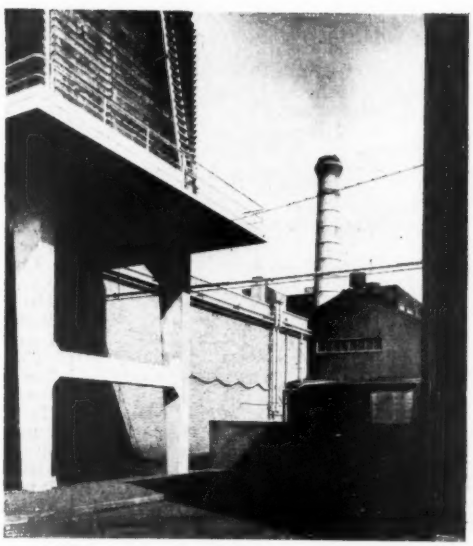
Ground floor plan [Scale: 1/8" = 1'0"]

top, the main entrance to the factory from the south-east, in the foreground is an old horse-propelled apple mill ; centre left, the south-west corner of the pectin building and the boiler house chimney; centre right, an interior view in the cider bottling shed, and bottom, a view from the south-east showing on the left the cooling tower. The main objects of the scheme were the expansion and complete separation of the cider and pectin production units, previously carried out in one dilapidated structure. Work was planned in stages over a period of five years so as not to interrupt production which, in the case of pectin is continuous day and night, and there has been complete alteration from horizontal to vertical line of production. Pectin is a white substance, formed from pectose (which in turn is derived from unripe fruit) by heating with acids, and becomes a gelatinizing agent in vegetable juices.





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



The building is steel framed and has precast reinforced concrete floors and roof and external cladding of corrugated protected metal sheeting. Windows are metal casements in wood frames. The general contractors are Wm. Bowers & Co., Ltd. For sub-contractors, see page 60.

D

the Annual Prizes and Studentships was read. There were in all 579 competitors. The total value of the prizes and scholarships offered is over £3,000 a year. The results of the various competitions are as follows:—

The Tite Prize: A Certificate and £100 for the study of Italian Architecture.

The subject set this year was: "An Italian Lakeside Garden." The prize was awarded to Geoffrey Edgar Howard, student of the Manchester University School of Architecture. *Commended:* Alexander Duncan Bell, student, School of Architecture, Dundee College of Art; Neville Whittaker, student, School of Architecture, Kings College, Newcastle-upon-Tyne; Ian Curry, student, School of Architecture, Kings College, Newcastle-upon-Tyne; George Duncan, probationer, Glasgow School of Architecture.

The Soane Medallion and £120 for Architectural Study Abroad.—The subject set this year was: "St. Paul's Stairs and Terrace." The prize was awarded to David Annison Rock, A.R.I.B.A., School of Architecture, Kings College, Newcastle-upon-Tyne. *Commended:* Brian Geoffrey Cobb, A.R.I.B.A., Manchester University, School of Architecture; Derek Anthony Cobb, A.R.I.B.A., Manchester University, School of Architecture.

The Pugin Studentship: A Silver Medal and £80 for the Study of Mediæval Architecture of Great Britain and Ireland.—Awarded to Conrad Stuart Rowberry, student, Birmingham School of Architecture.

The Owen Jones Studentship: A Certificate and £100. For the improvement and cultivation of knowledge of the successful application of colour as a means of architectural expression.—Awarded to John Robertson Notman, A.R.I.B.A., Glasgow School of Architecture. *Commended:* Aubrey John Stevens, A.R.I.B.A., School of Architecture, The Polytechnic, Regent Street; John Edward Southgate Sayers, student, School of Architecture, Architectural Association.

The Grissell Gold Medal and £35: For the encouragement of the Study of Construction.—Awarded to Michael Peter Bates, student, Brighton College of Art and Crafts.

The Andrew N. Prentice Bequest: A Certificate and £150 for the Study of Spanish Architecture.—Awarded to J. E. D. Sanderson, A.R.I.B.A., School of Architecture, Edinburgh College of Art.

The Royal Institute Silver Medal and £50 for an Essay.—Awarded to Peter Collins, DIPL.ARCH. (LEEDS), A.R.I.B.A., Leeds School of Architecture, for an essay entitled "Jacques Francois Blondel." A Certificate of Honourable Mention was awarded to William Ronald Trenbath, A.R.I.B.A., of Hale, Cheshire, for an essay entitled "The Redevelopment of Rural Areas."

The Banister Fletcher Silver Medal and £26 for the Study of History of Architecture.—The subject set for this year was: "The Relevance of History to Quality in Building Today." The prize was not awarded.

The Alfred Bossom Research Fellowship and £250 for Post-graduate Research.—Awarded jointly to John Charles Eastwick-Field, A.R.I.B.A., Bartlett School of Architecture, University of London; and John Cecil Stillman, A.R.I.B.A., Bartlett School of Architecture, University of London.

The Godwin and Wimperis Bursary: A Silver Medal and £245 for the Study of Works of Modern Architecture Abroad.—Not awarded.

The Henry Saxon Snell Prize and Theakston Bequest: £125. (Offered jointly by the RIBA and the Architectural Association for the study of the improved design and construction of hospitals, convalescent homes and asylums for the aged and infirm poor.) —Awarded to Warwick Leslie Smith, A.R.I.B.A., of Stockholm, Sydney Technical College, New South Wales.

The Hunt Bursary: £75 for the encouragement of the Study of Housing and Town Planning.—Awarded to E. L. Lloyd Hughes, A.R.I.B.A., Birmingham School of Architecture.

The Athens Bursary: £125 for Study at the British School at Athens.—Awarded to Richard Leacroft, A.R.I.B.A., Leicester College of Art.

The RIBA Rose Shipman Studentship: A Certificate and £200. For the Study of Architecture.—Awarded to R. A. Jensen, F.R.I.B.A., Liverpool University, School of Architecture.

The Henry L. Florence Bursary: A Certificate and £350 for the Study of Greek, Hellenistic and Byzantine Architecture of the Mediterranean Basin.—Not awarded.

The Ashpitel Prize, 1953.—This is a prize of books, value £20, awarded to the candidate who, taking the Final Examination to qualify as an Associate, shall most highly distinguish himself among the candidates in the Final Examinations of the year.—Awarded to (name to be announced later).

The Rome Scholarship in Architecture, 1953. £400 per annum for two or three years' study and research at the British School at Rome. Offered by the RIBA and awarded by the Faculty of Architecture of the British School at Rome.—Not awarded.

The RIBA Silver Medal and £10 in Books for students of Schools of Architecture recognized for Exemption for the Final Examination, 1953.—Awarded to James Beveridge, student, School of Architecture, Edinburgh College of Art.

The RIBA Bronze Medal and £10 in Books for students of Schools of Architecture recognized for Exemption from the Intermediate Examination, 1953.—Awarded to Francis Sibbald White, probationer, School of Architecture, Edinburgh College of Art.

The Archibald Dawnay Scholarships, 1953: *Three Scholarships of the value of £60 each for the Advanced Study of Construction.*—Scholarships awarded to D. J. Downes, student, Welsh School of Architecture, Cardiff; G. A. Williams, student, Welsh School of Architecture, Cardiff; A. G. Giffen, student, School of Architecture, Edinburgh College of Art.

The RIBA Henry Jarvis Studentship at the School of Architecture, the Architectural Association, 1953: £50.—Awarded to Anthony John Wylson, student.

The RIBA Howard Collis Travelling Studentship at the Architectural Association, 1953: £15 15*s.*—Awarded to Joanna Mary Bridgwater, probationer.

The RIBA Donaldson Medal at the Bartlett School of Architecture, University of London, 1953.—Awarded to Anthony Robert Osborne, student.

The RIBA Prize for Art Schools and Technical Institutions with Facilities for the Instruction of Intending Architects (£10 in Books), 1953.—Awarded to David Wellesley Bowes, student.

The Competition drawings (with the exception of those submitted in competition for the Godwin and Wimperis Bursary, the Hunt Bursary, the Andrew N. Prentice Bequest, the Alfred Bossom Research Fellowships, the Henry Saxon Snell Prize and Theakston Bequest, the Rome Scholarship, the Rose Shipman Studentship, the RIBA Bronze and Silver Medals for Students of Schools of Architecture recognized for Exemption from the RIBA Examinations, and the Archibald Dawnay Scholarships) will be on exhibition at the RIBA, 66, Portland Place, London, W.1, until February 2, between the hours of 10 a.m. and 7 p.m., Saturdays 10 a.m. and 5 p.m. (Sundays excluded).

The President Howard Robertson, will present the medals and prizes and will deliver an address to students, at a General Meeting to be held at 66, Portland Place on Tuesday, February 2, 1954, at 6 p.m., and a criticism will be given by Basil Spence of the work submitted.

BOT

Sand and Gravel in Central Scotland

A new reference has been made to the Monopolies Commission: they are to report on the supply in central Scotland of sand and gravel suitable for building or civil engineering purposes. Their report is to cover both the facts of the matter and the bearing of the facts on the public interest.

Any person or organization wishing to offer evidence on this subject should write to the Secretary of the Monopolies and Restrictive Practices Commission, 3, Cornwall Terrace, Regent's Park, London, N.W.1.

Import of Plywood

The Board of Trade announce that they are now prepared to consider applications for individual licences for imports of plywood, laminboard, blockboard and battenboard from countries other than the sterling and dollar areas.

MOW

BRS Films

In future the 16 mm. films on technical subjects, produced by the BRS, will be distributed by the MOW. Requests for loans of these films should be made to the Film Officer, MOW, Lambeth Bridge House, S.E.1, or to the MOW in Edinburgh or Cardiff, or the appropriate regional office.

DIARY

Different Kinds of Nursery Schools. Exhibition at 1, Park Crescent, W.1. (Sponsor: The Nursery Schools Association of Great Britain and Northern Ireland.) Weekdays, 10.30 a.m. to 4.30 p.m.
UNTIL JANUARY 16

University of Sheffield Architectural Competition. Premiated designs. At RIBA, 66, Portland Place, W.1. Weekdays, 10 a.m.—7 p.m.; Saturdays, 10 a.m.—5 p.m.
UNTIL JANUARY 20

Soil Stabilisation of Fine Materials. S. J. Crispin. At the Institution of Structural Engineers, 11, Upper Belgrave Street, S.W.1. 5.30 p.m. for 5.55 p.m.
JANUARY 14

Hotel, Restaurant and Catering Exhibition. At Olympia.
JANUARY 20 TO 29

Film Shows. At the BC, 26, Store Street, W.C.1. Lunch-time showings.
JANUARY 20 AND 27

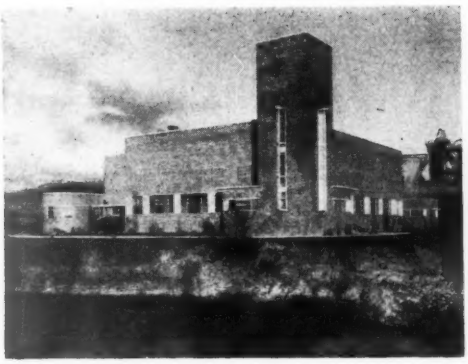
RIBA Dinner. At Grosvenor House, Park Lane, W.1. Applications for tickets to the Secretary, RIBA, 66, Portland Place, W.1. 7.0 p.m. to 7.30 p.m.
FEBRUARY 19

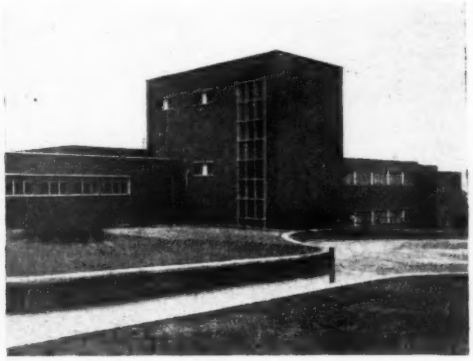
Selection of chairs in wood and metal. Exhibition. At the BC, 26, Store Street, W.C.1. Weekdays, 10 a.m. to 5 p.m.; Saturdays, 10 a.m. to 1 p.m.
UNTIL JANUARY 23

Colour in Industry. Lecture by R. F. Wilson. At the Portland Hall, Little Titchfield Street, W.1. (Sponsor: MOW.) 7.15 p.m.
JANUARY 15

Economy in Building. H. F. Broughton. At the RIBA, 66, Portland Place, W.1. 6 p.m.
JANUARY 19

Transfers, Exchanges and Rents. Henry Brooke, M.P., Chairman of the Subcommittee of the Central Housing Advisory Committee. At the Housing Centre, 13, Suffolk Street, S.W.1. 6 p.m.
JANUARY 19





For comparison: the work of the Architect's Department of the Miners' Welfare Committee and a recent building for the National Coal Board. Left, 1933, pithead baths at Manor Powis, designed by J. A. Dempster (chief architect, J. H. Forshaw). Right, twenty years later, pithead baths at Birley Beighton, designed by Amery, Taylor and Hatfield (chief architect, J. A. Dempster).

ARCHITECTURE and the COAL BOARD

Half of the architectural profession is now in public employment and a great deal of thought has been given to the question of how to ensure that these architects are enabled and encouraged to do good work.

In theory the public authority's architect should do better work than his private competitor. Buildings which advance professional standards are not often designed by men keenly interested in making money. So, given equal capacity, the man who is relieved of the constant financial worries that beset everyone in a responsible position in private practice should produce the better buildings. If he has not equal capacity then there is still something wrong with his conditions of service.

The improvement in the standards of official architecture since the war is manifest and the work of the best public offices attracts as much professional interest as that of any private office, past or present. But one cannot take continued improvement for granted, even though individual competence continues to rise. For public offices are always under one threat from which the private office is exempt. They are at the mercy—especially if they are large—of amalgamations, regroupings and other administrative changes carried out for non-architectural reasons by people who know nothing about architecture or architects. Every technical and scientific profession knows of groups doing valuable work who suddenly ceased to be, as the result of an administrative change. In these days of nationalization, perhaps of de- and re-nationalization, and of the ever-postponed local government reforms, all official architects' departments live under this threat.

The profession should know of the work that is being done in the various public offices, and be ready to do what it can to help an office which is doing good work if it begins to slide into the mincing machine of administrative reform. It may also try to tell the administrators in advance what we are talking about. Here, at the beginning of a year that will bring its crop of regroupings, an actual example may be helpful : an historical example which all may study calmly.

The National Coal Board is a huge organization whose activities in one way or another have received lots of public attention : but not the work of its architects. To those of the profession who are now compelled to call themselves middle-aged this will be a matter of regret. For among the multitude of bodies taken over by the Board was the Miners' Welfare Committee, and its architects ; and twenty years ago the work of the architects to the Miners' Welfare Committee meant a very great deal to the profession.

The JOURNAL has asked an architect, H. Myles Wright, who remembers what it meant, to write

the article which appears on the following pages, and various Divisions of the National Coal Board have been good enough to provide the illustrations and have enabled the story to be brought up to date by the inclusion of some recent buildings.

We believe this article has a moral for all big administrative bodies. The work of the Board's architects may be better than it ever was. The moral is not concerned with technical competence but with the fact that the work of the Miners' Welfare Committee was of the greatest interest to architects between 1933 and 1939 and contributed beyond question to the prestige of the Committee. The Board's current architecture means little or nothing to the profession. Even the old name has gone for ever.

All this may seem a trifle to the National Coal Board and no one will deny they have other worries. But the JOURNAL is aware that the government school for management, the Administrative Staff College, is now beginning another of its courses—at some expense to us all—and it suggests that during this, or some future course, the story of the architects to the Miners' Welfare Committee might be worth consideration by the students.

THE WORK OF THE MINERS' WELFARE COMMITTEE

by H. Myles Wright

THE Coal Industry Nationalization Act, 1946, placed the National Coal Board in charge of the whole industry, including work for the welfare of miners and mining communities which was being carried on by the Miners' Welfare Commission.* In consequence, a new body, the National Miners' Welfare Joint Council, was created, on which both the Board and the Commission were represented, but members of the Commission became members of the Council, and on July 1, 1952, under the Miners' Welfare Act, the work of the former Commission finally became the responsibility of other bodies. One may say therefore that, in one sense at least, the work of the Miners' Welfare Committee came to an end 18 months ago. For British architects the title *Miners' Welfare Committee* has a special meaning and associations; and for most of those now in their forties there is more in it than that. They remember the work of the Committee's architects with a warm personal goodwill. It takes a little time to remember why.

Taste changes and, one hopes, improves, and no mannerisms have fewer admirers than those of 20 years ago. It is therefore inevitable that as one turns over photographs of the pithead baths that began to be published in the early 'thirties, it is the mannerisms that are noticed first. It takes time to recollect that these were pioneer buildings in this country and that much of what is now taken for granted in competent industrial architecture derives from them. Nor is this all. Most of the Committee's buildings were good and some very good, but their significance was greatly increased by the state of the profession when they burst upon the architectural scene.

It was an unhappy time. The first big programme of building pithead baths was carried out between 1929 and 1933, and when the buildings began to be illustrated the profession was in acute financial distress and at odds within itself. The great slump had stopped the great majority of new building, compelled the RIBA to organize emergency relief for some of its members, and was not to end for another two years. This was bad enough; but to many of the younger men the slump was hardly less depressing than the narrow ruts in which the profession was trundling, and seemed likely to trundle for ever—in matters of design and in organization and scope of work.

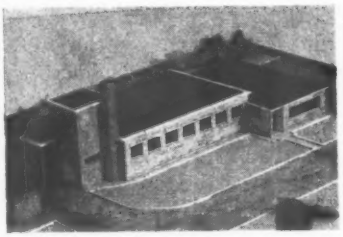
The young man of 1933 tended to be a modernist, and often believed in reinforced concrete with an intensity which is now reserved for political experiments. And whether modernist or not, he knew of Maillart's bridges in Switzerland, of the Bauhaus and factories in Germany, and felt there was no structure which would not be the better for being designed by or with the help of an architect. But apart from Mr. Frank Pick no one of influence seemed to agree with him.

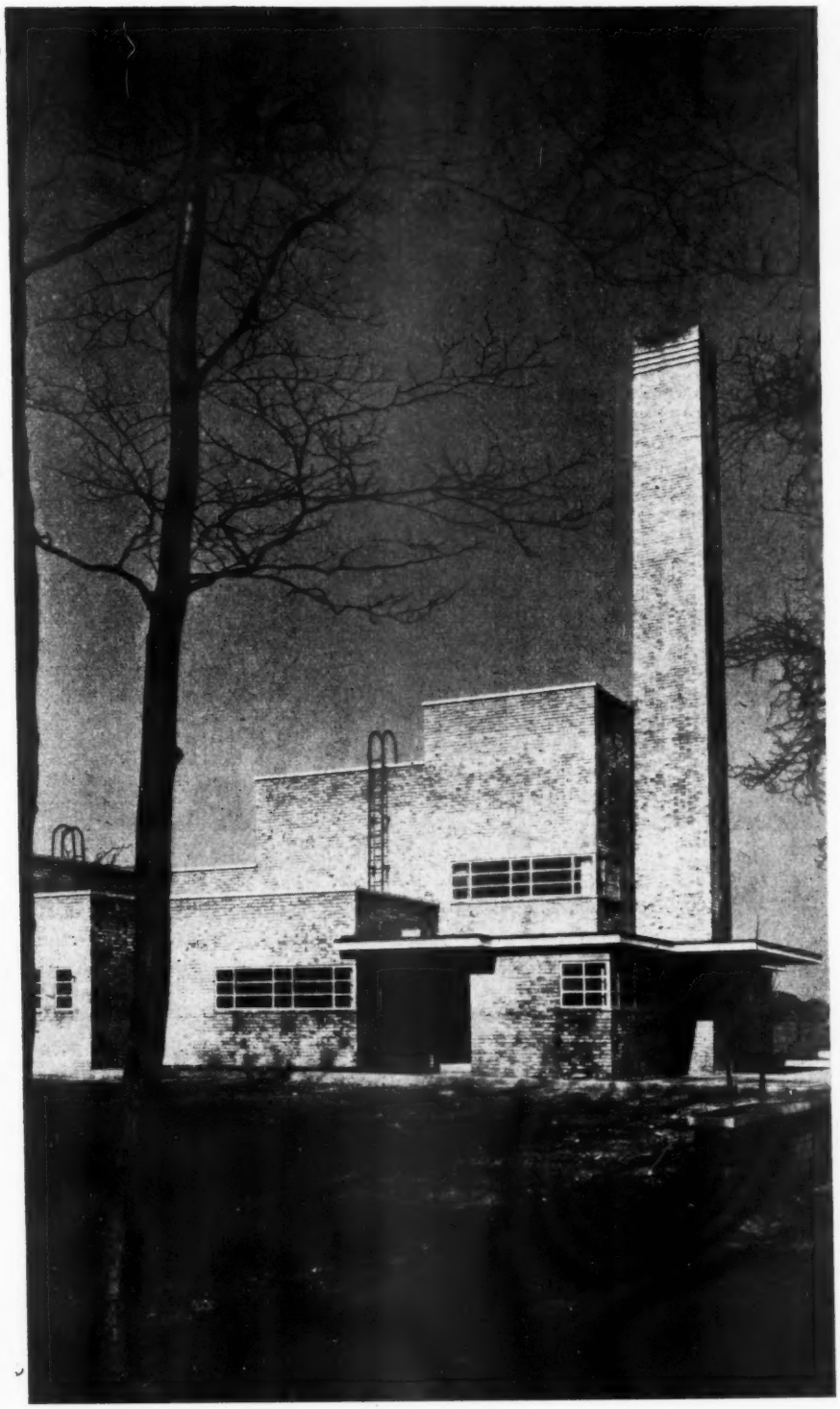
The Unacknowledged Architect

It takes quite an effort to remember how narrow the range of professional work was in the early 'thirties. The *élite* built large houses, churches and a few public buildings. The next level in professional esteem—usually large firms—built office blocks, flats, and now and then a hospital or store. A few firms specialized in competitions. Local authority departments built some houses and minor public buildings. That was about all. The great bulk of building—houses, factories, minor commercial buildings—was carried out without the assistance of architects in the present day meaning of the title.

Moreover, nearly all the work that was being done was traditional in character, and was in theory designed and executed by an individual artist, assisted when necessary by subordinate and anonymous helpers. In practice, work in offices of any size was usually carried out as it is now; but this was not publicly admitted and very few firms encouraged or acknowledged the work of junior members

* The Committee became a Commission in 1939, but was a Committee during the years when its work was watched with special interest by the architectural profession; and it is as the Miners' Welfare Committee that it will be remembered by architects.





Above right, the pit and clean entrances of Showdown pithead baths (architect: C. G. Kemp) opened in 1935. Left, some post-war models and completed buildings. From top to bottom: Wharncliffe Woodmoor baths (architect: F. T. Bettington); No. 8 Area offices (architect: C. Smith; assistant in charge: D. G. Williams); Primrose Hill baths (architect: C. Smith); Hill Top baths and Wheatsheaf baths, both designed by J. H. Bourne, chief architect, North Western Division. The top three designs and those on page 46 are the work of the North Eastern Division of the National Coal Board, under the direction of J. A. Dempster, chief architect; H. Smith, deputy; G. Moseley, senior and supervising architect; W. Kingdon, senior and planning architect and J. Rainer, chief quantity surveyor.

Typical work by the Miners' Welfare Committee architects' department. Above, Sherwood pithead baths, Notts, opened June, 1934; designed by A. J. Saise. Below, the Bryn sports pavilion, South Wales, opened November, 1938, designed by W. M. Traylor; and bottom, the Newstead pithead baths, near Melrose.

in the ways that are now common. The effects of this irritating fiction were worst in public departments, where it almost ensured all the vices of repetition, caution, dullness and irresponsibility.

To recall these things it is necessary to explain the excitement caused by the work of the Miners' Welfare architects when it began to be illustrated in the professional journals. To young men in particular it seemed to prove the truth of their hopes and a beginning of their realization. The pithead baths showed architects working in an entirely new field and one in which one would have thought their skill was least likely to be asked for. If collieries and mining communities could use good architects the whole of industry was a potential client. This was a heart-lifting possibility in a time of slump.

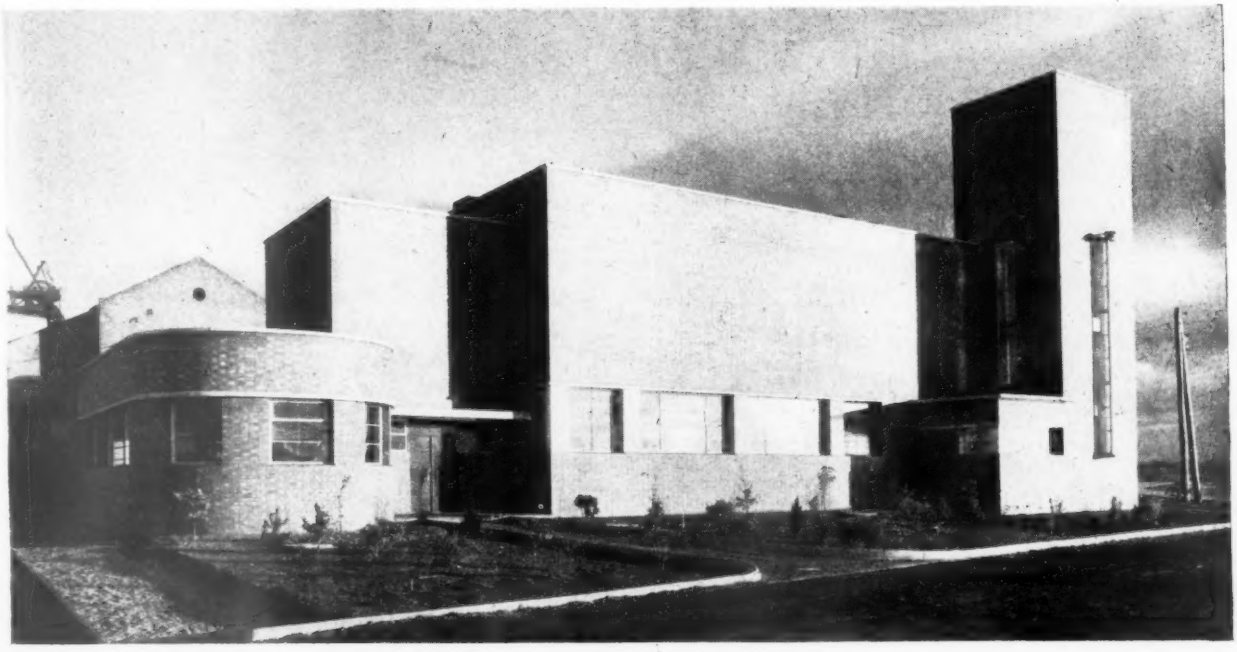
Then the buildings themselves were exciting. Both plans and block forms were clean, simple shapes based on the careful study of circulation and equipment. The plans proved that there was no need for the crudely subdivided shed-type of plan which was then standard for buildings connected with industry. The elevations threw overboard traditional detail, and, starting from a point nearer Dudok than Corbusier and Gropius, produced some buildings of great merit and a general standard which was very high when one considers the general state of the profession, the newness of the organization, and the size of the programme. Between 1929 and 1933, 140 pithead baths were built or started.

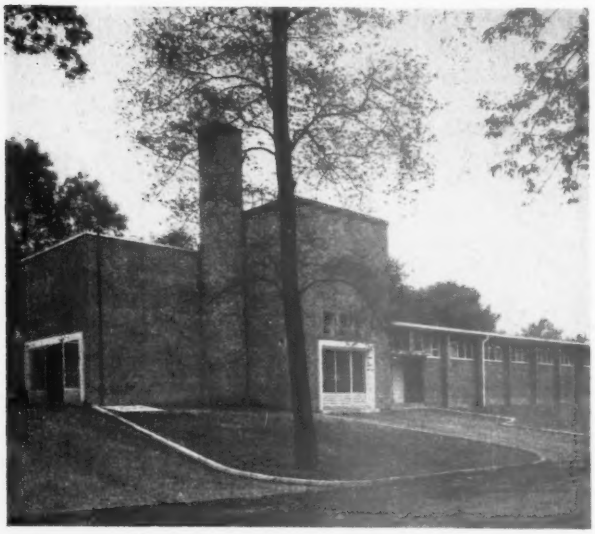
The third object of interest was the organization of the work. The younger British architects believed that a new architects' department doing such good work must have an organization which encouraged good work and might lead to reforms in other public, and even private, offices. In this they were at least half right. Changes in office organization in the past 20 years have been along the lines adopted by the Committee, and no department contemplating reforms could ignore the Committee's success. Yet there was no magic in the organization, which could hardly have been simpler. One comes to feel that its success and influence were due largely to J. H. Forshaw, the Committee's chief architect: that he fully understood the mood of the moment and how to use an opportunity.

As the Miners' Welfare Committee fades into history it is interesting to learn how the washing of coal miners became entangled with architecture and had lasting influence on the profession. The 1914-18 war had drawn attention to the hardships and isolation of miners and their families and to the fundamental importance of the industry; and, after a Royal Commission, the Miners' Welfare Fund was set up in 1920 for general welfare work in mining areas. From 1920 to 1928 preference was given to general welfare work rather than baths; but in 1926 the Samuel Commission strongly recommended that baths should be provided at all collieries, and in the same year a levy on coal royalties was imposed to pay for them.

The Miners' Welfare Committee then appointed a welfare advisor and an architect—J. H. Forshaw—and instructed them to visit collieries on the Continent and in America and prepare plans for pithead baths. These visits suggested that the basic unit in baths was the locker, for clean and dirty clothes. Prototype installations were built at four collieries, and when these had been tested and

Clock Face pithead baths, Lancashire, opened in 1939, *designed by C. G. Kemp, above, and below, the Manor Powis pithead baths, near Stirling, opened in* 1933 *and designed by J. A. Dempster. Chief architect: J. H. Forshaw.*

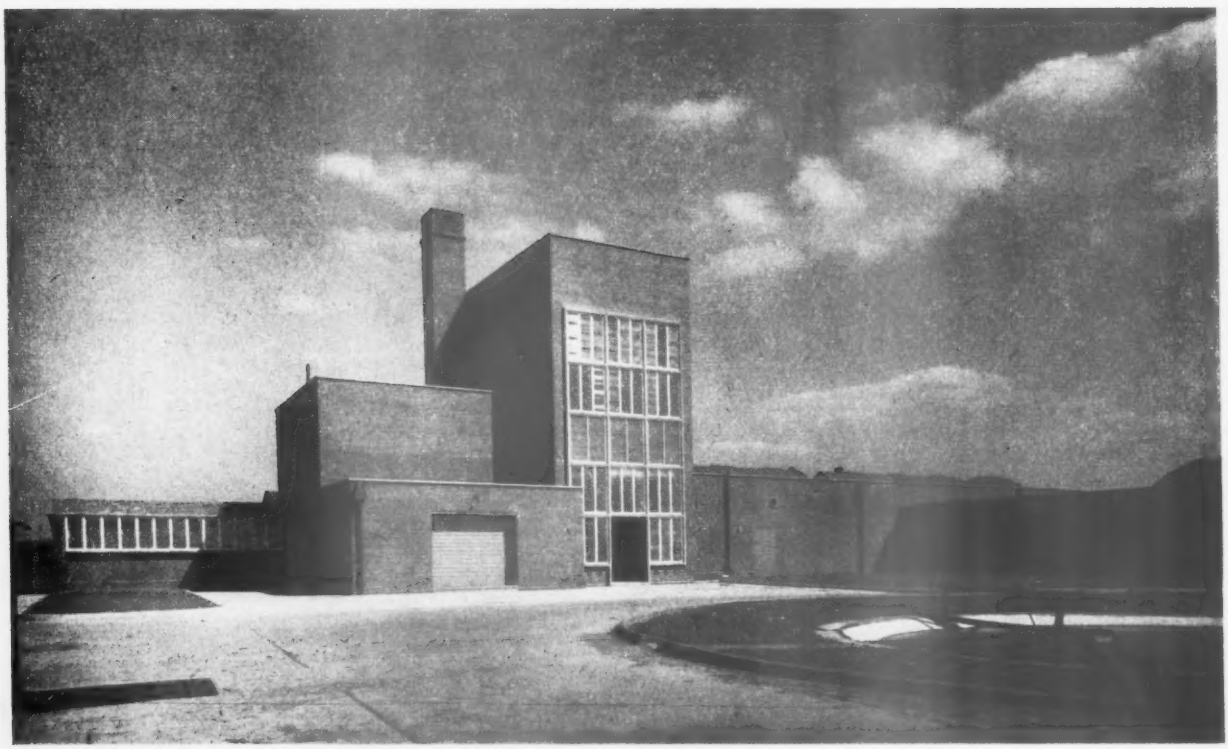




approved, the Committee decided to launch a big building programme.

They then had to decide whether to hand out the work to private architects or to set up their own architectural department. They decided to adopt the latter course; though only after much consideration and opposition. It was desired to ensure uniform standards of accommodation and construction and central control of expenditure. And it was believed that the exchange of information between architects working continuously on the same problem in different parts of the country, but within the same organization, would be the best way to secure improvements as the programme developed, as well as an understanding of necessary regional variations. These things might have been achieved without creating any worthwhile buildings, had it not been for Mr. Forshaw's method of organization, which was simple and successful. An architect was put in charge of all work within each convenient district of the coalfield. The district architect and his principal assistant were entirely responsible for the design and execution of

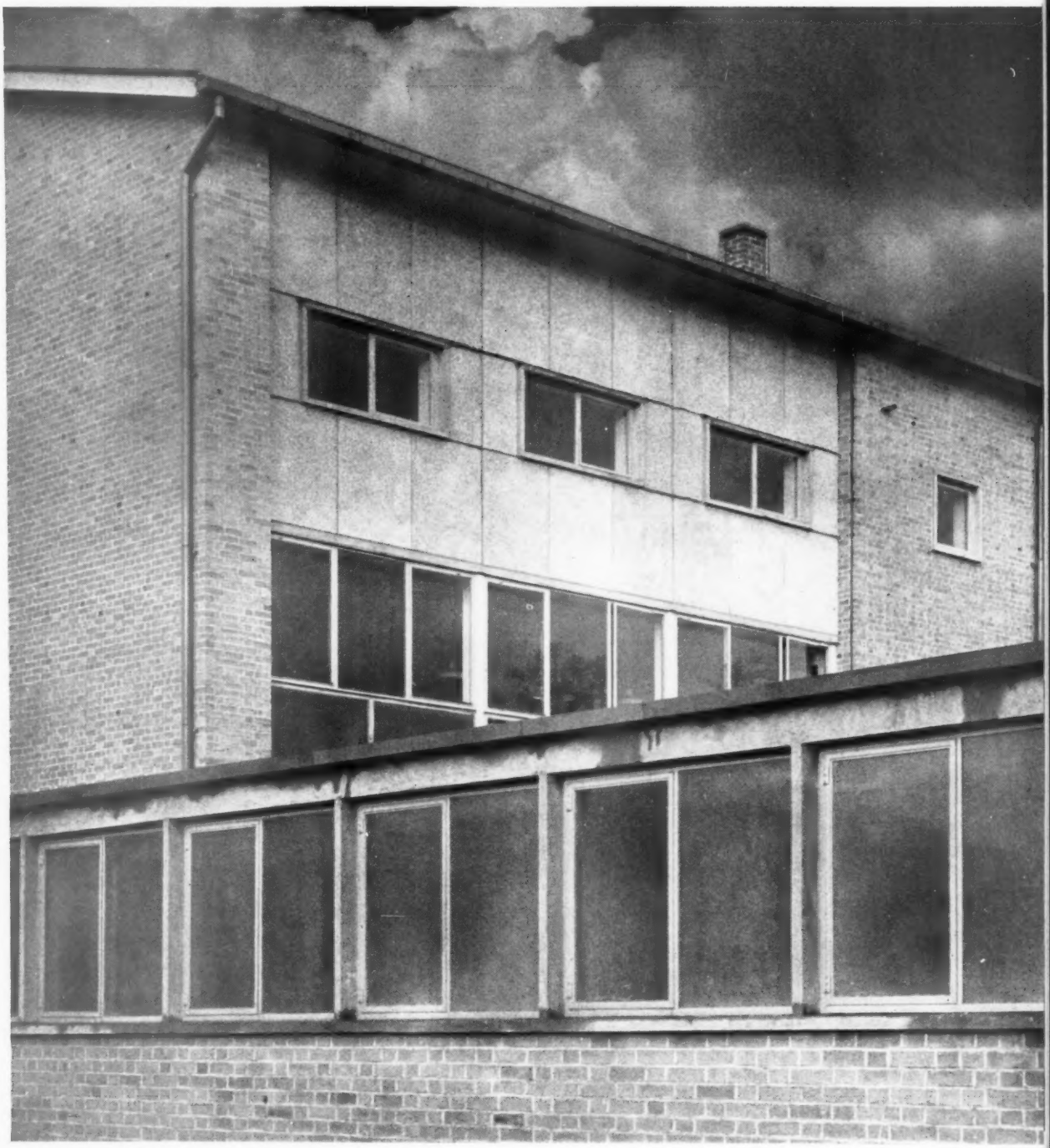
Above, the Grange pithead baths at Roughwood, designed by G. Devlin, chief architect, J. A. Dempster. There is accommodation for 576 *men. Cost :* £35,000. *Right, Askern main pithead baths, designed by C. Smith; chief architect, J. A. Dempster. Accommodation for* 2,016 *men at a cost of approximately* £100,000. *Below, Oakenshaw pithead baths, designed by G. Devlin; chief architect, J. A. Dempster. Accommodation for* 756 *men at a cost of approximately* £50,000.



WORKING DETAIL **WALLS AND PARTITIONS: 10**

PRECAST CONCRETE CLADDING: SCHOOL AT REDDITCH

Richard Sheppard and Partners, architects



Each precast concrete panel is secured to the beams by four fixing bars which are bent in situ, the lower pair being grouted into pre-formed holes in the beams, the upper pair being bent over a steel channel. Horizontal joints between panels are covered with a copper flashing. To protect the cladding against movement in the structural frame, the horizontal joints between panels and the vertical joints on the column centres and against the brickwork are formed in mastic, the remaining joints being cemented.

WORKING DETAIL

WALLS AND PARTITIONS: 10

PRECAST CONCRETE CLADDING. SCHOOL AT REDDITCH

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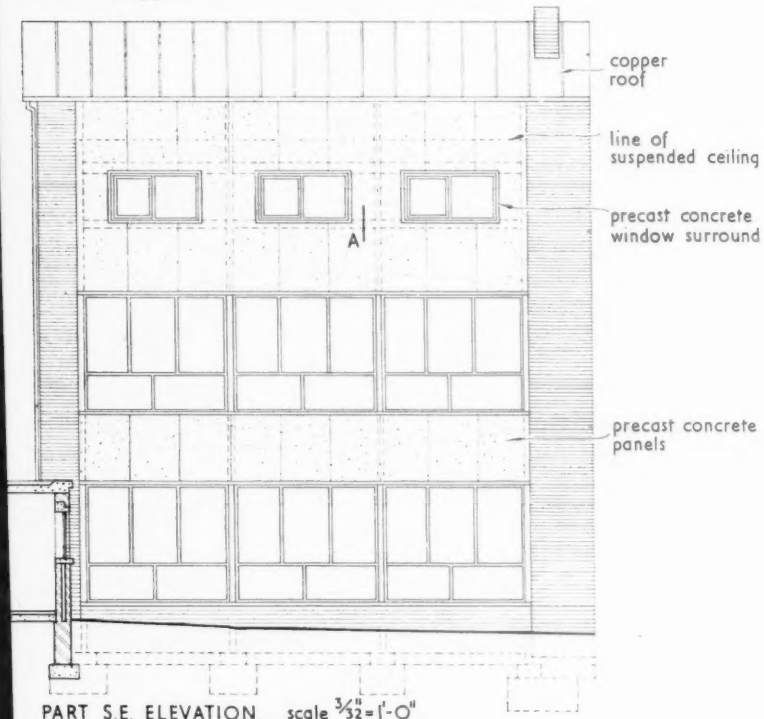
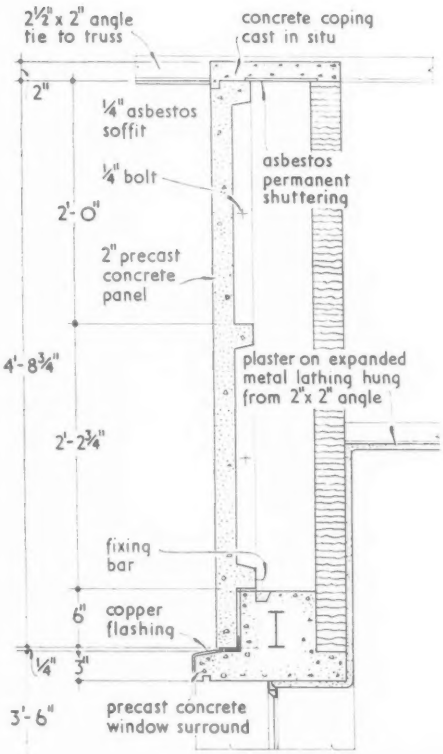
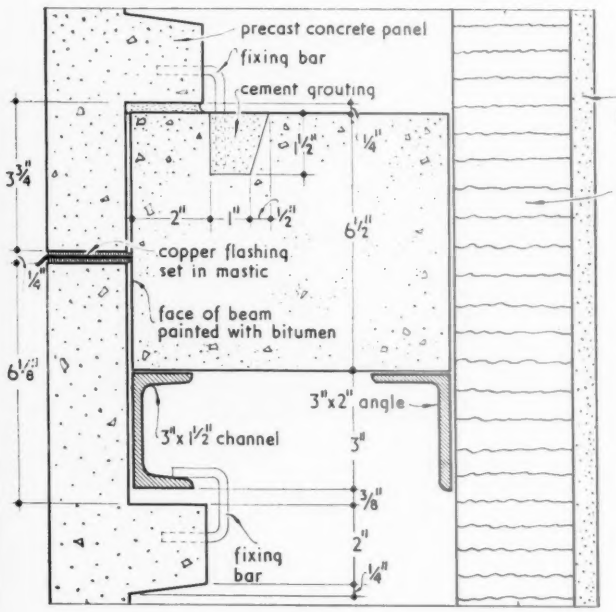
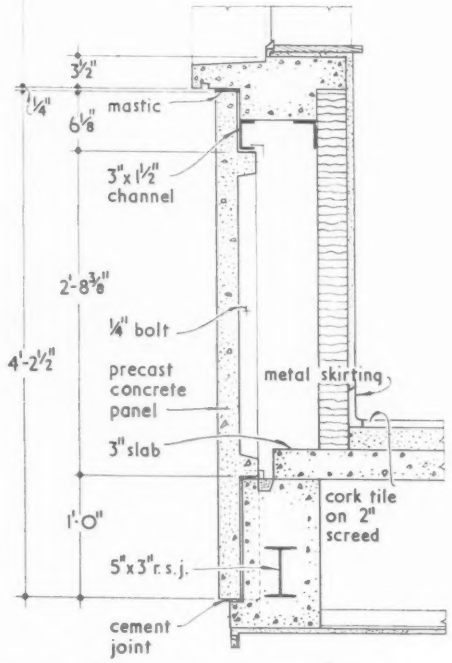


PART S.E. ELEVATION. scale $\frac{3}{32}$"=1'-0"

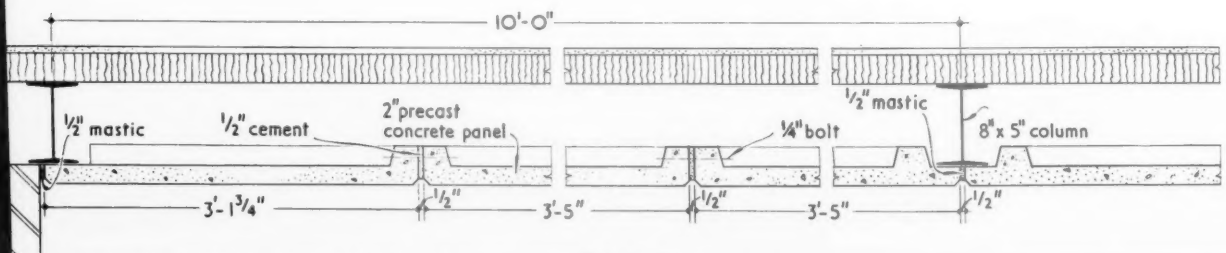




DETAIL AT 'A'. scale ¼ full size



SECTION THRO' 2ND. FLOOR. scale $\frac{3}{4}$"=1'-0"

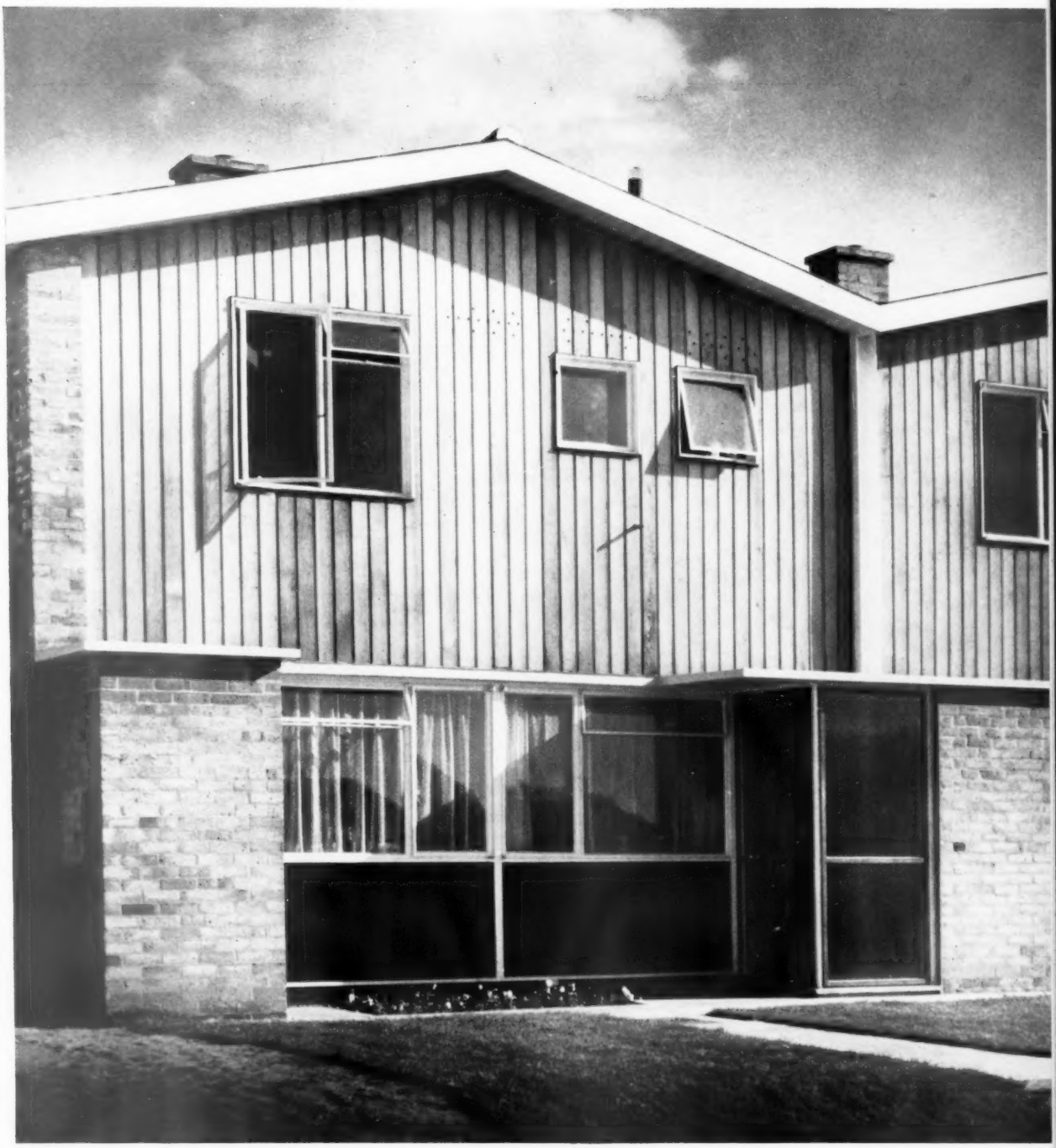


PLAN THROUGH WALL AT SECOND FLOOR. scale $\frac{3}{4}$" 1'-0"

WORKING DETAIL **WALLS AND PARTITIONS: 11**

GABLE WALL: HOUSES AT HATFIELD NEW TOWN

Lionel Brett and Kenneth Boyd, architects



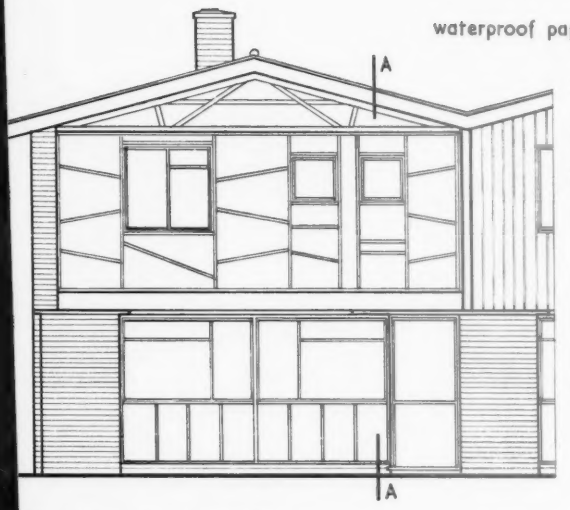
Where the cedar boarding abuts the party wall a firebreak is provided in the form of an asbestos channel section. Both the bathroom and the w.c. front onto this facade, the plumbing being accommodated within. The small holes above the windows give permanent ventilation to these rooms.

WORKING DETAIL

WALLS AND PARTITIONS: 11

GABLE WALL: HOUSES AT HATFIELD NEW TOWN

Lionel Brett and Kenneth Boyd, architects



EY ELEVATION SHOWING
RAMING. scale 1/8"=1'-0"

AN AT PARTY WALL. scale 1½"=1'-0"

SECTION A-A. scale 1½"=1'-0"

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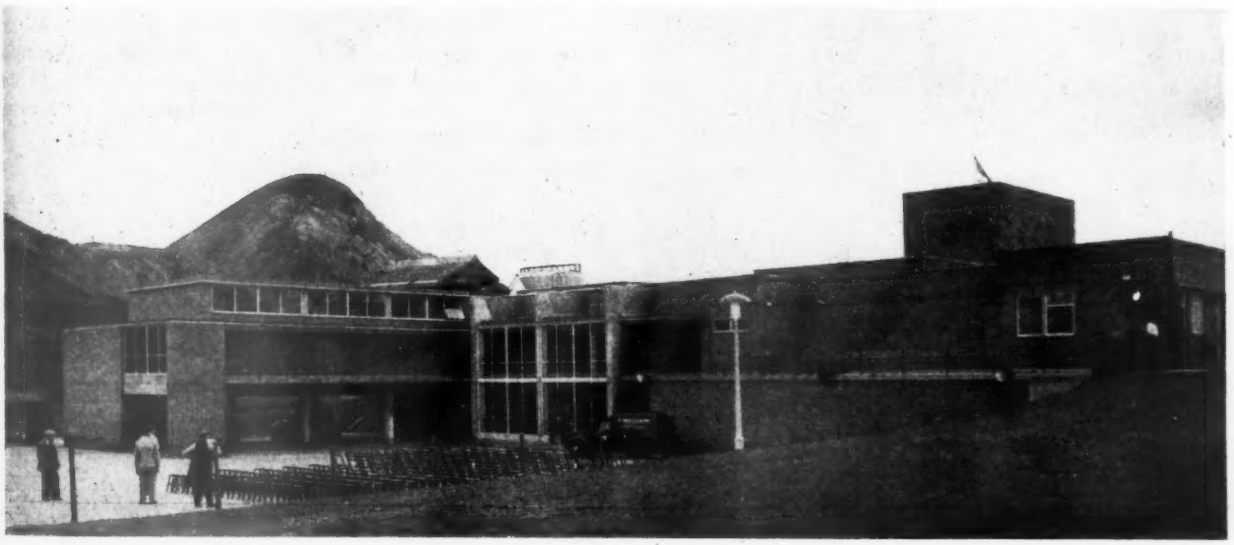
particular buildings, but matters of principle, recommended new methods, and administration were discussed at regular meetings of the architects, and from time to time directions on these things were circulated to all teams. As work developed it became the rule for the district architect and his chief assistant architect to remain responsible for the same district, while the junior staff tended to move from team to team, according to the burden of work. Finally, when completed buildings were illustrated, they appeared over the name of the architect responsible for them.

The Committee, with Mr. Forshaw's assistance, began to recruit senior architects in 1928, and a list of them is given at the end of this article.

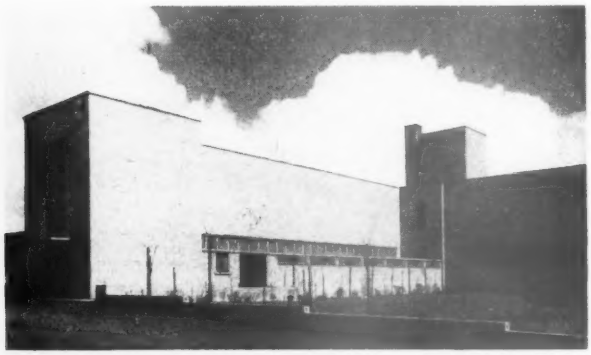
Such was the background and organization of the department. Given a good initial choice of architects, reasonably in sympathy with each other on matters of design, it was an organization which was likely to work well, to be insulated against dullness, stimulated by competition between districts, and to draw in as assistants some of the best of the young men. It achieved these things, and thereby helped to raise standards throughout official architecture: and also gave the whole of British architecture a needed push forward.

It was this which earns the department its place in architectural history. In the early 'thirties the profession was uncertain and divided over matters of design. The belief was spreading that contemporary problems and new materials and methods of construction could not be resolved within traditional forms, yet the majority of architects shrank from an abandonment of customary rules, forms and methods of approach; and the few buildings of the *avant garde* were generally disliked, both for breaking the rules and as being likely to place architectural design right in the welcoming hands of Sir Owen Williams. The broad middle section of the profession was feeling its way carefully and uneasily. It was the time of the RIBA building and Latymer Court, as well as the Cambridge University Library, and the Guildhall at Swansea. The small amount of industrial work which came to the profession was handled with special timidity—



Above, a first-aid centre and clean entrance at Brackley, completed in September, 1952: designed by J. H. Bourne, chief architect, north-western division, National Coal Board. There is accommodation for 1,104 men. Approximate cost: £61,960. Below, baths at Ifton, Shropshire. A general view of clean entrance elevation. Completed July, 1952, it was designed by J. H. Bourne. There is accommodation for 1,176 men. Approximate cost: £86,961.

The Welbeck pithead baths, Notts, opened in June, 1939; designed by A. J. Saise.



Above, the Murton pithead baths, Durham, opened in January, 1939; designed by F. G. Frizzell. Below, the Kells community centre, Cumberland, opened in 1940; designed by J. A. Dempster.

Cameron Kirby's service garages being almost the only buildings of the kind that were handled with assurance.

The profession needed a push towards handling new building types with competence and economy. The pithead baths supplied it. They were simple and modern—but not too modern. They abandoned traditional detail but retained the traditional brick wall and showed that Dudok's use of large areas of plain brick stood up well to export. Above all, they were competent, self-assured, free and easy. They and a very few other buildings (notably the Underground stations of Adams, Holden and Pearson) were the pioneers of the free and easy middle-of-the-road British modernism which is now to be seen in a thousand schools, factories, shops and public buildings.

From its new beginning in 1929 the building programme of the Committee continued steadily to 1940. Pithead baths were its major product, but it also contained canteens, institutes, sports pavilions, and other kinds of welfare building; and, in a few cases, the Committee's architects collaborated in the design of actual colliery buildings—notably at Betteshanger. During the war a diminished staff built a large number of colliery canteens and miscellaneous welfare accommodation, and since the war a limited number of additional buildings have been erected. In all, up to March, 1952, 438 pithead baths were built, providing for 503,000 miners.

In concluding this obituary notice and acknowledgment of the Committee's services to architecture, one naturally thinks of the future. The coal-mining industry now belongs to the nation, everyone now understands its importance, and everyone has read of big programmes of improvement and development, including many new collieries. One may therefore hope that the National Coal Board—having inherited an architectural department of high reputation—will try to extend its use and ask its advice on the layout, design and appearance of all surface buildings. This may happen under the present administrative arrangements. Pithead baths, canteens and medical centres will be the responsibility of the Divisional Boards acting through the various divisional architects. Design of all operational buildings and structures for the various collieries is also a divisional responsibility, and the divisional architect may or may not be consulted. Community centres and all buildings for miners as citizens are now the responsibility of CISWO (Coal Industry Social Welfare Organization). This is to work through divisional and area committees which will have sums to be spent on buildings that may be designed either by divisional architects or private architects.

The organization is thus very different from that set up by the Miners' Welfare Committee, and one notices that no specific provision is made for architects to collaborate in the design of all operational buildings. In this the Coal Board seems to lag behind its colleagues in charge of other nationalized industries. But organization is not the concern or interest of architects. They will await the results.

The following were the architects of the Miners' Welfare Committee referred to in this article: J. H. Forshaw (F), M.T.P.I., C. G. Kemp (F), J. A. Dempster (F), A. J. Saise (A), W. M. Traylor (F), W. A. Woodland (F), D. D. Jack (F), O. H. Parry, P.A.S.I., J. W. M. Dudding (F), Hugh Smith (F), J. H. Bourne (F).

TECHNICAL SECTION

In specifying materials and finishes to buildings, architects have always had to strike a balance between first costs and maintenance costs, having in mind a number of influencing circumstances, such as the character of the building, its use, and the way in which a client can be expected to behave regarding its upkeep. In much post-war building, licence restrictions, or other needs for economy, have been tending to tip the scales towards a cheap initial job almost regardless of consequences. Things generally may now be showing slight signs of improvement in this respect but one example, which occurs on all buildings, appears to be in danger of staying at the low level reached during, and following, the war years. Painting, especially external paint, which has a very important preservative function, seems to have slipped almost unnoticed from a prime plus three coats into a prime plus two coats specification. Looked at economically, the small saving in first cost will very quickly be outweighed by the need to repaint in, say, three instead of five, years. The result will often be not merely an economic loss to the client but a shabby building and consequent rather rude comments about builders and architects. Architects would be well advised to get back to pre-war standards on paintwork before too many reputations suffer. Even in cases where extreme economy is urged a reasonable client ought to be open to persuasion if a clear economic argument is put forward. If good advice is offered, but turned down, at least the architect is in a stronger position should complaints arise later on.

15 MATERIALS : TREATMENTS

condensation in buildings

The number preceding the week's special article or survey indicates the appropriate subject heading of the Information Centre to which the article or survey belongs. The complete list of these headings is printed from time-to-time. To each survey is appended a list of recently-published and relevant Information Centre items. Further and earlier information can be found by referring to the index published free each year.

G. D. Nash, of the Building Research Station contributes below a detailed study of condensation in buildings. Accompanying the article are sketches and notes in which Mr. Nash considers different types of wall and roof construction under normal winter conditions when the temperature and humidity inside a building are higher than those outside.

A successful building must not only reach a high standard in its planning and appearance, but it must be trouble free under the conditions of use for which it was designed. In recent years considerable attention has been given to such matters as weather resistance and sound and thermal insulation. Research and experience have provided valuable data and architects have been equipped to produce a satisfactory solution to many of these problems.

In the design of buildings in this country, however, one requirement is often neglected owing partly to unawareness of the problems involved, and partly to the scarcity of detailed information; this requirement is that a building should be free from trouble due to condensation. As moisture on

WALLS

Fig. 1. Single sheet of glass.—Familiar example of surface condensation. A non-absorbent surface and a large drop in temperature from the inside air to the surface of the glass (due to the high conductance, i.e. low thermal resistance of the single sheet of glass).

Fig. 2. Two sheets of glass with air space between.—Increased thermal resistance provides a higher inside surface temperature and therefore less risk of surface condensation than (1).

Fig. 3. Impervious external wall sheeting lined inside with pervious insulation.—The impervious outer covering such as glass or metal, will act as a vapour barrier on the cold side. The higher vapour pressure inside the building will extend through the insulation up to the outer covering. With the temperature drop across the construction (from inside to outside) the dew point will often be within the construction and condensation will occur in the thickness of the wall. This may lead to trouble, particularly if high humidities are maintained continuously inside the building.

Fig. 4. Impervious external wall sheeting (such as glass or metal) with ventilated cavity behind and inside insulating lining.—Less risk of condensation trouble than in (3) as ventilation of the cavity by air of lower vapour pressure from outside will lead to reduction of vapour pressures in the cavity and in the insulation.

Fig. 4(a). As Fig. 4 except that ventilated cavity is replaced by pervious outer covering, e.g., tile hanging, which allows air and vapour movement through the many joints.

windows and tiled walls, condensation is familiar to every householder, but provided its quantity is limited and its occurrence is infrequent it is often accepted as an unavoidable but comparatively harmless nuisance. There are, however, buildings in which condensation has been serious and has resulted in deterioration of parts of the structure, damage to machinery, manufactured goods or furniture, and, in some cases, it has made dwellings almost uninhabitable.

In certain parts of the world such as Canada, U.S.A., and some Northern European countries where the winter climate is more severe than our own, buildings are often designed specifically to avoid the trouble; but in Britain, cold-storage buildings are probably the only type for which this precaution is generally accepted as a necessity.

The principles of condensation are well known and understood, but in practice, however, the problem is often complicated by the many influencing factors such as the variability of the temperature and humidity either inside or outside the building. Further data are necessary before it will be possible to define precisely the limits of humidity, temperature and ventilation under which the many varied constructions of present-day building may be used. Difficulty is sometimes encountered in analysing the behaviour of a building structure in which condensation has given or is likely to give trouble in occupation. The aim of this article is, therefore, to give architects a greater appreciation of the problem and an indication of the behaviour of various constructions so that either the matter may be considered in the design stage, or the trouble that has occurred in an existing building may be understood and suitable remedial measures adopted.

1. *The Trouble and Some Design Considerations*

Before considering how wall and roof constructions are affected by humid conditions, a brief explanation of condensation and the terms used should be given.

Air is a mixture of gases and contains water vapour; the "humidity" of a volume of air is a measure of the amount of moisture it contains. When the maximum quantity of moisture vapour that the air can retain is present, the air is said to be "saturated." If the temperature of air is raised, then its capacity to retain moisture vapour is increased. It must, however, be emphasized that raising the temperature of air does not necessarily increase its moisture content—only its capacity to retain moisture. "Relative humidity" is the amount of moisture vapour contained in a volume of air at any particular temperature expressed as a percentage of the maximum amount which that air is capable of containing at that temperature.

If air is cooled, its capacity for retaining moisture is reduced; when the air reaches the temperature at which its moisture content is the maximum it can retain, the air has reached its "dew point," and further cooling will cause deposition of part of its moisture.

2 (*a*) *Surface Condensation*

If air comes into contact with a surface—for example, the internal face of a wall, which is at a temperature below the dew point of that air—then the air adjacent to the surface is cooled and the deposition of moisture, or condensation, will occur. Whether or not this moisture shows as free water on the wall depends on the nature of the surface; if it is non-absorbent, like a sheet of glass, the moisture will be visible as water on the surface. But if the surface is, for example, sprayed asbestos, the moisture will be absorbed by the material.

Surface condensation may be prevented if (*a*) the temperature of the surface is kept above the dew point of the adjacent air by adequate heating or by insulation behind the surface, or if (*b*) by sufficient ventilation, the humidity of the air is limited so that its dew point is lower than the temperature of the surface.

In cases of occasional, or intermittent, surface condensation, an absorbent surface is obviously valuable in preventing trouble as it can retain a limited quantity of condensate until the conditions change and re-evaporation can take place. The problem in detail is not fully explored quantitatively. Factors such as the capillary movement of the moisture through the material and the release of latent heat during the change from vapour to liquid may play a part in the process.

Surface dampness appears sometimes in patches due to the presence of deliquescent salts. The humidity at which it occurs is below that at which condensation would take place on an uncontaminated surface.

2 (*b*) *Condensation within the Thickness of the Construction*

Condensation in buildings is not confined to the exposed surfaces only, but frequently occurs within the thickness of, for example, a wall or roof construction (this phenomenon is sometimes referred to as "interstitial condensation").

The air temperature inside an occupied building in winter is normally higher than that outside and a progressive decrease in temperature (a "temperature gradient") occurs through the external walls and roof; in addition, the humidity (but not necessarily the relative humidity) inside the building is higher than that outside. The inside and outside air temperatures and humidities will often be such that at

some position within the walls and roofs, whether they be solid or some form of cavity construction, the temperature will be below the dew point temperature of the air inside the building. If the inside air or moisture vapour reaches this position and has *no means of escape* to the outside air, then condensation will occur within the construction as long as the conditions stated remain. Depending on the building materials and the form of the construction, this moisture will either be absorbed until saturation of the material occurs, or if an impervious layer is present, it will collect on the surface and tend to drip from, or run down, the material: An example of a wall or roof construction in which this trouble can occur, is one in which the outer cladding is of impervious sheeting such as metal, the joints of which are sealed and no ventilation is provided within the thickness of the construction; moisture vapour cannot pass through either the sheeting or the joints and is not conveyed to the outside air by ventilation. If in addition to this type of construction, a high humidity is maintained in the building then the risk of condensation trouble is appreciable. If, however, the building is well heated and ventilated to the outside air and a high humidity is not maintained, the risk is considerably diminished; trouble may, in fact, be avoided if the construction provides sufficient absorption to retain any condensate which may form until a change of external conditions enables re-evaporation to take place. Not only metal sheeted roofs form this barrier to the escape of moisture vapour which may penetrate the construction; it is also provided by asphalt or felt coverings on concrete and timber roof constructions and in the more severe conditions condensation can be troublesome with these roofs.

The feature which is common to all these constructions is the " vapour barrier " placed on the outside face of the wall or roof, this face being the cold side of the construction for a heated building in winter: they are therefore potential condensation risks, as moisture vapour from inside the building can *more readily* pass through the inside face of the construction than through the outside face.

It follows therefore that if (i) a vapour barrier is provided on or near the inside face to reduce the amount of vapour passing into the construction and *also* (ii) provision is made for the vapour to escape to the outside air, the condensation risk will be greatly reduced and for many conditions it will be eliminated. For the more severe conditions both (i) and (ii) should be applied and for moderate conditions (ii) alone may suffice. It is probably inadvisable to try (i) alone when the external covering is impervious to vapour, owing to the practical difficulty with many constructions of providing a complete vapour barrier on the inside face, and the risk therefore that the moisture may gradually build up within the construction. In principle, therefore, if there is risk of condensation trouble, the aim should be to provide less resistance to the movement of vapour through the outside covering than is provided at the inside face.

In considering this aim, the importance of the construction joints which occur with sheet linings, for example, should not be overlooked; the vapour may pass an inside lining either through the material itself by " diffusion " or through gaps at the joints by diffusion and air movement. If an air-conditioning plant humidifies the air and creates a positive pressure in the building this air movement will probably be increased by the pressure.

Self-finished roofing felt, a layer of bitumen of adequate thickness and aluminium foil free from pinholes are materials suitable for vapour barriers, subject to proper sealing of the joints. Two or three coats of good oil paint, particularly with aluminium as pigment, will considerably reduce the diffusance of some materials, but it is not so effective as the other three materials; in addition, it requires regular maintenance, it may not deal adequately with construction joints and care is necessary in using paint under damp conditions. A " cocoon spray " may possibly be a useful surface treatment as it has some elasticity and can be " webbed " across the joints; this spray is used for packaging machinery for export and it is claimed that it can be effective for several years. If an impervious material is used, it must be placed at such a position on the *warm* side of the construction that its temperature does not generally fall below the dew point of the air inside the building; otherwise condensation may occur at its face.

A means of escape near the outside surface for vapour which passes into the construction, may be obtained by ventilation openings or by gaps at the overlap of the sheets; the escape of the vapour to the outside air takes place by ventilation and by diffusion of the vapour, for example, from a cavity behind external roof sheeting, or wall cladding (the diffusion occurs as a result of the cavity air having a higher moisture content and therefore a higher " vapour pressure " than the outside air). Good ventilation will provide a more speedy removal of the vapour than the diffusion process.

In winter, the vapour pressure inside a building is usually higher than that outside; if no vapour barrier is provided in the construction, the inside vapour will move through the construction towards the outside area of lower vapour pressure, and escape. Therefore, in addition to a temperature gradient, there will also be a vapour pressure gradient across the wall or roof construction, as the vapour pressure decreases towards the outer face. When the vapour pressure is reduced, the dew point temperature is lowered:

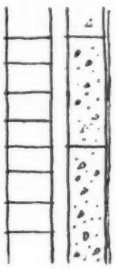


Fig. 5. Typical cavity wall in brick and blockwork.—Permeable inner and outer surfaces: it is generally satisfactory with most normal conditions as the vapour pressure decreases across the wall. When the dew point occurs within the construction, the condensate can be absorbed and later re-evaporate from both sides.

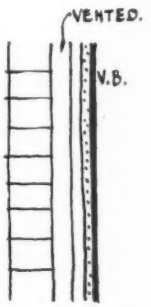


Fig. 6. Brick outer skin, framing and impervious inner lining.—An impervious inner surface such as aluminium foil or bitumen, will provide a vapour barrier on the warm side of the wall. Such treatment may be necessary in particular cases: the total thermal resistance of the wall must be sufficient to ensure that the inside surface temperature does not fall below the dew point of the inside air if surface condensation is to be avoided. No trouble likely from condensation within the wall construction.

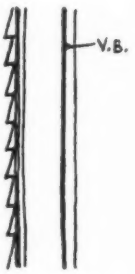


Fig. 6 (a). As in Fig. 6.—In Canada with lower outside air temperatures the condensation problem is more acute than in Gt. Britain. With good insulation the provision of a vapour barrier is considered necessary for housing. With timber framed construction and a sheathing paper on both sides of the framing, it is a recommended Canadian practice to use a more permeable paper on the outside than on the inside.

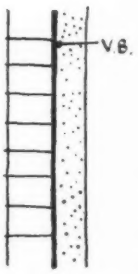


Fig. 7. Cold store wall.—It is usual to provide a vapour barrier on the outside of the insulation.

ROOFS

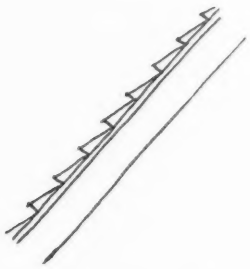


Fig. 8. Tiled pitched roof.—Generally satisfactory. No vapour barrier occurs on the cold side, the joints provide for air and vapour movement and the tiles provide some absorption.

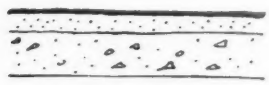


Fig. 9. Concrete flat roof.—Potential condensation risk as the asphalt or felt acts as a vapour barrier on the cold side of the construction. Probably satisfactory for normal humidity conditions with good heating and ventilation below but has given trouble in housing. Condensation trouble should not be confused in this case with dampness from a wet screed which has not dried out.

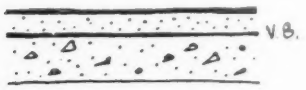


Fig. 10. Concrete flat roof.—Where higher humidities or other conditions make (9) doubtful, a vapour barrier below the insulation may be necessary. The insulation layer should provide adequate thermal resistance to keep the temperature at the vapour barrier above the dew point of the air below. There may be risk, if vapour barrier fails, of condensation in the insulation which should be mineral rather than vegetable.

Fig. 11. Timber flat roof.—Potential condensation risk, particularly when humidities higher than normal exist and/or continuous humidity controlled conditions are provided probably satisfactory with normal humidities and adequate heating and ventilation below.

under these conditions, therefore, the dew point within the construction will be lower than the dew point of the air inside the building; it will no longer be at the position within the construction where the temperature is that of the dew point of the air inside the building.

In designing a wall or roof with a vapour barrier, it may be necessary in certain cases to find the dew point position within the construction for the worst conditions by plotting the temperature gradient; it must be remembered that, due to "surface resistances," the temperatures of the inside and outside faces of the construction will not be those of the adjacent air. The temperature of the inside face will be below that of the inside air; the outside face will usually be above the outside air temperature, but due to radiation during cold, cloudless nights it may fall as much as 10° F. below the outside air temperature.

3. *The Importance of the Problem Today.*

In this country, there are many buildings in which no particular precautions were taken by the designer to prevent condensation and which have nevertheless proved quite satisfactory. In recent years condensation trouble has probably become more prominent, due mainly to the following reasons:—

(*a*) An increase in the use of thin sheet materials for the external cladding of walls and roofs; in such positions these materials store very little heat during the critical winter months, reach comparatively low temperatures and readily assist condensation.

(*b*) These thin sheet materials, such as metal and glass, are generally almost impervious to moisture either in the liquid or the vapour form; condensate which forms on the surface will not be absorbed. If the sheet material is vertical the moisture may sometimes be drained away through weep holes, but if it is the outer covering of a low-pitched roof the condensate may drip and cause damage below.

(*c*) The greater use of non-traditional wall and roof constructions of low thermal capacity; this means that, in comparison with a traditional brick building, the external structure requires little heat to raise its temperature to any given level, and it does not retain much heat particularly in the outer cladding. When the heating system is shut down in such an intermittently heated building, the temperature of the cladding falls fairly rapidly in winter time and condensation can readily occur.

(*d*) The greater tendency to use good insulating materials as interior linings to walls and roofs. Insulation, if correctly used, can assist in reducing or eliminating condensation. When the lining is more pervious than the external cladding, due to either the material or the joints, vapour from within the building will pass through it more readily than through the external cladding. The insulation, by restricting the flow of heat through the construction, will keep the inner face of the cladding in winter time at a comparatively low temperature and may increase the possibility of condensation forming on the cladding. This is not a criticism of the insulation but rather an indication that the construction as a whole has to be considered.

(*e*) Emphasis on the value of a closed cavity in wall and roof construction for improving thermal insulation; this has resulted in a tendency to reduce the natural ventilation of cavities by sealing the joints in the exterior cladding as, for example, in certain types of roof sheeting. The quantity of moisture vapour in the cavity may be appreciable and if it cannot readily disperse to the outside air, the risk of condensation will be increased.

(*f*) The requirement of factory managements for controlled humidities, maintained at a high level continuously throughout the year, for the production, for example, of textile goods. This provides a severe condition for the construction and has been a major cause of serious condensation trouble in a number of factories. The continuous high humidity is an important factor, as condensate, which has been absorbed in the construction, has little opportunity of drying out. In addition, if the air conditioning plant creates a positive pressure it assists the movement of the air into the wall and roof construction.

(*g*) The importance of restricting the heat loss from buildings by reducing the air change rate; this has directed attention to the improvement of the "air-tightness" of the structure, encouraged the use of draught sealing and probably resulted in an increase in the humidity within the building. This does not at present appear to be a serious factor contributing to condensation trouble in this country, although it may be in the USA and in Canada.

(*h*) The greater use of gas and electric cookers in domestic kitchens to replace the kitchen range, particularly if no domestic boiler is installed in the kitchen. The omission of a solid fuel appliance reduces the ventilation rate unless some other means of ventilation is provided; in addition, the average winter temperature in the kitchen is decreased as the range or domestic boiler are useful sources of heat for the room. The problem, however, is not very extensive in well-built houses of traditional construction.

(*i*) The greater use of flueless gas heaters, with insufficient attention to the installation design, in buildings such as churches and halls which are used only occasionally. These buildings are extreme examples of intermittent heating, as many of them are unheated for the

Fig. 12. Timber flat roof.—This is a correct design approach where high humidities provide a condensation risk in (11) : insulation to be sufficient to keep the under surface of the vapour barrier above dew point.

Fig. 13. Insulated metal deck.—The metal deck itself acts as a vapour barrier but joints or gaps in the decking may lead to condensation within the insulation.

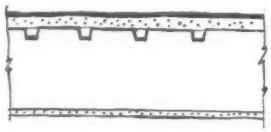


Fig. 14. Insulated metal deck and suspended ceiling below.—The addition of a suspended ceiling to (13) increases the risk of condensation on the underside of the metal deck as it causes a reduction in the surface temperature of the metal. Condensation trouble may sometimes occur even in moderate humidity conditions. The vapour diffusance of the ceiling board should be low and some ventilation of the cavity to the outside should be provided where condensation risk is present.

Fig. 15. Sheeted roofs with insulating lining.—A common factory roof : generally satisfactory for normal humidity conditions where no air conditioning and no steam process occurs. It is suitable, for example, for the light engineering type of factory. In higher humidity conditions vapour will penetrate the joints and lining sheeting and often in winter, condense on the underside of the roof covering: it may drip on to the lining and cause trouble. The risk is greater with thin metal roof coverings than with asbestos cement, particularly if with the former the overlaps are sealed and the cavity unventilated.

greater part of each week in the winter. Gas can be a very suitable fuel to use but care is necessary in the design of the heating installation and in the provision of suitable ventilation. Otherwise condensation trouble may result from the combination of a cold structure and a comparatively sudden increase in the humidity inside the building due to the congregation and the products of combustion.*

It will be apparent that condensation in buildings may be a complicated problem and no single factor is necessarily always the only or the principal cause of trouble. It may be said that a high humidity is the cause of condensation in a building, but if the structure is designed satisfactorily for such occupancy conditions, then trouble can be avoided, the cause being the structure rather than the internal humidity. In such cases, the designer has the responsibility of advising his client on the type of construction to be used and of the necessity of any extra initial cost which may save a greater expenditure on remedial measures at a later date.

In many buildings such as houses, flats, schools and offices, of traditional construction in this country, if a reasonable standard of heating and ventilation is provided and no continuous high humidities are maintained, there should be no serious condensation trouble generally. The risk may be slightly greater due to the local climate in some parts of the British Isles; the differences, however, are not great compared with those in the USA, which has been divided into zones because of the wide range of winter temperatures and humidity conditions.

Occasionally in the British Isles, a rapid increase in the humidity and temperature of the external air causes severe condensation in many buildings which normally are free from this trouble: the reason for this is that the building structure is comparatively slow to heat up, and the incoming air from outside comes into contact with the cooler surfaces of the structure. It is usually unnecessary to take account of this in design; the non-traditional building with linings of low thermal capacity is less likely to be affected by these particular conditions than a heavier traditional type structure.

4. *Buildings Affected.*

The buildings which probably provide the greatest amount of condensation trouble are certain types in the industrial group in which the air is maintained continuously at a high humidity. In such factories, the temperature and the relative humidity of the internal air is often kept above 65°F. and 70 per cent. respectively throughout the year. Buildings for the processing or production of textiles, tobacco factories and printing works are in this category; even if a plenum system is not installed but humidification is by water spray units, as is often the case in the cotton industry, condensation is frequently a serious problem. The greatest trouble generally occurs at the roof, a typical construction being a thin sheet external covering with an air space and insulation lining underneath. Ventilation of the factory space to the outside air cannot of course be a solution in such cases; the remedy must be found in the construction of the roof. A vapour barrier at or near the underside, adequate insulation, and

* A study of this problem is being made at the Gas Board research laboratories: information from this source is available to architects. Address: Research Centre North Thames Gas Board, Townmead Rd., Fulham SW.6

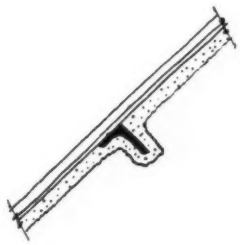
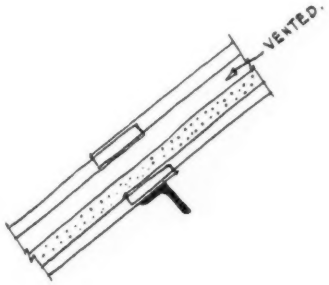


Fig. 16. Sheeted roofs with absorbent spray on underside.—This roof will be satisfactory for quite severe intermittent humidity conditions if ventilation is adequate to assist re-evaporation. In continuous very severe humidity conditions the absorbent may become saturated and drip.

A DESIGN APPROACH FOR ROOFS OVER CONTINUOUS HIGH HUMIDITY CONDITIONS

Fig. 17 (a). A double skin roof.—Two layers of roof sheeting with adequate insulation over the lower skin and a ventilated cavity above the



insulation but below the outer skin. The insulation should not be unsuitable for damp conditions. This roof can be used satisfactorily under very severe humidity conditions—the under roof sheeting to be laid as a normal roof sheeting with lapped and sealed joints and drained to gutter. Condensate within the construction can then drip on to this sheeting and be drained away. Insulation to be adequate to keep the under surface temperature above dew point.

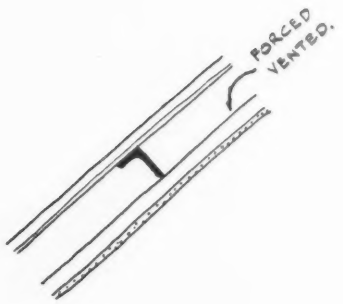


Fig. 17 (b). Roof with forced ventilation in cavity.—The external roof covering should have a reasonably good thermal insulation value and an absorbent under surface. The insulating lining under the covering should have a low vapour diffusance. Dried and heated air is blown through the cavity between the external covering and the lining.

ventilation of the cavity, perhaps with dried and heated air in the worst conditions, may be necessary.

High humidities occur in many other factories like those for paper making, for the processing of wool, for baking and brewing and also in canteen kitchens; the high moisture content of the air is often incidental, a result of the manufacturing or cooking processes; it is not necessarily maintained continuously, but nevertheless under the more severe conditions, which at their peak may be worse than those provided by an air conditioning installation, condensation can be very troublesome. In these cases, the first approach should be the provision of suitable hooding to collect the moisture-laden air at its source and to carry it by trunking and possibly extractor fans to outside the building; alternatively it may be possible for the area in which the moisture is produced to be separated from the rest of the factory. Good ventilation may generally be used; the incoming air will reduce the internal humidity and assist the drying of the materials in the wall and roof construction during the night and at week-ends when the plant may be shut down. In addition, however, care is necessary in the choice of roof construction; the advisability of using a vapour barrier with ventilation above it, or the application of an absorbent lining such as sprayed asbestos to the underside of the roof should be considered.

In many factories, such as light engineering shops, in which the humidity is not unduly high, a typical thin sheet roof insulated on the underside will be quite satisfactory.

Farm buildings are another group in which condensation trouble sometimes occurs. Interest in the economics of pig production has resulted in a greater emphasis on heat conservation in piggeries by improved thermal insulation and avoidance of excess ventilation; in this way, the food consumed by the pig may be utilized for increasing its weight rather than for keeping it warm. Roof condensation has resulted from the high humidities in some piggeries; good thermal insulation by restricting the heat loss will allow the use of better ventilation to reduce the humidity; the solution to this problem is also linked with a suitable design for the roof structure. The physiological requirements of the pig have also to be considered; in some systems of farming, the pigs stay inside the fattening house and the humidity and temperature maintained should be suitable for the pigs' well-being and progress.

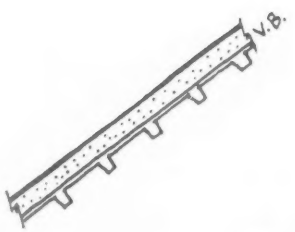


Fig. 17 (c). Insulated roof with vapour barrier on the warm underside.—In practice the provision of a complete vapour barrier is not easy due to joints, angles, etc., but a metal deck covered with lapped roofing felt laid in bitumen is probably a good solution to this problem. The underside of the metal deck should be kept at a temperature above the dew point of the inside air if surface condensation is to be avoided: alternatively, an absorbent surface treatment may be used to deal with occasional surface condensation.

Although dwellings generally in this country do not suffer from serious condensation trouble, it may sometimes result from several causes operating together. For example, if a dwelling is inadequately heated and ventilated, and particularly if the external walls and roof are covered with an impervious outer cladding and are of low thermal capacity, considerable care is necessary in designing the construction. The risk of condensation is probably slightly greater in bungalows than in houses; concrete flat roofs on dwellings, whether they are bungalows, houses or blocks of flats, are sometimes troublesome.

INFORMATION CENTRE

A digest of current information prepared by independent specialists; printed so that readers may cut out items for filing and paste them up in classified order.

4.78 planning: urban and rural
DERELICT LAND

Land Use in Walsall with Special Reference to Reclamation of Derelict Land and Slum Clearance. Matthew Edmund Habershon. (Journal of the Royal Sanitary Institute. November, 1953. pp. 714-727.)

A description of how a Borough Council is tackling a major problem: reclamation of derelict land.

In this instance, outcrop coal workings during past hundred years is the cause and further land is becoming derelict through slum clearance.

In 1945, out of 8,777 acres in the borough over 1,000 were derelict; since then about 580 have been reclaimed.

The article mentions: how, as a consequence, farming land has been saved; a proposed motorway has been sited conveniently to the town; the cost of levelling; technique of building construction employed and overcoming absence of top soil by use of sewage sludge.

Detailed tables show how the land has been used.

6.44 planning: social and recreational
SINGAPORE

Singapore Improvement Trust, 1952. Compiled by J. M. Fraser (Government Printing Office, Singapore, 1953. $2.00.)

The latest volume in the annual series of Reports produced by this Trust. 49 pages. Illustrated.

The trust is doing work normally carried out by a Government or City Council. Its interests are planning, land use and housing. Although it appears to have no formal housing powers, nonetheless it builds and manages housing estates for the Government.

For anyone interested in housing overseas, it is worth reading this pamphlet, which is fairly well illustrated. Inspired layouts may not be found, but standard of detailing is quite high.

This series of Annual Reviews of the whole field of activities by the Trust might well be emulated elsewhere.

8.36 surveying and specification
ESTIMATING

Principles of Builders' Estimating. R. G. Bailey (Crosby Lockwood. 1953. 7s. 6d.)

This is not a Price Book, but one which sets out the principles of pricing a Bill of Quantities by means of analyses of prices for representative items in each Trade. The approach is not novel, but as the examples are clear and the scope is limited, the book should prove both handy and useful for the student.

There are some errors which could have been obviated. For instance, on two consecutive pages (32 and 33), labourers appear at 3s. 2d., 3s. 2¼d., and 3s. 3d. per hour and on the same pages brickwork is analysed at 28s. and at 25s. 11d. per yard super, according to the method adopted.

It is disturbing to learn that a contractor who is unwilling to tender should be recommended to return the documents *or to obtain a cover price from another contractor.* This dubious practice persists, but a lecturer at

the Northern Polytechnic might have been expected to point out that if the aim of the Industry is to be realized and tender lists are to become short, the few tenders obtained must be genuine.

10.108 design: building types
TROPICAL ARCHITECTURE

Tropical Architecture. Special Number. (Architectural Design. Oct., 1953.)

With the rapidly increasing amount of architectural work being done in the Tropics a clearer understanding of the special requirements arising from climatic conditions is most desirable. There are two very different types of tropical climate, the hot/dry and the warm/humid and their requirements vary considerably. This special number deals with hot/dry climates and a later issue will cover warm/humid conditions.

An introduction by G. A. Atkinson, Colonial Liaison Officer to the Building Research Station, sets out the fundaments very clearly and has a most useful table showing the characteristics of the various types of tropical climate in terms of temperature, humidity, rainfall, sky conditions, ground conditions and air movement. There follow a number of illustrated descriptions of recent work in hot/dry areas including Kuwait, Borneo, Nigeria, French West Africa and other places. A most useful survey of the subject.

13.112 materials: timber
WOOD VENEERS

Surface Defects in Veneering. R. J. Newall. (Wood. Dec., 1953.)

Illustrated article by members of FPRL on the reasons for checking, cracking and shallow furrowing of the surface of decorative veneers. Describes in some detail the manufacturing reasons for these defects. Article primarily for the specialist, but interesting to architects who are concerned about high quality work with wood veneer finishes.

14.65 materials: concrete
PRECAST BLOCKS

Precast Concrete Blocks. BS 2028:1953. (British Standard Institution. 3s.)

This revised standard groups three types of block: (*a*) Dense aggregate; (*b*) lightweight load bearing and (*c*) lightweight non-load bearing, in the one publication instead of the three earlier BS Nos. 492, 728 and 834. This will make identification much easier.

A new standard size for bonding to 2¼ in. high bricks is added. Fair-faced blocks are not covered nor are blocks made of aerated concrete. The usual tests for drying shrinkage and moisture content are included and the strength test now includes a minimum strength requirement as well as an average strength. This latter is a very useful addition in limiting wide variability in batches of blocks. An alternative double groove joint is now permissable in addition to the original tongued and grooved joint.

Strict adherence to this specification, together with the use of proper jointing material, should help to reduce the all too frequent drying shrinkage troubles which occur in so many buildings.

15.114 materials: applied finishes, treatments
CONDENSATION

Wall and Ceiling Surfaces and Condensation. BRS Digest No. 58. (Sept., 1953. HMSO. 3d.)

Digest No. 23 dealt with methods of reducing or preventing condensation. Digest 58 attempts to classify condensation into four degrees of severity and then discusses possible treatments suited for each degree.

Condensation is a difficult subject on which to give precise advice and the Digest leaves a great deal to be determined by experience and commonsense in relation to any particular problem. A table of paint types gives their characteristics in terms of porosity, alkali resistance, ease of cleaning, tolerance to damp conditions during application, together with some general notes—a useful general reference on paints.

Helpful, but by no means a complete answer for anyone faced with a condensation problem.

15.115 materials: applied finishes, treatments
PAINTING

Two or Three Coats? J. M. Grenfell. (The Decorator. Sept., 1953.)

The old practice of three coats after priming is now rarely followed in painting work and the general rule in this country now seems to be "priming and two coats." It has been a tradition to say that two thin coats are better than one thick one. American practice in the last 10 years or so has broken down this idea and it is now quite common to specify a straight two-coat job equal in paint thickness to the previously normal three coat work. Apparently, the results of this are successful and, although there is no saving in the cost of paint, there is a considerable saving in labour costs. In this article are discussed briefly the above arguments and the question is raised: should the two-coat method be developed in this country?

16.105 materials: miscellaneous
PLASTICS

Plastics in Prefabricated Buildings. J. B. Singer. (Plastics. Nov., 1953.)

Four page illustrated article dealing in a rather general way with some of the fairly recent use of plastics in prefabricated buildings. Translucent panels of resin-bonded glass fibre are mentioned as well as several of the well-known opaque panel materials.

Of some general interest, but details of construction might usefully have been more fully described and illustrated.

16.106 materials: miscellaneous
DIMENSIONAL STABILITY

Dimensional Stabilization of Cellulose Fibre Materials. Research Report. (Progressive Architecture. Nov., 1953.)

Two page note on experiments which suggest that materials made from cellulose fibre can be made free from moisture movement by a process of chemical impregnation. If this means that such building materials as fibre boards could be supplied free from any risk of moisture movement it is important and one hopes that British manufacturers are following up the same line of investigation. The note does not give any indication of the possible effect on price.

17.100 construction: general
FIRE ESCAPE

Exitways from Buildings. Explanatory Memorandum on Regulations. (City Hall Cape Town. Aug., 1953.)

Applying to Cape Town regulations for the planning of exits from buildings, the chief interest in this memorandum is the fact that a municipal authority has thought fit itself to issue a simple explanation to enable designers to understand easily a somewhat complicated set of regulations. As a guide to the proper planning of fire exits it is a most helpful document. Various authorities in England might well copy the idea of issuing simple versions of difficult regulations.

19.170 construction: details
ALUMINIUM WINDOWS

Aluminium Windows. E. I. Brimelow. (RIBA Journal. Sept., 1953.)

Materials, construction, fittings and surface finish, cleaning and maintenance, costs. A useful general paper on the use of aluminium for windows.

The number of different aluminium alloys is considerable and correct choice depends upon method of manufacture, type of finish required and conditions of use. The article gives enough on this subject to make it clear that it is not good enough merely to obtain quotations for "aluminium windows" without specifying them in more detail. Certainly it would be unfair and unwise to compare competitive tenders without checking that all are on the same basis in this respect.

Some useful remarks on the design and fixing of fittings are included, while the section on finishes, including painting, is good, in that it does not attempt to pretend that aluminium is unaffected by atmospheric exposure.

Under the fixing of frames, a warning is given of the need to protect all aluminium alloy lugs, etc., which are in direct contact with masonry, timber or steel. Presumably the term masonry is here meant to include concrete.

Some useful notes on painting are included, as are the results of a survey of some existing installations and the way they have behaved. On costs, it is suggested that, if maintenance over a reasonable period is considered, aluminium is competitive with traditional materials.

The article is based on work carried out as part of the programme of the BRS and was published by permission of the Director of Building Research.

22.64 sound: insulation-acoustics
A MULTI-PURPOSE SCHOOL HALL

Blackwell Secondary Modern School. (Journal of the RIBA. October, 1953.)

A school hall for multi-purpose use, including fairly elaborate provisions for dramatic presentations, is described and illustrated. Some difficulty was experienced in finding sufficient wall space for the acoustic treatment necessary to compensate for the lack of the fully upholstered seats, curtains, boxes, etc., normal to a theatre. Raked fixed seating both on the main floor and in a balcony are provided in addition to removable seats, bringing the total accommodation to 960. The calculated reverberation time (full audience) is 0·9 sec. at 500 c/s.

22.65 sound: insulation-acoustics
ROMAN BASILICAS

Measurements of the Acoustical Properties of Two Roman Basilicas. A. C. Raes and G. G. Sacerdote. (Journal of the Acoustical Society of America. Sept., 1953.)

Acoustic measurements made in two Roman basilicas—St. John of the Lateran and St. Paul outside the Walls, are described.

Both these churches are virtually devoid of any acoustic absorbents, having polished marble wall and floor surfaces and stucco ceilings. In the first (volume 4,550,000 cu. ft.), the average reverberation time was found to be 5·2 secs., and in the second (volume 5,400,000 cu. ft.) it was 11·0 secs. The explanation suggested for this unexpected wide difference is that in the first church the absence of flat walls and the use of baroque detail, side chapels and high relief carvings, produces great diffusion, whereas in the second church there are considerable areas of flat wall and no side chapels.

The authors state that, if the calculated reverberation time of St. John of the Lateran is to agree with the measured value, an absorption coefficient (at 400 c.p.s.) of 0·13 must be taken for the marble instead of the more normal value of about 0·02. They do not state whether, in arriving at this conclusion, a conscientious effort was made to assess the increase in surface area due to the irregularities.

23.189 heating and ventilation
DOUBLE GLAZING

Thermal Insulation of Windows in Buildings: Double Glazing for Buildings. Peter M. Davidson. (IHVE Journal. Oct., 1953.)

Description of types of glazing, in relation to thermal and sound insulation.

Available forms of double glazing are discussed and the consequent reductions in heat losses are given. Other advantages noted include the avoidance of chilling by down-draughts or radiation to cold windows; the elimination of condensation; and the reduction in heating plant capacity due to lower maximum heat load.

Technical data are given for double glazing which has a layer of glass fibre in the interspace; this provides a diffused light and restricts the entry of solar heat. Alternative methods of reducing solar gain, such as the use of heat-absorbing glass having a greenish-blue tint, are also described. The author recommends that, while double *windows* should be used when sound insulation is the main aim, double glazing alone also gives a useful reduction in sound transmission.

23.190 heating and ventilation
DOMESTIC HEATING

Make Your House Cosier in Winter. (Prepared and issued jointly by the Coal Utilisation Council, Gas Council and Electrical Development Association. Gratis.)

Practical notes on insulation and draught prevention.

This pamphlet is intended for the householder who is prepared to spend a little time and money in making his house warmer. Advice is given on methods of insulating pipes, tanks and roofs, and a list of suitable materials has been compiled together with details of costs and manufacturers. Methods of weatherstripping doors and windows are also described.

This co-operative effort has produced a most attractive and useful publication which should be given a wide circulation.

26.110 services equipment: miscellaneous
ELECTRICAL APPLIANCES

List of Domestic Electrical Appliances. List No. 1. BEDA. May, 1953.

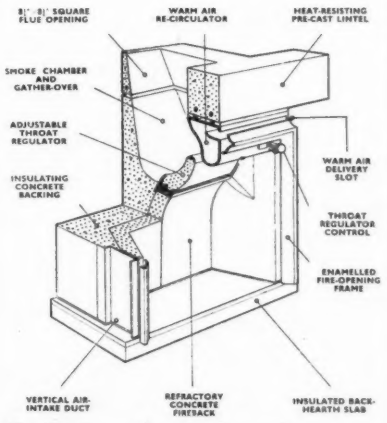
Appliances included in this list are approved by all Area Electricity Boards. List divided into two parts: The first deals with heavy, and usually immovable, plant such as cookers, heaters, refrigerators, washboilers, washing machines and water heaters. Part II covers most of the smaller and portable types of electrical apparatus used in dwellings.

THE INDUSTRY

From the Industry this week Brian Grant's report includes a pre-cast fireplace unit, parking meters and a new drafting projector.

FIREPLACE UNITS

Finch & Co., who introduced a precast chimney throat unit some years ago, have now produced a complete fireplace unit which provides convected warm air from a horizontal chamber across the top of the fire opening. The fire is supplied as a complete unit, and includes a vitreous enamelled fire opening frame, a vermiculite concrete insulating backing, a heat-resisting precast lintel and all the other units shown in the diagram below. The main point of interest is that the area of the throat can be adjusted (by a control knob in the frame of the fire opening), the manufacturers suggesting that a throat aperture of 10 sq. in. is ample once the fire is burning brightly, and also claiming that with smokeless fuels the area can be as small as 5 sq. in. The advantage of this adjustment is that the rate of air change in the room is considerably reduced, in some instances by more than 50 per cent. Since the normal air changed provided by a fire is far greater than necessary from the health point of view, any reduction will give a corresponding degree of fuel economy. It is claimed for the Finch fire that it will provide adequate heat for a room of 1,150 cu. ft. for a 24 hr. average of as little as ¼d. per hour. At the same time the flue gases are hotter and there is less likelihood of down-draught in the chimney. The unit has vertical air ducts at each side, with intake slots at hearth level, and the warmed air from the heated cast iron chamber is delivered to the room through a slot above the fire opening. Installation



The Finch complete fireplace unit.

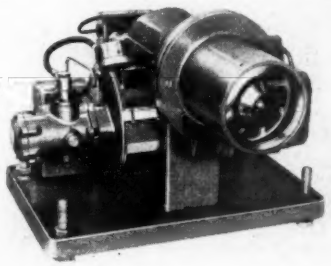
is very simple as only a plain opening 22¼ in. wide and 13¼ in. deep is needed. When the brickwork reaches a height of 2 ft. or so, the heat resisting lintel block is built in, and a 9 in. by 9 in. flue can be built directly off it. Bricklayers' work is very much simplified as there is no corbelling necessary to form the gather-over or smoke chamber. (*B. Finch & Co. Ltd., Belvedere Works, Barkingside, Essex.*)

A NEW CONVECTOR FIRE

An adjustable throat is also provided in Radiation's new Parkray, a free standing convector fire. This can be fitted in almost any existing fireplace opening, the chimney being sealed with a metal plate into which the flue of the fire fits. Air passing round the back and sides of the fire is heated by convection, and it is claimed that weekly fuel consumption for rooms of up to 1,700 cu. ft. should be about 1 cwt. Fixing is by a pair of Rawlplugs to the hearth, and there is no difficulty in cleaning the chimney after the front canopy has been lifted off and the restrictor plate removed. The fire will burn all the usual fuels and also has a gas burner for lighting. Prices vary from £7 2s. 6d. to £8 17s. 3d. according to the colour of finish required. (*Radiation Group Sales Ltd. (Solid Fuel Division), Belper Production Centre, Belper, near Derby.*)

AUTOMATIC OIL BURNERS

A new range of automatic oil burners to use with boilers rated between 75,000 and 100,000 B.Th.U. has just been announced by Brockhouse Heaters. All units are supplied with the usual automatic controls and can be mounted on a bedplate or have the nozzle flanged and drilled for direct mounting on the boiler front. The oil supply system is arranged so that when the burner



The Brockhouse light-oil automatic pressure-jet type burner.

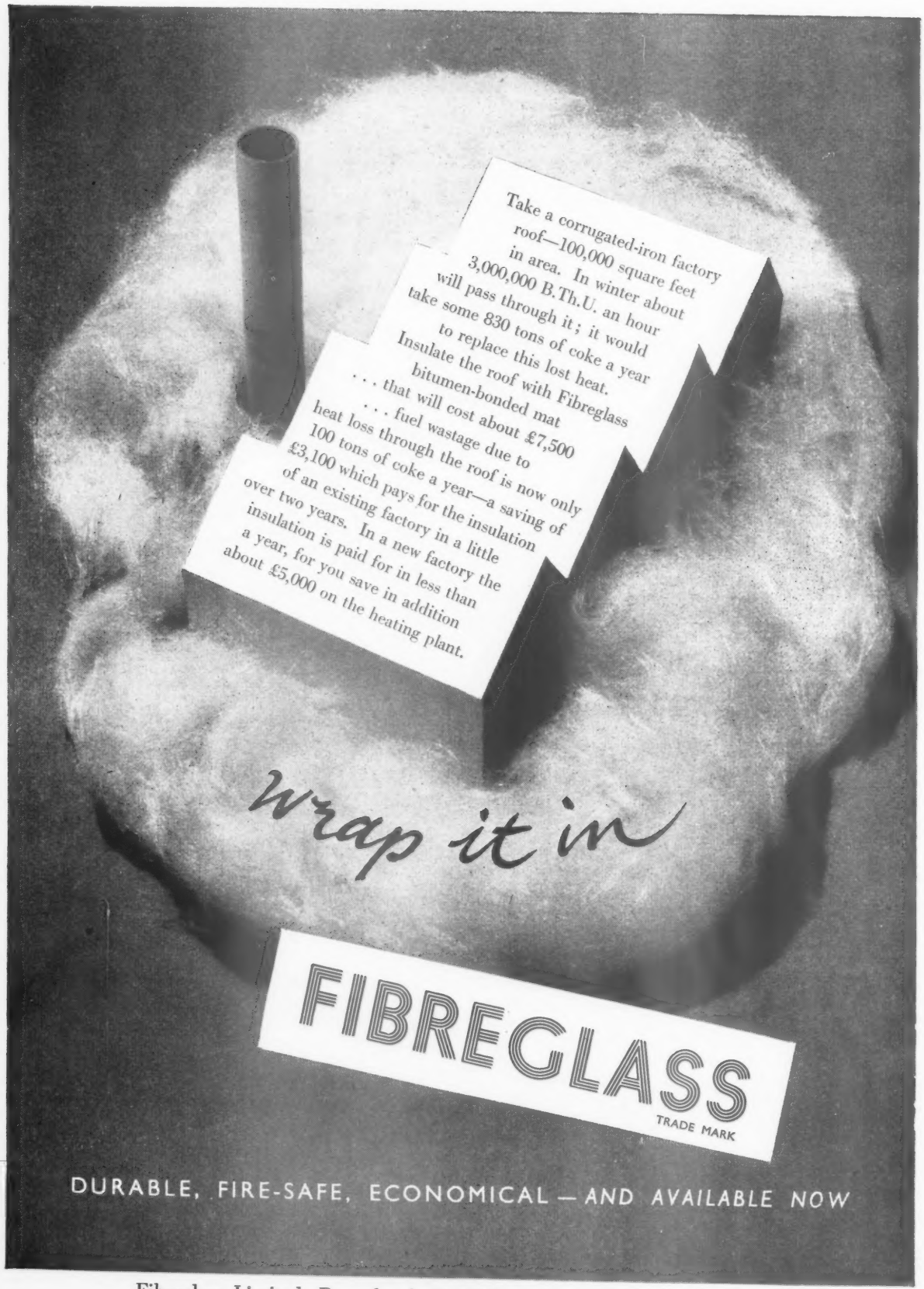
is shut down by the thermostat the fuel supply is cut off at once. This rapid cut-off means that no oil dribbles from the burner, and that there are no pulsations in the boiler while the fan and pump are slowing down. (*The Brockhouse Heater Co. Ltd., West Bromwich, Staffs.*)

LIGHTING AND WATER SUPPLY

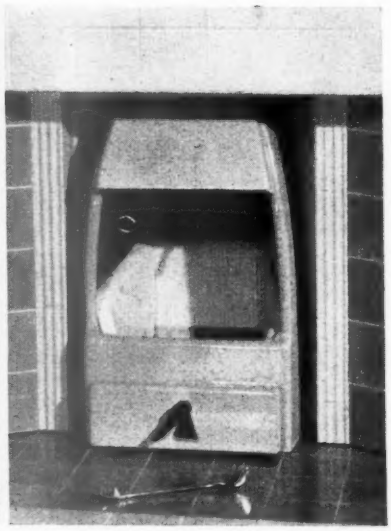
Arthur Lyon & Co. have recently introduced a combined water pump and electric generator, driven by a petrol or petrol-paraffin Villiers engine. The 1-in. self-priming centrifugal pump has a maximum suction lift of 27 ft., and an output of 500 gallons per hour, while the generator gives 500 watts at 230 volts, 50 cycles A.C., so that standard domestic equipment, such as vacuum cleaners, radios and television sets can be used without alteration. 500 watts is ample for work of this kind, plus normal lighting loads. The overall dimensions of the unit are 27 in. by 13 in. by 20½ in. high, and the price is £85. (*Arthur Lyon & Co. (Engineers) Ltd., 42-44, Telford Way, East Acton, London, W.3.*)

PARKING METERS

After the recommendation that parking meters should be installed in Central London to help pay for the underground car parks there has been a good deal of discussion and plenty of opposition from motorists, largely on the reflex "infringement of liberty" argument. It is not easy to see much difference between one shilling for an armbanded attendant, whose sole duty is to give misleading steering instructions, and one shilling in a slot machine, and I would guess that a large proportion of cars (30 per cent.?) are run on expense



Fibreglass Limited, Ravenhead, St. Helens, Lancs. (St. Helens 4224)



Extreme left, the Venner Park - O-Meter showing the side which faces the road. Left, Radiation's new free standing convector fire referred to by Brian Grant on page 56. Air passes round the back and sides of the fire and is heated by convection.

accounts anyway. The argument, however, does not really matter. Parking meters are to be adopted in London, and other towns will no doubt follow suit. And Venner's, the time-switch people, have already made arrangements to produce in this country a standard American design. It will be available in quantity "early in 1954" at a price of £30. Why it should have to be such an unattractive shape I cannot imagine, unless it is simplest to use the American design unaltered. The other interesting problem will be to choose the right spacing. Presumably it will have to suit the average smallish 10-h.p. saloon, so we can all hope that the 23-ft. dynahydramatics will have to pay twice over. (*Venner Ltd., New Malden, Surrey.*)

ANOTHER ASSOCIATION

Vermiculite is now an established material, so it is only to be expected that the various producers of it should have formed an association "to establish and maintain recognized standards of quality—and codes of practice." So far the Association has 18 members, and has agreed on four grades varying from $\frac{1}{16}$ in. to $\frac{1}{8}$ in. in size and from 10 to $3\frac{1}{2}$ lb. per cu. ft. in density. This is a useful step, but it is to be hoped that the members will ultimately agree on a purity or composition standard as well, since there are almost bound to be variations when the raw material comes from a number of different sources. The booklet also deals with vermiculite as a loose fill, mixes for roof and floor screeds, site-mixing and laying instructions, and plaster mixes. (*The Association of Vermiculite Exfoliators, Plantation House, London, E.C.*3.)

ELECTRICAL GEAR

Three leaflets from Sanders of Wednesbury describe a new range of fuseboards, fuse switches and a rubber plug. Dealing first with the latter, it is an unbreakable fused plug to fit the standard 3 kilowatt socket to BS 1363. As long ago as 1937 this firm introduced rubber plugs in 5- and 15-amp. 3-pin (BS 5216) sizes, and I remember passing on a sample to a local garage, where it was still in use (unbroken) in September, 1939. For all industrial purposes (or even in one's own garage) these plugs are very useful, as they will withstand remarkably rough treatment, including being run over by buses or lift trucks, the rubber preventing the cracking and splitting which is all too common with the more brittle plastic materials. Prices are 36s. 8d. per dozen for the 3-kW. rectangular pin plug, while the older, round pin types are 44s. and 63s. for the 5 and 15-amp. sizes, all these prices being subject to a 20 per cent. increase.

The Sandasteel industrial fuseboards are simple rectangular designs and are produced in single, double and triple pole types with up to 12 ways per board. The fuses are all of the duplex type, in which the bases are arranged to take alternative types of carrier, one to take the high rupturing capacity cartridges, the other of the normal re-wirable type. All the usual types of glands and sealing chambers are produced for cable entries.

The range of fused switchgear (Sandaclad) is produced in sizes up to 500 amps. with the usual cover interlocking arrangements and also the necessary holes for further padlocking when required. (*Wm. Sanders & Co. (Wednesbury) Ltd., Falcon Electrical Works, Wednesbury, Staffs.*)

PLANNING THE SMALL STAGE

The Strand Electrical Co., who have been producing lighting and other stage equipment for a great number of years, have issued a most informative booklet on the planning and equipment of stages of the kind normally to be found in schools, village halls or factory canteens. The booklet makes a very reasonable plea that even with the most limited cost budget, any scheme must be capable of expansion, and suggests that it is better to provide no equipment at all—only facilities for its future installation—than to supply inadequate equipment and make no allowance for additions in the future.

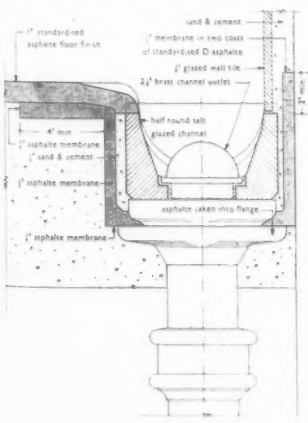
The planning requirements and recommendations are clearly set out for various types of stage, with notes on such essential subjects as safety precautions and storage. Section 2 covers stage draperies and general equipment such as curtain track, suspension gear, safety curtains, film projectors and sound effects, while Section 3 is devoted to the various types of lighting required and the uses to which it is put, including the types of switchboards and dimmers available. The booklet also contains some schedules of desirable equipment with, most important of all, data on approximate costs. A most useful booklet which is well worth keeping for reference. (*The Strand Electric and Engineering Co. Ltd.*, 29, *King Street, Covent Garden, London, W.C.*2.)

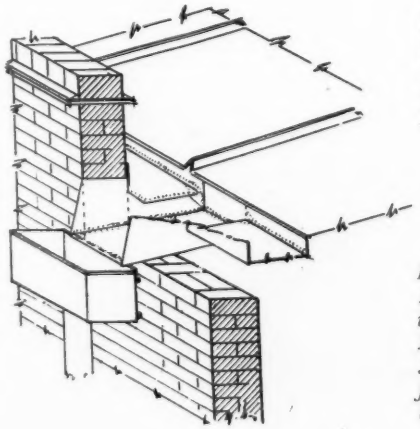
ALUMINIUM ROOFING

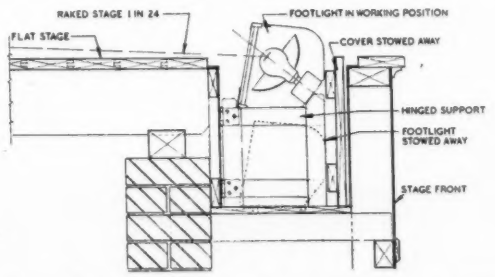
The latest publication from A.D.A. (Applications Brochure No. 9) gives details of fully supported aluminium roofs. The test consists mainly of constructional information and detail drawings with notes on the relevant BSS and the precautions to be taken where the aluminium comes in contact with other materials. The material is becoming more widely used in this country, and there are now quite a number of examples for potential users to inspect. A booklet such as this is therefore of some considerable use, and the drawings, although they have an odd and nowadays unusual Edwardian text-book air, are none the less clear and informative. (*The Aluminium Development Association*, 33, *Grosvenor Street, London, W.*1.)

ASPHALTE FLOORING

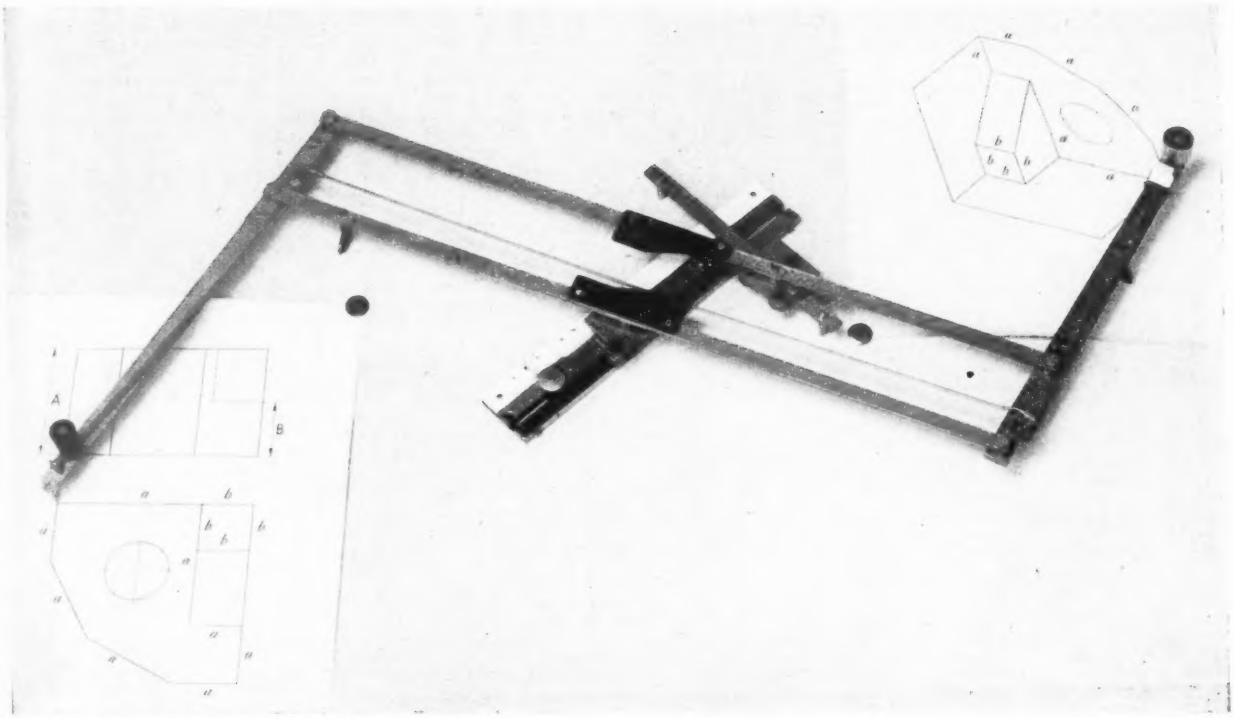
The Natural Asphalte Mine-Owners and Manufacturers Council has already published two booklets in its application series, and has recently followed them up with a third, which deals with flooring and paving. For these purposes there are two main asphalte categories, domestic and industrial, and each is manufactured in three grades, light, medium and heavy duty. As well as these categories further special mixes are produced to withstand low temperatures such as are







Extreme left, an illustration from the Natural Asphalte Mine Owners' and Manufacturers Council booklet showing the application of asphalte to a channel and outlet. Left, an illustration from the ADA's Application Brochure No. 9. Above, a section through a foot-light trough, from "Planning the Small Stage" by P. Corry published by Strand Electric.



A new drafting projector for producing isometric drawings.

found in cold storage rooms or comparatively high ones such as pithead baths and showers, where hot water is slopped around and discharged. Floors may also be in colour, or acid or oil resisting. The booklet contains a number of photographs of various applications and also some useful constructional details, one of which is reproduced on page 57. (*The Natural Asphalte Mine-Owners and Manufacturers Council*, 94/98 *Petty France, London, S.W.*1.)

NEW DRAFTING PROJECTOR

The illustration above shows the Mavitta-Binns Isometric drafting projector. From plans and elevations an isometric projection can be produced merely by following the outlines with a stylus, the pencil at the other end of the double fulcrum pantograph linkage producing the required projection. The standard machine is designed for use on a double elephant board. (*Mavitta Drafting Machines Ltd., Highlands Road, Shirley, Birmingham.*)

MIXES FOR MORTARS

For some years it has been the recommended practice to use cement lime sand mixes for mortars and renderings, a procedure which makes the mix "fatter" and easier to work, and at the same time reduces the strength of the mortar compared with straight cement-sand mixes, thus tending to diminish cracking. The sharp sands to BS 1200 require a fairly high percentage of fine particles in order to give a fat mix, and are commonly used in a proportion of 2½ or 3 of sand to 1 of cement or cement-lime. The addition of an air-entraining agent will allow mixes of about 6 to 1 to be used, providing an equally fat mortar, saving about half the cement necessary, and at the same time being more suitable for use with porous building materials such as brick and breeze block.

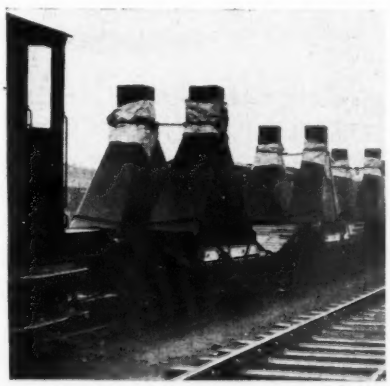
Similarly, in renderings it is possible to use a 6 to 1 mix for backing coats. Mixes as lean as this cannot be given the smooth trowel finishes obtainable with traditional mixes, but even where a smooth finish is required it should not be necessary to use mixes richer than 4 to 1.

Phomene plasticiser is simple to use, being supplied as a liquid which is added to the gauging water at the rate of ½ pint per cwt. of cement. Small and stable air bubbles are formed, and although in reinforced concrete practice the ill effects of too much air in the mix are serious, in mortars the amount of air required is not critical. (*The Pyrene Co. Ltd., Cellular Products Division, Great West Road, Brentford, Middlesex.*)

VENTILATING HOODS

The use of moulded asbestos cement for ventilation hoods and ducting is common enough in kitchens and laboratories, but it is worth remembering that special designs can be produced without undue difficulty and that the material itself has good resistance to corrosion. Quite large users, as the photograph shows, are British Railways, who have ordered some 6,210 hoods measuring 12 ft. by 9 ft. 6 in. by 3 ft., in Urastone. They are to be used for removing smoke from locomotive sheds, and are believed to be the largest units in this material made so far. (*Cellactite & British Uralite Ltd.*, 3-4, *Whitehall Place, Gravesend, Kent.*)

BRIAN GRANT.



Urastone moulded asbestos cement hoods for moving smoke from locomotive sheds.

Buildings Illustrated

Wimpson Junior School, Wimpson Lane, Millbrook Estate, Southampton. (Pages 815-819, *AJ*, Dec. 31, 1953.) Architects: E. D. Lyons & L. Israel, A./A.R.I.B.A. Consulting engineers: (reinforced concrete), Hajnal Konyi & Myers; (water, heating and electrical services), Stinton Jones & Partners. Quantity surveyors: Veale & Sanders. General contractor: R. H. Lynn & Co. Ltd. Sub-contractors: structural floors, The Bath & Portland Stone Firms Ltd.; steelwork, Matthew T. Shaw & Co. Ltd.; domestic hot and cold water and heating, Young, Austen & Young, Ltd.; asphalt and substructure tanking, Faldo Asphalte Co. Ltd.; electrical services, Newport Electrics Ltd.; Carda windows, Holcon Ltd.; built-up bituminous roofing, General Asphalte Co. Ltd.; ironmongery, Nettlefold & Moser Ltd.; sanitary ware, W. Dibbens & Sons Ltd.; artificial stone, Enfield Stone Co. Ltd.; metal windows, Crittall Manufacturing Co. Ltd.; external site fencing, Durafencing Ltd.; wall and floor tiles, Carter & Sons Ltd.; roller-shutters, G. Brady & Co. Ltd.; asphaltic tiled pavings, Gabriel Wade & English Ltd.; metal balustrades, Clarke Hunt & Co. Ltd.; teak wood block floor, Acme Flooring & Paving Co. Ltd.; linoleum pavings, Cellulin Flooring Co. Ltd.; school cabinets, furniture, etc., Elington Industries Ltd.

Bus Garage, Lansdowne Way, Stockwell, London, S.W.8, for the London Transport Executive. (Pages 820-822, *AJ*, Dec. 31, 1953.) Architects: Adie, Button & Partners in association with Thomas Bilbow, F.R.I.B.A., Architect to LTE. Consulting engineer (reinforced concrete): A. E. Beer, A.C.G.I., M.I.STRUCT.E., M.CONS.E. Consulting engineers (electrical): J. H. Coombs & Partners; (heating and ventilation), H. Carter, A.M.I.C.E., M.I.STRUCT.E., New Works Engineer, LTE. General contractors: Wilson Lovatt & Sons Ltd. Subcontractors: demolition, London Demolition Co. Ltd.; foundations, Cementation Co. Ltd.; asphalt, General Asphalt Co. Ltd.; bricks, Hall & Co. Ltd.; stonework, South Western Stone Co. Ltd.; structural steel, Concrete & Structural Products Ltd.; sprinklers, Mather & Platt Ltd.; tiles, Jacon-ello Ltd.; faience, Wiggins-Sankey & Co. Ltd.; roofing felt, Super Phalt Ltd.; glazed partitions, windows and window furniture, Mellowes & Co. Ltd.; patent glazing, Williams & Williams Ltd.; woodblock flooring, Improved Wood Pavement Co. Ltd.; central heating, G. N. Haden & Co. Ltd.; boilers, Prior Stokers Ltd.; electric wiring, T. Clark & Co. Ltd.; electric light fixtures, Metropolitan-Vickers Electrical Co. Ltd.; plumbing, Z. D. Berry & Co. Ltd.; sanitary fittings, door furniture, W. N. Froy & Sons Ltd.; rolling shutters, Mather & Platt, Ltd., and G. Brady Ltd.; sliding doors, E. Hill Aldam & Co. Ltd.; frames to attendant's office, W. James & Co. Ltd.; granolithic and plaster, Plastering Ltd.; metalwork, Light Steelwork (1925) Ltd., and George Wright (London) Ltd.; joinery, D. Burkle & Son Ltd.; linoleum, Cellulin Flooring Co. Ltd.; plastic tiles, Semtex Ltd.; cycle stands, Abix Ltd.; hoists, ACE Machinery Ltd.; signs, Pearce Signs Ltd.; fuel tanks, J. Bellamy Ltd., and Tecalemit Ltd.

New Cider and Pectin Factory, Widemarsh, Hereford, for Wm. Evans & Co. (Hereford & Devon) Ltd. (Pages 38-39) Architect: Willink & Dod, F./F.R.I.B.A. Architect-in-Charge: M. G. Gilling, F.R.I.B.A. Assistant-in-Charge: K. B. Edwards, A.R.I.B.A. Consulting Engineers: Hurst, Peirce & Malcolm. Quantity Surveyors: Thorneby & Partners. General Contractor: Wm. Bowers & Co. Ltd. Clerk of Works: D. Watson. General Foreman: Wm. Peake. Sub-contractors: Dampcourses, The Ruberoid Co. Ltd., and Wm. Briggs & Co. Ltd.; reinforced concrete, Peter Lind & Co. Ltd., and Trussed Concrete Steel Co. Ltd.; bricks, London Brick Co. Ltd.; artificial stone, Ferroconcrete Ltd.; structural steel, Dawnays Ltd.; roofing felt, Wm. Briggs & Co. Ltd.; glass, Pilkington Bros. Ltd.; patent flooring, Semtex Ltd.; central heating, Beaver & Co.; boilers, Danks of Netherton Ltd.; electric wiring, French; ventilation, Brightside Foundry & Engineering Co. Ltd.; plumbing, Beaven & Co., and Hereford Plumbing Co. Ltd.; sanitary fittings, Rowe Bros. & Co. Ltd.; staircases, Rowan & Boden Ltd.; casements and window furniture, Henry Hope & Sons Ltd., and Kaleyards Ltd.; rolling shutters, Sefton Lift & Shutter Co.; iron staircases, metalwork, Pearsons (Birmingham) Ltd.; lifts, Pickerings Ltd.; signs, Whitby & Sons and The Lettering Centre; corrugated metal sheeting, Robertson Thane & Co. Ltd.

Announcements

H. Williams has been appointed manager of the Worcester branch of British Insulated Callenders Cables, Ltd., in succession to the late C. H. Panting.

Roff Marsh, A.R.I.B.A., A.M.T.P.I., has a new office number (due to street re-numbering). It is now 125, Lombard Road, Chelmsford.

L. H. Cooper, chairman of the Mond Nickel Co., Ltd., has been elected a vice-president of the parent company, The International Nickel Co. of Canada, Ltd. He will assume the new office on January 1.

The partnership between Colin Laird, A.R.I.B.A., and Newel Lewis, A.R.I.B.A., has been mutually dissolved. Mr. Laird will continue to practice from 9, St. Clair Avenue, Port-of-Spain, Trinidad, British West Indies.

The firm of Mence & Moore, A./L.R.I.B.A., has taken J. Newel Lewis, A.R.I.B.A., into partnership and will continue to practice under the style of Mence & Moore, at 33, Abercromby Street, Port-of-Spain, Trinidad, B.W.I., and London.

IF YOU'RE PLANNING CENTRAL HEATING

you need this handbook

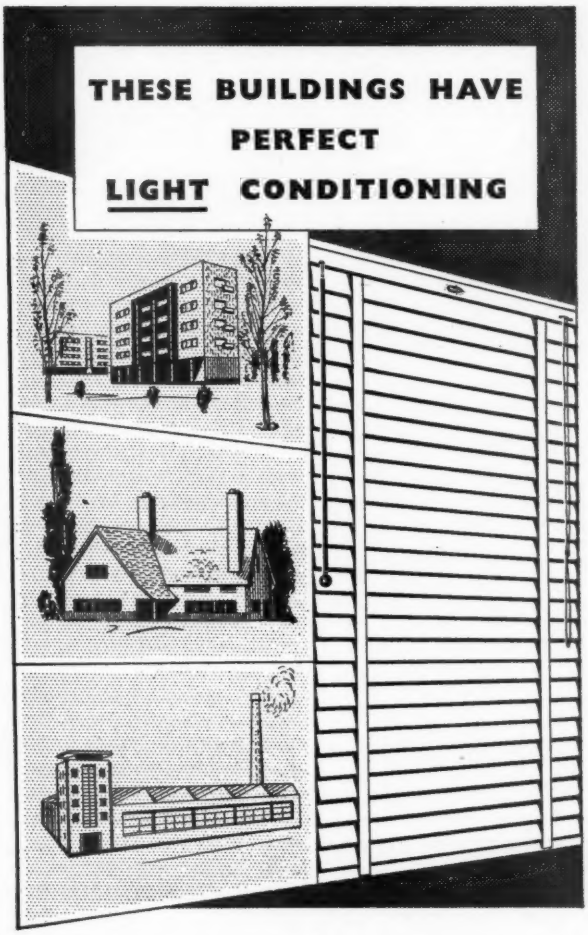
The Coke Department of the Gas Council exists to serve architects and others concerned with planning heating installations, to use gas coke in the most efficient ways. When central heating schemes are in the blueprint stage, the facts in this handbook will be found helpful. The Coke Department's Technical Handbooks are available free (together with any specialised advice you may need) from your Area Gas Board or the address below.

TWO OTHER HANDBOOKS WHICH MAY HELP

Coke-fired Small Steam-raising Plant

Coke-fired Domestic Appliances and their application

THE GAS COUNCIL · COKE DEPARTMENT · 1 GROSVENOR PLACE · LONDON · SW1



Finger-tip adjustment with special plastic rod.

In every room fitted with DANAURA venetian blinds, perfect light conditioning is assured. They protect furniture and fittings from harmful glare, giving adequate shade without stuffiness. On winter evenings their gleaming aluminium slats increase artificial light by reflection. Added advantages are draught-free ventilation and conservation of heat in cold weather.

DANAURA slats are made of extra strong aluminium alloy. Their stove-enamelled finish deters dust and simplifies cleaning. For homes, offices, hospitals, schools and all public buildings.

Rubber rollers protect ladder tape; plastic caps prevent scratched paintwork; free-wheeled cord lock and flexible spindle. 13 different colours, 15 different shades of ladder tapes, give nearly 200 colour combinations.

DANAURA
Blinds

Send for literature and colour card: DEPT. A.J.

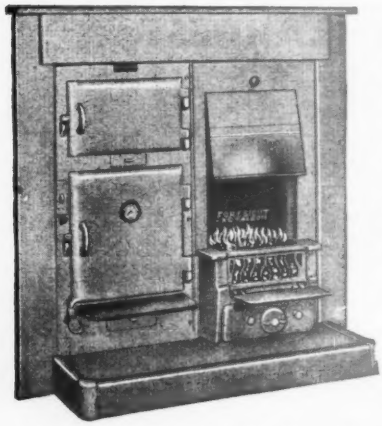
DANAURA LTD., 12, WHITEHALL, LONDON, S.W.1

Tel: WHITEHALL 5704

Announcing . . . . . large reductions in the prices of the

"XL-TALBOT" COMBINATION GRATE

Rely on a Foresight



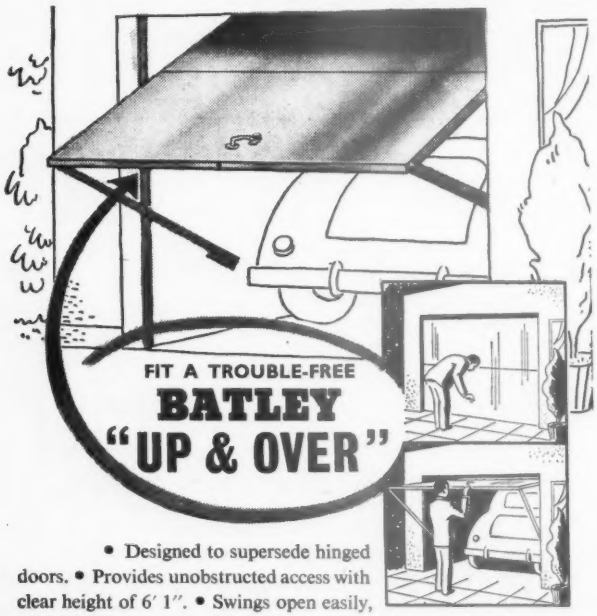
The "XL-TALBOT" is an entirely new design of the popular 38" × 38" Side-oven Combination Grate, being continuous burning on Coke, Coal or any other solid fuel. It gives an open or closed fire as desired, providing an abundant supply of hot water, with ample cooking facilities.

Approved by the Ministry of Fuel and Power

The above illustration shows this model with cast iron mantel and curb with solid doors which are finished in various attractive vitreous enamels. Lustre enamel finishes are also available. This model can also be supplied with Tiled doors, Hearth Tiles and all Tiled Surround.

Please write for full particulars and reduced prices to:

SAMUEL SMITH & SONS LTD.
BEEHIVE FOUNDRY
SMETHWICK, 41, STAFFS.



FIT A TROUBLE-FREE
BATLEY "UP & OVER"

• Designed to supersede hinged doors. • Provides unobstructed access with clear height of 6′ 1″. • Swings open easily, gliding smoothly on ball-bearing wheels. • Can be quickly and easily fitted to any width or height of opening. • Framed and double cross-braced in Aluminium Alloy. • Panelled with Aluminium Alloy or Exterior Grade Mahogany Plywood, grained finish to take varnish or paint.

ALUMINIUM ALLOY £18 EXTERIOR GRADE MAHOGANY £20

DELIVERED FREE ENGLAND AND WALES

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ERNEST BATLEY LIMITED

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PWA

"PARWINAC" INDUSTRIAL RUBBER DOORS (PAT. APP. FOR)

Made from rubber with canvas reinforcement, they are supported from a tubular top and side frame, each door having a perspex observation window. The patent spring mechanism which is concealed in the tube, always returns the doors to the centre position. The spring is fully adjustable.

NO MAINTENANCE COSTS — SILENT IN OPERATION — AUTOMATICALLY RETURNS TO NORMAL "CLOSED" POSITION.

PRICE £70 Complete pair of doors, natural black rubber with metalwork painted one coat. This compares very favourably with the cost of two Floor Door Springs.

PARKER, WINDER & ACHURCH LTD

80, BROAD ST., BIRMINGHAM, 1.
Telephone: MIDland 5001.

Write for illustrated leaflet PRD80.

LONDON: 16, Grosvenor Place, S.W.1. (SLOane 2232 & 2339.)
MANCHESTER: 16, John Dalt Street, Manchester, 2. (BLAckfriars 9478.)

PRA

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Dunbriks are manufactured by:

London & Home Counties
DUNBRIK LIMITED, 26, Chilworth Street, London, W.2. 'Phone: Paddington 2471/2

Cambridgeshire, Hunts, Norfolk & Suffolk
ST. IVES SAND & GRAVEL CO. LTD., 24, The Broadway, St. Ives, Hunts. 'Phones: 2261, 2262, 2270 and 2279

Dorset, S.W. Hants, S. Wilts, S. & W. Somerset
W. E. MASTERS, Brick Manufacturers, Lytchett Minster, near Poole, Dorset. 'Phone: Lytchett Minster 291/2

Oxon, Berks, N. Wilts, Glos & N. Somerset
THE COTSWOLD BRICK & TILE CO. LTD., Standlake, near Witney, Oxon. 'Phone: Standlake 284

East & West Ridings, Yorkshire
DUNBRIK (YORKS) LTD., Stanley Ferry, near Wakefield, Yorks. 'Phone: Wakefield 3694

Counties of Notts, Lincs, Leicester, Rutland, Derby
THE HOVERINGHAM GRAVEL CO. LTD., Hoveringham, Notts. 'Phone: Bleasby 242

Scotland
SCOTTISH DUNBRIK LTD., 250, Alexandra Parade, Glasgow, E.1. 'Phones: Bridgeton (Glasgow) 1818; Dundee 81673

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DUNBRIK (ULSTER) LTD., Doagh Station, Co. Antrim, N. Ireland. 'Phone: Doagh 59

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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

25s. per inch; each additional line, 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

LONDON ELECTRICITY BOARD.
ARCHITECTURAL DRAUGHTSMAN.

Applications are invited for the above position in the Chief Engineer's Department in Central London. Applicants should be neat draughtsmen, and preferably have had several years' experience in an Architect's office.

The post is graded under Schedule "D" of the National Joint Board agreement as Grade 6—£458 to £595 7s. per annum, inclusive of London allowance.

Application forms obtainable from Secretary, 46, New Broad Street, E.C.2, to be returned completed within 10 days of the publication of this advertisement. Please enclose addressed foolscap envelope and quote ref. V/1683/A. on envelope and all correspondence. 1331

CITY AND COUNTY OF BRISTOL.
CITY ARCHITECT'S DEPARTMENT.

Applications invited for following permanent staff appointments in Quantity Surveying Section:—

(*a*) SENIOR QUANTITY SURVEYORS. A.P.T., VII (£710-£785 p.a.).

(*b*) SENIOR QUANTITY SURVEYOR. A.P.T., VI (£670-£735 p.a.).

(*c*) SENIOR QUANTITY SURVEYOR. A.P.T., V (£595-£645 p.a.).

(*d*) ASSISTANT QUANTITY SURVEYORS. A.P.T., IV (£555-£600 p.a.).

(*e*) ASSISTANT QUANTITY SURVEYOR. A.P.T., III (£525-£570 p.a.).

(*f*) ASSISTANT QUANTITY SURVEYOR. A.P.T., I (£455-£510 p.a.).

(*g*) QUANTITY SURVEYORS' ASSISTANTS. General Division (M) (£160-£450 p.a.).

Further particulars and application form from undersigned. Applicants must state post for which they apply. Completed forms must be received by 25th January.

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

Council House, College Green, Bristol, 1. 1370

BOROUGH OF RICHMOND (SURREY).

Applications are invited for the appointment of an ARCHITECT on the staff of the Borough Engineer and Surveyor, at a salary in accordance with A.P.T. Division, Grade VIII, i.e., £760-£835, together with appropriate London area weighting, according to age.

The appointment is subject to the provisions of the National Scheme of Conditions of Service and the Local Government Superannuation Act.

Applicants should be registered Architects and have had considerable architectural experience.

Applications, stating age, qualifications and experience, with particulars of present and previous appointments should be delivered, together with the names of two referees, to the undersigned not later than 25th January, 1954.

Canvassing will disqualify. Candidates shall when making application disclose in writing whether to their knowledge they are related to any member of the Council or senior officer.

The Council is unable to assist in the provision of housing accommodation.

CLIFFORD HEYWORTH,
Town Clerk.

Town Hall, Richmond, Surrey. 1320

MONMOUTHSHIRE COUNTY COUNCIL.
APPOINTMENT OF ARCHITECTURAL STAFF.

Applications are invited for the following posts in the County Architect's Department, under the N.J.C. conditions:—

ONE SENIOR ARCHITECTURAL ASSISTANT. Salary: £760-£835. A.P.T., VIII.

THREE ARCHITECTURAL ASSISTANTS. Salary: £595-£645. A.P.T., V.

Forms of application, particulars of posts, and conditions of service can be obtained from the undersigned. Applications, together with copies of three testimonials, must be forwarded to the County Architect, Queen's Hill, Newport, Mon., not later than Saturday, 30th January, 1954.

VERNON LAWRENCE,
Clerk to the Council.

County Hall, Newport, Mon. 1407

COUNTY BOROUGH OF SOUTHAMPTON.

Appointment of TWO SENIOR QUANTITY SURVEYORS, Grade VII (£710-£785 p.a.), ONE QUANTITY SURVEYOR, Grade VI (£670-£735 p.a.), ASSISTANT PLANNING OFFICER, Grade VI (£670-£735 p.a.), and PLANNING ASSISTANT, Grade II (£495-£540 p.a.). Application forms from Borough Architect, Civic Centre, Southampton, to be returned by 30th January, 1954. 1422

THURROCK URBAN DISTRICT COUNCIL.
ENGINEER AND SURVEYOR'S DEPARTMENT.
APPOINTMENT OF JUNIOR PLANNING ASSISTANT.

Applications are invited for the appointment of a Junior Planning Assistant, at a salary in accordance with Grade II of the A.P.T. Division of the National Scale of Salaries.

Candidates should be neat draughtsmen, have experience in surveying and levelling, and possess some knowledge of development control.

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

Applications, endorsed "Planning Assistant," together with names and addresses of three referees, should reach the undersigned not later than 20th January, 1954.

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

A. E. POOLE,
Clerk of the Council.

Council Offices, Whitehall Lane, Grays, Essex. 1347

BRITISH ELECTRICITY AUTHORITY.
EAST MIDLANDS DIVISION.

Applications are invited for the following positions within the Division.

DRAUGHTSMEN CONSTRUCTION DEPARTMENT.

SECTION LEADER, CIVIL ENGINEERING DESIGN. (Vacancy No. 4/54.)

Candidates should have experience in design and detail of heavy reinforced concrete structures, heavy foundations, retaining walls, bridges and the like.

Preference will be given to candidates who are Corporate Members of the Institute of Civil Engineers or equivalent qualifications.

Salary will be in accordance with Grade 3, £780-£884 per annum of Schedule D of the National Joint Board Agreement.

The closing date for this appointment: 25th January, 1954.

SENIOR DRAUGHTSMEN AND ENGINEERING DRAUGHTSMEN. (Vacancy No. 1/54.)

Candidates should have experience in design and detail of reinforced concrete structures, piled and slab foundations for heavy plant, culverts, cable subways, etc., for general building construction drainage and sanitation schemes, associated with official and administrative buildings.

The salary will be in accordance with Grade 5 (£567-£671 per annum) or Grade 6 (£433-£567 per annum) of Schedule D of the National Joint Board Agreement.

ENGINEERING DRAUGHTSMEN (MECHANICAL), Construction Department. (Vacancy No. 2/54.)

Senior Draughtsmen are required in the Mechanical Section of the Construction Department at North Wilford Power Station. Candidates should have experience in one or more of the following:—

(i) Design and layout of Power Station equipment, including turbo-alternators, boiler plant, coal and ash plant, and general station auxiliaries.

(ii) H.P. and L.P. steam and feed pipework. Condensing plant and feed heating systems.

(iii) Conveyor plant, coal handling systems, and material handling of station auxiliary equipment.

Salary and conditions of service will be in accordance with the National Joint Board Agreement, Grade 5 (£567-£671 per annum) and Grade 6 (£433-£567 per annum) of Schedule D, according to experience.

ENGINEERING DRAUGHTSMEN (ELECTRICAL), Construction Department. (Vacancy No. 3/54.)

Candidates should have experience in the preparation of layouts and diagrams for the installation of E.H.T. and L.T. Switchgear, transformers, E.H.T. and L.T. cables; knowledge of protective gear systems would be an advantage.

The salary will be in accordance with Grade 5 (£567-£671 per annum) or Grade 6 (£433-£567 per annum) of Schedule D of the National Joint Board Agreement.

The above position will be pensionable within the provisions of the British Electricity Authority and Area Boards Superannuation Scheme.

Applications should be submitted on the official form, which may be obtained from the Divisional Establishments Officer, British Electricity Authority, Barker Gate, Nottingham, and should be returned to the undersigned by the date stated. Please quote Vacancy Number.

L. F. JEFFREY,
Divisional Controller.

1384

OXFORD REGIONAL HOSPITAL BOARD.

Applications are invited from qualified ARCHITECTS to fill the following post in the Regional Architect's Department. Compulsory superannuation. A car is desirable.

ASSISTANT ARCHITECT. £600 × £25 (7) × £30 (3)—£865 p.a.

The age and experience of the candidate may be taken into consideration in fixing the starting salary.

Applications, stating age, training, qualifications and previous experience, with the names of two referees, should be submitted to the Secretary, Oxford Regional Hospital Board, 43, Banbury Road, Oxford, not later than 28th January, 1954. 1400

EAST BARNET URBAN DISTRICT COUNCIL.
ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the following appointments to the Permanent Staff of the above Department:—

(*a*) SENIOR ASSISTANT ENGINEER—GRADE A.P.T., VI (£670 to £735, plus London weighting, per annum).

(*b*) SENIOR ASSISTANT ARCHITECT—GRADE A.P.T., VI (£670 to £735, plus London weighting, per annum).

(*c*) ARCHITECTURAL ASSISTANT—GRADE A.P.T., IV (£555 to £600, plus London weighting, per annum).

Housing accommodation will be provided, if necessary, for one of the two Grade VI appointments referred to in (*a*) and (*b*) above.

Forms of Application and Conditions of Appointments may be obtained from the undersigned, to whom completed application forms should be returned by Monday, 25th January, 1954.

C. M. BARNES, O.B.E., M.I.Mun.E., F.R.San.I., A.M.T.P.I.,
Engineer and Surveyor.

Town Hall, Station Road, New Barnet, Herts.
December, 1953. 1367

HUYTON-WITH-ROBY URBAN DISTRICT COUNCIL.

JUNIOR ARCHITECTURAL ASSISTANT—GENERAL DIVISION to A.P.T., III.

Applications are invited for the above-mentioned appointment in the Architect's Department from candidates with suitable qualifications and experience as laid down by the Joint Council for Local Authorities.

The successful candidate will be placed on Grade A.P.T., III, if he has passed, or been exempted from, the R.I.B.A. Intermediate Examination.

Applications, giving details of qualifications, experience, and the names of two referees, must be received by the Clerk to the Council not later than the 22nd January, 1954.

Canvassing will disqualify.

H. E. H. LAWTON,
Clerk to the Council.

Council Offices, Huyton.
January, 1954. 1398

Colombo Plan Technical Co-operation Scheme.—THE GOVERNMENT OF BURMA urgently requires the services of an ARCHITECT, with specialised knowledge of Housing, to advise the Government on their Housing Programme, and to be responsible for the preparation and execution of large scale Housing Schemes in Rangoon and other devastated areas.

Applicants must possess high qualifications in Architecture and have had extensive experience in Housing, and should be between the ages of 35 and 50 years. Candidates must be either Associates or Fellows of the Royal Institute of British Architects. Some experience of Central or Local Government and of conditions in South-East Asia advantageous but not essential.

Duration: Three years, subject to satisfactory service.

Salary: £1,500 per annum (taxable), plus a tax free allowance of £1,500 per annum (married), £800 per annum (single), with free furnished accommodation or allowance in lieu. Free medical attention, free passages for appointee and dependants.

Application forms from Ministry of Labour and National Service (A.S.12), Almack House, 26, King Street, S.W.1. 1424

CITY OF STOKE-ON-TRENT.
CITY ARCHITECT'S DEPARTMENT.

Applications are invited from suitably qualified persons for the following appointments:—

(*a*) ASSISTANT QUANTITY SURVEYOR. Salary: A.P.T. Division, Grade VIII, £760-£835 p.a.

(*b*) ASSISTANT QUANTITY SURVEYOR. Salary: A.P.T. Division, Grade VII, £710-£785 p.a.

(*c*) ASSISTANT ARCHITECT. Salary: A.P.T. Division, Grade VI, £670-£735 p.a.

Suitable housing accommodation may be made available to successful candidates.

The selected applicants will be required to pass a medical examination, and the appointments will be subject to the provisions of the Local Government Superannuation Acts, 1937 and 1953.

Applications stating date of birth, particulars of training, experience, etc., with copies of two recent testimonials, should be received by J. R. Piggott, F.R.I.B.A., City Architect, Kingsway, Stoke-on-Trent, Staffs., endorsed with the title of the appointment, not later than Saturday, 30th January, 1954.

HARRY TAYLOR,
Town Clerk.

Town Hall, Stoke-on-Trent. 1423

BUCKS COUNTY COUNCIL.

Applications are invited from Architects to fill the following permanent posts on the staff of the County Architect, and to work on a large and interesting building programme, including traditional and new building techniques:—

TWO ASSISTANT ARCHITECTS, A.P.T., Grade IX (£815-£935 p.a.).

Applicants should have outstanding design ability.

A weekly allowance of 25s. and return fare home once every two months may be paid for six months to newly appointed married officers of the Council unable to find accommodation.

Applications on forms, giving further particulars of the appointments, are obtainable from Mr. F. B. Pooley, County Architect, County Offices, Aylesbury, and returnable by 30th January, 1954. 1329

COUNTY COUNCIL OF HUNTINGDON.
COUNTY ARCHITECT'S DEPARTMENT.
APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT, GRADE VII-VIII, A.P.T.

Applications are invited for the appointment of Senior Architectural Assistant, at a salary in accordance with Grade VII-VIII, A.P.T. (£710-£835 per annum), of the National Joint Council's Scales. The commencing salary to be within the Grade VII, A.P.T., subject to qualifications and experience.

Candidates should be Associate Members of the Royal Institute of British Architects, or hold equivalent qualifications, and have had considerable experience in the design of Schools, Police and other County Buildings. The post could offer considerable scope to the right applicant, being the senior position in the Drawing Office.

The appointment will be subject to the terms of the Local Government Superannuation Acts, and the person appointed will be required to pass a medical examination.

Applications, giving the names of three referees and stating age, present position and salary, technical qualifications and examinations, together with details of experience, are required to be submitted to S. M. Holloway, A.R.I.B.A., County Architect, County Buildings, Huntingdon, in a sealed envelope endorsed "Appointment of Senior Architectural Assistant," by not later than Friday, 29th January, 1954.

JOHN KELLY,
Clerk of the County Council.

County Buildings, Huntingdon.
14th January, 1954. 1421

CITY AND COUNTY OF BRISTOL.
CITY ARCHITECT'S DEPARTMENT.

Applications invited for permanent appointment of ASSISTANT ARCHITECT—Grade IV (£555×£15 to £600 p.a.). Applicants must have passed the Intermediate Examination of the R.I.B.A. or recognised alternative.

Duties will include preparation of detailed working drawings, specifications, site layout plans, assisting in preparation of various types of designs, etc.

Housing accommodation provided, if necessary, at an economic rent.

Further details and application form may be obtained from the undersigned, to whom the completed forms must be returned by Monday, 25th January.

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

The Council House,
College Green, Bristol, 1. 1409

TRACER (WOMAN) required by the CROWN AGENTS FOR THE COLONIES for Drawing Office. Commencing pay between 109s. 3d. and 127s. 6d. a week, according to age, rising by annual increments of 5s. a week to 139s. 8d. for 45½-hour week. Hours 9 a.m.-5.30 p.m. (12 noon Saturdays). Paid holidays at rate of 18 days a year, inclusive of one Saturday morning (half day) off per month. Refreshment club on premises—low charges for lunch and tea. Candidates must be 21 years of age or over, and preference will be given to experienced Tracers. Write, stating age and experience, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting O/225/AG. 1408

NORTHERN IRELAND HOUSING TRUST.
ARCHITECTURAL ASSISTANTS.

The Trust has vacancies for Architectural Assistants on the salary scale of £575×£25—£625.

Candidates must have passed the Intermediate Examination of the Royal Institution of British Architects.

The persons appointed will be required to participate in the Northern Ireland Local Government Officers' Superannuation Scheme.

Preference will be given to ex-Service candidates.

Canvassing will disqualify.

Apply, as soon as possible, giving full details of age, education, qualifications and experience, including present post and salary, to the General Manager, Northern Ireland Housing Trust, 12, Hope Street, Belfast. 1383

WARWICKSHIRE COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of:—

(*a*) SENIOR ASSISTANT ARCHITECT. Salary grade: A.P.T., VIII, £760×£25 to £835. Applicants should be Associate Members of the Royal Institute of British Architects, and should have sound experience in the design and preparation of drawings and site supervision of educational buildings. Experience in non-traditional types of construction will be an advantage.

(*b*) ASSISTANT QUANTITY SURVEYOR. Salary grade: A.P.T., IV-V, £555×£15 and one of £20 to £645. Preference will be given to candidates who have passed the Intermediate Examination of the R.I.C.S., but this is not essential. The work will consist mainly of interim valuations and final accounts.

The appointments will be subject to the provisions of the Local Government Superannuation Acts, 1937-1953, and the successful candidates will be required to pass a medical examination.

Applications should be made on forms, which can be obtained from G. R. Barnsley, F.R.I.B.A., County Architect Shire Hall, Warwick, to whom they are returnable not later than the 23rd January, 1954.

L. EDGAR STEPHENS,
Clerk of the Council.

Shire Hall, Warwick. 1401

BOROUGH OF EALING.

CLERK OF WORKS (Temporary) required for supervision of Housing Contracts. Salary: £650 p.a. and otherwise in accordance with the Scheme of Conditions of Service for the Miscellaneous Classes of Officers. Candidates must be thoroughly experienced, and preference will be given to members of the Institute of Clerks of Works of Great Britain Incorporated.

Form of application, further particulars etc., from the Borough Engineer & Surveyor, Town Hall, Ealing, W.5. Completed applications to the undersigned not later than 30th January, 1954.

E. J. COPE-BROWN,
Town Clerk.

Town Hall,
Ealing, W.5. 1439

PADDINGTON BOROUGH COUNCIL.

require SENIOR ASSISTANT ARCHITECT, within A.P.T., Grade VIII (£790×£25—£865 p.a., £10 p.a. less if under age 26 years). Candidates must be A.R.I.B.A., with experience of local authority work, contemporary design, and construction of general Municipal work, including multi-storey flats; supervision of large building contracts and architectural staff; Town Planning experience an advantage.

Applicants should state age, qualifications, previous and present appointments with dates and salaries, details of experience, and names and addresses of three referees. Last date for receipt by Town Clerk (A.140), Paddington, W.2, is 1st February, 1954. 1399

URBAN DISTRICT COUNCIL OF ABERCARN.
ARCHITECT'S DEPARTMENT.

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

(*a*) SURVEYING AND ARCHITECTURAL ASSISTANT. A.P.T., Grade V.

(*b*) TECHNICAL ASSISTANT. A.P.T., Grade III.

The persons appointed to these posts will be required to undertake such duties as may be assigned to them by the Council's Architect, including (*a*) survey of new housing site of 50 acres, and must be competent and qualified to prepare detail drawings for roads and sewers and to set out these works on site, and (*b*) architectural and survey work relating to the Council's programme.

Housing accommodation will be offered the successful applicants if required. The appointments are superannuable, and will be terminable by one month's notice on either side. The persons appointed must devote the whole of their time to the duties of the office.

Applications, stating age, qualifications, present and previous appointments, and giving names of three persons to whom reference can be made, to be sent to the undersigned not later than noon on Monday, the 25th January.

Canvassing in any form will disqualify, and applicants must disclose whether they are related to any member or senior officer of the Council.

LEON KING,
Clerk of the Council.

Council Offices, Abercarn, Mon.
4th January, 1954. 1392

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

The City Architect will be pleased to receive applications for the following vacancies in the Department from Architects possessing a contemporary outlook and considerable aptitude in Architectural design and construction.

(*a*) ONE SENIOR ASSISTANT ARCHITECT.
A.P.T. Division, Grade VIII (£790—£835).

(*b*) SENIOR ASSISTANT ARCHITECTS.
A.P.T. Division Grade VI (£670—£735).

(*c*) ASSISTANT ARCHITECTS.
A.P.T. Division, Grade V (£595—£645).
A.P.T. Division, Grade IV (£555—£600).
A.P.T. Division Grade III (£595—£570).

(*d*) ARCHITECTURAL ASSISTANTS.
A.P.T. Division, Grade II (£495—£540).
A.P.T. Division, Grade I (£465—£510).

The work of the Department comprises an extensive programme of building works of an interesting character—Educational Buildings, Housing and Flats, and General Architectural Work.

The successful candidate for post (*a*) will be required to assist in the organisation and control of the work of the Housing Section, and candidates for the appointment must be fully qualified architects with sound practical experience in the running of large building contracts. Candidates for posts in grades A.P.T. IV and above should be fully qualified architects.

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

Applications stating position applied for, age, particulars of training, qualifications, experience, present and past appointments, together with copies of 2 recent testimonials or the names and addresses of 2 persons to whom reference may be made should be addressed to George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle upon Tyne, 1, not later than Thursday, the 28th January, 1954.

JOHN ATKINSON,
Town Clerk.

Town Hall,
Newcastle upon Tyne, 1.
7th January, 1954. 1438

MIDDLESBROUGH EDUCATION COMMITTEE.

Applications are invited for the following new appointments in the Education Offices (Education Architect—P. R. Middleton, Dipl.Arch., A.R.I.B.A.):—

(*a*) SENIOR ASSISTANT ARCHITECT, Grade VI.

(*b*) ASSISTANT ARCHITECT, Grade V.

Housing accommodation can be provided for these posts.

Forms and particulars obtainable from the Director of Education, Education Offices, Woodlands Road, Middlesbrough, to whom completed forms should be returned not later than Saturday, 30th January, 1954. 1425

BOROUGH OF WREXHAM.
BOROUGH ENGINEER AND
SURVEYOR'S DEPARTMENT.

APPLICATIONS are invited for the following appointments

(*a*) Senior Assistant Engineer—Salary A.P.T. V, £595—£645

(*b*) Senior Assistant Architect—Salary A.P.T. VII, £710—£785.

(*c*) Assistant Quantity Surveyor—Salary A.P.T. III or IV (£525—£570 or £555—£600 according to experience and qualifications)

Applicants should be qualified and experience according to standards laid down in the National Scheme of Conditions of Service, where applicable.

Housing accommodation provided (if married).

Form of Application, particulars of duties and Conditions of Service may be obtained from the Borough Engineer and Surveyor, 31 Chester Street, Wrexham.

Applications with copies of two testimonials to be delivered to the undersigned in an envelope appropriately endorsed not later than the 29th January, 1954.

PHILIP J. WALTERS,
Town Clerk.

Guildhall, Wrexham.
8th January, 1954. 1440

ROYAL BURGH OF RUTHERGLEN.
BURGH SURVEYOR'S DEPARTMENT.

Applications are invited for the appointment of Assistant Architect in the Burgh Surveyor's Department—Grade A.P.T. III—V (£550—£680). Placing on the salary scale will be according to experience and qualifications. Applicants should have had experience in the preparation of plans, specifications, etc., for works in connection with the development of housing schemes and maintenance of buildings, and preference will be given to candidates holding the appropriate architectural qualifications.

The appointment will be subject to the provisions of the Local Government Superannuation (Scotland) Acts, 1937 to 1953, to the passing of a medical examination and to the National Joint Industrial Council's Scheme of Conditions of Service.

Applications marked "Assistant Architect," stating age, qualifications and experience, etc., together with copies of three testimonials should be lodged with the undersigned not later than 22nd January, 1954.

ROBERT F. POLLOCK,
Town Clerk.

Council Chambers, Rutherglen,
9th January, 1954. 1437

Architectural Appointments Vacant

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

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she is, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

ASSISTANT required for large general Architectural Practice with offices in Maidenhead. Some experience in specification writing essential. Salary £300 to £500, according to experience. Box 8933.

A SENIOR ARCHITECTURAL ASSISTANT required, full experience in preparation of Working Drawings, Details, and supervision of office and Industrial Buildings in the London Area. Good knowledge of construction and design essential. Apply in writing giving full particulars of qualifications, age, experience and salary required to Box 9829.

SENIOR ARCHITECTURAL ASSISTANT required in Worcester office. Experience in drawing office and supervision of works. Five-day week. Write, giving particulars of age, qualifications, experience, salary required, if car driver, and if housing is required, to Box 1278.

ARCHITECT'S ASSISTANT required in London office. Interesting and varied practice, including housing, licensed premises, hospital, factory and laboratory works. Passed R.I.B.A. Intermediate essential. Five-day week, staff profit sharing scheme. Salary £494 per annum. Applications by letter only, giving particulars of training and experience, to Stewart & Hendry, FF.R.I.B.A., A.M.T.P.I., 90, Fenchurch Street, London, E.C.3. 1362

ASSISTANT required for contemporary work, with minimum 5 years' experience, of Inter. standard. Prepared to take on responsibility. Apply, quoting previous employments, giving three references and present salary, to Louis Erdi, 27, Knightrider Street, London, E.C.4. 1363

ASSISTANT required; R.I.B.A. Inter. standard. Full details and salary desired to Architects' Department, Rawlence & Squarey, Chartered Surveyors, 13, Commercial Road, Southampton. 1325

ASSISTANT required in Architect's office, Welwyn Garden City. Not less than Inter. standard. Write full particulars and salary required. Box 1339.

INTERMEDIATE Standard ASSISTANT required for small Architectural practice in Gloucester. Write, stating age, experience, and salary required, to Box 1351.

CHIEF ASSISTANT required immediately for general private practice. Thorough experience of design, specifications, site supervision, negotiations, accounts, maintenance, work, etc., essential. Salary: £600-£800, according to experience and ability. Apply: George E. Clay & Partners, AA.R.I.B.A., 198, Parrock Street, Gravesend, Kent. 1350

ARCHITECTURAL ASSISTANT required for small but busy private practice branch office in Chelmsford with wide variety of work on hand. Previous office experience and good draughtsmanship essential. Please reply with full particulars to Box 1322.

SENIOR ASSISTANT required for Architects' and Surveyors' general practice at Southampton. Reply, stating full details of experience, age, and salary required, to Box 1406.

ARCHITECTURAL ASSISTANT, with provincial or country office experience required as Junior. F. J. Lenton & Partners, F./A.R.I.B.A., 16, Broad Street, Stamford, Lincs. 1403

RESIDENT ARCHITECT required for Eastern Region, British Railways. Successful applicant will be attached to the Architect's office at King's Cross and required initially to supervise contract work in the Doncaster and Sheffield areas. Applicants should be qualified and have had practical experience, and should reside within reach of the areas mentioned. Salary £612 5s. to £687 15s. Free residential railway travelling within specified limits and other reduced rate travelling facilities after qualifying period of service. Permanency to suitable applicant after probationary period. Five-day week. Apply in writing, giving full particulars as to qualifications, experience, etc., to the Civil Engineer, Eastern Region, British Railways, King's Cross Station, London, N.1. 1402

ARCHITECTURAL ASSISTANT required in S.W. London office, 2-3 years' varied experience, preferably in private London practice, and approaching Inter. R.I.B.A. standard. Salary according to experience and ability. Write, stating full particulars, to Box 1404.

ARCHITECTURAL ASSISTANTS required in London Architect's office. Inter. R.I.B.A. standard. Must be capable of preparing working drawings and details from sketch schemes. Five-day week. Salary at the rate of £500-£600, and annual bonus according to ability and progress. Apply, with details of experience, to Box 1427.

ASSISTANT required for Hinckley (Leics.) office. Inter. standard. School training and slight experience desirable. Details to Cecil Ogden & Son, Chartered Architects, Lutterworth, Rugby. 1386

JUNIOR ARCHITECTURAL DRAUGHTSMAN required of a standard approaching Inter. R.I.B.A. Examination, to work under guidance and supervision in Architects' and Quantity Surveyors' office in Croydon area. Write, stating age, experience, and approximate salary required, to Box 1388.

ARCHITECT, W.C.1, requires immediately JUNIOR DRAUGHTSMAN, over military age. Good draughtsmanship essential. State experience, age, and salary required. Write Box 547, c/o 7, Coptic Street, W.C.1. 1389

ENTHUSIASTIC JUNIOR ASSISTANT required for private practice in S.E. Kent. R.I.B.A. Intermediate standard. Salary £400 p.a. Write, stating age and experience, to Box 1387.

WANTED, immediately, Intermediate ASSISTANT for Architect's office (S.W. Coast). General experience, including housing, domestic and industrial work, surveys and simple specifications. Please state in reply whether married or single, salary required, and when available. Box 1390.

SENIOR ASSISTANT wanted by firm of Architects in Birmingham. Varied and busy practice. Particulars to Box 1393.

REQUIRED, for office in Worcester, capable ASSISTANT, who has passed R.I.B.A. Intermediate Examination, with at least 3 years' office experience. Salary £450-£550, according to experience. Write, giving full particulars, to Willis, Llewellyn Smith & Waters, 103, Old Brompton Road, S.W.7. 1394

CHARTERED Surveyors (Central London) require SENIOR ASSISTANT, with specialised knowledge of Town Planning procedure, to investigate and report on site development schemes. Salary £700 p.a., with progressive opportunities. Box 1395.

SENIOR ASSISTANT required by London Architects to work on contemporary schemes. Capable of controlling working drawing group. Salary £750 per annum. Box 1396.

JUNIOR ARCHITECTURAL or BUILDING DRAUGHTSMAN required for factory construction. Able to produce ¼ in. scale working drawings, ½ in. details, and full scale details. Permanent, progressive position. Non-contributory pension, insurance and sickness benefit plan. Apply by letter to the Personnel Department, Kodak, Ltd., Wealdstone, Middx. 1411

SENIOR ARCHITECTURAL or BUILDING DRAUGHTSMAN required for factory work. Should have knowledge of steel-framed and reinforced concrete construction and specifications. Permanent, progressive position. Non-contributory pension, insurance and sickness benefit plan. Apply by letter to the Personnel Department, Kodak, Ltd., Wealdstone, Middx. 1412

ASSISTANTS required for large general practice. Apply, stating experience and qualifications, to Kitson, Parish, Ledgard & Pyman, Chartered Architects, Lloyds Bank Chambers, Vicar Lane, Leeds, 1. 1413

ASSISTANT required in Architects' Department of North Lincolnshire Iron and Steel Works. The Department is responsible for the design of Offices, Amenity, Medical and Laboratory Buildings, in connection with Works Development. Applicants should be at least of Inter. R.I.B.A. standard, have a sound knowledge of modern construction and building services, and be quick and accurate draughtsmen, capable of preparing working detail drawings from sketch plans. Write, stating age, details of training and experience, and salary required, to Box 1416.

JUNIOR required, preferably passed Inter., for medium sized busy contemporary office. Bonus scheme. Must be neat, quick draughtsman. Salary according to ability. State age, experience, salary required, and when available. J. Roland Sidwell, A.R.I.B.A., 27, Union Street, Coventry. 1426

ARCHITECTURAL ASSISTANT (temporary) required for minimum period 6 months. Busy office borders Glos. and Worcs., in pleasant market town. Salary up to £500 per annum. Intermediate or Final standard. Quick draughtsman, capable of running a job. Box 1385.

SENIOR ARCHITECTURAL ASSISTANT required in Croydon office. Associate R.I.B.A. 30-40 years of age, preferably with previous experience in private practice. Good draughtsman and managerial ability. Progressive post for keen worker. Write, stating age, previous experience, and present salary. Box 1430.

ASSISTANT ARCHITECT (A.R.I.B.A.) required for period April, 1954, to April, 1955. Please write, giving experience and salary required, William & Segar Owen, Chartered Architects, Palmyra Square Chambers, Warrington. 1414

WANTED.—JUNIOR ASSISTANT (age 17-21), in Architect's and Surveyor's office, 15, Curzon Street, London, W.1. Free lunches. One Saturday in three. Salary according to age and experience. Box 1428.

EXPERIENCED SENIOR ASSISTANT required by London Architect for the preparation of working drawings for schemes abroad. Box 1432.

CO-OPERATIVE WHOLESALE SOCIETY, LTD., ARCHITECT'S DEPARTMENT, LONDON.

ASSISTANT ARCHITECTS required, of Intermediate R.I.B.A. standard, capable of preparing sketches, working drawings and details under supervision of Senior Architects,

and

JUNIOR SHOPFITTING DRAUGHTSMAN—must have completed National Service.

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

Successful candidates will be required to undergo medical examination for compulsory superannuation scheme.

Applications, stating age, experience, qualifications and salary required, to W. J. Reed, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 99, Leman Street, London, E.1. 1433

MESSRS. HARRY W. WEEDON, F.R.I.B.A., & Partners, of Calthorpe Road, Edgbaston, Birmingham, require the services of an ASSOCIATE and an ASSISTANT of Intermediate standard. Please submit particulars of experience and salary required to above address. 1434

Architectural Appointments Wanted

B.ARCH., A.R.I.B.A. (28), with 4½ years' post-graduate experience of local authorities and private practice (including schools, town planning, airfield planning, and teaching) seeks London appointment. Particularly interested in sociological and journalistic aspects of architecture. Salary by arrangement. Box 829.

EXPERIENCED Senior ARCHITECTURAL ASSISTANT (31), school and office trained, varied general experience, contemporary outlook, clean draughtsman, and able to manage contracts, had practice on own account, seeks responsible progressive position with prospects in London or South Country. Salary in the region of £750 per annum. Box 830.

CONTEMPORARY-MINDED Student R.I.B.A. (Final), 26, with two years' general professional experience following full-time course at leading school of architecture, seeks responsible post at home or abroad, where his flare for domestic design can find a stimulating and worthwhile outlet. Box 833.

SENIOR ASSISTANT, R.I.B.A. Final standard, part school training, able to take charge, 6 years' varied experience most building types, specifications, surveys, etc., seeks responsible position showing prospects for advancement. Box 834.

SENIOR ASSISTANT (32) desires change. Central or South London preferred. Comprehensive experience. Box 1397.

STUDENT R.I.B.A. (29), near Final, seeks position involving responsibility and some freedom. 7 years' all-round experience. Salary by arrangement. Box 836.

ARCHITECT'S SENIOR ASSISTANT desires change. Comprehensive experience, including surveying, administration and accounts. Prefer commercial post or small practice. Not London. Box 1420.

Other Appointments Vacant

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

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

WHITE ALLOM, LTD., require the services of a DRAUGHTSMAN, accustomed to interior decoration, full-sizing and detailing generally. Experience in ship interior work a great advantage. 1368

DRAUGHTSMAN required to work under Civil Engineer on design and detailing of factory and office buildings and services. A broad general experience covering brick, concrete and steel structure is desirable. Please send details of training and experience, age, and approximate salary, to Group Engineer, Coates Bros. & Co., Ltd., St. Mary Cray, Kent. 1324

SHORTHAND TYPIST, in Staff Architect/Surveyor's office, Mayfair district. Experience in Architect's office essential. One Saturday on in three. Salary £300-£375, according to experience. Free lunches. Box 1410.

A GROUP of Companies, specialising in the actual manufacture, sale, and distribution of rubber and plastic flooring of all types, with a separate contracting organisation for laying these floorings, as well as carpets, linoleum, etc., require a COMMERCIAL MANAGER with a thorough knowledge of the flooring trade to administrate these companies. Applicants must have experience of executive control and administration, and be capable of maintaining and developing the selling organisation to a level of high efficiency. Write, with full particulars of qualifications, salary required, etc., to Box 1417.

"THE Architects' Journal" requires a DRAUGHTSMAN, to assist in the preparation of final ink drawings for Working Details and Information Sheets. Good draughtsmanship, a knowledge of building construction, and a keen interest in the above type of work are necessary. Write to the Editor (Information Sheets), 9, Queen Anne's Gate, S.W.1, stating age, architectural training, and experience (if any). 1429

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SPECIFICATIONS for new or alteration work, surveys and detailed drawings, quantities, variations, measured, final accounts, reports, etc. Quantity Surveyor, LIV. 1839, or Box 1352.

TYPEWRITING/DUPLICATING.—All kinds undertaken by experts. Specifications, etc. Usual office staff supplied. Miss Stone, 446, Strand, W.C.2. TEM. 5984. 1327

EXPERIENCED Qualified ARCHITECT, with own office, able to give assistance to Architects, etc. Gladstone 7355. Box 1313.

EXPERIENCED ARCHITECT undertakes Surveys or Drawing work in evenings or at week-ends in London area. Own transport. Box 1405.

ARCHITECTURAL ASSISTANT, Final standard, offers services for part-time work. Details from Sketches, Surveys, etc. Collins, 3, Myrtle Grove, New Malden, Surrey. 1435

EXPERIENCED TYPIST requires spare-time work. Letters, Specifications, etc., accurately typed at moderate charges in London area. Box 1391.

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RECONDITIONED EX-ARMY HUTS, and manufactured buildings. Timber. Asbestos Nissen type, Hall type, etc. All sizes and prices. Write, call, or telephone, Universal Supplies (Belvedere), Ltd., Dept. 25, Crabtree Manorway, Belvedere, Kent. Tel.: Brith 2948. 6863

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SURVEYOR wishes to contact qualified Architect with a view to establishing a general practice in London. Advertiser, who is 36, has in mind a gentleman who is already employed and who is willing to work on part-time or spare-time basis. Box 1415.

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AUTHORS invited submit MSS. all types (including Poems) for book publication. Stockwell, Ltd., Elms Court, Ilfracombe. (Estd. 1898.) 1419

ARCHITECT setting up own practice wishes to share or take accommodation with telephone, for a temporary period, pending establishing his own permanent office. Box 1436.

TO LET.—King's Lynn. In an excellent position near the Market Square. Accommodation suitable for consulting rooms or offices. Apply Strutt & Parker, Coval Hall, Chelmsford. 1431

Competition

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

ROYAL BURGH OF KIRKCALDY.

THE Royal Burgh of Kirkcaldy invite ARCHITECTS to submit, in competition, designs for a Crematorium, to be erected at Dunnikier Park, Kirkcaldy.

Assessor: Dr. Ronald Bradbury, Ph.D., F.R.I.B.A., A.M.T.P.I.

Premiums: 1st, £300; 2nd, £200; 3rd, £100.

Last day for submitting designs: Saturday, 8th May, 1954.

Last day for questions: Saturday, 20th February, 1954.

Conditions of the competition may be obtained on application to the Town Clerk, Town House, Kirkcaldy. Deposit: £2 2s.

CHARLES D. CHAPMAN,
Town Clerk.
1285

Educational Announcements

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

R.I.B.A. AND T.P.I. EXAMS.—Stuart Stanley (Ex. Tutor Sch. of Arch., Lon. Univ.), and G. A. Crockett, M.A./B.A., F./F.R.I.B.A. M./A.M.T.P.I. (Prof. Sir Patrick Abercrombie in assn.), prepare Students by correspondence. 10, Adelaide Street, Strand, W.C.2. TEM. 1603 4

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COURSES for all R.I.B.A. EXAMS.
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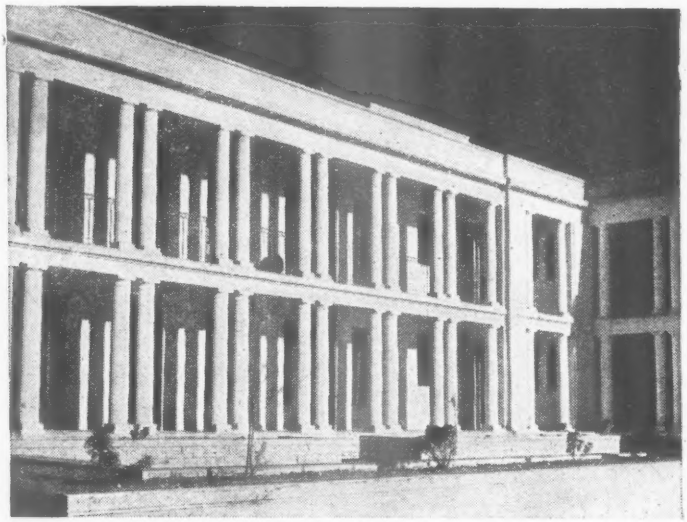

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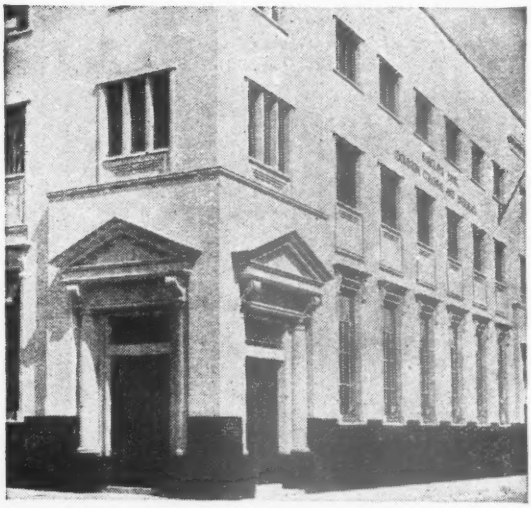

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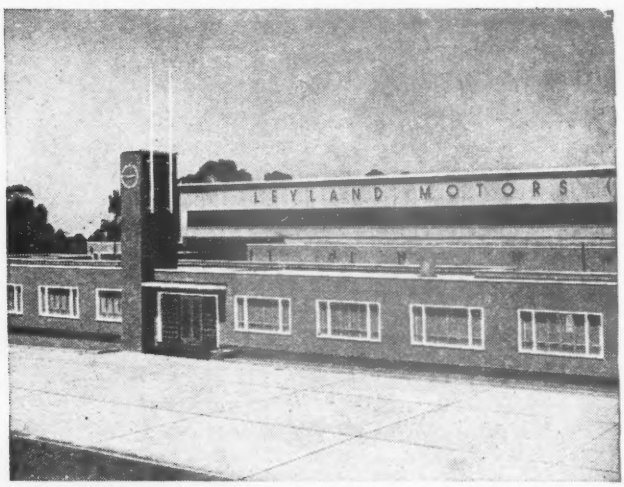

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