

# THE ARCHITECTS' JOURNAL



## standard contents

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

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## CURRENT BUILDINGS

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Architectural Appointments  
Wanted and Vacant

No. 3019]

[Vol. 117

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

IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 75, Eaton Place, S.W.1.	
IIBD	Incorporated Institute of British Decorators. Drayton House, Gordon Street, W.C.1. Euston 2450	Sloane 3158/1601
ILA	Institute of Landscape Architects. 12, Gower Street, W.C.1.	Museum 1783
I of Arb.	Institute of Arbitrators. 35/37, Hastings House, 10, Norfolk Street, Strand, W.C.2.	Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197/5176
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3.	Avenue 6851
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1.	Abbey 6172
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Sloane 7128
IWA	Inland Waterways Association. 14, Great James' Street, W.C.2.	Chancery 7718
LIDC	Lead Industries Development Council. Eagle House, Jermyn Street, S.W.1.	
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	Museum 3891
MARS	Modern Architectural Research Group (English Branch of CIAM) Secretary: Gontran Goulden, Building Centre, 26, Store Street, W.C.1.	Museum 5400
MOA	Ministry of Agriculture and Fisheries. 55, Whitehall, S.W.1.	Whitehall 3400
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1.	Mayfair 9400
MOH	Ministry of Health. 23, Saville Row, W.1.	Regent 8411
MOHLG	Ministry of Housing and Local Government. Whitehall, S.W.1.	Whitehall 4300
MOLNS	Ministry of Labour and National Service, 8, St. James' Square, S.W.1.	Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, Victoria Embankment, W.C.	Gerrard 6933
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1.	Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1.	Reliance 7611
NAMMC	Natural Asphalte Mine-Owners and Manufacturers Council. 94-98, Petty France, S.W.1.	Abbey 1010
NAS	National Association of Shopfitters. 9, Victoria Street, S.W.1.	Abbey 4813
NBR	National Buildings Record. 37, Onslow Gardens, S.W.7.	Kensington 8161
NCBMP	National Council of Building Material Producers, 10, Princes Street, S.W.1.	Abbey 5111
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives, Federal House, Cedars Road, Clapham, S.W.4.	Macaulay 4451
NFHS	National Federation of Housing Societies. 13, Suffolk St., S.W.1.	Whitehall 1693
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1.	Langham 4341
NPL	National Physical Laboratory. Head Office, Teddington.	Molesey 1380
NSA	National Sawmilling Association. 14, New Bridge Street, E.C.4.	City 1476
NSAS	National Smoke Abatement Society. Chandos House, Buckingham Gate, S.W.1.	Abbey 1359
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1.	Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1.	Whitehall 9936
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh 20396	
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Langham 5721
RICS	Royal Institution of Chartered Surveyors. 12, Great George St., S.W.1.	Whitehall 5322/9242
RFAC	Royal Fine Art Commission. 22A, Queen Anne's Gate, S.W.1.	Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1.	Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Trafalgar 2366
RSI	Royal Sanitary Institute. 90, Buckingham Palace Road, S.W.1.	Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19.	Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1.	Victoria 2186
SCR	Society for Cultural Relations with the USSR. 14, Kensington Square, London, W.8.	Western 1571
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1.	Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3.	Mansion House, 3921
SIA	Structural Insulation Association. 14, Moorgate, London, E.C.2.	Central 4444
SIA	Society of Industrial Artists. 7, Woburn Square, W.C.1.	Langham 1984
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen.	
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2.	Temple Bar 5006
TDA	Timber Development Association. 21, College Hill, E.C.4.	City 4771
TPI	Town Planning Institute. 18, Ashley Place, S.W.1.	Victoria 8815
TTF	Timber Trades Federation. 75, Cannon Street, E.C.4.	City 5040
WDC	War Damage Commission. Devonshire House, Mayfair Place, Piccadilly, W.1.	Mayfair 8866
ZDA	Zinc Development Association. Lincoln House, Turl Street, Oxford.	Oxford 47988

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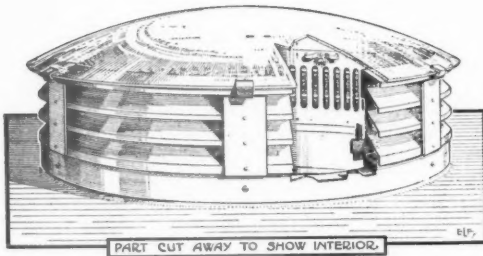
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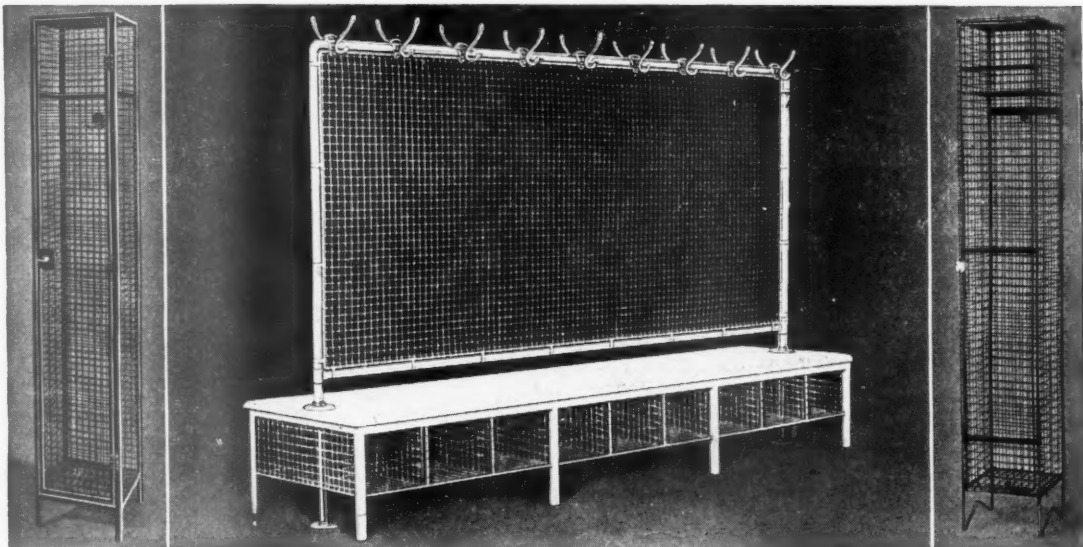
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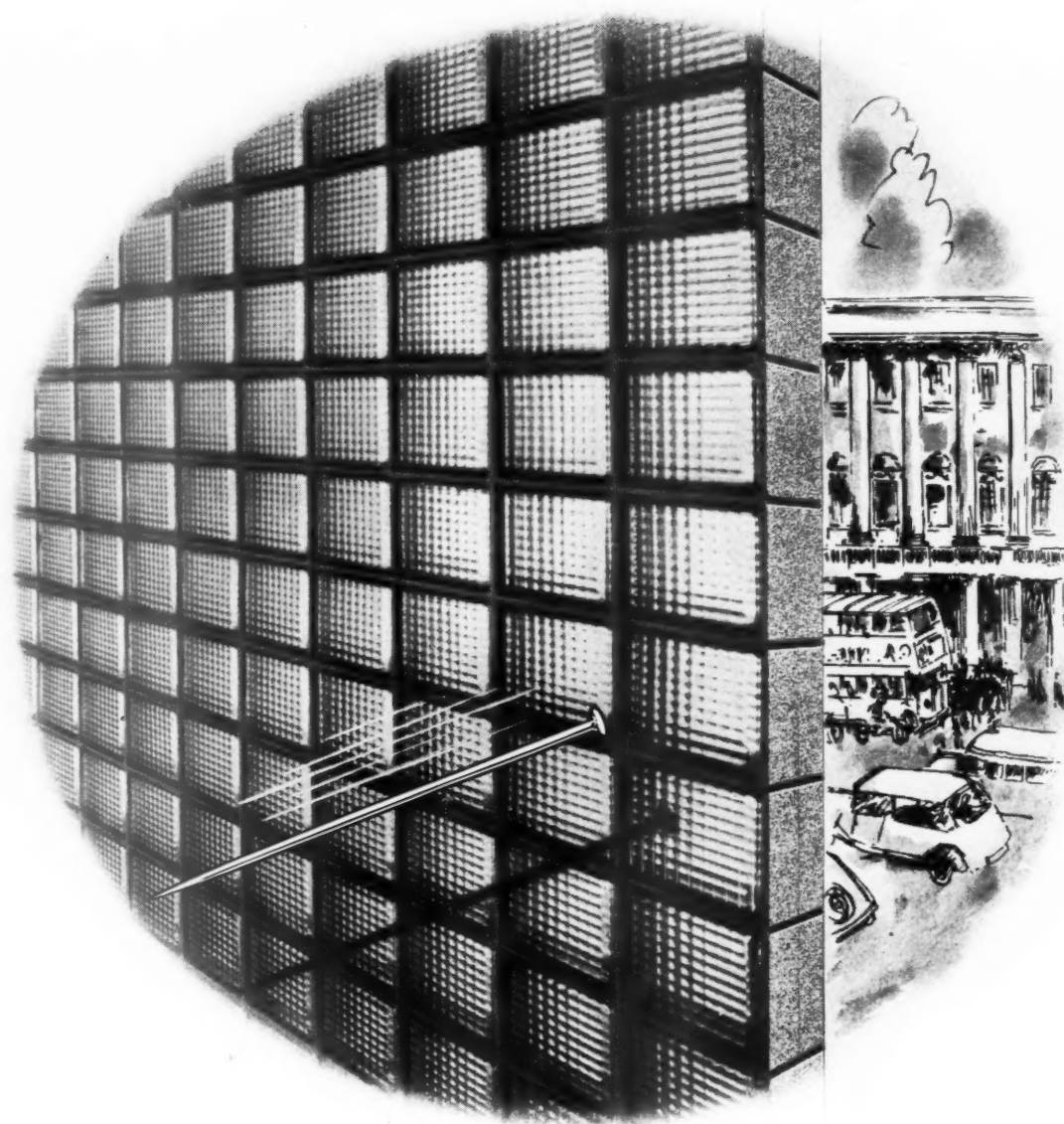
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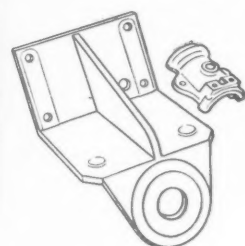
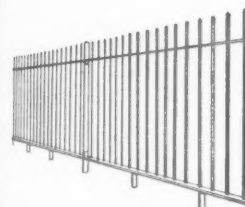
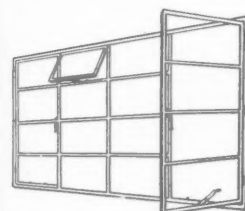
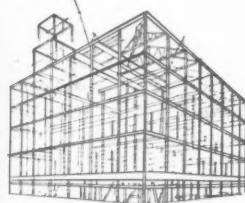
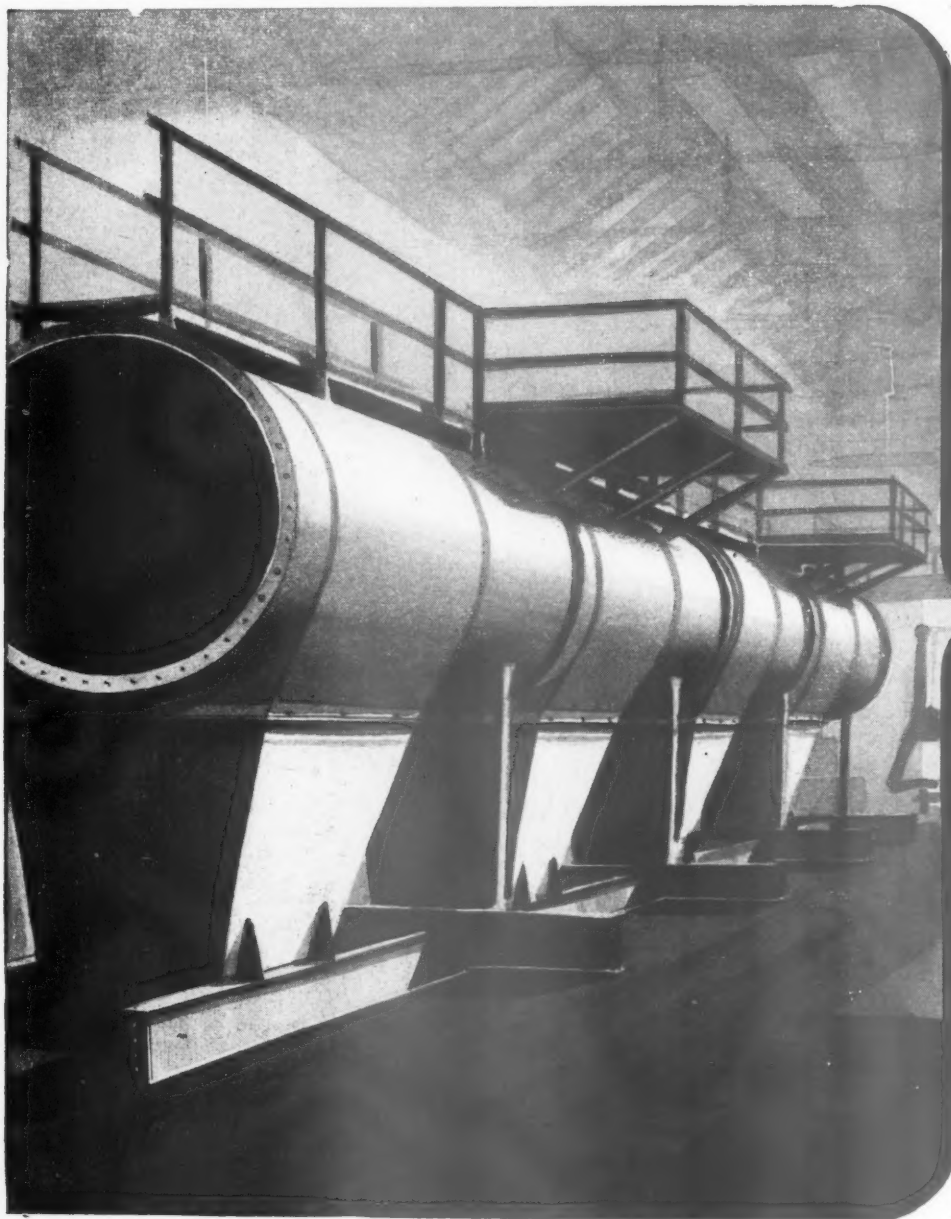
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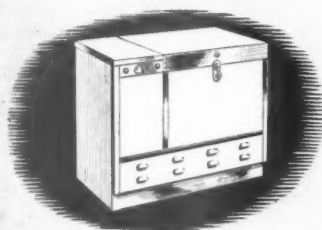
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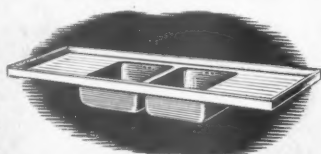
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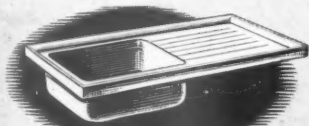




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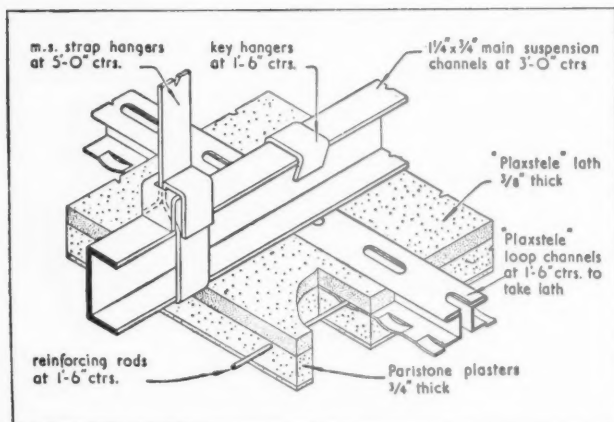
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# The Ring of Truth



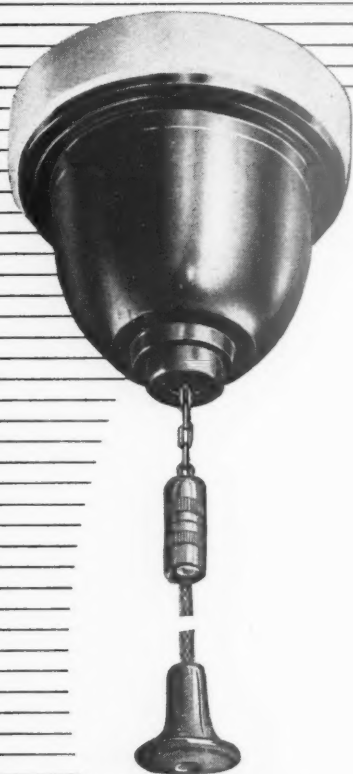
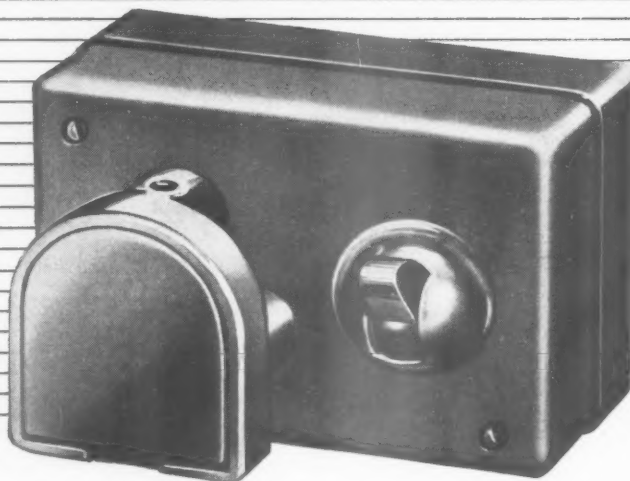
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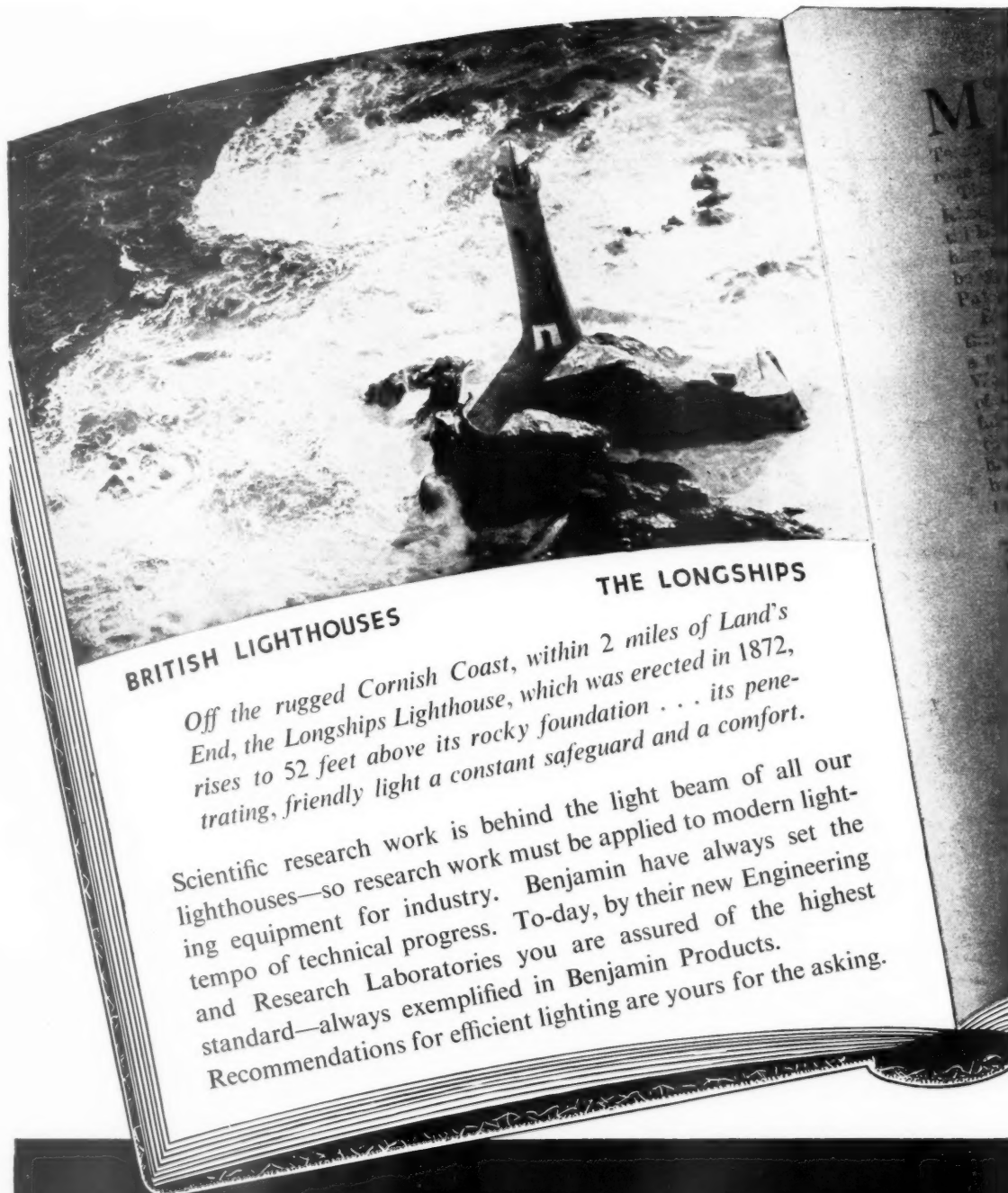
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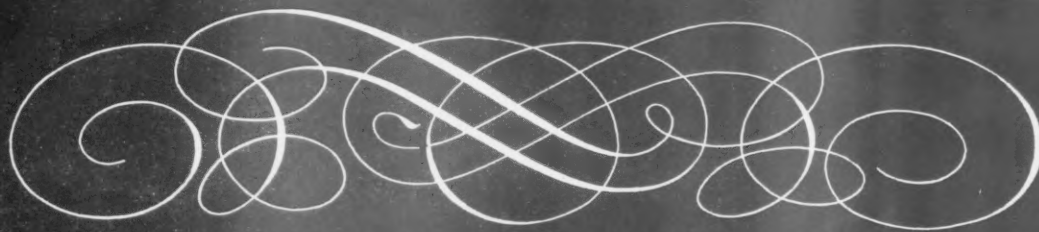
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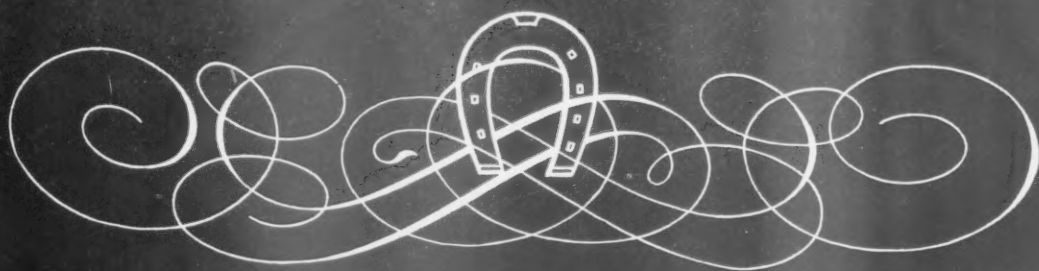
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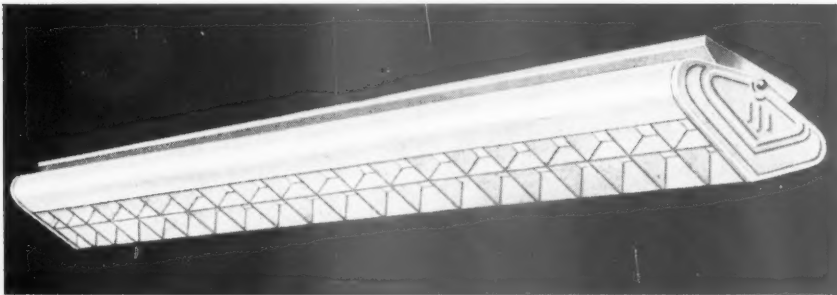
Architect: F. C. Moscrop-Young, F.R.I.B.A.  
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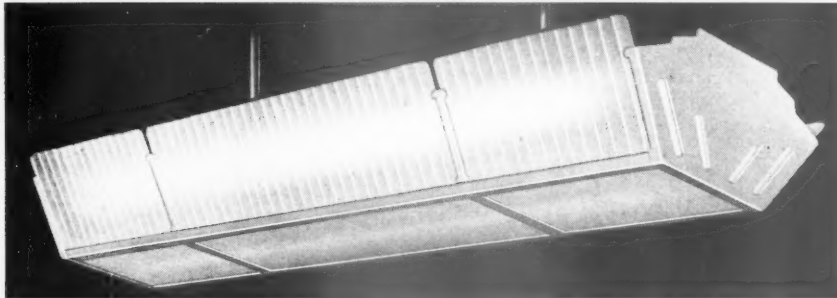
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(Top left)



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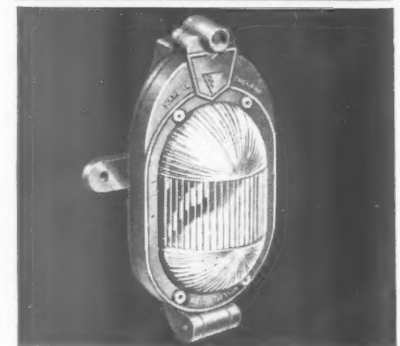
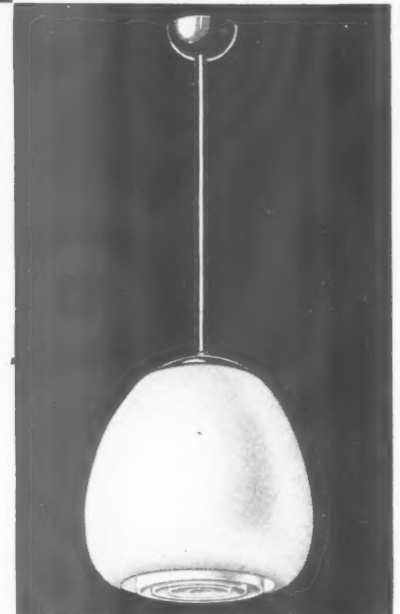
(Bottom right)

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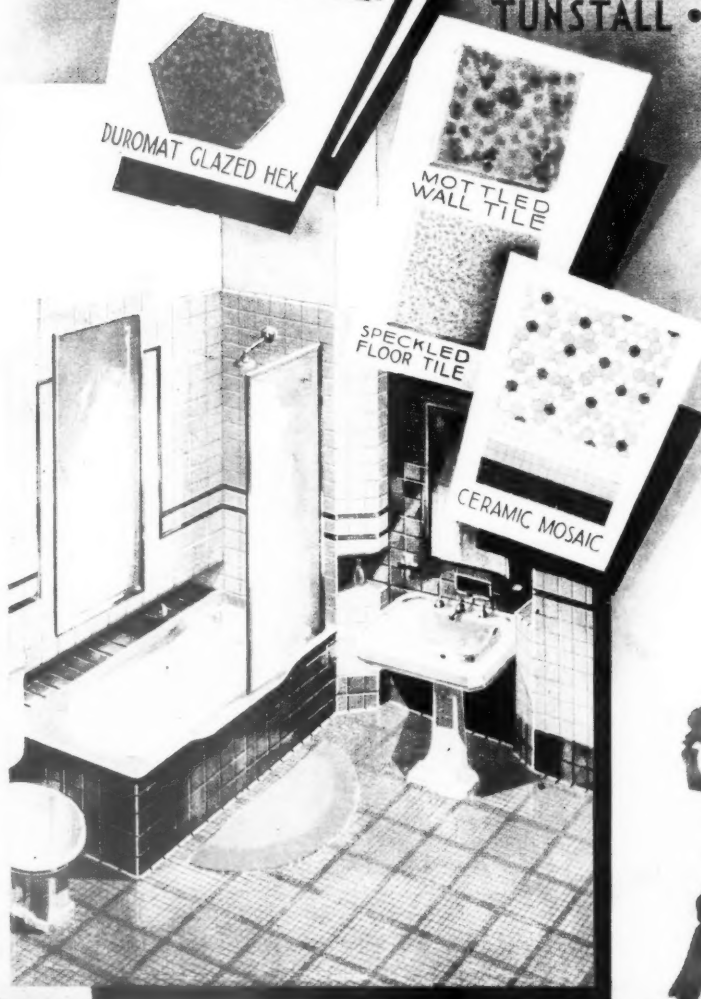
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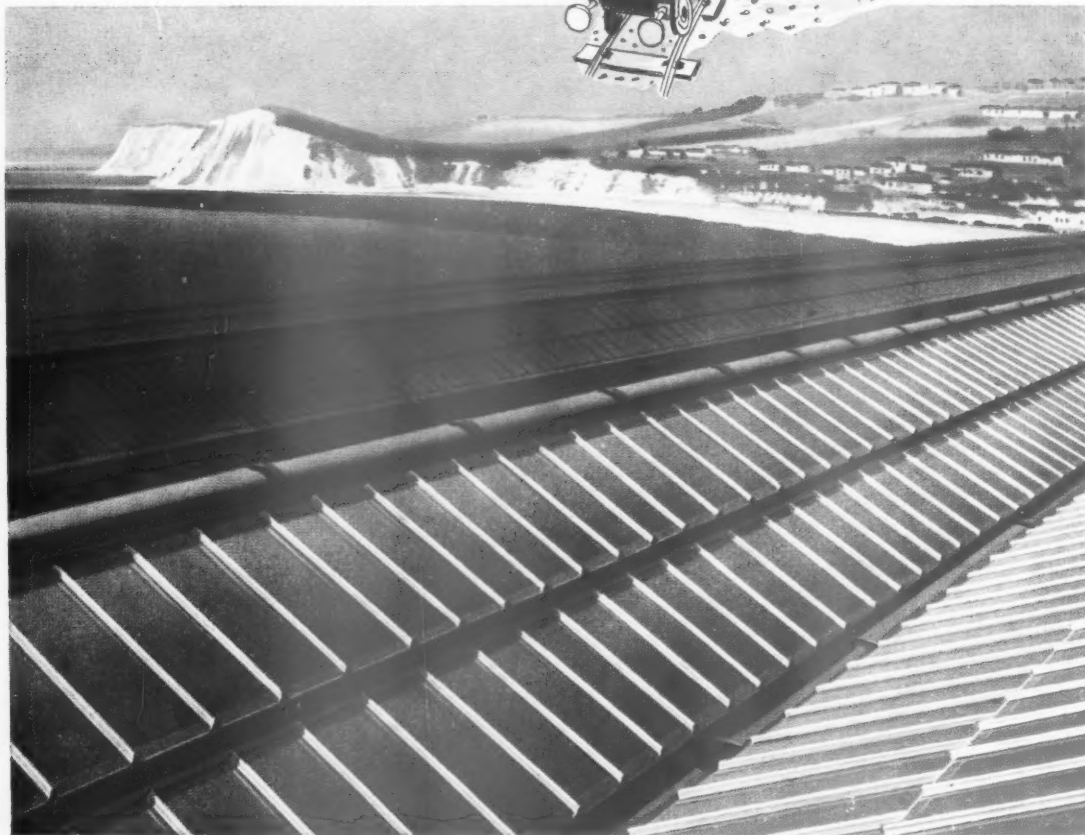
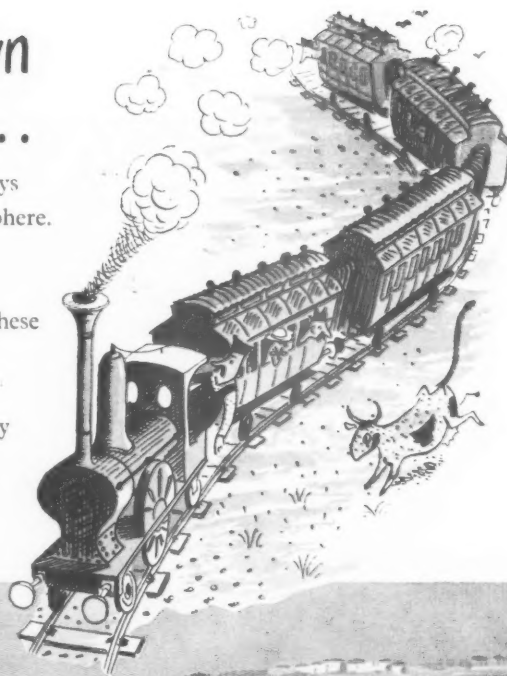


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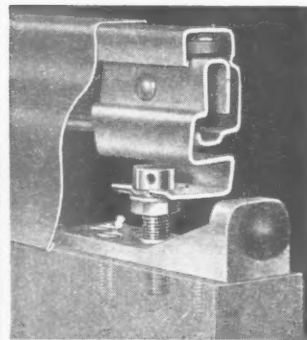
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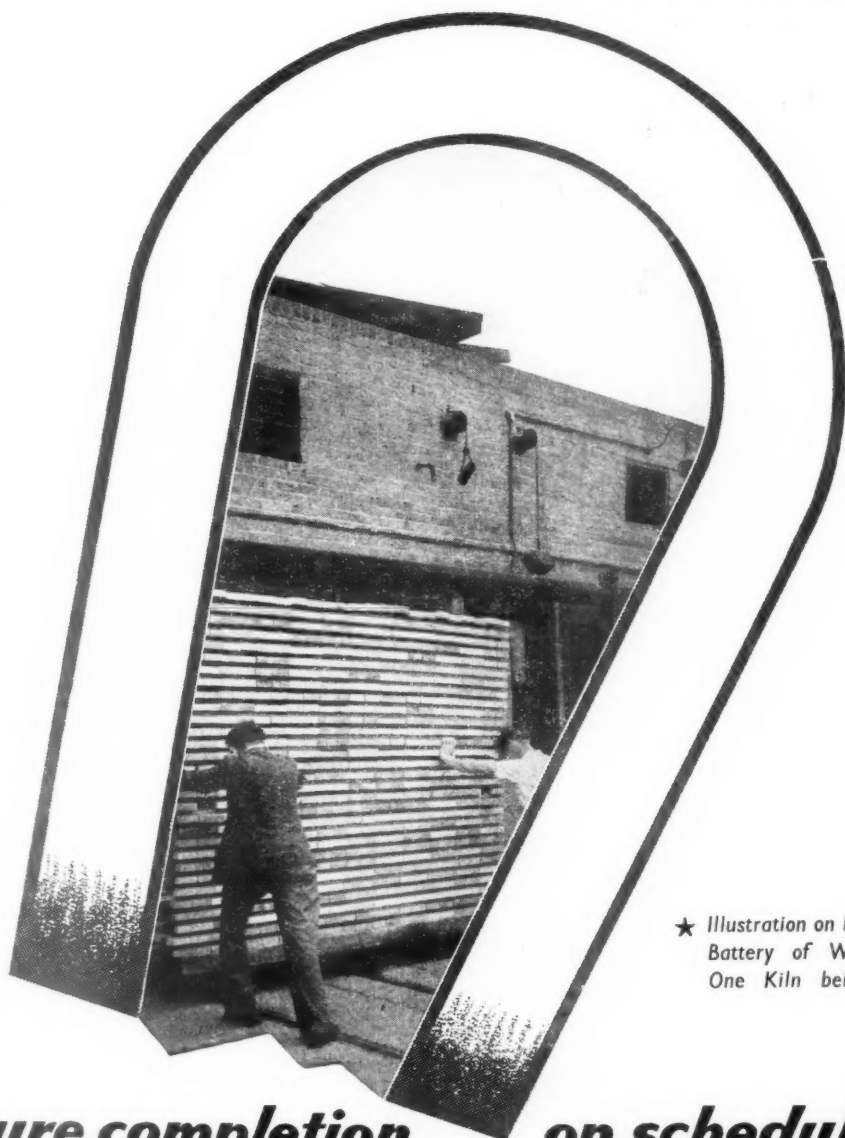


ESTATE and RADIAL Sliding Door Gears have recently been supplied to the following: London County Council Flats and Housing Schemes; Peterborough, Sedgfield R.D.C., Rushden U.D.C., Easington R.D.C., Eston U.D.C., Mexborough U.D.C., Corporation Housing Schemes; Canterbury, Sawbridgeworth, Castletown, I.O.M., Housing Estates, Garston-Watford, Kyles Settlement Estate.

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★ Illustration on left shows a Battery of Wells Kilns. One Kiln being loaded.

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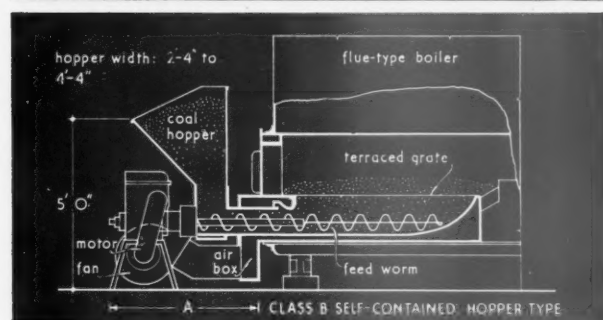
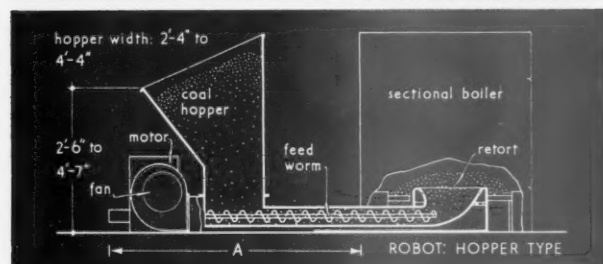
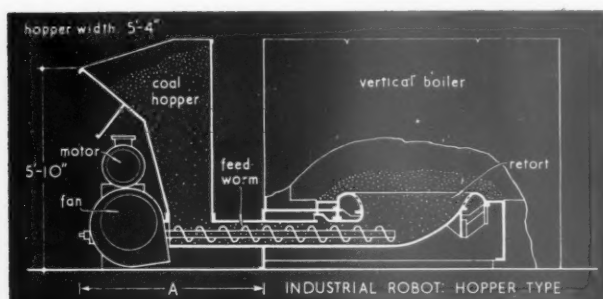
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## COAL SAVING IS AUTOMATIC

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Further details may be seen in the Architects' Journal Information Sheets Nos. 29.J.10 and 11. Booklets sent on request.

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Every part of a Riley automatic stoker is of the sturdiest construction for a very long life under the hardest conditions.

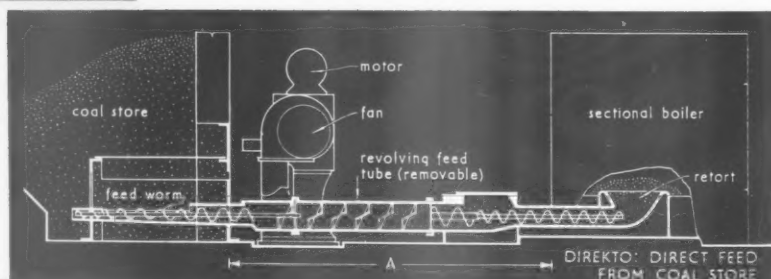
INDUSTRIAL ROBOT		
model	boiler rating B. Th. U/hr.	A
10	3,750,000	5'-2½"
11	5,250,000	5'-2½"
12	7,500,000	5'-3½"
12A	9,000,000	5'-3½"

CLASS B		
model	boiler rating B. Th. U/hr.	A
B1	2,575,000	4'-6"
B3	3,525,000	4'-6"
B5	5,075,000	4'-8"
B7	6,625,000	4'-8"
B9	9,350,000	5'-1"

ROBOT		
model	boiler rating B. Th. U/hr.	A
BABY ROBOT	100,000	3'-3"
1	200,000	5'-0"
2	325,000	5'-0"
3	410,000	5'-4"
4	625,000	5'-8"
5	825,000	5'-11"
6	1,000,000	5'-11"
6A	1,200,000	5'-11"
7	1,400,000	6'-5"
8	2,000,000	6'-5"
9	2,700,000	6'-5"

DIREKTO			
model	boiler rating B. Th. U/hr.	A	
		b	c
1	200,000	6'-6½"	7'-1½"
2	325,000	6'-6½"	7'-1½"
3	410,000	6'-0½"	6'-7½"
4	625,000	6'-5"	7'-5"
5	825,000	7'-2½"	8'-5½"
6	1,000,000	7'-2½"	8'-5½"
6A	1,200,000	7'-3½"	9'-0½"
7	1,400,000	7'-3½"	9'-0½"
8	2,000,000	7'-0½"	8'-11½"
9	2,700,000	7'-6½"	9'-5½"

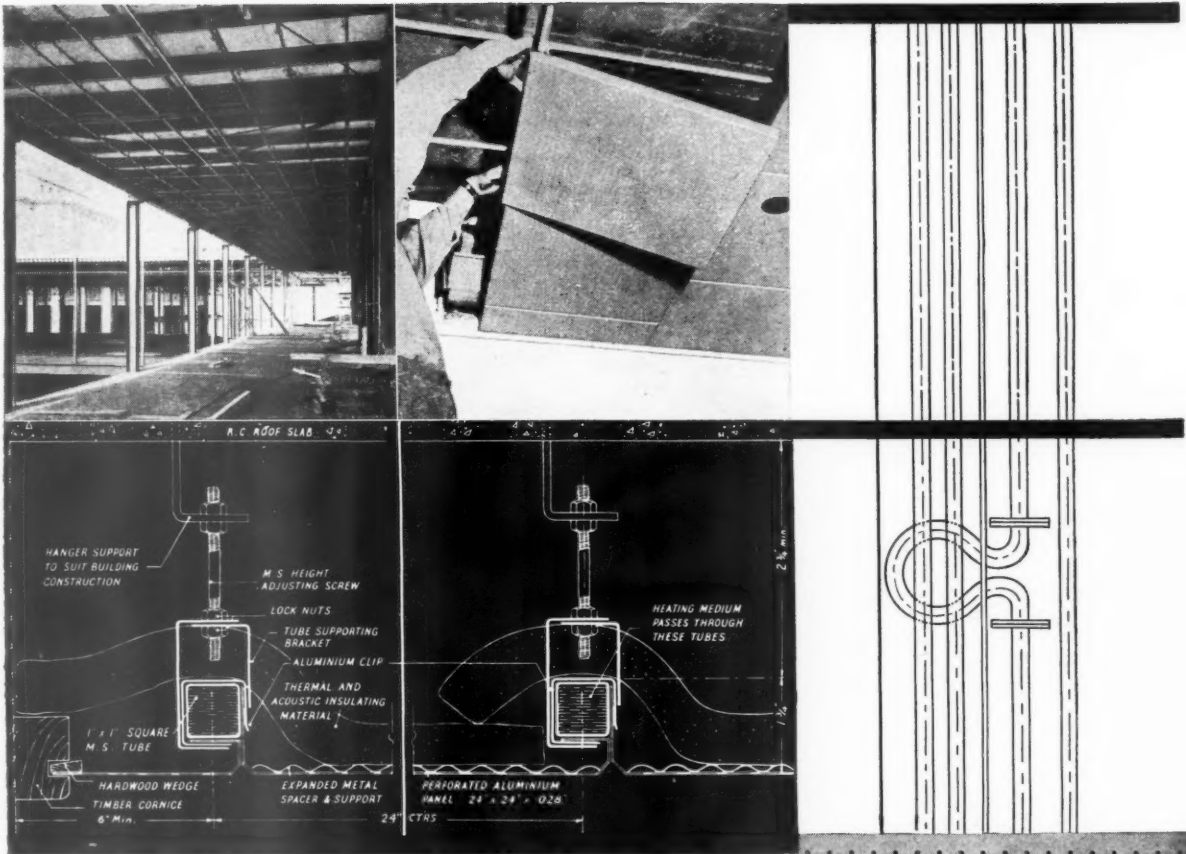
b = minimum  
c = recommended minimum



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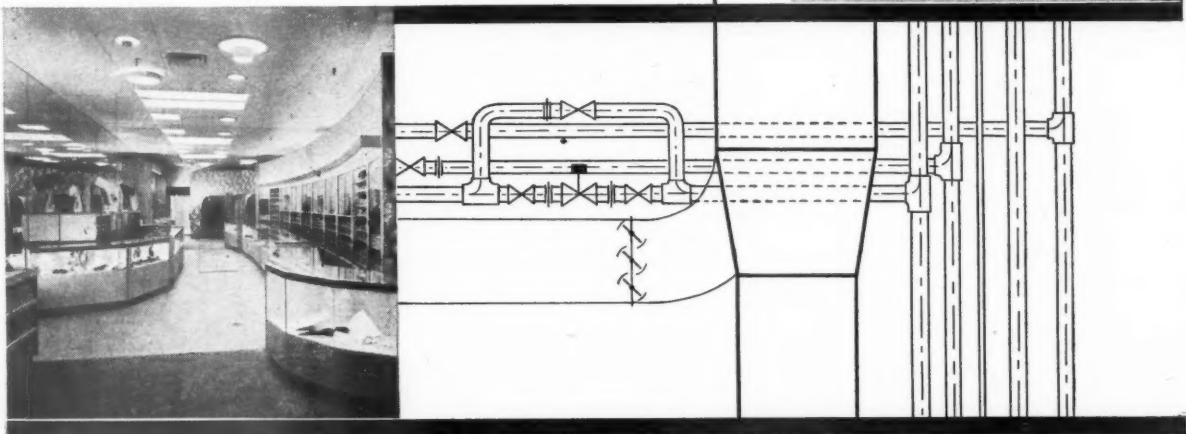


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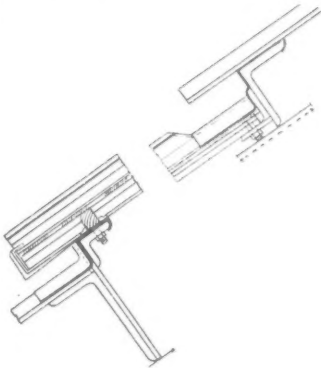




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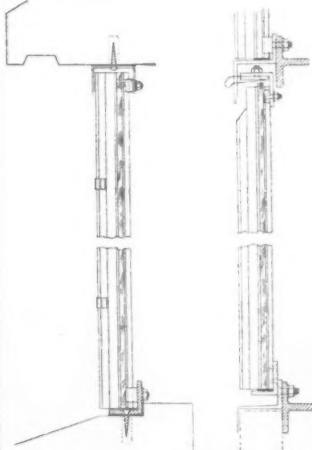


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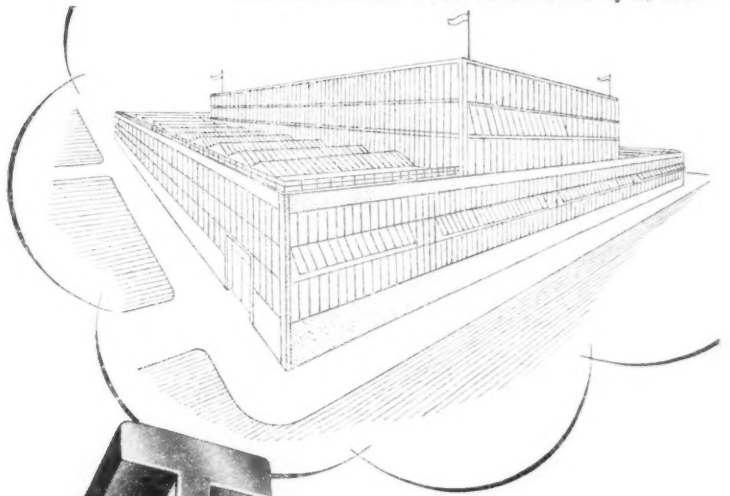
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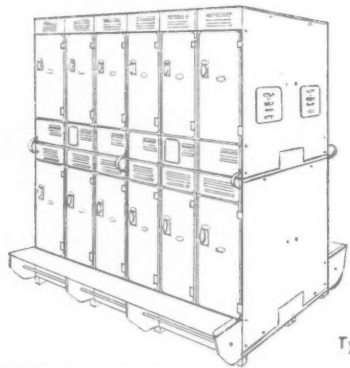
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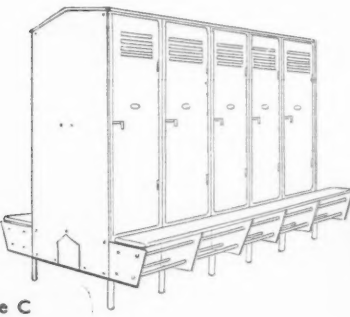
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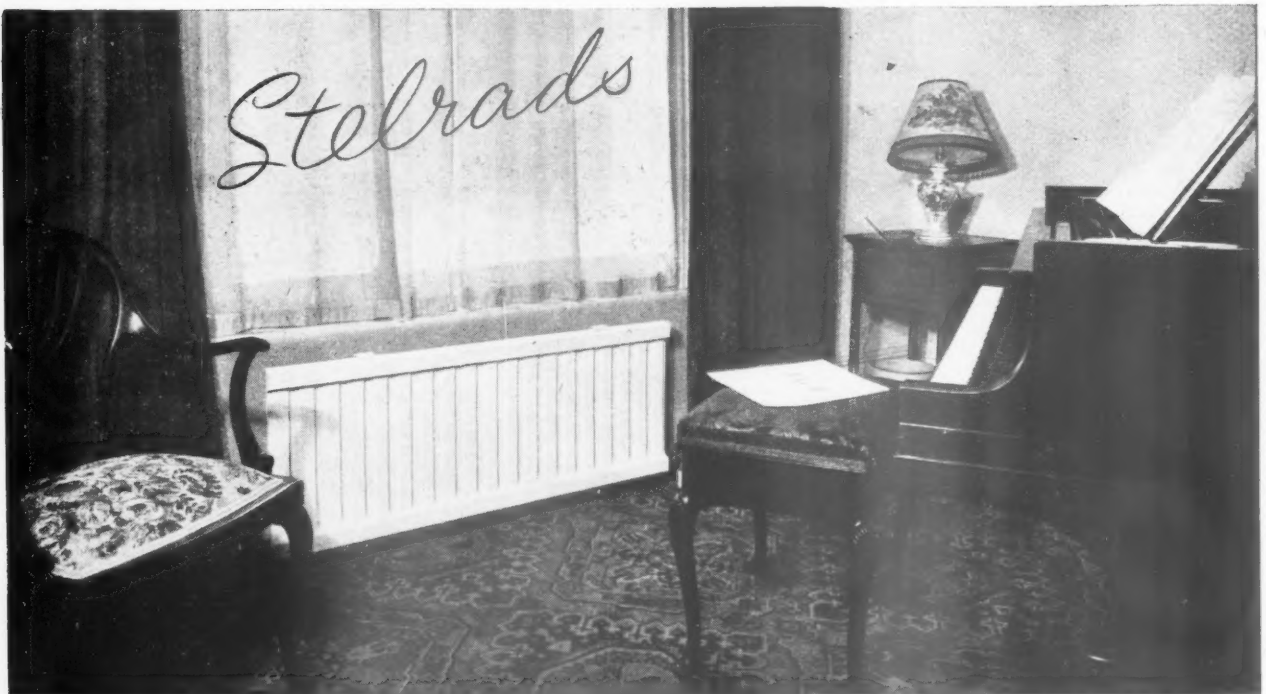
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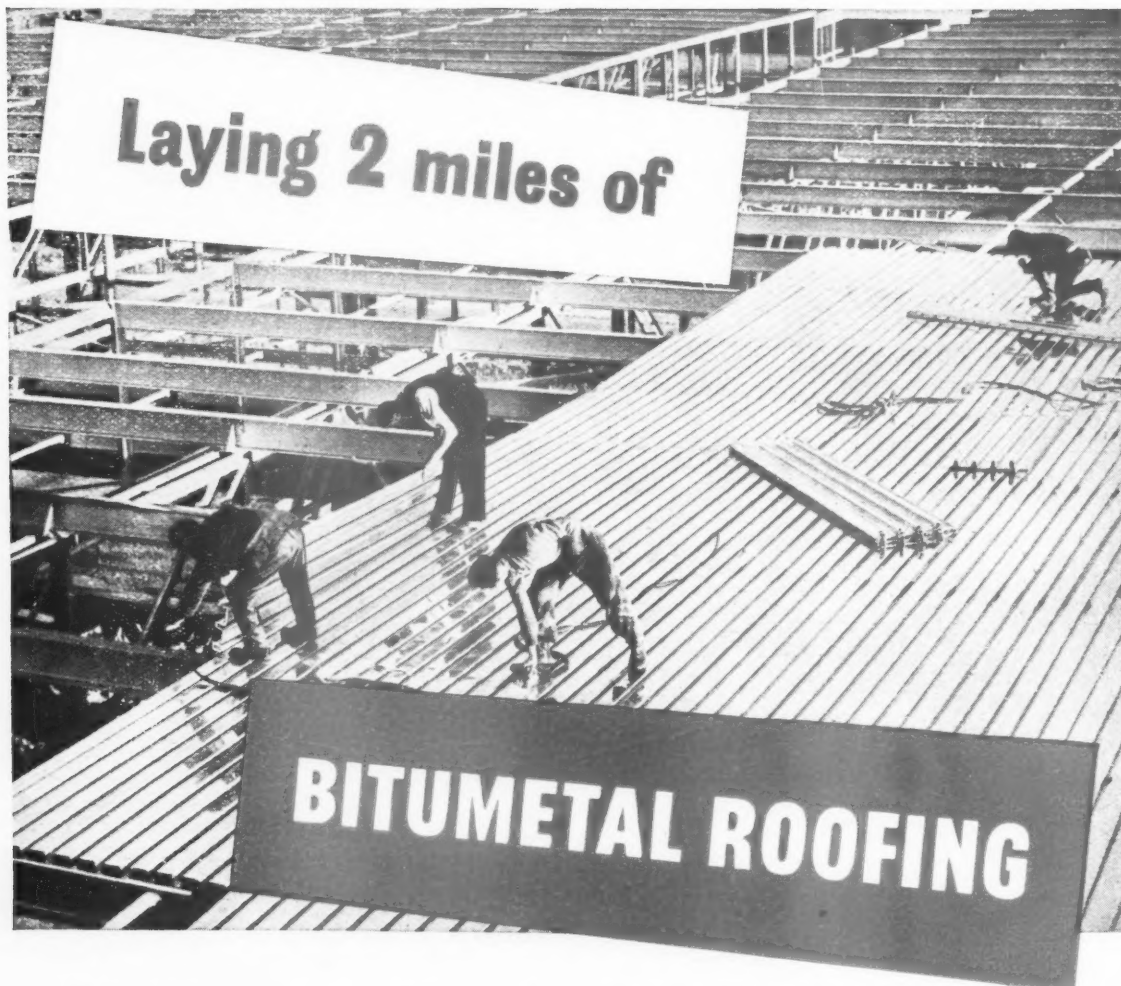
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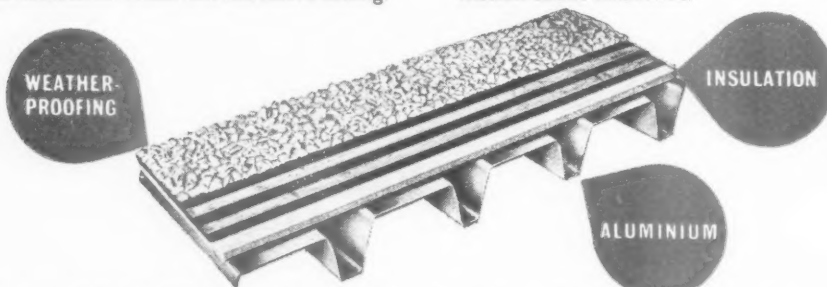


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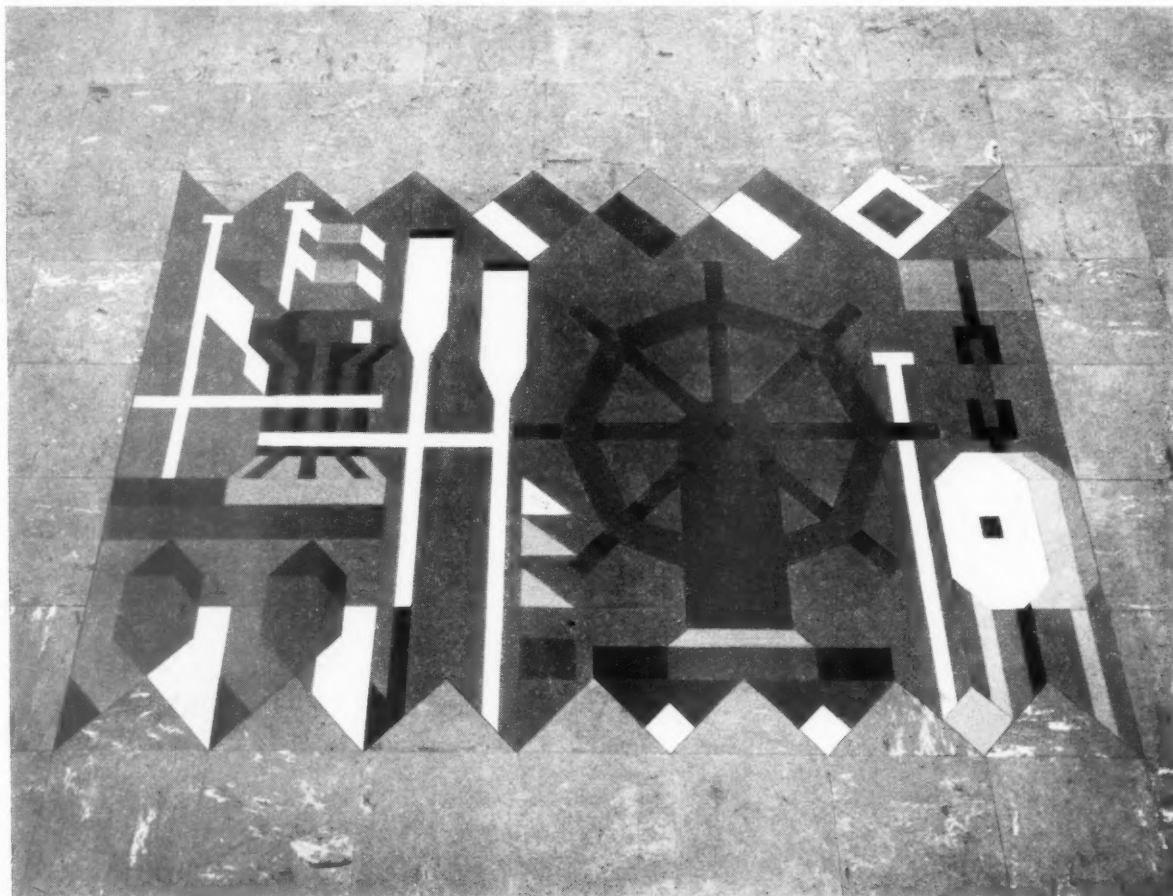


*Cock o'  
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SMITHS**

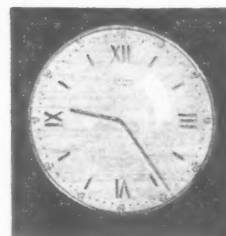


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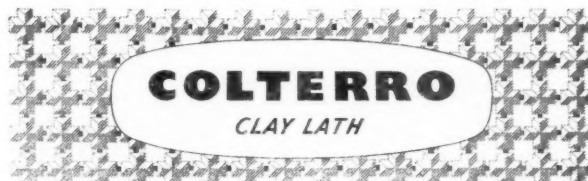
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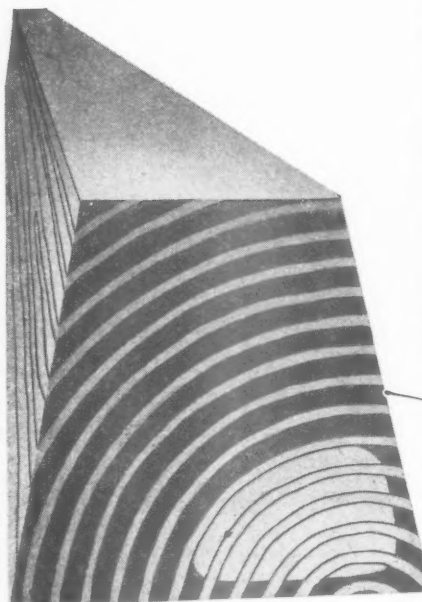
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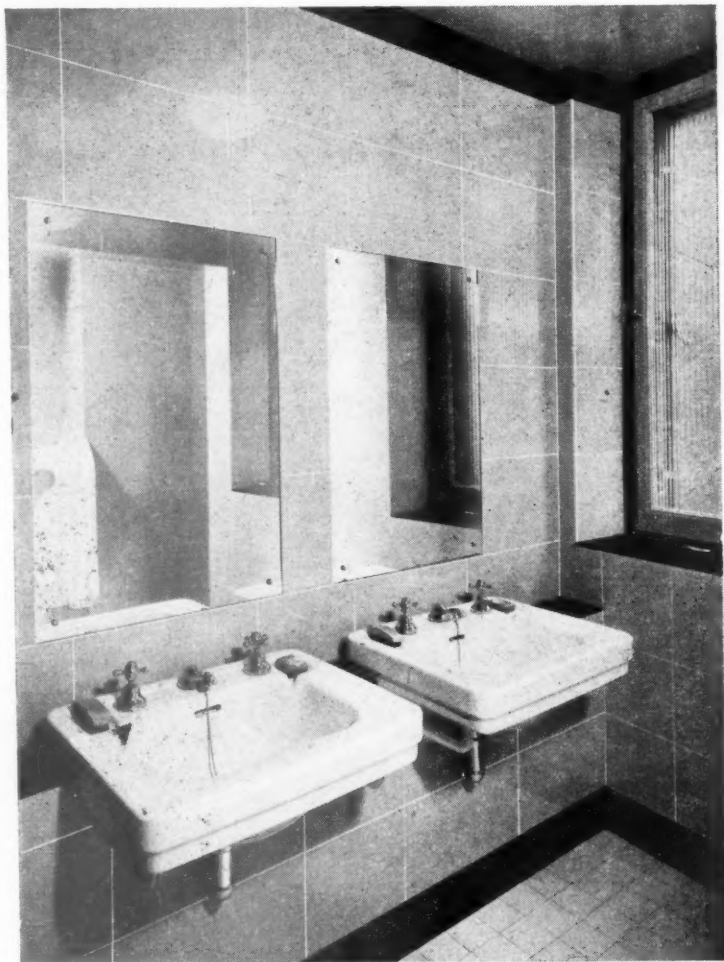
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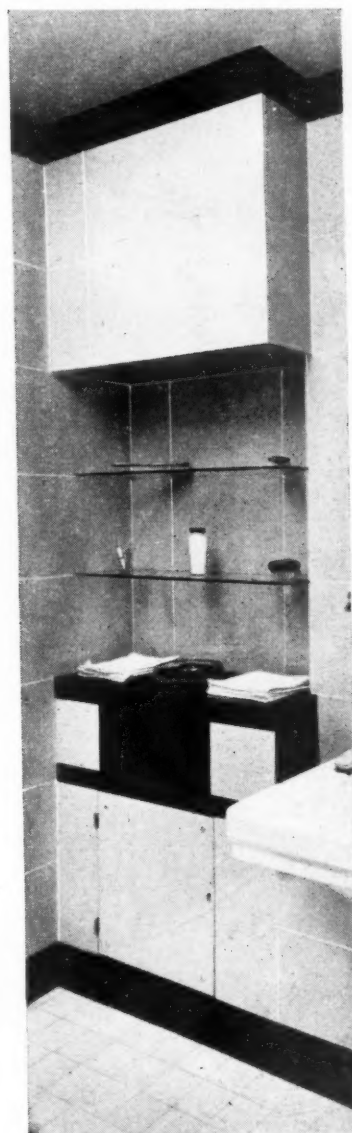
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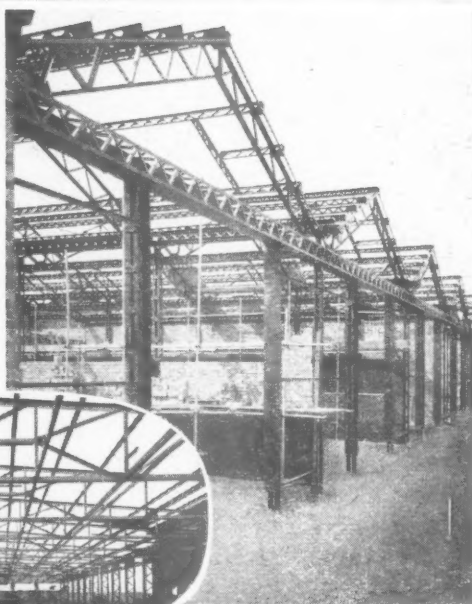
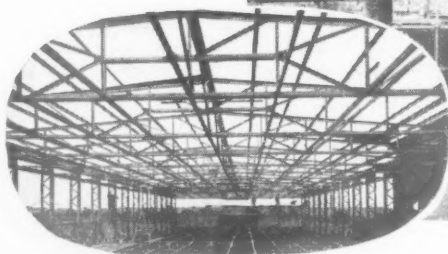


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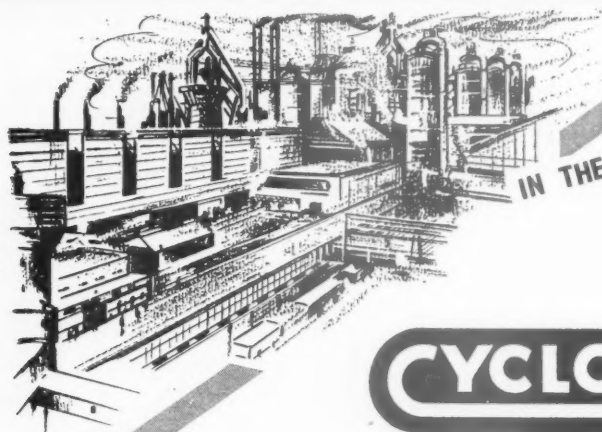
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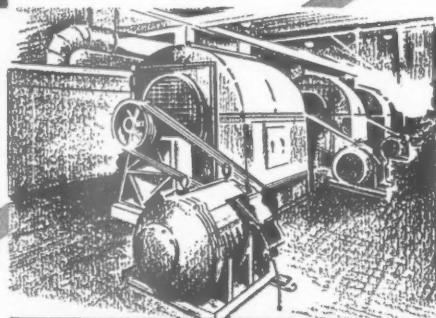
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# WHO WILL DESIGN THE CORONATION KITCHEN?

**FASCINATING "DAILY MAIL IDEAL HOME EXHIBITION"  
COMPETITION IS OPEN TO ALL**

AT DE LA RUE'S Stand at the Ideal Home Exhibition this year there will be a full size kitchen for a small house suitable for an average Housing Estate. A design for this kitchen is invited by a competition open to residents in Great Britain and Northern Ireland.

## THE GENERAL REQUIREMENTS

**1** A design is required for a completed kitchen suitable for a three-bedroom house. The area of the kitchen must be between 85 square feet and 110 square feet and it should have two doors, on opposite sides of the room, and one window sufficient to light the room adequately. The placing of the window is left to the competitor's choice.

**2** The kitchen should be economical in first cost but should be designed for hard wear and easy maintenance and is to include a kitchen cabinet and a utility table featuring Formica Laminated Plastic veneer tops.

These units are normally 36" high to working top level and from 18" to 21" deep. The cabinet unit may be designed to have an over-top cupboard if desired. While being designed for the exhibition kitchen it is desirable that these units should be suitable for production as standard fitments for use in a variety of kitchen plans of this type.

**3** In addition to the above units the kitchen must include a sink and draining board and a De La Rue G.4 Cooker which is cream and measures 21½" deep x 19" wide x 36" high (55" to top of splash plate).

**4** The electric lighting is to be shown in the design.

**5** It can be assumed that hot water to the sink should be supplied from a back boiler to a fire or stove in an adjoining living room.

**6** All other kitchen arrangements are left to the competitors.

## COMPETITION CONDITIONS

**1** The CLOSING DATE is the 10th February, 1953, and all entries must be delivered not later than 5 p.m. on that day addressed to Miss Pamela Gray, Thomas De La Rue & Co. Ltd., Imperial House, 84/86 Regent Street, London, W.1.

**2** Thomas De La Rue & Company will take reasonable care of entries and will return unsuccessful entries if stamps are enclosed. But they accept no responsibility for entries lost in the post, mislaid, or wrongly addressed. A set of FORMICA linette patterns will be sent on application.

**3** Designs should be submitted as ½" scale or larger general plans elevations and essential sections, with sufficient full size working details to show construction and materials. A perspective sketch is optional and may be in line or colour wash. Drawings may be of any convenient size and of not more than three sheets in all. All drawings must be signed with a nom-de-plume and must be accompanied by a sealed envelope bearing the same nom-de-plume on the outside and containing a signed declaration by the competitor to the effect that the designs submitted are his own work.

**4** Competitors may submit more than one entry if they wish but each entry must be packed and submitted separately.

**5** The submission of an entry automatically implies permission to photograph and reproduce design and plans, the competitor's name being acknowledged in such cases.

**6** The Jury will consist of the following persons or, in the event of one or more of the judges being unable to act, be of such other persons as the promoting company may appoint:

CECIL C. HANDISYDE, A.R.I.B.A.; A.A. DIP.

HERBERT NORMAN (Director; Hill, Norman and Beard Ltd.)

JANE ALISON (Daily Mail Feature Writer)

**7** The decisions of the Judges will be final and binding on competitors.

**8** Prizes will be paid on or before 28th March, 1953 by cheque:

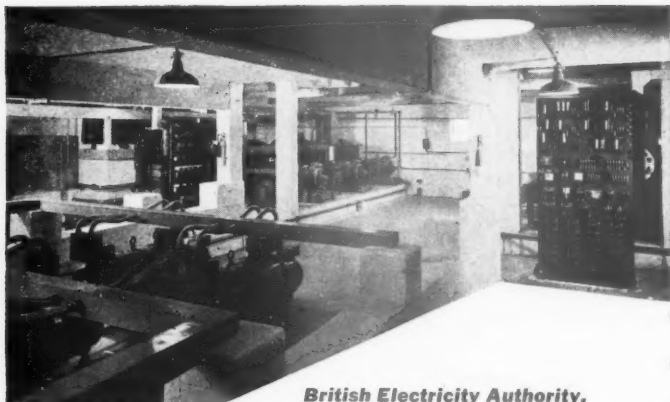
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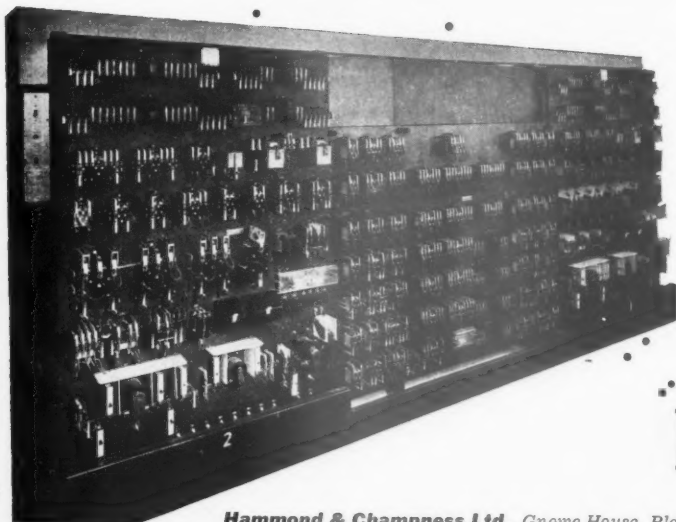


**British Electricity Authority,**

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*Architects: W. Curtis Green, Son & Lloyd, F.F.R.I.B.A.*

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Hammond & Champness take pleasure in announcing the completion of another outstanding lift contract. On the South Bank, near where they erected their famous Festival of Britain Lift, Hammond & Champness have now installed a battery of six fully automatic electric lifts in the British Electricity Authority's new building. Five are passenger lifts, 300 feet-a-minute, with geared variable voltage control and automatic precision levelling by electronic detector units.

One provides an express service between the Ground, Seventh and Eighth floors, while the other four operating in pairs serve all floors and are fitted with interconnected collective control. Lastly, there is a special 200 feet-a-minute passenger/goods/fireman's lift. All the lifts have power operated sliding doors with 'sensitive' edges, and all the motor generators have automatic 'shut-down' devices.

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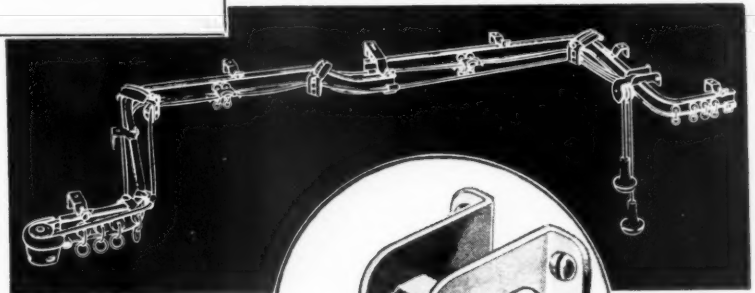
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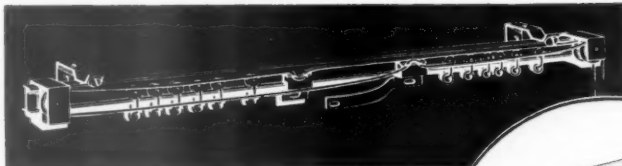
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'Rufflette' Brand Curtain Runways have been developed for every curtain suspension need. Shown on right is the new cord-controlled 'Rufflette' runway for fitting to bay windows.



**FOR STRAIGHT RUNS**

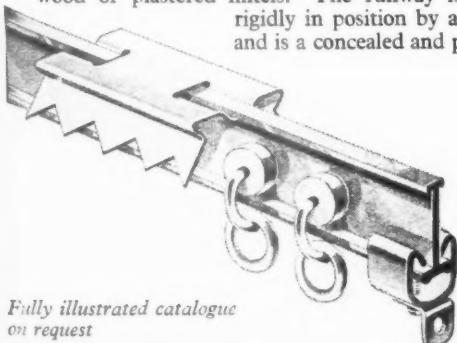
For straight runs, curtains can be effortlessly opened or closed with this 'Rufflette' cord-controlled runway with sliding overlap arm. Brackets are top or face fixing, and are designed to save valuable fitting time and cost on the job.



\* Note the curved travelling section which enables curtains to be overlapped without cutting rail.

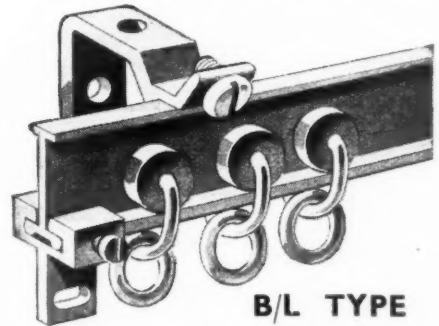
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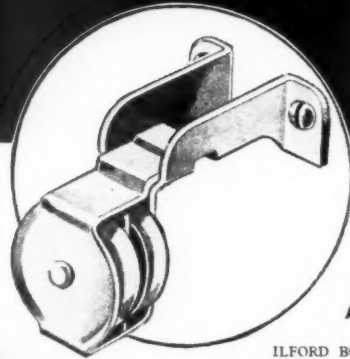
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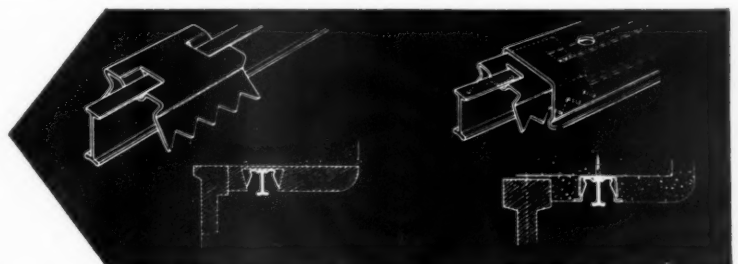


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## THE FACTS OF A SECONDARY SYSTEM

Every home fitted with a solid fuel water heating apparatus also needs a secondary system. In the summer it is uncomfortable and extravagant to have a fire going to provide intermittent hot water in the kitchen, where it is constantly in demand. Even in the winter the supply from the solid fuel system falls short of kitchen needs unless fuel is burned briskly most of the time.

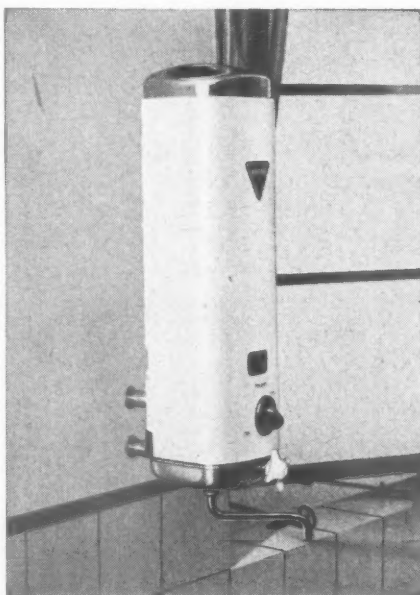
There is no necessity for the secondary system to provide a bulk supply, as the demand for large quantities of hot water for bathing is pre-arranged in the majority of homes. What is absolutely necessary is an instant supply at the kitchen sink for washing-up, washing clothes, toilet purposes, bathing the baby, cooking and domestic cleaning.

Gas, used in one of the Ascot sink water heaters, provides such a service. The Ascot water heater only uses fuel while the hot water is actually being drawn, and heats just the amount of water required for each job, so there is no wastage. The instantaneous heater

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An Ascot installation using the Jigged Wall Fitting

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THE ARCHITECTS' JOURNAL

No. 3019 January 8, 1953 VOL 117

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## HONOURS

It is a twice-yearly pleasure for ASTRAGAL to be able to send his congratulations, through this column, to the members of the architectural profession whose names appear in the honours list. It gives him even more pleasure than usual to congratulate Bill Holford, the newest architectural knight. This is a case when the conventional term "for public services" really means something; no one has been so indefatigable as Holford in furthering the cause of good architecture and planning by sitting on committees and commissions, working quietly in the background of events and travelling all over the world teaching and giving advice.

So much so that it is too easily forgotten that Holford is also (one might

even say first and foremost) a designer—and a very distinguished one—of towns and buildings, as his recent work in the City of London, Cambridge, Liverpool, Corby and elsewhere bears witness. How he finds time for all this as well as his professorial work only he can tell.

Another honour that will please everyone is the CBE to Ove Arup. ASTRAGAL hopes none of the architects concerned will take offence if he says that in the remarkably large number of successful modern buildings for which Arup was consulting engineer, a large part of the credit for their architectural quality really belongs to Arup. Few individuals have contributed more to modern architecture in our time and few have done more to make the architect-engineer relationship an example of real teamwork.

The CBE also goes to M. B. Blackshaw, superintending architect for housing at MOHLG. This again will give great pleasure all round. The official architects in charge of housing tend to get all the kicks and none of the halfpence, yet all who think about it admit that theirs is the credit for the remarkable rise in the standard of design that local authority houses have achieved since the war. Here is some public acknowledgment of it.

## ROBERT ATKINSON

If it hadn't been for Christmas printing schedules I would have written something before about Robert Atkinson, who died on Boxing Day. Many who learned architecture after the first world war have vivid memories—vivid is the exact word; his lanky frame

and unmistakable colouring made him a striking figure wherever he went—of Robert Atkinson's dominating presence at the AA school, which he built up and made into the power in architectural education that it is now, handing it over as a going concern to Howard Robertson in the early 'twenties.

As an architect he worked in a greater variety of styles than is considered proper in these days, but very ably in all of them. His Regent's Park flats, called Stockleigh Hall (designed in partnership with A. F. B. Anderson) were as well thought out a solution to that particular problem as any that had been achieved at the time, and his Gresham Hotel, Dublin, certainly showed great freshness and invention in its decoration; nor should his charming Cornish cottages—referred to in a tribute by John Betjeman—be forgotten in the long record of his works.

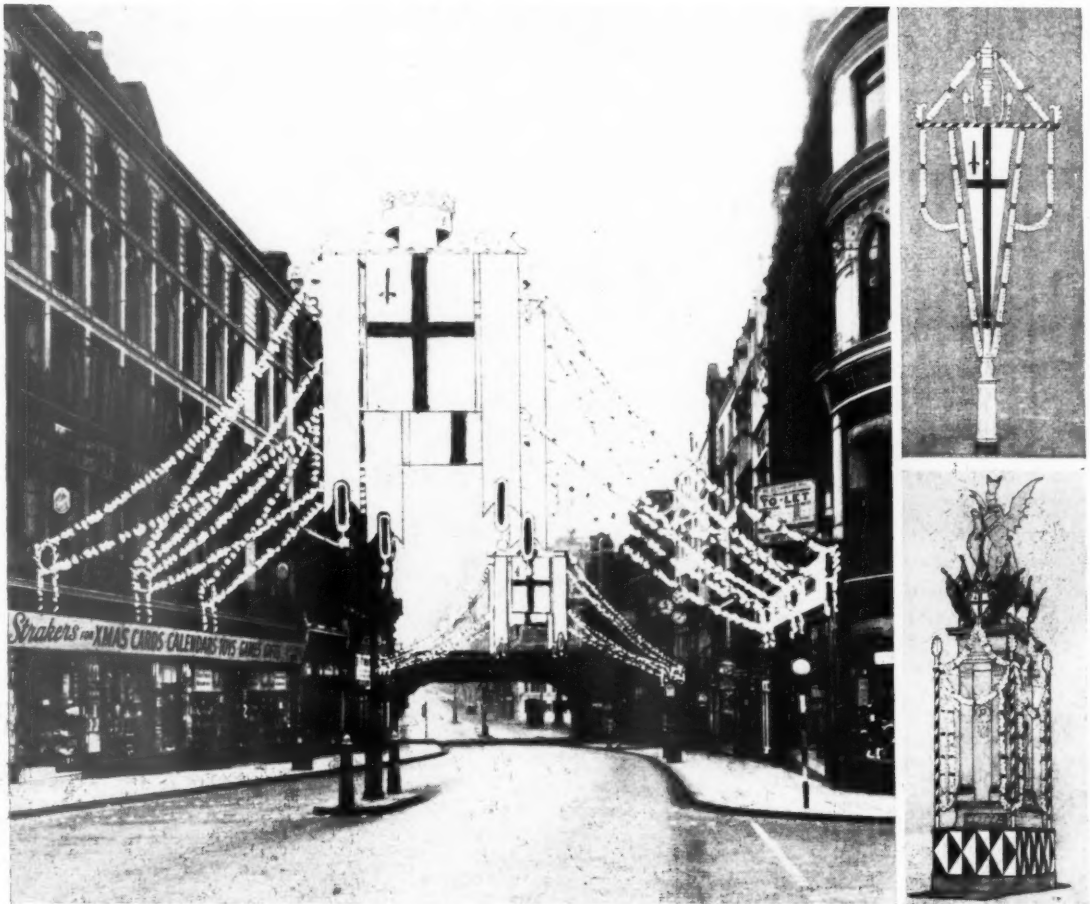
But Atkinson is, in my view, most to be remembered as a draughtsman. In this he was quite outstanding, in the fine tradition of architectural artists carried on after the nineteenth century by only a few men like Rickards. They were a race that now, one fears, has died out altogether. Whether this is because contemporary architectural draughtsmen have less knowledge of and feeling for architecture than their predecessors, and are often more interested in pattern making or sedimented washes, or whether it's because contemporary buildings are inevitably less sympathetic to such a style of presentation I don't know. More likely, the latter. If you go through old volumes of *The Builder* you will find that as "Hard Victorian"



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*Designs by Sir Giles Gilbert Scott, R.A., of Coronation decorations for the City of London. Above, suspended features, which incorporate the city's crest. Top right, lamp standard decorations for Ludgate Circus. Above right, the treatment for the Griffin monument, Fleet Street.*

gives way to "Soft Edwardianism" and eventually to "Sharp Modernism" these changes are all reflected in the style of their presentation—first rigid wood engravings, then soft lithography from Maurice Adams's drawings and finally the dramatic tone of Dell and Wainwright photographs.

\*

In the course of a long and active career R. A. lived through many of these architectural changes and managed to stamp all his work with that determined vigour which was so characteristic of his personality. He will be greatly missed.

TOM BARTON

Architecture has also lost a good friend by the sudden death of Tom Barton, the permanent secretary to the Gold Coast Ministry of Education and Social Welfare, as many architects working there have occasion to know. Both in his last post and formerly as director of Gold Coast education he was not only instrumental in the smooth transfer of his department from colonial- to

self-government but was largely responsible for the high and forward-looking standards set by it for the Gold Coast education and welfare building programme. A Scotsman by birth he had come to regard the Gold Coast as his country. Such men—administrators with a breadth of vision beyond their normal duties—are rare indeed. Their loss is all the more to be mourned.

#### MR. PROFIT AND MR. BOYD\*

Readers of the *Observer* will have noticed that a correspondence has been going on for some weeks on the subject of what is referred to as "the architect-builder relationship." It all began when a certain Mr. Boyd, who had built himself a house in Welwyn Garden City, complained that certain materials were not in accordance with the specification. He blamed his architects in the correspondence columns of the *Observer*. As ASTRAGAL happens to know, Mr. Boyd's architects are men of integrity, who have a technical

knowledge of materials well above that of the average member of their profession. One must assume, therefore, that the materials specified were (a) provided, or (b) unobtainable, or (c) omitted by an unscrupulous builder. In the case of (b) a financial adjustment would be made; in the case of (c) the right materials could be substituted—they were finishings—unless, of course, Mr. Boyd was not prepared to face the delay or mess involved. The substitution of inferior materials in this way can be prevented only by a resident architect or clerk-of-works—something that no client will face on a small house. Mr. Boyd may have had some disappointment of a kind fairly common in many spheres since 1940; his case is unusual only in the manner of making that disappointment public.

\*

He is now followed (*Observer* for December 28) by a Mr. Profit, who writes:—"It is peculiarly discreditable for an architect to connive at the shortcomings, or worse, of an unscrupulous builder—for that is precisely what he

\* This note was written before further correspondence appeared in the *Observer* on Sunday last.



## Canterbury Builds

Considerable progress in rebuilding Canterbury's main shopping street has been achieved since the JOURNAL published an article on Canterbury in April of last year. At that time Woolworth's store, shown above, was an unrecognizable brick and concrete shell standing alone amongst blitzed sites. Today the scene is very different, as the photographs above and left show—a shop for Dolcis (architect, Ellis E. Somake) was recently opened (centre, above) and the major portion of the arcaded shops on the south side of the street (left), designed by L. Hugh Wilson, the City Architect, are nearing completion.

is paid to prevent. The client seldom has the knowledge to protect himself. The strange thing is that the Royal Institute of British Architects, which one would have expected to have some means of safeguarding the public in such circumstances, if only for the good name of the profession, apparently has none."

Mr. Profit does not say whether the architect concerned was or was not a statutory member of the RIBA. If he was, and actual "connivance" was certain, then Mr. Profit is mistaken; the RIBA has a Professional Conduct committee, so has ARCUK. If Mr. Profit has tested that procedure—either directly or by suing his architect—and has found it wanting, then this JOURNAL will give publicity to any properly attested facts. In any case, if the RIBA was unwilling to act as it should, and both "unscrupulousness" and "connivance" were reasonably certain, there is always the common law.

Meanwhile it may be relevant to mention that one of the architect's most delicate tasks is to have to act as a kind of arbitrator between his own client and the builder—either of whom may be unreasonable. As long as the architect's non-contracting, pseudo-professional status remains, that will be an anomaly insufficiently appreciated by the public—especially the public who pay the piper, e.g., Mr. Boyd and Mr. Profit. It is only in *extremis* that the professional arbitrator provided for in the contract is called in. Incidentally, was he called in by either Mr. Boyd or Mr. Profit. If not, why not?

#### FOUR-WAY TELEVISION

It had to happen. And it was bound to happen in America. An architect over there has designed a house constructed entirely around a television set. The set is placed on a turntable and can be seen from the living room, the dining room, the main bedroom and the kitchen, which has a glass wall. That is all ASTRAGAL knows about it. But he would like to know if the set is very big, or the house very small. And is the sound relayed to each room? If not, how does the housewife listen from the other side of her glass wall? Your guess is as good as mine. In any case, let's hope it can't happen here.

ASTRAGAL

### POINTS FROM THIS ISSUE

Knighthood for <b>Professor Holford</b> .. .. .	pages 31 and 40
A summing-up by the <b>Guest Editors</b> .. .. .	pages 35 and 37
Revised <b>Model Byelaws</b> analysed .. .. .	page 53

### The Editors

### SETTING A COURSE

THIS week the JOURNAL's Guest Editors for 1952, in a concluding article to their series on Public Architecture, recapitulate, point by point, the proposals they have advocated over the past year. These proposals make impressive reading. As an attempt to get good architecture, through good working conditions, humane administration and efficient building controls, they will meet with strenuous opposition from all who fear responsibility, belittle the role of the architect and oppose change. Let those who attack these proposals remember that the quality of the buildings which have been produced from the public offices with which these four guest editors have been, or are, associated is second to none. The whole purpose behind their proposals is, after all, the creation of better architecture. The standard of building which they have attained is a single but irrefutable proof of all they advocate.

They have set a course that can be followed by all architects who are dedicated to their art; all who, with humility and integrity, wish to serve their fellow men with true architecture. All readers will join the JOURNAL in thanking these four distinguished men for all they have done, and in wishing them well for the future.

### ARCHITECTS TO THE FORE

The recent letter sent by the Minister of Works to the President of the RIBA (see last week's JOURNAL, page 6), offering the RIBA the Government's encouragement and support in its efforts to "reduce costs and review contracting arrangements" [Mr. Eccles's letter], gives the RIBA a further opportunity to strengthen the position of the architect as the leader of the building team.

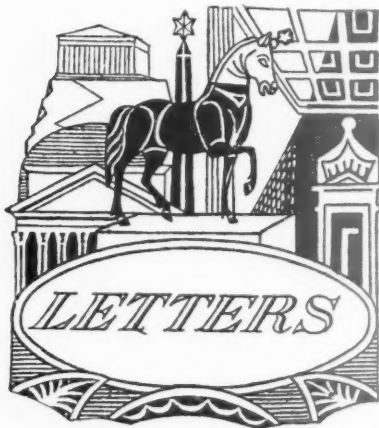
What steps can the RIBA take? It is clear that the whole question of tenders and contracts needs exhaustive study. A conference on the subject might be the best *long term* way of bringing to light and examining new ideas. In the meantime, there are two steps that the RIBA could take. As the standard form of contract is by no means the only form of contract now in use, the RIBA should tell its members (possibly through the Practice Notes in its journal) all about alternative forms of contract. It should put forward the advantages and disadvantages of these alternatives. And it should collaborate with the NFBTE and the RICS, through the existing machinery of the Joint Tribunal on the Standard



Form of Contract, in drawing up several *official* alternative forms of contract which the architect could use with as much confidence as he now uses the standard form of contract.

What alternative forms of contract are needed? They should ensure that the contractor's profit is related to the efficiency of the job, in the same way that the earnings of workers on incentives schemes are related to their output. The "fixed fee" form of contract has already been described and advocated in our pages; other methods could doubtless be devised. (Whether architects' fees should also be made dependent on the efficiency of the job, as they are in Poland, is for the RIBA to decide.)

The RIBA has been given a great opportunity, but this will have been lost if only the officers of the Institute respond to the Minister's letter. When the committees have done their job of disseminating information and drawing up new forms of contracts, it will be up to rank and file members of the Institute to make full use of them and to prove to a somewhat sceptical public and industry that architects can have business acumen as well as æsthetic discernment.



Leonard C. Howitt, F.R.I.B.A.,  
City Architect, Manchester.

Arthur Cripps, L.R.I.B.A.

E. Wamsley Lewis, F.R.I.B.A.

Unemployed Woman Architect

### Tower Cranes

SIR,—With reference to ASTRAGAL's comments on the use of a tower crane by the Norwich Direct Works Department, you may be interested to know that thanks to the fact that I am privileged to act as an honorary observer to the Building Research Station, the Station is concerned in a test which is taking place in Manchester where private contractors are engaged.

Messrs. G. & J. Seddon Limited, of Manchester, who have already used a tower crane on the erection of three-storey flats at Wythenshawe, are at present engaged upon the erection of two shopping sub-centres at Wythenshawe for my department. These consist of several shops with a two-storey maisonette over each shop. Messrs.

Seddon are using the tower crane on one block and the other will be built by traditional methods; the plan and constructional details of each block are similar and both sites have similar characteristics.

It will thus be possible at the conclusion to make very useful comparisons of speed, man hours and so on between the two methods on two almost identical jobs.

LEONARD C. HOWITT.

Manchester.

[May we take this opportunity of correcting a statement made by ASTRAGAL in the note referred to above. Housing in Norwich, where a tower crane is now in use, is not the responsibility of the City Engineer but of the City Architect, Leonard G. Hannaford. Ed.]

### Architects' Fees

SIR,—My firm runs a simple internal costing system which gives information on the subject raised by ASTRAGAL on December 11. The following assessment of the office costs in respect of commissions for single private houses relates to conditions in Cowes, IOW. The fee charged is that demanded by the RIBA scale, and not necessarily the 6 per cent. assumed by ASTRAGAL.

I find that a costing generalization is not possible for the sketch plan stage—for which one-sixth of the final fee is allocated. Some jobs show a profit; some a loss. At the working drawing stage (two-sixths of the fee) a loss is unusual. At the "Approved by Councils" stage (three-sixths of the fee) a fees profit margin is certain. At "Contract Signed" stage (four-sixths of the fee) our fees profit stands at its highest. When site work is virtually completed (five-sixths of the fee) our profit has turned to loss. At "Final Certificate" stage (six-sixths of the fee) our loss approaches 25 per cent. (of the fee).

Our variation order system is in full working order, so checking of the contractor's final account is not expensive. Our travelling time on jobs is small. Our drawings, specifications and contracts are comprehensive. In my view, our clients would not accept a larger fee charge. My own con-

clusion is that my firm is faced with but two simple alternatives: Either we must work ourselves out of business, or we must accept the consequences which result when an architect leaves his contractor to do a great deal more of his own thinking. The results from the latter course are often depressing; but the alternative is foolishness.

Cowes.

ARTHUR CRIPPS.

### "Spec." Builders Preferred

SIR,—There is no doubt that in some areas, especially where borough authorities have delegated powers of control, good design is hampered. In the best of these places, judgment on design is pronounced by municipal engineers, but often the butcher, the baker and candlestick maker, and perhaps a speculative builder are the duly elected representatives of the community to judge the proposition of the architect.

I often receive forms, headed by the name of the county planning office but signed by the town clerk of the borough council, informing me that "the design of the proposed building would be detrimental to the amenities of the district." If I ask the borough surveyor what he expects me to produce I find he prefers the design of the speculative builder.

We should heartily welcome the criticism of the public but unfortunately our work is not interesting or exciting enough for the public to be interested and so few are capable of judging architecture. The speculative semi-detached villa is still the orbit of the average Englishman's desire in building.

The architectural profession is considerably to blame, for within its qualified ranks are many who themselves are quite incapable of producing worthy architecture and many more are without powers of criticizing for themselves or for judging what is good or bad. There are within our ranks those who are not even sure of the various styles of architecture. This being so the educated lay public should be protected by some measure of control.

E. WAMSLEY LEWIS.

Weymouth.

### Woman Architects

SIR,—In the correspondence on the growing unemployment amongst architects now appearing in the Press, no mention has been made of the extensive prejudice against employing women which still exists in the profession both in public and in private offices.

Approximately 80 per cent. of the very few offices with vacancies are not open to women at all, and of the remaining 20 per cent., 15 per cent. give preference to men. It is little consolation to the unemployed woman architect in the present scramble for jobs, to know that the more enlightened 20 per cent. are also generally those that produce the more interesting and better work. Other young architects want these jobs too, and since men can get experience in the offices of the not-so-desirable 80 per cent. first, they are in a better position to compete for the limited vacancies in these better offices.

Of course it cannot be expected that the unprejudiced and more enlightened section, realising the situation, will employ a woman assistant who unfortunately has less office experience than a man. What we can ask is that these architects should fully appreciate the difficulties with which a newly qualified woman architect is faced, and, where a choice has to be made between employing a man or a woman assistant, to be quite sure that ability is the only deciding factor.

UNEMPLOYED WOMAN ARCHITECT.

London.



*Below, the JOURNAL's Guest Editors for 1952 conclude their year of office by recapitulating the essential details of the extremely progressive and fundamental proposals which they have made in previous articles.*

## The Guest Editors

### THE PROPOSALS RE-STATED

LOOKING back over our year's Guest Editorship on Public Architecture, we are very conscious of the large number of problems still waiting to be examined. We think, however, that we have considered many of the leading issues, and we have attempted to make a number of proposals. In this last article we summarize what we have said over the year.

We began with a brief historical background, and although quite a number of people were no doubt disappointed that we did not begin at once to attack the defects of the present system, we felt it was essential to see it in the light of its historical evolution. We found that it was a comparatively new public service (although it had ancient and honourable antecedents), and that it had expanded very greatly since the war. This expansion had taken place in a rather *ad hoc* way without much fundamental thinking, and frequently rested on rather poor foundations. In fact, we were forced to admit that before the war there was some justification in the epithet of "stale chocolate" which was once thrown at Public Architecture by a President of the RIBA.

On the other hand, we showed that its scope in the future was very great indeed, if present trends were any guide. There was, for instance, a large amount of work being carried out by and for various Government Departments. Then there were the various new Government agencies, created by such developments as the nationalization of industries and utility services, or the New Town programme. But most important of all was the vast network of Local Authorities, with a key role for the Local Authority architect, as the responsible officer for Housing, Educational and other Public Buildings, for Bye Law control, and as Urban Designer for Town Planning.

The opportunities before the Public Architect seemed to be limitless, providing he could equip himself to meet them.

The first thing, then, was to see what, if anything, was wrong with existing Public Offices, and at once we were struck by the large size of so many of them and by their pyramidal type of organization; also by the inadequacy of the salary scales prevailing. While we accepted the necessity for the large office (although we prefer reasonably small ones ourselves), we did object to the pyramid. Readers may remember how we described it:—

"Then there is the 'pyramid,' that bugbear of the large office—any large office. In our first article we diagnosed the trouble as due to the public office being modelled at its inception on the form of the small private office, *i.e.*, an architect with a few assistants, each of them hoping," (with a very slender chance) "soon to become a principal himself. When a very large increase of work occurs the office fails to adjust itself to the new situation, and continues to have one architect and often hundreds of assistants, who have insufficient personal responsibility for their work. The chief architect has to shoulder the blame for every minor error, and unless he is a very remarkable man, becomes a distant and shadowy figure to his staff, so submerged in administrative work that he rarely gets down to any designing himself. Also the administrative work which is essential to any technical job tends to become separated and treated as a specialist duty, which then requires an administrative staff of its own. In a large office, too, recruitment and staffing may sometimes become the responsibility of an administrative officer, and although these officers may do an important and difficult job very well in most large offices, the whole system

thus created requires consideration against the essential question: 'Does the office produce good architecture, at the right cost, and in the right time?'"

#### THE GROUP LEADER

As we felt that we ourselves might be in danger of being regarded as old fogeys, we invited two young public architects of proved ability to join us in discussion. What emerged was a belief that it was possible to run a large office well, but only on the basis of the maximum devolution of responsibility. This took the form of "Group" working, and of the creation of a new sort of professional man in the Group leader. The Group itself, we considered, should consist as a general rule (depending, of course, on the type of work) of up to ten architects, some of whom would be newly qualified. The Group leader should be given a generous measure, not only of technical, but also of staff, responsibility, and the closest co-ordination should exist between him and the Chief Architect. A key point was that each architect should be treated as a responsible professional person, and in being given greater opportunities and freedom, accepting greater responsibilities and obligations. To illustrate our proposals, an architect actually in charge of such a group in a progressive Public Office very kindly described how his group tackled their job.

#### THE CHIEF ARCHITECT

We then gave our views as Chief Architects, first on the role of the Chief, whose job we saw as one concerned primarily with co-ordinating and policy-making, but who should strive to remain a creative architect and, given our suggested form of organization could do so. Here, a key point was that he should on no account look on himself as the one and only architect, employing senior or junior "architectural assistants," but as a co-ordinator of a team of responsible architects.

After this we looked at various sizes of office, and came to the conclusion that in the very large office it would probably be necessary to interpose Divisional Architects between the Chief and the Group leaders.

#### SALARIES

We then looked at salaries, and here we made a number of suggestions which would involve a general "upgrading" in many public offices, but which we regarded as minima, bearing in mind the responsibilities of the work. We proposed that the 'Group leaders' salaries should be somewhere between £1,500 and £2,000, and that they should be rated at about 75 per cent. of that of his immediate chief, unless he himself is the chief. Our argument was



that "too many local authorities try to get cheap architects and succeed in getting bad architecture expensively."

### BUILDING CONTROLS

After this we proceeded to discuss Building Controls, and we concluded that "building controls of a kind are a recognized and necessary part of the building process today," although we thought that there was considerable room for improvement in procedural methods of controls. The main emphasis of our proposals was on a positive approach to building control, involving "broad principles and sample checking rather than detailed examination of every drawing," and we considered that "a full scale review is required throughout the field of building regulations. . . . At the same time, the underlying reasons for their existence should be examined, their broad principles restated, and the procedure for their operation should be generally agreed. The RIBA should start campaigning for this right away." Incidentally, we think that Local Authority Building controls should be the job of the Public Architect and not of any other official.

### TOWN PLANNING

We concluded our review of Public Architecture by examining the difficult problem of Town Planning. Three of us\* came to the conclusion that the ultimate responsibility for Town Planning, in both positive and control aspects, should be vested in the architect-planner, although obviously, as with a complex building project, it is only through the contribution of many skills that the job is done. Again, we saw it very much as a co-ordinating job, but one in which the whole concept of urban design is kept very much in mind, wherein the aggregation of many buildings, however well designed in themselves, does not necessarily result in a beautiful city.

### CONCLUSIONS

We would now like to summarize our conclusions and recommendations:

1. The general trend today points to a large part of the country's building programme (using the words in their widest sense), being carried out by public architectural offices, belonging to both central and local authorities. A great opportunity is therefore offered to the Public Architect if he can measure up to the job.

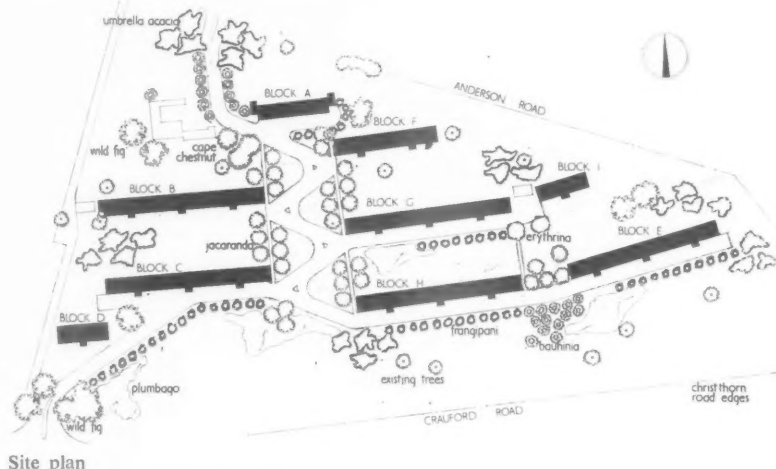
2. We accept that much of the work will be done in large offices. By and large we see little objection to this, provided the form of organization is suitable. We consider that the well known pyramid is not a good one, and should be replaced by a group pattern in which the maximum devolution of responsibility would occur.

\* S. A. W. Johnson-Marshall was away on Z Reserve Training when this article was prepared.

## FLATS IN NAIROBI, KENYA



The Delamere Flats in Nairobi, designed by Dr. E. May and Partners, are built on a steeply sloping site bordering the main access avenue to the city. The photograph above shows blocks E and H from the east; below is seen block A from the north-west; above, right, opposite, is block F from the north-west, and bottom, opposite, the south facade of block A, showing the car port. The flats were designed for Europeans with medium incomes in a neighbourhood within easy access of the centre of Nairobi.

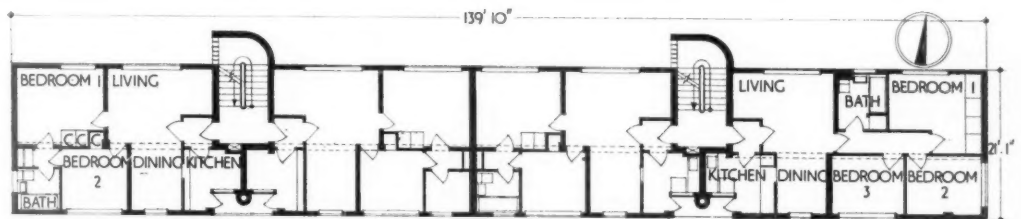
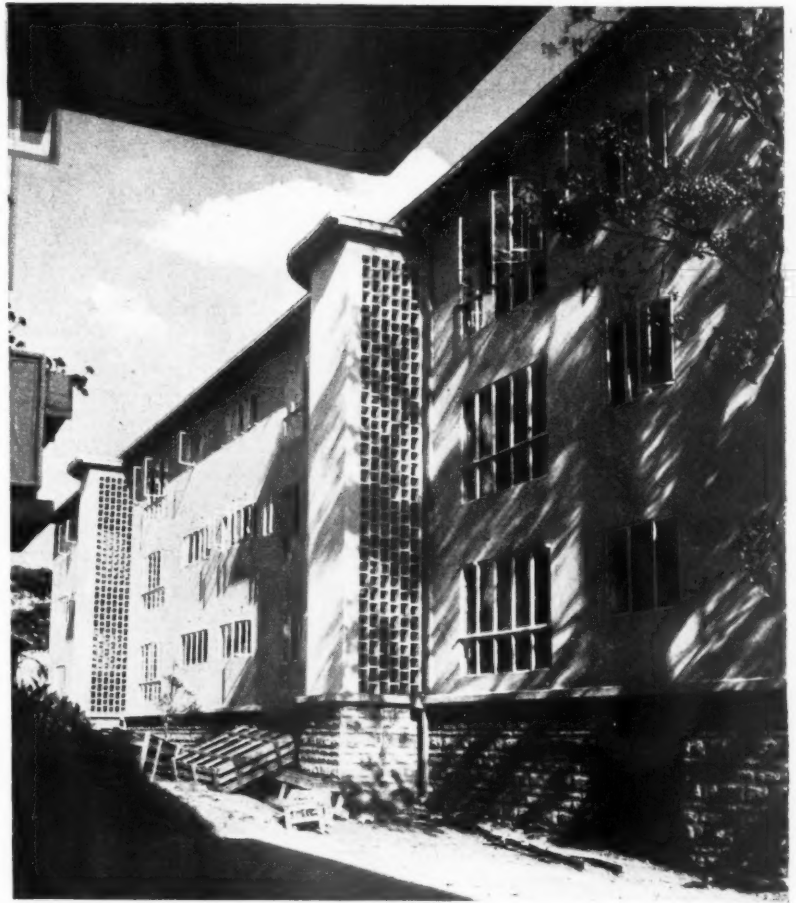
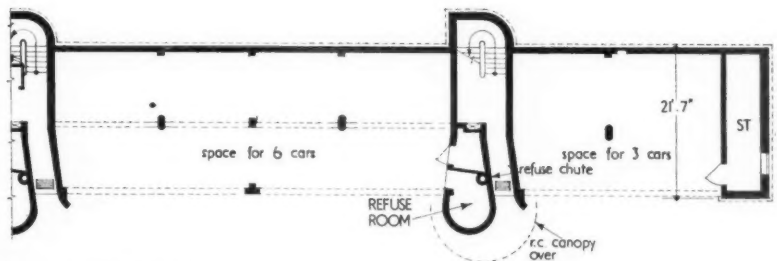


Site plan



## DESIGNED BY DR. ERNST MAY AND PARTNERS

Since servants are becoming increasingly difficult to obtain, the flats are designed to be run with a minimum number of servants, or none at all. Kitchens are fitted with all labour-saving devices and there are refuse chutes accessible from kitchen balconies. The blocks are on an east-west axis so that the glare of the early morning and afternoon sun is avoided and they are built parallel to the contours. All buildings are raised on "stilts," with car parking on ground floors. Access to flats is by staircases, which are lit and ventilated by grilles, facing away from the direction of the main rains. The flats have a reinforced-concrete frame, with partitions of pumice concrete. It was originally intended to use floating floors for sound proofing, but these were abandoned because of high cost, and cork flooring, which has been laid instead, has proved quite satisfactory. Flat roofs are finished with tongued and grooved boarding, over which is two-ply bituminous felt and aluminium foil laid in strips across the whole width and glued to the felt with bitumen. All elevations are plastered and rendered

Typical upper floor plan [Scale  $\frac{1}{4}$ " = 1' 0"]

Part ground floor plan

in various shades of terracotta, cream and silver grey, which will blend harmoniously with planting, when this is completed around the flats. This scheme is thought to be the first in East Africa where sanitary pipes have been avoided on the outside of buildings by encasing all water, sewage and vent pipes and electric mains in ducts.

3. In the Group method a key job would be that of Group architect, which would be one carrying considerable technical and administrative responsibility. We recommended a salary scale of between £1,500 and £2,000 for this job and a relationship of 75 per cent. to that of the immediate chief.

4. All qualified architects would be considered to be responsible professional men and not "assistants," and they would be expected to carry the technical and administrative obligations of such a status.

5. The role of the chief would be that of a team co-ordinator and not the autocratic boss. His job would be mainly concerned with co-ordination and policy making, and with the new form of office organization he would be left time for some creative work.

6. There is some danger in the large office of "bureaucracy," a word which we take to mean the extraction and isolation of administration from the technical job. We maintain that there is no such thing as pure administration, and that unless the technical men are prepared to shoulder the inevitable administrative and staffing problems inherent in any technical job, they will gradually lose all responsibility for their work.

7. We consider that Building Controls both of Central and Local Authorities should be based on broad principles and sample checking, encouraging variety of architectural solutions.

8. We think that a full scale review is required throughout the field of building regulations.

9. Local Authority building controls are held to be the responsibility of the Public Architect, as being the appropriate officer to administer them on behalf of the Council concerned.

10. We recognize that Town Planning has only recently emerged as an essential duty of Local Authorities, and that much harm has been done architecturally because it has been often controlled by people who have little appreciation and understanding of architecture.

11. The possibilities of comprehensive development and redevelopment are, however, greater than at any time since the 18th century, and require the best brains we have available.

12. We are, therefore, anxious that the Public Architect-Planner should be the responsible officer for co-ordinating the Town Planning activities of Urban Local Authorities, while recognizing that it is necessary for many skills to contribute to the work.

Finally, Public Architects cannot achieve all these necessary advances by sitting back and waiting. They have to convince the majority of the profession, as well as their public clients who make the decisions, that major reforms are necessary.

It is a job for *all* Public Architects, great or humble, to begin now.



## NEW YEAR HONOURS

### List Includes Holford, Arup and Blackshaw

Professor Holford is to be knighted by the Queen, and Sir Ernest Arthur Gowers is to be made a Grand Commander of the Order of the Bath.

Also listed in the first New Year Honours to be conferred by the Queen are William Henry Pilkington, vice-president of the Council of Building Material Producers (among the *Knights Bachelor*), and Ove Arup, the consulting engineer, M. B. Blackshaw, superintending architect, MOHLG, F. J. Bywater, chairman of the council for Codes of Practice, R. B. Carnegie, county surveyor, Devon CC, and A. R. Stone, the engraver and designer (who are to receive the *CBE*).

Among those who are to receive the *OBE* (*Prime Minister's List*) are: A. Bates (county planning officer, the West Riding of Yorkshire), W. Grigor (county surveyor, Antrim CC), and W. F. Lownie, late deputy chief architect and surveyor, Dept. for Agriculture for Scotland; *MBE*: F. W. Atkinson (chief clerk of works, MOW), G. V. Griffith (borough engineer and surveyor, Port Talbot), B. K. Nightingale (surveyor, Sodbury, RDC), L. Parker (surveyor and chief sanitary inspector, Flaxton RDC), C. H. C. Payne (construction designer, Billingham div. ICI), C. T. Price (divisional engineer, E. Surrey Division, SE Gas Board), P. Sellens (surveyor DGW, Air Ministry), Miss Norah Sullivan (senior experimental officer, DSIR), C. J. Sweeney (deputy chief superintendent, plans branch, Land Registry), C. R. Tobitt (assistant city surveyor, Essex CC), D. R. Williams (senior partner, Williams, Bros., building and civil engineering contractors, Pontardawe, Swansea), T. Wills (assistant regional director [lands], MOW).

## MOW

### Builders' Conference Correspondence Made Public

The London Builders' Conference, in a letter to the Minister of Works dated Dec. 30, has stated that it would not be prepared to appear before any committee appointed by the RIBA as a tribunal to review its activities, on the grounds that "the Council

of the RIBA have over the past 14 years repeatedly expressed their disapproval of the Conference and, incidentally, have refused all invitations even to discuss the problems which they are now asked to take the lead in solving."

The London Builders' Conference's Council is here referring to the recently-published correspondence between the Minister of Works and the President of the RIBA, in which the Minister suggested that the time had come for "the industry itself under the leadership of the architects to take active steps to reduce costs and to review contracting arrangements" (see last week's JOURNAL, page 6).

The Conference's Council further objects in its letter that "the body to be charged with the responsibility, *inter alia* of judging how far the attacks made upon the Conference in the House of Commons on Nov. 7 last were justified is not after all to be an obviously impartial authority like the Monopolies Commission nor even a tribunal specially constituted by the Minister himself from the building industry."

This letter was issued to the Press last week, together with previous correspondence between the Minister of Works and the Conference's chairman, Sir Alfred Hurst, in which the Minister (on Dec. 4) stated that he was "considering in consultation with the main national bodies what steps can best be taken to ensure that the building industry as a whole brings under review these wider questions" [of tendering and contract procedure within the building industry].

In reply to this, Sir Alfred Hurst stated that his Council appreciated the difficulties of a wide enquiry and an enquiry into the activities of the Conference proceeding simultaneously, and that his Council was prepared "to defer to the Minister's suggestion so far as to hold in abeyance the request for an impartial investigation" put forward in previous letters.

In reply to this letter the Minister of Works (Dec. 11) reminded Sir Alfred of the main features in the operation of the Conference to which objection has been taken; *i.e.*, "the communication of tender prices to other persons, and the adjustment of tender prices by reference to other tenders."

"Whether or not it is possible to operate a scheme for sharing tender prices without either of these features," the Minister's letter continues, "and whether it is desirable that such a scheme should be operated, are clearly matters which will come within the scope of the review" [mentioned above]. "Accordingly the Minister does not propose to consider any change in the Form of Declaration used in MOW contracts until the results of the review are known."

This letter provoked a further reply (Dec 15) from Sir Alfred Hurst, in which he protested that the Minister's letter had, when read to a largely attended meeting of the Conference's members, "further intensified their feeling of injustice at the treatment they have received."

"They were," this letter continues, "prepared to defer" [in accepting the Minister's proposal to postpone the enquiry into the activities of the Conference] only "on the understanding that all discriminatory action against them . . . [was] discontinued." In view of the contents of the Minister's letter of Dec. 11, they felt "they must now re-affirm their former request."

## RIBA

### Soane Museum Drawings

Next Monday John Summerson will speak at the Soane Museum, Lincoln's Inn Fields, about the Wren, Dance, Adam and Soane drawings, which are owned by the museum. The talk will begin at 6 p.m.



*This article, the third in John Stillman and John Eastwick-Field's series describing the Wokingham experimental school (the first appeared in the JOURNAL for October 16, 1952; the second, December 4, 1952), is devoted to a study of the engineering services, including electrical services, cold-water services and heating and hot-water supply. In their introductory paragraphs the authors discuss the advantages and drawbacks of dispensing with competitive tenders for specialist services, taking as the alternative the procedure of entrusting the work to "carefully selected firms," as adopted by the MOE Development Group.*

John Stillman and John Eastwick-Field

## MOE DEVELOPMENT WORK: WOKINGHAM: 3

THE design of buildings such as schools is today complicated by the number of specialized engineering services which are involved, and the architect needs the assistance of engineers. It is common practice to entrust the design of the steel structure and the heating scheme, at least, to selected contractors, but there has of late been a tendency to employ independent consultants with the object of making a better assessment of the merits or demerits of the available systems, and of ensuring that there should be closer co-operation between the architect and the engineer. Employing a consultant also enables competitive estimates to be obtained on a proper basis. Where a consultant is not employed, fees for the design are no doubt included in the estimate for the work submitted by the selected firm, and this arrangement is often more acceptable, since the fee does not appear as a separate, and apparently additional, item. Most public offices have engineers on their staffs and competitive estimates are obtained for engineering services, as is normally required under council byelaws. Only when a product is produced by only one firm is it permissible to depart from this rule.

The architects in the MOE Development Group chose not to employ consultants for the heating and electrical work (or for the structural work, which was described in our first article, October 16, 1952), but preferred to entrust the work to carefully selected firms who, in their experience, would contribute most to the development work.\*

The firms chosen were known to be controlled by enterprising designers with an intimate knowledge of their own manufacturing techniques who could, therefore, discuss readily with the architects the manufacturing consequences of variations. Although competitive estimates were not obtained, the cost of the work undertaken by these firms was examined and checked, and

the estimates were accepted only if they were considered reasonable. A system of cost analysis, as described in Bulletin No. 4,\* was used to find the approximate amount which could be expended on any one element, and this, together with a comparison of the costs of similar installations in other schools, obtained in competition, enabled the design team to make a fair assessment of estimates.

It must be pointed out that this method of assessing costs would not be acceptable to many authorities unless the work could be undertaken by only one firm, and many architects would not have ready access to comparative prices or could not afford the time to make a cost analysis as described in the Bulletin. Many people feel that the lengths to which "competition" is taken is wasteful in time of full employment and may not lead to economies, but an alternative system which eliminates competition may not reflect the advantages of falling prices should these occur when work is scarce.†

### ELECTRICAL SERVICES

Having designed a structure which provided a continuous suspended ceiling below a space interrupted only by lattice beams, it was natural that the designers should try to use this space for as many of the services as possible.‡ The orthodox means of installing electric wiring for this class of work has in the past been to run it in steel conduits. This has been recommended for the following reasons:—

- i. it provides a high degree of mechanical protection;
- ii. it provides earth continuity;
- iii. it is easy to rewire.

\* HMSO, 1951, 1s.

† The MOE comments: "This may be perfectly appropriate for an ordinary production job, but where development is the primary object it is necessary that the manufacturer be selected beforehand. When the article or system has been developed it can, of course, be placed in competition with the comparable products."

‡ The MOE comments: "This misses the point. One of the main factors in deciding on a constant ceiling depth was to accommodate services economically and to disentangle their installation from builders work."

All these advantages become less important if the cables are contained within a ceiling space and, since conduit is expensive, and moreover was in short supply at the time, the architects considered whether some alternative might be suitable.

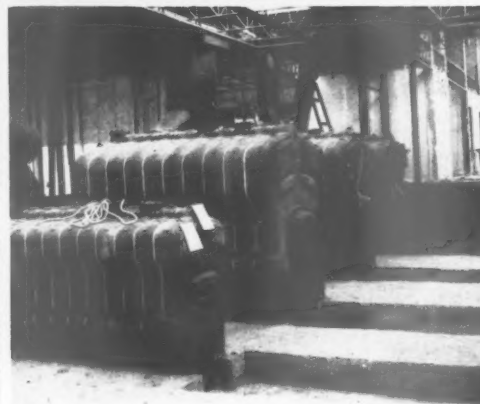
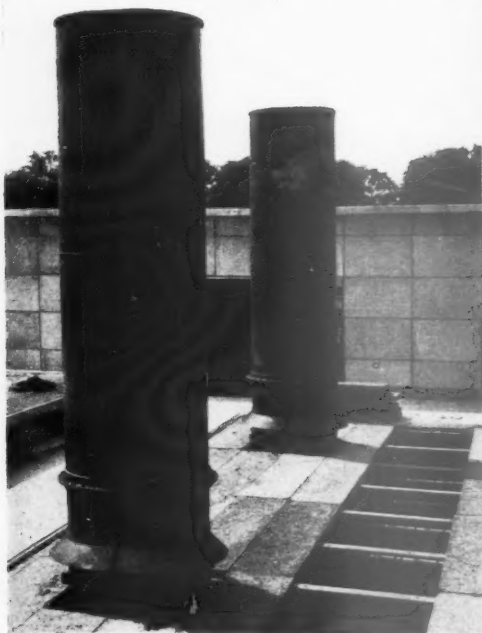
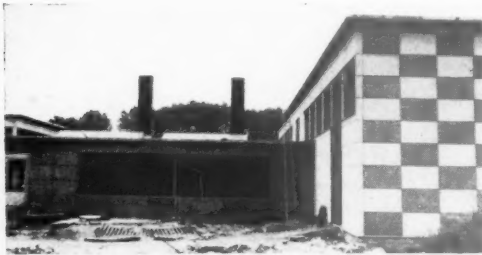
A review of the problem showed that any cable which was adequately insulated would be suitable, and cheaper, but that the difficulty of protection against mechanical injury to the cable in vertical runs, and of providing earth continuity throughout the installation, would require consideration. The existence on the market of a flexible cable, insulated and sheathed by P.V.C. and covered with a metal braiding, provided a solution to the electrical problems, and in addition gave an opportunity for factory fabrication in keeping with the spirit of the remainder of the school's design. It is not considered that rewiring due to perished cable will be necessary but the installation can easily be altered and extended, since access to the cables and junction boxes can be made through the ceiling at any point by removing panels.

In systems of building construction like that used at Wokingham, there can be little doubt that an installation which avoids conduit is of considerable advantage for reasons other than electrical ones, but it is also possible that even the attributes of the conduit system may themselves be questioned. Above all, condensation and the rusting which it causes may reduce the mechanical protection, break earth continuity, and make renewal and drawing in of cables difficult and dangerous.

Other features of the installation are: the concentration of switches, sockets, distribution boards, circuit breakers, thermostats, fire alarm bells and call points in open-sided metal droppers which are built into the partitions (see Fig. 14): the use of circuit breakers instead of normal fuses, which although considered more expensive is more efficient and compact; the main switch-gear is purpose designed and is of cubicle construction.

\* A list of these firms appears on page 60.



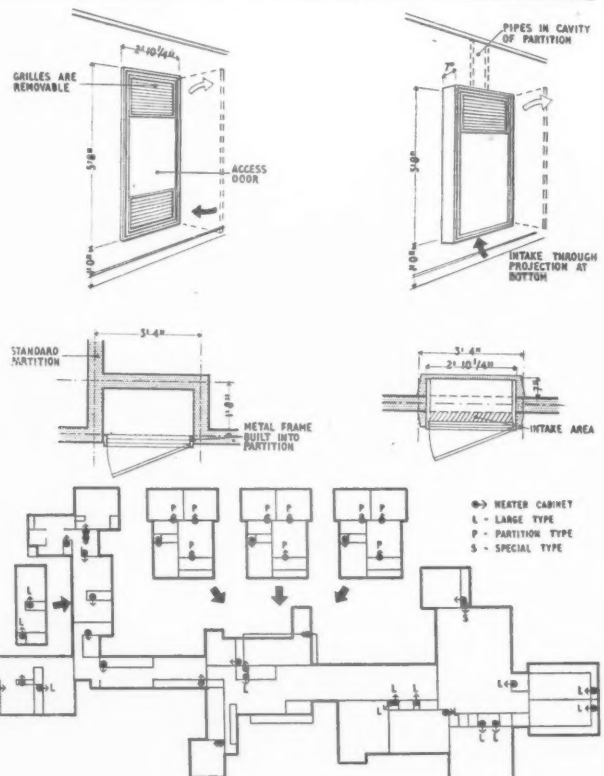


## WOKINGHAM : THE BOILER HOUSE, BOILERS AND FLUES

Extreme left, Fig. 1, a view of the boiler house under construction and seen from the front of the building. Notable features are the short metal flues. The four-storey block is immediately to the left of the part of the building shown. Below this, Fig. 2, a close view of the metal flues. These will eventually receive an additional aluminium casing above roof level. Left, Fig. 3, a detail of the removable galvanized iron panels through which the coal for the boilers is to be pitched, straight from the lorry. The storage capacity is 40 tons—enough for three weeks supply in severe weather. Below this, Fig. 4, the boiler house under construction showing the cast iron sectional boilers. Of the three larger boilers which are for heating, one is a stand-by. The smaller boiler is for the hot water service. The boilers will be lagged and cased. The ducts in the floor accommodate the worm gear of the automatic stokers, these are the only ducts in the building. The boiler house is well lit by top lights.

## THE HEAT EXCHANGE UNITS

Right, Fig. 5, heater cabinets; left, built in corner of store; right, built into partition. Below these, Fig. 6, diagram showing position on plan of heater cabinets. Below, Fig. 7, one of the recesses which house the heat exchange units. These units consist of gilled tubes heated by hot water over which air passes and is warmed. The flow of air is controlled by a thermostatically-controlled fan. The circuit breakers, which can be seen in the top left hand of the photograph, are used in the place of fuses, and are exposed in the various rooms.



It is expected that the whole installation will show considerable economies over a conduit installation whilst still conforming to the IEE regulations and approved by the BEA. According to the manufacturers, it can be assumed that the cost of the metal-braided cable is about half that of conduit and conductors, and that the cost of labour using braided cable is about a third that of the labour required in installing a system using conduit.

#### COLD WATER SERVICES

The cold water service, like the electrical installation, differs in several respects from normal practice. In the first place, the amount of water stored is, by arrangement with the local water board, only 2.8 galls. per head, and, even taking into account the reduced consumption afforded by the small basins, this is considerably less than is normally assumed to be necessary. The amount often required is from about 5 to 10 galls. per head, and this sometimes necessitates using a water tower.

In order to avoid a high load on the four storey block, the storage was distributed in three tanks: 1,000 galls. in the hall block, 600 galls. in the two-storey block and only 100 galls. in the four-storey block.

One other controversial feature is that there is no separate cold water supply at each basin. Instead, the hot and cold water are mixed by permanently set mixers. These are cheaper than automatic thermostat mixers. The temperature of the mixed water is controlled at 110° F.

#### HEATING AND HOT WATER SUPPLY

Statutory regulations for schools include rules as to the temperatures and number of air changes to be allowed for in various rooms; the MOE Bulletin No. 2, *New Secondary Schools*\* gives a number of general recommendations. The arrangements at Wokingham are clearly described in Bulletin No. 8, *Development Projects: Wokingham*,† but there were a number of questions which occurred to the authors and which were put to the designer of the installation, who, as explained above, is also the specialist contractor at Wokingham. These questions and the answers given are published below:

**Q** Are more efficient boilers not available than the traditional ones (cast iron sectional)?

**A** More efficient boilers than traditional ones are not available. There are three heating boilers, any two of which are capable of carrying the full equipment load. There is one hot-water-service boiler. The piping is arranged so that if the hot-water-service boiler breaks down, a heating boiler can be used for the hot-water service.

You will note that we have emphasized

the word "equipment." The heating power of the equipment installed is considerably greater than the heat loss from the building when the outside temperature of 32°. This is done in order that the temperature may be dropped during the out of school periods and brought up quickly as the school opening hours approach. It is comparatively cheap with this system of warm-air heating to do this.

**Q** What is the advantage of automatic stoking over magazine boilers?

**A** The fundamental trouble with magazine boilers is that they must be installed in a boiler house, the top of which is ground level. This is costly. Incidentally, there are really no acceptable magazine boilers of the size required.

**Q** What fuel has to be used; are there limitations in choice because of the stoking system?

**A** The fuel used is washed singles, semi-bituminous coal of maximum size 1 in. The worst fuel which can be used by stokers is a bituminous slack with not more than 25 per cent. under ½ in.

**Q** Why will there not be a nuisance from smoke in the four-storey block?

**A** The burners should be adjusted so that the smoke is negligible.

**Q** How is it possible to have such short chimneys?

**A** The manufacturers of the heating system developed this short chimney technique and it has proved successful on many schools.

**Q** What governed the choice of steel for the chimneys and what insulation is required?

**A** Cost. The metal flue is only insulated where it passes through the roof.

**Q** Is the system of ash removal unusual?

**A** The ash removal system comprises a block and tackle on a four wheel trolley, running on rails suspended below the ceiling, to which the ash bins are hooked.

**Q** What are the economic advantages of automatic stokers? Some councils do not consider the capital cost worth while since caretakers are employed anyway.

**A** The controls of the forced warm air system used control the output of heat automatically. This being so, the development of heat must also be controlled automatically. The full equipment is a heat machine controlled with regard both to temperature and to time.

**Q** Is there any disadvantage in running all pipes (i.e. flow and return) in suspended ceilings with drops to units; are air locks likely to occur?

**A** There is no disadvantage in running pipes in suspended ceilings and there is no reason why air locks should occur.

**Q** Do the units require water to be at a higher temperature than for radiator systems?

**A** The units do not require water at a higher temperature than radiators in severe weather. As the outside temperature rises, however, the water temperature is not allowed to fall as much as with radiators.

**Q** What is the heat distribution in each room? Is there any danger of down-draughts from the large glazed areas?

**A** The horizontal distribution of temperature in each room is remarkably even. There is no evidence of discomfort from down-draught from the large glazed areas.

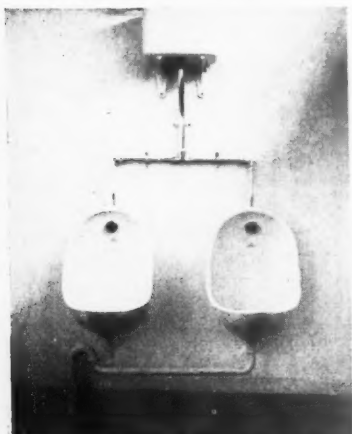


Fig. 8, part of ceiling, showing heating pipes and electric cables in interspace.

\* HMSO, Feb., 1950.

† HMSO, Oct., 1952.

## WOKINGHAM: SANITARY SERVICES



Above, Fig. 9, a range of four "Lotus" basins. These are of fireclay and were specially designed. They hold only about a quart of water. The waste is a prefabricated copper unit, and is not trapped, except at the gully at floor level. The taps are ordinary pillar taps, and there is one only to each basin: the hot and cold water is premixed to 110° F. Left, Fig. 10 a specially designed laboratory sink. The outlet at the right hand side of the main sink discharges into a smaller container which drains through an overflow, and is thus permanently filled with waste water which dilutes any small quantities of strong acid which might accidentally be poured into the sink. Left, Fig. 11, Mark II "Bean" urinals. These were developed from the original urinals designed for the Hertfordshire County Council, which were found, in practice, to have insufficient projection. The individual urinals save initial cost, and avoid a considerable amount of builders work associated with the more traditional types. Below, Fig. 12, one of the precast concrete manholes with channels moulded in dense concrete (without any glazed lining). The branches can be arranged only at intervals of 15° with this particular model. The use of prefabricated manholes also makes difficult any additions or modifications to the drainage on site.

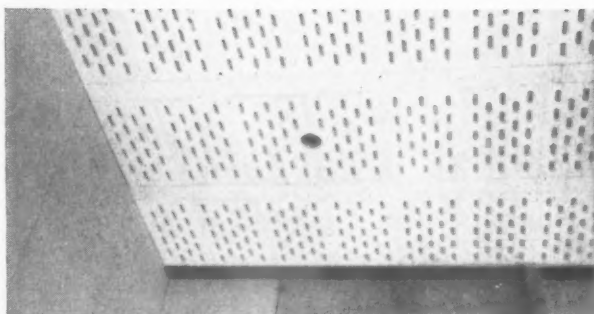
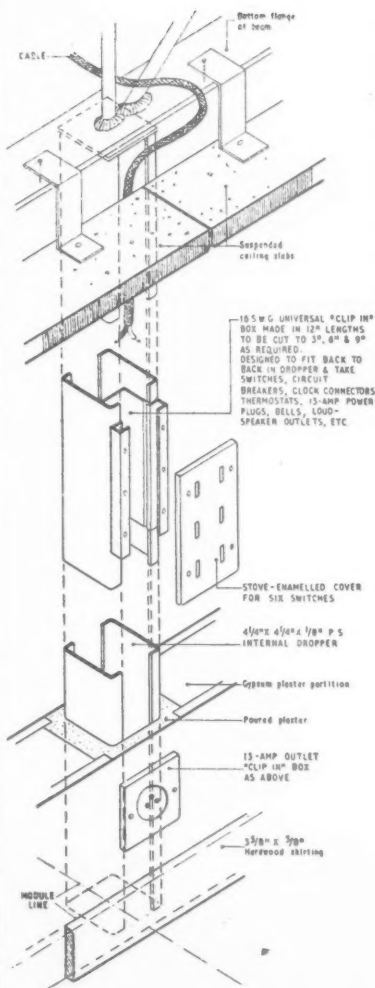


Fig. 16, part of the fibrous plaster ceiling which has recently been developed and which is being fixed in the hall. The pattern derives from the holes which are cast into the panels, behind which an acoustic absorbent is fixed. Each panel rests on a rebated fibrous plaster rail which is wadded to the steelwork.

## ELECTRICAL SERVICES

Above, Fig. 13, one of the "droppers" through which the cable is taken in vertical runs. These droppers take the place of stanchions and their positions are limited to grid intersections. Left, Fig. 14, a dropper with junction boxes. Below this, Fig. 15, an electrical box fixed by means of a special clip to the underside of a beam. Note the copper braided cable. The ceiling units fit round the box, and the light fitting is fixed direct to it.

## PRIMARY SCHOOL

in MANSTON ROAD, RAMSGATE, KENT

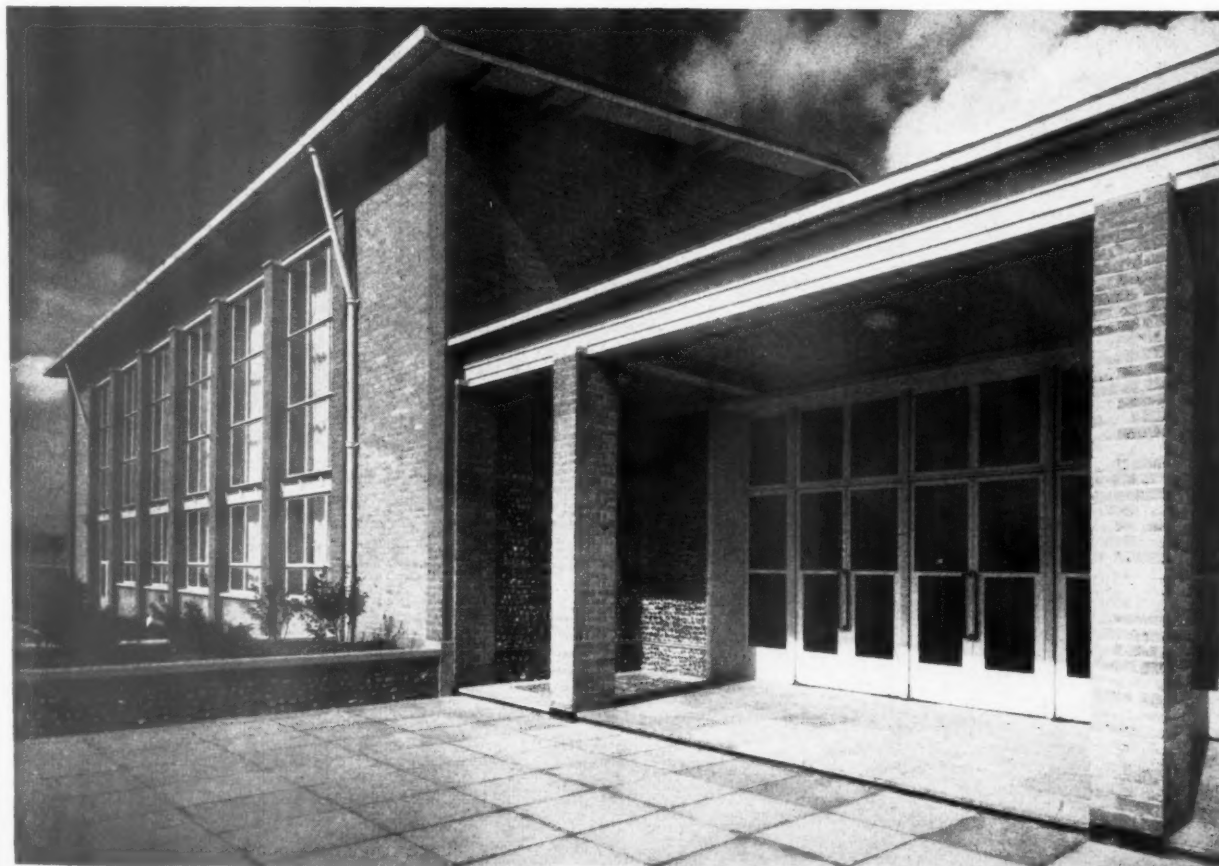
designed by HOWARD V. LOBB AND PARTNERS

in collaboration with S. H. LOWETH, county architect

A. P. HODGSON, S. E. ALDRIDGE, assistants  
quantity surveyors C. E. BALL and PARTNERS

The primary school on the north-west outskirts of Ramsgate was designed to accommodate 480 pupils. Most of the pupils will come from a new housing estate near the school. Until a school for infants was built on an adjoining site, a wing of this school was set aside for them.

*The main entrance and assembly hall.*

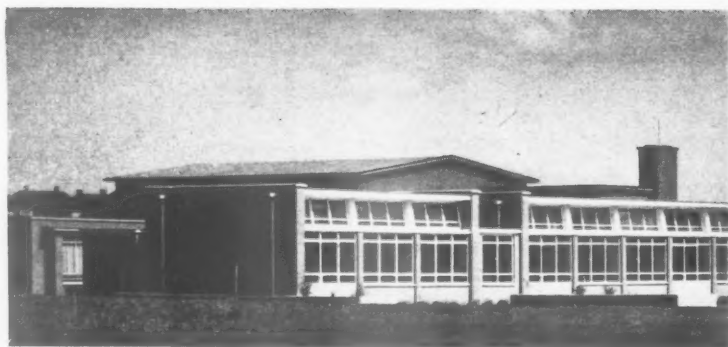




## PRIMARY SCHOOL

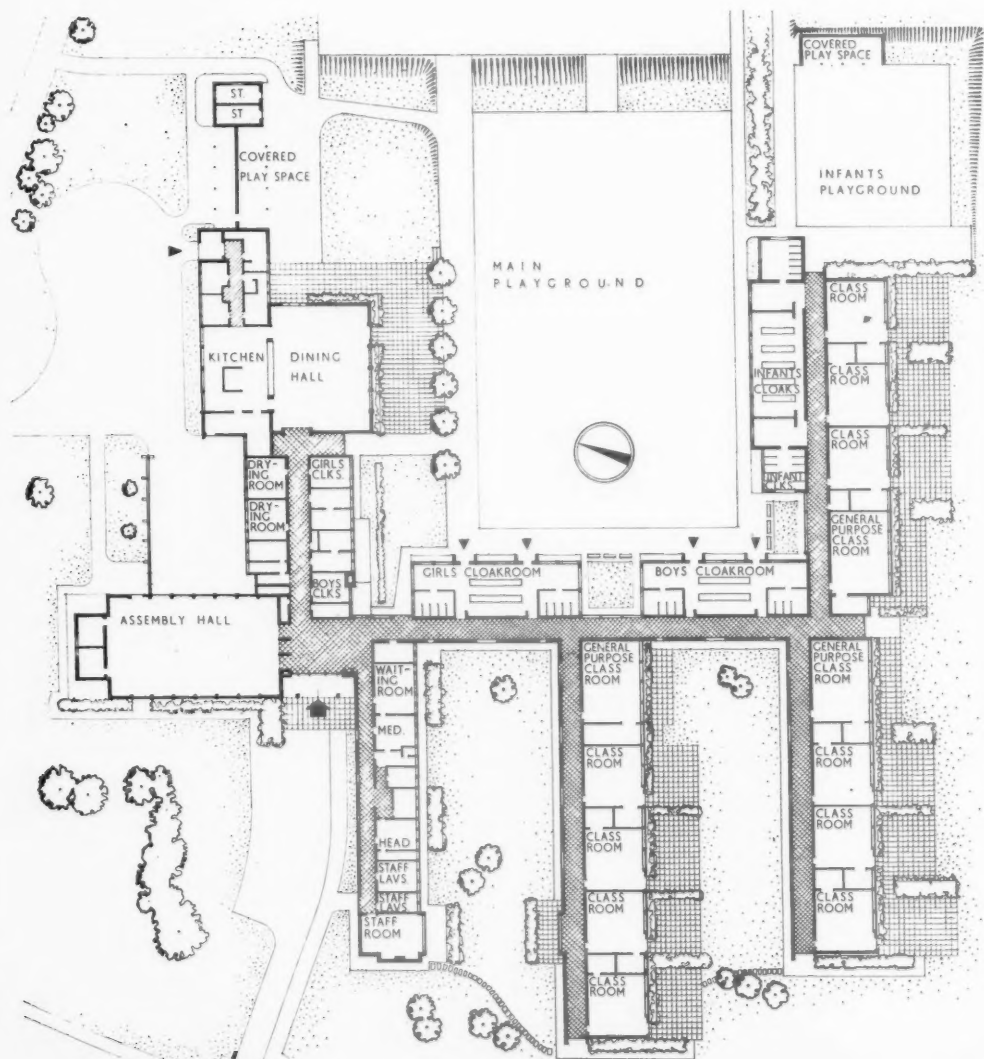
in MANSTON ROAD, RAMSGATE,  
KENT

designed by HOWARD V. LOBB and  
PARTNERS



**SITE.**—The ground rises to the east, which is fairly level round the buildings. It is bounded on the east by a playing field, beyond which is a railway line; on the south by Manston Road; on the north-west by a housing estate.

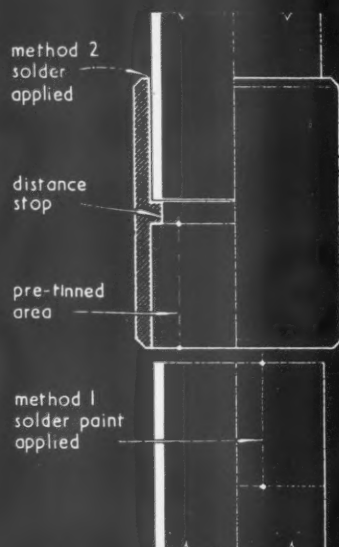
**PLAN.**—The classroom blocks are parallel to each other and face S.S.E.; they are screened from the playground by the cloakrooms and lavatories. The main entrance faces the housing estate; next to it is the administration wing. The kitchen and



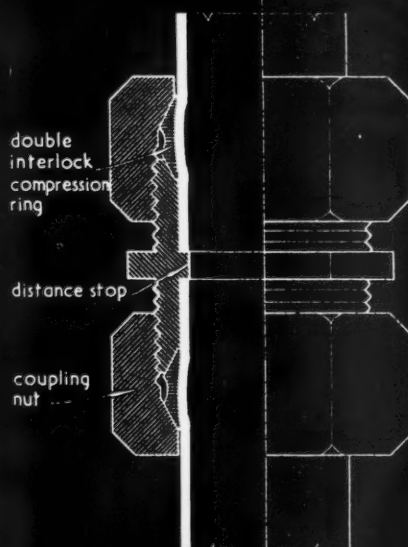
Ground floor plan [Scale:  $\frac{1}{4}$ " = 1' 0"]



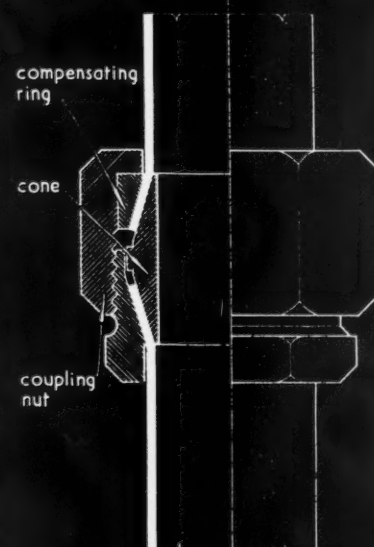




INTEX P.T. PRE-TINNED  
CAPILLARY FITTING.  
(for tubes  $\frac{1}{8}$ " to 2" nominal bore)



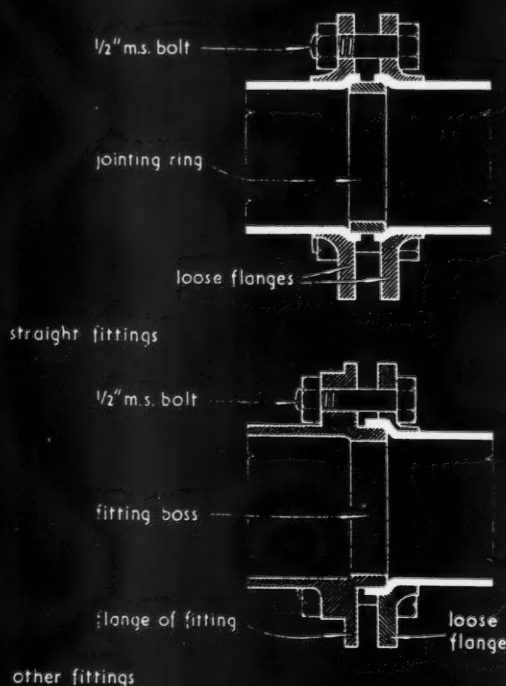
INSTANTOR NON-MANIPULATIVE  
COMPRESSION FITTING.  
(for tubes  $\frac{1}{8}$ " to 2" nominal bore)



CONEOR MANIPULATIVE  
COMPRESSION FITTING.  
(for tubes  $\frac{1}{4}$ " to 2  $\frac{1}{2}$ " nominal bore)



D-D MANIPULATIVE COMPRESSION FITTING:  
NUT TYPE. (for tubes  $\frac{1}{4}$ " to 2" nominal bore)



D-D MANIPULATIVE COMPRESSION FITTINGS:  
FLANGE TYPE. (for tubes 2  $\frac{1}{2}$ " to 8" nominal bore)



### 33.B3 CAPILLARY AND COMPRESSION FITTINGS FOR LIGHT GAUGE COPPER TUBES

This Sheet describes various types of capillary and compression fittings for jointing light gauge copper tubes. The drawings on the face show details of different fittings; given below are notes on making the joints and the range of fittings available and their uses. The fittings comply with B.S. 864 : 1945 and suit light gauge copper tubes to B.S. 659 : 1944 and B.S. 1386 : 1947.

#### Capillary Fittings

**Intex P.T.:** These are pre-tinned brass fittings made from hot stampings or castings or hydraulically formed from seamless tube; they are for use with tubing from  $\frac{1}{8}$  in. to 2 in. nominal bore.

The joint depends on the principle of capillary attraction, therefore cleanliness and accuracy of fit are essential if it is to be successfully made. Tube ends should be checked with a sizing tool and any deformation corrected; they must also be thoroughly cleaned with steel wool. The interior of the fitting is pre-tinned and wiping with a clean rag to remove dust is all that is necessary.

There are two methods of assembly (see face of Sheet):—

1. P.T. brand solder paint (a specially prepared mixture of solder and flux) is used to coat the tube ends before insertion in the fitting. Heat from a blowlamp is applied and the solder, which is liberated from the paint, seals the joint.

2. A good quality solder wire, melted by a blowlamp applied to the joint, is run between the fitting and the tube, the tube ends having been previously coated with a non-corrosive flux. In either case a temperature test should be made by removing the blowlamp and touching each end of the joint with solder wire. If the wire melts, sufficient heat has been applied to make a perfect joint, which should be allowed to cool undisturbed.

These fittings may be used for general domestic installations including hot and cold water services, gas services, space and panel heating installations employing hot water and waste and vent pipe services. As there are no coupling nuts, installations can be easily chased into walls, if required.

**Endex:** These fittings are similar to the above but are not pre-tinned, therefore the interior must be thoroughly cleaned with steel wool before assembly. They are for special installations that require brazing or silver soldering.

#### Compression Fittings

The range includes Instantor (non-manipulative) and Coneor and D.D. (manipulative—i.e., requiring flaring or shaping of the tube ends).

**Instantor:** These fittings, made from hot stampings or hard castings in brass, are for use with tubing from  $\frac{1}{8}$  in. to 2 in. nominal bore and are also available in special sizes for tubing not covered by B.S. 659. They should not be used with annealed copper tube. No preparation of the tube is needed, but the outer surface should be free from reeds or deep scratches. When the coupling nut is tightened an annealed brass ring is compressed on to the tube giving a permanent and positive grip.

These fittings may be used for hot and cold water

services, heating installations and waste and vent pipe services. They may also be used in the engineering industry for jointing tubes conveying lubricating oils and other liquids, and generally for jointing Alkathene plastic tube.

**Coneor:** These fittings, made from hot brass stampings and either hard brass or gunmetal castings, are for use with tubing from  $\frac{1}{8}$  in. to  $2\frac{1}{2}$  in. nominal bore. The cone is integral with the fitting except in straight couplings.

A simple forming tool is used to flare the tube end before assembly. The coupling nut compresses the shaped end of the tube between a chamfered compensating ring and the cone.

These fittings may be used for hot and cold water services, heating installations and waste and vent pipe services. They may also be used in the engineering industry for general work on low pressure steam, air and oil lines. They are unaffected by vibration or lateral pressure and are, therefore, particularly suitable for underground services.

**D.D.:** These fittings, made from brass or gunmetal, are in two forms—the standard nut pattern for tubes of  $\frac{1}{8}$  in. to 2 in. nominal bore and the bolted flange pattern for tubes of  $2\frac{1}{2}$  in. to 8 in. nominal bore. (Special fittings are available for sizes of tubing not covered by B.S. 659 and B.S. 1386.)

The ends of the tube are formed to a cup shape by means of simple hand tools for small diameter tubes and mechanical tools for larger sizes (tools may be obtained on loan from the manufacturer). In making the joint the cupped end of the tube is compressed by the coupling nut (or the loose flange in the larger fittings) on to the seating incorporated in the body of the fitting.

The straight flange fitting has a brass jointing ring and two loose malleable iron or gunmetal flanges. Fittings other than straight have one flange integral with the fitting and a loose counter flange of malleable iron or gunmetal. Nuts and bolts are of mild steel.

These fittings may be used for hot and cold water services, heating installations, underground installations, vent pipes, and in circumstances where service conditions are exacting. The flanged fittings are used for large-scale trunking systems in hospitals, hotels, factories and ships.

#### Fittings

All the above fittings are available in a wide range of straight couplings, bends, tees, crosses, stopcocks and valves.

#### Finish

When required the fittings may be supplied with polished, plated or tinned finishes. Malleable iron flanges are finished with a coat of protective paint.

#### Further Information

Further details of the full range of fittings for all joints may be obtained on request from the manufacturer.

Compiled from information supplied by:

Fyffe and Co. Ltd.

Address: Fyffe Works, Carolina Port, Dundee.

Telephone: Dundee 81291/2.

Telegrams: Couplings, Dundee.





## BUILDING BOARD GENERAL DATA

15.B1

The Architects' Journal Library of Information Sheets 398 Editor: Cotterell Butler, A.R.I.B.A.

REVISED 8.1.59

TRADE NAME	DESCRIPTION AND APPLICATIONS	THICKNESS	WEIGHT PER SQ. FT.	STANDARD SIZES
Lloyd insulating board	made from long, tough wood fibres—cellular construction internal use only for sound and heat insulation	1/2 in.	0.7 lb.	6 ft., 8 ft., 9 ft., 10 ft. and 12 ft. long x 4 ft. and 2 ft. wide 8 ft. long x 3 ft., 3 ft. 4 in. and 3 ft. 6 in. wide
		3/4 in.	1.0 lb.	6 ft., 8 ft., 9 ft., 10 ft. and 12 ft. long x 4 ft. and 2 ft. wide 8 ft. long x 3 ft., 3 ft. 4 in. and 3 ft. 6 in. wide
Lloyd building board	similar material to insulating board but thinner internal use only for sound and heat insulation	5/16 in.	0.45 lb.	6 ft., 8 ft., 9 ft., 10 ft. and 12 ft. long x 4 ft. and 2 ft. wide 8 ft. long x 3 ft., 3 ft. 4 in. and 3 ft. 6 in. wide
		3/8 in.	0.54 lb.	6 ft., 8 ft., 9 ft., 10 ft. and 12 ft. long x 4 ft. and 2 ft. wide 8 ft. long x 3 ft., 3 ft. 4 in. and 3 ft. 6 in. wide
Lloyd medium hardboard	made from long, tough wood fibres into a homogeneous material having a high strength/weight ratio internal use for furniture and fittings, panels and linings generally	4 mm. (5/32 in.) 6 mm. (1/4 in.) 8 mm. (5/16 in.) 10 mm. (3/8 in.) 12 mm. (1/2 in.)	0.6 lb. 0.8 lb. 0.9 lb. 1.05 lb. 1.2 lb.	8 ft. long x 5 ft. wide
Lloyd hardboard	a highly compressed fibre board of greater strength than medium hardboard internal use only	1/8 in.	0.68 lb.	6 ft., 8 ft., 9 ft., 10 ft. and 12 ft. long x 4 ft. wide 8 ft. long x 5 ft. wide 6 ft. 6 in. long x 2 ft. 6 in. wide
		3/16 in.	0.90 lb.	6 ft., 8 ft., 9 ft., 10 ft. and 12 ft. long x 4 ft. wide 8 ft. long x 5 ft. wide
Lloyd super hardboard	similar material to hardboard but hardened by a special process to give superior strength and surface internal or external use for concrete form lining, floor covering etc.	1/8 in. 3/16 in.	0.68 lb. 0.90 lb.	8 ft. long x 5 ft. wide

LLOYD BOARDS: RANGE, STANDARD SIZES AND TYPICAL APPLICATIONS.

Copyright by G.W. Lloyd and Partners for Building Products Limited



# 15.B1 LLOYD BOARDS: RANGE, STANDARD SIZES AND TYPICAL APPLICATIONS

This Sheet supersedes Sheet 15.B1 published 23.8.51 and tabulates the range of Lloyd building and insulating boards and gives standard sizes, properties and typical applications for each type.

*Lloyd insulating boards* have a low thermal transmission value (conductivity  $k = 0.34$  B.Th.U./sq. ft./hr./1° F./1 in. thickness) and high sound absorption value. The sound absorption coefficient is 0.35 (average) on 2 in. by 1 in. nominal battens at 1 ft. 4 in. centres. As a base for plaster these boards minimise drumming. The following tables give the results of tests carried out at the National Physical Laboratory:

TABLE 1.  
SOUND ABSORPTION COEFFICIENTS OF LLOYD INSULATING BOARD. REPORT S.258—18th JANUARY, 1935.

Material as tested.	Absorption coefficients (to nearest 0.05) for frequency bands in region (cycles per second).			
	250	500	1,000	2,000
Insulating board $\frac{1}{2}$ in. thick approx. Nailed to $1\frac{1}{2}$ in. by $\frac{1}{4}$ in. vertical battens on 16 in. centres, and $1\frac{1}{2}$ in. by $\frac{1}{4}$ in. horizontal battens on 10 ft. centres. Nails spaced at 4 in. centres round edges of boards, and at 8 in. centres on remaining battens.	0.40	0.35	0.35	0.40

TABLE 2.  
OF THE TRANSMISSION OF AIR-BORNE SOUND THROUGH A SAMPLE OF LLOYD  $\frac{1}{2}$  in. INSULATING BOARD. REPORT S.258—23rd JANUARY, 1935.

Description.	Frequency (cycles per second).	Sound reduction factor (R).	Sound reduction in decibels (10 log <sub>10</sub> R).
Insulating board, $\frac{1}{2}$ in. thick. Weight 0.77 lb. per sq. ft.	200	80	19
	300	160	22
	500	160	22
	700	125	21
	1,000	1,600	32
	1,600	2,000	33
	2,000	1,250	31
	4,000	2,500	34

TABLE 3.  
ON THE THERMAL CONDUCTIVITY OF A SAMPLE OF LLOYD  $\frac{1}{2}$  in. INSULATING BOARD. REPORT No. H.1496—PHYSICS DEPT.—29th JANUARY, 1935. Insulating Board (approximate density 16 $\frac{1}{2}$  lb. per cu. ft.).

Cold face temperature.	Hot face temperature.	Thermal conductivity.	
		Gram. calcs. per sq. cm. per second for 1 cm. thickness and 1° C. difference in temperature.	B.Th.U. per sq. ft. per hour for 1 in. thickness and 1° F. difference in temperature.
18 64	30 86	0.00012	0.34

*Lloyd building boards*: The texture and density of these boards is equivalent to that of the insulating board and the thermal conductivity is the same.

*Lloyd hardboards* have a higher resistance to moisture penetration than insulating board. One surface of these boards is smooth and requires no finishing treatment, the other is textured. To ensure dimensional stability, hardboards should be kept on site as long as possible before fixing under conditions as similar as possible to their final environment.

This Series of Sheets on Lloyd boards covers general data, applications, fixing and thermal and sound insulation.

Compiled from information supplied by:

**Bowaters Building Boards Limited.**

Address: Harewood House, Hanover Square,

London, W.1.

Telephone: Mayfair 9266.

**Irish Wallboard Co., Limited.**

Address: Athy, County Kildare.

Telephone: Athy 80.



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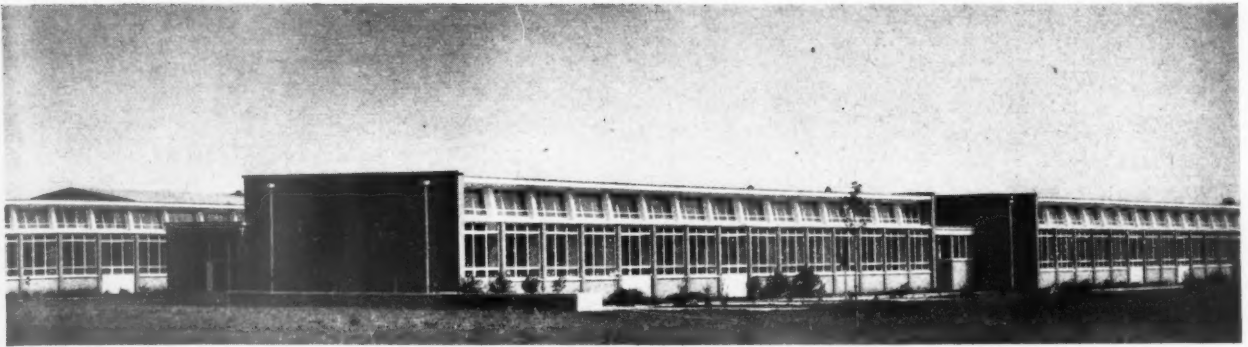
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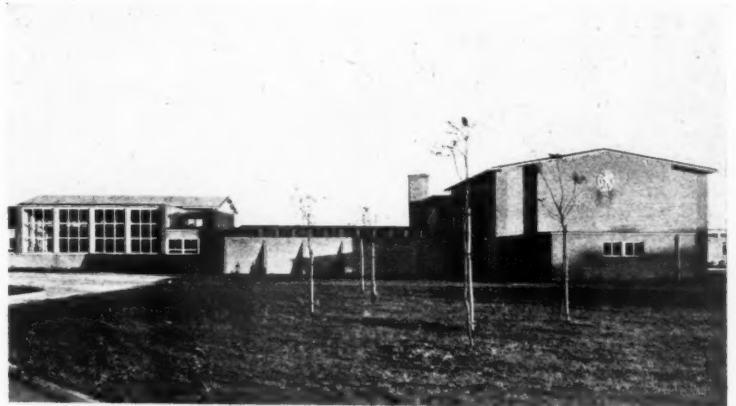
*Above: classroom block, from the south-west; another classroom wing can be seen on the left.*

boiler house is on the north side of the main approach.

**CONSTRUCTION.**—Foundations: RC ground beams on mass concrete bases at approximately 8-ft. centres. Walls: 11½-in. cavity construction; south sides of classrooms, brick piers supporting wide transoms, above which are short precast concrete columns sloping slightly inwards and supporting the roof. Roofs: asbestos cement cavity decking units, 8 ft. or 8 ft. 3 in. long, supported on rolled steel joists over classrooms and welded steel lattice trusses over assembly and dining halls; ½-in. asphalt on felt underlay, topped with white spar. Ceilings: classrooms and halls, fibre board supported with secret fixings hung from steel beams or roof trusses; elsewhere, insulating spray finish

applied direct to soffits of decking units. Windows purpose made, of galvanized steel.

**FINISHES.**—Floors: classrooms, dining hall and administration wing, wood block; cloakrooms, granolithic; corridors, asphalt tile; assembly hall, wood strip; kitchen, quarry tile. Walls: exterior, selected yellow stock bricks with horizontal joints pressed in with a rod; classrooms, fair faced and distempered above facing brick dado; cloakrooms



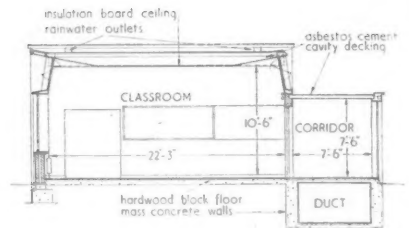
*Right, from the north-west; the dining hall is on the left; the assembly hall on the right. Below, the assembly hall. Below right, the dining hall.*



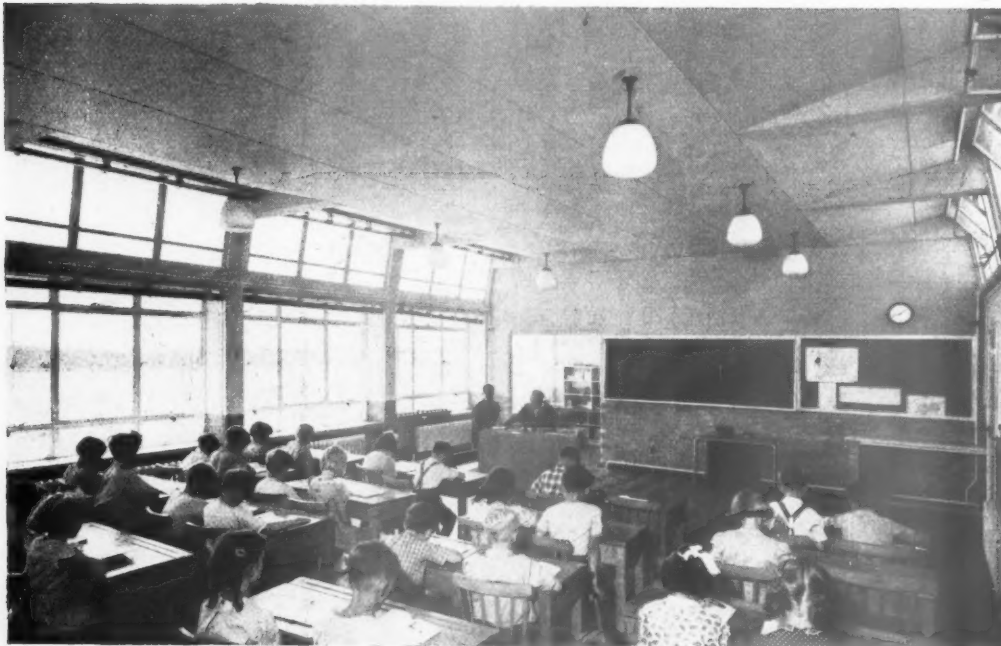


and corridors, cement glazed dados; administration wing, plastered and distempered.

**SERVICES.**—Heating: solid fuel boiler, accelerated low temperature hot water system, radiators. The general contractor was R. J. Barwick. A list of sub-contractors appears on page 60.

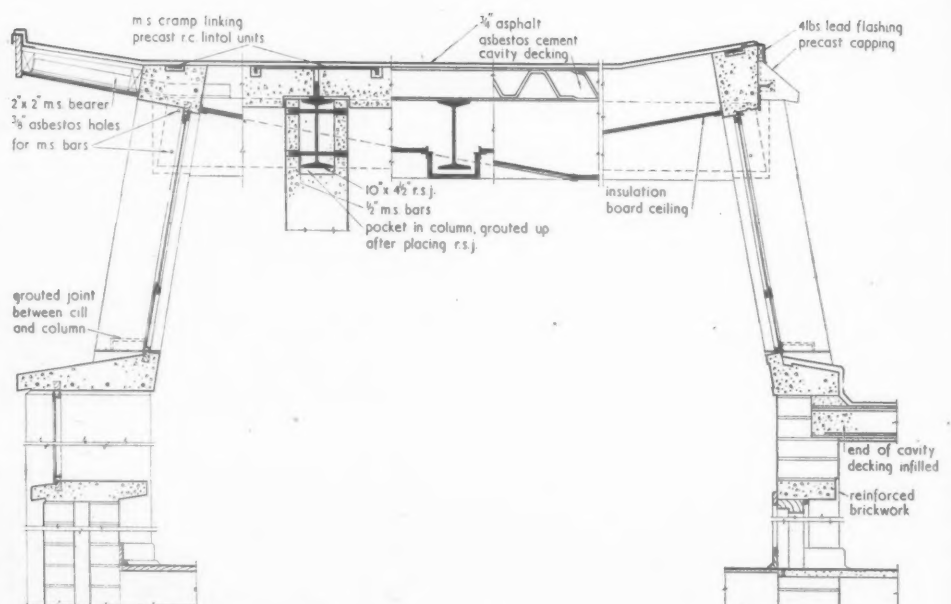


Section of classroom [Scale: 1/4" = 1' 0"]



*A classroom. Careful study of daylight curves led to the conclusion that unless top lighting was to be accepted, it was essential to slope the clerestory inwards so as to obviate the shadow normally cast by the cill.*

**PRIMARY SCHOOL**  
in MANSTON ROAD,  
RAMSGATE, KENT  
designed by HOWARD V.  
LOBB AND PARTNERS



Detail of section through classroom [Scale: 1/4" = 1' 0"]

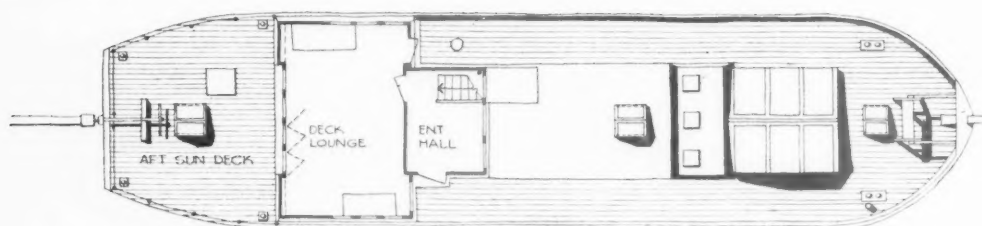
## THAMES BARGES

converted by P. H. LAURENCE

Two Thames barges have been converted for use as floating houses. The *Crouchbelle*, which has a deck length of 85 ft., a beam of 20 ft. 6 in. and a floor area of 1,550 sq. ft., was converted in 1950. The *Humber*, with a deck length of 78 ft., a beam of 18 ft. and a floor area of 1,050 sq. ft., was converted in 1948.

*The main lounge of the Crouchbelle, looking aft.*





Main deck


The lower deck of the *Crouchbelle* [Scale:  $\frac{1}{16}'' = 1' 0''$ ]

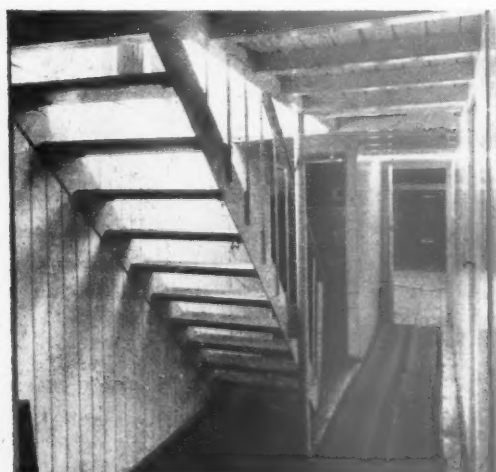
## BARGES

converted by P. H. LAURENCE

**PLAN.**—*Crouchbelle*. The client wanted a relatively spacious bathroom, a utility room, two-way fitment between the kitchen and dining area, a cocktail bar, a separate entrance hall, and a deck lounge opening on to the aft deck. To save space and economise in furniture, built-in wardrobes to each cabin were provided, arranged so as to afford sound insulation between cabins. Bunks with drawers, dressing tables, chest of drawers, shelves and cupboards were also built-in. *Humber*. The client wanted a large lounge, with plenty of storage


The aft sun deck of the *Crouchbelle*

The central passage of the *Crouchbelle*, looking forward towards the main lounge.



accommodation and shelving for books and ornaments. The sleeping quarters were required to be divided, with separate accommodation for the owner and guests, hence the provision of two bathrooms. To compensate for the lack of a garden, the raised roof over the main lounge was strengthened to take tubs for flowers, shrubs, etc., and for sitting out during the summer.

**CONSTRUCTION.**—The hulls of both barges have outer and inner skins of 3-in. planks, secured to 5-in. sq. framing, forming a type of cavity construction. This framing is secured to keelson, chimes, inwhales, etc. Partitions are 1½-in. studs



*The main lounge of the Humber looking aft.*

faced with  $\frac{1}{2}$ -in. V-jointed t. and g. matchboarding. The external main deck walls have 2-in. framing with metal faced ply outside and hardboard inside. The new roof deck covering is painted canvas on mastic, 1-in. boards and  $\frac{1}{2}$ -in. insulation board. The main decks are waterproofed. Windows in

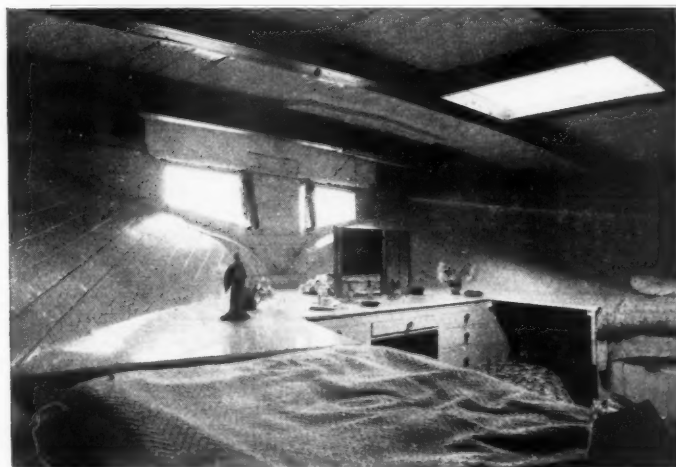
main deck superstructure are purpose-made aluminium with plate glass.

**SERVICES.**—Each barge has an independent boiler for hot water supply and partial central heating. The entrance hall of the *Crouchbelle* is warmed

*The deck lounge of the Crouchbelle*



*The owner's double cabin on the Crouchbelle*



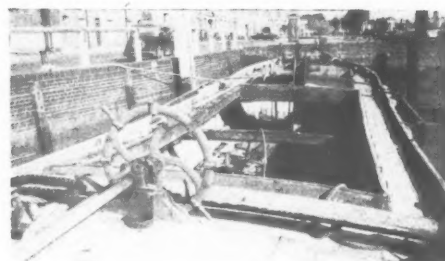




*The Humber.*

## BARGES

converted by P. H. LAURENCE.

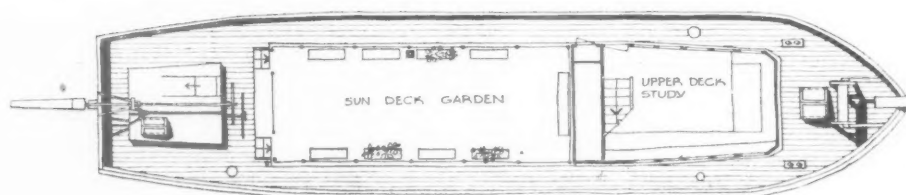


*The Humber before conversion.*

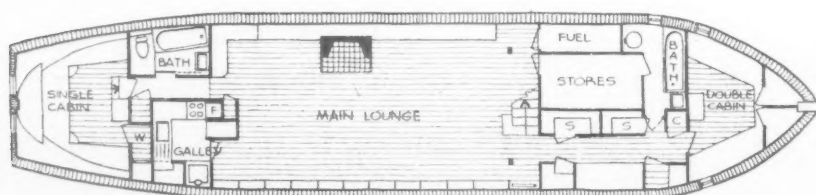
by the flue pipe from the boiler. The central area is warmed by pipe runs to the linen cupboard and the radiator in the main lounge. All rooms have electric power points. Electric light and power installation has an independent charging set with changeover switch for main supply. The *Humber* has an open fire in the lounge and a bottled gas geyser in the forward bathroom.

**COST.**—Purchase, towing and repairs cost £420; the tender price of conversion was £2,410 for the *Crouchbelle*. Purchase, towing and repairs for the *Humber* cost £450. The tender price for conversion was £1,545.

The general contractors for the conversions were the Thames Repair Co.



Main deck



Lower deck of *Humber* [Scale:  $\frac{1}{16}$ " = 1' 0"]

## TECHNICAL SECTION

Much important information and interesting critical comment appears in the Information Centre of the JOURNAL—tucked away in odd corners of the Technical Section, in, unfortunately, small type. This week is somewhat exceptional and we make no apologies, therefore, for drawing readers' particular attention to, first, items 13.99 and 16.95 (pages 55 and 59 respectively), in which Specialist Editor No. 12 (General Construction) comments on some of the anomalies of the MOW Economy Memoranda. Second, to item 14.56, in which is mentioned some of the precautions taken in the USA to avoid shrinkage cracking in concrete block walls. Third, item 18.116, in which some of the advantages of using high-strength vibrated concrete are cogently outlined. And, fourth, item 25.88, an abstract of the first BRS Digest on One-Pipe Plumbing (others are to follow). In this Digest, it is pointed out that, if it is properly designed, a single-stack plumbing system for a two-storey house need have no anti-siphonage vent pipes.

This week's  
special article

### 17 CONSTRUCTION : GENERAL new model byelaws

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

*For many years architects have been demanding new byelaws—byelaws that would give them the freedom they have long wanted to exploit new materials and methods of construction to the best advantage. "To what extent does the new series of Model Byelaws, recently published, fulfil their expectations of byelaws that are more appropriate to the second half of the 20th century?" asks the anonymous author of the following article. A further article will deal with the important new fire-resistance clauses and compare certain aspects of the new Model Byelaws and the new LCC Byelaws. Readers are recommended to have a copy of the Model Byelaws (HMSO, 1952, 2s.) by them as they read the article.*

At a first glance, the byelaws seem little changed. The definitions and preliminary clauses are much the same as in the old byelaws, and the "exceptions," such as those for "buildings for storage," are also familiar. At the end, the "chimneys, flues and hearths" clauses too are reminiscent of the old byelaws. It is between these two groups of clauses that some radical

changes are to be found; and it is perhaps unfortunate that these changes (changes, in fact, for the better) are sandwiched between relatively obsolete material.

There are two types of clause in the new byelaws. Clauses in ordinary type are functional clauses that express requirements in terms of performance standards that must be satisfied by

the building, leaving the architect complete freedom as to the means by which he meets the requirements. Clauses in italics describe methods of design or details of construction which will be "deemed to satisfy" the functional requirements. The architect may adopt these, but is not under any obligation to do so.

The new byelaws are complicated, but so were the old (what could have been more confusing than some of the old byelaws relating to walls?). Hence, in order to use the new byelaws to the best advantage the architect will have to study them carefully, and he will also need a thorough knowledge of materials, soil mechanics, structural design and, possibly most important of all, fire resistance. The task of assimilating the fire protection clauses is a formidable one, but the freedom given to the architect by the other clauses depends very largely on these new fire-resistance clauses.

Standards for thermal insulation appear for the first time. This is most gratifying, especially as there was some doubt during the preparation of the byelaws as to whether they would, in fact, be included. It is regrettable, however, that standards for sound insulation have not also been included; it is true that there would be difficulties in doing this, but it would have been well worth while trying to overcome them.

A notable omission is the old requirement that windows should be at least  $\frac{1}{10}$  the floor area. In fact, no clause appears to control the day-lighting of buildings, although attention is drawn, in the foreword, to BS C of P 3—Chapter 1 *Daylight*. It is to be hoped that this omission will not lead to a regression in daylighting standards when specialist advice is not available.

#### MATERIALS (Byelaws 13-14)

All the old clauses have been replaced by a single functional clause (13), that in simple words demands that every material shall be of good quality and properly used. This is followed by a "deemed to satisfy" clause that accepts any material complying with a BS covering quality of workmanship, and any methods of applying or fixing the material laid down in a Code of Practice. This is a typical "deemed to satisfy" clause and any material not covered by a Standard or Code can still be used, provided evidence of its suitability for use in a particular situation is forthcoming. This clause clearly places on the architect, builder and local authority great discretionary powers and responsibility.

Thus the architect is given full scope for using new materials; local authorities will, it is hoped, use their new discretionary powers wisely; and in many cases the evidence of suitability will have to be furnished by the manu-

facturer, and, presumably, very often obtained from BRS.

#### SITE CONCRETE (Byelaws 15-18)

There are minor modifications and additions, the most significant of which is that the mixes for site concrete are now specified. Over-rich mixes, leading to waste of cement, have been common in local authority work.

#### FOUNDATIONS (Byelaws 19-21)

The functional foundation clauses differ little from those of the old byelaws, and it is in the subsequent "deemed to satisfy" clauses and table that much progress is evident, for the width of foundation is now related to the loading and to the class of soil. For a normal two-storey house a foundation 12 in. wide is now considered adequate on a good soil, as compared with 18 in. required in the past. Much economy is evident here and the byelaws as a whole have been much clarified.

#### GENERAL LOAD-BEARING REQUIREMENTS (Byelaws 22-27)

The old foundation clauses were followed by a lengthy series of clauses relating to walls—a set of clauses that had been added to and modified over the years and had become cumbersome and unsatisfactory. Now all these clauses have been eliminated and we find in their place a simple clause that can be regarded as truly a "model" byelaw, for it says simply: "The load-bearing structure of a building above the foundations shall be capable of safely sustaining and transmitting the dead load and superimposed loads and the horizontal and inclined forces to which it may be subjected without exceeding the appropriate limits of stress for the materials of which it is constructed and without undue deflection."

This is followed by an important paragraph laying down dead and imposed loads. A series of "deemed to satisfy" clauses follow, the first of which brings to the fore the anomalous position that we still have two Codes for the design of structural steelwork.

Aluminium finds its place in the series of structural materials to which these clauses relate but we find there is no Code for this material.

The ancient rule of thumb clauses for walls that at one time were the backbone of the byelaws are relegated to a schedule. The priority of position given to the design basis for load-bearing walls (it was formerly subsumed in the "rule-of-thumb" clauses) will, it is hoped, lead to a greater use of "designed brickwork" and to the economies that this can achieve.

#### WALLS: RESISTANCE TO WEATHER AND DAMP (Byelaws 28-31)

These are new clauses made necessary by the "functional" treatment. The

first relates to weather resistance and the second to protection against ground water. There are two features of interest in the latter. First, the need for protection against ground moisture is extended to factories (formerly it applied only to domestic buildings, although few architects in recent years would have erected any building without some form of D.P.C., so that the new byelaw merely consolidates existing practice). Second, that the byelaw, by its very form, admits methods of preventing the rise of ground moisture other than that of introducing a D.P.C., and thus frees designers from the absurd positions into which they have often been forced in the past. A damp-proof course is now merely a "deemed to satisfy" method of protection against rising damp.

The paragraph that follows must be closely studied, for it covers a multitude of other matters that need attention to ensure adequate protection against dampness from the ground. Careful detail design is needed here and the byelaw is a good example of the way in which the functional approach, whilst giving freedom, imposes greater responsibility on the architect for detailed design.

#### FIRE RESISTANCE (Byelaws 32-49)

Byelaws 32-49 and part of 50 relate to fire protection requirements and will be discussed separately in a later article. It is not clear where the fire resistance clauses end if one relies on the heading on p. 25.

#### FLOORS (Byelaw 52)

Clause 52 (i) is a new functional clause concerned with protection against rising ground moisture and is followed by two "deemed to satisfy" paragraphs that merely bring together clauses that were scattered throughout the former byelaws. Architects should notice that the specific clause in the former byelaws relating to prevention of dry rot in solid floors is now covered by this clause; as is the way in which damp prevention measures in walls must be linked with those in floors.

#### CHIMNEYS, FLUES AND HEARTHES (Byelaws 53-68)

There are some changes here that are difficult to follow and suggest hasty revision and imperfect knowledge. In general, the clauses do not modify existing practice, and there are relics of the Victorian age in byelaw 54 (a) which incidentally includes a misprint. With changes in practice, byelaw 54 (d) may be seriously misinterpreted to mean that an independent chimney in a house need not conform with normal practice. The proviso to clause 60 (i) requiring  $8\frac{1}{2}$  in. of material around that part of a chimney passing through a roof covered with thatch or other incombustible material is new and

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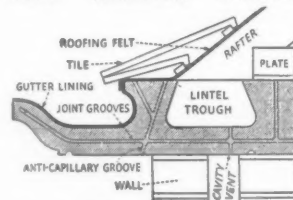
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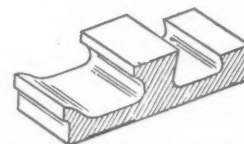
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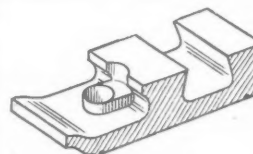
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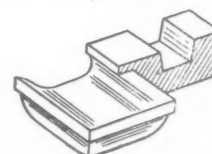
This sectional drawing shows the system in detail and illustrates the ways in which FINLOCK saves approx. 5 yards of brickwork, 80 ft. of rafter, 40 ft. of normal guttering, 40 ft. of fascia, 40 ft. of soffit and 80 ft. super of roof tiling per single house. Painting is eliminated and a reduction in down pipes and drainage is obtained. The complete eaves for a building, with all fittings, can be fixed in one day. Some typical FINLOCK units are shown on the right:—



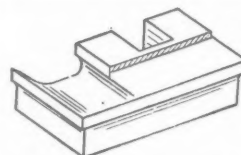
Finlock "N" Type Gutter block enabling lintels to be cast *in situ* if required.



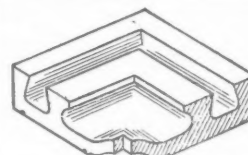
Finlock "G" Type Gutter block enabling lintels to be cast *in situ* if required, but illustrating soil vent.



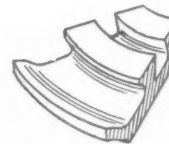
A typical standard stopped end for use on gable end walls, available for all type Gutters.



Illustrating a flush stopped end where this is also made with moulded return, available for all type Gutters.



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likely to lead to difficulties with concrete roofs covered with felt.

Byelaw 65, also new, requires chimneys to be weatherproof, while byelaw 66 reduces the minimum permissible projection of a chimney above the ridge of a roof with a slope of more than 15° to 2 feet.

Byelaw 75 increases the space required at the rear of dwellings to 300 sq. ft.

#### VENTILATION OF BUILDINGS (Byelaws 79-82)

There are some significant changes in the ventilation clauses. Under the heading "Ventilation" in the former byelaws, every habitable room was required to have a window area of  $\frac{1}{10}$  the floor area (this was, in fact, a daylighting requirement), of which  $\frac{1}{2}$  had to be openable for ventilation. The daylighting requirement has now, as stated above, been omitted, so only the requirement that there should be openable windows  $\frac{1}{20}$  the floor area in every habitable room remains.

The requirement that there should be a "ventilator" in every habitable room has also been omitted. This is a sensible move—these ventilators are more often than not sealed up by comfort-loving tenants. Instead, there

is now a functional clause on Ventilation—Clause 79 (1). In view of this, it is a pity that Clause 79 (2) requires that openable windows be provided even where there is a system of mechanical ventilation.

The reduced minimum height of 7 ft. 6 in., discussed recently *ad nauseam*, is consolidated in Byelaw 83.

#### THERMAL INSULATION OF HOUSES (Byelaw 84)

The functional clause is 84 (1) and ideally the performance standards that follow should be part of this. There appears to be some confusion here in the way the clauses have been set out, but their purpose is reasonably clear.

The Ministry has retained the solid wall as acceptable construction, despite the fact that it falls well below the performance standard set out in the paragraph that follows.

It should be remembered incidentally that recent research has shown that the thermal capacity of a wall also is an important factor in saving fuel.

The solid concrete floor is accepted without demur, but the simple butt-jointed board floor is excluded (presumably unless some additional provi-

sion for thermal insulation is made). Draughts through the cracks should be a thing of the past.

Although, as yet, imperfect, this byelaw represents a step in the right direction, and will be of particular importance for builders of non-traditional houses. Let us hope that the appeal for better thermal insulation which appears in paragraph 17 of the foreword, will be heeded by builders of traditional houses.

#### OTHER BYELAWS AND SCHEDULES

The clauses in Part IV "Works and Fittings," need no explanation, and the loading schedule conforms with the BS C of P already well known to architects.

The third schedule consists of the old walls clauses which now find their true place. Specific requirements are now laid down for the materials to which the schedule applies, but the most significant change is that the tables have been made to conform with the corresponding figures in the LCC byelaws. The differences between the tables were not substantial, but it is a sound move to correlate the two sets of regulations.

## 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.*

*Headings below.*

#### 13.99 materials: timber ECONOMY

*Use of Timber in All Building Work. MOW Economy Memoranda No. 4. (HM Stationery Office. 1952. 6d.)*

This Memorandum has been approved by MOHLG and includes "restrictions" as well as recommendations. It will, therefore, be necessary to refer to it during the preparation of drawings and specifications, especially for housing work. Sizes of structural timbers, it says, "could be safely accepted by local authorities as satisfying by-laws, even when they diverge from their published tables." Does this mean that local authorities must or may enforce the sizes given in this Memoranda?

There are many suggestions for using hardwood in place of softwood. Extra expense is admitted, but it is suggested that in the case of windows the extra first cost will be balanced in part by lower maintenance costs. Even hardwoods have to be oiled

and many people would be sorry to lose the decorative value of paint on housing work, but in any case will the authorities grant extra licences for the cost of such hardwood on private housing or approve the extra first cost on public housing work? The virtues of low pitched roofs as timber-saving devices cannot be refuted, but the present tendency for all houses to be of one pitch and, therefore, covered with large interlocking tiles is having a most unfortunate effect on the appearance of the countryside as all variety of treatment is being lost. Apparently this part of the Memoranda is merely a statement of fact, as it does not seem to be part of the restrictions that roofs must be low in pitch. (Memoranda No. 3, incidentally, suggests using the roof space for rooms, in order to reduce wall heights and economize in bricks.)

The bulk of the Memoranda consists of a tabulated list of 59 items where "in the absence of any special circumstances restrictions will be applied to the use of softwood in buildings." Presumably non-conformity to these 59 articles will mean rejection of licence applications. There are appendices dealing with structural timber in which permissible sizes are tabulated.

All this seems much too complicated. At least in the case of houses, an overall restriction of "x" standards per house and no interference from anyone would cause far less annoyance and probably far less waste of time both in drawing offices and in officials' offices. If a greater economy than is at present in force is necessary, surely the answer would be to reduce "x" and to leave us all to use our ingenuity to meet the situation.

#### 13.100 materials: timber TIMBER RESEARCH

*Forest Products Research, 1951. DSIR (HM Stationery Office, 1952. 3s.)*

Annual report of year's work including a number of items of interest to architects as general information, though in most cases

not referred to at sufficient length to give useful conclusions or data.

Items of particular interest include references to tests on wood-block flooring over heated floors, and more news of the Longhorn beetle, which has appeared in recent years, the completion of a new structures testing laboratory big enough for testing large trusses; and the accumulation of data on further types of hardwood.

A good report for architects to read in order to acquaint themselves with the advice they can get either from FPRL publications or, sometimes, from direct inquiry.

#### 14.56 materials: concrete CONCRETE BLOCKS

*Concrete Blocks in America. R. Whitaker. (RIBA Journal. Nov., 1952.)*

3-pp. article on the use of concrete blocks, mainly for dwellings, in the USA. Comparative cost figures somewhat misleading.

Concrete blocks are used to a considerable extent in America, both for internal and external walls and for decorative purposes. Manufacture is fully mechanized, including stacking and loading, and the blocks, which are usually steam cured, are stronger than is usual here. A table gives comparative costs of 8-in. walling and, while total costs may be somewhat misleading owing to variations in the price of materials and

(continued on page 59)

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

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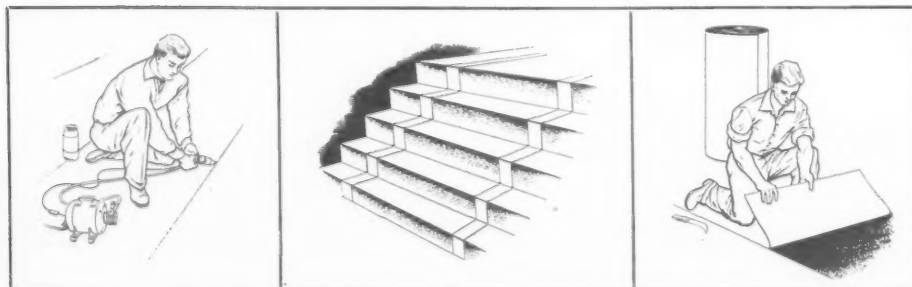
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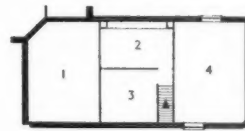


## GUY'S MAUDSLEY NEUROSURGICAL UNIT, DENMARK HILL

This neurosurgical unit, the first building in this country designed specially for the purpose, was opened recently by the Rt. Hon. Viscount Waverley. It consists of two converted ward units, comprising the ground floor of an existing ward block, and a new single-storey extension to the south. Each of the ward units contains two five-bed and five one-bed wards, kitchen, nurses' duty room, bathroom, sluice room, examination room, clinical room, linen and other stores, and separate toilets for patients and staff. Between the five-bed ward, where the seriously ill and post-operative patients are accommodated, and the duty room, is a glass panel through which the nurses can supervise the ward. The entrance to the neurosurgical unit and wards has been so arranged that circulation for the



unit is not interfered with by the circulation of the non-neurosurgical wards above. The broken lines on the plan, top right, indicate patient and staff circulation from the wards and the staff rooms respectively to the operating theatres; the patient passing first through the anaesthetising room, the staff through the changing room and "scrub-up" (seen on the left of the photo above of the main operating theatre). A unique requirement was accommodation for the electroencephalographic unit. This consists of the recording room, containing the equipment, and a quiet room screened against electrical interference. The unit serves two purposes: firstly, the routine measurement of impulses from the brains of patients; secondly, the measurement of these impulses whilst the patient is undergoing a brain operation. For this latter purpose the recording apparatus must be wheeled into the

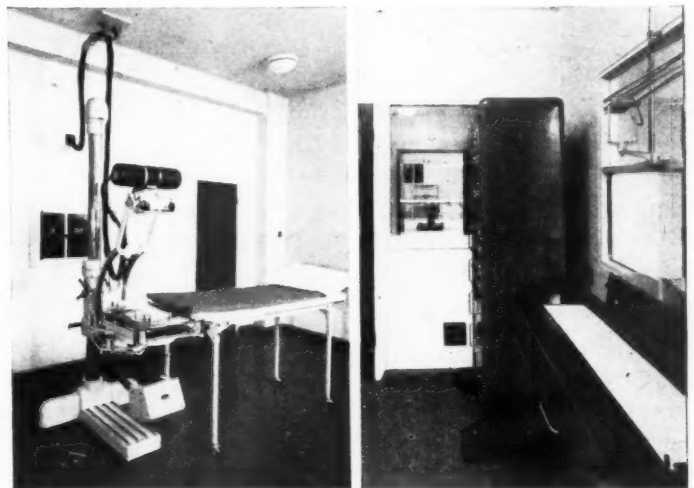
Ground floor [Scale:  $\frac{1}{16}$ " = 1' 0"]

Mezzanine

- KEY
1. Apparatus and bins
  2. Sluice
  3. Sterilizing
  4. Sterilizing
  5. Nurses' workroom
  6. Nurses' changing
  7. Sister
  8. E.E.G. laboratory
  9. Minor theatre
  10. Circulation
  11. Operating theatre
  12. Scrub-up
  13. Director's changing
  14. Surgeon's changing
  15. Tea room

16. Radiologist
17. Radiologist's secretary
18. Quiet room
19. Pathologist
20. Anaesthetising
21. Area
22. Skull room
23. Control room
24. Dark room
25. Wet films
26. Tilting table room
27. Film store
28. Conference room
29. Staff room
30. Visual fields
31. Assistant surgeon
32. Patients' lavatories: female
33. Patients' lavatories: male
34. Waiting
35. Sister
36. Examination lobby
37. Secretaries
38. Surgeon
39. Secretaries
40. Lift
41. Entrance hall

- Mezzanine
1. Upper part of skull room
  2. Records
  3. Mixing room
  4. Upper part of tilting table room



theatre, where the surgeon can see it, and plugged into terminals connected to the apparatus in the EEG room. It was also required that the operating table should be visible from the EEG room, and a window let into the wall of the latter (see photo above right) makes this possible. In addition to the ordinary X-ray room, there is the skull room (22 on plan), containing special equipment (above left) for taking X-rays of the brain.





A 32'-0" clear span prestressed roof slab being hoisted into position on a building erected by the Ministry of Works.

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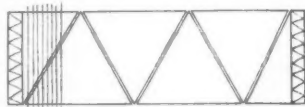
**SPECIALISTS IN PRECAST FLOORS SINCE 1919**

*Below is a report of the paper on prestressed concrete given by O. J. Masterman to the RIBA recently, and the ensuing discussion. A more highly technical paper on the same subject given a few days before at the Institute of Civil Engineers will be commented on by the JOURNAL's Specialist Editor No. 13 (Structural Engineering) in a forthcoming issue.*

## PRESTRESSED CONCRETE

On December 16, O. J. Masterman presented a paper on prestressed concrete at the RIBA. Replying to questions, he described an ingenious method of prestressing a concrete slab in two directions, with wires in only one direction. This technique, which was used first by Freyssinet for a runway at Orly airport and has since been used at London airport, makes possible the prestressing of a slab of almost any length, and several hundred feet wide.

The slab, which consists of rows of yard-square precast units, is divided up into several large triangles (as shown in the diagram), separated by rollers. The ends are



buttressed, and post-tensioning wires are placed across the slab in the grooves between the rows of precast units. When the stress is applied to the wires, the slab is not only compressed across its width, but the pressure also squeezes the triangles closer together. The free movement of the triangles due to the rollers results in a movement which tends to increase the length of the slab. This is prevented by the buttresses, so the slab is compressed (or prestressed) longitudinally as well as cross-wise.

In his paper, Mr. Masterman had described various methods of applying prestress, including an unusual German method of post-tensioning "in which the jacks which do the tensioning are made of reinforced concrete and are left permanently in the structure."

### THE ADVANTAGES OF PRESTRESSED CONCRETE

Mr. Masterman outlined convincingly the many advantages of prestressed concrete, in addition to steel saving, which he said had at one time been put forward as the principal advantage. Among these advantages were "that... maximum spans can... be doubled"; that precast units "can be handled—and indeed mis-handled—with much more safety" and need no special handling steel; and that the material had (as tests had shown) "excellent fatigue strength."

One particular advantage which Mr. Masterman thought was likely to be much more exploited was "the possibility of making prestressed components and even whole structures out of short precast sections of concrete."

[As at the Fairway Café at the South Bank Exhibition and the prestressed concrete hangars at London airport (JOURNAL for December 4, 1952).]

Mr. Masterman assured his audience that "prestressed floors can be treated in the same way as reinforced concrete floors where improved sound resistance is required," and that "while... the question of fire resistance... is still *sub judice*, results of a comprehensive test programme should not give cause for apprehension... a number of post-tensioned beams (scaled down)

have now been through the standard test laid down in BS 476 and have behaved satisfactorily"... and L. A. Ashton, in a paper in the *Civil Engineering and Public Works Review* for December, 1951, had quoted the results of a number of *ad hoc* tests from which it could be seen that all the constructions tested except one "would be suitable from the fire resistance point of view for use in flats, offices, schools, hospitals, etc."

On the question of cost too, Mr. Masterman was able to give encouraging information. He quoted tenders for multi-storey flats submitted recently to the LCC by the principal flooring firms. The average prices of firms tendering for prestressed concrete floors came out, he said, at the same figure as the average of the hollow-tile firms and

about 8 to 10 per cent. cheaper than that of the precast concrete firms. At a bus garage at Bournemouth, Mr. Masterman added, prestressing of the 150 ft. span shell roof had been estimated by the engineers to have effected a 20 per cent. saving in the cost of the building.

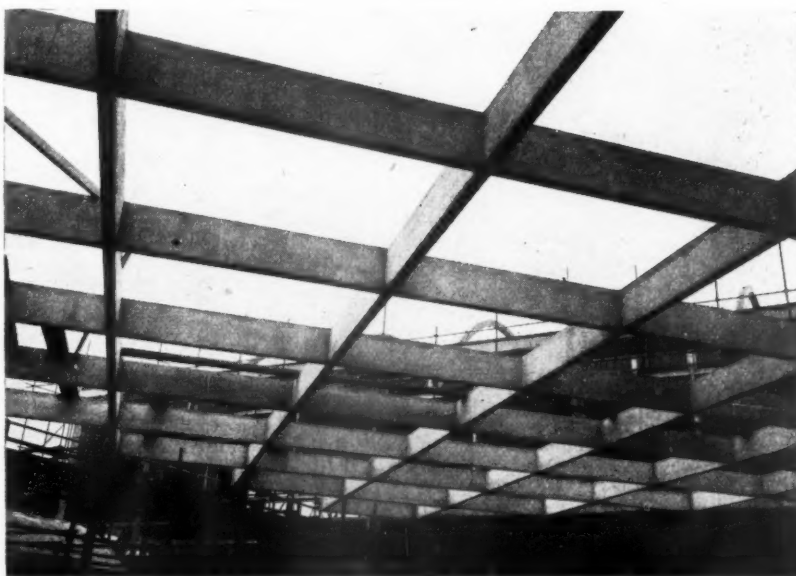
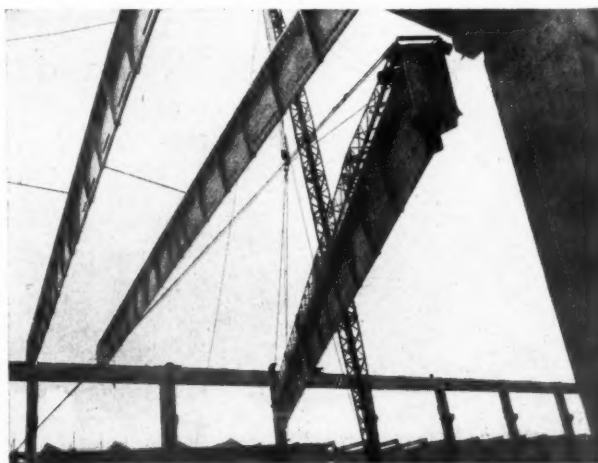
In reply to questions, Mr. Masterman stated that the thermal coefficient of prestressed concrete was the same as for ordinary reinforced concrete; that exceptionally strong mixes were not required (1:1½:3, or 1:2:4 if alumina cement was used, was adequate provided mixes were not too wet); and that the only limit to the length of, say, a road to be prestressed longitudinally was the length of cable available—there was already at least one example 600 feet long.

Asked about patents, Mr. Masterman said that Freyssinet's original patent had run out, but that there were many new ones. The position at the Patents Office was, he said, hopeless—there was so much congestion there that it sometimes took as long as two years to get information on a provisional patent.

### "THE POSITIVE APPROACH TO ECONOMY"

The vote of thanks to Mr. Masterman was proposed by Edward D. Mills, who said that the figure of 270, quoted by the speaker as the number of jobs in this country for which prestressed concrete had been used, should help architects to convince their clients that

*The use of short precast units for prestressed concrete work. Right, secondary beams used at London airport, consisting of 7-ft. lengths, post-tensioned on the site to form 110-ft. beams. Below, the roof of the Fairway Café of the South Bank Exhibition, which consisted of short lengths, post-tensioned when in their final position to form a "diagrid" type of roof.*





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prestressed concrete was not a "new fangled" idea. He paid tribute to the part MOW had played in developing prestressed concrete. "I hope," he said, "that the success of the positive approach to economics in building materials will encourage the Ministry to develop this line of action, as opposed to the negative one which recommends reductions of standards, both of materials and workmanship."

F. J. Samuely, who seconded the vote of thanks, said that Mr. Masterman's figure of 270 prestressed concrete jobs in this country was an under-estimate and should have been nearer 400. He made his customary plea for the use of a composite form of construction, in which only the tension zones of members were prestressed, the remainder being in ordinary concrete.

#### PRE- OR POST-TENSIONING ?

With regard to the problem of when to use pre- and when to use post-tensioning, Mr. Samuely said that he had found a definite range of spans in which one was economical and another in which the other was economical—up to 30 ft. for pre-tensioning; above 30 ft. for post-tensioning. It was essential, he said, for small spans that there should be plenty of repetition, otherwise precasting was not economical. Precast units over

35 or 40 ft. long were difficult to transport and therefore uneconomical.

Over 30 ft., Mr. Samuely continued, post-tensioning became cheaper, because the principal item of cost was the end anchorages which cost the same whatever the length of the beam. It might be better, as Mr. Masterman had suggested, to use a series of short units, strung together like a string of beads.

#### INDIRECT SAVINGS

Compared with ordinary reinforced concrete, Mr. Samuely said that long spans were cheaper prestressed; with 12-ft. spans, prestressed beams were slightly dearer; at 24 ft., about the same. But, he added, in most cases there were indirect savings as well. These indirect savings could be quite remarkable. As Mr. Masterman had said, prestressed beams were shallower and therefore gave more headroom; this might make it possible to use only prestressed floor slabs instead of beams and slabs, thereby eliminating the need for false ceilings. It was possible to span 30 ft. with a prestressed concrete beam only 9 in. deep, whereas ordinary reinforced concrete would need to be 16 to 18 in. deep; this might mean that with a multi-storey building an extra storey could be got in within the permissible height.

(continued from page 55)

labour, the man-hour figures show that block walling requires little more than  $\frac{1}{2}$  the labour required for brickwork. Whether further man-hours should be added to the figure for block walling for external finish, in cement paint or other waterproof coatings, is not clear.

Apparently the finishes, and especially the clean sharp arrises, are good enough to satisfy architects that interior work can often be left unplastered. Conduit runs are often housed in the block cavities. Cracking due to drying shrinkage seems to be a trouble in America as well as here, but precautions, such as dividing walls into panels and using mastic joints and the introduction of reinforcement in bedding joints, are used where the expense seems justified. Even so, the use of these blocks is confined mainly to small house building.

#### 16.95 materials: miscellaneous BRICKS

*Using Bricks to Best Advantage.* MOW Economy Memoranda No. 3. (HM Stationery Office, 1952. 2d.)

A very poorly written sheet of pious hopes about economy in brick usage in areas where there is a shortage of supply.

Suggestions for saving bricks by using terrace houses instead of semi-detached are hardly likely to be regarded seriously, as, in most cases, many other considerations are likely to outweigh the factor of shortage of bricks and some alternative solution would be found. To suggest that more accommodation be provided in the form of roof space with dormer or gable windows is also unlikely to be welcomed as a means of saving bricks, for, quite apart from amenity, it would be likely to increase timber requirement (contrary to Economy Memoranda No. 4) and would probably increase cost, with a consequent refusal of permission to build at all.

One sensible suggestion is that interior skins of cavity walls should be of solid or hollow blocks, instead of bricks. With some blocks, cement usage will be increased (contrary to Economy Memoranda No. 1), but at least better heat insulation would result.

After making a number of general suggestions of the above type, the Memoranda

goes on to suggest alternatives to brick. Why the suggested use of blocks for bricks in the inner skin of cavity walls is not an alternative is a mystery. Other alternatives include four items involving more cement usage. They also include a suggestion for the use of rat-trap bond for party walls and for rendered external walls. There are serious objections to both these ideas.

Altogether, one gets the impression that someone gave the order that a Memorandum on brick economy should be prepared and that some harassed and unfortunate individual shut himself in a room well away from all contacts and produced this very disappointing result.

#### 18.116 construction: theory VIBRATED CONCRETE

*Vibrated Concrete.* D. A. Stewart. (Civil Eng. & Public Works Review, Aug, 1952. pp. 745-747; Sept., 1952. pp. 835-838.)

Article on vibration of concrete with reference to materials employed and sections to be concreted.

Mr. Stewart has carried out considerable research in this field and its effect on the present uneconomic and inefficient use of concrete deserves wide publicity. Mr. Stewart suggests that, if the compressive strength of concrete in bending can be raised from 1,250 to 2,000 lb./sq. in., it would be possible to reduce the section of members and, therefore, dead weight, to eliminate compressive steel, reduce shear steel and allow the efficient use of high-tensile steels. Certainly, the advent of prestressed concrete has led to a more technical approach by contractors to the making of concrete, and while it would be impossible to employ high-strength concrete on every small job, it is definitely an economic proposition on a large job where the contractor uses weigh batching. The purpose of this article is to show the effects of the particle sizes in the mix and the manner in which they are vibrated together and around the reinforcement. The suggestion is made that a more rational design would be achieved by crowding the bars together to get a smaller section of beam, yet maintaining full compaction by the vibration of the smaller sizes of particles in the mix.

#### 23.166 heating and ventilation GAS DOMESTIC APPLIANCES

*List No. 2 of Tested and Approved Domestic Gas Appliances.* (Gas Council, Oct., 1952.)

This list, which cancels list No. 1 of September, 1951, covers cookers, refrigerators, gas fires, space heaters and portable heaters, water heaters, wash boilers and sundry appliances. It results from a programme of testing by the Gas Council's laboratories, and has been prepared in consultation with the Ministry of Fuel. It has been circulated to local authorities by MOHLG with the recommendation that only appliances from this list should be used in houses.

#### 25.88 water supply and sanitation ONE-PIPE PLUMBING

*One-pipe (Single Stack) Plumbing for Housing: (Part 1).* BRS Digest No. 48. (HM Stationery Office, Nov., 1952. 3d.)

A clear statement of the essential differences between two-pipe, one-pipe and single-stack plumbing systems, with an explanation of the factors which must govern the design of single-stack plumbing. Details of design methods will be given in the next Digest.

It will surprise some people to learn that for small houses ordinary one-pipe plumbing is not cheaper or more economical in material than the traditional two-pipe method. The single-stack method also will not show much economy unless the whole system, including the positions of fittings, is carefully designed.

If special multi-branch pipe fittings could be standardized—and the Digest offers hope that they might be—a useful economy might be made. The greatest advantage of single-stack plumbing in small houses is, therefore, the great improvement in appearance which results.

## ENQUIRY FORM

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## Buildings Illustrated

**MOE Development Work: Wokingham.** (Pages 41-44.) General contractor: Gilbert Ash Ltd., Sub-contractors and suppliers: steel frame, wall slabs, floor slabs, Hills (West Bromwich) Ltd.; heating, Weatherfoil Heating Systems Ltd.; copper wastes, Econa Modern Products Ltd.; boilers, Beeston Boiler Co. Ltd.; sanitary ware, Adamsez Ltd.; electrical installation, Hartley Electromotives Ltd.; ceiling panels ("Kisol"), William Kenyon & Sons Ltd.; partitions ("Bellrock"), Bellrock Gypsum Industries Ltd.; roof slabs, Thermacoust Ltd.

**Ramsgate Junior School, Manston Road, Ramsgate, Kent.** (Pages 45-48.) Architect: Howard V. Lobb and Partners, in collaboration with S. H. Loweth, F.S.A., F.R.I.B.A., Kent County Architect. Assistants: A. P. Hodgson, A.R.I.B.A., S. E. Aldridge, A.R.I.B.A. Quantity Surveyors: C. E. Ball & Partners, F./F.R.I.C.S. General contractor: R. J. Barwick. Sub-contractors: structural steelwork, Dorman Long & Co. Ltd.; bricks, Wills & Packham Ltd.; precast concrete, Girlings' Ferro-Concrete Co. Ltd.; artificial stonework, Liverpool Artificial Stone Co. Ltd.; metal windows, Crittall Manufacturing Co. Ltd.; asphalt work, Val de Travers Asphalte Paving Co. Ltd.; sanitary fittings, Associated Clay Industries Ltd.; hardwood block flooring, Hollis Bros. Ltd.; radio and electric installation, South-Eastern Electricity Board; fibreboard ceilings, Anderson Construction Co. Ltd.; "Pyrok" finishing, C. & T. Painters Ltd.; granolithic pavings, Plastona Ltd.; asphalt tile flooring, Marley Tile Co. Ltd.; "Insulight" double glazed units, Pilkington Bros. Ltd.; reinforced concrete roof lights, J. A. King & Co. Ltd.; cement cold glaze, Robb's Cement Enamel Finishes; metal faced w.c. partitions and doors, Flexo Plywood Industries Ltd.; metal cloakroom fittings, Clark Hunt & Co. Ltd.; ironmongery, Yannedis & Co. Ltd.; roller shutters (hardwood) Dennison, Kett & Co. Ltd.; terrazzo, Camden Tile & Mosaic Co. Ltd.; cavity decking to roofs, Turners Asbestos Cement Co. Ltd.; York stone paving, Joseph Brook & Sons; heating and hot water services, C. S. Thompson (Letchworth) Ltd.

**Neuro-Surgical Unit at Maudsley Hospital, Denmark Hill, S.E.5.** (Page 56.) Architects: Saxon Snell & Phillips. Consultants: Mechanical engineering services, J. Roger Preston & Partners; electrical works, Couzens & Brown. Quantity surveyors: Clevely & Bass. General contractors: Allen Fairhead & Sons Ltd. Sub-contractors: heating, hot water and ventilation, J. Jeffreys & Co. Ltd.; electrical installation, Read & Partners Ltd.; asphalt, The Limmer & Trinidad Lake Asphalt Co. Ltd.; reinforced concrete floors and roof, The Kleine Co. Ltd.; windows, instrument cupboards, lockers, etc., James Gibbons Ltd.; tiling and terrazzo, W. B. Simpson & Sons Ltd.; sanitary fittings, John Bolding & Sons Ltd.; X-ray apparatus, Philips Electrical Ltd.; operating theatre blinds, dark blinds and cubicle curtains, J. Avery & Co. Ltd.; rubber pavings, The North British Rubber Co. Ltd.; hardwood flooring, Horsley, Smith & Co. Ltd.; cement glaze dadoes, Robb's Cement Enamel Finishes Ltd.; inset sterilizing equipment, Chas. F. Thackray Ltd.

of Arts—the society which sponsored the paper.

The new architect for Groves and Whitnall Ltd., 274, Deansgate, Manchester, 3, is E. A. Wingrave, A.R.I.B.A., M.R.S.A.N.I.

Jack Whittle, A.R.I.B.A., recently took up an appointment as Deputy Borough Architect and Planning Officer of West Ham.

Mr. Chalcotte T. Gibson Henry, M.R.I.A.I., A.R.I.B.A., will be leaving London shortly for Karachi where he will work in association with the American architect, Mr. Benjamin K. Polk, on projects in Pakistan and India. His address will be Hotel Metropole, Karachi, Pakistan. He will be pleased to receive trade catalogues and up-to-date literature in connection with materials and equipment for hospitals, schools, and industrial buildings.

The practice of the late C. Howard Crane, A.I.A., Architects & Engineers, at 7, Buckingham Gate, S.W.1, is being carried on as C. Howard Crane & Partners, Architects & Engineers, at the same address, the partners being:—Mr. M. R. Beckstrom, A.I.A. (U.S.A.), Mr. John B. Guise, A.R.I.B.A., Mr. A. T. Davies, A.M.I.C.E., and Mr. W. J. Upfold, A.I.A.S.

Messrs. Spirax-Sarco Ltd., of Cheltenham, announce that, as a result of the amalgamation of the companies Spirax Manufacturing Co. Ltd. and Sarco Thermostats Ltd., the prices of a number of their steam engineering products will be reduced. A price list is available.

## Announcements Correction

We have been asked to point out that the paper on Modular Co-ordination by M. Hartland Thomas, which was printed almost in full in the JOURNAL for December 18, will be published in its entirety in the January issue of the magazine of the Royal Society

In an advertisement for a senior planning assistant for Norfolk County Council, which appeared in the JOURNAL for December 25, the words "senior shop assistant" were printed in error. We apologize for this mistake.

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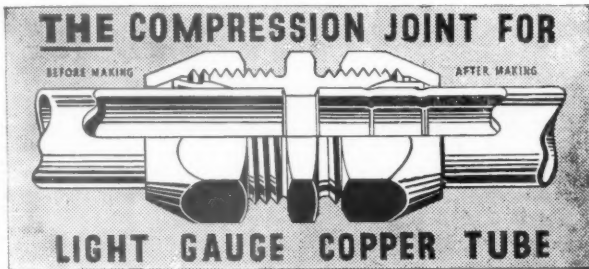
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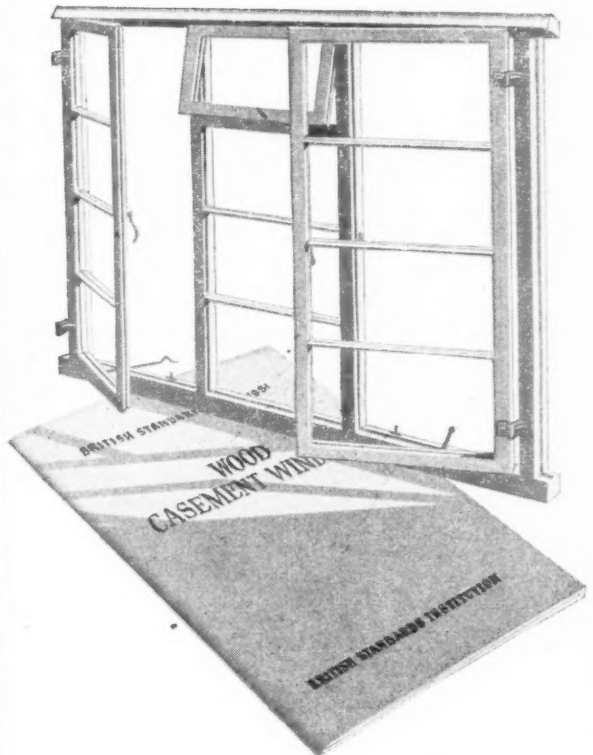
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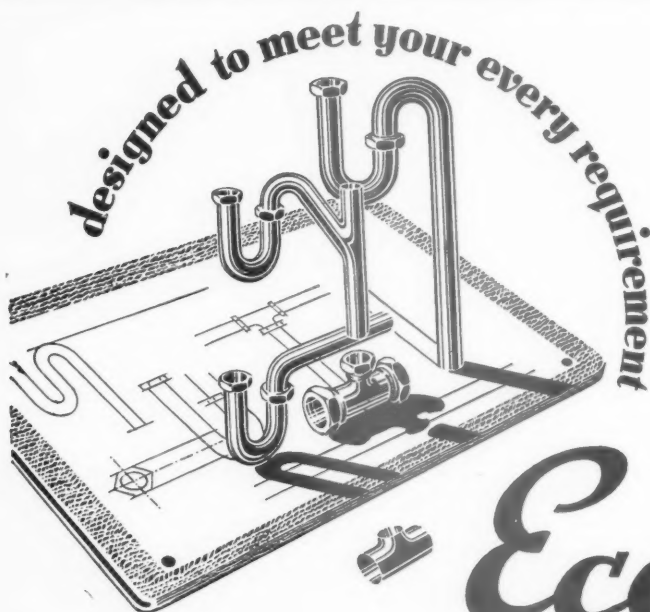
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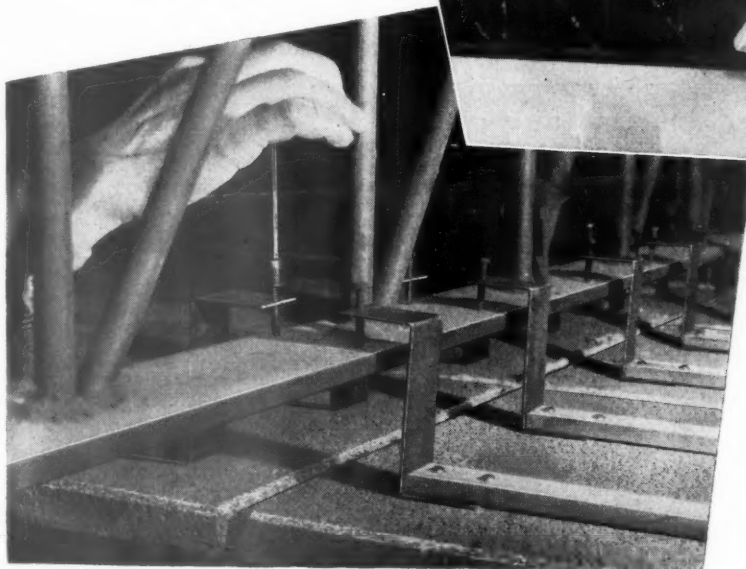
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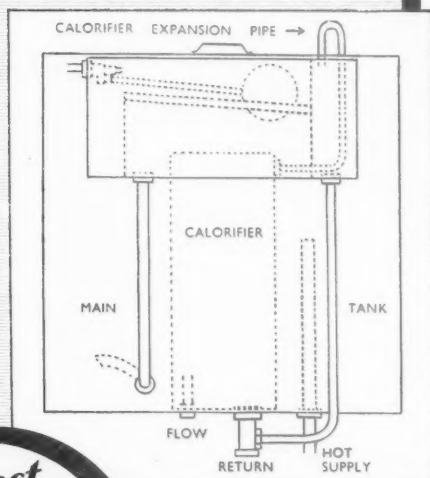
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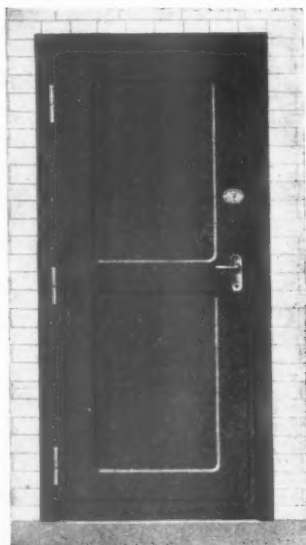
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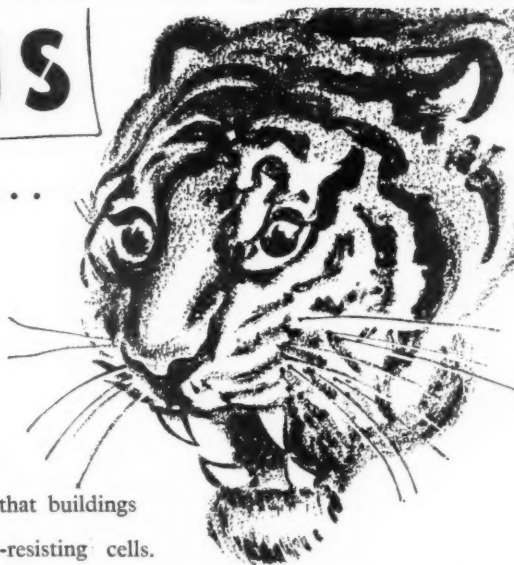
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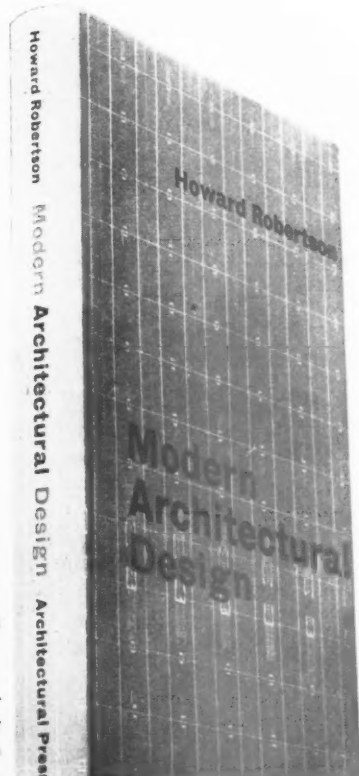
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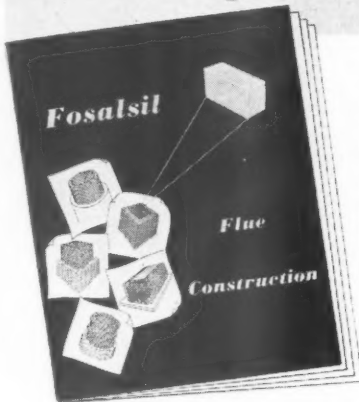
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Modern Architectural Design by  
Howard Robertson  
P.R.I.B.A., S.A.D.G.

The Architectural Press, 9-13 Queen Anne's Gate London SW1

THIS NEW EDITION of *Modern Architectural Design*, which is, in a sense, a companion volume or sequel to the author's well-known *Principles of Architectural Composition*, has been very largely rewritten, entirely reset and newly illustrated. It is not a plea for the so-called modern movement but is a penetrating and constructive analysis of the design problems which face the practising architect and student of the present day. Mr. Robertson combines theory and experience gained from practice in a lively and stimulating discussion of present-day problems of planning, structure, materials and decoration. His text is thoroughly illustrated with photographs and drawings of the most interesting modern buildings in Europe and America. Size 8½ ins. by 5½ ins. 228 pages illustrated with half-tone and line illustrations. Price 25s. net, postage 7d.

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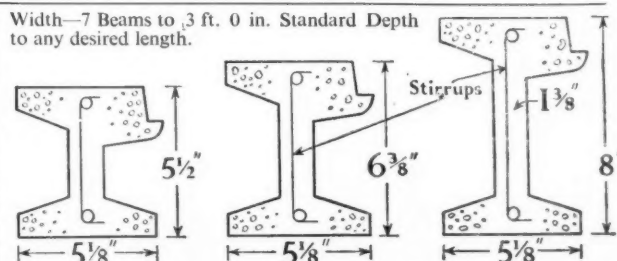
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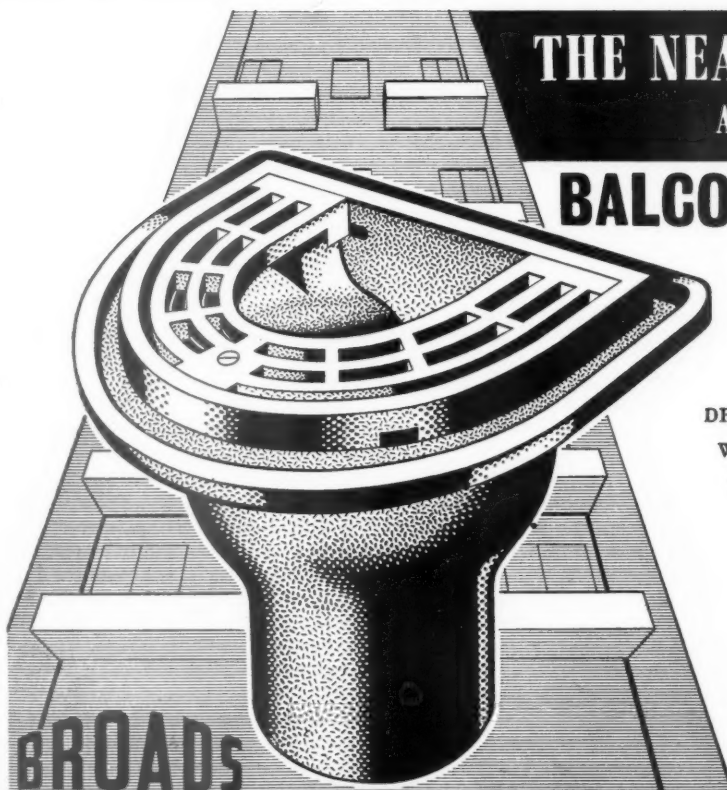
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## CLASSIFIED ADVERTISEMENTS

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

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

## Public and Official Announcements

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

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

**CARSHALTON URBAN DISTRICT COUNCIL.**  
Applications are invited for the appointment of a TOWN PLANNING ASSISTANT in the Engineer and Surveyor's Department, at a salary in accordance with Grades A.P.T. V-VI, of the National Scales (£595-£735), plus London weighting. The commencing salary will be fixed according to qualifications and experience.

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

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

The Council cannot provide the successful applicant with housing accommodation.

Applications, on forms to be obtained from the undersigned, must be returned, together with the names of three referees, not later than Wednesday, 14th January, 1953.

Canvassing in any form will be a disqualification.

C. H. DURRANT,

Clerk of the Council.  
District Council Offices, The Grove,  
Carshalton, Surrey. 7920

**CITY AND COUNTY OF BRISTOL.**  
**CITY ARCHITECT'S DEPARTMENT.**  
Applications are invited for the following permanent staff appointments:—

**SENIOR ASSISTANT ARCHITECTS:**  
(a) Grade VI, £670 to £735 per annum.  
(b) Grade V, £595 to £645 per annum.

Applicants must be Associate Members of the R.I.B.A. or hold equivalent qualifications, and have had considerable experience in design, construction and contract administration, preferably with a large Local Authority. Appointments are superannuable, subject to satisfactory medical examination, and to one month's notice in writing on either side.

**HOUSING ACCOMMODATION PROVIDED, IF NECESSARY, AT AN ECONOMIC RENT.**

Applications, stating age, training, qualifications, experience, present appointment, and salary, with names of two referees (including present employer), by Monday, 19th January, to:

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

The Council House, College Green, Bristol, 1.  
1st January, 1953. 7951

**BOROUGH OF HEMEL HEMPSTEAD.**  
**JUNIOR ARCHITECTURAL ASSISTANT—**  
**GRADE A.P.T. III.**

Applications are invited for the appointment of a Junior Architectural Assistant, in the Borough and Water Engineer's Department, at a salary in accordance with A.P.T. Grade III (£525-£570). Candidates should have passed the Intermediate Examination of the R.I.B.A. or other approved examining body, and should have had experience in the design of dwellings and public buildings for Local Authorities.

The appointment will be subject to the Local Government Superannuation Acts, to the National Conditions of Service from time to time in force, and to the passing of a medical examination; and will be terminable by one month's notice in writing on either side.

Applications, stating age, education, qualifications, present and previous appointments, and details of experience, together with the names of three persons to whom reference can be made, should be submitted to Mr. A. H. Turner, A.M.I.C.E., Borough and Water Engineer, Market Square, Hemel Hempstead, and should be received not later than Monday 2nd February, 1953. Canvassing will disqualify, and applicants must state whether to their knowledge they are related to any member of the Council or to any senior officer of the Council.

C. W. G. T. KIRK,

Town Clerk.  
Town Hall, Hemel Hempstead, Herts.  
29th December, 1952. 7969

**BOROUGH OF MANSFIELD.**  
**APPOINTMENT OF THIRD ARCHITECTURAL ASSISTANT.**

Applications are invited from Registered Archi-

ects for the above appointment in the Borough Engineer and Surveyor's Department. The salary will be in accordance with A.P.T. V, of the National Joint Council's Scale, and the following conditions:—

(1) N.J.C. Conditions of Service.  
(2) Superannuation Act, 1937, for which purpose the selected candidate will be required to pass a medical examination.

(3) Residence within the Borough.  
Applications, stating age, qualifications, present appointment and salary, previous appointments and experience, together with copies of not more than three testimonials, should be sent to the undersigned on or before Monday, the 12th of January, 1953.

A. C. SHEPHERD,

Town Clerk.  
Carr Bank, Mansfield.  
15th December, 1952. 7937

### CITY OF BRADFORD.

Applications are invited for the appointment of SENIOR TOWN PLANNING ASSISTANT (Post No. 13) in the City Engineer and Surveyor's office, at a salary in accordance with Grade A.P.T. VI, of the National Scales, i.e., £670-£735 per annum.

Applicants must be A.M.T.P.I., should preferably be A.M.I.C.E., or A.M.I.Mun.E., and have had considerable experience in the administration of the Town and Country Planning Act, 1947, and, in particular, dealing with applications for (a) Planning Permission and (b) Display of Advertisements.

The appointment is superannuable. Applications on the prescribed form to be obtained from the City Engineer and Surveyor, Town Hall, Bradford, together with three testimonials, must be received by me not later than 26th January, 1953. No housing accommodation will be provided by the Corporation.

W. H. LEATHEN,

Town Clerk.  
Town Hall, Bradford. 7968

**PEMBROKESHIRE COUNTY COUNCIL.**  
**AMENDED ADVERTISEMENT.**  
**COUNTY ARCHITECT'S DEPARTMENT.**

Applications are invited for the post of ASSISTANT QUANTITY SURVEYOR, on the permanent staff of the County Architect's department, at a salary in accordance with Grade VI, A.P. & F. Division, of the National Joint Council Scales. The appointment will be subject to the National Conditions of Service for local government officers, to the Local Government Superannuation Act, 1937, and to the passing of a medical examination, and will be terminable by one month's notice on either side. Applicants should hold a recognised qualification and be experienced in taking off, under supervision, the measurement of all trades or works in progress, the preparation of interim certificates and the checking of Sub-Contractors' accounts.

Forms of application can be obtained from the County Architect, County Offices, Haverfordwest, and completed applications, together with copies of not more than two recent testimonials, should be returned to him not later than Saturday, 24th January, 1953.

Canvassing, directly or indirectly, will be a disqualification.

H. LOUIS UNDERWOOD,

Clerk of the County Council.  
County Offices, Haverfordwest.  
31st December, 1952. 7967

**QUANTITY SURVEYORS AND ASSISTANT QUANTITY SURVEYORS required throughout U.K. BY MINISTRY OF WORKS, ADMIRALTY, WAR DEPARTMENT, AIR MINISTRY, and occasionally overseas by Service Departments.** Although not established, posts have long term possibilities.

Salaries in London for Officers over 26 years of age: £600 to £1,200. Slightly lower in provinces. Salary on entry in accordance with age, qualifications and experience.

Also vacancies for QUANTITY SURVEYING ASSISTANTS and others having some experience in a quantity surveyor's office, at salaries ranging from £300.

(Quoting ref. J.Q.S.), apply to Room 403, M.O.L.N.S., Technical and Scientific Register, 26, King Street, London, S.W.1. 7971

**YORKSHIRE ELECTRICITY BOARD.**  
Applications are invited for the following appointment:—

**AREA BOARD HEADQUARTERS.**  
**ARCHITECTURAL DRAUGHTSMAN.**

The duties include the preparation of working drawings and details of substations, etc. Applicants should have a sound knowledge of Industrial and Commercial Building Construction.

Salary: £433-£567 per annum, according to qualifications and experience.

Applications, giving full details of age, qualifications and experience, should be forwarded to the Secretary, Yorkshire Electricity Board, Wetherby Road, Scarcroft, Leeds, not later than 29th January, 1953. 7970

**BOROUGH OF RUGBY.**  
**BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.**

Applications are invited for:—  
(a) ASSISTANT ARCHITECT. Salary: A.P.T. VI, £670-£735, and  
(b) ARCHITECTURAL DRAUGHTSMAN. Salary: General Division: £450 at age 30, or A.P.T. I, £465-£510 (according to experience).

For appointment (a), preference will be given to candidates who have passed the R.I.B.A. Final examinations. The appointments are subject to the provisions of the Local Government Officers' Superannuation Act, 1937, and the successful candidates will be required to pass a medical examination. Both appointments are pensionable.

Applications, giving details of qualifications and experience, together with names of three persons to whom reference may be made for testimonials, should be delivered to the Borough Engineer, Burford House, Church Walk, Rugby, not later than Tuesday, 20th January, 1953.

D. E. BIART,

Town Clerk.  
7956

**HER MAJESTY'S COLONIAL SERVICE.**  
Applications are invited for the following post:—

**EXECUTIVE ARCHITECT, Windward Islands, British West Indies (CDE 112/39/01).** To be responsible for the design of all new public buildings in the Windward Islands; to collaborate with the Public Works Departments of the Islands in the execution of buildings and in building research and experiments; and to give advice to the Housing and Planning Authorities on housing and planning development. Appointment will be on agreement for 3 years in first instance with salary on scale £1,000 by £50 to £1,200. Free passages for officer and family, not exceeding five persons in all, on first appointment and back to United Kingdom on satisfactory completion of agreement. Candidates must be A.R.I.B.A. with practical experience in traditional design and construction and in administration of an Architect's office. Town planning qualifications an advantage but not essential. Knowledge of the West Indies or other Colonies an advantage.

Intending candidates should apply in writing to the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith Street, S.W.1, giving brief details of their age, qualifications and experience. They should mention this paper and quote the reference number (CDE 112/39/01). 7980

**GOVERNMENT OF SIND, PAKISTAN.**

Applications are invited for the post of ARCHITECT TO GOVERNMENT OF SIND. Contract three years in first instance. Pay: Rs.1,200 by Rs.100 to Rs.1,400 p.m. (approx. £130-£150) plus allowances. 25 per cent. of salary may be drawn in sterling in U.K. Free passage both ways. Free medical attention. Generous leave allowance. Housing accommodation at rental not exceeding 10 per cent. of salary. Qualifications: (i) Graduate in Civil Engineering or A.M.Inst.C.E. (ii) F.R.I.B.A. (iii) 8 years' professional experience. Knowledge of Urdu and conditions in Pakistan/India advantage. Age—preferably 35-45 years. Applications, on form obtainable on request should reach the Establishment Officer, 35, Lowndes Square, London, S.W.1, by the 2nd February, 1953. 7982

**LONDON ELECTRICITY BOARD.**  
**ARCHITECTURAL DRAUGHTSMAN.**

Applications are invited for the above position in the Architect's Section of the Chief Engineer's Department in Central London.

Applicants should be neat draughtsmen and preferably have had several years' experience in an architect's office.

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

Application forms obtainable from Establishments Officer, 46, New Broad Street, E.C.2, to be returned completed by 27th January, 1953. Please enclose addressed foolscap envelope and quote ref.: V/1563/A. on all correspondence. 7981

**NORTHAMPTON COUNTY BOPOUGH.**  
**BOROUGH ARCHITECT'S DEPARTMENT.**  
**ARCHITECTURAL ASSISTANT,**  
**A.P.T. III (£525-£570).**

Particulars of the above appointment, and form of application, to be returned by 24th January, may be obtained from the Borough Architect, Guildhall, Northampton.

C. E. VIVIAN ROWE,  
Town Clerk. 7979

**CITY OF BELFAST—**  
**EDUCATION COMMITTEE.**

Applications are invited for the following positions on the permanent staff of the Education Architect's Department.

(1) **DEPUTY EDUCATION ARCHITECT:**

Applicants should be Corporate members of the Royal Institute of British Architects, with good architectural and building experience. Ability and experience in office organisation and supervision of staff are essential.

The scale of salary for the position is £925 by £60 to £1,105 per annum.

(2) **ASSISTANT ARCHITECTS:**

Applicants should be registered Architects and preferably have experience in modern school design and planning.

The scale of salary for the position is £525 by £27 10s. 6d. to £745.

The following conditions apply to the above-mentioned appointments:—

The commencing figure of remuneration in each case will be determined in accordance with the qualifications and experience of the successful applicant. Superannuation contributions will be payable at the rate of approximately 6 per cent. of remuneration.

Canvassing in any form, oral or written, direct or indirect, will, if proved to the satisfaction



of the appointing authority, disqualify a candidate for appointment.  
Forms of application and conditions of appointment may be obtained from the Education Office, Academy Street, Belfast, on receipt of a stamped addressed foolscap envelope. Applications, in envelopes suitably endorsed, should reach the undersigned not later than Wednesday, 4th February, 1953.

JOHN DUNLOP,  
Town Clerk.

City Hall, Belfast.  
3rd January, 1953

7978

**BRITISH ELECTRICITY AUTHORITY.  
MIDLANDS DIVISION.**

**SENIOR DRAUGHTSMAN** (Architectural) is required in the Chief Generation Engineer's (Construction) Department at Wolverhampton. N.J.B. service conditions, superannuable appointment, salary within Schedule D, Grade 5, £557 to £671 per annum.

Wide experience in the preparation of working drawings relating to power stations and other buildings required, and the possession of recognised professional qualifications will be an advantage.

Application forms are available from the Establishments Officer, 53, Wake Green Road, Moseley, Birmingham 13, to be completed and returned by 31st January, 1953.

F. W. LAWTON,

Divisional Controller.

7977

**CITY OF SALFORD.**

**'APPOINTMENT OF CHIEF ASSISTANT  
ARCHITECT.**

Applications are invited for the above post in the department of the City Engineer and Surveyor. The salary is in accordance with Grade A.P.T. IX (£615-£935), of the National Scheme of Conditions of Service.

Applicants must be Associate Members of the Royal Institute of British Architects and have considerable experience in the design and construction of schemes for houses, flats, schools and public buildings, together with adequate administrative experience. The person appointed will be responsible to the City Engineer for the control of the Architectural Section of the Department.

The post is superannuable and subject to a medical examination. Detailed applications, with three referees, should be sent to the City Engineer and Surveyor, Town Hall, Salford, 3, endorsed "Chief Assistant Architect (Ref. A.J.)," not later than Saturday, 31st January, 1953.

Applicants must disclose, in writing, any known relationship to members or officers of the Council.

H. H. TOMSON,

Town Clerk.

7940

**HER MAJESTY'S COLONIAL SERVICE.**

Applications are invited for the following posts:—

**SENIOR ARCHITECT**, Public Works Department (CDE 112/3/01), Northern Rhodesia.—Appointment will be on contract-gratuity terms for three years in the first instance. Salary: £1,540 per annum, plus cost-of-living allowance of £277 per annum. A gratuity will be paid on the satisfactory completion of contract at the rate of £37 10s. for each period of three months' service. Home leave on full pay at the rate of five days for each month in Northern Rhodesia;

fourteen days local leave each year. Rent at the rate of 10 per cent. of salary will be charged for partially furnished Government quarters. Free passages on appointment and on leave for the officer and his wife, and for children up to the cost of one adult fare. Candidates should be between 35 and 45 and A.R.I.B.A. The successful candidate will be required to organise and administer a large Educational programme, and he should have had wide general experience, with preferably experience in design and planning of schools.

**TOWN PLANNING OFFICER**, Survey and Town Planning Department, Tanganyika (CDE 112/3/02).—Appointment is pensionable on probation, with salary on scale £355 to £1,320 per annum. An emergency allowance of 25 per cent. subject to a maximum of £250 per annum is also payable. Free first class passages each way each tour for the officer, his wife, and children (up to a maximum of three adult passages in all); Government quarters, if available, at a rent of 10 per cent. of the salary; and home leave on full pay at the rate of 5 days for each month of resident service. Applicants preferably under 40, must hold the qualification of A.M.T.P.I. and either A.M.I.C.E., A.M.I.Mun.E., A.R.I.B.A., A.R.I.C.S., B.Sc. (Eng.), or a Degree in Architecture. Considerable experience of the preparation of town planning schemes in all stages and the control of development are essential.

Intending candidates should apply in writing to the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith Street, S.W.1, giving brief details of their age, qualifications and experience. They should mention this paper and quote the reference number shown against the post for which application is made.

7955

**WEST SUFFOLK COUNTY COUNCIL.**

**JUNIOR QUANTITY SURVEYING ASSISTANT**, N.J.C. service conditions. Salary: £465-£540 (A.P.T. I-II). Post pensionable; medical examination. Applicants should be Students of the Royal Institution of Chartered Surveyors; duties will include abstracting and billing in all trades and taking off under supervision.

Application forms, obtainable from the Clerk of the County Council, Shire Hall, Bury St. Edmunds, to be returned by 24th January, 1953.

7945

**NORTH STAFFORDSHIRE TECHNICAL  
COLLEGE, STOKE-ON-TRENT.**

Principal: H. W. WEBB, O.B.E., D.Sc.  
**SENIOR LECTURER IN BUILDING  
DEPARTMENT.**

A **SENIOR LECTURER** is required as soon as possible in the Building Department of the above College. (Salary on the Burnham Technical Scale: £1,040×£25—£1,190.)

Applicants should preferably have had previous Technical College experience and possess a professional qualification in Quantity Surveying (or Architecture with Quantity Surveying experience), and must be able to teach Quantity Surveying and some Theory of Structures.

Applications, giving details of training, qualifications and experience, should be sent to the Principal immediately.

H. DIBDEN,

Clerk to the Governors.

7976

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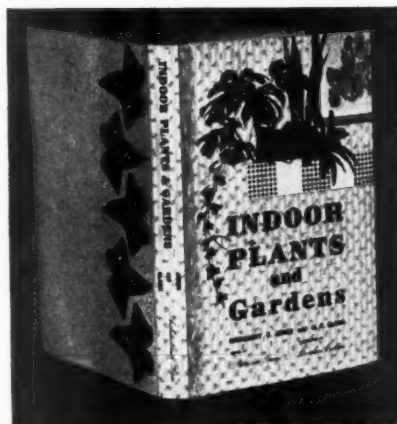
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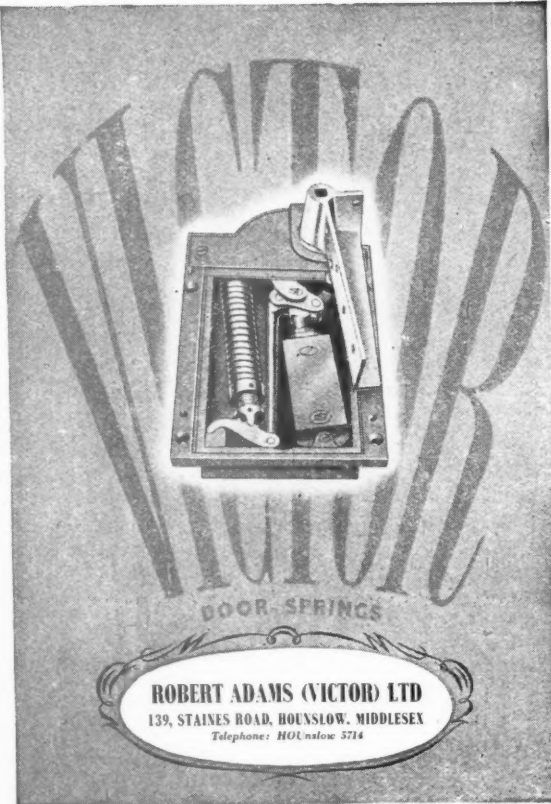
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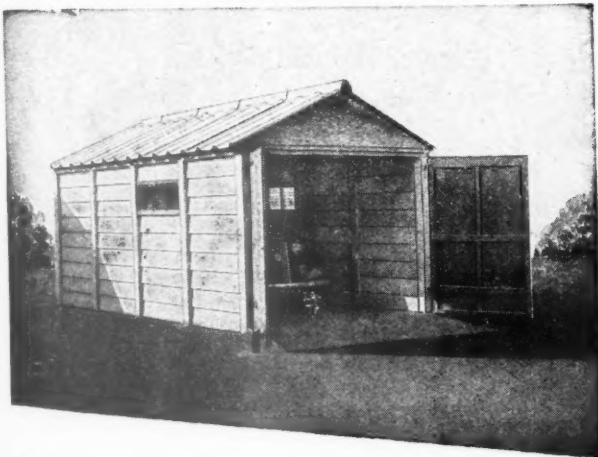




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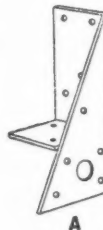
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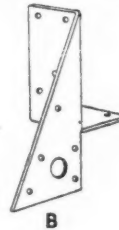
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