THE ARCHITECTS' JOURNAL

No. 3249] [Vol. 125

THE ARCHITECTURAL PRESS

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

Price 1s. 0d.

Registered as a Newspaper.

★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ig one week, Ih 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. 1, 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
ARCUK	Architects' Registration Council. 78, Wimpole Street, W.1.	Welbeck 2915
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
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
BRS	Building Research Station. Bucknalls Lane, Watford	Garston 4040
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. 32, Millbank, S.W.1.	Tate Gallery 8134
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Newport 65491
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.	Belgravia 6661
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611 Ext. 1284
CDA	Copper Development Association. 55, South Audley Street, W.1.	Grosvenor 8811
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7, Zurich, Switzerland	
COID	Council of Industrial Design. 28, Haymarket, S.W.1.	Trafalgar 8000
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.1.	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. 68, Gloucester Place, W.1.	Welbeck 9966
FASS	Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, S.W.1.	Abbey 7232
FBBDO	Fibre Building Board Development Organization, Ltd. (Fidor), 47, Princes Gate, Kensington, S.W.7.	Kensington 4577
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	Regent 0221
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 4341
GPDA	Gypsum Plasterboard Development Association, 11, Ironmonger Lane, E.C.2.	Monarch 8888
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 2, Chester Street, S.W.1.	Belgravia 3081
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1.	Belgravia 3755
ICA	Institute of Contemporary Arts. 17–18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. 1, Great George Street, S.W.1	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent. S.W.1.	Sloane 8266

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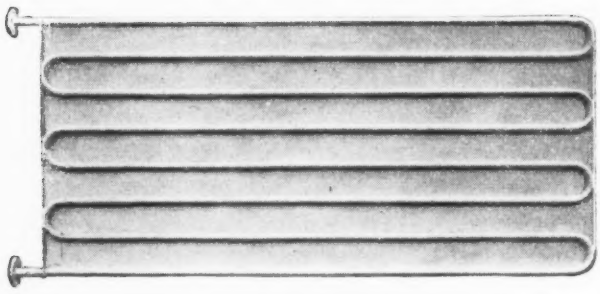

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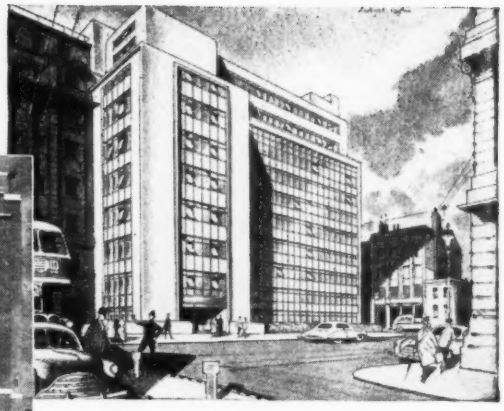
Quantity Surveyor : L. J. Newton, F.R.I.C.S.
Consulting Engineer : Messrs. Bylander & Waddell



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Quantity Surveyor :
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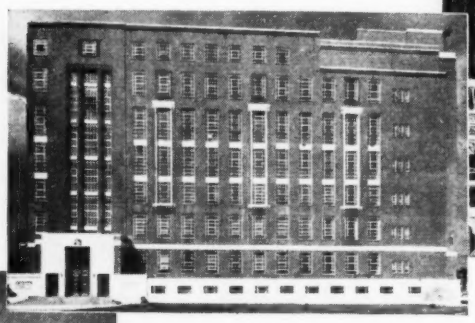

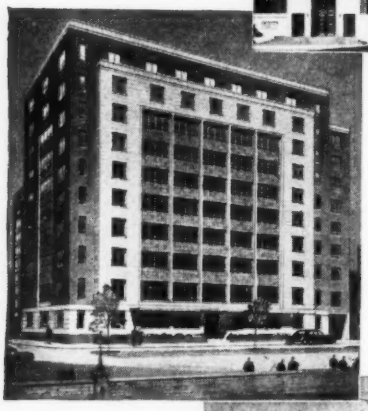

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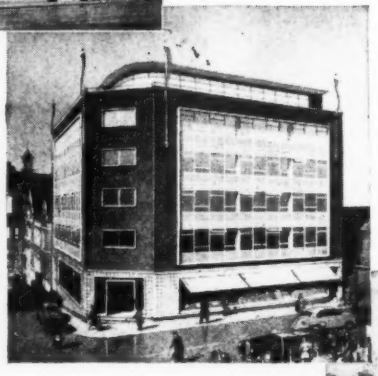

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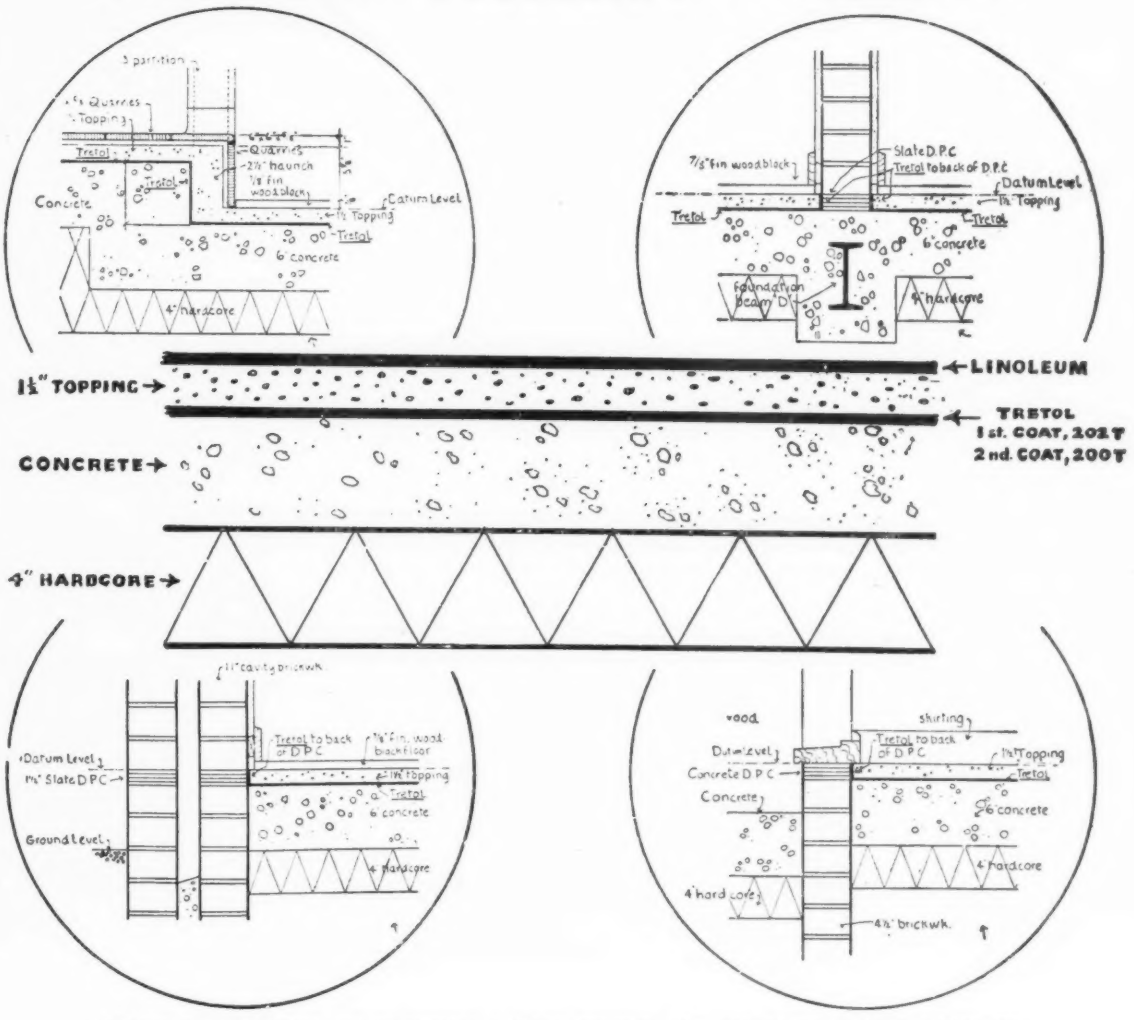

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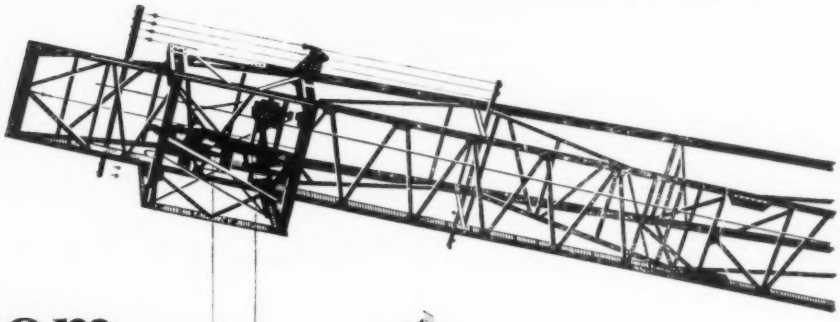

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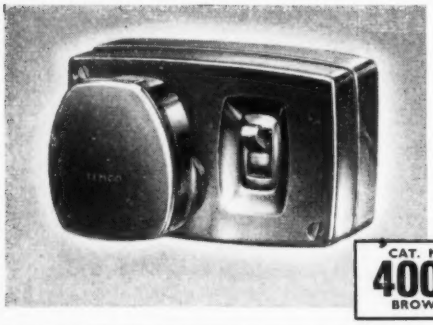

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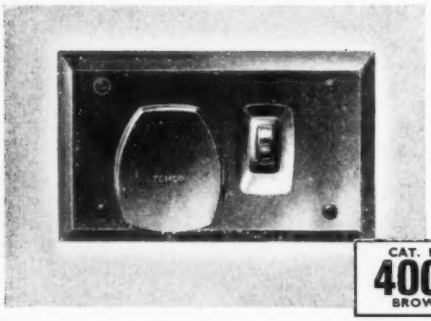

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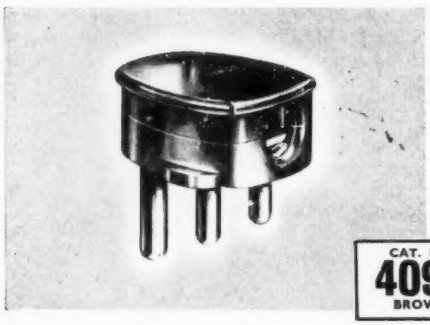

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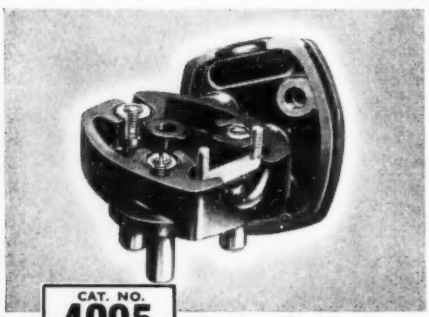

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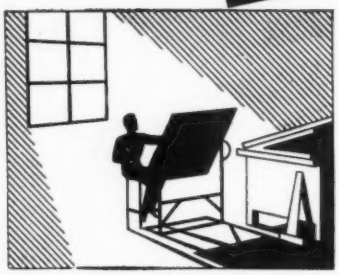

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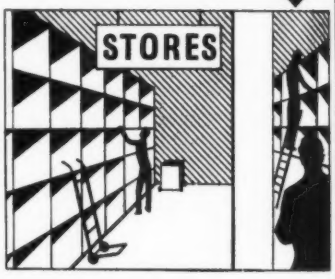

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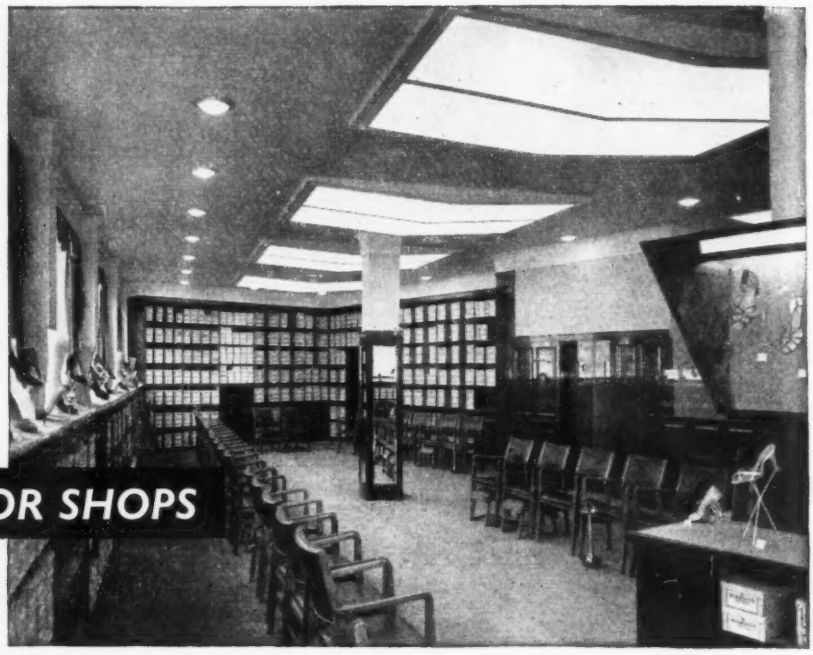

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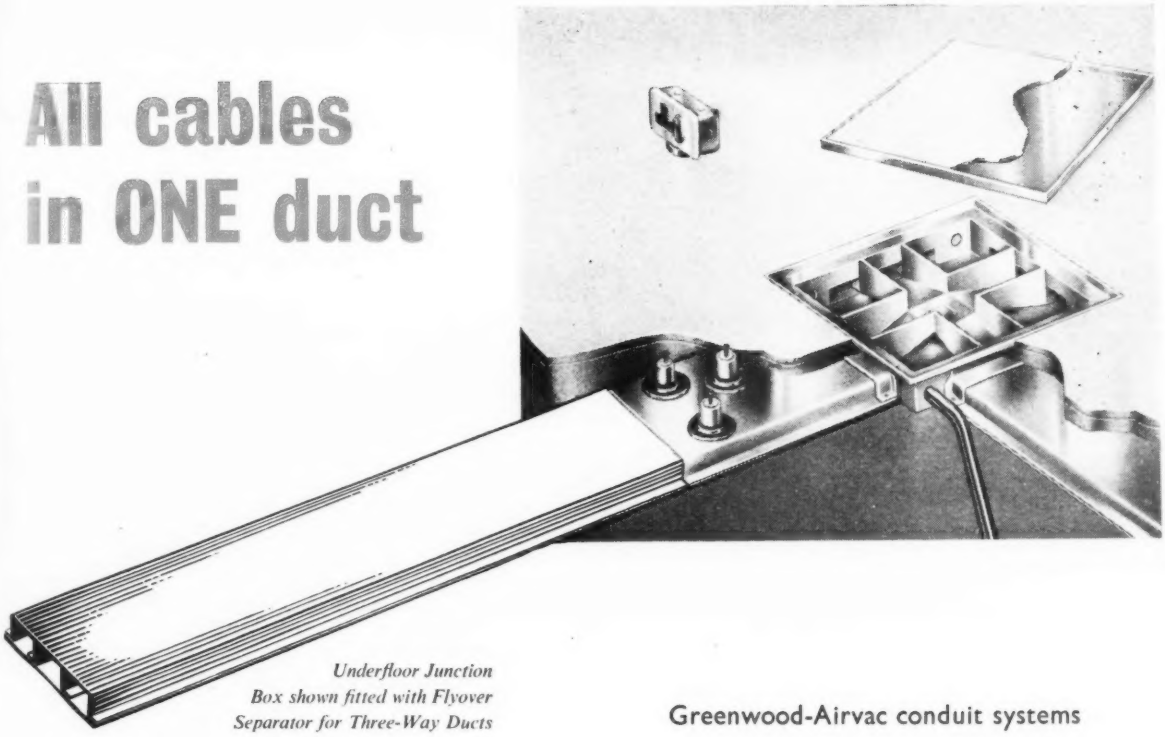

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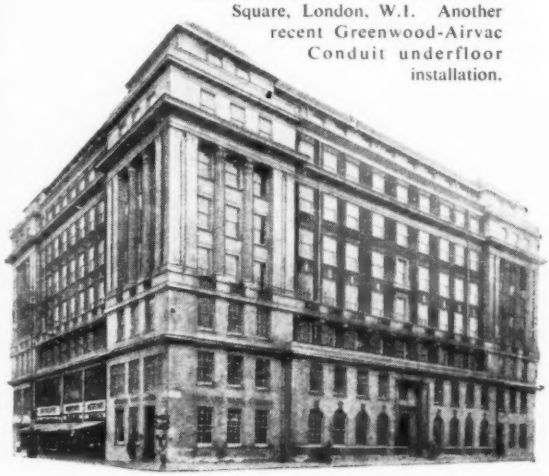

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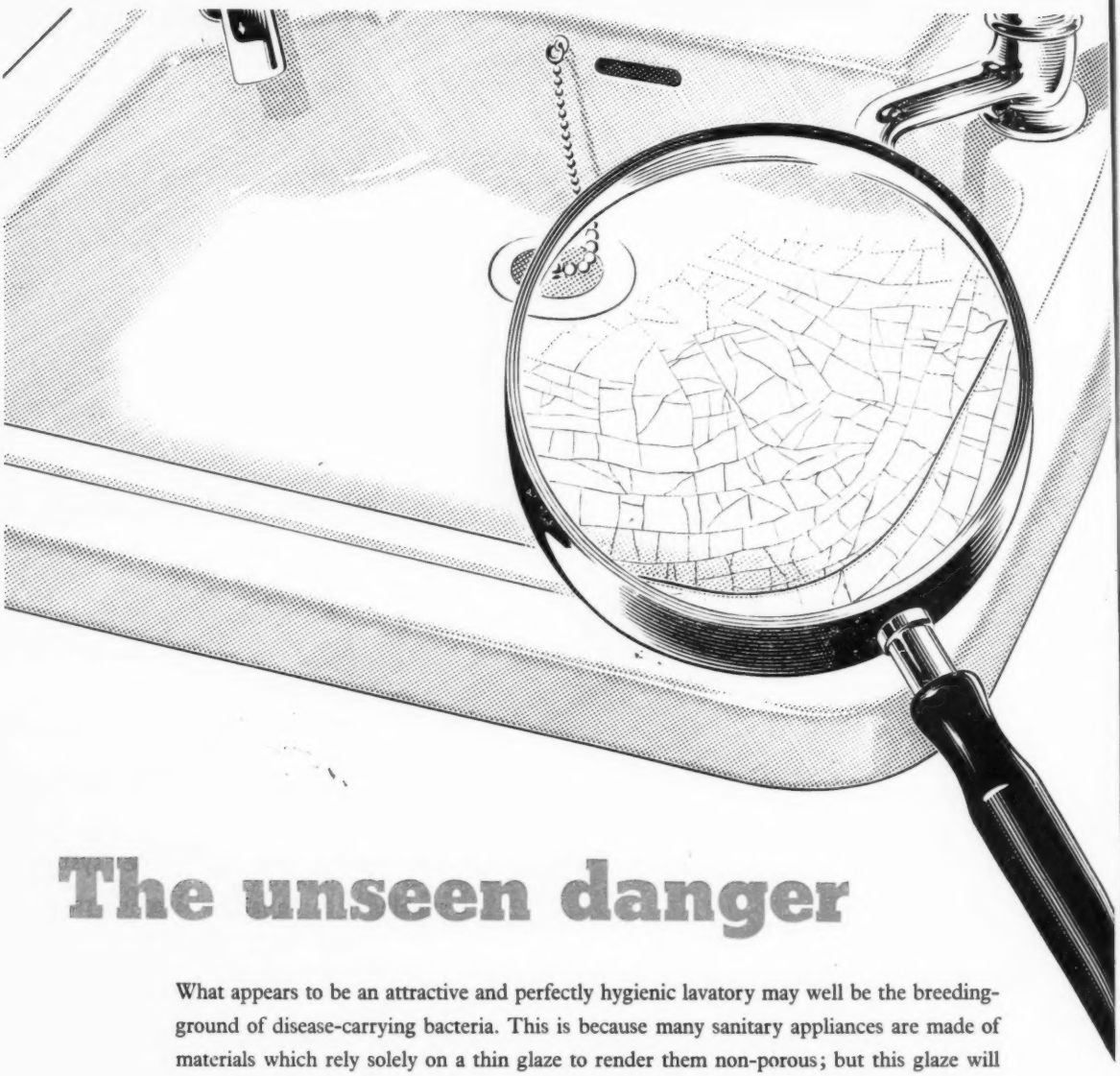

The unseen danger

What appears to be an attractive and perfectly hygienic lavatory may well be the breeding-ground of disease-carrying bacteria. This is because many sanitary appliances are made of materials which rely solely on a thin glaze to render them non-porous; but this glaze will craze after a period of use, and the way is then open for germs to enter and contaminate the absorbent body of the appliance. There is no such danger in "Standard" Sanitary Appliances because they are made only of **Vitreous China** which is fired at considerably higher temperatures than "ordinary ware" until it is completely vitrified, forming a solid, impermeable mass that does not depend on the glaze to keep it non-absorbent and hygienic. The glaze is, in fact, added only to obtain an attractive finish; furthermore, only on "Standard" Sanitary Appliances does the glaze, due to great skill and care in manufacture, form a perfect amalgam with the body of the appliance. For this reason, the glaze is guaranteed against crazing.

Specify **"Standard" Sanitary Appliances**

made of **VITREOUS CHINA**

IDEAL-Standard

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357

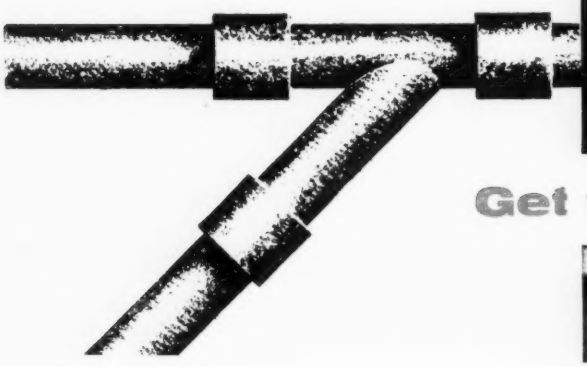
Are your ideas on DRAINAGE up to date ?

Specify the drainage system with no maintenance problems

A specification for Key Pitch Fibre pipes means a dependable drainage system with many important advantages. More and more leading architects and consultants are adopting this modern specification where greater efficiency in service, lower costs, and speed of installation are all seriously considered.

A typical run of Key pipe on a Wolverhampton housing scheme where a saving in cost of 22½% over conventional materials has been achieved.

The site, comprising 1,200 houses, was designed and built by the Wolverhampton Corporation under the supervision of the Borough Engineer and Surveyor, and Director of Housing, W. Mervyn Law, M.B.E.

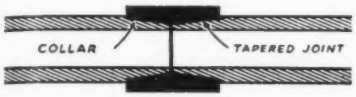


Get to know more about

TGA KD1

Smooth bore and clean joints

Key Pitch Fibre pipes have precision-machined taper joints which require no mortar or compounds. Combined with their smooth bore, this means a high flow factor, with no problems of root growth.



No cracking through settlement

The resilience of pitch fibre pipes ensures that no cracking occurs under normal conditions of earth settlement. This also means that bedding concrete is unnecessary.

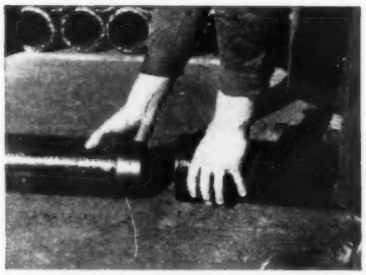
Resistant to corrosion

Key pipes are vacuum-impregnated with pitch and are non-porous and resistant to normal effluent corrosives throughout their thickness.

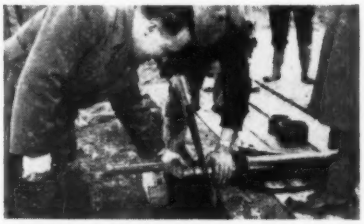
Maximum loan period

The 30-year loan period applies to all Key Drain pipes. Pitch fibre pipes have been used with notable success in the United States for over 50 years.

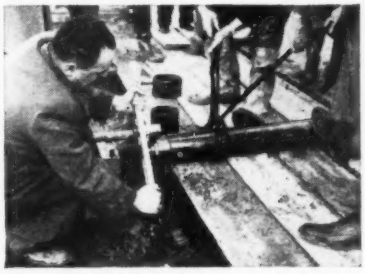
A piece of heavy timber is placed against the coupling and a length knocked home.



The precision-machined taper joints require no mortar or jointing compounds.



Short lengths of pipe can be cut with a coarse toothed handsaw.



A special hand lathe is used for cutting joints on short lengths.

SPEEDING THE JOB—CUTTING THE COST

500 feet an hour is a modest rate for laying Key pipes. The simple system of jointing also ensures that the pipe can be laid in all weathers. Because there is no cement to dry out, the completed drain can be tested immediately and the trench back-filled without delay. When contracts must be carried out to a tight schedule these advantages are well worth bearing in mind. On a cost plus labour basis, pitch fibre pipes are cheaper per installed foot run than other drainage systems.

THOROUGHLY TESTED AND APPROVED

British Standard

Key pipes exceed the requirements of BS 2760/56 for Pitch-impregnated Fibre Drain and Sewer Pipes. This standard was approved by the Bituminous Products Industry Standards Committee consisting of representatives of Government departments and professional bodies, including the following:

Royal Institute of British Architects
Ministry of Housing & Local Government
Ministry of Works
Institution of Civil Engineers
Royal Institute of Chartered Surveyors
D.S.I.R.— Building Research Station
Institution of Public Health Engineers
London County Council

Ministry of Health Model Bye Laws

Pitch fibre pipes are deemed to comply with M.O.H. Bye Law requirements.

Building Research Station Report

Key pipes were tested by this body and given a favourable report.

Other approving bodies

Federation Civil Engineering Contractors.

National Federation of Building Trade Employers.

Royal Society for the Promotion of Health.

Many local authorities have installed KEY pipes

Test Results

Key pipes have been subjected to detailed physical tests.

Also specify **KEY** Underfloor Ducting and cable Conduits

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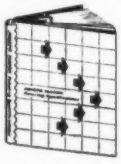
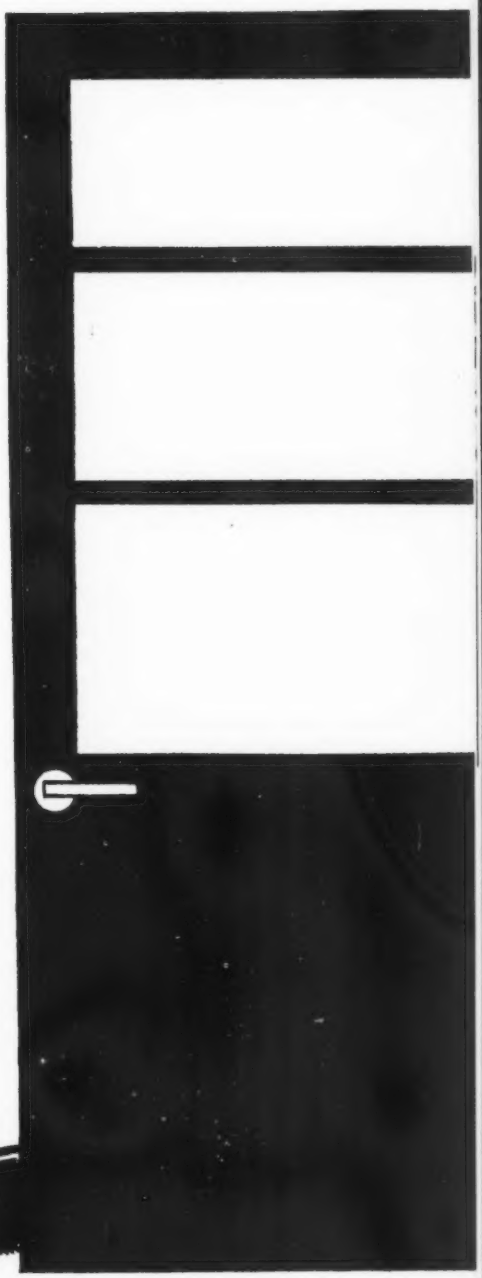


Practising architects are invited to write for this helpful book— "Joseph Mason Painting Specifications"



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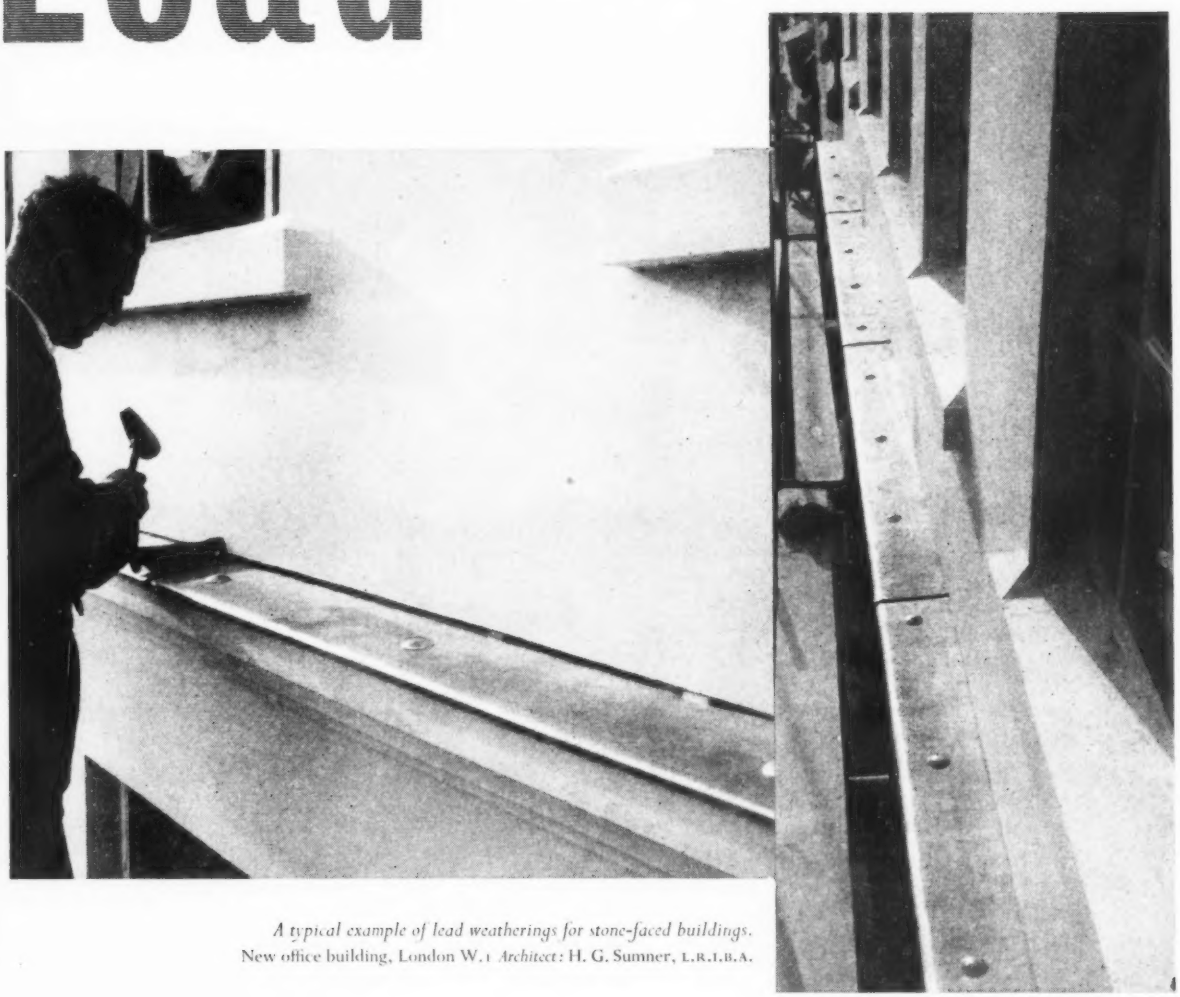
Lead weatherings...



A typical example of lead weatherings for stone-faced buildings.
New office building, London W.1 *Architect:* H. G. Sumner, L.R.I.B.A.

A FAMILIAR JOB to the plumber is fixing lead weatherings to cover cornices and similar projections of stone-faced buildings.

Lead is extensively used for such weatherings, because experience proves it to be the best material for the purpose—it does not stain adjoining masonry—it gives

permanent protection

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The Council's Technical Information Bureau will gladly help with problems on the use of Lead Sheet and Pipe in building work. Details of the main uses are given in a series of information sheets and bulletins, which can be obtained by applying to the Council.

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EAGLE HOUSE · JERMYN STREET · LONDON S.W.1 Telegrams: Ukleadman, Piccy, London Telephone: WHitehall 4175

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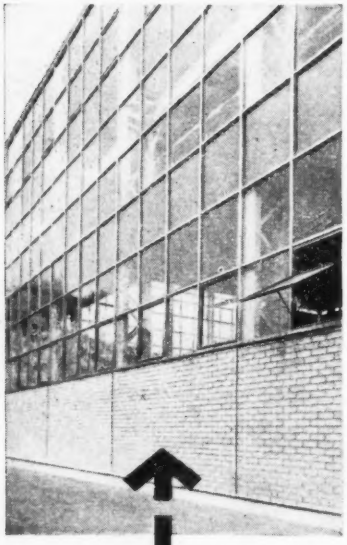

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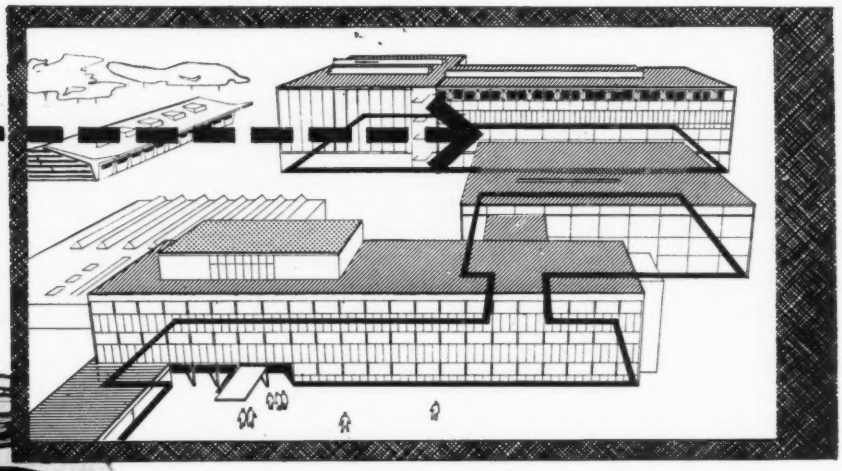
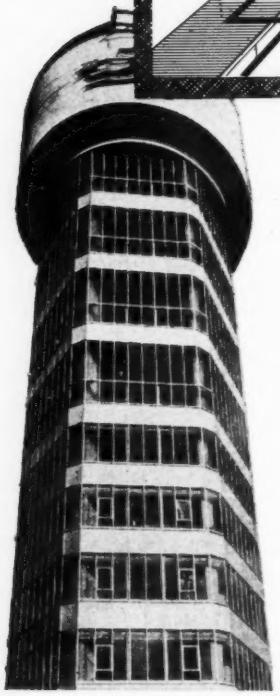
Illustration top left: Stove-enamelled units behind glass with a plinth wall of Uxbridge Flint Bricks.

Illustration below: Water Tower with window wall frame of aluminium veneered Asbestolux infill panels.





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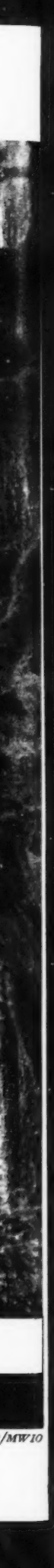
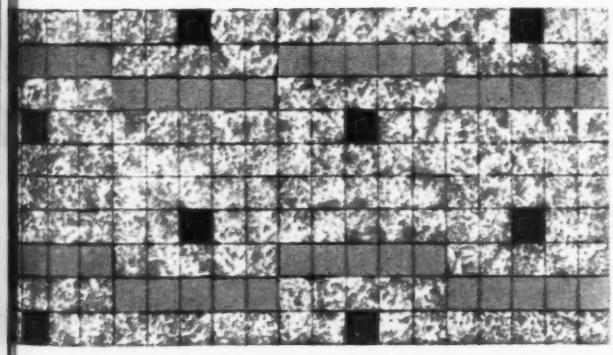
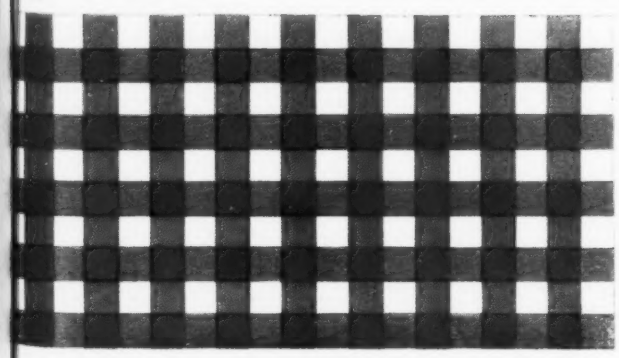


Ceramic tiles for *Colour*





Langley's Red and Grey Plain Colour 4″ × 4″ Vitrified Ceramic Floor Tiles in a ground floor entrance hall. An unusual and attractive application of these hard wearing and easily cleaned tiles. Two suggestions for a more contemporary treatment are also shown and if these give you ideas and you would like to know more about these tiles, please call at our showrooms or write to us.

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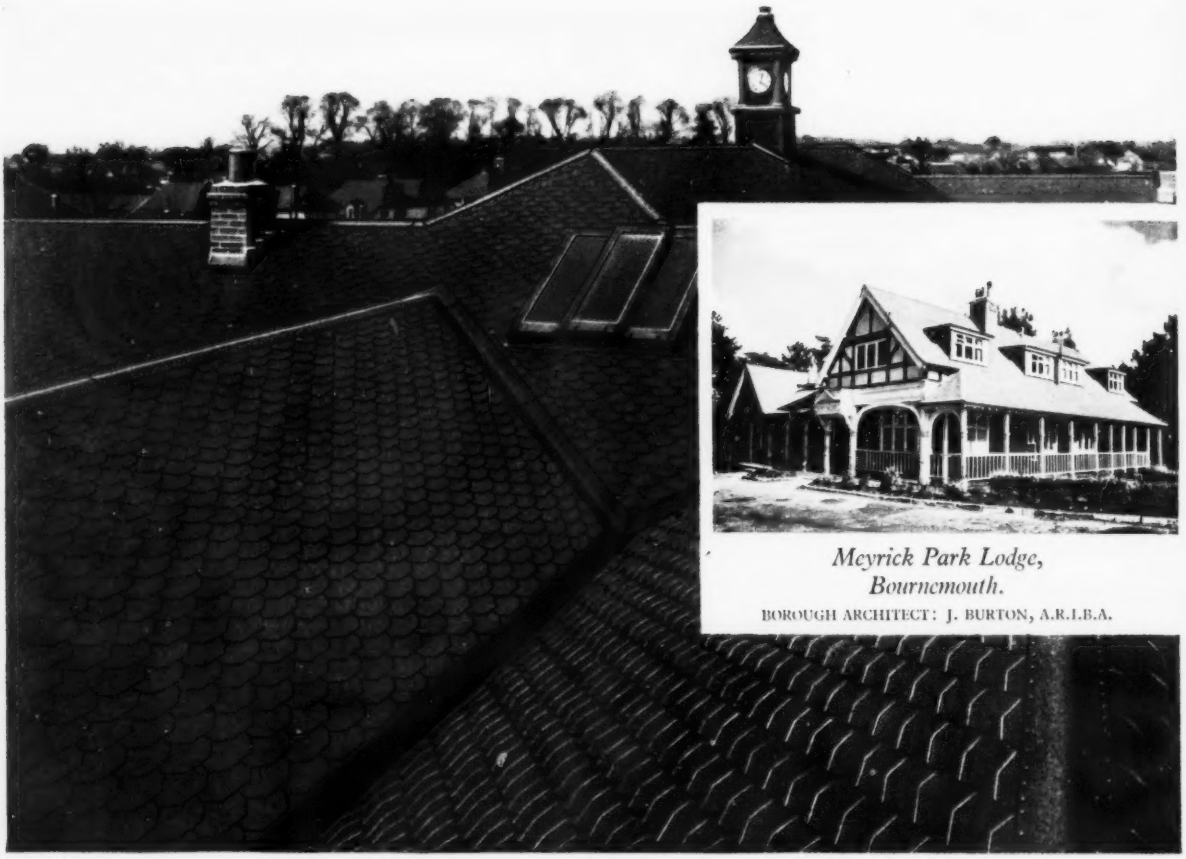

Meyrick Park Lodge, Bournemouth.
BOROUGH ARCHITECT: J. BURTON, A.R.I.B.A.

B.B.C. Sports Pavilion, Motspur Park. CONTRACTORS: S. J. FRANKLIN & CO.

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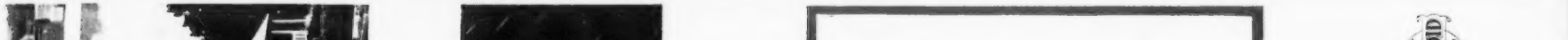

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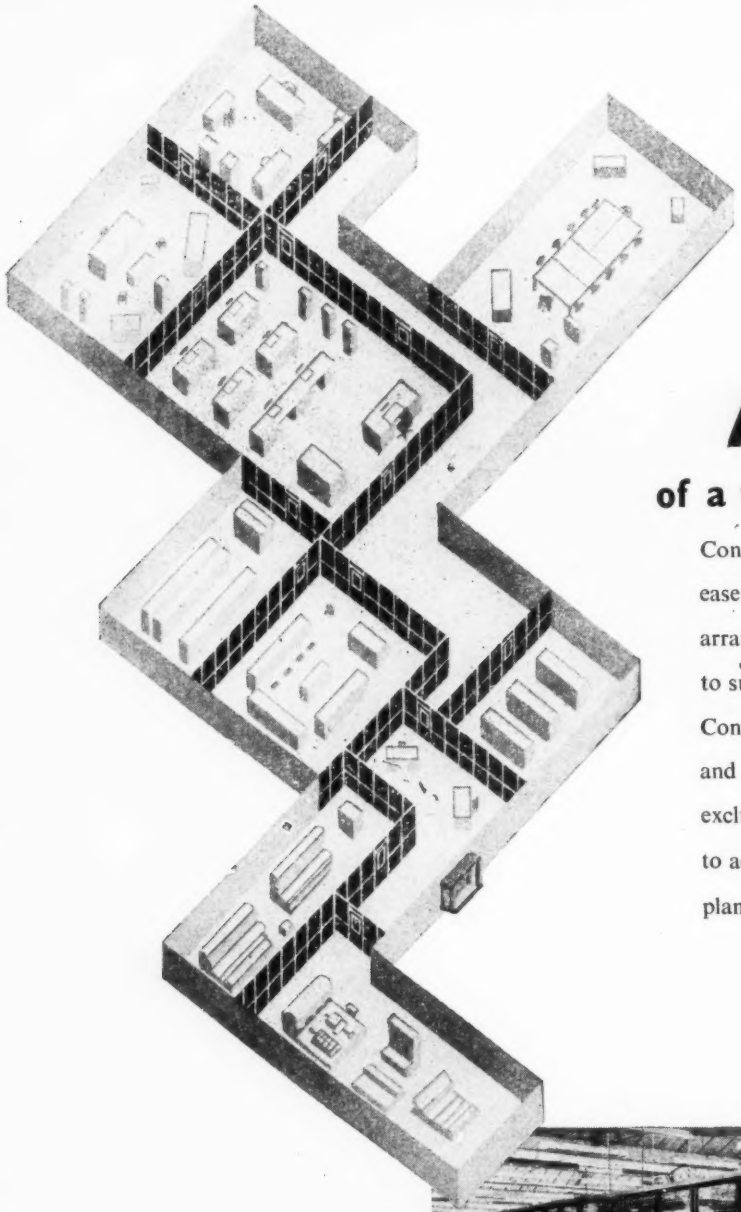

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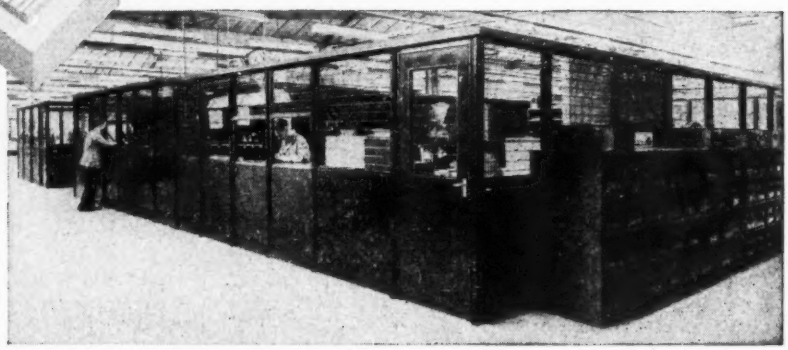

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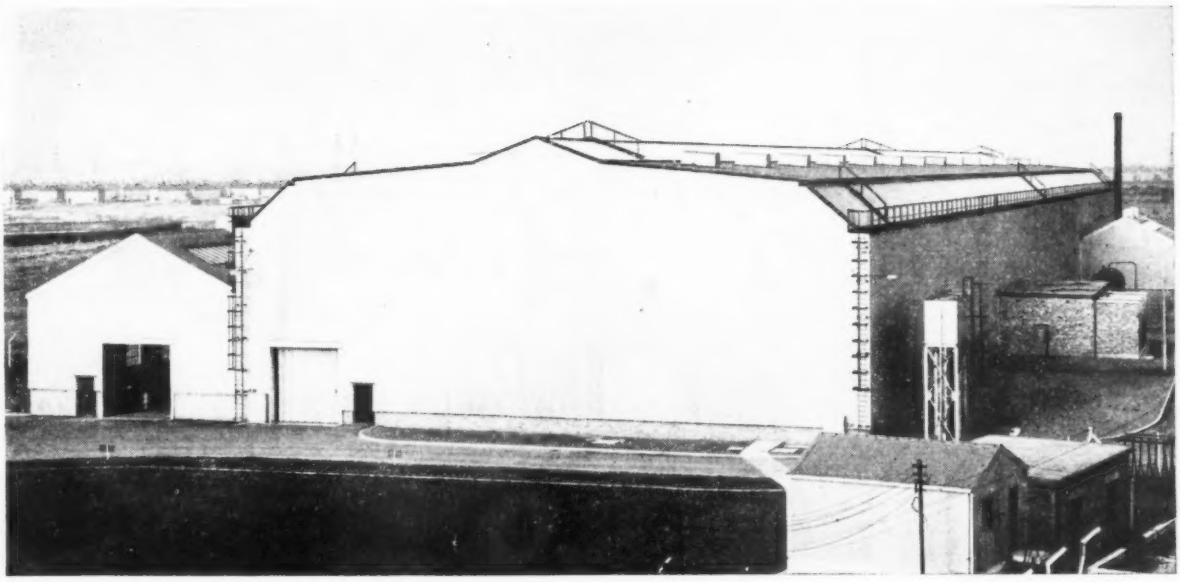
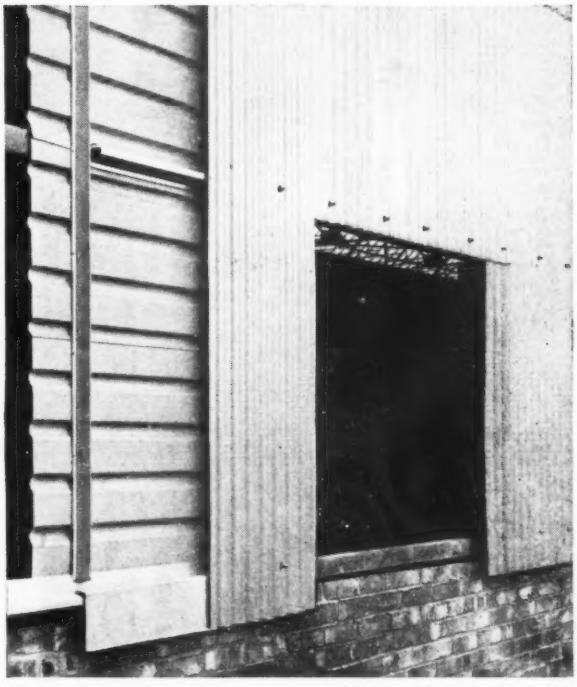


British Aluminium for Factory Cladding

This aluminium extrusion factory at Latchford Locks is walled and roofed, appropriately enough, in aluminium sheeting. The walls are comprised of inner and outer corrugated aluminium skins, spaced 2″ apart, and fixed to a conventional steel framework, to the Dialindre system designed, developed and erected by Freeman, Morrison Ltd., and the roof is D. Anderson & Son Ltd. Aluminium 'E' decking.



Close-up of the Freeman, Morrison Ltd. Dialindre system of wall construction.

The BRITISH ALUMINIUM Co Ltd

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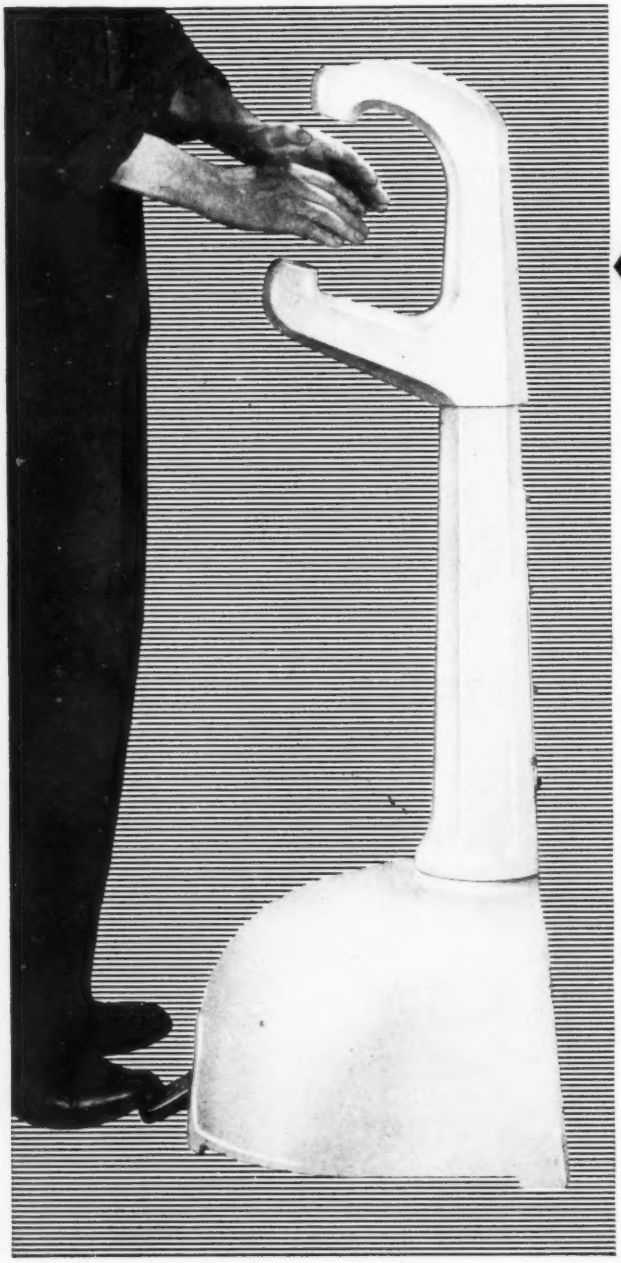

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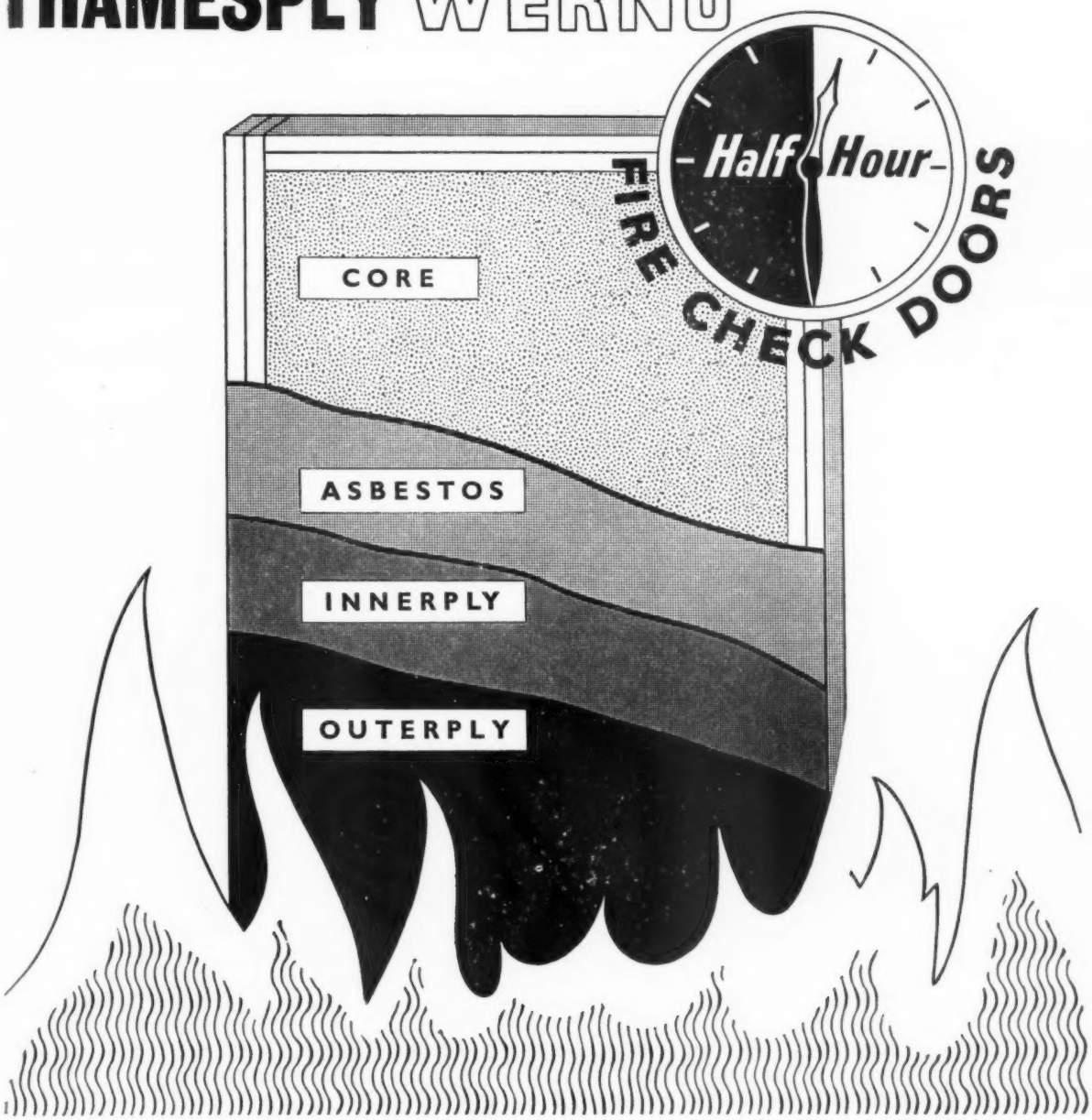

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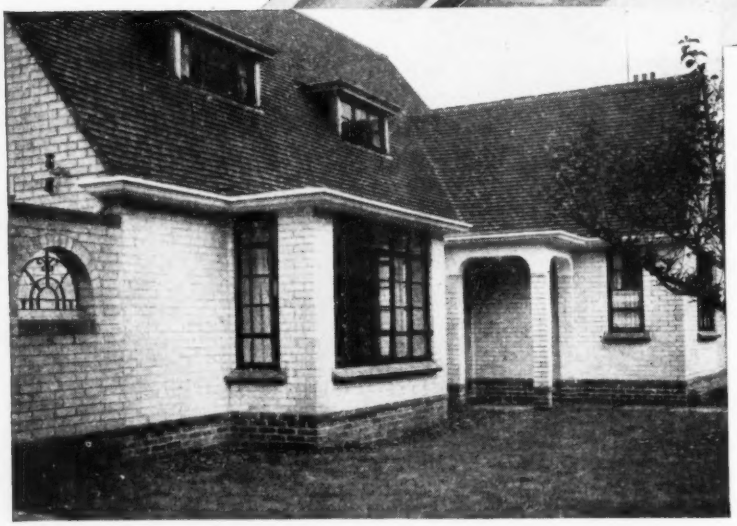

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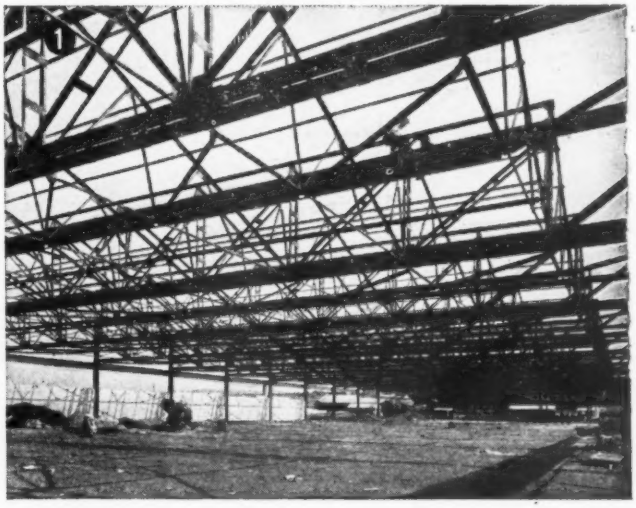
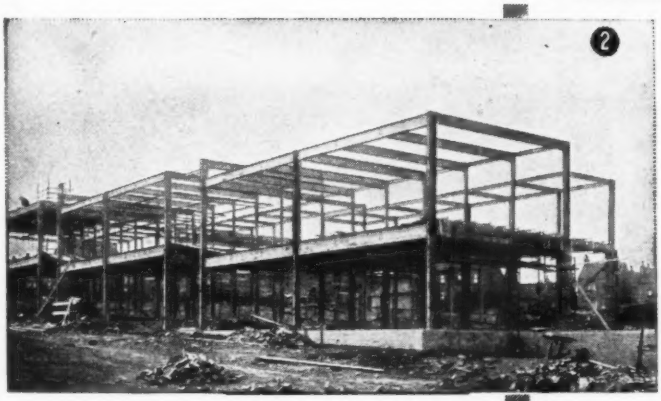
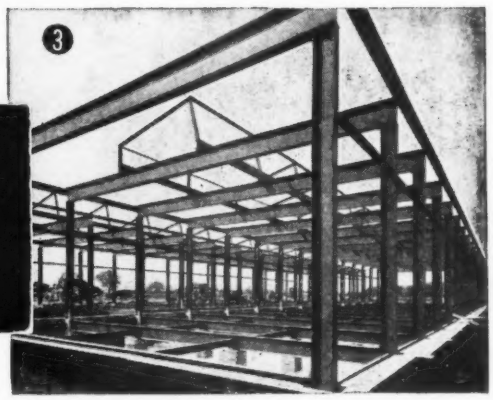




1. New factory building for Messrs. William Cooke & Co. Ltd. of Rotherham. 300 ft. x 120 ft. span.
2. The County Primary School, Crosland Moor, Huddersfield.
3. College of Further Education, Grimsby, in course of erection. Stage 1.
4. The completed College. Stage 1.



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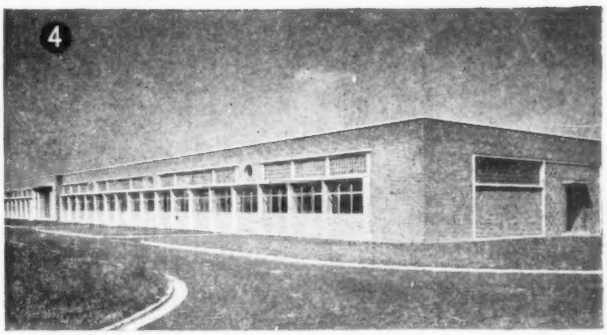

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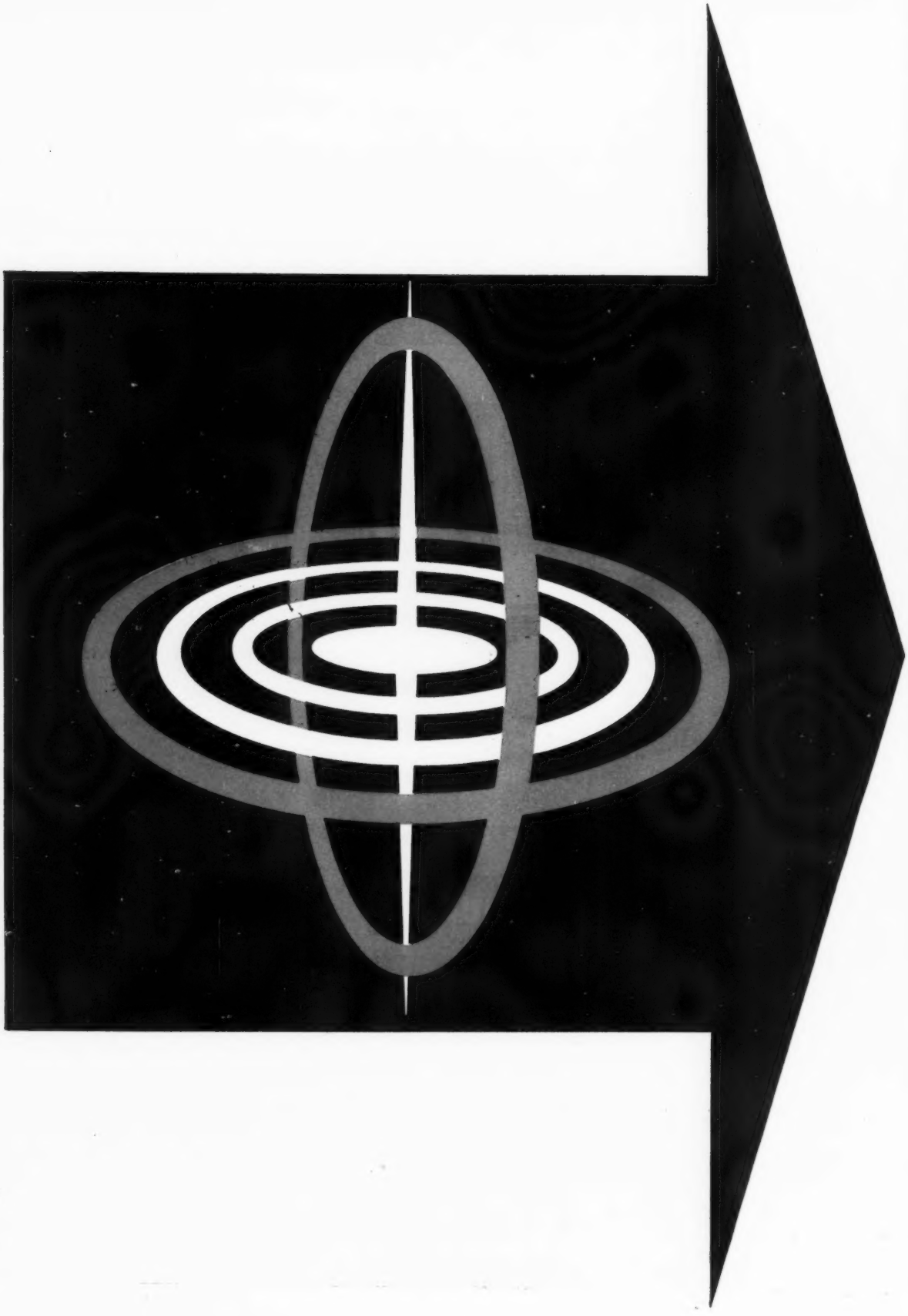

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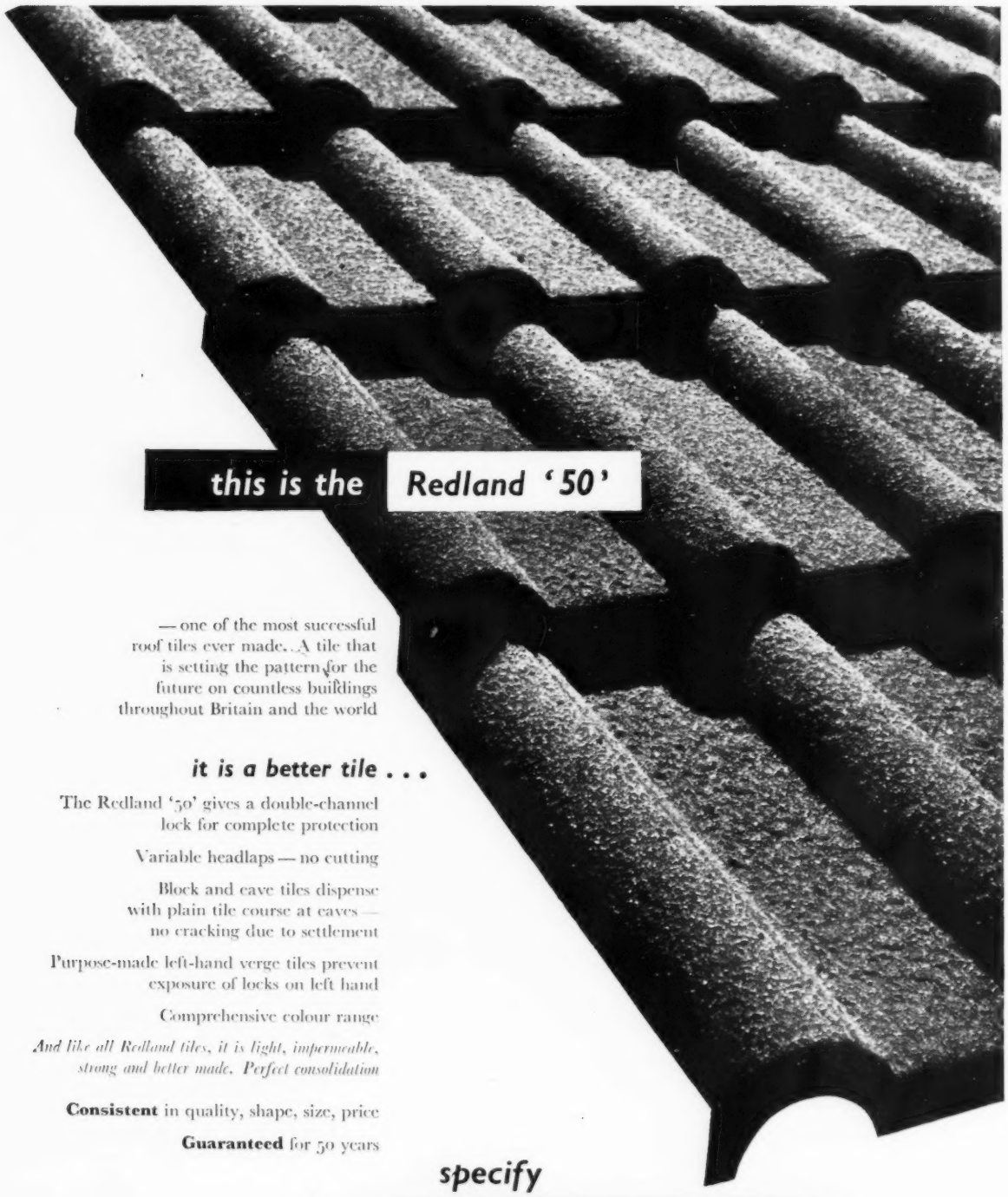

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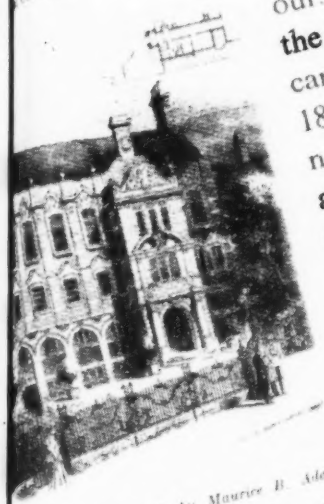

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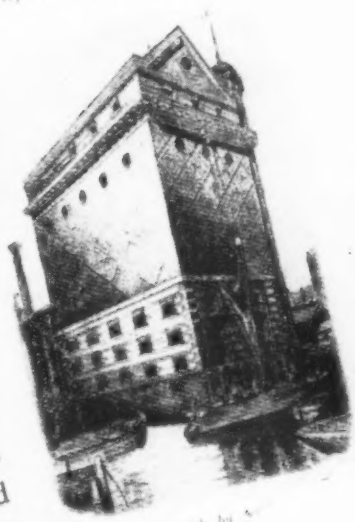

Grain silo, Greenwich, by

building a
foundations.

But we are also getting to know
modernism is not enough, and as we win
the battle against eclecticism we find
ourselves in the middle of a new battle,
the battle for *quality*, and the lessons that
can be learnt from the architecture of
1897, in spite of its wholly eclectic
nature, are concerned with **quality in
architecture, especially quality of crafts-
manship.** Craftsmanship has, of course,
changed its meaning with the sixty years
that have passed. Hand workmanship has
given place to machine production and
the process of building has increasingly
become the assembly of factory-made
parts. But, nevertheless, the basic attri-
butes that make the difference between good quality architecture and
routine building remain: **the right use of the right materials,** with an
eye for proportion and scale; a sense of the relationship of the part
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detailing, ensuring not only fine finish but durabili
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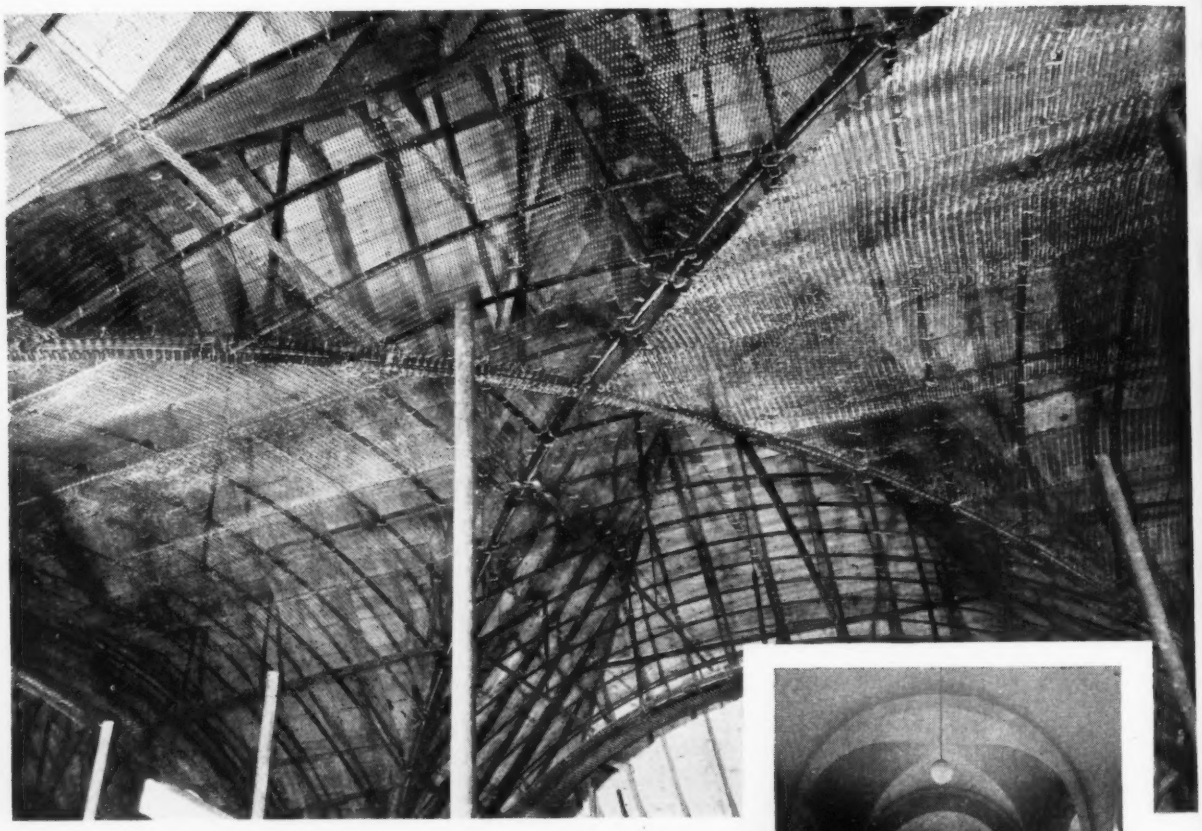

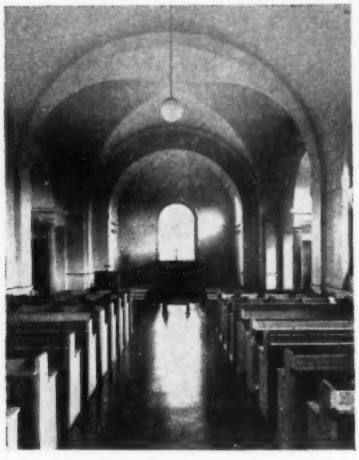

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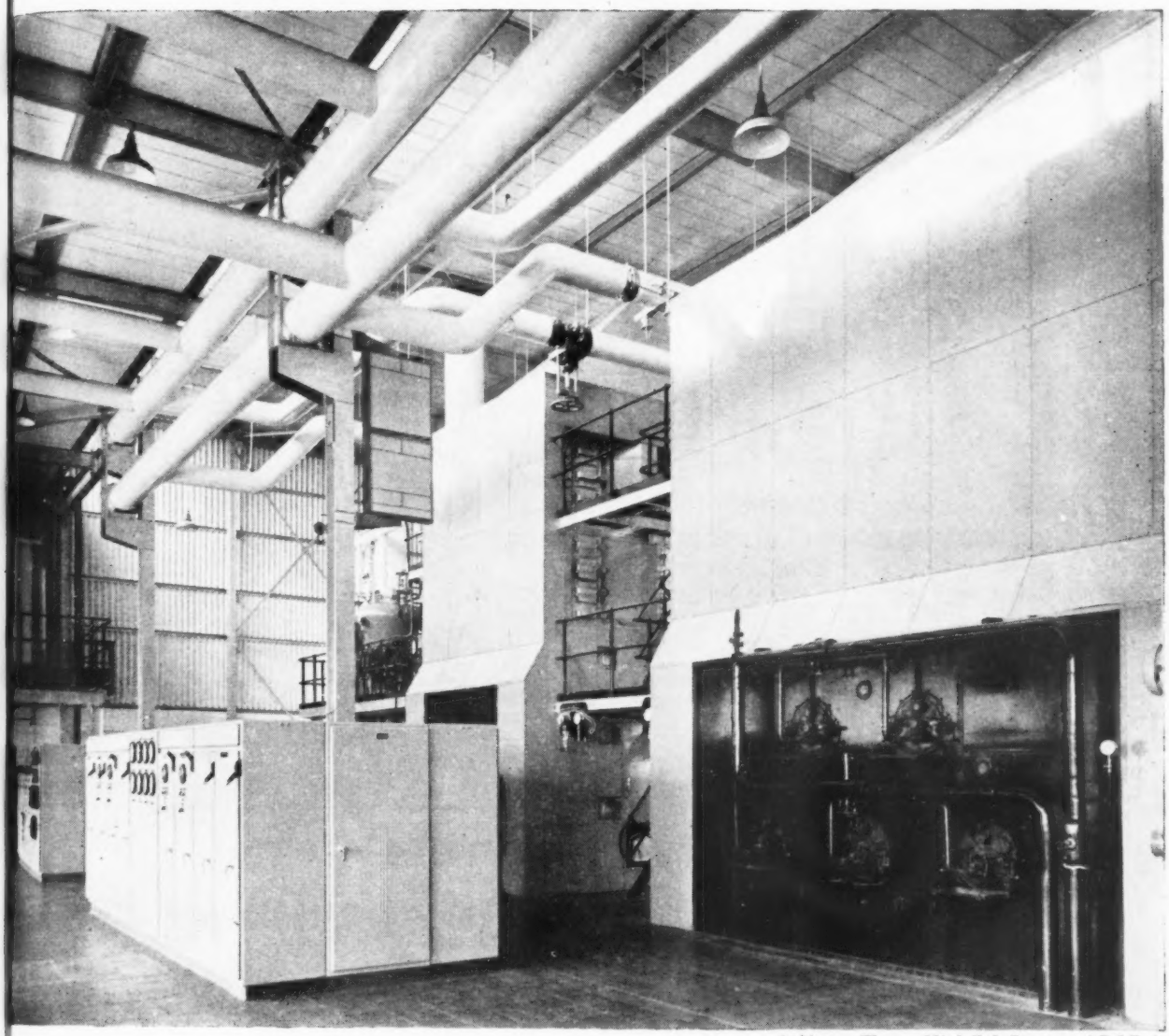

Architects : Thomas Mitchell & Partners, A.R.I.B.A.

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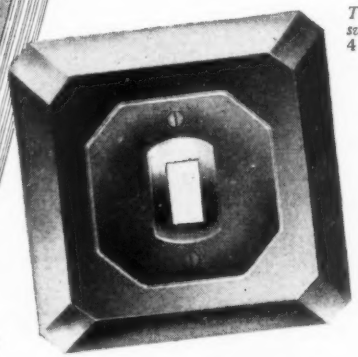

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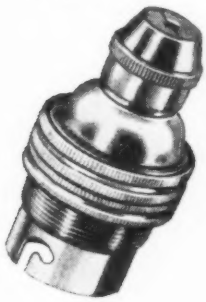
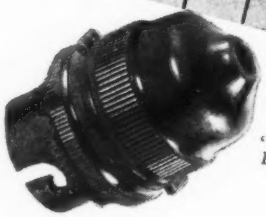
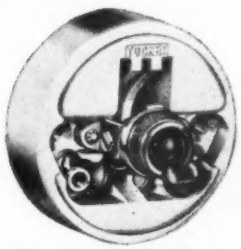
'Trojan' Brass B.C. Lampholder.





'Titan' all-insulated B.C. Lampholder.



Open view of 'Tyne' heavy duty 5 amp tumbler switch.

'Tyne' heavy duty quick make and break tumbler switch.

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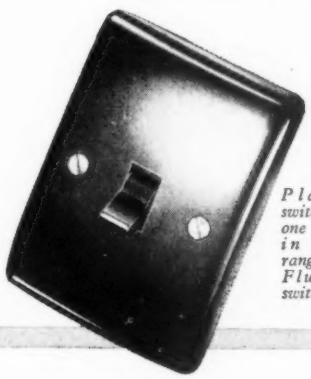

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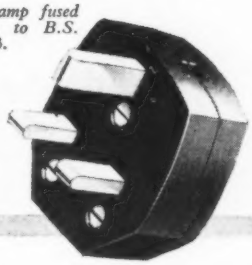

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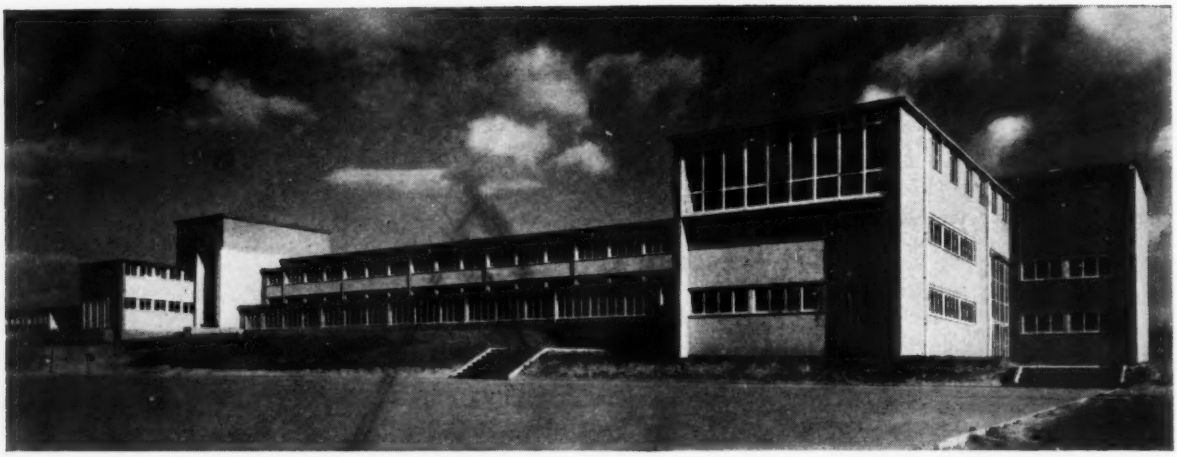

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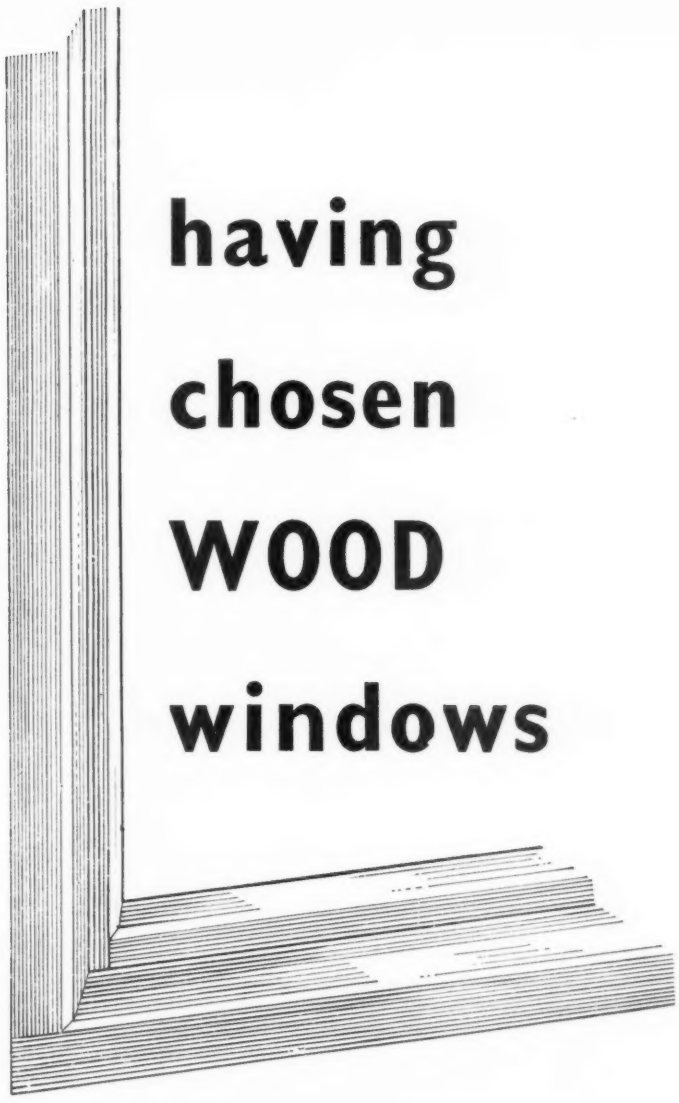

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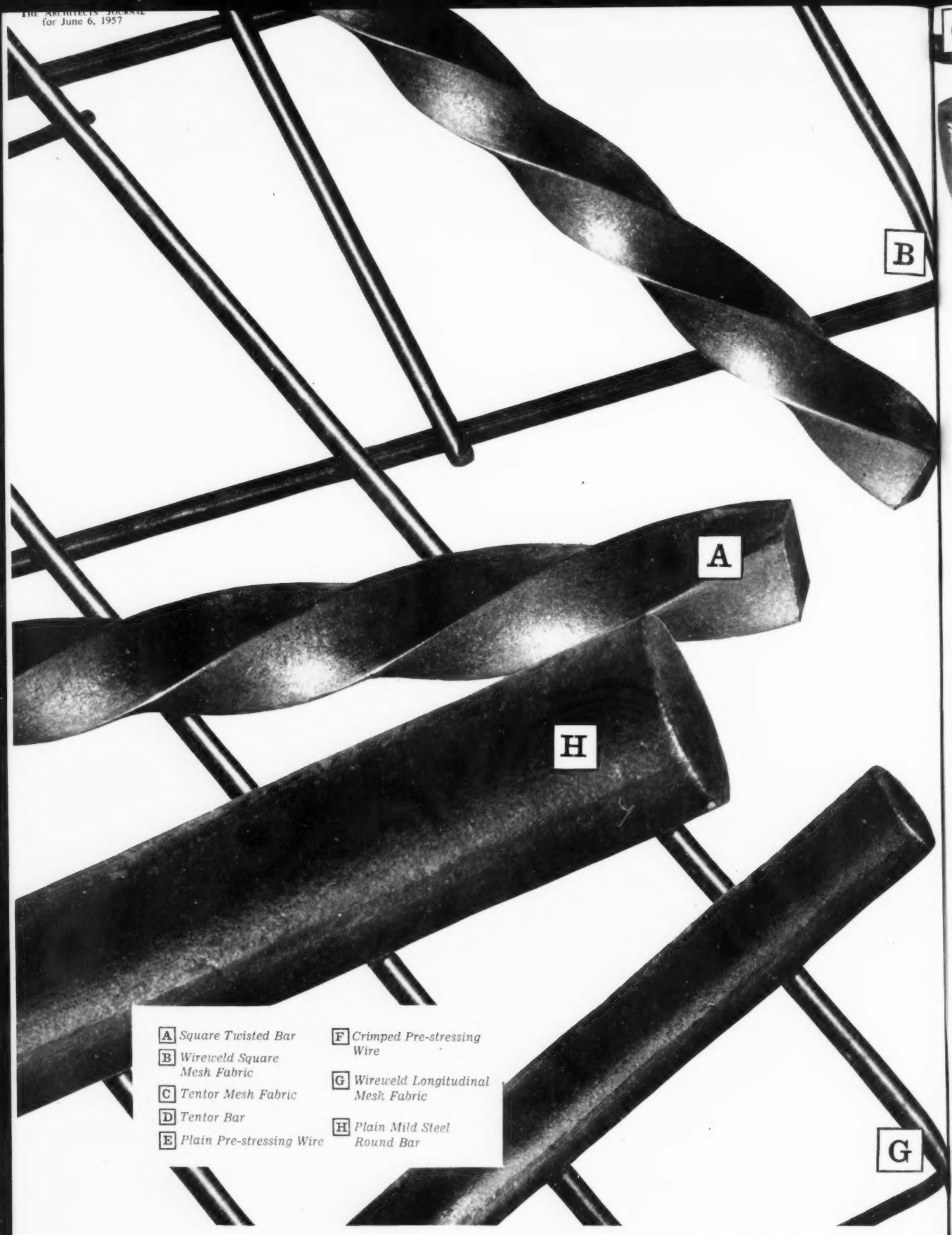

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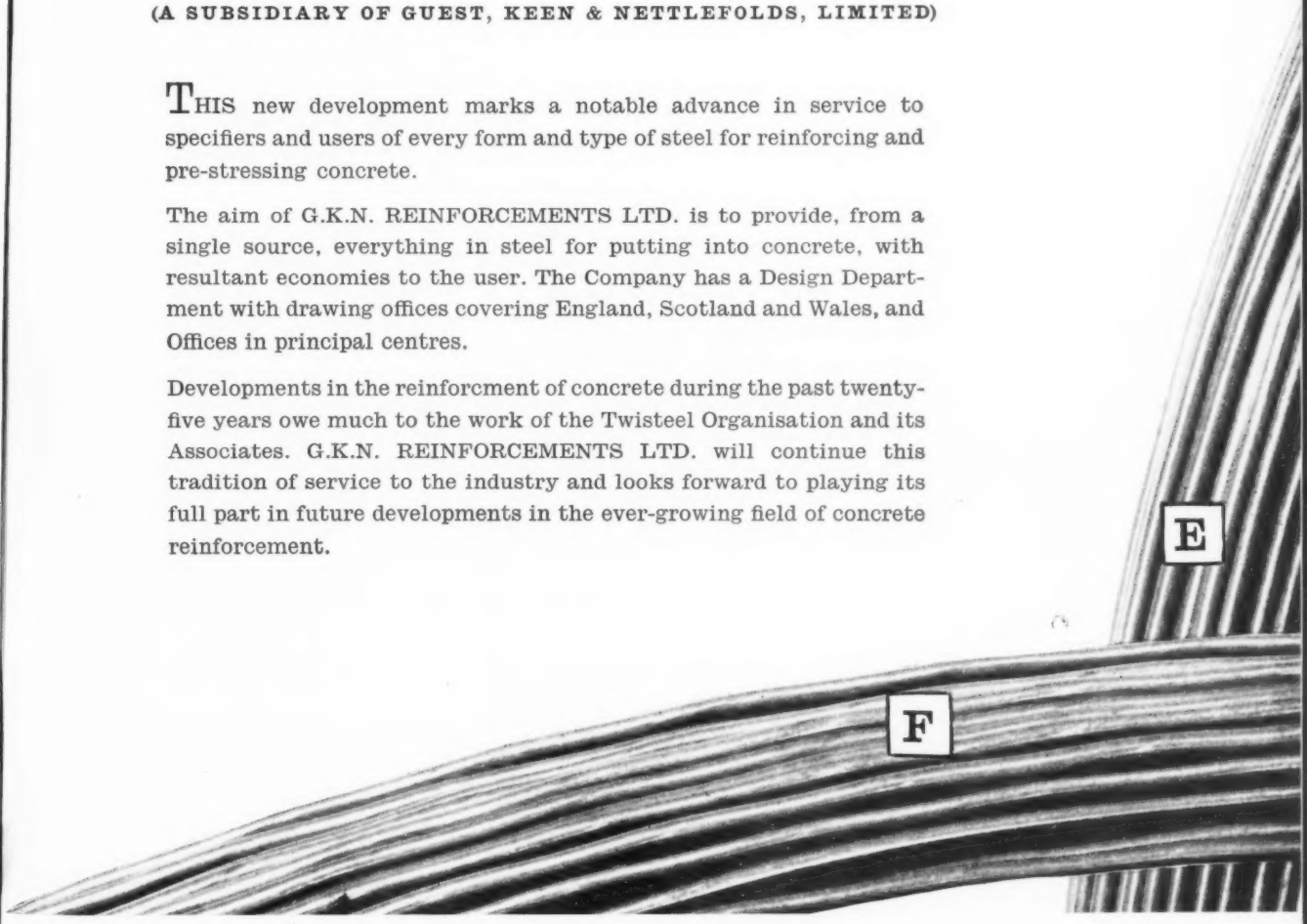

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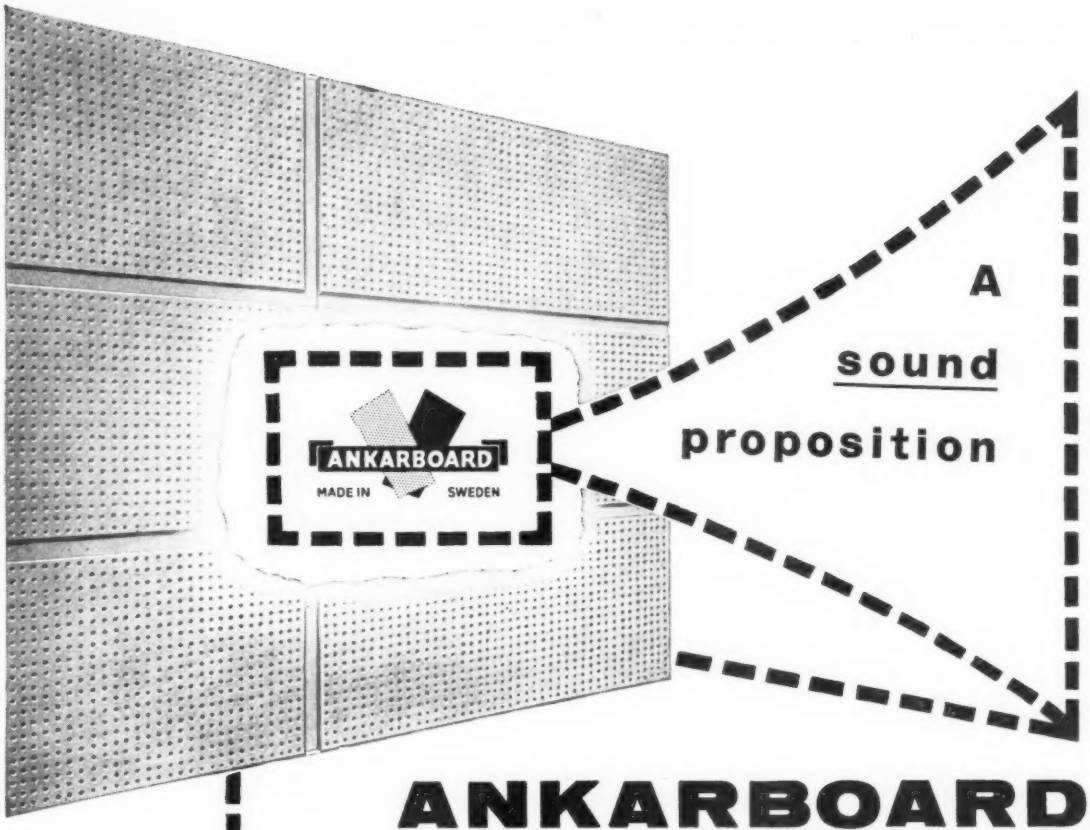

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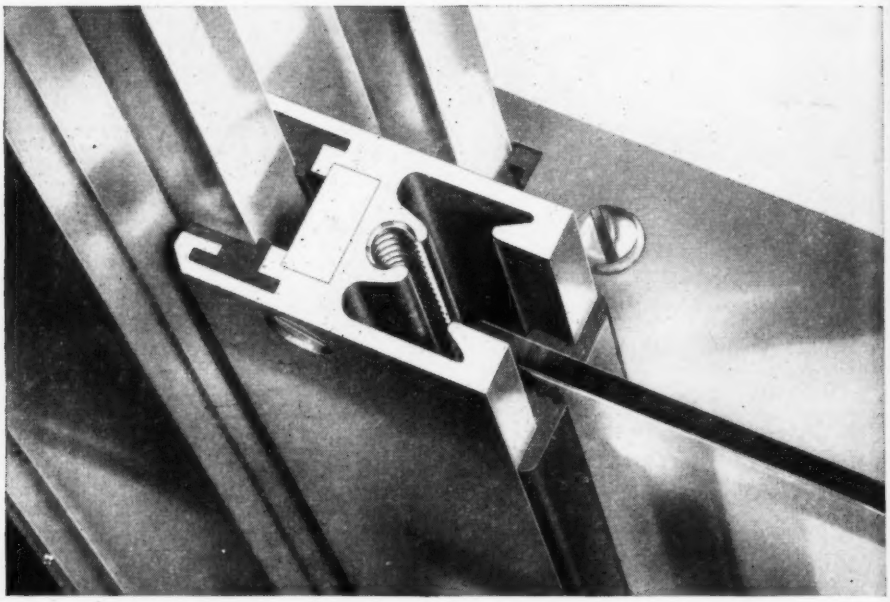

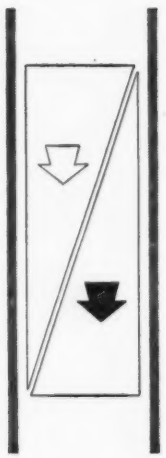

Pressure on top wedge (white arrow) binds wedges together in channel, locks device in position. Pressure on bottom wedge (black arrow) permits free downward movement. The converse is true for upward movement. This is the principle on which the 'Alomega' suspension works. The wedges are accommodated in the jambs of the moving sash, and the whole mechanism is completely enclosed.

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TYPE 15, 4′ 8¾″ x 1′ 2½″	TYPE 25, 4′ 8¾″ x 1′ 11½″
TYPE 35, 4′ 8¾″ x 2′ 8½″	TYPE 45, 4′ 8¾″ x 3′ 5½″
TYPE 16, 5′ 8⅜″ x 1′ 2½″	TYPE 26, 5′ 8⅜″ x 1′ 11½″
TYPE 36, 5′ 8⅜″ x 2′ 8½″	TYPE 46, 5′ 8⅜″ x 3′ 5½″

Owing to the method of construction, purpose-made sizes present no difficulty and are available up to a maximum of 6 ft. x 4 ft., at approximately pro rata prices—although, of course, there will be a certain delay.

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NOT QUITE ARCHITECTURE

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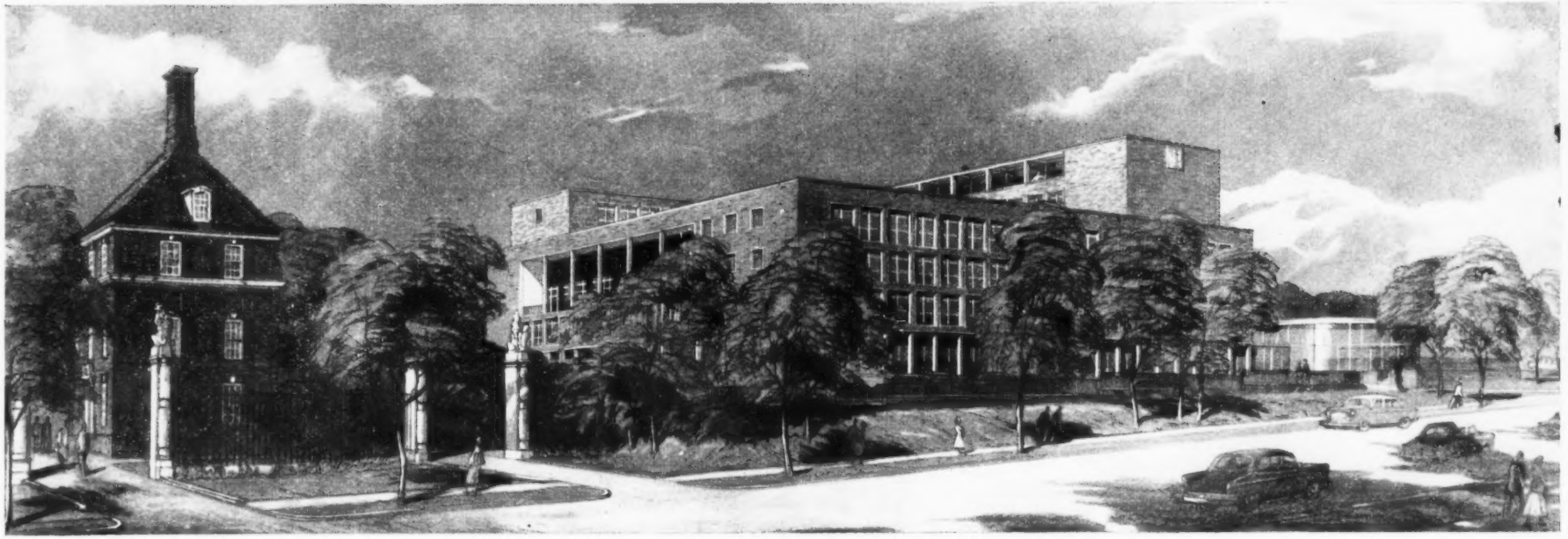
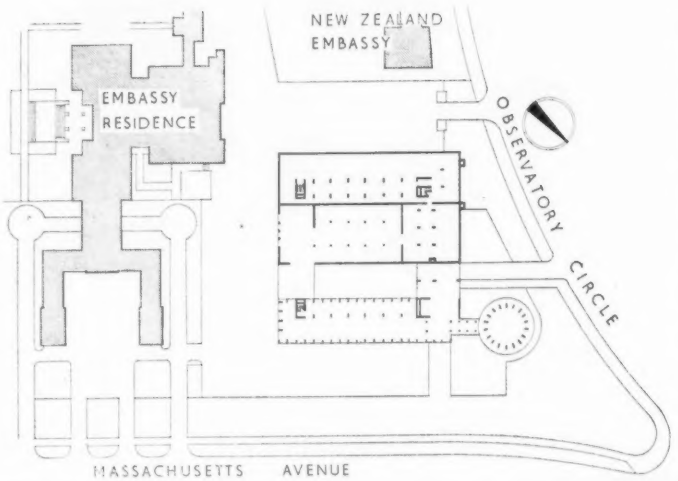
The justice dispensed at the Royal Courts of Justice, the Strand, is no doubt as good as man can make it: that being so, the judges are to be congratulated on one of the most remarkable triumphs of mind over matter. If ever there was an inefficient building it is the neo-gothic law courts in which, the other day, the Queen's Bench Divisional Court found in favour of Thomas Hughes in his case against the Architects' Registration Council of the United Kingdom.

*

To hear the custodian of professional good manners being ticked off by three judges for bad manners was not an occasion to be missed. But let me give a piece of advice to anybody else who decides to sample the law courts at first hand. Arrive in ample time, for you will almost certainly get lost. The visitor who wishes to visit, say, room 123 is given some such direction as this: "Go straight through the hall to the bar, then it's sharp right, first left, second right, third left, up the steps and you'll find it opposite you on the right." Needless to say, one does not, and the visitor's nose, as he enters the labyrinthine passages at the end of the hall, tells him that the bar referred to is not the one to which barristers are called. It recalls the sensation caused when an Edinburgh newspaper, in one of the most glorious misprints of all time, headlined the appointment of a Scottish judge as "New Sottish Judge Appointed." Those were the bad old days when success at the bar had a double meaning, and "sober as a judge" was a contradiction in terms. But now the law has sunk to a wretched pull-up for carmen, and it is only one of the many makeshift arrangements to be found in



The Good Old British Square



The proposed British Embassy office in Washington (site and ground floor plan, left; perspective above) has been arranged, state the Ministry of Works, so that " it will not dominate the main embassy buildings designed by Sir Edwin Lutyens and completed in 1930. The materials used will harmonize with the present embassy buildings but the design will be simple and no attempt has been made to copy the more traditional features of the Lutyens building." One should hope not. For some years now it has been customary to praise the MOW for forsaking eclecticism in design and adopting the contemporary approach to architecture. However recently there have been signs, and this embassy project is one more of them, that the MOW's record for modern architecture is stuck in the groove. This building is obviously paralysed by its proximity to Lutyen's embassy building. As the plan shows, the offices are planned double-banked, around a central court only 150 ft. square which is used as a garage and car park—a dull outlook for a large proportion of the office workers. This rigid, four-square layout has the visual disadvantage, as well, that the *mass* of the building is bound to compete with the Lutyen's Embassy in the least satisfactory way. The new building is obviously going to provide more accommodation than the old embassy and it is an unnecessary handicap to try and compress it into a squat shape no higher than its neighbour. If it is desirable that it should not detract attention from the main embassy building, this should be achieved not by subordinating it in scale, but by differentiating it entirely by the use of contemporary construction, expressed in the elevations, and by ensuring that detail, colour and the rhythm of the massing is subordinate to the older building. This design competes with the Lutyen's Embassy because its panels and planes of brickwork, stretched rather despairingly round framed elevations, echo—instead of contrast with—the brickwork of the other, and the enclosed layout does nothing to link up the pavilion-tipped wings of the earlier design—an error in town planning terms. It is, perhaps, time that the Ministry's architectural department, under the Chief Architect, Eric Bedford, who are responsible for this design, observed the contemporary sophistication of American Embassy projects and dared another step or two towards modern architecture. This modest essay is hardly likely to set Washington on fire.

this building. There are few sorrier sights in London than the two temporary asbestos courts crammed into a courtyard, which look as if they must have been there for years and intend to stay there for years to come.

*

Inside the Lord Chief Justice's Court there is a bustle of informality before the three wise men come in. It must frighten the litigant (unless he is a poor one) to see so many barristers, solicitors, clerks, shorthand writers and court officials and to think that if he loses he is going to pay for the lot. Never, it must seem to him, was so little done by so many, and at such a frightful cost.

*

The entry of the judges is a solemn moment, but it does not take long for a "Brothers-in-law" atmosphere to be established. A barrister rises to move the court to fix a day for a hearing. "Have you leave to move?" demands Lord Goddard, who certainly has all his wits about him, even if he is 80. "Yes, my lord," replies the barrister with a complete assurance that is promptly punctured by the next question: "when did you get leave?" The barrister whirls round, and begins a hasty (and, one suspects panic-stricken) confabulation with the solicitor's clerk behind him, but before they can answer the question Lord Goddard says "you don't need leave."

*

Lord Goddard read his judgment in Hughes *v.* ARCUK with ponderous emphasis, Mr. Justice Hilbery read his with an air of erudition, and Mr. Justice Devlin added the spice of wit in a judgment which he must have enjoyed preparing. When they had finished, counsel for ARCUK rose with the utmost deference, and temerity. But not even the utmost deference and temerity would persuade Lord Goddard to withdraw his strictures on ARCUK for having told Mr. Hughes that he must sit an examination if he wants to be restored to the register. Lord Goddard fortified his view with the unanswerable statement that if he, the Lord Chief Justice, had to sit his exams again he would be ploughed by the Bar Council. At this, the evening newspapers, which couldn't have cared less about Hughes *v.* ARCUK, pricked up their ears. For the Lord Chief Justice to proclaim his inability to pass the law exams was clearly in the man bites dog category and therefore NEWS.

*

The improbable had happened: a case that was not quite architecture had yielded an *obiter dictum* that was not quite law.

JUSTINIAN

The Editor

HIGH-DENSITY LANDSCAPE

HIGH-DENSITY housing has come to stay, but an immense amount has still to be done to raise the standards of the dwellings, community buildings and surrounding spaces to a point at which they provide a fully satisfactory family life for the occupants. Previous discussions on high density housing have focused attention on the design of the buildings: the recent RIBA symposium concentrated on the scarcely-less-important question of the design of the space about them. If the housing managers and architects who were present return to their cities and boroughs carried away with enthusiasm for the splendid park system of Stockholm, nothing but good can result. But it is no good ignoring the fact that even imagination cannot take the place of money.

The severe reduction in housing subsidies and their present structure, the high rate of interest, and the high level of building costs have induced in many local authorities a state of mind in which they shrink from anything beyond minimal expenditure on landscaping, playgrounds or community buildings. When cuts seem to be necessary it is always easier to apply them to the outside works. Landscaping and subsequent maintenance of a housing site is normally the financial responsibility of the housing and not of the parks department, with the result that lower standards tend to be applied, and part of the cost falls on the rent. This division of responsibilities should be reviewed, for one of the principal lessons taught by Holger Blom, chief of the Stockholm Parks Department, was the need to treat all the space between buildings as a single parks system provided as a social service at a cost substantially greater than is customary in this country. In particular he emphasized the need for supervized playgrounds. Britain, as Peter Shepheard's paper showed, has as good a tradition of landscape as any other country and there is no good reason why we should still have to use so many foreign examples to show housing managers the best way to design space about buildings. The RIBA has done its part by holding this symposium, and much now remains to be done by the local authorities, their housing managers and architects. But the Ministry of Housing and Local Government has also an essential part to play, not only by stimulating and popularizing good landscape design, but also by providing the financial inducements that will encourage local authorities to spend substantially more on the design and maintenance of the space around buildings.

NABARRO'S BILL

ASTRAGAL'S view (last week's JOURNAL) that Gerald Nabarro has had to make far too big a sacrifice to secure government support of his Thermal Insulation (Industrial Buildings) Bill found support in the House of Commons Standing Committee last week, when the process of partially degutting the Bill took place. Mr. Nabarro himself confessed to an understandable reluctance in moving the clause which delays the application of the Bill for a year, so that it only applies to buildings begun after January 1, 1939. Sir A. Braithwaite, a director of Lindsay Parkinson's, said this was a retrograde step, and that six months after the passing of the Bill would be ample delay. "By deferring the Bill's application until 1959 we are abrogating a whole year's fuel economy," he said. "The architects of the country are not so dumb that they cannot apply a simple provision like this during a shorter period." And so says ASTRAGAL.

MISS DENBY AND THE DENSITIES

The ABT are planning further meetings of their Housing and Planning Committee to follow up the ideas discussed at the conference they held at the AA in January, under the title "Housing the City Dweller." The questions discussed were largely those of density, and there is plenty of room for authoritative studies of density problems (if only as an answer to the parrot-cries of the TCPA) as long as there is co-operation between everyone studying and working on the problems to avoid the confusion of too many rival groups.

*

But I hope that in pursuing their studies the ABT (and everyone else) will not omit to give full credit to Elizabeth Denby as the pioneer when it comes to analyzing densities in relation to the social units represented by old and new housing schemes. Her analysis of several early nineteenth-century squares in relation to modern space standards provided some of the most telling pages of the *Review's* "Counter-Attack" number, and the diagrams and tables on which her *Review* thesis was based were among the most important material on exhibition at the AA conference. It is a most useful line of attack on which no doubt Miss Denby is continuing her work. Now the ABT has taken it up too, they would do well to be guided by her knowledge and experience.

WHEN IS AN OFFICE . . . ?

ASTRAGAL, who had been looking forward to E. J. Kahn's talk at the RIBA (last Monday) as a further contribution to the previous RIBA symposia, found that it was more about *office buildings* in America than *office practice*. It was interesting to learn that no wood is allowed over 150 ft., that instead of installing a boiler you tap the city steam mains, and that when you are digging for the foundations you may unearth the boats from a previous waterfront. But ASTRAGAL, for one, would have liked to hear more about the American architect's legendary powers of organization. Mr. Kahn presented the outline of a gigantic task—but few details of how it is tackled.

*

The office block, he said, might house 10,000 people, and contain 27 lifts and air-conditioning—yet it took less than a year to build. The client might invite a number of architects to discuss a job of this size, and to decide whether it could be fitted into their programme, and he would then make his choice. At sketch plan stage, said Mr. Kahn, the advice of real estate and loaning institution experts was welcomed by the architect; steel could be bought long in advance of the drawings and the general contractor appointed when early sketches were ready. The architect's first job was to present a budget and time schedule for the various phases of the work. Later on, the subcontractors would be selected from "bids" and the whole team would then organize "schedules" for administration of the job.

*

All this left the audience's tongues hanging out, longing to lap up the details—what *kind* of drawings, what *sort* of cost information, and how, exactly, did architect and builder work together? Perhaps the RIBA could get an American team—architect, builder, engineer and real-estate expert—to get together and make another symposium.

SO THAT'S ALL RIGHT, THEN

The Modular Society says in "an important statement" that bricks do not fit into the 4-in. module adopted by the Council in 1954, and that the fact must be accepted. This statement has come none too soon. The truth of the matter is that whatever the advantages of a firm module, and we all recognize that they are manifold, it can mainly be used to co-ordinate newer materials and that there are certain elements—of which the brick is the most obvious example—where a great deal of existing capital investment is involved, and where control will be resisted.

*

It seems to ASTRAGAL that the 4-in. module is an excellent guide, but must fail dismally if it is to be made a strait-jacket. The key to the whole thing lies in the last paragraph of the Society's statement: "The Directors [of BSI and BRS] welcome this flexible approach to the problem of modular co-ordination as a means of meeting the existing situation."

ROUNDABOUT APPROACH

Is it too much to ask that a Minister's right hand should know what his left hand is doing? Harold Watkinson, the Minister of Transport, told the House of Commons last week that fly-overs must gradually supersede roundabouts. But the Ministry of Transport continues to approve, and to spend quite large sums of money on, roundabouts at some of the most heavily-trafficked junctions in the country. The new roundabouts on the Cromwell Road

extension are splendid examples of the congestion that these outmoded devices can cause. The operative word in the Minister's remark seems to be "gradually." Only two fly-overs are being built at the moment, and the construction of two more has been authorized.

*

The Ministry's happy-go-lucky attitude to roads and bridges seems to be shared by Mr. Watkinson's Parliamentary Secretary, Mr. Nugent, who comfortingly reassured anxious East Anglian members last week by telling them that the bridge carrying the A.10 trunk road over the Little Ouse was "structurally sound apart from some corrosion of the main girders." He went on to admit that money was being spent in shoring up the middle of the bridge by building an additional pier under it, and when pressed to authorize a new bridge, said it would have to "take its turn." It would be interesting to know how much money is being spent annually on patching up bridges that ought to be replaced, building roundabouts that will not work, and generally holding together an obsolete road system instead of providing a modern one which is the essential framework for planning.

CARAVAN CITY

While caravan makers seem to be hoping that the Rent Bill is going to sell a lot of caravans to the dispossessed, there is still the difficulty of finding sites. An enterprising little journal called *Modern Caravan* has had an idea for *urban* caravan sites, based on multi-storey garages, each van having its own bay with patio and a sanitary-cum-storage block, with shops at ground level. (See picture.) The obvious snag is that by the time you have built a structure with fairly large access ramps, and the plumbing has been installed, you are probably three-quarters of the way towards the cost of a complete flat block; and by the time the practical-minded caravanner has added a few partitions to his patio he may begin to wonder if he needs his caravan at all. But the idea was worth thinking about, and ASTRAGAL takes off his hat to a paper which goes to an architect—in this case, Sheila Hayward—when it has ideas about building.

*

And talking of caravans, ASTRAGAL was very impressed recently when he met Peter Pitt, who specializes in architectural photography, driving a touring home-cum-office which he had designed for himself. He has patented this ingenious conversion of the Austin 152 Omnivan, and it costs only about £870. It is illustrated on page 838.

This "caravan web," designed by Peter Warwick and architect Sheila M. Hayward for the magazine, Modern Caravan, *is referred to below by* ASTRAGAL. *It is described as "a framework into which the caravans fit to make complete homes of a high standard . . . From a short distance it would be practically indistinguishable from a modern flat-building, of a style that is now widely accepted and admired."*

CASTLES FROM THE AIR

There is no end to the possibilities for lightning architectural tours opened up by the enterprise of Sabena, by whose courtesy one can now visit 13 chateaux of the Loire in a single day by helicopter, which leaves Paris at 9.30 in the morning and gets back at 6.50 p.m. the same day. The helicopter flies to Chenonceaux, where the tourists visit the chateau and have lunch. The promoters seem to think that this exhausts the tourists' interest in interiors, for the afternoon is spent in flying over the chateaux of Montrichard, Cheverny, Chambord, Blois, Chaumont, Amboise, Villandry, Azay-Le-Rideau, Chinon, Usse, Langeais and Luynes. For those who cannot spare a whole day to see the chateaux there is a helicopter flight leaving Chenonceaux at 11.30 a.m. and returning for luncheon, which takes the student of architecture to a mere half dozen chateaux. The only drawback in the arrangements is that the helicopter has no time to land.

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British European Airways will surely be lacking in enterprise if it fails to organize a half-hour helicopter tour ("See where the Great Masters Live by Air") of the National Gallery, the National Portrait Gallery, the Royal Academy and the Wallace Collection —or a half day trip to stately homes.

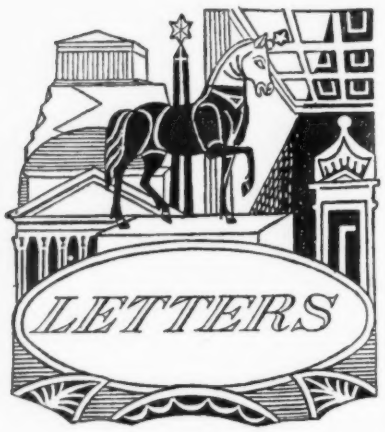
HOLLAND PARK SCULPTURE

Try as one may to be fair-minded, it is difficult to be enthusiastic about the new open-air sculpture show at Holland Park, because one cannot help feeling a lack of fair-mindedness on the organizational side. The theme is complex, aiming to balance the sculpture of the present decade against that of a century ago, but the simple-minded reader of the catalogue might suppose from the PRA's preface that the two competing teams were the PRA's XI and the Arts Council Wanderers. For this is a fair division of twentieth-century material, and it is perfectly clear from his words exactly where the PRA's antipathies lie. "Must sculpture be difficult to understand and should it need explanation by the written word . . . ?" After which it is, as they say, significant that no fewer than eighty-five lines of miscellaneous exposition are devoted to the naturalistic contemporaries, and only seventeen-odd to the strange abstractionists.

*

As for the exhibits themselves, the Victoriana looks charming in the trellised conservatory, but—at the risk of appearing old-fashioned—I can't say I was very impressed by it. Out on the grass there is a monstrous brutal bull by Clatworthy which makes nonsense of the PRA's brutalist, Charoux; there is Henry Moore's eroded and curiously-noble Warrior; one of Reg Butler's fat girls; an amusing Kenneth Armitage; some slick, sentimental Mother and Child capers; and a tall thing by Robert Adams.

ASTRAGAL



Sir William Holford, F.R.I.B.A.

Noel Moffett, A.R.I.B.A.

A. D. Bell and A. Stewart, A./A.R.I.B.A.

Anthony Pott, A.R.I.B.A.
Chief Architect M.O.E.

Johns, Slater (F) and Haward (A)

Richard Edmonds, Chairman, LCC Town Planning Committee

Anti-Climax at St. Paul's

SIR,—ASTRAGAL (on May 9), under "Anti-Climax at St. Paul's," referred to ". . . the LCC's revised proposals for the approach to the West Front by Ludgate Hill," thus giving the impression that the Council varied the plan against my wishes. This is far from being the case. The proposals as I submitted them in my report of March, 1956, were accepted in principle by both the Council and the City Corporation, but were unacceptable both to the late Minister of Housing and to the Ministry of Transport. The grounds given by the latter were the inadequate turning radii at the top of Ludgate Hill. The engineers to both authorities, in consultation with Ministry of Transport and myself, have indicated the course the road would have to take if the minimum turning radius was observed, and the LCC, as planning authority, has indicated the revision that has been asked for on the formal maps accompanying the proposed amendment of the development plan.

As there must be a public inquiry into the proposed amendment, all proposals and objections will go from there to the Minister; and it is not necessary for me to say more at this stage. But before any public representations are made, I should be glad if you would allow me to acquit the LCC and their Architect of any intention deliberately to alter the plan for the south-west corner of the precincts as a matter of design.

WILLIAM HOLFORD.

London.

A Theory of Modern Architecture

SIR,—At the RIBA John Summerson set himself the difficult task of stating the case for a theory of modern architecture. With a fine display of oratory, erudition and historical reference, he came to the conclusion that we ought not to look for a theory of modern architecture.

This is not very satisfying. Nor is Peter Smithson's division of modern architecture into "the old" and "the new." As Mr. Summerson pointed out, the design principles on which the modern movement is based were adumbrated by Le Corbusier, Gropius and Moholy-Nagy; but *Vers une Architecture* and *The New Vision* were written a long time ago. Today most architects would agree that functionalism and a "social" architecture are not enough; nor is an organic architecture, in spite of Lloyd Wright and Bruno Zevi.

A theory of modern architecture, if we are to have one, will recognize the rationalist, functionalist attitude of Le Corbusier and the social conscience of Gropius and Moholy-Nagy, but it will also take into account the fact that today our way of life is different from what it was in 1925 and that we have no idea what it will be in 1985. Such a theory must surely recognize the need for a flexible architecture, the need to create forms which, without costly demolition, can be satisfactorily altered and adapted to suit unpredictable needs and changing ways of life.

NOEL MOFFETT.

London.

Crash !

SIR,—It is with surprise and alarm that we view the daring conception of the third prize-winning design in the Northern Ireland War Memorial Competition illustrated in your May 16 issue.

We note that the upper floor structure of the main block fronting Waring Street appears to span 60 ft. over the main entrance and that structural walls at the rear rest happily on dubiously-supported beams of great span.

It is evident from the cross section that this is no accident of design but the theme of the entire structure.

The four-storey side wing rests on what appears to be a cantilevered floor slab, apparently balancing on a 9-in. thick wall.

As keen participants in open competition we are inclined to feel that we no longer need to risk those "few grey hairs" over structural worries and take comfort from the fact that competitors need only a front elevation and may let the structure take care of itself. If this is so then the RIBA examiners should be brought up to date, as students' designs are still being failed for structural misdemeanours and it is still necessary to sit an examination in construction.

ALEXANDER DUNCAN BELL and
ANDERSON STEWART.

Belfast.

Building Cost Analysis

SIR,—In the interesting cost study of infil panels by Johns, Slater and Haward, and Caston and Porritt, which you published in your issue of May 9, there are two points to which I would draw attention in the interests of accuracy.

It might be inferred that the Ministry of Education recommends that external panel walls, if not protecting the structural frame, should have a fire resistance of one hour in some circumstances. This is not so; the recommendation in Building Bulletin No. 7 (Table VIII) is that such panels should have a fire resistance of half-an-hour in buildings of four or more stories; in buildings up to three stories high they need have no fire resistance.

It is also implied that a cladding of timber, or other combustible material, complies with the recommendation of the Bulletin for schools of three stories. This has been agreed to in some circumstances, but generally the use of combustible external walls is limited to buildings of two stories which are also subject to a number of detailed constructional limitations which are set out in footnote 24 (page 33) of Building Bulletin No. 7.

ANTHONY POTT.

London.

We agree that Table VIII on p. 37 of Building Bulletin No. 7 states that for external wall panels of up to three storeys, no fire resistance is required, and that for four storeys and above, ½ hour is necessary, but we would like to point out that p. 46 Appendix 1—under Additional Precautions to restrict Structural Damage—Para. 6 says:

> "Where the fire resistance of the *floors* is 1 hour or more, the heads of the windows on any one floor should be separated from the sills of the windows on the floor immediately above either by a continuous panel at least 3 ft. high and having a fire-resistance of *about* 1 *hour*, or by a non-combustible etc."

We then referred to Table VIII again and under "Floors" it gives five floors and over must have a resistance to fire of 1 hour. We therefore concluded that likewise external panels must also have a resistance of 1 hour. This also implies that sometimes buildings of less than five storeys, *i.e.*, those with floors of high resistance, must also have external panels of 1 hour fire resistance.

The outcome of this is that the figure of ½ hour given in Table VIII appears to be in contradiction to paragraph 6 on page 46. We should be glad to have your comments on this matter as to which should be followed.

The second point you raised in connection with the combustible material on the external face of buildings, we agree that the article does not completely clarify the position, these notes were based on the buildings under design in this office, where permission had been obtained to use timber under certain circumstances.

You will appreciate that with the publication of a complicated article on costs in a limited space there is a great danger of generalization on matters not strictly relating to the cost study, and we regret that in this case we did not make it clear that there are certain limitations. We hope none the less that the approach we have adopted to the cost comparison of important building elements will prove useful to others.

JOHNS, SLATER & HAWARD.

Ipswich.

The Albert Bridge

SIR,—I have noted with interest ASTRAGAL'S comments on May 23 about the reconstruction of Albert Bridge.

He asks "Is the LCC's architect's department to look after this side of it?" The answer is "Yes."

In general I can assure ASTRAGAL and his readers that the Council is arranging full consultation and taking all care to ensure that the best possible scheme is achieved from the point of view of architecture and amenity as well as engineering and traffic.

I am very shortly having a meeting between representatives of the Council and the other authorities concerned.

RICHARD EDMONDS.

London.

NEWS

ELECTRICITY BILL

Amendments Not Much Use

Those who regard public inquiries into the siting of power stations, nuclear or otherwise, as elaborate pieces of window-dressing, will derive little comfort from two amendments made by the Government to the Electricity Bill, which is now before the House of Lords. The first requires the Minister to hold a public inquiry whenever a local planning authority objects to the erection of a power station or overhead lines, and the second requires the Minister to consider the desirability of preserving natural beauty and protecting buildings of architectural or historic interest, both in formulating or approving general programmes, and in the preparation or approval of individual projects. These concessions do not touch the real objection to the public inquiry procedure, which was expressed by Lord Lucas when he described public inquiries as " foregone conclusions," and said it was asking too much of human nature to expect an inspector of the Ministry of Power to give an adverse report upon the Ministry's proposal. Lord Mills denied that an inspector would be prejudiced in favour of the Ministry's case, urging that the Minister had no " case," but was merely finding out facts in order that he could perform his duties of providing electricity and doing justice to the people.

It is true that the Minister does not have to prove his case at the inquiry; but the only reason for the inquiry is his proposal to build a power station, and it would be extraordinary if the inspector were not prejudiced in its favour. One might have some confidence in the inquiry if the inspector was independent of the Ministry, as some peers suggested. One would have even more if there existed a Ministry of Planning which could take an over-all view of all development projects on the national scale, and which would be the obvious body to hold public inquiries of this kind.

BYE-LAW CHANGES

Effect on Cladding

The over-ruling by the London County Council and the Ministry of Housing and Local Government of an objection by the RIBA to amended bye-laws relating to cladding of buildings and the protection of structural steelwork is not so final as might appear at first sight. The RIBA objected to the provision whereby the approval of the district surveyor would be necessary for the materials, thickness and manner of fixing and support of any cladding to a building; it contended that these matters should be dealt with centrally by the Council to secure uniformity, and to facilitate compiling of a body of knowledge on the subject. The Council suggested to the Minister, however, that despite this objection the bye-law should stand pending the report of the LCC's Advisory Committee (on which the RIBA is represented) which is considering among other things the powers and duties of district surveyors. The Minister, in approving the bye-law, has expressly stated that his approval is not in any way to be construed as an expression of opinion on the future powers and duties of district surveyors. The disputed section of the bye-law states: " Any cladding to a building, whether applied externally or internally, shall be of such materials, of such thickness, and fixed and supported in such manner as the district surveyor may approve, having regard to the particular circumstances of the case."

HISTORIC BUILDINGS

English and Welsh Reports

Very different views on the effectiveness of the machinery for preserving buildings of outstanding historic or architectural interest are expressed in their annual reports by the Historic Buildings Councils for England and for Wales. The Welsh Council, after severely castigating both local authorities (unnamed) and private owners for their unco-operative attitude, concludes pessimistically that " the agents of destruction, such as dry rot and the death watch beetle, progress more rapidly than some owners, particularly local authorities." But the English Council considers that, despite its inability to save some marginal properties, it has been successful in the three years of its existence in preventing the demolition or decay of any historic building of the first importance.

Since the passing of the Historic Buildings Act in 1953 the Historic Buildings Council for England has recommended grants totalling £865,000, as a result of which repairs have been or will be carried out by the owners to a value of more than £2 million. It reports good progress on the restoration of The Circus at Bath, and small grants on a 50-50 basis to the local authorities for preservation work on the Regency terraces at Brighton and Hove and at King's Lynn. Garden architecture has provided many applications, and the Council's impression is that the proportion of these buildings suffering extensive decay a few years ago was greatest. " These buildings include some of the finest and most original works of English architecture and it is therefore reassuring that a high proportion of the most important garden buildings, including some at Stowe, Hagley, Sugborough, Rousham and Castle Howard have been the subject of grants." The Council has been recommending grants at the rate of £350,000 a year for the past two years, and anticipates that over the next few years substantially more will be needed than the £250,000 a year which the Government proposed initially to provide for England, Wales and Scotland.

The Council does complain, however, that certain buildings to the fact, either that they were already too far gone when the Act was passed, or that they were borderline cases. To save those buildings which have been demolished would have required not only a very much larger expenditure from public funds, but also the acceptance of the point of view that even historic buildings of secondary importance should be preserved at almost any cost, whether or not they could be put to some useful purpose.

The Council does complain, however that its work has been handicapped by the lack of co-operation from a few local authorities, and by the practice, which seems to be on the increase, of subdividing a large estate for sale into lots in such a way that the historic house is left with a totally inadequate area of land around it, and is only of interest to a demolition contractor.

The Historic Buildings Council for Wales describes 1956 as a disappointing year, and severely castigates both local authorities and private owners for their attitudes, as a result of which " the procedure by which grants can be offered to owners for the repair of historic buildings cannot guarantee the preservation of fine buildings." To ensure this, it adds, much more direct measures would be needed which the Council, however, would hesitate to recommend. The Council does not disclose the names of the local authorities or the private owners whose behaviour it criticizes, but it charges them both with the same offence: allowing decay to proceed while they are unable to make up their minds to accept grants or to find a use for the building. In one case the repair of a building for which a grant to a local authority was recommended in 1954 had not begun by the end of 1956. In another, the Council has failed to persuade the private owner of a most important historic house, which is in need of extensive repairs and deteriorating steadily, to accept a grant. The owner was understood to regard deterioration as a lesser evil than any approach to a body even remotely connected with the Government. Other owners, it suggests, may be reluctant to accept grants on condition that limited facilities are available for the public to see the buildings.

EDINBURGH

Architectural Centenary Celebration

A correspondent writes:—

During the centenary celebrations coincident with the R.I.A.S. Convention at the end of May the Edinburgh Architectural Association held a small but exuberant exhibition of the buildings erected or designed within their chapter area during the last hundred years.

The general effect of the exhibition was exceptionally virile, and the 19th-century " Stones of Edinburgh," illustrated by recent photographs alongside drawings and prints yellowed and crumpled with age, almost brought to life the shades of Bryce, Washington Browne, Rowand Anderson, Lorimer and the rest whose monuments form such a solid part of Edinburgh's scene. Some abandoned projects were included; one which might have materialized more successfully than the subsequent building, and one, dreamed up by Robert Gourlay in 1855, which wickedly derived its full effect by the removal of St. Giles' Cathedral just a few yards eastwards.

The 19th-century spirit overflowed well into the 20th-century section of the exhibition, which was not arranged chronologically, and unfortunately, through lack of space, the two large and impressive models which could have made a fitting climax—Professor Basil Spence's fertilizer works at Leith Docks and Professor Matthew's power station at Kincardine—found themselves back in 1880! The organizers, however, under the direction of Graham Law, cleverly pin-pointed the " New Era " at the start of the second section with a small " Restoration (sic) of two Gazebos at Ladybank, Fife " into which David Mylne had very tactfully and skilfully inserted two small bachelor flats.

In addition to buildings already illustrated in the Press, such as Matthew's Edinburgh Airport Terminal, the Department of Health's Centre at Sighthill, and the winning design for the Paisley Technical College by Alison & Hutchison, all shown by photographs, drawings and/or models, there were quite a few which will deserve publication. Among these were Professor Gardner-Medwin's Department of Engineering for Edinburgh University, Alan Reiach's Knox Academy at Haddington, and Peter Whiston's Cistercian Abbey at Nunraw. The former two were regrettably illustrated only by models and the latter by two slight perspectives of the interior. More wall space was taken up by the E.A.A.'s Project for a Festival Centre in Edinburgh by Michael Laird and Douglas Laird in association with Alan Reiach, and this scheme, though enterprising and therefore praiseworthy, seemed to lack the *joie de vivre* of a first sketch without having attained the conviction of a fully considered scheme.

Among the many buildings deserving mention, which lack of space compels me to

omit, were several very efficient-looking hospitals by John Holt and a house at Cramond by two hitherto unnoticed young architects, who have just started practice in Edinburgh—Morris and Steedman.

It is clear from this exhibition, although it was only representative of a small part of Scotland, and was not even fully representative of that area, that, with a little more time available for preparation and a slightly different object in view, a very interesting exhibition of contemporary architecture in Scotland could be made. As a summary of the efforts and achievements of the last hundred years this centenary exhibition was adequate. For the architect it had everything—pathos, humour, and occasionally the æsthetic experience. What it has for the "man in the street," at whom Esme Gordon, President of the Association, says it is more directly aimed, the layman alone can tell.

MOW

More Building than Last Year

The value of building and civil engineering work done during the first quarter of 1957 was £525,000,000, according to provisional figures compiled by the Ministry of Works.

Allowing for changes in cost, the Ministry of Works estimate that 6 per cent. more work was done in the first quarter of 1957 than in the first quarter of 1956. The weather was unusually good for building in the first quarter of this year, employment was higher than a year ago and output per man also showed some increase. There has been some decline in total output since the end of last year, but this reflects mainly the normal seasonal drop in employment.

The Board of Trade figures for the number of industrial development certificates approved during the first three months of this year showed some decline, but the value of factory building actually carried out is being maintained at about the same level as last year. Housing activity has continued at a high level.

ARCUK

What You Musn't Do

In the annual report of the Architects' Registration Council of the United Kingdom there are notes about several cases which have been investigated by the Discipline Committee.

One architect has been disqualified from Registration for three years because he was found guilty of "disgraceful conduct" by inserting advertisements in the *Incorporated Auctioneers' Journal*, offering his services as an architect.

Another architect has been disqualified from Registration for three months because, after he had left a firm of architects and set up his own practice, he undertook work which had been partly completed by his old firm and left in abeyance. He did this without informing the firm. The Discipline Committee says that "An architect who is approached with regard to any work upon which it is obvious another architect has been employed must notify that architect notwithstanding that the original client has parted with possession of the building to another party."

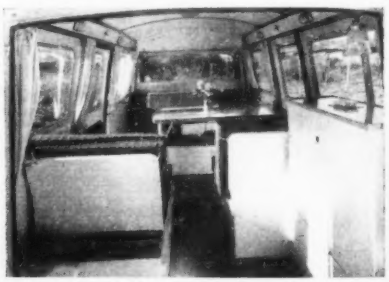
A third architect has been disqualified from Registration for three years because he (*a*) permitted builders to carry out work on his personal account in excess of licences obtained; (*b*) refused to pay the builders for work carried out on his behalf, and when sued pleaded illegality on the ground that the amount claimed was in excess of licences, although he himself was responsible for obtaining additional licences; (*c*) took advantage of his professional status as an architect in attempting to gain profit for himself at the expense of the builders.

You must not advertise for assistants in an ostentatious way, says the Professional Purposes Committee in the annual report. Two advertisers have been told that their advertisements must not be repeated in displayed form.

After the Committee had received a complaint about an architect who had inserted a displayed advertisement in a local paper, advertising building sites for sale, the Council ruled that an architect must not in any case publish an advertisement offering property for sale, whether displayed or otherwise.

The Council also considered the issue of booklets by estate owners or others offering plans of houses designed by an architect or architects and are of opinion that the names of the architects responsible may be published provided that the architect's name is not ostentatiously displayed, that the letterpress accompanying the design is not such as could be construed as an indirect offer of the architect's services, that the publication of the booklet is not solicited

AN INGENIOUS CARAVAN: YOU CAN SLEEP IN IT OR ON IT, COOK



Peter Pitt, the photographer, designed this caravan conversion of the Austin 152 Omnivan. The "kitchen," which hangs on the rear door, can be used for indoor or outdoor cooking. There are 90 ways the interior can be arranged—mainly by means of easy handling of interchangeable wooden units and squares of rubber-foam cushions. On this page are three ways of fixing the table and seating. On the opposite page are three ways of arranging sleeping accommodation: single bed (top left); double bed (top right); and child's bed (bottom left). The storage space, used for bedding, food, crockery, etc. (especially etc.—see bottom right) should

or induced by the architect, and that the architect is in no way concerned with its distribution.

DANCING ARCHITECTS

Invited to Blenheim Ball

Even if you are not going to the British Architects' Conference at Oxford, from July 10 to 13, you may buy a ticket for the Architects' Ball at Blenheim Palace which will conclude the Conference on Saturday, July 13. The tickets are obtainable from the Secretary, RIBA, 66, Portland Place, W.1, or from Mrs. M. J. Holmes, 9, Blackhall Road, Oxford, at £2 2s. each. The price includes supper. There will be a bar.

The Ball will begin at 9 p.m. and will continue until 2 a.m. Those wishing to travel from and to Oxford by motor coach may do so, on payment of 3s., in advance.

YORK

Course on Landscape Design

The York Institute of Architectural Study, Micklegate, York, is to hold a course on Landscape Design from July 27 to August 17. Students unable to attend for the whole period may join for shorter periods of a week or a fortnight. Studio accommodation will be provided. The fee for the whole course will be 8 guineas, or 3 guineas per week. Residential accommodation, at a cost of 5 guineas per week, will be available at St. John's College Hostel, Heyworth Green, York. Applications should be made, on a form obtainable from the Institute, by June 16.

Summer School

The eighth annual summer school for students will be held by the Institute at St. John's College Hostel from July 27 to August 10. It is open to students from architectural offices and from schools of architecture recognized by the RIBA. Preference will be given to students who wish to make measured studies for the RIBA Intermediate Examination or its equivalent. The fees for residents will be £15 and for non-residents, £6. Applications should be made on a form obtainable from the Institute, not later than June 24.

Exhibition Programme

The York Institute of Architectural Study is organizing seven exhibitions between now and November. They are as follows:

"New Buildings in the West Riding," June 10 to 21.

"Buildings in York and District," June 24 to August 10.

"Modern Landscape Design," August 12 to September 6.

"Outrage," September 16 to 28.

"The Church and the Artist," September 30 to October 12.

"Work by Members of the York and East Yorkshire Architectural Society," October 12 to 26.

"A Design for the Sydney Opera House," October 28 to November 2.

The Institute, in Micklegate, York, is open on week-days from 9 a.m. to 1 p.m., and from 2.30 p.m. to 4.30 p.m. On Saturdays it is open from 9 a.m. to 1 p.m.

CRICKET

The RIBA beat the LMBA by four wickets in an all-day game at Wanstead on May 22. The scores are as follows:

LMBA

E. Lessiter b Norton	1
S. Wright c Marlow b Batty	51
I. Thomas lbw Chegwidden	23
H. C. Watkins st Holmes b Batty	10
A. Cload b Batty	0
J. J. Webb c and b Norton	39
J. Cranson b Robinson	8
P. Trollope b Robinson	2
M. E. Brock c Holmes b Norton	1
R. F. Tobitt c and b Robinson	1
R. W. Triggs not out	0
Extras	2
	138

Norton 3 for 27, Batty 3 for 46, Chegwidden 1 for 16, Robinson 3 for 47.

RIBA

J. G. Batty b Watkins	23
A. Chegwidden c Webb b Thomas	24
A. Marlow b Cload	23
G. G. Banfield c Webb b Thomas	40
M. E. Pache lbw Cload	0
D. L. Robinson lbw Thomas	13
J. Kennedy-Hawkes not out	4
R. T. Holmes not out	5
D. le M. Brock, C. A. R. Norton, and J. Ficken did not bat	
Extras	8
(for 6 wkts.)	140

Cload 2 for 38, Watkins 1 for 38, Thomas 3 for 23, Wright 0 for 33.

CRITICISM

The architects reply

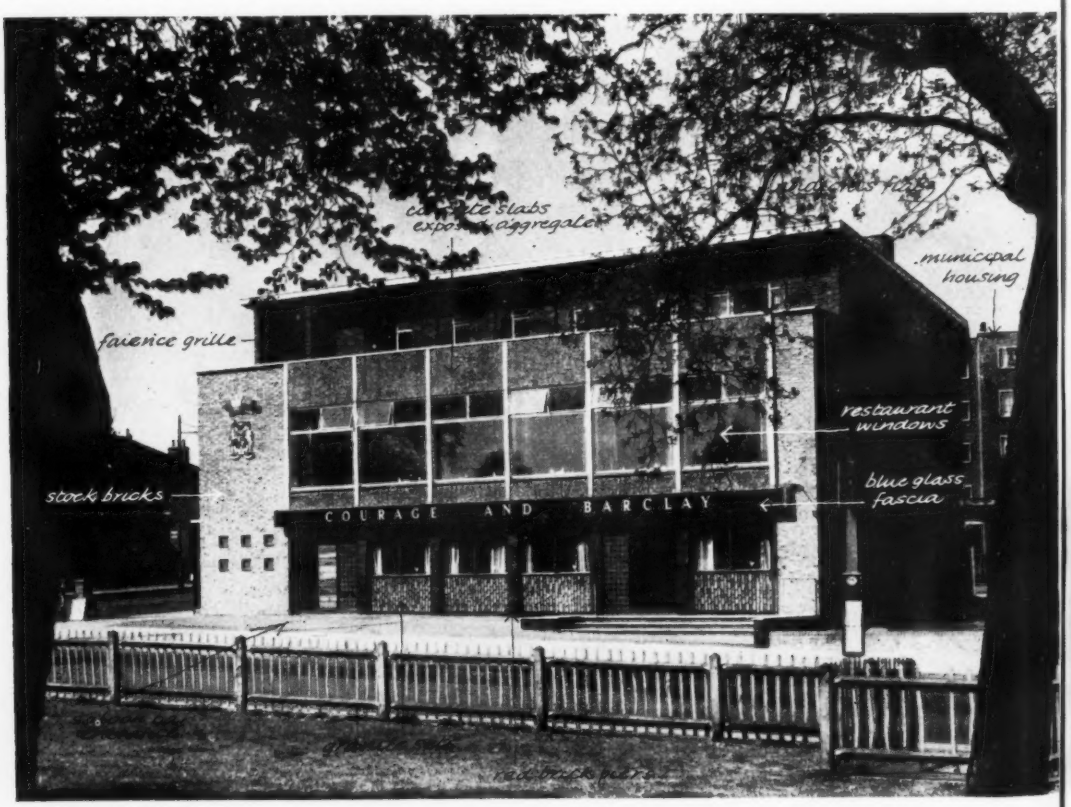
Last week we published a criticism by J. M. Richards of the pub at Peckham Rye, designed by Westwood, Sons and Partners. Below are the architects' replies to the points made by Mr. Richards.

In replying to Mr. Richards's criticism of the King's Arms, we are limited inasmuch as we share with him a similar outlook in our approach to the problem of pub design, and we therefore agree with a great deal of what he has to say. A number of minor points have been criticized, rightly, in some cases, while other cases may, perhaps, be regarded as matters of opinion. However, the important criticisms, and those of the most general interest, have been directed at the arrangement and layout of the ground floor bars, and at the external treatment.

Mr. Richards is quite correct in pointing out that the supervisory requirements of the licensing authorities are a major factor in public house design. An example of this is the need for lavatory entrances to be visible from behind the bar counter. It is, admittedly, possible to satisfy these requirements by means of an "island" bar counter set in the middle of three or four small bars and off-licences. This was the layout of the original King's Arms, and some of the former "regulars" have mentioned their preference for the more intimate atmosphere of the old house, but for reasons touched upon later this solution was not adopted.

In designing a pub, there has to be the most intimate collaboration between brewer and architect, and the client's overall policy, based on a careful study of the various trends in the licensing trade, must always be borne in mind. There is, at present, a tendency towards a reduction in the distinction between first and third class drinkers. It is no more than a tendency, but within the next generation we may see a revolution in drinking habits, and with it the abolition of the two-bar system. Similarly, the brewers might find themselves trading in soft drinks to a far greater degree, and this might result in further layout alterations. The tendency remarked by the critic to open up the bar space seems to us to be due to (1) licensing

The main front of the King's Arms, overlooking Peckham Rye.



justices' requirements and (2) the need to provide for ever-changing conditions. It therefore seemed logical to plan the two bars within a simple, rectangular space, separated by no more than a light, easily-removed partition. Should the bars have to be re-planned for the reasons suggested above, the operation could then be carried out with a minimum of trouble and expense.

One example of a quite sudden change in drinking habits is the remarkable turnover to bottled beer from draught beer mentioned by the critic in discussing the crate store. This is where the crates of "empties" are kept pending collection and replacement by the brewery vans. A large, well-placed store with immediate access to the serving space is essential where there is a big sale for bottled beer, and there is an increasing tendency for this part of the pub to become one of the most important parts of the plan. On a limited site, with bars, lavatories (one of the most complicating factors of pub designing), entrances, fireplaces, car parks all fighting for position, the intrusion of an enormous crate store is a major problem. We started off with quite a small one, which became progressively larger as reports came in from other pubs of their difficulties in handling bottles. The present store is the largest we felt able to provide in view of the cube limitations imposed by the War Damage Commission.

The pub is on a corner site, and one point of criticism was that this had not been taken into account in planning the entrances to the ground floor bars. With the present layout, a corner entry is the obvious answer, but as the plan developed it became apparent that this was not going to fit at all happily into an otherwise satisfactory plan, and we had to decide whether an entrance off the secondary road was of real importance. As the critic points out, the object of such an entrance is to attract the passing custom. In the present case, this important road junction is dominated by the new building to such an extent that it can hardly fail to register with the most casual pedestrian or even motorist. In the event, the external entrance to the restaurant foyer serves as a secondary approach to the saloon bar, but we have no information as to its effect on casual trade.

Mention of the dominating character of the building brings us to the criticism of the external treatment. The "larger-than-life" scale remarked on by the critic was the result of a careful decision which took into account the importance of the corner site and the height of the adjoining blocks of municipal flats. The main reason for setting back the external wall of the top floor flat was to eliminate as far as possible any domestic scale.

We were a little taken aback to see the front described as dull. Apart from the general scale and the proportions of the various elements, we have relied for effect on colour, associated with the London scene, and applied decoration in the form of signs, lettered fascias and contrasts of material; one might take as a simile a well-designed label on an elegant beer bottle. We thought that, if anything, we had overdone the excitement!

The criticism of the treatment of the junction of planes at the corner is a fair one. The problem arises through having to build to the limits of a confined and irregular site. We did, in fact, use a model in trying to devise a sound, three-dimensional solution, and the result seemed to us to be the best of various not entirely satisfactory alternatives.

We will deal with the remaining points quite briefly in the order in which they occur.

1. Why no decorative mirrors?

Answer: Not liked by clients, who felt that the deliberate introduction of a Victorian motif might be resented by their public as a "phony."

2. Unsuitability—domestic character of wallpaper for bars in general.

Answer: Liked by brewers as providing an easily-changed background.

Liked by us as providing a not too heavy touch of colour just where we needed it. We have, however, seen wallpaper used in pubs with deplorable effect, but would suggest that so far as dining rooms are concerned there is quite a strong tradition.

3. Overheating of cellar.

Answer: The efficiency of the old-fashioned cellar in keping down the temperature is entirely due to the cooling by evaporation of the walls and floor, which are structurally unsound by modern standards, and are, therefore, in a state of continual dampness. In such a case, the installation of an uninsulated boiler room has often been found to have no adverse effect. Conversely, a soundly-constructed modern cellar with a completely isolated boiler room tends to be inefficient in this respect. Although the King's Arms cellar retains much of the original brickwork, and has not been tanked, it comes, unfortunately, into the latter category.

4. The conflict between horizontal brick courses and vertical setts below ground-floor windows.

Answer: This has never bothered us and we feel that it is a matter of opinion. One frequently finds partners (and assistants!) in the same firm disagreeing on such matters. The idea here was to follow the tradition as in Cornwall of using the stones vertically as a strong base.

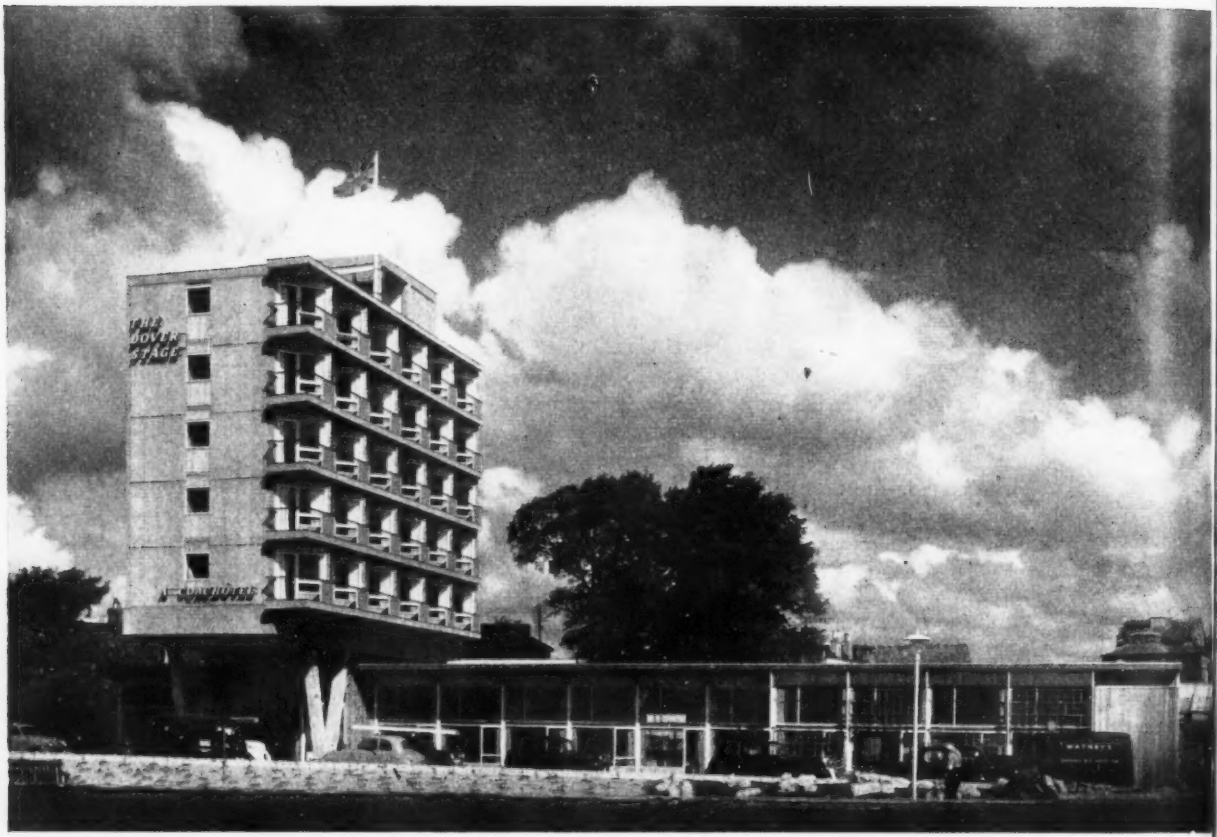
5. Small and genteel sign.

Answer: We agree. The question of cost came into it: the sign was full-sized in colour by the architects and carefully emasculated by the signpainters; in any case, it should be in full relief.

We are very pleased that the critic has seen fit to mention the part played by Messrs. Courage and Barclay. We had the advantage of having their enlightened chief architect to hold our hand. One could hardly wish for a more understanding client.

In conclusion, may we congratulate the critic on his obvious knowledge and experience of the London pub, and his very fair and reasoned comment.

BUILDINGS IN THE NEWS



Coach Hotel at Dover

" The Dover Stage," designed by Louis Erdi for Lyon-Watney (Coachotels) Ltd., is the first hotel in Europe specially designed for motor coach tourists. It will be the subject of a full analysis, and a " Criticism " article by J. M. Richards, in a forthcoming issue. It consists of a multiple-storey bedroom block in reinforced concrete supported on four sets of " V " columns, linked by the service core to a low wing in timber and brick containing the public rooms. There are 42 bedrooms. The general contractor was R. J. Barwick

Aeronautics Department at the Imperial College

The Roderic Hill Building of the Imperial College of Science and Technology was opened by the Queen Mother on May 28. It houses the Aeronautics Department and additional accommodation for the Chemical Engineering Department. Work was begun in 1952 to Sir Hubert Worthington's design and suspended soon afterwards with some of the steelwork erected or on order. Work was re-started in 1954 to the design of Norman and Dawbarn with Sir Hubert Worthington as consulting architect. The service requirements are exceptionally complicated. General contractors: Higgs & Hill Ltd. (foundations) and J. Jarvis & Sons Ltd. (superstructure).

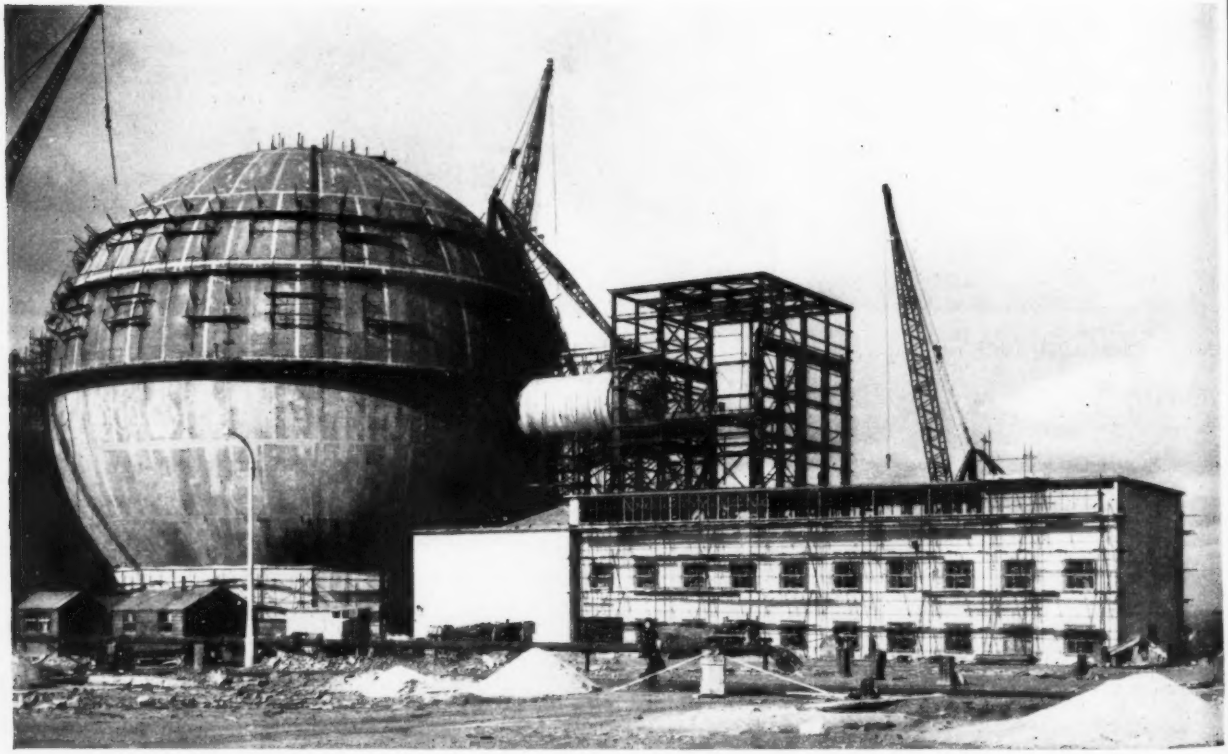
Postal Sorting Office at Norwich

The new postal sorting office at Norwich was designed by T. F. Winterburn, senior architect of the Chief Architect's Division, Ministry of Works. It is planned on four floors, and a basement for heating plant and stores. There is a garage and workshop on the ground floor, with a loading platform in the yard from which mail is conveyed to the first floor sorting office by conveyor belt. There are offices on the second floor, and a canteen and lounge on the third floor. The roof over the canteen is of hollow precast, prestressed reinforced concrete units only 14 in. deep, spanning a clear width of 42 ft. The general contractors were J. Young and Sons Ltd.

Computing Centre in Wigmore Street, W.1

C. H. Elsom is the architect of this very large block of offices, above left, now nearing completion in Wigmore Street, W.1. Part of the premises has already been taken over by IBM United Kingdom Ltd., and adapted to be a showroom and a computing centre, above right, using the 650 high-speed digital computer, augmented by punched card accounting machines, calculators and auxiliary equipment. This is on the ground floor, where the machine can be watched by passers-by in the street. The company has its offices on the upper floors. When installing these computing machines the architect had to take the following factors into account: an output of heat, per machine, of 123,500 BTU's per hour; a dust-free atmosphere for magnetic tape storage with a humidity of between 40% and 60%; a high noise level; unusually high floor loads for an office building. For this showroom the designer, Jonathan Green, installed the machinery on a platform of ⅞-in. plywood panels (tested to 800 lb. point load) on lattice beams which allowed flexibility in the positioning of power cables and allowed space for underfloor air ducts. Fibreglass pillows have been placed in the cavity to reduce drumming. Air extract ducts are above the false ceiling. The lighting is by fluorescent tubes and baliast lamps. Intensity: 80-120 foot candles at service height.

Above: Dounreay works from the seaward side, which provides one of the most dramatic views of the steel sphere enclosing the fast-breeder reactor. On the extreme left is the sea-water pump house which will supply cooling water at the rate of 2 million gallons per hour. Below: the reactor administrative building with control room adjoining the fast-breeder reactor.



Michael Laird writes this account of a visit to Dounreay, the site of Britain's latest experimental atomic establishment on the north coast of Scotland. He discusses the architectural work both at the atomic establishment, dominated by the 135-ft. diameter shell enclosing the fast-breeder reactor, and at the Atomic Energy Authority's housing estate at Thurso. The industrial buildings were designed by the Industrial Division of the AEA, chief architect R. S. Brocklesby, site architect A. V. Levens, and the housing by Hugh Macdonald and Son.

ARCHITECTURE IN THE FAR NORTH

A Visit to the Experimental Atomic Station at Dounreay

It really began in the aeroplane when, with a thin film of ice forming on the inside of the window, a Central European correspondent snuggled deeper into his fur collar and remarked "It be expected colder at Wick . . . . of course nothing of interest as architecture." The depression continued at John O'Groats when as the bus stopped at the large ungainly hostelry of the same name, remotely situated in company with the "last house in Scotland"—a once beautiful little Caithness cottage now suffering a castellated porch—Graham Allen (*The Times Survey of Industry*) observed "Of course there's really no *raison d'être* here—except that it's the end." The press reception that evening did little to counteract a feeling of fruitless venture when *The Observer's* John Davy answered "Housing? Oh yes I shall be interested in what you think about corners of Harlow New Town being dropped around the Atomic Energy centres in various parts of the country." This, from quite the most level-headed man in the room, hardly whetted one's appetite for the following day's visit to Dounreay and Thurso.

Sense of Adventure

However next evening, at a similarly lively reception (the event, a three-day one, was fraught with journalistic hazards of this kind) everyone, from the very charming *TASS* correspondent to the writer, seemed fired by the more than splendid hospitality—as much by the extraordinary *esprit* of the Atomic Energy Authority staff at Dounreay as by the unprecedented promise of their apparently endless energies. The great enthusiasm and sense of adventure among both the engineers and the architects on the site was surely due to their necessarily-close co-operation at all stages of a complex operation being carried on in unusually difficult circumstances.

Dounreay is an experimental station. Specification for buildings, plant, and services are therefore more liable to change in this establishment than perhaps any other in the country. Yet it has had to be created with immense speed on an isolated site served by few of the normal communication lines. There is only a single line railway to Thurso, and a narrow road traverses the intervening 10 miles to the site. Work began in June 1955 and now somewhere between £15 million and £20 million have been spent (Sir Christopher Hinton would divulge no more precise information on this point) of which about 20 per cent must be on buildings or "semi-building" structures. While the administration buildings are generally complete—and already needing expansion—there is still a considerable amount of constructional work in hand before the two reactors are due to become "critical" (an oddly scientific euphemism) on April 1, 1958. Whatever the more purely architectural quality, it is surely remarkable to have achieved a clearly ordered scheme of things in two years of constant re-adjustment in programme. Contracts generally are on a prime cost basis, and make extreme demands on the supervisory duties of the site architects and engineers.

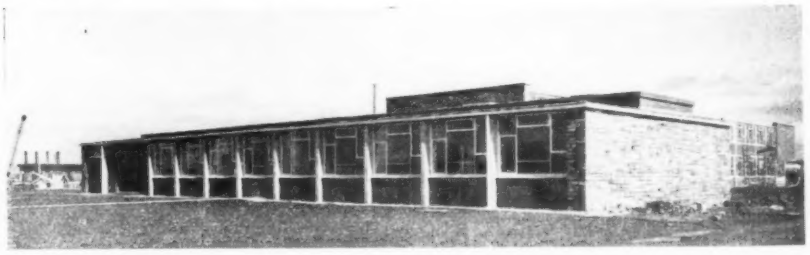
The site architect at Dounreay is A. V. Levens, and it really is hard to know how he and his enthusiastic but very few—in fact too few—assistants manage to cope with their multifarious responsibilities. These are modest men doing a worthwhile job, ever-increasing the architects' prestige in this industrial field, and for whom only the greatest effort is good enough. In the course of our visit there were many instances of this effort being appreciated but, as the senior P.R.O. himself admitted, there must be even more pressure on every department of the U.K.A.E.A. than in any other overworked department in the country.

Site and Layout

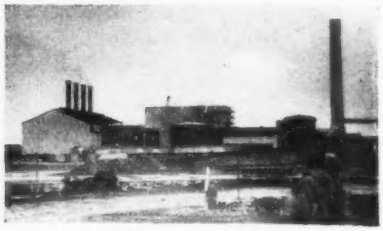
The site itself is on a former naval airfield and is subject to high winds as well as raging seas on the rocky northern boundary. All external steelwork is grit blasted and zinc sprayed before erection and subsequent painting, while the 100 m.p.h. winds have severely tested the detail design from every aspect. It is frankly admitted that design modifications are still in progress as "faults due to these abnormally searching conditions are discovered." These buildings are designed in Risley, Lancashire, so that faults of this kind are not entirely unexpected. Their apparently "thin" architectural character is most obvious on the entrance facade of the main administration building (unfortunately not shown in any of the official photographs) where gutters seem wafer thin, reveals are almost not at all, and there is no clearly identifiable character—regional or otherwise—in spite of Caithness sandstone gable ends and spandrel panels of locally produced concrete brick. Fortunately, this building does stiffen up towards the farther end where the surgery block terminates the L-plan. Similarly, the health, physics and fire-station buildings take this desirable trend a stage further and these are more typical of the general design quality. The grouping and design of both plant and building is generally useful in its effects but the greatest tragedy is the nearly complete compromise of a successful layout by our old friends, the Gibbets. The official handout states ". . . . deliberate policy of keeping the height of buildings low, which is both in keeping with the gently undulating character of the surrounding countryside and also serves to minimise the effects. . . of high winds." But this policy cannot, let's face it, minimise the effects of the lamp standards. That these concrete killers of scale have penetrated to farthest Caithness is most difficult to believe, and the appearance of a representative exactly before the reactor itself is almost amusing.

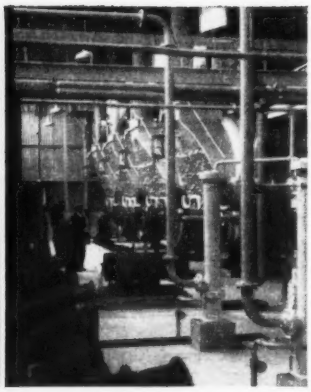
Plant

The fast-breeder reactor (where actually more fissile material will be formed in the breeding blanket than will be "burned" in the core) is enclosed in a splendid great sphere, 135 feet in diameter, which has been site-welded plate by plate. The reactor was sited on the axis of one of the main runways and the main entrance was placed on the same axis, so that the landward approach is really most dramatic—while that from the sea must be quite sensational. The sphere is a wonderful form for an isolated site, and the associated buildings are clearly articulated in emphasis of a general visual order. Associated with

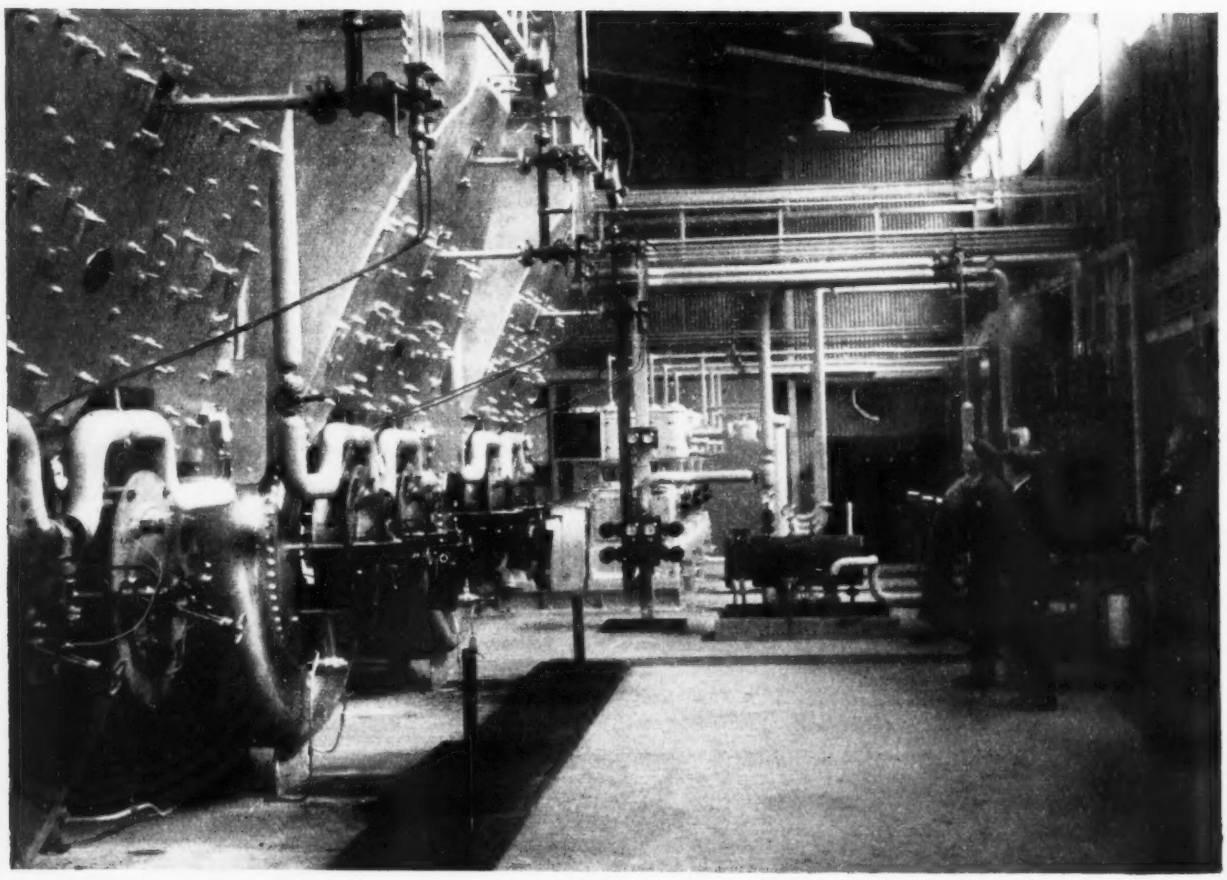


Above: the surgery wing which terminates the west end of the administration block. Below: the fire station and health physics block. Note, on the right, the concrete lamp standard criticized in the article as a "killer of scale."





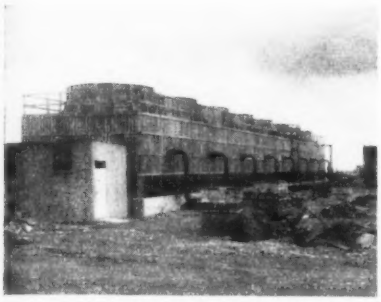
Above left: a typical detail treatment common to administrative and welfare buildings at Dounreay. The gable is of Caithness stone, and the spandrel panels of a yellow-tinted concrete brick from a plant specially set up for Dounreay. Top: the sea-water pump house which, despite its situation, does not promise great dramatic effect. Above: general view from the fast-breeder reactor towards the materials testing reactor (right by chimney) with the boiler house on the extreme left. Extreme left: a laboratory interior. Left and below: the interior of the boiler house, which is beautifully organized internally and is outstanding for its careful colour treatment.



the Reactor Group Building is the sea water pump house, designed by Sir William Halcrow & Partners, which though situated on the cliff face, does not somehow promise the same dramatic effects.

To the east of all this, and well separated, lie the Chemical Group Buildings. In the words of the scientists themselves these are "first class—absolutely first class"—and represent an incredible complex of comprehensive services and ducts, together with ingeniously flexible planning arrangements. The boiler house is also beautifully organized internally and is perhaps the most outstanding example of the carefully considered colour treatment which prevails at Dounreay.

Farther to the east there is the Materials Testing Reactor Group Buildings. This reactor (which does exactly what its title



The very low all-timber cooling "towers."

suggests) will be devoted to applied research and development for all types of reactor which are direct commitments on the Industrial Group of the Atomic Energy Authority. The M.T.R. Group comprises the reactor itself (housed in a cylindrical steel shell), with an "active area" containing heavy concrete caves, laboratories, plant room, etc. It generally follows Harwell precedents with certain design modifications as required by different operational requirements and site conditions. The all-timber cooling "towers," eight of them in series, by Messrs. Head Wrightson Limited, are of interest and they stand probably less than twenty feet high.

Houses for Staff

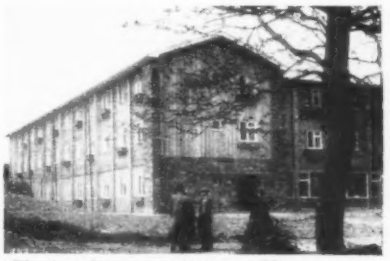
At Thurso there are 450 houses for staff (known locally as "The Atomics") completed or under construction. These are laid out to apparently usual housing estate pattern, but with a great number of garages (almost one per house), and have been designed in various offices. It is the policy of the A.E.A. to commission local architects for associated housing projects and this would appear not only politically advisable but physically necessary. The time and cost factors are, however, even more crucial in their effects on housing design and one can only sympathize with a local architect who has to plan house types to someone else's layout, before issuing these drawings to various competing contracting firms who not only tender but design elevations to suit—later to be revised and possibly modified by the Risley architectural department. The semi-detached timber houses shown in the accompanying photographs are a result of this mode of operations (the houses being "elevated" originally by the successful contractors whose offices happen to be in Nottingham). The nominated architects are Sinclair Macdonald & Son, Thurso, and they have designed some fine looking houses for senior officers. These employ the very lovely local stone in part and are roofed with Caithness slabs, but only four of these were encountered in the visit, and apparently costs have prevented the use of local materials for the remaining houses, *e.g.*, the great weight of Caithness slates requires heavier timbers.

There are 156 houses and a three-storey high extension to Ormlie Lodge hostel, of timber construction. The hostel accommodation was designed at Risley and looks well—a feature being the clean effects of welded, and therefore apparently jointless, downpipes which fly free of the facades. It is most unfortunate that the houses were not completely designed by the nominated architects for timber is a most suitable, even if rarely used, material for a Scottish climate, and if the density had been either higher (or lower) than 9-10 houses to the acre, then the whole scheme could have been extremely successful. All services have been kept underground, there is a glorious absence of boundary walls, and even the "temporary" single-storey timber houses of prefabricated construction look as well as semi-detachment can, though suffering from equally "temporary" landscaping. Hugh Macdonald, of Sinclair Macdonald & Son, explained that terraced housing had proved too high in cost on this sloping site, and the remaining traditional houses designed by this architect are also semi-detached. The entire housing project is well above the very variable standard of contemporary developments in Caithness, but can hardly rival the real traditions of the county which may embrace castles or cottages or even their outhouses.

We also saw some fine closely-knit housing in central Thurso designed by Hugh Macdonald for the local authority. This layout, by the late Sir Frank Mears, is much nearer to the traditional "snuggle" pattern of coastwise architecture in Scotland and includes the beautifully rehabilitated old toll house. What seems strange is the existence nearby of potentially wonderful old cottages, derelict and clustered round the ruins of the church, while Thurso extends both east and west for its own and the A.E.A. requirements. This was discovered by the writer for himself, as were considerable areas of apparently waste space nearby, so that his information is not as full as he would like, but it does seem an anomalous situation. Mr. Trystan Edwards, of the *Financial Times*, was the only other architectural correspondent to brave the long trip north, and it is interesting to note that this redoubtable reviewer also held strong views about the low density of the A.E.A. housing.

And so, back to Dounreay and the reactor rampant, framed between the tubular steel entrance gates, picked out in yellow and black, and representing a successful solution to a difficult design problem. There are many more exciting aspects of this establishment but there is no space to write about such things as the prototype submarine reactor, the processes of the plant, or the very far-reaching effects on the architectural form of nuclear power stations which the Dounreay experiments may have. For instance, the reactor itself is about the size of a dustbin and it is possible that no containing sphere—at any rate of this dimension—will be required in later applications, though of course there is still the great concrete biological shield and the primary heat exchanger to be reckoned with. We cannot compare this plant, with its cheapest materials and exigencies of ultra-rapid building, to the more leisurely exercises of private consultants. Dounreay is not yet complete and if the architectural approach is of a calibre matching the great scientific adventure of the "clients" then we may be well-rewarded next year. Now, there is no more crucial field of industrial architecture and if these stations look like something we can eventually understand, then our present advantage on the export market will be reinforced with something of architectural significance. This, in the face of U.S. competition, is a possibility almost without precedent in our time.

The housing estate at Thurso for "the atomics," as the local people call the new residents. There are 150 of these timber houses on the estate.



"The hostel accommodation at Thurso (3-storey timber construction) looks well."

"Temporary" single-storey timber houses.

"Contemporary" developments at Caithness.

The beautifully-rehabilitated old toll house, Thurso.

"Potentially wonderful" old cottages cluster round the ruins of the church.

The idea of a comprehensive university faculty for the education of architects, planners, landscape architects, structural engineers, builders and others concerned in building and design is here developed by Percy Johnson-Marshall. The faculty would provide both degree and post-graduate courses in association with a Building and Planning Research Centre, and Mr. Johnson-Marshall shows how such a faculty could be developed from one or more of the existing schools of architecture.

FROM SCHOOLS OF ARCHITECTURE TO

A NEW UNIVERSITY FACULTY

By Percy Johnson-Marshall

Most architects have a pet theory about architectural education, and it is a very hopeful sign that it is today one of the most controversial subjects under discussion. Indeed, out of the present ferment of theories and arguments may emerge in due course a firmer foundation for our future work.

The ideas set out in the following statement are entirely personal, and have evolved from a particular set of circumstances, so that a brief account of the latter may be useful. My own interest in architectural education was first aroused by a visit of Professor Gropius when I was a student at Liverpool. He brought with him a fine exhibition of Bauhaus work, and we were filled with enthusiasm both for the variety and quality of its achievements and for his teaching ideas, which at the time were quite new to most people in this country (who had so unfortunately forgotten Lethaby and the other British pioneers).

It was not until several years later that the chances of war found me, along with many other British architects and students, transported to India and stationed in Calcutta. No school of architecture existed in that great city, and I was invited to organize the preparation, with an Indian enthusiast (Mr. Sris Chandra Chatterjee), of a syllabus for a school of architecture with a department of city and regional planning. I was then appointed (by permission of the Army Commander) to a university committee set up by the Governor of Bengal to consider how such a school could be set up. I was fortunate in having a group of devoted colleagues, including graduates of a number of British and American schools, and it was while we were engaged in the laborious task of drafting a detailed syllabus appropriate to Indian conditions that the need of carrying further the Bauhaus ideas to the stage of integration with the university system became apparent. After discussions with the then educational adviser to the Indian Government and other leading educationalists in India, I prepared a memorandum on a proposed faculty of building, planning and technics for the adviser. This, with a number of other documents by various experts, was eventually put before the All-India Committee for Technical Education, and in due course an institute along the lines of the faculty was set up in Bengal.

Since the war I have had numerous discussions on the idea of creating such faculties in this country, and have found many progressive people concerned with technical education thinking along similar lines. In view of current interest in education in the building industry, with proposals being initiated for degrees in building, chairs in building science, etc., it seems to be an appropriate time to put forward the following statement as a basis for discussion.

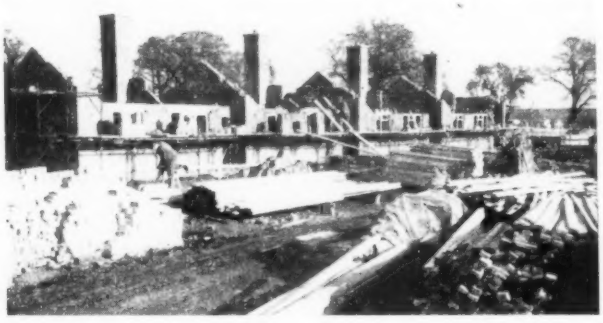
Since it is obvious that a fully developed faculty could not spring into existence overnight, I have indicated a tentative programme whereby it could be achieved in stages. The broad aim, however, is essentially one of bringing together a group of professional and technical experts in the common task of studying

in collaboration in the hope that the problems involved in working together will be made easier.

Background

Many people still remember Winwoode Reade, that enthusiastic disciple of Darwin and author of a very fine book entitled *The Martyrdom of Man*. This book was originally intended to be an historical study of Africa, but as he worked on it he found it impossible to avoid including Asia and Europe as well, and eventually it became an outline of universal history. This is, of course, a difficulty which occurs in writing about most subjects, but more particularly of those where deep changes are taking place which affect them closely. If, therefore, as an architect, one begins to consider the problem of architectural education, and one agrees that its purpose is to educate men and women so that they may create architecture, then automatically any consideration of the content of architecture involves a study of building technique, organization, materials, and so on, until one is eventually examining general trends in the building industry as a whole. Incidentally, I would like to say that I am using the word "building" in the broad sense in which it has been used by le Corbusier and in the various publications of CIAM.

Students of the Birmingham School of Architecture design buildings and get experience of site work in their "live" programme: here are four old people's homes under construction at Garrett's Green, Birmingham, which were designed by the School.



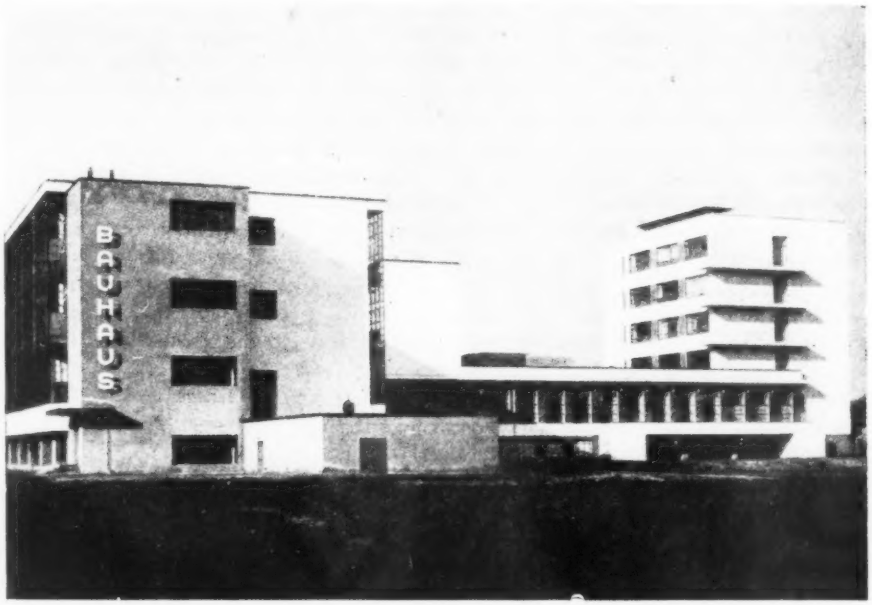
Trends in the building industry

The main trends today, then, as I see them, are towards a rapid industrialization in all sectors; in the design and production of new components, in their assembly on the site and organization of the job. This industrialization carries various implications: for instance, that building work can be vastly speeded up, so that large-scale comprehensive development can be undertaken in a much shorter space of time than before, and again it implies, if it is to be successful, a high degree of specialization, but at the same time a much closer co-ordination between all the experts involved in the job. Let us look for a moment at the building process and the various experts required.

First, there is the problem of architectural design. This covers not only the planning and three-dimensional creation of every different type of building, but extends in scale down to component design at one end, and up to civic design and town planning at the other. Clearly this is by and large a vital part of the architect's job as we know it today and as it always will be.

Second, there is the problem of industrial design in terms of taps, baths, door handles, furniture, cookers, etc., and the related problem of component design of prefabricated parts; of beams, cladding, partitions, windows, and so on. In some cases the design of all these various items will be undertaken by architects, in others by industrial designers (who will, in any case, have to be closely conversant with architecture). Coupled with these problems are those of specialized equipment, such as heating, lighting and ventilating.

Third, there is the problem of the economics of building, and for the complex buildings of today a com-



The Bauhaus at Dessau (left), by Walter Gropius, which provided intellectual, manual and technical training for men and women in all kinds of creative work, particularly building, executed experimental practical work and developed models for industrial and manual production;

paratively new expert has appeared in the form of the quantity surveyor. He, of course, has to be hand-in-glove with the architect, for his is essentially a particular aspect of architecture.

Fourth, there is the problem of the detailed structural design of complex buildings, and this has become the sphere of the structural designer or structural engineer, whose work is also an integral part of the broad design.

Fifth, there is the problem of specialized equipment, of heating, lighting, and ventilating; today often highly complicated specialists' work, but involving the closest integration with architectural design.

Sixth is the practical job of getting the building on to the ground. This can be divided into a number of processes, (*a*) ordering the materials and seeing that they are the right ones, that they are at the site in the right order, in the right place at the right time, (*b*) seeing that the building erectors are fully acquainted with the job, and with each other's contribution, and with the building process; since the very speed and complexity of building today demands a high standard of efficiency and team work from the operatives, and (*c*) making sure that the work of the various specialist sub-contractors is planned and co-ordinated efficiently. In terms of staff, this demands, firstly, a new type of operative who can handle prefabricated components efficiently; secondly, a highly skilled foreman; and thirdly, a new type of building manager, who is reasonably conversant with, and sympathetic to, the problems of architectural design, but who is also really efficient at organizing a job on the site. In addition there is the range of specialists for the sub-contracted work, who also need to have a good knowledge of building technique as a whole in order most efficiently to carry out their expert contribution. Then there is the clerk of works, the architect's site representative, the man who ensures that the job is carried out from day to day in accordance with the building agreement.

Nor must we lose sight of painting and sculpture, or of the painters and the sculptors, whose work was once so much a part of the buildings which they adorned. Only by strong pressure to have enrichment in buildings large and small, and then by close collaboration between architect and artists, will we get back to the old synthesis and unity of the arts. Coupled with painting and sculpture may be considered landscape architecture, which has a very important part to play in town and country planning, in neighbourhood design, in central area redevelopment, and in the humanizing of urban spaces of all kinds.

The list of jobs and experts is already formidable, but is not yet complete. There are the problems of urban design and town planning, which are concerned primarily with the use, siting, and relationship of buildings, but are complicated by many other factors; and beyond them again is the wider problem of regional planning, which includes all the important economic aspects of the environment, among which building is only one—but a very important one, nevertheless.

There is also the problem of buildings as property, and of the land on which buildings are erected. Land, with or without buildings, is bought and sold. Here is the sphere of the valuers and of the building and estate surveyors, who were once indistinguishable from architects, and who today remain constantly in touch with them.

Scope of studies

So we can make up a list something like this of the experts concerned with the building industry:

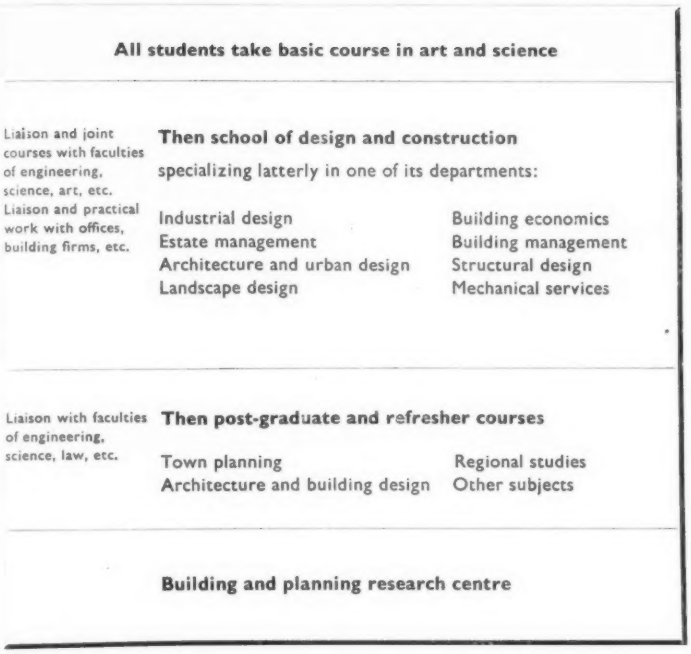
Industrial designers (including furniture designers).
Architects.
Town planners.
Building and estate surveyors and valuers.
Quantity surveyors and estimators.
Structural engineers.
Heating, lighting and ventilating engineers.
Building managers.
Sub-contractors' specialists.
Clerks of works.
Landscape architects.

When one looks at this long and varied list (in which I would also be inclined to include painters and sculptors) one realizes that it represents a great new industry, comparable with that of engineering, or of science. One also realizes that there is no university educational agency which is catering for it as a group. It is interesting to note, too, that engineering began simply as civil engineering or hydraulic architecture in the 16th century, but with the enormous technical advances of the last 150 years the faculties of engineering now have a whole range of specialist schools and departments (mining, mechanical, electrical, hydraulic, hydro-electric, aeronautical, etc.). Science, too, is catered for by faculties with an impressive range of constituent departments. The building industry in contrast has no comparable higher educational organization. There are schools of architecture, some of which are attached to university faculties of arts (the word is often used in the restricted sense of *literary* arts). Others are subsidiaries of schools of art, while others again are parts of technical colleges. There are also town planning departments associated with schools of architecture or on their own, one or two departments of building science associated with faculties of engineering, a couple of colleges of estate management, and so on.

Perhaps the polytechnics come nearest to the idea of a higher educational organization for the building industry, but they suffer from a number of disadvantages, notably that they are not within the university system, and that they include a range of subjects far wider than the building industry. The Bauhaus, the most famous polytechnic of all, fell short in the same way, although its curriculum and breadth of teaching foreshadowed future developments.

The proposed faculty

The obvious solution is a new university faculty, with a full complement of schools and departments. These



This diagram shows how a university faculty could be organized, in the closest association with a Building and Planning Research Centre.

could take the form of a tree—all the students taking a preliminary course at a basic school of art, science, and technics. Then they would proceed to the main course, where they would branch out to their various specialist courses. After graduation students would have the opportunity of post graduate studies and research, and there would also be refresher courses in all subjects. The whole faculty would be hubbed about a research centre, which would also cover all subjects. The courses would be a balanced mixture of theoretical and practical work, taking full advantage of internal university liaison on the one hand so as to co-operate fully with other faculties, and of external facilities on the other with outside offices and firms. Also, an essential part of the idea is that the faculty would be regional in character, so that constituent schools could be in various centres, and not all necessarily in one place. One of the most important things about the faculty is that (*a*) it would have university status, and thus be able to take advantage of liaison with other institutions often only to be found in universities, (*b*) it would form a large and powerful centre where all kinds of experiments could be made, and where exercises in teamwork could take place at the student stage.

How to start

This is all very well, you may say, but it represents an ideal. It is like the American tourist of Lilienthal's TVA story, who asked a hobo the way to Jonesville. "If I were you," he said thoughtfully, "I wouldn't start from here at all." It is, therefore, necessary to start from the situation as it presents itself today, and it is essential that, like the County Development Plans, any proposals must be programmed in stages.

Let us assume, for instance, that there is an existing school of architecture in a large city which is the centre of its region. If it is not already part of the university, it would begin by endeavouring to achieve this status. It would also initiate the setting up of a town planning department, if one did not already exist. It would also endeavour to persuade the Government to start up a regional Building Research Centre in adjacent premises, and would draw a building school (if it already existed) into close collaboration, and would start a building management department. This would be followed by the institution of departments for landscape, industrial design, structural design, etc., until all the major jobs in the building industry were catered for in some kind of university course, leading in most cases to a degree.

Concurrently, a school of refresher courses would be set up to run refresher courses in all subjects and post-graduate research similarly organized.

In the meantime a basic school of design and construction would have been organized, at which all the entrants to the faculty would commence studies. Each specialist course would be carefully worked out so as to branch off at the appropriate time (there is little value, for instance, in the landscape architects studying pre-stressed concrete), but, having separated out into their various specialist studies, they would be on hand to come together for exercises in teamwork. During this basic course there would, of course, be an opportunity for students to change their minds and select an alternative branch of specialization if they wished to do so.

In a large city, and particularly in its surrounding region, there would most probably be other schools or departments in existence. There might be, for instance, one or two architectural schools of intermediate standard (the unrecognized schools). These would naturally federate to the faculty (as colleges of faculties do now, often from far-flung dependencies), and might in some cases adapt their courses to be similar in form to that of the basic school of design and construction. It would in any case be necessary for the students to study for their degree at the central faculty.

Since the idea of a faculty as outlined is a new idea (for building if not for nearly all the other subjects) it might be wise to begin with a prototype as an experiment. Obviously considerable teething difficulties would be experienced. The industry would have to contribute considerable capital sums in order to ensure adequate endowment for chairs, lectureships, and equipment: the Government would have to give its support, both morally and financially, through the Ministry of Education and the DSIR: the RIBA would have to develop real enthusiasm for the project: and the university concerned would have to see the advantages of developing in this direction. But in spite of difficulties there is nothing inherently against the idea, except that it has not been tried before.

BOOK REVIEWS

Enough to Make an Englishman Blush

The Architecture of Poland. Zbigniew Dmochowski. (Polish Research Centre Ltd., 51 Eaton Place, S.W.1. 70s.)

Before the publication of this book the history of Polish architecture was almost wholly inaccessible to English readers. Apart from the occasional Polish example in general histories of Gothic and Baroque, there was nothing to be had. Even if this were not so and if Polish architecture were less interesting than it is, this book would still be something remarkable in architectural publishing, if only on account of the immense number—1,173 in all—of good scaled drawings and photographs which it contains. Mr. Dmochowski has, to the reader's advantage, taken a maximal definition of Poland, including Silesia, Pomerania and Danzig to the west, East Prussia and Lithuania to the north, and up to the pre-war Russian-Polish frontier to the east. His procedure is sensible, though perhaps unusual: he divides Polish architecture into fifty-two headings, representing sometimes plan types ("three nave hall churches," "circular churches of the late Baroque"), sometimes styles ("the Stanislaus Augustus style") and sometimes building users ("country palaces and castles"). Each of these headings is maintained (usually) by three or four buildings, and each building is accorded a few hundred words and good illustration. Typographical sophistication has been abandoned in order to give, wherever humanly possible, all the illustrations to a building on the same page as the text, which is a great convenience.

The English architect reading this book will blush for the parochial nature of his own school history curriculum which caused him to take no notice at all of the rich architecture which lies on either side of the direct route Egypt-Greece-Rome-Italy-France-England. Poland, after all, is a peculiarly "architectural" nation, meaning by this a nation which has chosen to express the national sensibility in building more readily than any other art. It was doubtless for this reason that, after the wilful destruction of so many of the Polish national monuments at the close of the late war, the government granted a first priority to their total rebuilding.

Because of this national bias towards architecture an important part of the evidence of our western building tradition is to be found on Polish soil. Looking through this book it is not difficult to see which architectural phenomena are more fully represented in Poland than elsewhere. In the Romanesque period it is surely the single cell circular church, a plan form which is of the greatest rarity. Polish architecture of the later Middle Ages is, to the English reader, mainly interesting for the number of conventual churches which have survived. This is attributable to the fact that Poland was the only nation in the far north to come down on the Catholic side of the fence and that she also escaped the no less destructive effects of the French Revolution. The most interesting conventual churches are those of the Cistercians and the Dominicans. Indeed there must be more double-naved churches (*i.e.*, with a central line of columns), a type particularly associated with the Friars, than in any other country in Europe. On the technical side, Polish Gothic has much in common with the Gothic of North Germany, though the region of Cracow had both a characteristic plan (a square, commonly three-aisled nave with a long single-aisled presbytery projecting towards the east), and an original system of vaulting, named after the ruling dynasty, the Piasts, which is altogether too intricate for easy description. From the time of the Renaissance Poland entered into direct and continuous contact with Italy and later with France and Holland. The change of style was at first resisted and seems to have been confined to the occasional mausoleum, of which the earliest was the celebrated Sigismund Chapel in the Wawel Cathedral, Cracow (1524-33, Architect: Bartolo Berecci); but once Renaissance passed the threshold into Baroque, the response was universal and the characteristic Polish church interior shows a Gothic shell with utterly convincing Baroque incrustations. Mr. Dmochowski is probably right, however, in judging that Poland's most important contribution to the architecture of Western Europe was her neo-classicism at the close of the XVIIIth century, a manner of building which is closely linked with the patronage of King Stanislaus Augustus (1764-95). This has the technical competence and refinement which we associate with French architecture of the Louis XVI period, but is more masculine in its flavour and more varied in its effects. It was a thousand pities that its chief monuments, the Royal Castle in Warsaw and the Royal Palace at Lazienki nearby were blown up in 1945, though it is also good to know that the records are sufficiently complete and national feeling sufficiently strong for them to be meticulously rebuilt.

To sum up, this book is clearly a labour of love in the sense that far more work has obviously been put into it than the meagre rewards of book publishing could possibly requite. All who are in the least interested in historical architecture should read it and it should certainly be on the shelves of all schools of architecture.

LANCE WRIGHT.

Keeping Up With The *Jones*

The Triumph of Peace. A Study of the Whitehall Banqueting House. Per Palme. (Thames & Hudson Ltd. 70s.)

One of the principal duties, indeed perhaps *the* principal duty of the art historian (as opposed to the art critic) is to attempt to understand the intentions of the artist and his patron in any given work of art. This is a difficult study, requiring patience, judgment, caution and a profound humility; but if the discipline is relentlessly applied, the result can bring a new interpretation to some phase of human history. Any book which makes a serious attempt, as this does, to apply this discipline to an English work of art, is welcome.

Mr. Palme has chosen a peculiarly difficult task, for in his attempt to define the original meaning of the Banqueting House at Whitehall, he is dealing with a building which has been entirely recased (though this was most carefully done by Sir John Soane); the interior of which has been much altered and for which no working drawings survive, though there are two preliminary designs of great importance. Morevover, it was created for a patron who was notorious for his vacillation (an aspect too much neglected in the analysis) and for ceremonies so alien to modern living that their meaning has almost been lost. It is perhaps in his collection of very full descriptions of the varied ceremonies surrounding a seventeenth-century monarch, drawn from a wide range of printed sources, that the author places us most deeply in his debt. How far he is justified in all the claims that he makes for the conscious reflection of these many different requirements in the actual design of the building is at many points controversial and beyond the scope of a short notice. He weakens his case by his insistence that not only the Banqueting House itself, both in design and decoration, but also all the other manifestations of royal patronage of the arts in the later part of the reign of James I were directed towards the glorification of the Spanish marriage project, which was to be the coping stone of James's grand design for the peace of Europe. Neither the work of Hubert Le Sueur (who was in France till 1624) nor the establishment of the Mortlake tapestry factory can safely be associated with the building of the Banqueting House; and though Mr. Palme is clearly aware, since he refers to it in his footnotes, of the importance and almost conclusive evidence of a preliminary sketch by Rubens for the ceiling of the Banqueting House, published by Mr. Oliver Millar in the *Burlington Magazine*, August, 1956, which proves that the ceiling design cannot have been planned in James's lifetime, he still insists on his theory that it was conceived about 1620.

Neverthless, any attempt to throw more light on the tantalizing personality of Inigo Jones is well worth reading: he may have been as sophisticated an artist as Mr. Palme would have us believe: but he was an Englishman, working at the English court, and it would be surprising if he alone among English artists had escaped the tendency to compromise, and had allowed logic rather than the imaginative use of happy accident to control his design. The book is well produced, though since the plates are scattered they are hard to find and, though Mr. Palme writes fluent English, his publisher should have warned him that "contignation" is archaic, that "ceiling" is better English than "plafonds," and that "masques" and "masks" are not the same.

MARGARET WHINNEY.

DIARY

Subtopia. Exhibition at the RIBA, 66, Portland Place, W.1. Daily, 10 a.m.-7 p.m. Closed June 8-10. UNTIL JUNE 13

Sculpture 1850 *and* 1950. Exhibition at Holland Park, W.8. 10 a.m. to dusk (including Sundays). Admission 1s. 6d.

The Englishman's House. Talk by Dr. W. G. Hoskins. In the BBC Third Programme. 8.55 p.m. JUNE 9

The Effects of Radiation on the Individual. Talk by F. G. Spear (Deputy Director, Strangeways Research Laboratory, Cambridge). At the Royal Society of Health, 90, Buckingham Palace Road, S.W.1. 2.30 p.m. JUNE 12

Talk by Eero Saarinen. At the AA, 34, Bedford Square, W.C.1. 8 p.m. JUNE 12

Country House Architecture from Burghley to Blenheim. SPAB talk by John Summerson. At the V & A Museum, Exhibition Road, S.W.7. 6.15 p.m. JUNE 13

City Planning—from St. Paul's Precinct to Pubs. TCPA tour of the City of London under the guidance of Anthony Mealand (City Planning Officer). From the City Corporation Offices, 55, Moorgate, E.C.2. 6.15 p.m. JUNE 17

Design for Leisure. Exhibition at the Design Centre, Haymarket, S.W.1. Monday to Saturday 9.30 a.m.—5.30 p.m. JUNE 17 TO JULY 10

Building Productivity in Holland and Sweden. Illustrated talk by S. Mayer (Vice-president ABT), Colin Penn, A.R.I.B.A., and F. E. Shrosbree (General Secretary ABT). At the BC, 26, Store Street, W.C.1. 6.30 p.m. JUNE 7

technical section

THE INDUSTRY

This week Brian Grant reviews new light fittings, an overhead door for garages, a channel duct for electrical cable, decorative expanded metal mesh, a new gutter, a bulkhead light fitting and a new wall finish.

LIGHTING FITTINGS

Cone fittings have now been on the market for a number of years, and have always been very reasonable in price. The latest list illustrates a range of three- and five-branch ceiling fittings with shades in spun aluminium, enamelled, or in pleated washable acetate, all suitable for 60 watt lamps. There are also wall lights with the same type of shade, either on mounting blocks, as in the illustration, or adjustable with a pair of legs, and a tripod mounted table lamp. (*Cone Fittings Ltd., 9 Rosemont Road, Hampstead, London, N.W.3.*)

OVERHEAD DOOR GEAR

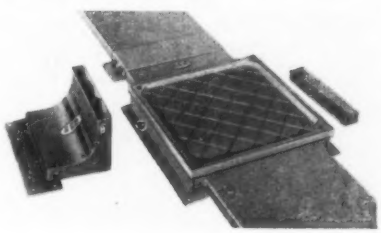
Hendersons, the manufacturers of the well-known Tangent range of overhead door gear, have now introduced a new type known as the Ultra, which is suitable for garage doors up to 7 ft. 6 in. high and with a maximum weight of 210 lb. The space required for the gear is only 1¼ in. at the head and 2¼ in. at the side, so that there is a negligible loss of space. The doors are locked by an espagnolette bolt suitable for widths up to 10 ft., and the counterbalancing spring is adjustable after the door has been hung. Messrs. Henderson have available a standard door 7 ft. square, but other sizes are probably best made locally. The standard sets of fittings are designed for timber doors, but can also be used with metal doors provided that size and weight limitations are not exceeded. Two versions of the equipment are produced, for light and heavy doors (weights up to 150 or 210 lb.) and the prices per set are £10 and £10 12s. 6d. There is also a third version, the Ultramatic, which is self-opening as soon as the catch is released, and can be used with doors up to 180 lb. The price of this is £14 17s. 6d. (*P. C. Henderson Ltd., Tangent Works, Harold Hill, Romford, Essex.*)

ELECTRICAL DUCTING

A shallow channel duct cable distribution system has been developed by the GEC. The duct is made from 16g. steel and is supplied in 6 ft. lengths which are provided with a removable cover, a fish plate coupler, a bridge piece to cover the joint, and a copper earth link. Dividing partitions are fitted in the base to provide a multi-channel duct. Single, twin or triple compartment ducting is made in two widths, 6 in. and 9 in. and in two depths, ¾ in. and 1 in., though other depths can be made to order: solid welded ducting with sleeve couplings is also available as an alternative. Terminal stop ends, horizontal 90 and 45 degree bends, vertical 90 degree bends and flanged outlet adaptors are made for each size of duct and expansion joints can be arranged at any required point, while junction boxes are 11¾ in. square. The photograph shows the system, with a vertical bend on the left, a typical junction box in the centre, and a stop end on the right. (*The General Electric Co. Ltd., Magnet House, Kingsway, London, W.C.2.*)

DECORATIVE METALWORK

Expanded metal is a well-known reinforcing material, but it is now being produced in a range of anodized aluminium patterns for decorative purposes such as grilles for loud speakers, radiators, fire guards and ventilators, or for display work and shopfitting. The mesh is easily cut and bent, and is obtainable in a range of 12 colours and in 28 different versions of two basic vertical and chevron patterns. The size of the standard sheets is 4 ft. by 2 ft. (*The Expanded Metal Co. Ltd., Burwood House, Caxton St., Westminster, London, S.W.1.*)

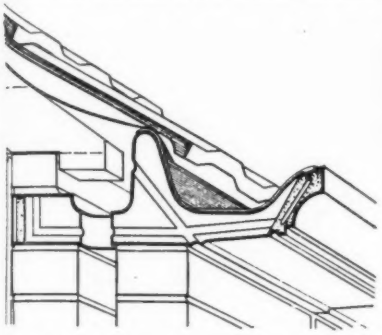


Top right: one of the new range of Cone wall-ligh fittings, which has a shade made of silk-screen printed card, cherry red, citron or black with white pattern. Centre right: the Ultramatic overhead garage door, which opens automatically when the catch is released. Right: details of the GEC channel-duct for electrical cable.

technical section

NEW FINLOCK GUTTER

There is now an entirely new Finlock gutter known as the Wellstone. It has been designed for extreme ease of fixing, and can be used on most types of house with 9 or 11 in. walls. The gutter is laid level by the bricklayer on normal lintols or brickwork, and is then lined with hot bitumen and a thin layer of aluminium by the manufacturers, who will then give a written guarantee

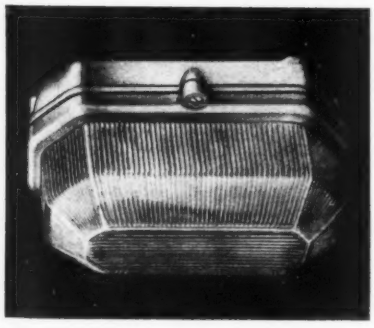


Detail of the Wellstone gutter, which is guaranteed for 25 years.

of 25 years for each individual house. The makers claim that a saving of at least two shillings per foot run can be made, as one course of brickwork and two or more courses of tiles, battens and felt can be omitted, and at least 1 ft. 6 in. can be saved on the length of each rafter. Gutter brackets, swan necks and timber facias are not needed, and the owner has no painting or maintenance costs. Moreover, the insulation of the roof space is improved by the seal at the eaves, and all roof timber is kept back under cover. (*Finlock Gutters Ltd., Tunbridge Wells, Kent.*)

INDUSTRIAL LIGHTING

The illustration below shows the new Wardle Prismalette bulkhead fitting, which



The Wardle Prismalette bulkhead light-fitting, available either in enamelled cast-iron or galvanized.

sells at 26s. in enamelled cast iron, or 29s. galvanized. Overall dimensions are 9 in. by 5 in. (*The Wardle Engineering Co. Ltd., Old Trafford, Manchester* 16.)

WALL FINISHES

A new form of wall finish known as Tylex is now being produced by Messrs. Tretol. The material is applied like a paint, and provides a hard abrasion resistant surface which can be frequently washed down without losing its surface gloss. It can be applied to old or new work, and the makers recommend it for any situation where conditions such as excessive humidity, chemicals, steam, grease or oil would normally demand the use of tiling. Tylex is made in 18 BS colours, as well as black and white. (*Tretol Ltd., The Hyde, Hendon, London, N.W.9.*)

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.

7.59 practice

FIRE ESCAPE

Escape from Fire. (LCC. free.)

This booklet is really meant for householders and its interest for architects lies in the fact that as it is issued by the LCC it is an official expression of what the LCC regards as "reasonable means of escape" when applied to old buildings under Sections 35 and 37 of the London Building Act. This may become a very live issue in practice as the LCC is embarking on a survey of old buildings with a view to enforcing compliance. Briefly they require that staircases should be completely enclosed at all landings with a screen giving ½-hour fire resistance, and that easy access should be provided to the roof, but not directly from the staircase. If screens are to be provided with wood framed partitions they advise that these be covered both sides with asbestos wallboard or ⅜-in. plasterboard.

8.56 surveying and specification

COSTING

Costing for Builders. W. & L. Townsend. (E. & F. N. Spon Ltd. (2nd ed.) 12s. 6d.)

This book explains ". . . a really sound costing system . . . for the small and medium-sized building contractor." There are separate chapters on Labour, Materials, Transport, Sub-Contractors, Plant and Machinery; and on Insurances, Day Work, Completion and Work in Progress. The main object of the costing system is to show the builder what his jobs have cost up to any particular date, not to provide data for estimating, or for analyzing the economy of building operations.

The key document is a Cost Sheet on which is entered the labour, transport, materials and sub-contractors' costs for one week for one contract. The bulk of the book is a detailed explanation of how this is done—the abstraction of information from wages sheets, merchants' invoices, lorry drivers' log books and so forth, with diversions on the way into the intricacies of holidays-with-pay, stamps, dirty money, discounts and things of that kind.

The authors appear to be writing mainly for small builders and jobbing work, although they insist that their system can be used by larger contractors.

It is a pity that they seem not interested in the use of cost information for improvement in estimating accuracy.

10.157 design: building types

LABORATORIES

Design of Research Laboratories. Richard Llewelyn Davies. (The Royal Institute of Chemistry Journal. Jan. 1957.)

This is by way of in interim report presented to a non-architect audience on the work on Laboratory Design on which the Division for Architectural Studies of the Nuffield Foundation is now engaged. From a survey of sixteen laboratories belonging to the Agricultural Research Council the author reaches the general conclusion that deep rooms with benches running back at right angles to the window wall are to be preferred to shallow rooms with benches running along the window wall, and that the correct depth of a laboratory from window to back wall is 16 ft. 6 in. The concluding section of the article is concerned with an investigation into how a laboratory with this general form could be provided with the correct amount of lighting.

The survey showed that a minimum level of illumination at 3 ft. height of 15 lumen/ft.² by artificial light or its equivalent, a 3 per cent. daylight factor, would satisfy the needs of laboratory users for 75 per cent. of their time and it was suggested that their needs would be wholly met so long as it was possible for them to move into a more brightly lit area for more exacting tasks. Calculations were made for a laboratory 16 ft. 6 in. deep and 13 ft. wide. With a ceiling 10 ft. high and an average reflection factor of 39 per cent. (which was considered to be an average figure for today's laboratories) the daylight factor at the back of the room would only be 1 per cent. In order to avoid raising the ceiling the author proposes an upstand at the back of the room with a rooflight window facing the same direction as the main window. This solution (which, of course, only applies to a single-storey laboratory) gives a 3·3·5 daylight factor at the back of the room even when the average reflection factor is no higher than 39 per cent.

CLASSIFICATION FOR TECHNICAL ARTICLES AND INFORMATION CENTRE

1 Sociology. 2 Planning: General. 3 Planning: Regional & National. 4 Planning: Urban & Rural. 5 Planning: Public Utilities. 6 Planning: Social & Recreational. 7 Practice. 8 Surveying & Specification. 9 Design: General. 10 Design: Building Types. 11 Materials: General. 12 Materials: Metal. 13 Materials: Timber. 14 Materials: Concrete. 15 Materials: Applied Finishes & Treatments. 16 Materials: Miscellaneous. 17 Construction: General. 18 Construction: Theory. 19 Construction: Details. 20 Construction: Complete Structures. 21 Construction: Miscellaneous. 22 Sound Insulation & Acoustics. 23 Heating & Ventilation. 24 Lighting. 25 Water Supply & Sanitation. 26 Services & Equipment: Miscellaneous. 27 Furniture & Fittings. 28 Miscellaneous.

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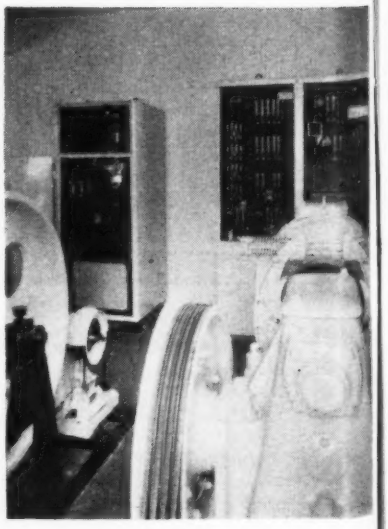

In the machine-room illustrated, the rectifier cubicle can be seen on the left. The arc between graphite electrodes and a pool of mercury in an evacuated vessel possesses rectifying properties, and the static mercury-arc rectifier has replaced rotating machinery in many applications, converting a.c. to d.c. with smaller power loss and greater reliability. For lift drive the d.c. voltage supplied to the lift motor is controlled electronically, using rectifiers incorporating auxiliary electrodes. Several features of Wadsworth rectifier drive are protected by patent.

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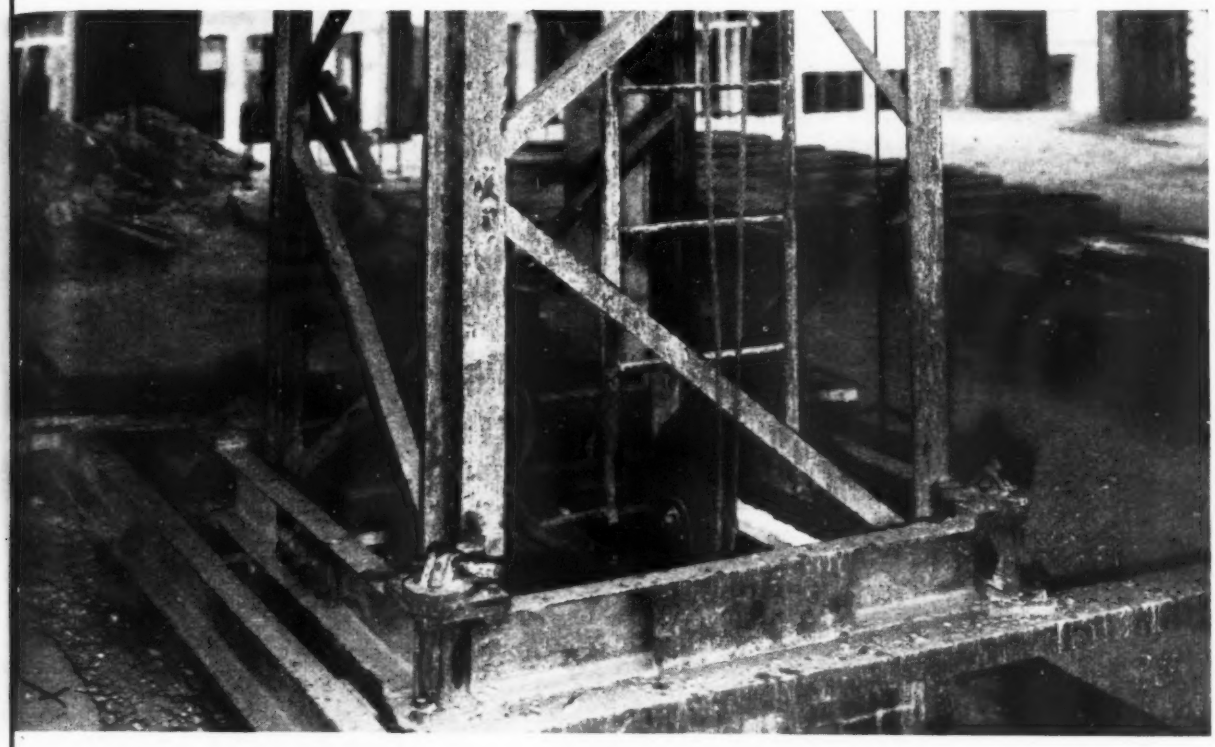
technical section

CLIMBING TOWER CRANE WITHIN THE BUILDING

About six years ago, the Building Research Station began to take an interest in handling-problems on building sites. One of their discoveries was that the total handled weight in putting up a pair of houses (including double handling of some materials) reached the astonishing figure of over 1,200 *tons—nearly all by manual labour. Compared with the mechanical handling developed by other industries, this was rather absurd, so they looked about for devices to ease such burdens. One of the most capable and versatile—well known in the French landscape but unheard of over here—was the tower crane. Experiment and testing of an imported model was followed by efforts to interest British builders and crane makers. The advantages of the crane, when used within a well-programmed context, are remarkable, and there are now said to be over* 400 *of them in use, mostly still of French or German make and usually rail-mounted. A more recent development is to mount the crane* within *the building, supported on the completed floors, so that it can climb as the building rises. This means that the unsupported length of mast is shorter and access to the building at ground level is not obstructed as it is with the rail-mounted crane. But the principal advance is that building plan and slewing circle being more or less concentric on plan, a smaller crane can deal with a larger building. One of the first uses of the climbing crane is now in progress on some* 11*-storey flats at Treverton Street, Kensington (architect: Gordon Jeeves; builder: Leslie and Co.; crane maker: Pingon Tower Cranes Ltd.). The mast of the P*13 *crane is* 3 *ft.* 10 *in. square on plan and rises within one of the lift shafts. The bottom section of mast, containing the motors and gearing for hoisting*

technical section

CLIMBING TOWER CRANE WITHIN THE BUILDING: continued



and lowering is first bolted to a prepared base at ground level. A small erecting jib running in guides at one side of the mast is then secured to the top of the first 10 ft. 6 in. mast section. This is used to hoist the second section which is bolted to the first, and so the assembly process continues. At the required height, the slewing head containing motor and gearing for slewing and traversing motions is hoisted up and bolted to the top of the mast followed by jib and counter jib, both pre-assembled on the ground. The temporary hoisting jib can then be slid down its guides and put away and the crane can begin putting up the building. The assembly process takes about 1½ days. When the second or third floor has been constructed a climbing frame is fitted—like a collar—round the mast at floor level (above). At each internal corner of the frame is a flanged wheel in which the corner angles of the mast run, and there is provision for wedges to engage with projecting fishpates on the mast so that when hoisted to the next position, it can be locked. A similar climbing frame is fitted one floor below, and the two together transmit the weight of the crane (about 6 tons) to the floors and restrain it in position. Hoisting from position to position is accomplished by a four man hand winch on the highest floor, steel cable and pulley gearing (far left). The crane can be operated either from its cab inside the mast or from a push button box on a wandering lead, so that the driver can walk about to get a good view of what he is doing (left). At extreme reach, (66 ft.) the maximum load is 12 cwt., at 27 ft. it is 2 tons. There is an automatic stop switch operating if safe loads or overturning moments are exceeded and for safety the remote control works at a transformed voltage of 48v. The crane illustrated would cost about £2 700 ex. works depending on number of mast sections, equipment etc.

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technical section

10 DESIGN: BUILDING TYPES

user requirements for laboratories. 2 the specialized services

The factor which makes the laboratory different from almost any other building type is the importance which has to be granted to the services. In his first article, published last week, W. H. Pritchard discussed, among other matters, the thought which must be given to the services at the earliest stage of all, when client and architect are considering whether to adapt an old building or to build a new one and where to go. In this week's article he considers the specialized laboratory services in greater detail: how they are supplied, how distributed and, since this is a world which is commonly unfamiliar to the architect, what are their uses and how often they are likely to be wanted.

Any laboratory will require both heating and lighting, but the number of additional services required for experimental work will depend not only on the functions of the laboratory but also on a severely critical review of services that merit the expense of centralized distribution. The technique of laboratory planning over the last twenty five years or so shows the transition from the stage of an inadequate distribution of the barest essentials followed by a period in which it was fashionable to distribute a bewildering array of services, many of which were only infrequently used. The development of reliable portable equipment for the supply of compressed air, vacuum, demineralized water, etc., has obviated the necessity for the centralized distribution of those services unless the demands upon them are likely to be both frequent and heavy. Contemporary practice tends towards liberal and flexible distribution of the essentially basic services with only the addition of those specialized services that are clearly vital to the work of the particular laboratory. This objective of providing basic services that are readily available at any point in the laboratory entails a clearly defined distribution system with proper allowance of room to enable both maintenance and extension work to be carried out with a minimum of labour.

The basic services of gas, water, electricity at usual mains voltage, and drainage may be assumed for any laboratory, with the addition of fume extract trunking for any work necessitating the use of fume cupboards. Particularly in industrial research laboratories the need may be clearly established for special services to selected parts of the building. Common requirements coming under this category are:

1. Electricity on DC or non-standard frequency.
2. Compressed air at high pressure.
3. Vacuum.
4. Steam, high and/or low pressure together with condensate return.
5. Brine, for cooling and refrigeration purposes.
6. Distilled and/or demineralized water.
7. Nitrogen or other inert gas.
8. Oxygen.
9. Hydrogen.

These, and similar specialized services, should only be brought to laboratory rooms where it is certain that they will be required. Their general distribution on the rather vague grounds that they may possibly be of future use does not justify the cost of installation. On the other hand, the service channels must allow the ready extension of special services, as need arises. The aim must be that additional services can be brought to any laboratory room without causing interruption of experimental work.

Electricity

Direct current is required for a limited amount of specialized laboratory work and is conveniently obtained from:

(*a*) Batteries with suitable mains charging equipment.
(*b*) Metal rectifiers.
(*c*) Mercury vapour rectifiers.

Batteries are usually used where absolute constancy of voltage or freedom from "ripple" is essential, *e.g.*, in accurate photometry. Conventional lead/acid cells are widely used for these purposes, but life and performance are impaired if they are subjected to widely differing load and/or charging rates. Alkali/nickel-iron cells are initially more expensive but need less care in maintenance and will withstand gross mistreatment both with regard to charging and discharge rates.

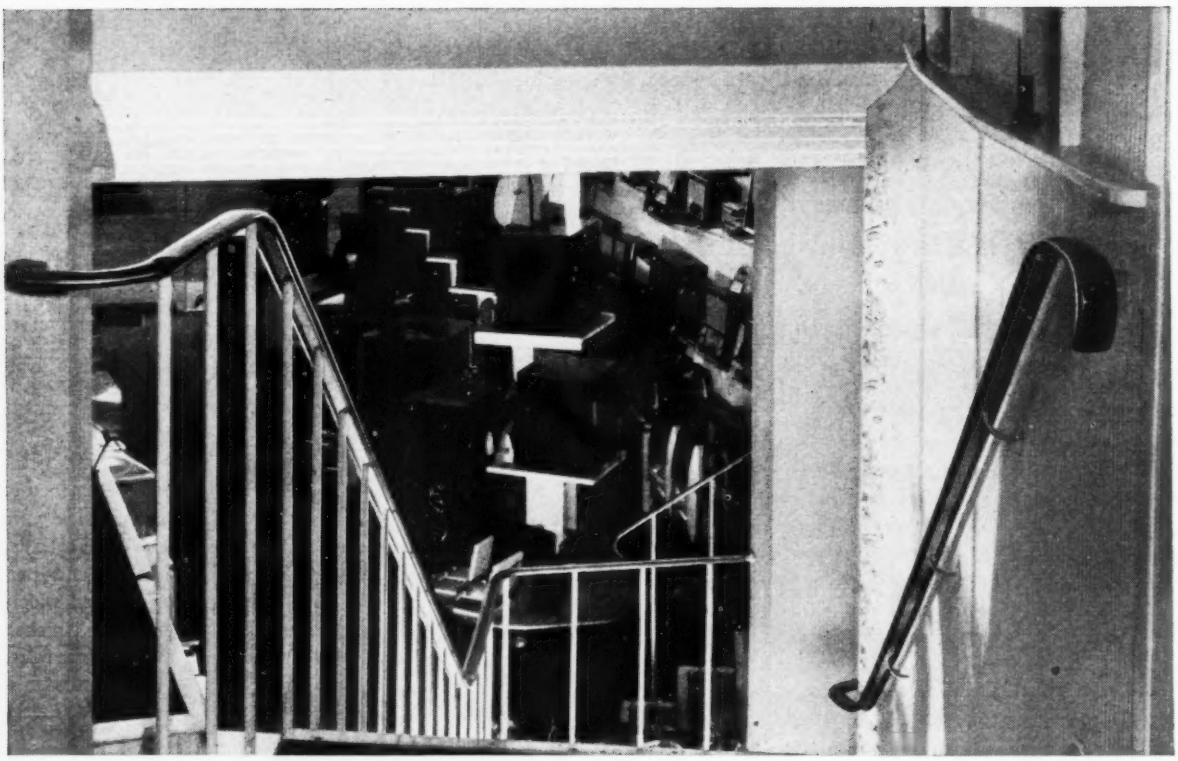
A battery installation of any size should preferably be sited in a battery room. Because batteries give off a certain amount of hydrogen when charging, the room should be well ventilated, and because it is inflammable, smoking or any naked flame should be prohibited within the room. Batteries also give off sulphuric acid vapour and for this reason all metal work should be treated with acid-resisting paint. Batteries can be quite bulky. For instance, each cell of a large battery of, say, 100-200 volts with a capacity exceeding 100 ampere hours would be about 2-ft. 6-in. high by 1-ft. 6-in. square, and clearly 100 of them would require a fair amount of room.

Metal rectifiers, such as the Westalite type made by the Westinghouse Brake & Signal Co., are widely used for supplying plating vats and other equipment where uni-directional current is essential. Metal rectifiers

the new technique in handrails...in action

Staircase linking two floors in the radio and television showrooms of Messrs. Thorn's of Chessington, 13 North Parade, Chessington, Surrey

ARCHITECT: A. E. CLAYTON, A.R.I.B.A.



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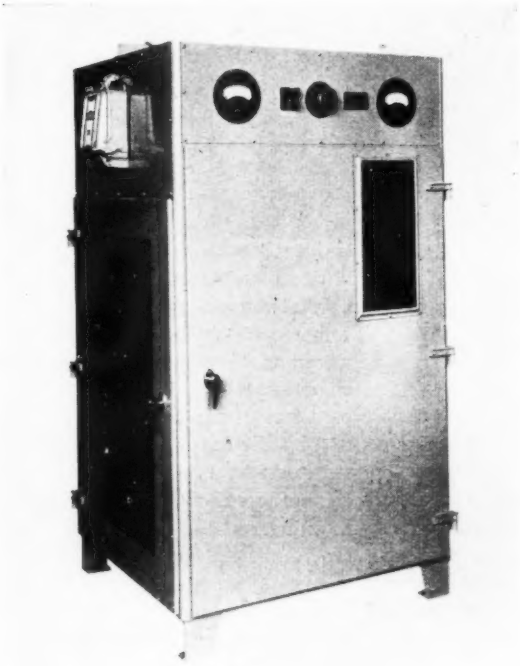
technical section

require to be kept within fairly narrow temperature limits which correspond to those in which a person could work comfortably. They need good ventilation and must not be too closely confined, since overheating can cause permanent damage.

The mercury vapour rectifier has the advantage of handling fairly large loads, of the order of 50 kW., with moderately small equipment that will withstand gross overloading for short periods. The multi-phase input mercury vapour rectifier gives a fairly smooth uni-directional output. Mercury vapour rectifiers are less exacting in their climate requirements than metal rectifiers, but they too need sufficient ventilation to ensure that the room temperature does not rise above maximum English summer temperatures and to be housed in a room where the temperature will not drop below freezing point in winter.

Simple suppressors should be fitted to all rectifiers to prevent interference.



Standard 5-kW. demonstration mercury arc rectifier which has been specially built by Lancashire Dynamo-Nevelin Ltd. for use in teaching laboratories.

Factors influencing choice of DC conversion equipment would be on the following lines:

(*a*) For work where freedom from ripple is essential or for low voltage school supplies, install batteries.

(*b*) For low voltage work, such as electrolysis, where a uni-directional current is required but "ripple" is not an important factor, install small portable metal rectifiers, plugged into the AC mains supply, and used where required.

(*c*) For applications where fairly large DC loads are required at pressures of about 200 volts, mercury vapour rectifiers afford certain advantages. This equipment would usually be treated as a centralized service and the DC output distributed on wiring reserved for the DC supply.

For loads of several kW. taken at medium voltage, the mercury vapour rectifier has lower initial cost and higher operating efficiency than other systems of rectification. Glass bulb mercury arc rectifiers for a wide range of applications are made by Lancashire Dynamo Nevelin Ltd., of Hurst Green, Oxted, Surrey. The pumpless steel clad mercury arc rectifier was introduced by The General Electric Co. Ltd., and has an optimum operating efficiency of about 95 per cent.

Distribution of electrical supplies for experimental work

The cabling and distribution of mains electricity brought to points provided for the connection of experimental apparatus should comply with the current regulations for the electrical equipment of buildings issued by the Institution of Electrical Engineers. The type of cable employed must be in all respects appropriate to the work of the laboratory; for example, where there are risks arising from solvents, metal sheathed magnesium oxide insulated cable presents some obvious advantages. It is bad practice to have flex permanently alive and switches should be positioned so that it is dead when apparatus to which it is connected is not in use. Earthing pins for terminals must be provided so that all metal apparatus can be earthed and the risks of dangerous shock and fire, due to insulation failures, eliminated.

Special supplies may involve the use of rotating equipment, frequency changers, etc., that are best housed in the services part of the building to avoid noise and vibration in laboratory rooms. The number of special supplies of this nature may be large but frequently any specific service is only required for occasional use. Nevertheless every supply must be available in every laboratory room for when need arises. For instance, for variable frequency, work is delayed if either special cabling has to be run or the apparatus transferred to a room where the supply is available. On the other hand, the permanent wiring of a number of occasionally-used supplies to all laboratory rooms entails waste of space, material, and money.

A simple plug board arrangement will permit a single pair of conductors being used for a variety of special services. The basic circuit diagram is shown in Fig. 1. In the arrangement sketched the supplies are brought to sockets wired in parallel on panels X, Y, and Z. Outgoing feeds to laboratories are by pairs of conductors brought to numbered sockets on corresponding panels.

Plug boards are by no means novel in laboratories but their design has frequently necessitated the fabrication of non-standard fittings. The system then becomes expensive and cannot readily be extended.

Some years ago the writer had constructed a number

technical section

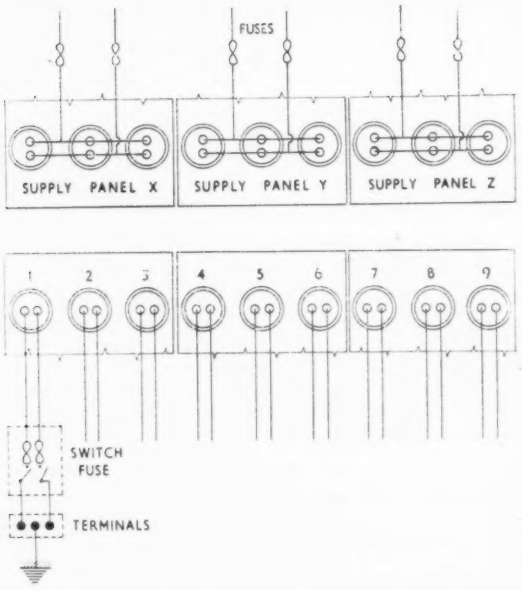


Fig. 1. Diagram of plug board arrangement designed by the author to provide alternative supplies in a number of laboratory rooms without duplicating the wiring. By means of a connecting lead it is possible to connect any of the sources of supply leading into the top line of sockets with any of the sockets in the lower line which distribute to the laboratory rooms.

of large plug board systems, using the general basic circuit described, in which all components were of standard metal-clad heavy-duty industrial design. Supply and outgoing sockets were mounted on mild steel panels and the flexible connector leads were terminated at both ends by non-reversible shielded plugs. A number of these plug boards have been in use in different laboratories for periods of ten to fifteen years without renewal of any components or any accidents arising from continual use. New services have been made freely available throughout the buildings by merely adding an additional panel to the plug board.

Compressed air

After the essential services, compressed air is probably the most valuable "luxury" item. The major use is to facilitate glass-blowing operations and for this a pressure within the range 5-15 p.s.i. is desirable. Glass-blowing is a more common activity in laboratories than architects may imagine. Its main purpose is to join pieces of glass tubing required for experimental apparatus. In vacuum physics laboratories, such as those engaged on research on cathode ray tubes, radio valves, electric lamps, etc., complex glass-blowing operations are undertaken every day; but even in laboratories for medical sciences, such as mammalian physiology, some glass-blowing facility is essential.

In certain laboratories air is required at a much higher pressure for driving compressed-air motors and tools for instrumentation. Compressed-air motors usually require a pressure of about 80 p.s.i., and pneumatic instruments about 25 p.s.i. Excepting for these specialized purposes there is little point in distributing compressed air throughout the laboratory at pressures greatly exceeding one atmosphere (*i.e.* about 15 p.s.i.).

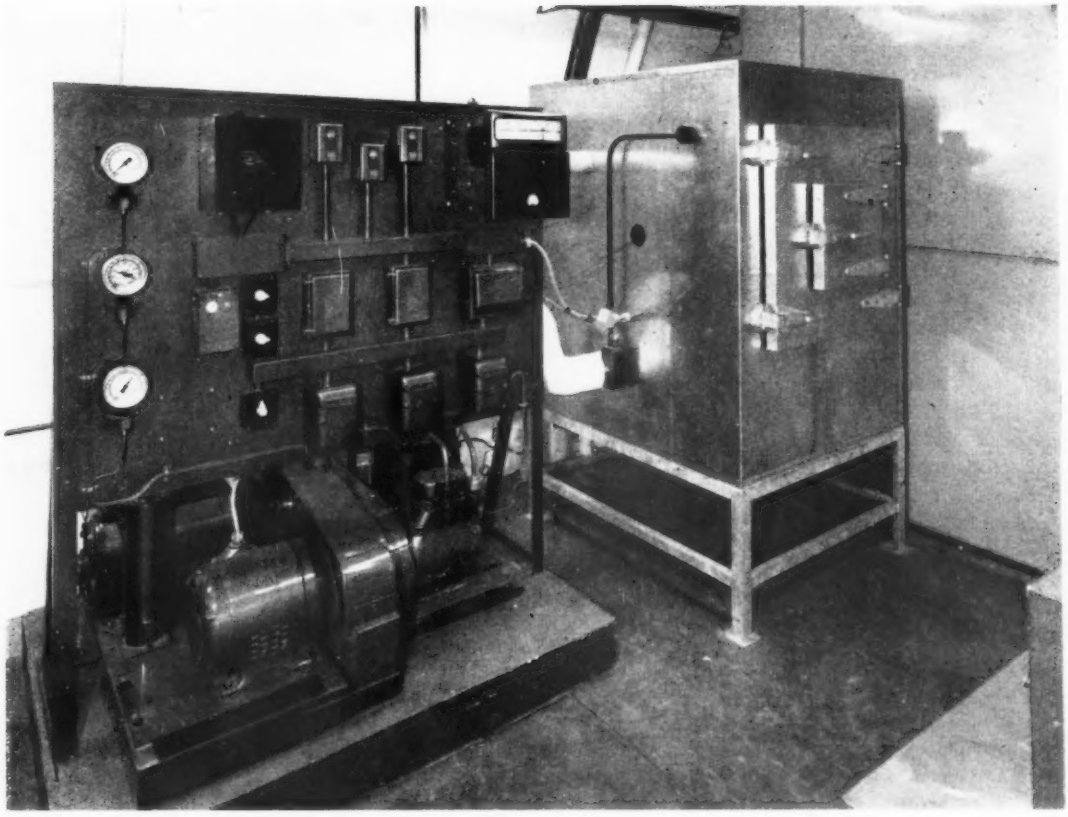
Compressed air for instrumentation needs careful dehumidification and removal of all fine dust particles and, while conditions for "general use compressed air" are less exacting, it is desirable that the air should be reasonably dry and filters should be fitted in main supply lines to remove moderate-sized particles. A wide variety of tubing may be used for distributing compressed air, the cheapest probably being cast-iron piping; it is important, when this material is used, that the air be reasonably dry as otherwise, in the course of years, rust forms on the interior of the piping and ultimately becomes detached and may be borne by the air stream into carefully prepared apparatus that will then need careful cleaning to remove the last traces of the iron oxide deposited. It is usually convenient to arrange for the compressor to operate at a pressure considerably higher than that employed for general distribution and to provide a compressed-air reservoir or tank fitted with a reduction valve on the outgoing pipeline. Careful thought should be given to the siting of air compressors as they often give rise to troublesome vibration. In a large laboratory it is desirable that compressors should be in a selected plant room in the basement of the building and the machines mounted on specially-constructed bed plates well clear of main structural steel work; it is also essential that main compressor feed pipes should not be rigidly attached to structural steel members as vibration can be only too readily distributed throughout the entire building by failure to observe this precaution. Air compressors are made by a number of firms; one of the best-known makers of large compressors is Peter Brotherhood Ltd., of Peterborough.

Where the expense of centrally distributed compressed air is not merited, consideration should be given to small portable compressors that will serve one or two experimental positions. Equipment of this nature is marketed by most laboratory suppliers, *e.g.* Baird & Tatlock Ltd., of Chadwell Heath, Essex.

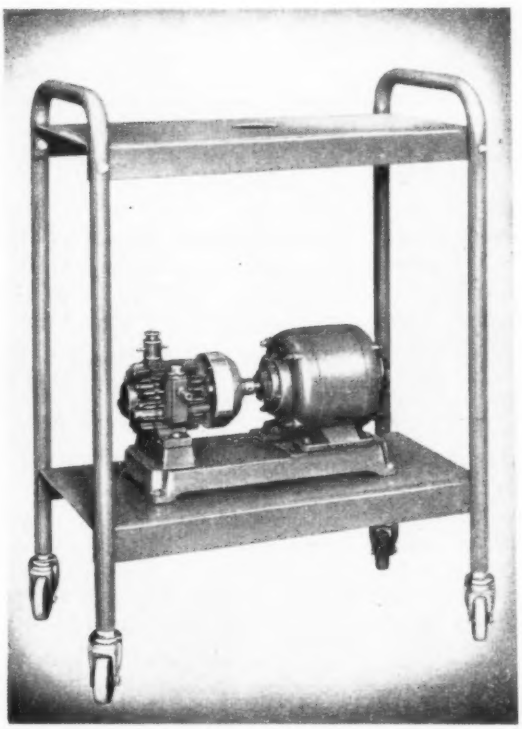
For use over short periods to do an odd glass-blowing job, as may arise, for instance, in a school laboratory, the simple cylindrical type domestic vacuum cleaner provides a convenient and inexpensive means of obtaining a constant source of air at a pressure adequate for simple laboratory glass-blowing.

Compressed air at very high pressures, several hundred p.s.i., is sometimes required for very special apparatus, such as ultra-centrifuges, but the installation must be planned in close consultation with the makers of the equipment.

technical section



Above: low temperature compressor by J. & E. Hall Ltd. for use in a large radio engineering laboratory. Below: a portable rotary compressor and vacuum pump mounted on a trolley, by Edwards (High Vacuum) Ltd.



Vacuum

There are very few instances where provision of a central vacuum line will, on detailed investigation, prove to be justified. Formerly there were two broad classes of piped vacuum systems:

(*a*) Fine vacuum systems with residual pressures* of 1-5 mm. Hg. used for backing oil or mercury diffusion pumps† or analogous applications.

(*b*) Rough vacuum systems with residual pressures in the range 10-50 mm. Hg. generally used for chemical work such as "vacuum" filtrations.

The installation of equipment adequately to serve the first purpose is expensive and maintenance problems are complex. Slight air leaks in valves and/or distribution piping are troublesome to detect but they can seriously impair the efficiency of the system and a sudden "drop" of vacuum can ruin the diffusion pump that it is backing. A moderate-sized installation to provide this degree of vacuum can, with pipework and valves, cost at least £1,000. Small portable pumps have been developed which in fact provide a much better degree of vacuum but will normally serve only one or two experimental positions. The portable pumps cost in the region of £50 each and are marketed by Metropolitan-Vickers and by Edwards (High Vacuum) Ltd., of Crawley, Sussex.

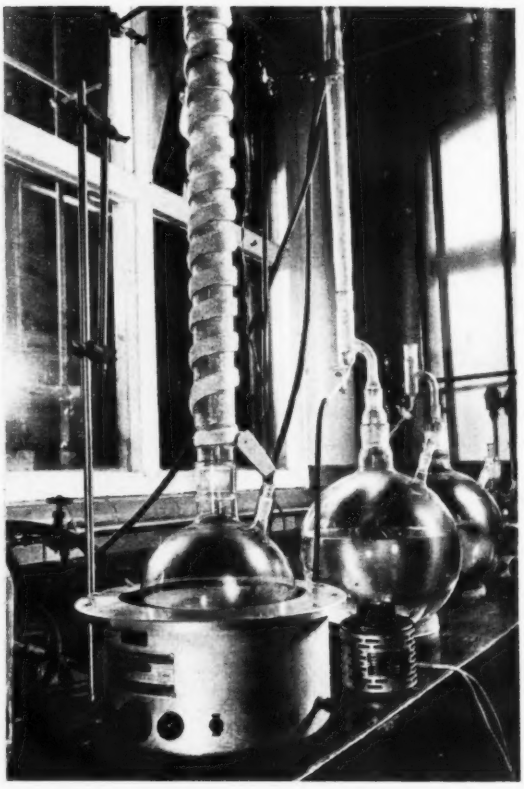
* "Residual pressure" is the pressure of air left in a vessel after you have done your utmost to extract it all.

† In a fine vacuum system you have to have two kinds of pump: an ordinary pump which sucks away most of the air and an oil or mercury diffusion pump which sucks away most of what is left. The latter cannot do its work without the former, which is said to "back it up."

technical section

Rough vacuum systems are normally employed for chemical work, principally for vacuum filtrations.* There is risk of corrosive substances being drawn into the piping with damage to the network and/or the vacuum pump. This should not happen but in fact it does; on a particular installation approximately a Winchester quart of formic acid was recently allowed to pass into the vacuum system damaging both the copper pipework and the main pump. A conservative estimate of cost of making good the damage was in the region of £150. Where only a limited amount of reduced pressure distillation or filtration is carried out a well-designed jet-type water filter pump will usually provide sufficient pressure reduction if the pressure of the water supply is adequate, say over 20 p.s.i. Accidental drawing of corrosive liquid into the pump causes no harm to it and dilution of the corrosive fluid is effected by the relatively large volume of water being passed through the pump. Pumps of this type use ½ to 1½ gallons of water per minute and in certain cases are regarded with disfavour by water supply companies owing to the large volume of water run to waste in a day if a number of pumps are in continuous use. Mechanical rotating vacuum pumps suitable for this application are made by a number of firms including the Pulsometer Engineering Company, Reading.

In certain laboratories in the U.S.A. attempts to avoid corrosion of vacuum pumps have been made by using ejector-type high-pressure steam pumps so that corrosive substances cannot come into contact with machined moving parts.



A typical electro-thermal heating mantle for laboratory use, by Electro-Thermal Engineering Ltd.

Steam

The general distribution of live steam as an experimental laboratory service is tending nowadays to be regarded as a somewhat controversial matter. Formerly, where the work of the laboratory entailed the use of large amounts of highly inflammable solvents live steam was brought to the laboratory bench as the only safe method of heating liquids with very low flash points. The development within the last few years of the electro-thermal heating mantle (*i.e.* a sort of asbestos "cosy" interwoven with a low-temperature electric heating element) has produced a generally safer heating medium without the necessity for the general distribution of heavily lagged steam pipes. However, where the steam is required to feed an autoclave, or similar apparatus, there is no practical alternative. We may, therefore, divide laboratory steam services under two headings—those that would normally be brought to the laboratory bench and used for heating relatively small-scale experiments and those which are brought to fixed pieces of equipment, such as autoclaves. Steam brought on to the laboratory bench should, in no circumstances, exceed 25 p.s.i., but when required for an autoclave pressures up to 150 p.s.i. may be encountered. High-pressure steam supplies should not terminate with an outlet into free air. The jet of steam released by the careless operation of a valve will often have the most disastrous results. Certain organic chemists still tend to cling to the low-pressure steam outlet on the laboratory bench and will readily make out a case for its alleged usefulness, but many of its former applications can be carried out with even greater facility with low-temperature electrical heating elements, especially if they are associated with simple electronic control devices.

Steam pipes should always be arranged free to expand longitudinally due to changes in their temperature. It is recommended that high-pressure steam pipes should have provision for expansion about every 40 to 60 ft. of straight run and low pressure pipes about every 80 to 100 feet. For very special applications, where normal fans would not stand up to the corrosive conditions encountered, steam ejector pumps are sometimes fitted to fume cupboards and for these applications a steam pressure of about 40 p.s.i. is required and the temperature at the ejector nozzle is then, of course, about 267° F. The volume of one pound of dry saturated steam at this temperature is 10·5 cubic feet. Probable rates of demand for this specialized application may be as high as 150 lb. of steam per minute.

* A vacuum filtration means drawing a liquid through a filter by creating vacuum on the further side.

technical section

Chilled brine

Chilled brine is occasionally distributed as a centralized piped service where the work of the laboratory entails lowering relatively large volumes of liquid to a temperature a little below ambient or the rapid removal of heat from an exothermic* reaction. The temperature of the circulated brine solution is usually between 20° and 28° F. The liquid is normally employed in closed systems and individual laboratories must therefore be fitted with both flow and return valves. All distributive piping must be thoroughly lagged both to avoid lowering the temperature of the laboratory and the loss of energy occasioned by the refrigeration plant having to deal with "reverse heat losses." The plant itself follows conventional refrigeration principles and is usually installed by specialist contractors, such as J. & E. Hall Ltd.; in a number of cases reciprocating compressors are employed and care must be taken in locating the compressors to avoid vibration effects throughout the building. The pressure of the chilled brine supply should be such that at the highest point in the laboratory building there is a pressure about 15 p.s.i. at the flow valve. The refrigeration compressors will normally use fairly large volumes of cooling water themselves—a moderate sized installation may require about 1,000 gallons an hour, and consideration should be given to the provision of cooling towers for this purpose. Very roughly on the above rate of consumption, and with the cost of water at about 2s. per 1,000 gallons, the entire capital cost of the installation of a well-designed cooling water tower would be recouped in under two years.

It is occasionally possible to link refrigeration compressors with the heating plant on the heat pump principle. The trouble is that the refrigeration plant may be required to operate at times when the heating is not wanted. Such investigation as the writer has made has always shown that the expected fuel economy is more than offset by additional technical problems and by the cost of overcoming them.

It is desirable to avoid the use of copper, brass or aluminium tubing and fittings in a chilled brine system, and materials should be chosen that will resist corrosion by fairly concentrated solutions of sodium chloride.

Wrought iron piping will stand up reasonably well. Internally enamelled steel or wrought iron tubing is rather better, and any metal tubing with a continuous internal polythene sheathing may be used. Care should, however, be exercised that the internal polythene sheath is continuous and does not expose the metal pipe to the action of brine. When using vitreous enamelled pipe, special precautions should be taken to ensure that there are no pin-holes or cracks in the enamel, as otherwise these will form spots for rapid corrosion. Chilled brine installations are only an economic possibility in large industrial research laboratories where a major process of the industry served by the laboratory makes the provision of this facility strictly essential.

* An exothermic reaction is one which liberates heat energy: one which absorbs that energy is "endothermic."

Distilled water

Water from which the major mineral content has been removed, either by distillation or other means, is required in almost every laboratory. The quality of the distilled water is frequently a matter of discussion in many laboratories and unless elaborate distillation methods are employed the condensate is often far from pure and it is fairly common practice to choose distillation plant which will leave only such residues as are unimportant for that particular work of the laboratory at that time. Frequently when a particular worker requires high purity water he has to resort to redistillation of the bulk distilled water supply, a process that is slow, cumbersome and time consuming.

There appears to be no generally accepted standard to define "distilled water." Tap water contains (according to district) of the order of five hundred parts per million of solids. "Good distilled water" contains about five parts per million of solids and has a specific conductivity of the order of 5×10^{-6} reciprocal ohms. The purest water ever obtained by condensate distillation required forty-two distillations at reduced pressure in quartz apparatus and produced a small amount of water of specific conductivity of $0{\cdot}043 \times 10^{-6}$ at 18° Centigrade. Demineralizing processes for obtaining the approximate equivalent of distilled water by ion exchange are well established, but not so well known in detail. The elementary nature of the first principles have, however, sometimes been applied with insufficient attention to detail or unsuitable materials and the resulting water, while, for example, being low in calcium has been unduly high in silica content. Ion exchange resins for the preparation of pure water for laboratory use are marketed by the Permutit Company and by the choice of the most appropriate resins it is possible to obtain the equivalent of distilled water of a high degree of purity at a fraction of the cost of condensate distillation methods. For the small laboratory portable "Deminrolit" equipment is marketed and the ion exchange resins can be obtained in cartridge form so that the equipment can be serviced by relatively unskilled labour. Where there is a demand for relatively large quantities of pure water of the order of 100 gallons per day the installation of a central piped "distilled" water supply merits consideration. The material used for piping distilled water supplies should be chemically inert and polythene tubing appears to be pre-eminently suitable for this purpose. Glass tubing is used in certain applications, such as in the brewing industry, but it should be borne in mind that small amounts of silica are added to the water in its passage through glass and that for very accurate analytical work this may be undesirable. Polythene tubing does not add traces of any element to the distilled water.

Nitrogen

Nitrogen is distributed as a centralized piped service in relatively few laboratories, but with modern experi-

technical section

mental techniques it probably has more claim for inclusion in the list of centrally distributed services than either compressed air or vacuum. A number of chemical and physical preparations and experiments can only be successfully carried out in the absence of oxygen and the observation is particularly applicable to certain types of metallurgical investigations. In certain organic preparative work a reaction that would be violent or dangerous when carried out in air can be safely controlled in an inert atmosphere. While nitrogen is not the only inert gas it is the commonest and cheapest, and it forms a useful "blanket" in a wide range of experimental work. The gas is chemically inert and therefore non-corrosive and non-toxic. Any type of material can be used for piping the gas and the selection of material can be determined simply on the basis of cost and ease of installation. General distribution throughout the laboratory should be at a pressure of about 15 p.s.i. and in any case not exceeding 25 p.s.i. Although it is the major constituent of air it is not normally practicable for the laboratory to instal plant for nitrogen separation and the gas can be purchased very cheaply in cylinders of varying capacities from the British Oxygen Company Ltd.* Where nitrogen is installed as a central piped service it is recommended that cylinders of about 180 ft. cubic capacity be utilized. In this country cylinders of this and other gases are frequently taken into the individual laboratory rooms. There is no doubt that they take up space in the working laboratory and if used to any appreciable extent much labour is expended in bringing fresh cylinders to where they are required. Nitrogen as a central piped service has much to commend it as it provides a greatly appreciated facility for the scientist and the installation is simple and relatively inexpensive both in terms of capital expenditure and running costs. Although the prohibition does not apply in this country, it is of interest to note that in some others the taking of gas cylinders into inhabited rooms, such as working laboratories, is strictly forbidden. As far as can be ascertained, the basis of this regulation is fear of the cylinders exploding should they be dropped on to the floor. Theoretically this is a distinct possibility, but although one hears of rumours of such occurrences it seems very difficult to obtain real evidence of their having happened. Perhaps one of the strongest arguments in favour of a piped nitrogen supply is the reduction of the amount of fairly heavy manual labour required to shift cylinders into individual rooms scattered throughout the establishment. The nature of the outlet fitted to the nitrogen supply will depend upon the type of laboratory, but where it is supplied as a piped service in analytical laboratories it is recommended that needle-type valves should be used in order that the flow of gas through a particular piece of apparatus can be regulated accurately and kept constant. Sensible precautions should be taken to ensure that when a fresh cylinder is connected to the system that a pocket of air is not introduced into the piping as the oxygen will, of course, vitiate the entire purpose of inert gas supply.

* Those in common use in laboratories weigh between 22 lb. and 1 cwt

Oxygen

A centrally distributed oxygen supply is a great asset in a wide variety of laboratories. A steady stream of pure oxygen is a requisite in certain chemical and physiological investigations and its use in combination with coal gas to produce an intensely hot flame is valuable in welding processes and the manipulation of hard glass or quartz.

Where the oxygen supply is to be used in conjunction with town coal gas it is essential that non-return valves be fitted to the gas supply cocks to prevent oxygen being forced into the gas supply mains with possibly disastrous results. Non-return valves for this purpose are marketed by the British Oxygen Company.

The pressure at which the oxygen supply is distributed will depend upon the work of the particular laboratory. In chemical and physiological laboratories a maximum pressure of 10 p.s.i. should be adequate but for other applications about 30 p.s.i. may be necessary.

Oxygen is not normally regarded as a dangerous gas, but its powers of encouraging combustion tend to be overlooked and it is therefore important that all piping and cocks should be leak free. While there are other methods of obtaining oxygen supplies the most practical is the attachment of large cylinders to a distribution network of piping. The rate of supply of oxygen to an experiment or flame is usually important and the terminations in the laboratory should preferably be fitted with needle-type valves. Wrought-iron or steel tubing may be used for the pipe distribution system and the factor of safety that is usually considered applicable for service piping subjected to internal pressure may be taken as a value of ten times the normal maximum working pressure.

Hydrogen

Very similar considerations apply to a centrally distributed hydrogen supply. It should, however, be borne in mind that with oxygen and/or air the gas forms a violently explosive mixture. It is especially useful in metallurgical laboratories but in circumstances where both oxygen and hydrogen are distributed throughout the same establishment the outlets for the two services should be markedly different, so that there is no possibility of confusing the two services. Hydrogen is less likely to be required as a centrally distributed supply than either oxygen or nitrogen, it is potentially more dangerous than these gases, and its range of application for experimental uses much more restricted. Small amounts of pure hydrogen can be more readily prepared by simple laboratory reactions than is the case with either oxygen or nitrogen and unless there is a clearly defined reason for its general distribution throughout the building suggestions that "it might one day be handy" should be firmly resisted.

working detail

SERVERY HATCH: SCHOOL IN COVENTRY

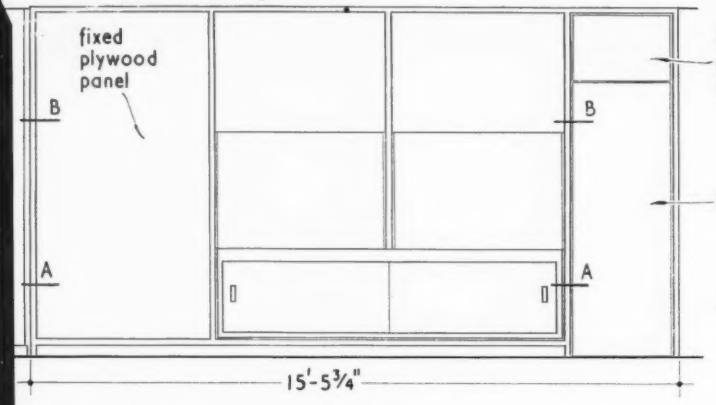
Architects' Co-Partnership, architects

Being in an infants' school, the counter height is only 2 ft. 6 in. above the floor, and the top of the servery opening is only 5 ft. 3 in. above floor level. This scaling down of dimensions is undoubtedly correct. At the same time it is important to ensure that, when this is done on a hatch of this type, the sashed opening is on the dining room (i.e., the children's side) as it is here, and not on the servery side; otherwise the servery staff will bump their heads against the top of the opening. The hardwood frame is West African mahogany, the panels gaboon-faced plywood: both are wax-polished.

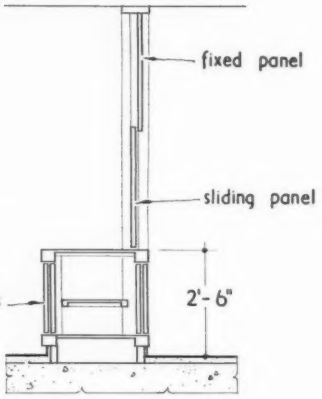
working detail

SERVERY HATCH: SCHOOL IN COVENTRY

Architects' Co-Partnership, architects



KEY ELEVATION. scale ¼"=1'-0"



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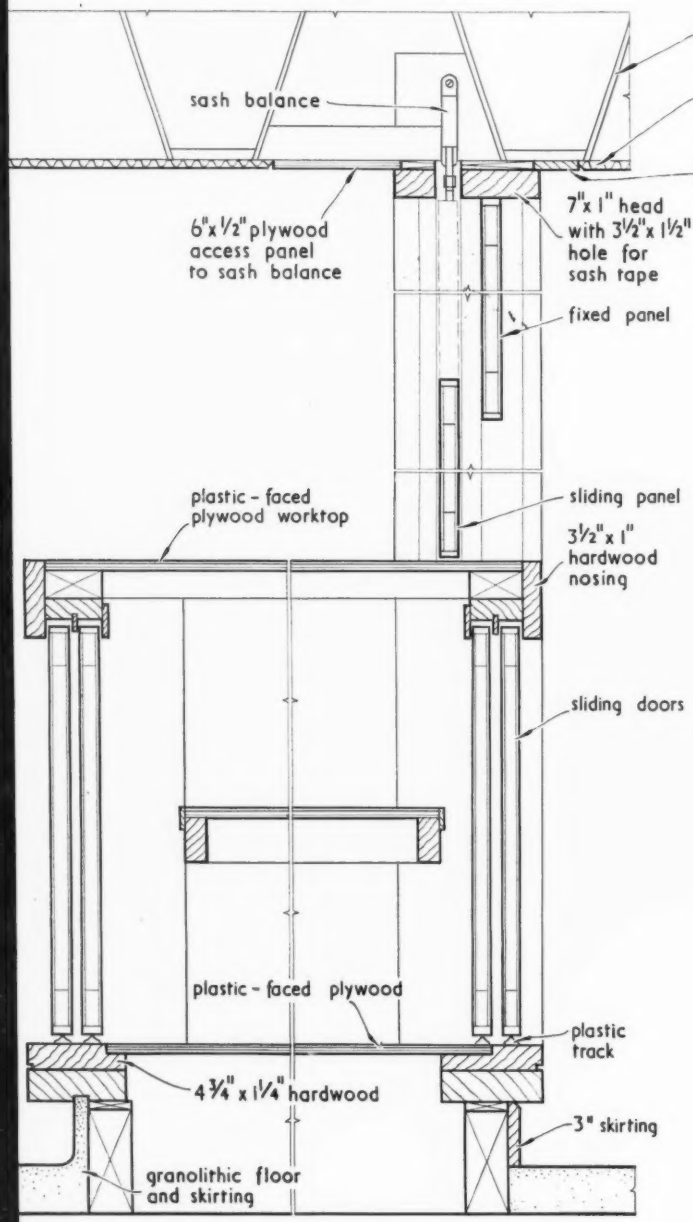
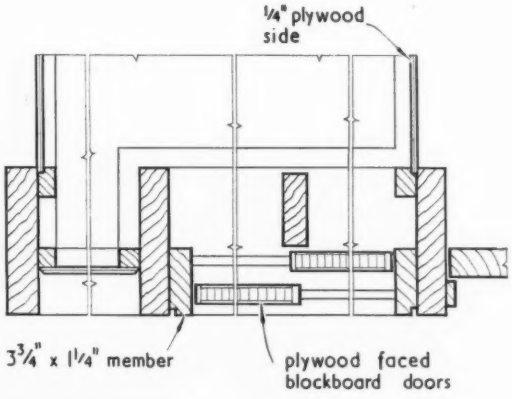
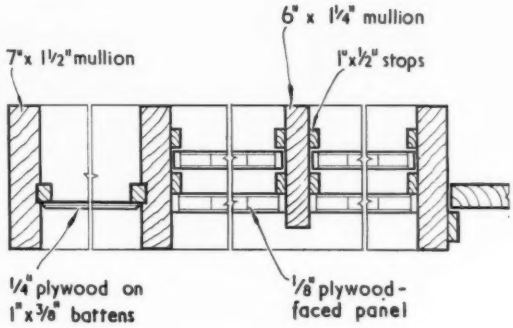


SECTION OF SERVERY. scale 1½" = 1'-0"



PLAN AT A-A. scale 1½" = 1'-0"



PLAN AT B-B. scale 1½" = 1'-0"

working detail

WINDOWS: 52

WINDOWS: HOSPITAL IN LONDON, S.E.1

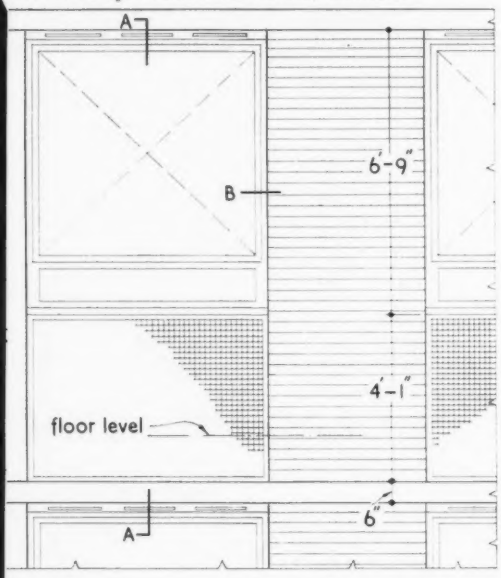
W. G. Holford and L. G. Creed, architects

One of the factors determining the fenestration of this very skilful facade was the need to screen the bench tops which lie directly behind the windows from draughts from the opening lights. It was for this reason that the opening lights were stopped about a foot above bench level and a strip of fixed lights inserted. Because this type of double window is so effective in stopping draughts when shut a line of ventilation slots were inserted above the head. The woodwork is teak, varnished inside, oiled outside, the strings are Westmorland slate, and the panels beneath the windows are oyster grey vitreous mosaic. The ground floor arcades form part of the existing building.

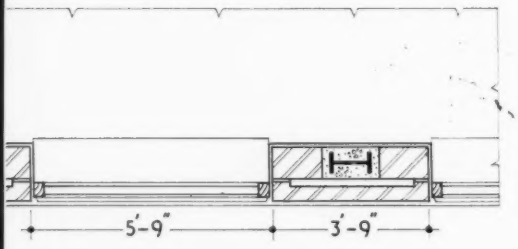
working detail

WINDOWS: HOSPITAL IN LONDON, S.E.1

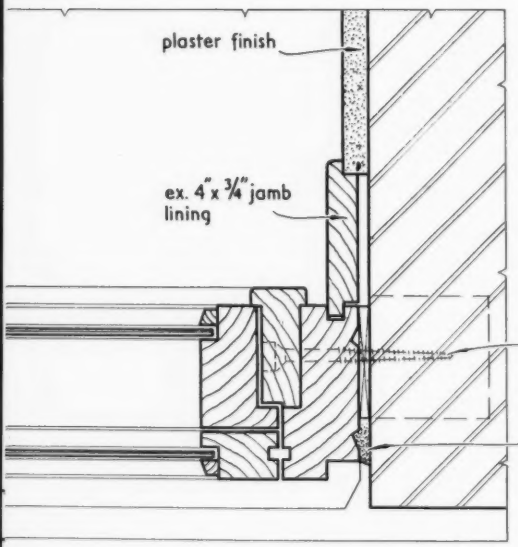
W. G. Holford and L. G. Creed, architects



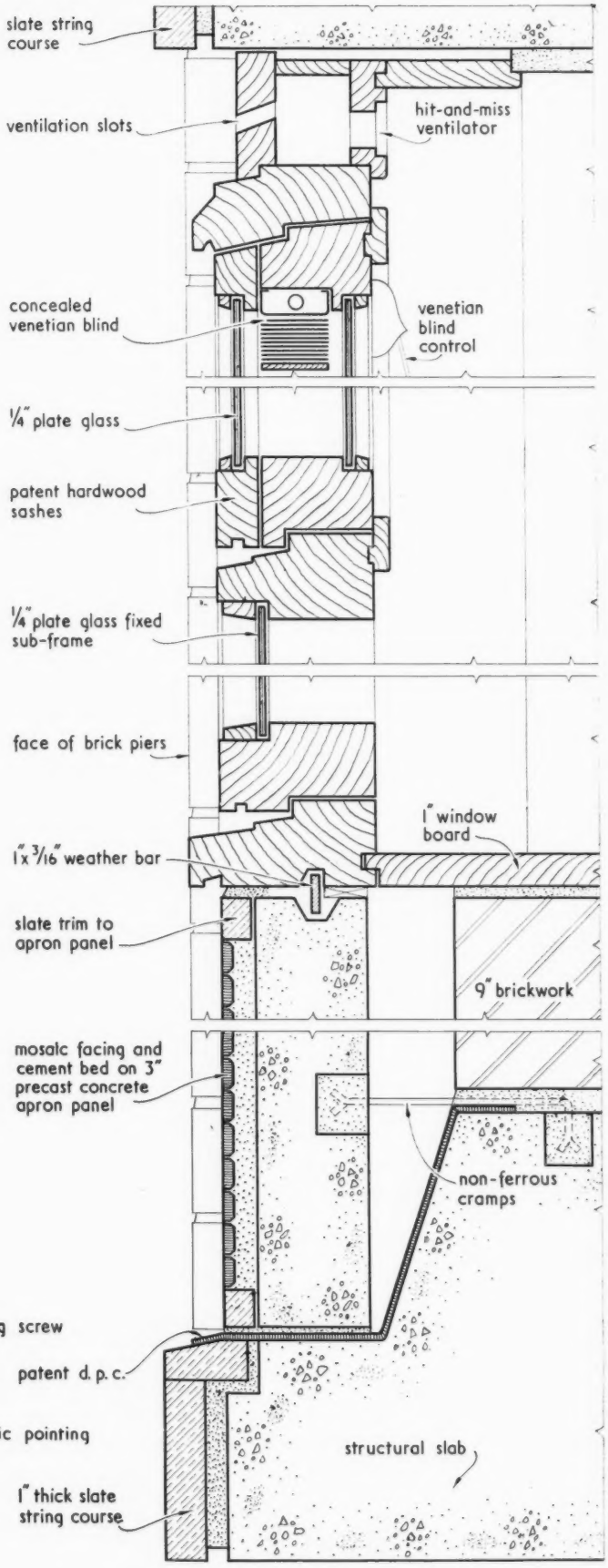
ELEVATION. scale 1/4" = 1'-0"



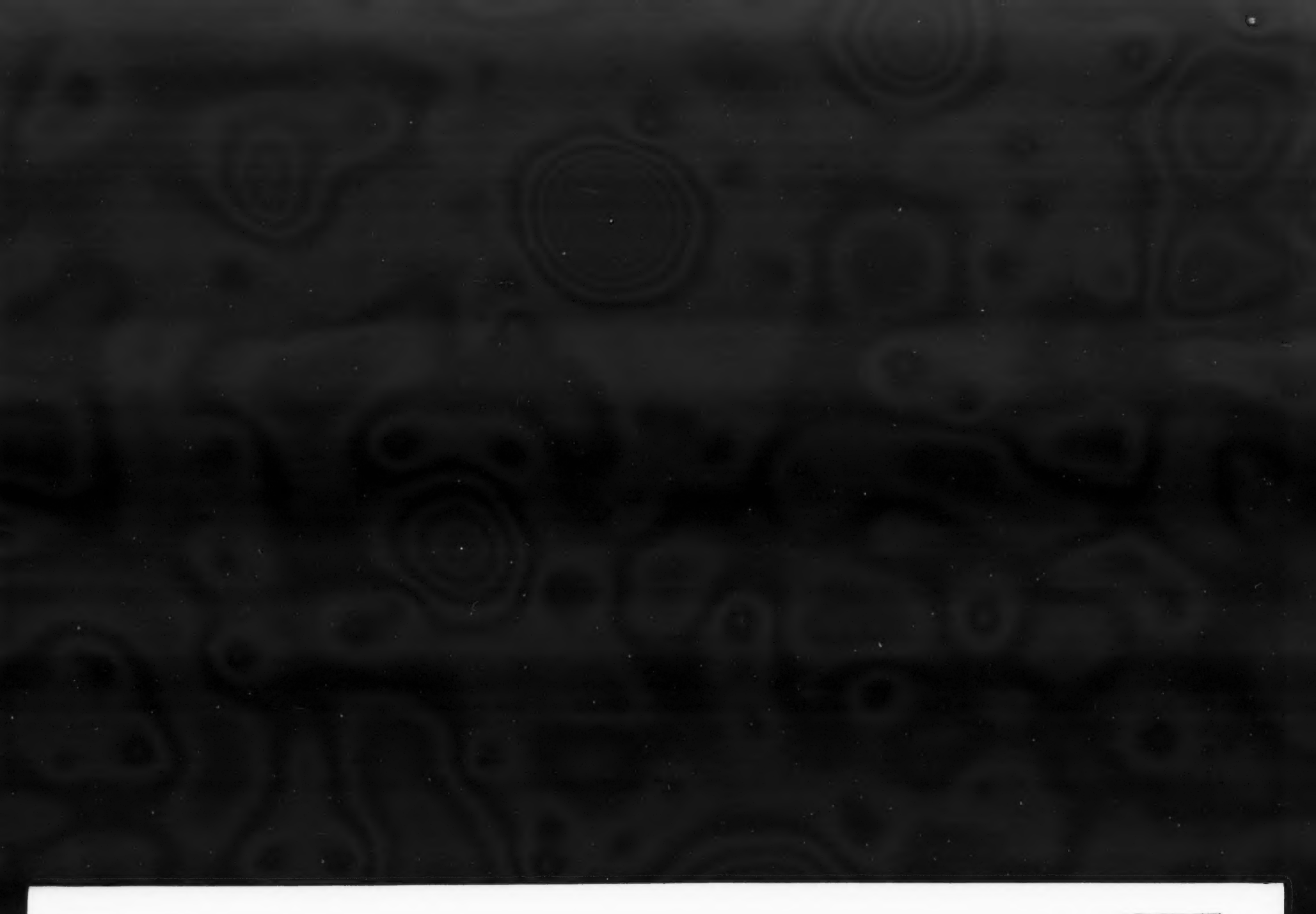
PLAN. scale 1/4" = 1'-0"



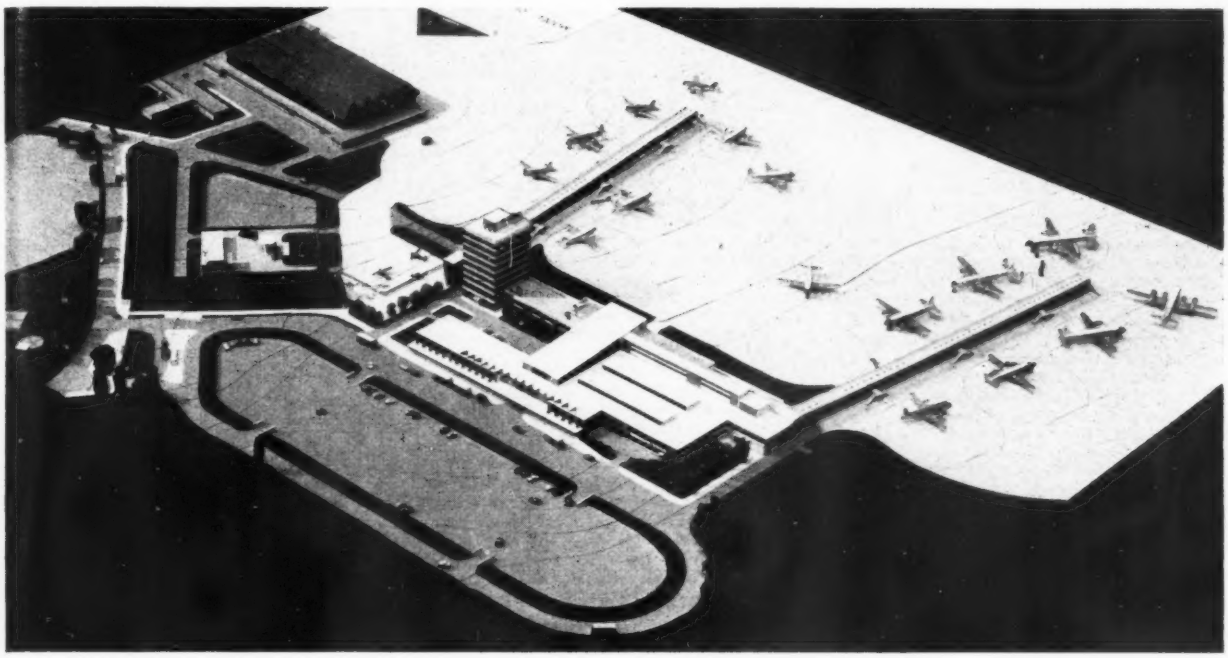
PLAN AT B. scale 1/4 full size



SECTION A–A. scale 1/4 full size



TERMINAL BUILDING AT MANCHESTER AIRPORT



Leonard C. Howitt, the city architect of Manchester, has designed this new terminal building for Manchester Airport. In this view of the model, from the north-west, the traffic hall and departure entrance are on the left and the baggage claim and the exit for arriving passengers are to the right of the central concourse. To the left of the control tower is the "domestic pier," to the right is the "international pier." The existing passenger-handling building is to the top left.

GOLF

*BAGS beat RIBAGS**

15½ to 14½

Golfers who arrived a little late at the Royal Mid-Surrey found the caddies bagged and empty trolleys put out all together near the first tee like crutches from Lourdes. This is to be regretted. Self-service may be a good thing for the Social Revolution but it is a bad thing for golf, however necessary. Golf is partly fantasy like an expensive restaurant or a box at the opera and it should be spared demeaning processes. The golf trolley (really a sort of medicinal wheelbarrow and in America a powered one) is an unromantic artefact like the male suspender and its proper place is not trundled along the fairways in droves but hung up for ever in the windows of sleazy truss-shops. This said, and it ought to be said if the *look* of a golfer and his course matters as much as his handicap, the JOURNAL may report an enjoyable match played out over flattish meadowlands with trees, one of them a giant cedar standing in weird, surrealistic isolation in the middle.

Singles in the morning, fourball in the afternoon. By lunch-time the RIBAGS were in the lead, 11½ to 8½, but not quite comfortably and the BAGS pulled up and scraped home. Felix Wilson for the RIBAGS won a gay, sparkling game against Len Trower by two holes when Trower hit his approach shot at the 18th over the privet hedge into the precincts of the bar, while a very much in-practice President Sir Giles followed behind giving Mathew Tait a rough time and winning. But when they all came in together from the fourball the result was reversed.

It was good to see V. V. Tatlock (Tatters) of the Architectural Press wielding clubs again for the BAGS whether in jaunty cap (before lunch) or without it (after). It was his first match appearance for two years and he finished all square with Tommy Darbyshire. A good game this. Tommy Darbyshire might well have beaten him but for an unluckily lost ball at the 18th. For the fourball he partnered B. Butler and B. Butler, who is a very big man, blazed away off his tees like eighteen rounds of pom-pom cannon shell, tracer, if one may refer with effect to such a conventional weapon. Together they brought Tommy Darbyshire down and with him Colonel Arthur E. Henson, who had suffered under pom-pom in the morning.

K. H. Bole, who last year showed a quantity surveyor's zeal for impartiality by playing and winning for both sides, found less scope for idealism when the BAGS required his services for all 36 holes; but as he had a good morning on his own versus F. G. Frizzell and a bad afternoon with E. A. Bower versus Frizzell and J. Barnard perhaps the idealism was still at work. Or was it poor E. A. Bower? He lost in the morning too.

So did Harry St. John Harrison, that most amiable and civilized of golfers, to P. C. Howe in the singles, and with H. Marsh to Howe and R. Parton in the fourball, which seemed all very topsy-turvy because Marsh had trounced Parton in the morning. But then a lot of the day's golf went like that. There was always the unexpected. A few lost balls were picked up during the day and one of them was in its wrapper.

* BAGS stand for Building Alliance Golfing Society, RIBAGS for RIBA Golfing Society.

Individual Results (BAGS names first):
SINGLES: *R. Parton* lost to *H. Marsh* (4/3); *I. D. Forbes* beat *Andrew Jones* (4/3); *L. J. Trower* lost to *Felix Wilson* (2 up); *N. M. Cox* lost to *J. A. Maudsley* (7/6); *P. Whitcomb* lost to *Duncan Scott* (5/3); *F. Pavletich* lost to *Tony Branson* (5/4); *P. C. Howe* beat *H. St. John Harrison*; *F. M. Goodhead* lost to *R. P. Shannon* (1 up); *W. R. Herbert* beat *Allan Johnson* (3/2); *H. M. James* lost to *C. A. Townsend* (4/3); *C. S. Willmott* lost to *H. E. Sadler* (3/2); *M. Tait* lost to *Sir Giles Gilbert Scott* (4/3); *K. H. Bole* beat *F. G. Frizzell* (4/2); *V. V. Tatlock* halved with *T. S. Darbyshire*; *D. Jack* beat *A. H. Watkins* (1 up); *R. T. Warren* beat *John Gray* (4/3); *T. W. Howard* lost to *S. H. Statham* (1 up); *G. W. Smith* beat *F. Sutcliffe* (3/2); *E. A. Bower* lost to *J. Barnard* (3/2); *B. Butler* beat *A. E. Henson* (5/4); RESULT: BAGS 8½, RIBAGS 11½.

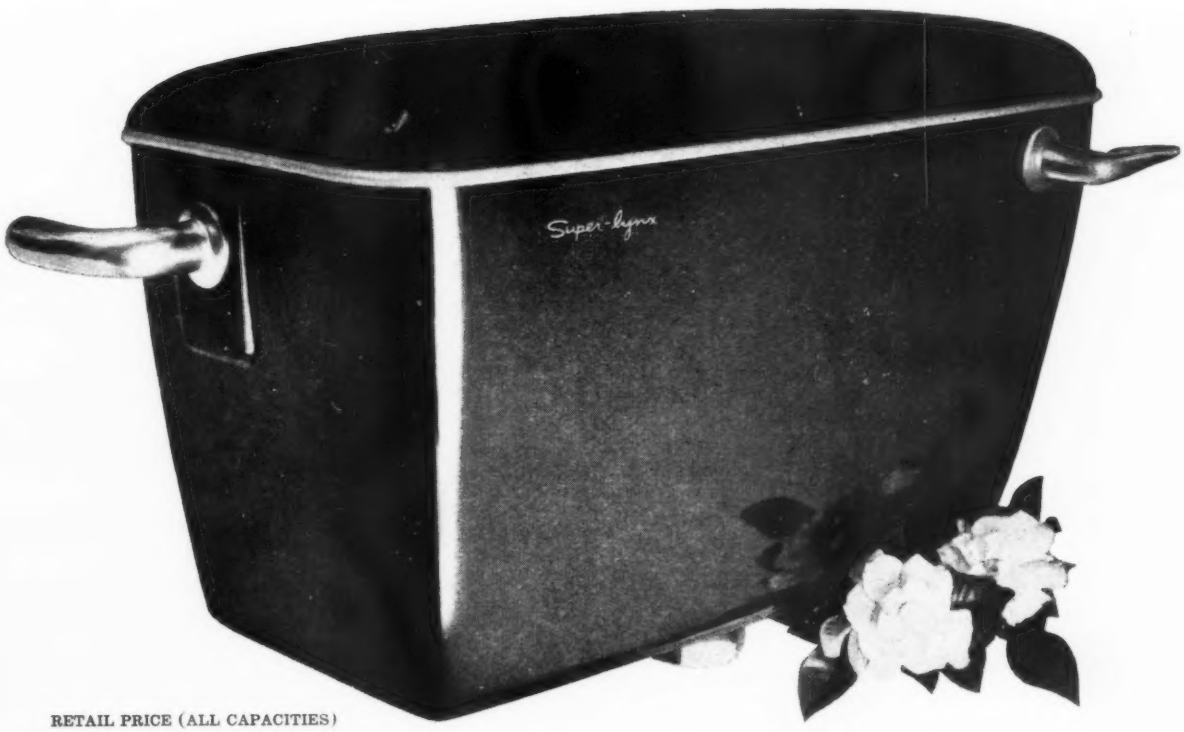
FOURBALL: *Forbes & Howard* beat *Jones & Statham* (1 up); *Jack & Goodhead* lost to *Watkins & Shannon* (5/3); *Cox & Whitcomb* lost to *Scott & Maudsley* (2/1); *Trower & Tait* beat *Wilson & Sir Giles Gilbert Scott* (4/3); *Bole & Bower* lost to *Frizzell & Barnard* (2/1); *Pavletich & James* beat *Townsend & Branson* (4/3); *Parton & Howe* beat *Marsh & St. John Harrison* (2 up); *Tatlock & Butler* beat *Darbyshire & Henson* (3/2); *Warren & Herbert* beat *Gray & Johnson* (2/1); *Smith (G. W.) & Smith (F. W.)* beat *Sutcliffe & Sadler* (2/1); RESULT: BAGS 7, RIBAGS 3.

ROBIN MUDIE

Now – by Shires

the super-efficient super-smart *Super-lynx*

A cistern has to be good for its manufacturer to guarantee it for five years. Which is precisely what Shires do with their new 'Super-lynx'.
Inside and out the 'Super-lynx' really is an outstanding job—one which you will be pleased to specify for initial installation or for replacement. High and low level models are available in extra high gloss black Duranite.
The low level model has gold-lustre beading, operating lever and flush pipe.
The high level model has a gold-lustre lever mechanism and chain with coloured acrylic handle.
Matching flush pipe for the high level model can be supplied at extra cost.
The 'Super-lynx' is fitted with the rustless, unbreakable, silent flush-at-a-touch 'Kingfisher' syphon mechanism.
Powerful flush syphon to B.S.S. 1125 and water works specifications.
Capacities 2, 2½ and 3 gallons.



RETAIL PRICE (ALL CAPACITIES)
Low Level 187/- High Level 140/-

made by **Shires** *for your convenience*

Shires are the largest manufacturers of flushing cisterns in the world. They also make W.C. pans and seats, pipes, wash-basins and complete W.C. suites. Full details and trade terms from: **Division A, Shires & Co. (London) Limited, Greenbottom Works, Guiseley, Yorks.** (Also at London, Stoke, Birmingham & Glasgow.

S48

Heard about the shindy on the House Committee?

Nothin' definite.

Featherstonehaugh says he'll resign.

What on earth for?

'Pears young Johnson tabled a motion that the possibilities of establishing an American Bar should be investigated. Said he knew just the people for the job.

Reed Millican of course*

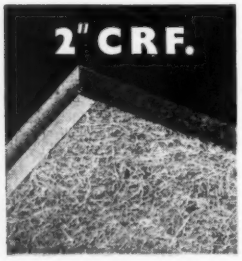
None other. Featherstonehaugh said he was damned if he was going to sit idly by and see a dignified club turned into a hall of mirrors by a lot of whippersnappers. Ponsonby and Willoughby-Watkins in support.

What's goin' to happen now?

Johnson's going to cable Mr. Dulles.

ROOFS revolutionary

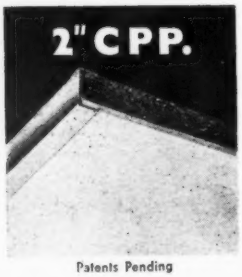
EVERY Architect knows that roofs, in most cases the largest single continuous surface in a building, demand the most careful attention. In the past, the Architect chose the roof structure and would frequently have to conceal its unsightly appearance from within. Although this great sound reflecting surface also provided the easiest path for heat losses, *additional* cost made the use of thermal insulators or sound absorbants a luxury.



Not until Thermacoust Limited first introduced 2" Channel Reinforced Fine Grain (2" CRF) Roof Slabs, could roof structure, thermal insulation, sound absorption and fine textured finish be provided by *one* low priced material.

2" CRF has revolutionized roof construction. In one cheap unit all the following qualities are combined :—

- **Low first cost and simplicity of construction.**
- **30 lbs. superload up to 7' 0" span.**
- **Total roof thickness less than 3", saving inches of brickwork.**
- **Lightness of weight (7 lbs./sq. ft.), saving tons of supporting structure.**
- **Thermal Insulation (U=0.23 BTh.U), saving in fuel and size of heating installation.**
- **Fine textured finish needing little decoration.**
- **Sound absorption (0.85 at 500 cps.).**
- ★ **Availability ex stock in large quantities.**



Patents Pending

And now we offer, where no sound absorption is required the 2" Channel Reinforced Preplastered Thermacoust (2" CPP) with the following *additional* advantages.

- **Smooth finish.**
- **Highest possible light reflection.**
- **Preformed plaster in its strongest form.**

Thermacoust OF COURSE!

T.21

THERMACOUST LTD., 20 Albert Embankment, S.E.11. (RELiance 7281)

PLASTER CORNER REINFORCEMENT

The Blakey Galvanized metal Angle Bead protects external angles against accidental damage at very little cost. It is simply and quickly fixed and finishes off with a neat arris.

The Blakey Bead will not shrink, corrode or chip and has been fixed in factories, housing estates, hospitals, etc.

Illustrated brochure and sample section will be sent on request.

Manchester Corporation Housing Scheme.
Director of Housing : A. MACKENZIE, L.R.I.B.A.

OVER 2,000,000 FT. OF BLAKEY BEAD USED ON ABOVE CONTRACTS

PAT. No. Pro, 10832/54

BLAKEY PATENT *Galvanized* METAL ANGLE BEAD

THE BLAKEY CABINET & METAL WORKS CO., LTD.

61 Scotland Road, Nelson . Lancs.

'Phone Nelson, 941

COUNTER ATTACK GROTESQUE OLIVETTI

Ian Nairn, of *Outrage* fame, will contribute a first essay on the aims and objectives of the newly-formed **Counter-Attack Bureau,** to the June issue of the ARCHITECTURAL REVIEW, and make proposals for positive anti-Outrage policies for the threatened suburban village-centres of Ewell, Colnbrook and Huyton.

Subtopian Mess at Colnbrook.

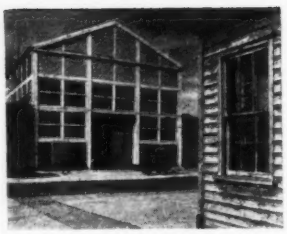
Two widely diverse Italian subjects to be discussed in the same issue will be the grotesque statuary and architecture of the Orsini garden at **Bomarzo,** considered iconographically by Dr. S. Lang, and the impressive and intelligent record of patronage in architecture, the arts, and design, of **Adriano Olivetti,** considered biographically by Georgina Masson. New buildings in this issue will be as different in type and place as the **Golden Lane** development by Chamberlin, Powell and Bon, and the **Museum at Accra** by Drake and Lasdun; the old buildings of the month will be **Balmes House,** Hackney, a forgotten, but representative piece of artisan mannerism which will be described and discussed by Priscilla Metcalf, and those in **Halifax Street,** Sydenham, another threatened area that comes within *Counter-Attack's* purview. *Skill* features of the month include a broad survey of food-preparation equipment, and in *Miscellany* Robert Melville contributes, as

Golden Lane, by Chamberlin, Powell and Bon.

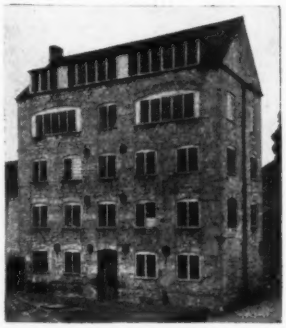
usual, his column of off-beat opinions on the world of art galleries and exhibitions.

EARLY INDUSTRIAL

Mills, docks and harbours, warehouses, fences and gates, railways and canals—all bear witness to the theme of July's special issue of the REVIEW, *The Functional Tradition*, compiled and edited by J. M. Richards. In our present need to consolidate the results of the technical revolution that has overwhelmed architecture in this century, we need the discipline of an unconscious vernacular, a simple way of doing things simply, and we have no better guide for this than the monuments of the functional tradition that dot the country from end to end, even in the most remote and rural areas. The tradition is not limited to any material—with its wooden water-mills, its brick warehouses, its iron framed naval boatsheds, its stonework by canal and railway—it had the adaptability we admire in the great masters of today, fitting together material, function and form, but into an unselfconscious unity. Most architects know of the great tradition's existence, have seen one or two textbook examples illustrated, have discovered one or two favourites of their own, but in *The Functional Tradition* they will find for the first time a systematic analysis of the nature and value of the tradition, supported by the results of an extended photographic campaign by Eric de Maré, which has rescued many unknown and forgotten buildings from undeserved obscurity, and also set on record for the first time the little known architecture of the warehouses, rope walks and other buildings in the dockyards of the Royal Navy.



Sheerness Naval Dockyard: cast iron frame extension, 1858.



Bentley's piano factory, Nailsworth near Stroud.

DRAUGHT-STOPPERS HOTELS ADVERTISING

The year-round English draught makes **Weather-stripping** a subject of perennial interest and in the August issue of the REVIEW, Peter Whiteley will make a study of the products available for remedial work on both doors and windows, as well as the kind of preventive design that is better than even the best of cures. Two hotels of outstanding interest will be described and illustrated; the *Malmen*, by Wallander and Varhelyi in Stockholm, and Louis Erdi's *Coachotel* in Dover, both radical solutions

Model of a village at Rushbrooke, Suffolk, by R. Llewellyn Davies, to be illustrated with photographs of pilot houses.

in their different ways to contemporary hotel-design problems. A creative and broadminded approach to a vexed question, outdoor publicity, will be outlined in the new proposals for **Advertising in Stevenage,** and the social and architectural problems of building new **Urban Nuclei** in rural areas will be considered in an article by Hilda Selem on recent re-settlements in Italy and a study of Richard Llewellyn Davies' rebuilding programme for **Rushbrooke** in Suffolk. Historical features in this issue will range from the early days of the **Bauhaus,** recalled by Helmut von Erffa, to a sheaf of notes on aspects of Italian architecture. Ian Nairn will make a half-century assessment of **Hampstead Garden Suburb,** prototype of so much good and so much evil, to see how it has stood the test of time, and in *Skill*, the *Interior* of the month will be the new Offices for the Orient line, in Cockspur Street, S.W.1, while *Design Review* will cover recent developments in wallpapers and furnishing fabrics.

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

30s. per inch; each additional line, 2s. 6d.

ARCHITECTURAL ASSISTANTS with three years' training, experience in Architect's Office, of Intermediate R.I.B.A. standard and with a keen interest in Historic Architecture required by Ministry of Works Historic Buildings and Ancient Monuments Drawing Offices, London. Applicants must have surveying experience and a sound knowledge of construction. Work involves Surveying and Preservation of Ancient Monument and Historic Buildings.

Pay between £500 and £790 per annum, according to age and experience. Five-day week, 3½ weeks annual leave. Prospects of promotion and permanency.

State age, qualifications and experience to Chief Architect, Ministry of Works (D), Room 439, Abell House, London, S.W.1. 6255

CITY AND COUNTY OF THE CITY OF EXETER

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

(*a*) PRINCIPAL ASSISTANT ARCHITECT (Education Section). Salary A.P.T. Grade VI (£902 to £1,107).

(*b*) SENIOR ASSISTANT ARCHITECT. Salary A.P.T. Grade IV (£727 to £907).

(*c*) ARCHITECTURAL ASSISTANT. Salary A.P.T. Grade II (£609 to £691).

(*d*) ARCHITECTURAL ASSISTANT. Salary A.P.T. Grade I (£543 to £625).

Applicants for posts (*a*) and (*b*) must be Associate Members of The Royal Institute of British Architects, and for appointments (*c*) and (*d*) must have passed the Intermediate R.I.B.A. Examination.

For post (*a*) applicants must have had considerable experience in all phases of modern design and construction related to School Buildings and Civic Buildings.

For post (*b*) preference will be given to those experienced in the design and construction of schools and houses.

All appointments will be subject to one month's notice on either side. The successful applicants will be required to pass a medical examination. Posts (*a*), (*b*) and (*c*) are subject to the provisions of the Local Government Superannuation Acts 1937 and 1953.

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

Applications, stating age, qualifications, previous and present appointments and salaries, with full details of experience and earliest possible date when available, should be sent to Harold B. Rowe, F.R.I.B.A., A.M.I.Struct.E., City Architect, Municipal Offices, Exeter, not later than 15th June, 1957.

C. J. NEWMAN,
Town Clerk.

Exeter.
May, 1957. 6419

SURREY COUNTY COUNCIL

Applications invited for following appointments:—

1. ASSISTANT ARCHITECT, GRADE IV, £727 15s.—£907 2s. 6d. p.a. plus £30 p.a. London Allowance.

2. ARCHITECTURAL ASSISTANT GRADE II. £609 17s. 6d.—£691 17s. 6d. p.a. plus London allowance up to £30 p.a. Must be of good general training, preference given those who have passed Intermediate R.I.B.A.

Full details of experience and qualifications, present salary and three copy testimonials to County Architect, County Hall, Kingston, as soon as possible. 6415

BOROUGH OF WILLESDEN
BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT

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

(*a*) ASSISTANT ARCHITECTS (two posts), Grade A.P.T. V (£814 17s. 6d.—£994 5s. p.a.).

(*b*) ASSISTANT ARCHITECTS (three posts), Grade A.P.T. III (£656—£784 2s. 6d. p.a.).

(*c*) ASSISTANT ARCHITECT, Grade A.P.T. I (£543 5s.—£625 5s. p.a.).

London weighting, maximum £30 p.a., is payable in addition to the above salaries.

The Council is unable to assist with housing accommodation.

Forms of application and conditions of appointment may be obtained from the Borough Engineer and Surveyor, Town Hall, Dyne Road, Kilburn, N.W.6. Applications to be returned to the undersigned not later than 9 a.m. on Monday, 17th June, 1957.

When writing for application forms candidates must state for which appointment they wish to apply.

R. S. FORSTER,
Town Clerk.
6413

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Selections for appointment are now being made from students at architectural schools who will take their final examinations this summer. Starting salary up to £676. Vacancies also for ARCHITECTS of experience at starting salaries up to £1,036. Full programme of houses, flats, schools and many other interesting buildings.

Application forms and full particulars from the Architect (Ref. AR/EK24/572), The County Hall, S.E.1. (895) 6290

GOVERNMENT OF NORTHERN IRELAND
ASSISTANT ARCHITECT CLASS II

Applications are invited for pensionable posts in the Chief Architect's Branch, Ministry of Finance. Candidates must be Registered Architects by examination, with at least two years' experience in an Architect's office in the preparation of working drawings. Salary scale £744 (at age 25)—£1,002 (age 34 and over)—£1,160. Preference will be given to suitably qualified candidates who served in H.M. Forces during the 1939-45 War, provided the Ministry is satisfied that such candidates are, or within a reasonable time will be, able to discharge the duties of the post efficiently. Application forms may be obtained from the Secretary, Civil Service Commission, Stormont, Belfast. 6381

BOROUGH OF BLYTH

Applications are invited for the following vacancies:—

(*a*) CHIEF ENGINEERING ASSISTANT—Salary A.P.T. IV, £727 15s. 0d. p.a. rising by annual increments to £907 2s. 6d. p.a. Applicants should have experience in Municipal Engineering and hold a recognized qualification.

(*b*) JUNIOR ARCHITECTURAL ASSISTANT—Salary A.P.T. II, £609 17s. 6d. p.a. rising by annual increments to £691 17s. 6d. per annum. Applicants should be of Intermediate standard.

The appointments are subject to the Local Government Superannuation Acts, The Scheme of Conditions of Service of the National Joint Council, one month's notice on either side, and the passing of a medical examination.

Applications suitably endorsed, must be delivered to the undersigned with names of two referees not later than 17th June, 1957.

Canvassing will disqualify and applicants should disclose relationship with any member or official of the Council.

Housing accommodation will be provided if required.

EDWIN W. CARTER,
Town Clerk.

Dinsdale House,
Marine Terrace,
Blyth, Northumberland. 6493

SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD

Applications are invited for the following appointment on the staff of the Regional Architect at the Western Area Offices at Winchester. The successful candidate will be required to reside in or near Winchester:—

ASSISTANT ARCHITECT—The commencing salary will be within the scale £680 × £25 (3) × £30 (2) × £35 (1) × £30 (1) × £35 (3) to £985 per annum. Applicants must be Associate Members of the Royal Institute of British Architects and capable of preparing working and detailed drawings and specifications and supervising work on individual projects. Experience of hospital planning and construction will be an advantage.

Application forms may be obtained from the Area Secretary, Highcroft, Romsey Road, Winchester, and must be returned completed within 14 days of the appearance of this advertisement. 6492

LINDSEY COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Vacancies on permanent staff for TWO ENGINEERING ASSISTANTS, Grade III, £656/£784 2s. 6d., for Heating Services. Applicants should hold the Higher National Certificate or Intermediate Examination I.H.V.E. and be capable of designing and preparing heating and hot water schemes and specifications for school buildings.

In special circumstances consideration will be given to starting salary not more than two steps up the grade. N.J.C. Conditions of Service. Canvassing will disqualify. Candidates must disclose in writing whether to their knowledge they are related to any Member or Senior Officer of the Council.

Applications giving age, qualifications, experience, present salary, and the names of at least two persons to whom reference can be made to be sent not later than 30th June, 1957, to County Architect, County Offices, Lincoln. 6498

COUNTY BOROUGH OF DUDLEY
ASSISTANT ARCHITECT

Applications are invited for the above appointment in the Borough Architect's Department.

Salary Grade A.P.T. V (£814 7s. 6d.—£994 5s.).

Candidates must be Associates of the R.I.B.A. and must have a good all-round experience.

National Scheme of Conditions of Service and Local Government Superannuation Act apply.

Applications, together with the names and addresses of three persons to whom reference may be made, should reach me not later than Friday, 14th June, 1957.

P. D. WADSWORTH,
Town Clerk.

The Council House,
Dudley,
Worcs.
29th May, 1957. 6521

LANCASHIRE COUNTY COUNCIL

PLANNING ASSISTANT required at BURY, salary within £707 5s. 0d. to £907 2s. 6d.

Applicants should preferably have a qualification in architecture, surveying, engineering and/or planning. Candidates who are studying, however, would be considered for an appropriate lower grade with prospects of promotion. The commencing salary for the successful candidate will be according to qualifications and experience.

Applications giving age, qualifications, present appointment, experience, etc., and two referees to the County Planning Officer, East Cliff County Offices, Preston, by 14th June, 1957. 6480

QUANTITY SURVEYING ASSISTANTS required by Air Ministry Works Directorate in London and Provinces. Grade and commencing salary based on not less than 3 or 5 years' previous experience under Quantity Surveyor or Building Contractor. Approved full-time study will count towards 5 years period. Normally technical qualifications in Builders quantities or building, *e.g.* C. & G. Final or O.N.C. or proof to equivalent standard. Duties include abstracting and billing, site measurement and preparation of estimates. Salary range £520 to £830 London rate starting pay dependent on age qualifications and experience. Salaries somewhat lower in Provinces. Pensionable and promotion prospects. Five-day week, three weeks' leave a year. Applicants normally should be natural born British subjects. Write stating age, qualifications and previous appointments including type of work done, to Manager, Professional & Executive Register, Ministry of Labour and National Service, 1-6, Tavistock Square, W.C.1, quoting reference PE 105/745. No original testimonials should be sent. Only applicants selected for interview will be advised. 6612

COUNTY BOROUGH OF BIRKENHEAD
BOROUGH ARCHITECT'S DEPARTMENT

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

TWO ASSISTANT ARCHITECTS, A.P.T. V (£814 17s. 6d.—£994 5s.).

TWO ARCHITECTURAL ASSISTANTS, A.P.T. II (£609 17s. 6d.—£691 17s. 6d.).

ONE ASSISTANT QUANTITY SURVEYOR, A.P.T. VI (£902—£1,107).

TWO ASSISTANT QUANTITY SURVEYORS, A.P.T. V (£814 17s. 6d.—£994 5s.).

THREE ASSISTANT QUANTITY SURVEYORS, A.P.T. IV (£727 15s.—£907 2s. 6d.).

The appointments are superannuable subject to satisfactory medical examination and to one month's notice on either side.

Forms of application obtainable from the Borough Architect's Department, 3, Conway Street, Birkenhead.

Closing date for applications: 24th June, 1957.

DONALD P. HEATH,
Town Clerk.

Town Hall, Birkenhead. 6505

COUNTY BOROUGH OF WALLASEY
APPOINTMENT OF ARCHITECTURAL ASSISTANTS

Applications are invited from qualified architects for the following appointments in the Borough Architect's Department:—

(*a*) PRINCIPAL ARCHITECTURAL ASSISTANT—Grade A.P.T. VI (£902—£1,107).

(*b*) SENIOR ARCHITECTURAL ASSISTANT—Grade A.P.T. IV (£727 15s.—£907 2s. 6d.).

The commencing salaries will be in accordance with capabilities and experience. Conditions of appointment and application forms may be obtained from the Borough Architect, Town Hall, Wallasey, to whom completed forms must be returned by 12th June, 1957. The Council will consider favourably the provision of housing accommodation in connection with these appointments, in approved cases.

A. G. HARRISON,
Town Clerk.
6465

COUNCIL OF THE COUNTY OF ABERDEEN
COUNTY ARCHITECT'S DEPARTMENT

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

(*a*) SENIOR ASSISTANT QUANTITY SURVEYOR on salary scale £1,130 to £1,255 per annum and (*b*) ARCHITECTURAL ASSISTANT on salary scale A.P.T. VI—VIII (£825—£1,005 per annum).

Applicants for the Quantity Surveying appointment must be Associates of the Royal Institute of Chartered Surveyors and should have considerable experience in the preparation of estimates, schedules of quantities, etc., and the settling of accounts for all types of local authority contracts. Applicants for the Architectural appointment must be Associates of the Royal Institute of British Architects and should have had not less than three years' practical experience.

Both appointments are subject to the Local Government Superannuation (Scotland) Acts, 1937 to 1953 and the successful candidates will require to pass a medical examination.

Conditions of appointment and forms of application are obtainable from the undersigned and should be returned not later than 24th June, 1957.

Canvassing of members of the Council directly or indirectly in connection with these appointments shall disqualify the candidate.

JAMES L. CRAIG,
County Clerk.

County Buildings,
22, Union Terrace,
Aberdeen.
28th May, 1957. 6523

DONCASTER BY-PASS MOTORWAY ENGINEERS REQUIRED

THE WEST RIDING OF YORKSHIRE COUNTY COUNCIL is to undertake on behalf of the Ministry of Transport and Civil Aviation, the design and supervision of construction of this important By-Pass which is one of the largest motorway schemes so far programmed to be undertaken by a County Council.

In addition, other road and bridge improvement schemes of considerable magnitude are anticipated shortly.

The following appointments are to be made from candidates of any age and will offer outstanding experience in all aspects of modern bridge and highway engineering design and construction.

SENIOR BRIDGE ENGINEERS
up to £1,625 per annum.
ASSISTANT BRIDGE ENGINEERS
up to £1,230 per annum.
ASSISTANT ROAD ENGINEERS
up to £1,230 per annum.
JUNIOR ASSISTANT ROAD AND BRIDGE ENGINEERS
A.P.T. GRADES I to IV.
ASSISTANT LABORATORY ENGINEER
up to £1,230 per annum.
SENIOR ASSISTANT MECHANICAL ENGINEER
up to £1,515 per annum.
ASSISTANT MECHANICAL ENGINEER
up to £1,230 per annum.

Candidates must have appropriate professional qualifications and experience as follows:—

Bridge appointments—in modern bridge design and construction.
Road appointments—in modern highway layout and construction.
Laboratory appointment—in soil mechanics.
Mechanical appointments—in the construction, use, repair and maintenance of modern civil engineering plant and transport.

All appointments are permanent and pensionable and subject to normal County Council regulations governing conditions of service, subsistence and travelling allowances.

Application forms and further particulars from the County Engineer and Surveyor, County Hall, Wakefield. Completed forms to be returned by 24th June, 1957. 6469

URBAN DISTRICT COUNCIL OF CORBY
SENIOR ARCHITECTURAL ASSISTANT

Applications are invited for the appointment in the department of the Engineer and Surveyor of Senior Architectural Assistant, Grade A.P.T. V, commencing at the 4th point, £922 10s. per annum and rising to the maximum of £994 5s.

Applicants must be Registered Architects of at least five years' experience, have considerable experience in design, construction and contract administration as applied to contracts for Public Buildings and local authority housing. The work on which the successful candidate will be employed includes new cemetery buildings, mortuary, recreational buildings and housing.

The provisions of the Local Government Superannuation Acts, 1937-1953, will apply to this appointment.

Housing accommodation will be made available to the successful candidate, if married.

Forms of application may be obtained from the undersigned, to whom they should be returned not later than Friday, 21st June, 1957.

Testimonials will be required only from applicants selected for interview.

G. B. BLACKALL,
Clerk of the Council.

Council Offices,
Corby,
Northants.
28th May, 1957. 6504

UNIVERSITY OF OXFORD

Applications are invited from qualified assistants with some experience for the following appointment: SENIOR ARCHITECTURAL ASSISTANT. The person appointed must have a knowledge of contemporary techniques and be capable of taking charge of a small drawing office. In addition, his duties will include assistance in the administration of the University's major building programme. Housing accommodation will be available where appropriate. Salary about £850.

Apply for further particulars stating age, training and experience to the Surveyor to the University, 5, South Parks Road, Oxford. 6506

NORTHAMPTON RURAL DISTRICT COUNCIL
ARCHITECTURAL ASSISTANT

Applications are invited for the above appointment on Grade A.P.T. II. Commencing salary within the Grade according to qualifications and experience.

The principal work will be preparation of improvement schemes for Council Houses, although from time to time, new works will be involved.

Applicants must have had a sound general experience, and preferably have passed or be studying for the Intermediate examination of the R.I.B.A.

Applications, endorsed "Architectural Assistant," with personal details and details of experience and qualifications, together with names of two referees to be sent to the undersigned by 21st June, 1957.

CLIFFORD E. JONES,
Clerk of the Council.

Council Offices,
1, Cheyne Walk,
Northampton.
28th May, 1957. 6509

METROPOLITAN BOROUGH OF LAMBETH
APPOINTMENT OF TECHNICAL ASSISTANT (SURVEYOR) IN THE HOUSING DEPARTMENT

Applications invited for post of TECHNICAL ASSISTANT in Housing Dept. Duties primarily concerned with preparation of plans and specifications for development of small housing schemes; conversion of existing properties for housing purposes, including supervision of works; survey of properties with a view to acquisition, etc. Applicants should have passed the final examination of an appropriate professional institution. Salary within the range of £757 15s. to £1,024 5s. per annum. No housing accommodation provided.

Application forms (quote 38C) from Town Clerk, Town Hall, Brixton Hill, S.W.2. Closing date: 15th June. 6488

UNIVERSITY OF SHEFFIELD

Applications are invited for the post of ARCHITECTURAL ASSISTANT in the Surveyor's Office. Applicants must be suitably qualified and have a sound knowledge of building construction and site supervision. The work includes design of laboratories, lecture rooms, etc., alterations and conversions. The post is permanent and superannuated. Commencing salary £750 p.a. plus child allowance. Applications giving full details of qualifications, experience, and two referees to be sent to the Bursar, The University, Sheffield, 10, within 7 days. 6466

COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE
OFFICE OF THE COUNTY ARCHITECT

Applications are invited for appointments in the grades shown below, the salary ranges of which are:—

A.P.T. IV £727 15s. 0d.—£907 2s. 6d.
A.P.T. VI £902 0s. 0d.—£1,107 0s. 0d.
A.P.T. VII £999 7s. 6d.—£1,230 0s. 0d.

(*a*) SENIOR ASSISTANT QUANTITY SURVEYOR, Grade A.P.T. VII. Applicants should be Associate Members of the Royal Institution of Chartered Surveyors and have had experience in the preparation of bills of quantities and measuring for and adjustment of final accounts.

(*b*) SENIOR ASSISTANT HEATING ENGINEER, Grade A.P.T. VI. Applicants should be Associate Members of the Institution of Heating and Ventilating Engineers, or hold equivalent qualifications and be capable of carrying out the design and detailing of heating, hot water and ventilating installations and preparing the necessary drawings and specifications for schools and other public buildings.

(*c*) ASSISTANT ARCHITECTS, Grade A.P.T. IV. Applicants should preferably be Registered Architects. Opportunities available for taking responsibility and supervising works in progress in connection with extensive and interesting programmes of first-class architectural work.

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

Applications, on forms obtainable from this office, must be delivered not later than the first post on Monday, the 17th June, 1957.

A. W. GLOVER, F.R.I.B.A.,
County Architect.

"Bishopgarth,"
Westfield Road,
Wakefield. 6494

CITY AND COUNTY OF NEWCASTLE UPON TYNE
CITY ARCHITECT'S DEPARTMENT
PROPOSED NEW TOWN HALL
APPOINTMENT OF PRINCIPAL ASSISTANT ARCHITECT

Applications are invited from Associate Members of the R.I.B.A. for the undermentioned special appointment in the City Architect's Department. This appointment is additional to the present Establishment of the Department, and the successful candidate will be engaged solely upon duties in connection with the New Town Hall Scheme, the estimated total cost of which is in the region of £2 million.

PRINCIPAL ASSISTANT ARCHITECT, A.P.T. Division, Grade VII (£999 7s. 6d.—£1,230).

Candidates for the above appointment must have received a sound architectural training, preferably at a recognised School of Architecture; should be capable designers with sound experience in the control of building works of high quality.

Forms of application, together with further particulars and Conditions of the Appointment, may be obtained upon application to George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle upon Tyne.

Closing date Thursday, 20th June, 1957.

JOHN ATKINSON,
Town Clerk.

Town Hall,
Newcastle upon Tyne, 1.
29th May, 1957. 6510

STEVENAGE DEVELOPMENT CORPORATION

Applicants are invited for the post of ASSISTANT LANDSCAPE ARCHITECT in the Chief Architect's Department on Salary A.P.T. Grade IV, £728—£907, starting salary according to experience.

Candidates should have passed the Final Examination I.L.A. and be experienced in the layout of open space in housing areas.

Housing accommodation will be available in due course in an appropriate case.

Applications, giving full details and names of two referees, to be sent to the Chief Administrative Officer, Aston House, Nr. Stevenage, Herts., not later than Thursday, 20th June, 1957. 6507

BRACKNELL DEVELOPMENT CORPORATION

Applications are invited from Corporate Members of the R.I.B.A. for the post of ASSISTANT ARCHITECT, GRADE A.P.T. V. Salary £815—£994.

Superannuation schemes, medical examination. Housing available in due course. Apply by 25th June, 1957, giving age, education and qualifications; experience and appointments held (with dates and salaries) and names of two referees to the General Manager (A.A.), Bracknell Development Corporation, Farley Hall, Bracknell, Berks. 6533

STAFFORDSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for ARCHITECTURAL STAFF on the following salary grades:—

A.P.T. II £609 18s. 0d.—£691 18s. 0d.
A.P.T. III £656 0s. 0d.—£784 3s. 0d.
A.P.T. IV £727 15s. 0d.—£907 3s. 0d.

Applicants for Grade IV should be Associates of the R.I.B.A.

Applications, together with copies of three recent testimonials should be forwarded to P. Woodcock, F.R.I.B.A., Deputy County Architect, County Buildings, Stafford, not later than Thursday, 6th June, 1957, giving full details of experience and qualifications and stating age, present salary and grade applied for.

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

County Buildings,
Stafford.
May 24th, 1957. 6463

CITY OF SHEFFIELD
CITY ARCHITECT'S DEPARTMENT

Applications are invited from suitably qualified persons for the undermentioned appointments on the staff of the City Architect, Mr. J. L. Womersley, F.R.I.B.A., M.T.P.I.

(*a*) SENIOR ASSISTANT ARCHITECT, Grade A.P.T. VI (£902—£1,107).
(*b*) SENIOR ASSISTANT ARCHITECT, Grade A.P.T. V (£814—£994).

Both posts are in the Education and General Section which has an extensive school building programme and a variety of "General" work which is expanding and includes interesting civic buildings. Preference will be given to candidates with experience on work of this nature.

Applications stating post applied for, age, education and training, qualifications and experience, present and past appointments (with dates and salaries) together with the names of two referees should reach me by the 17th June, 1957.

JOHN HEYS,
Town Clerk.

Town Hall,
Sheffield, 1.
28th May, 1957. 6508

CHURCH COMMISSIONERS require ARCHITECTURAL ASSISTANTS. Candidates should be up to Intermediate R.I.B.A. standard. Salary according to experience within scale of £750 × £30 to £990. Apply in writing to the Establishment Officer, Church Commissioners, No. 1, Millbank, Westminster, S.W.1, not later than 28th June next. 6528

COUNTY BOROUGH OF WOLVERHAMPTON
APPOINTMENT OF PRINCIPAL PLANNING ASSISTANT

Principal Planning Assistant required in Borough Engineer's Department. Salary Grade V (£814, 17s. 6d.—£994, 5s. 0d. per annum). Candidates should be corporate members of the Town Planning Institute, preferably with an appropriate additional qualification, with considerable experience in a responsible position in a Town Planning Office.

Further particulars obtainable from the Borough Engineer, Town Hall, Wolverhampton, to whom applications should be submitted by 26th June, 1957. 6535

FAREHAM URBAN DISTRICT COUNCIL
QUANTITY SURVEYOR

Applications invited for above temporary appointment in Architects' Section of Engineer and Surveyor's Department. Salary A.P.T. V (£814 17s. 6d.—£994 5s.), commencing point according to qualifications and experience. Car allowance. Housing accommodation if needed.

Successful applicant will be responsible for all normal quantity surveying services in connection with Authority's building programme, and will also be expected to collaborate in design and further development of low-cost housing schemes.

Applications stating age, present salary, qualifications, and experience, with names of three referees must reach me within 10 days of publication of this advertisement.

B. W. RANDS,
Clerk to the Council.

"Merton,"
5, Grove Road,
Fareham, Hants. 6520

HEMEL HEMPSTEAD DEVELOPMENT CORPORATION

TRACING ASSISTANT (Male or Female) (Vacancy No. 58). Salary in scale rising to £513 per annum with G.C.E. or to £431 without G.C.E. Experience in architectural or planning office an advantage.

Conditions of service similar to those in Local Government. Housing accommodation may be available.

Starting salary will be determined according to age, experience and qualifications.

Applications, endorsed "Vacancy No. 58," with details of age, experience, and names of two referees, to reach General Manager, Westbrook Hay, Hemel Hempstead, by 14th June. 6483

EASTERN ELECTRICITY BOARD
NORTHMET SUB-AREA HEADQUARTERS
GENERAL ASSISTANT ENGINEER (CIVIL ENGINEERING AND BUILDING)

Candidates should have had a good general and technical education, possess a sound knowledge of practical building and civil engineering construction and be capable of setting out and supervising site works.

Salary—N.J.B. Class M, within a range of £520—£775 plus London allowance, the grade to be dependent upon qualifications and experience.

The successful candidate will be required to contribute to a superannuation scheme and may be required to undergo a medical examination.

Apply by letter, within 7 days, to C. C. Hill, B.Sc. (Eng.), M.I.E.E., M.I.Mech.E., Manager, Northmet Sub-Area, Eastern Electricity Board, Northmet House, Southgate, London, N.14. 6479

BOROUGH OF WATFORD

Applications are invited for the appointment of ASSISTANT ARCHITECT on the established staff at a salary within the grade A.P.T. II (£609.17.6d. to £691.17.6d.) according to qualifications and experience.

Forms of application obtainable from the undersigned to be returned by 19th June, 1957.

F. C. SAGE,
Borough Engineer, Surveyor and Architect.
Town Hall,
Watford. 6534

MANCHESTER EDUCATION COMMITTEE
REGIONAL COLLEGE OF ART

Required, an ASSISTANT to teach Interior Decoration. Salary, Grade "B" of Burnham Further Education Report 1956 (men £650 × £25 —£1,025) (women £580 × £20—£820, plus equal pay increments). Additions for graduateship and training. Starting salary according to previous teaching and industrial experience.

Forms and particulars (s.a.e) from Chief Education Officer, P.O. Box 480, Manchester, 3, returnable by 29th June, 1957. 6522

ISLE OF ELY COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

(*a*) ARCHITECTURAL ASSISTANTS—Grade A.P.T. I or II or III (£543—£625 or £610—£692 or £656—£784).

(*b*) ASSISTANT ARCHITECTS — Special Grade (£743—£994).

(*c*) SENIOR ASSISTANT ARCHITECTS—Grade A.P.T. V (£815—£994).

Applicants should state the grade applied for, and appointments and the point of entry within the grades will be determined by qualifications and previous experience.

Applicants for posts (*b*) will be required to have completed parts I and II of the R.I.B.A. Final or Special Final Examination, or to have satisfactorily completed a course at a recognized School of Architecture. This will also apply to Students completing their course this summer.

Applicants for posts (*c*) must be A.R.I.B.A. or equivalent, with some previous experience.

Appointments are subject to the National Joint Council's Scheme of Conditions of Service, the Local Government Superannuation Act and to passing a medical examination.

Applications giving details of training and experience, together with the names of two referees, to be sent to the County Architect, County Hall, March, Cambs., not later than 21st June, 1957.

R. F. G. THURLOW,
Clerk of the County Council.
6536

BOROUGH OF SCUNTHORPE
BOROUGH SURVEYOR'S DEPARTMENT

Applications are invited for the following appointments:—

ASSISTANT ARCHITECT, Grade A.P.T. IV (£727—£907 p.a.).

ASSISTANT ARCHITECT, Grade A.P.T. II (£609—£691 p.a.).

Housing accommodation is available if required.

Applications giving particulars of age, experience, qualifications and appointments, together with the names of two referees should be submitted to the undersigned not later than Friday, 21st June, 1957.

T. M. LISTER,
Town Clerk.
Municipal Offices,
34, High Street,
Scunthorpe.
28th May, 1957. 6503

Architectural Appointments Vacant

4 lines or under, 9s. 6d.; each additional line, 2s. 6d. Box Number, including forwarding replies, 2s. extra.

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

APPLICATIONS are invited for the following appointments:—(*a*) SENIOR ASSISTANT ARCHITECTS with experience of work on commercial and industrial projects (salary range £820 to £975 per annum). (*b*) ASSISTANT ARCHITECTS capable of preparing working drawings from preliminary details (Salary range £550 to £820 per annum). There is a five-day week in operation and both appointments offer prospects of upgrading. Applications stating age, experience, qualifications and salary required to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 1, Balloon Street, Manchester 4. 6023

KEEN JUNIOR ASSISTANT required in London office. Should be good draughtsman with sound knowledge of building construction. Box 6951.

COURTNEY, POPE LTD., require SHOPFITTING DRAUGHTSMEN. Write, giving details of experience and salary required to: Amhurst Park Works, London, N.15. 5784

GOLLINS, MELVIN, WARD & PARTNERS have vacancies for JUNIOR and INTERMEDIATE GRADE STAFF. 5-day week—quarterly bonuses. Pension scheme. Telephone WELbeck 9991. 6361

ARCHITECTURAL ASSISTANT required in busy London Office with varied practice. Good salary and prospects for suitable applicant. Five-day week. Write, giving particulars of age, qualifications, experience, etc., to Box 861 c/o 7, Coptic Street, W.C.1. 6376

JUNIOR and Senior ARCHITECTURAL ASSISTANTS required with imagination and experience for contemporary commercial work in London. Holidays honoured this year.—C. H. Elsom, 10, Lower Grosvenor Place, S.W.1. VIC 4304. 6366

W. H. WATKINS, Gray & Partners require ASSISTANTS up to Final Standard for interesting hospital work, pension scheme in operation.—Write or phone, 57, Catherine Place, S.W.1. Victoria 7761. 6366

ASSISTANT, Intermediate standard, required, busy West End office. State age, experience, and salary required.—Box 6046.

ASSISTANT required by Liverpool Architect. Good draughtsman with general experience essential. Box 6431.

ARCHITECTS' Co-Partnership require ASSISTANTS for working drawings and detailed design. Salary according to experience. Write 44, Charlotte Street, London, W.1, or telephone Langham 5791. 6297

SENIOR ARCHITECTURAL ASSISTANT required. Experience in Licensed premises, including interior decoration, an advantage. Apply in writing to Secretary, Benskin's Watford Brewery Ltd., P.O. Box 105, Watford, Herts. 6320

RONALD WARD & PARTNERS require ARCHITECTURAL ASSISTANTS with contemporary outlook and willing to use own initiative. Salary range £600 to £850. Congenial working conditions. Apply 29, Chesham Place, Belgrave Square, S.W.1. Telephone Belgravia 3361. 6322

ARCHITECT'S ASSISTANT required in the Chief Architect's office of a large multiple retail firm with offices in London. Five-day week, pension scheme, dining room available for use of staff. Applicants should state age, qualifications, experience and salary required. Box 6332.

RAMSEY, MURRAY, WHITE & WARD require recently qualified ASSISTANTS, with two to five years' practical experience, to work on interesting industrial and office buildings. Salary by arrangement.—Apply 32, Wigmore Street, W.1. 5929

INTERMEDIATE ASSISTANT required, to run smaller jobs under minimum supervision. Contemporary office and pleasant working conditions. 5-day week. Good prospects for hard worker with initiative. Salary £650—£750 p.a.—Apply Morris de Metz, F.R.I.B.A. CITy 4086. 6227

HASKER & HALL, L./F.R.I.B.A., require ARCHITECTURAL ASSISTANT, with 4 to 5 years' office experience.—Write or telephone, giving full particulars, including age and salary, to 13, Welbeck Street, W.1 (Welbeck 0061). 5824

ESTABLISHED practice in Charing Cross area requires SENIOR and INTERMEDIATE ARCHITECTURAL ASSISTANTS. Interesting and varied work. Good salaries offered commensurate with experience. Apply giving particulars, Box 6379.

MORRISON & PARTNERS require a QUALIFIED ASSISTANT ARCHITECT for their London Office, to work on industrial projects and new housing developments. Applications to be addressed to 30b, Wimpole Street, London, W.1. 6395

ARCHITECTURAL ASSISTANT with experience required for Design and Contractors office, Manchester area. Intermediate or Final standard. Interesting work of industrial and commercial nature. Salary £800/£850. Apply Box 6399.

ARCHITECTURAL ASSISTANT required, qualified or Intermediate standard, for London office with varied practice. Five-day week. Salary according to qualifications and experience. Box 6397.

WELL-KNOWN ARCHITECTS require ASSISTANTS between Intermediate and Final standard in their London Office. Interesting projects. Box 6435

ARCHITECTURAL ASSISTANT, Intermediate R.I.B.A. standard, required in Engineer's Office of large Brewery Company in the Midlands. Work involves maintenance and alterations of Brewery Buildings, Maltings, Cooperage and Bottling Stores. Sound knowledge of building construction, preparation of working drawings, surveys. State age and salary required. Apply Box 6430.

F. W. WOOLWORTH & CO. LTD., Architect's Department, Kensington District Office. Applications are invited for the following appointment:—

ARCHITECTURAL ASSISTANT of Intermediate R.I.B.A. standard, capable of carrying out surveys, preparing sketch schemes, working drawings and details.

The appointment is permanent and pensionable. Five-day week. Dining room facilities. Application stating age, experience, qualification and salary to District Architect, F. W. Woolworth & Co., Ltd., 26/40, Kensington High Street, London, W.8. 6396

ASSISTANT ARCHITECT. Co-operative Wholesale Society, Ltd., invite applications for the position of Assistant Architect. Must be capable of preparing working drawings from preliminary details. The post is superannuable, subject to medical examination. 5-day week in operation. Applications, giving details of age, experience and salary required, to—W. J. Reed, F.R.I.B.A., Chief Architect, C.W.S. Ltd., 99, Leman Street, London, E.1. 6350

ARCHITECTURAL ASSISTANT required, intermediate standard with office experience, varied work, salary £12 to £15 according to ability. Phone: London Wall 3826. 6455

SENIOR ASSISTANT required in busy West End Office, interesting commercial work and must be prepared to take responsibility. Please write giving details of experience etc. Box 6447.

£1,250 P.A. for 1st class qualified ASSISTANT for small London Architect's City Office for interesting large scale project. Lunch voucher scheme, Bonus and Pension contribution after probationery period. Box 6443

ARCHITECTS—Jackson & Edmonds—require SENIOR ASSISTANT, ASSISTANT of Intermediate standard and JUNIOR ASSISTANT. Pension scheme. Write stating age and experience to 116, Colmore Row, Birmingham 3. 6432

ARCHITECT, Intermediate standard, required as Assistant to partner Edgbaston, Birmingham office. Varied practice giving wide experience. Five-day week. Holiday arrangements honoured. Box 6425.

ARCHITECTURAL ASSISTANT of Intermediate standard required for busy Worcester Office. Sound knowledge of construction and ability to handle the smaller type of job essential. Salary according to experience. Apply in writing to Llewellyn Smith & Waters, 103, Old Brompton Road, London, S.W.7. 6407

ASSISTANT, Intermediate R.I.B.A. standard, wanted in small but varied private practice. Summer holiday by arrangement.

Write details and salary required to Cyril P. Griggs, A.R.I.B.A., 102, Sandgate Road, Folkestone, Kent. 6519

ARCHITECTURAL ASSISTANT, £700/750 p.a. offered for good architectural assistant of Intermediate standard for London Head Office of large concern. Applicants must have had good contemporary experience and be capable of working with minimum supervision. Pension Scheme. Luncheon Vouchers. Apply with full details to Box 6526, quoting ref. A.J.118.

BURLES & NEWTON require an ARCHITECTURAL ASSISTANT in the salary range £600 to £750 per annum. Interesting and varied practice includes Churches, Schools, Housing, and Commercial Buildings. Apply 25, Bedford Row, W.C.1. Telephone Chancery 9538. 6527

HENING & CHITTY, F.R.I.B.A., require DRAUGHTSMAN with good office experience. MUSeum 8577 or write 30, Percy Street, London, W.1. 6530

JUNIOR ARCHITECTURAL ASSISTANT required in busy London Office with at least two years' drawing office experience. Apply in writing stating age, experience and salary required. Box 6539.

ASSISTANT (Intermediate standard) required in Architect & Surveyor's Department of a London Brewery Company. Maximum age 30. Basic starting salary £535—£700 according to age and experience. Pension scheme, five-day week, luncheon allowance and cost-of-living bonus at present in operation. Reply, stating age, experience and past and present appointments in chronological order, to Box 6532.

G. M. VICKERS, F.S.A., Dipl.Arch., A.R.I.B.A., requires JUNIOR ASSISTANTS. Time off for studying. Write: 68, Gt. Russell St., Bloomsbury Square, W.C.1. 6537

BUSY London Office requires ASSISTANT of intermediate standard. Must be capable draughtsman with a good knowledge of construction. Apply in writing stating age, experience and salary required. Box 6538.

ARCHITECTURAL DRAUGHTSMEN required in the Design Department of a rapidly expanding Company marketing prefabricated timber products. The successful applicants will be engaged in the preparation of schemes to Architects' requirements, and will be called upon to visit offices to discuss and advise on technical details. The work demands a high degree of individual initiative and ability.

Five-day week. Compulsory Superannuation Scheme. Starting salaries from £700 per annum.

Applicants should indicate age, past experience, qualifications and present salary level. Box 6518.

LONDON office with widely varied practice urgently requires all grades of ASSISTANTS, preferably with London experience. Five-day week. Lewis Solomon, Son & Joseph, 21, Bloomsbury Way, London, W.C.1. Holborn 5108. 6531

ARCHITECTURAL ASSISTANT required in private practice, Cheshire town, about eight miles south of Manchester. Varied work. Must be capable of surveys, working drawings, details, specifications. Practical experience more important than academic qualifications. Bonus scheme. Box 6517.

ARCHITECTURAL ASSISTANTS required, Intermediate to Final standard, variety of work, pension scheme available. Good office experience essential. Write with details previous experience and salary required. T. H. Johnson & Son, F.F./R.I.B.A., 20, Priory Place, Doncaster. 6516

YOUNG ASSISTANT required to work with Principal. Cumberland, Westmorland and Lancashire. Payment related to ability. Real prospects for rapid advancement. First-class education and references essential. C. B. Martindale, F.R.I.B.A., Castle Street, Carlisle. 6514

H. J. BROWN AND L. C. MOULIN require an ARCHITECTURAL ASSISTANT for work on interesting Office/Bank project. Salary according to ability and experience. Five-day week. Luncheon Vouchers. Good prospects. Write to 42, Russell Square, W.C.1, or telephone Langham 7065. 6513

ARCHITECTURAL ASSISTANT required for the London head office of a major oil company. Should be of Final standard and have passed the Intermediate examination of R.I.B.A. Candidates should have experience of contemporary design and be capable of working independently. A high standard of presentation is required. Good salary. Pension and life assurance scheme; generous sickness benefits; free luncheon vouchers; Social Club. Write giving full details of experience, age and salary required to Box 6464 quoting ref. AA/106.

A WELL-KNOWN Paint Company requires an ARCHITECTURAL SALES MANAGER for London and Southern England. Candidates should be aged 35 to 45, and only those having real contacts with specifying authorities and a proved sales record in this field should apply. A four figure starting salary will be paid and there is a strong possibility of a more senior position at a later date. Full details, in confidence, to Box 6467.

ARCHITECTS' ASSISTANTS required immediately. Intermediate/Final standard. Salary according to experience. Five-day week. Staff canteen, Pension scheme. Applications in writing, giving full details of age, experience and salary to Personnel Department, British Home Stores, Ltd., 129, Marylebone Road, London, N.W.1. 6468

LANCHESTER & LODGE urgently require MALE ASSISTANTS of all grades up to £750 p.a. Five-day week and luncheon vouchers. Ring Museum 0845 for appointment or write full particulars, 10, Woburn Square, W.C.1. 6462

FARMER AND DARK have vacancies for two ASSISTANT ARCHITECTS (Intermediate standard) with not less than three years' office experience. Applications marked "Confidential" with full particulars and salary required, to: Farmer and Dark, Romney House, Tufton Street, Westminster, London, S.W.1. 6487

ARCHITECTURAL ASSISTANT. Senior Assistant is required to work under the direction of the Society's Architect. He must be up to Final R.I.B.A. standard and with experience in industrial and commercial work. Applications giving full details of age, experience, etc., should be sent to Personnel Officer, Birmingham Co-operative Society Ltd., High Street, Birmingham, 4. 6477

QUALIFIED ARCHITECTS are invited to apply for position as Group Leader in a Department concerned with the use of prefabrication systems in a large range of building types. Write to Box 6478.

TWO ASSISTANTS required in City Architect's Department. Salary range £600—£800 with good prospects of advancement and secure future for suitable applicants. Write giving particulars of experience, age and salary required. Box 6481.

NORTH & PARTNERS, Chartered Architects with extensive practice, seek partner's personal ASSISTANT. Position will afford excellent opportunity for capable assistant. Reply: 40, Broadway, Maidenhead. 6502

ARCHITECT'S ASSISTANT, Intermediate standard, preferably with practical experience required in busy South-West London office. Reply stating age, salary and experience to Box 6484.

URGENTLY required by busy West End office with widely varied practice, an ARCHITECTURAL ASSISTANT of Intermediate standard or above with minimum of two years' office experience in this country. Excellent opportunities for gaining all-round experience. Holiday arrangements respected. Staff bonus scheme in operation. Overtime paid at 50% over basic rates. Phone WELbeck 6551 for interview. 6485

MISHA BLACK requires a SENIOR ASSISTANT for work on interior of new Orient liner. Administrative experience, design ability, and draughtsmanship equally important. Apply in writing to D.R.U., 37, Park Street, London, W.1. 6501

ASSISTANTS required in West London office for varied work on educational buildings. Please write stating experience (minimum three years) and salary required to Box 6482.

JUNIOR ARCHITECTURAL DRAUGHTSMAN required for work on interiors and furniture. Salary £350-£500 per annum according to experience and ability. Write to Walker-Symondson, Ltd., Braintree Road, Ruislip. 6497

FIRST-CLASS ARCHITECTURAL ASSISTANT required for busy West End office—Intermediate to Final standard—every opportunity given for advancement in practice specialising in commercial buildings. Top salary will be paid to keen and competent applicants. Apply S. M. Haines, 38, Upper Grosvenor Street, London, W.1. Tel. MAY 8944. 6496

DIAMOND, HODGKINSON & PARTNERS require full-time ASSISTANT in small informal West End office. Would suit first or second year student at evening classes. Write to 50, Baker Street, or ring Hunter 0489. 6495

ARCHITECTURAL ASSISTANT of about Intermediate standard with experience of housing schemes and office routine, required for Essex practice 12 miles from London. Applications should state age, experience and salary required and should be made by letter to Tooley & Foster, Midland Bank Chambers, Buckhurst Hill, Essex. 6491

ARCHITECTURAL ASSISTANTS, all grades, required for varied and interesting work in progressive West End Office. Box 6472, or telephone Hunter 0364.

Architectural Appointments Wanted

4 lines or under, 9s. 6d.; each additional line, 2s. 6d. Box Number, including forwarding reply, 2s. extra.

ARCHITECT (48), widely experienced, qualified, requires position as Senior Architect or Office Manager, preferably leading to partnership. U.K. or abroad. Box 6400.

HIGHLY QUALIFIED ARCHITECT with experience in both public and private work seeks a post in London with a view to partnership. Box 6474.

SENIOR ASSISTANT, 38, Registered, not R.I. Member, seeks change in London. Complete control from sketch to final account and site supervision. Design and administrative ability. Competition successes. Contemporary office essential. Present salary £1,000 p.a. Box 6473.

SENIOR ARCHITECT, A.R.I.B.A., 14 years' varied experience, seeks progressive post with good prospects. Minimum salary £1,100. Used to hard work and responsibility. Sound business knowledge. Box 6489.

Other Appointments Vacant

4 lines or under, 9s. 6d.; each additional line, 2s. 6d. Box Number, including forwarding replies, 2s. extra.

QUALIFIED ENGINEER or ENGINEERING DESIGNER/DRAUGHTSMAN required to be trained as Assistant Chief Draughtsman in a Neon Sign and Light Engineering Factory. When replying please give details of qualifications, experience, age and salary required to Claude-General Neon Lights Ltd., Wembley Hill Estate, Wembley. 6388

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