

THE ARCHITECTS' JOURNAL



standard contents

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

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★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to 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. 49, Cadogan Square,	Sloane 1601/3158
IIBD	Incorporated Institute of British Decorators. Drayton House, Gordon Street,	W.C.1. Euston 2450
ILA	Institute of Landscape Architects. 12, Gower Street, W.C.1.	Museum 1783
I of Arb	Institute of Arbitrators. 35/37, Hastings House, 10, Norfolk Street,	Strand, W.C.2. Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197/5176
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.	Whitehall 7264/4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	Museum 3891
MARS	Modern Architectural Research Group (English Branch of CIAM). Secretary:	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, Savile 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 Asphalt 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 St., 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.	Abbey 4504
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh.	Edinburgh 20396
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Langham 5721
RICS	Royal Institution of Chartered Surveyors. 12, Great George Street, 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. 32, Queen Anne Street, W.1.	Langham 7616
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.	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 5051
WDC	War Damage Commission. 6, Carlton House Terrace, S.W.1.	Whitehall 4341
ZDA	Zinc Development Association. Lincoln House, Turl Street, Oxford.	Oxford 47988

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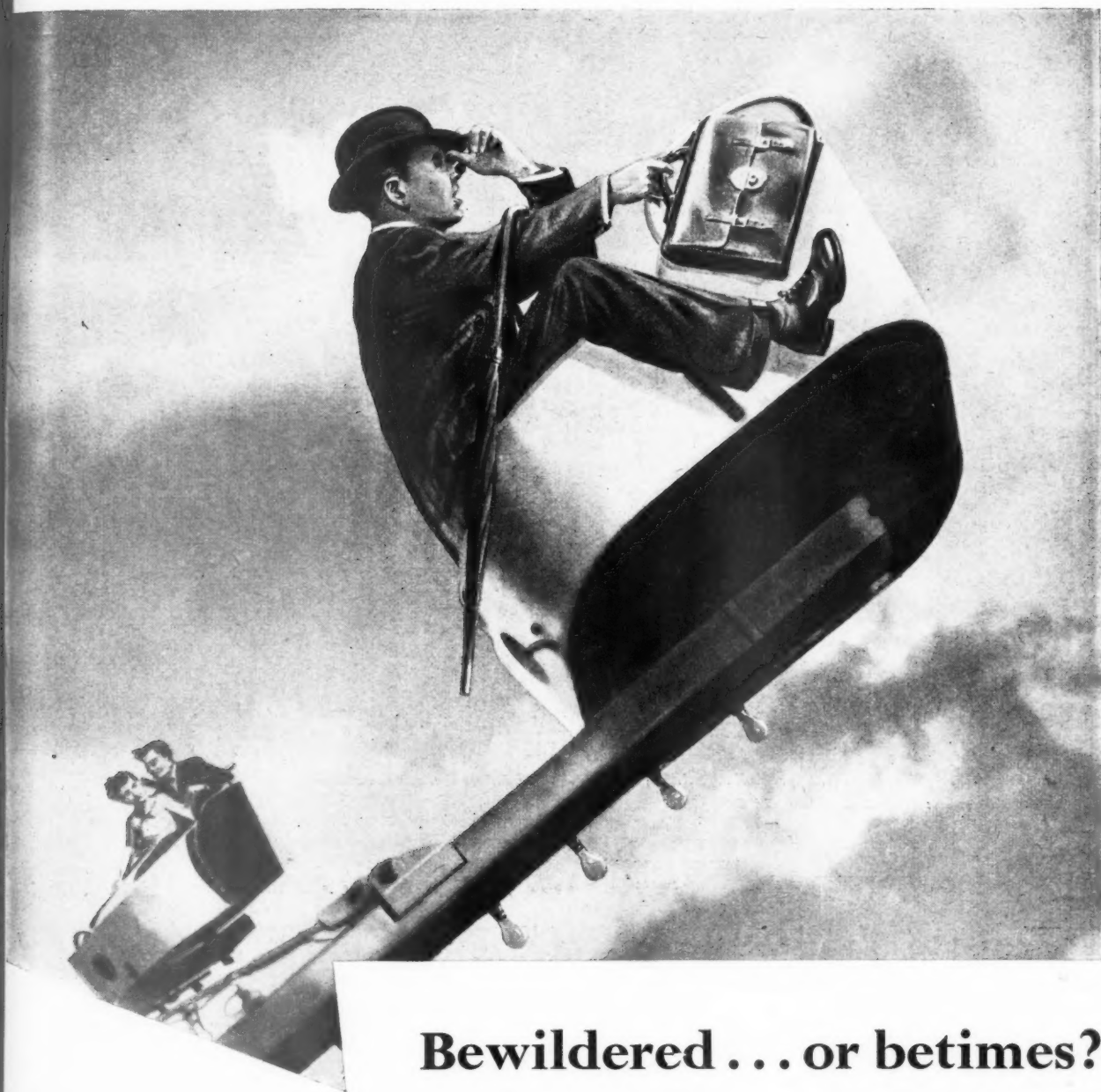
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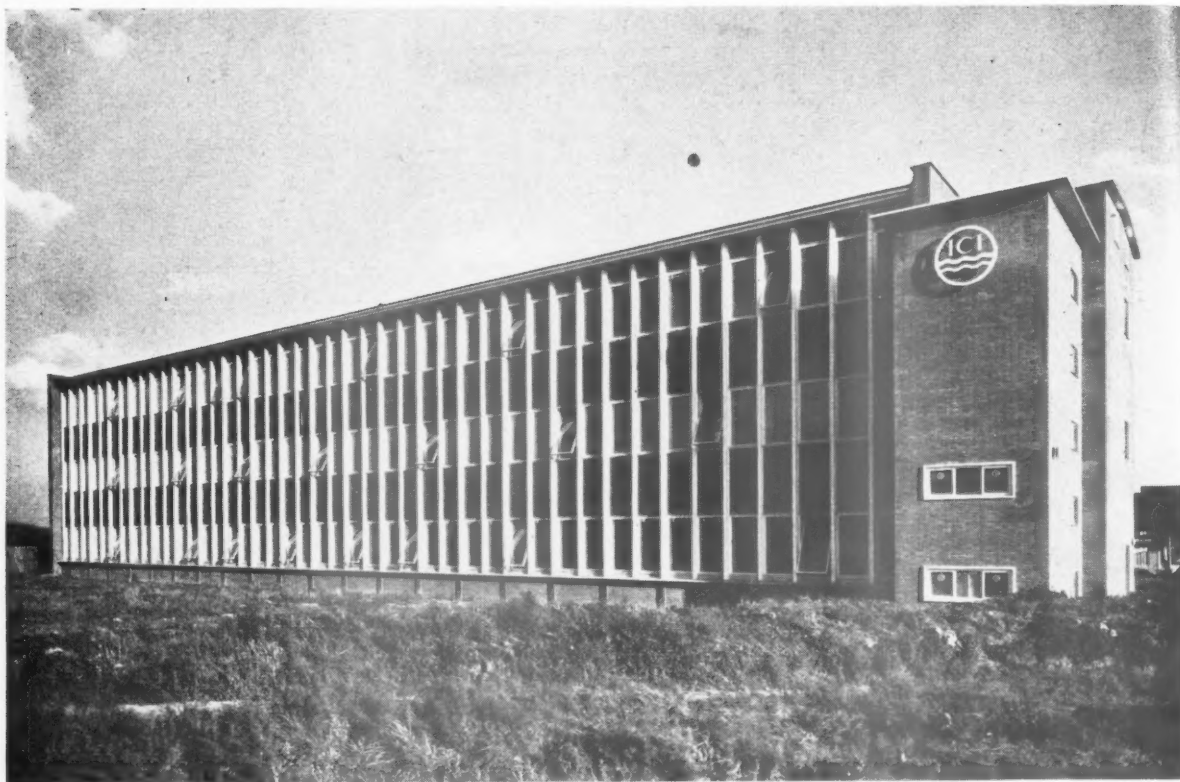
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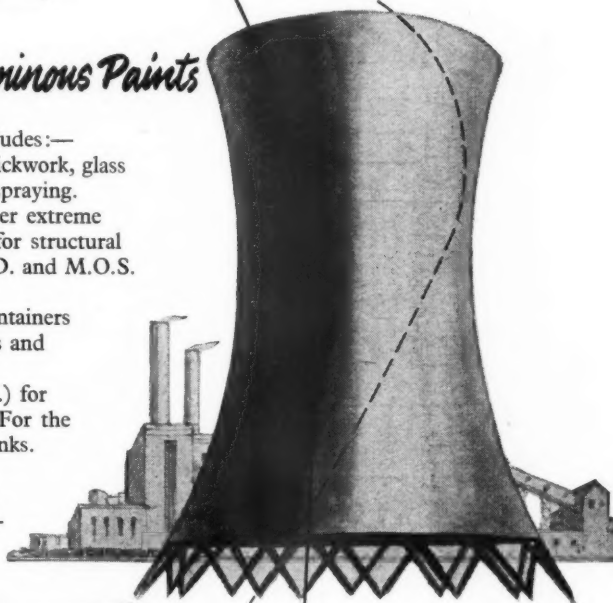
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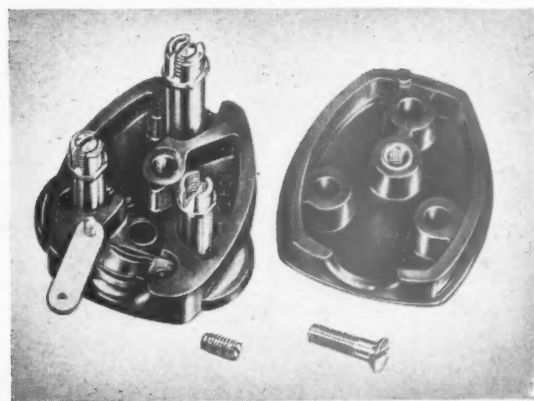


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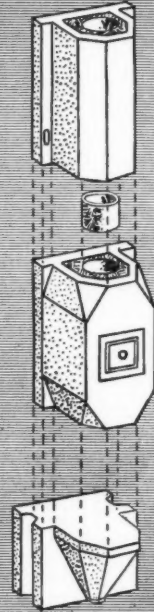
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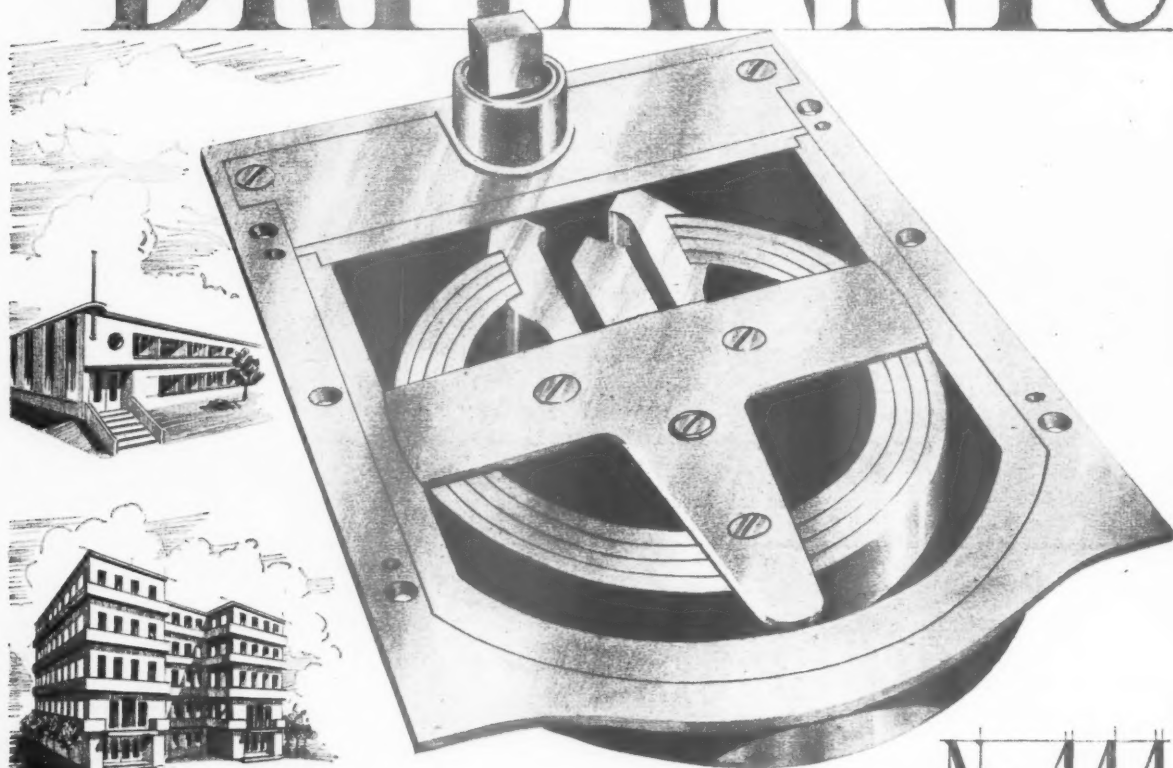
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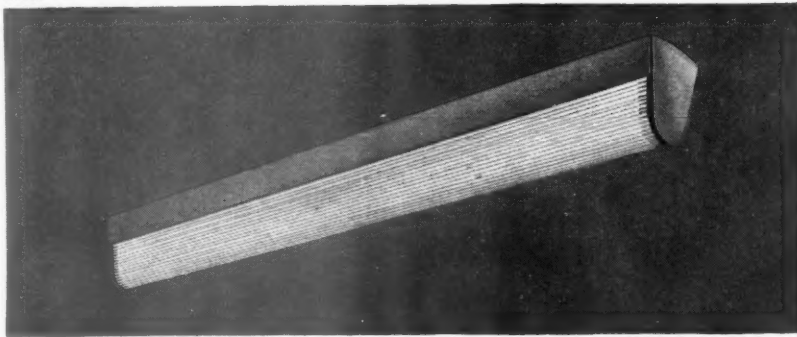
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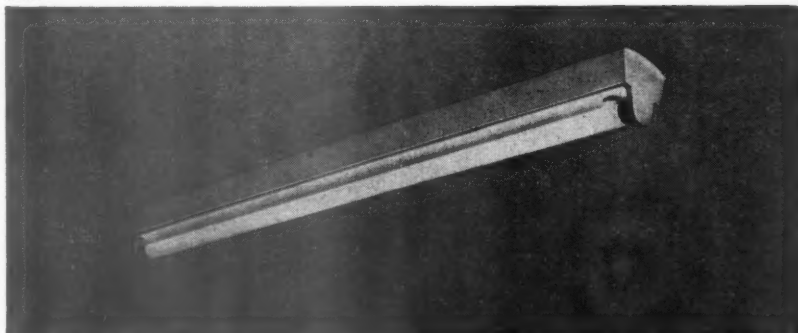


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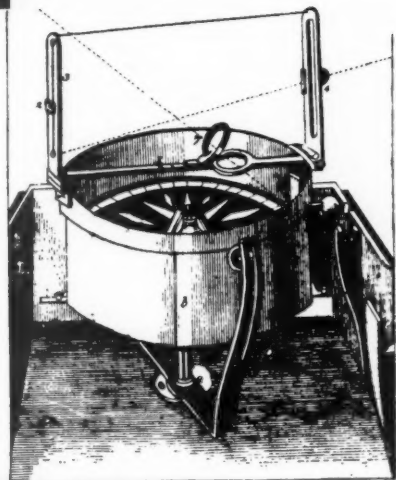
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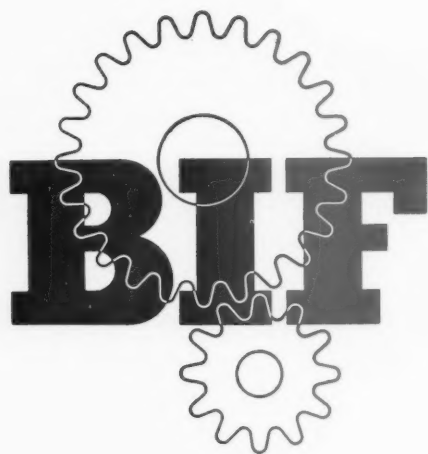


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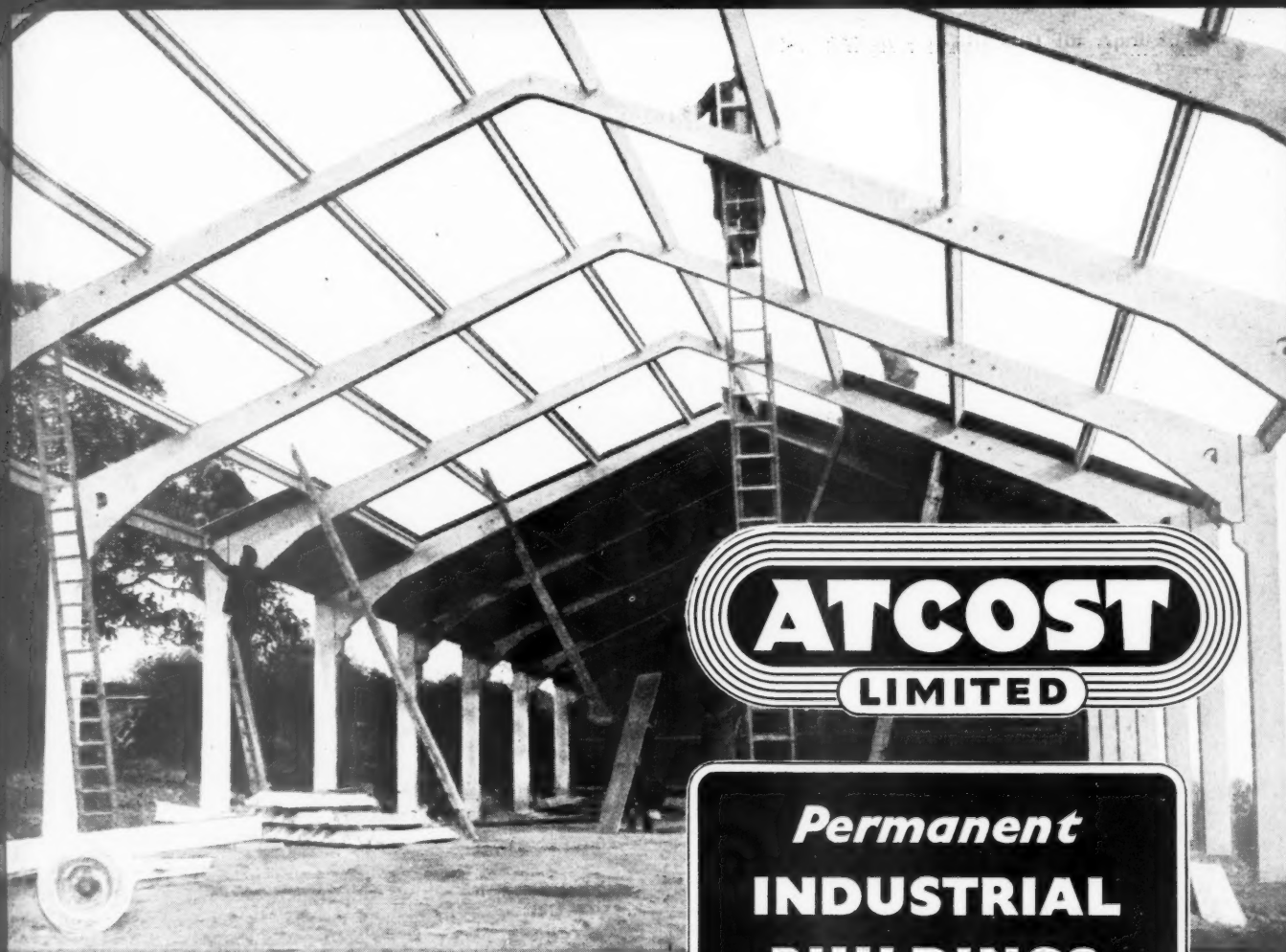


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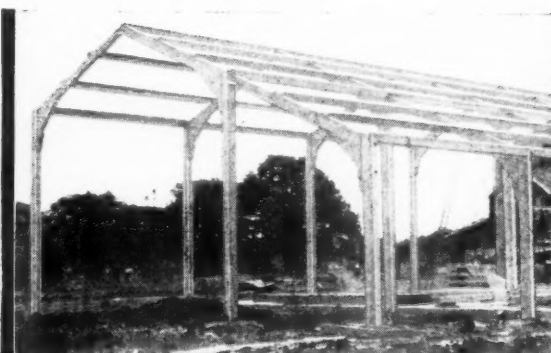
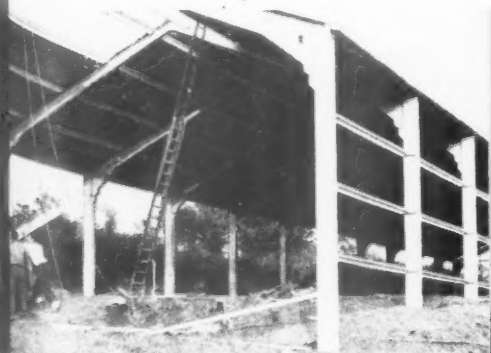
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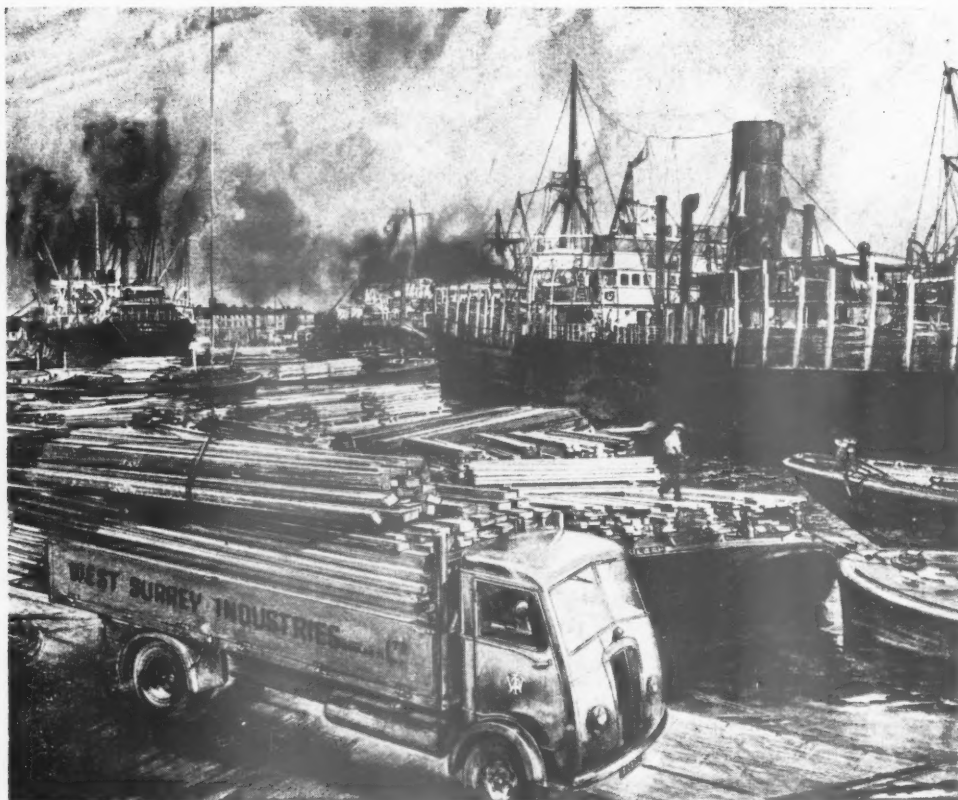
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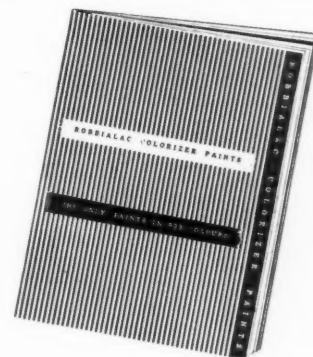
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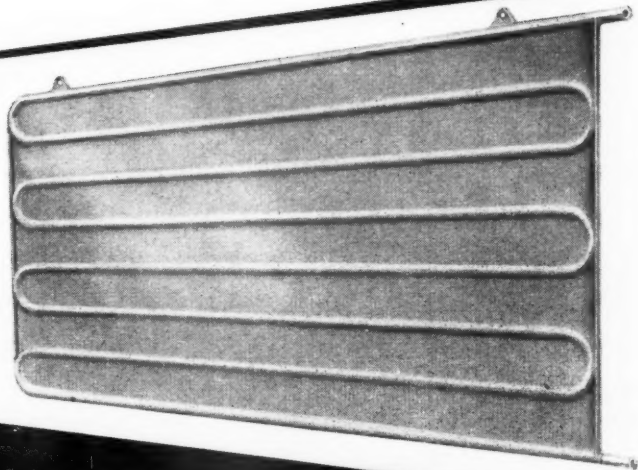
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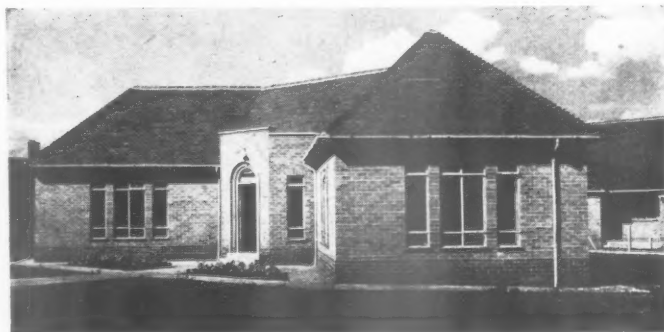


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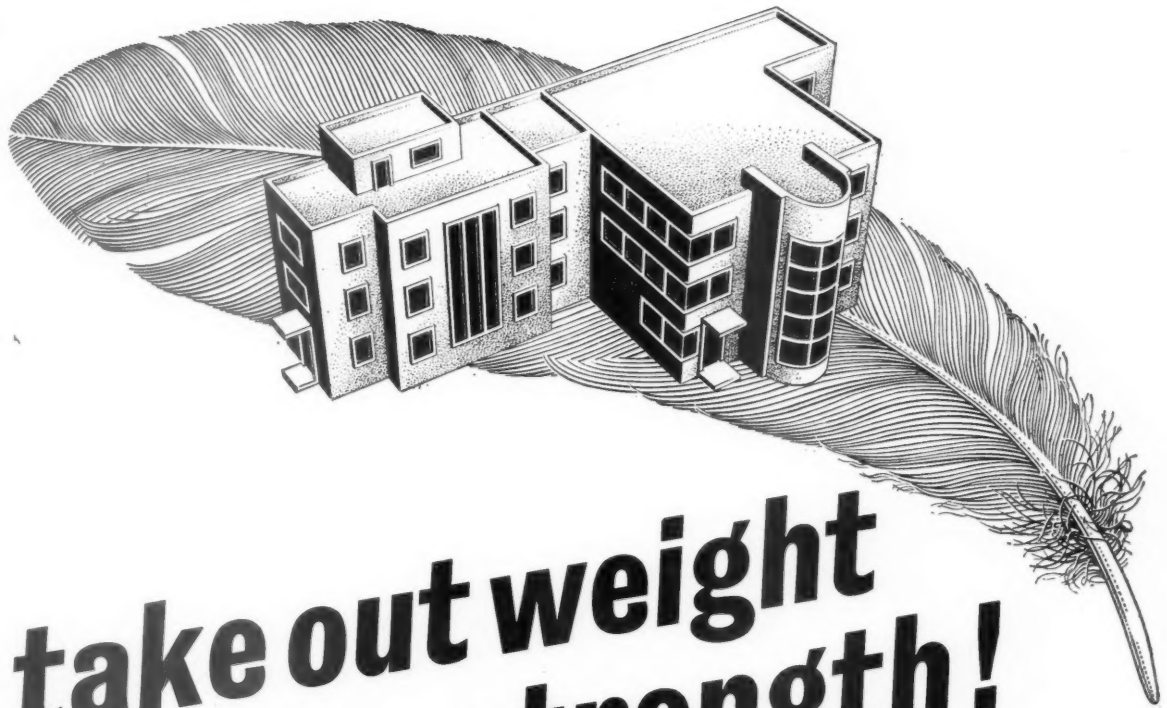
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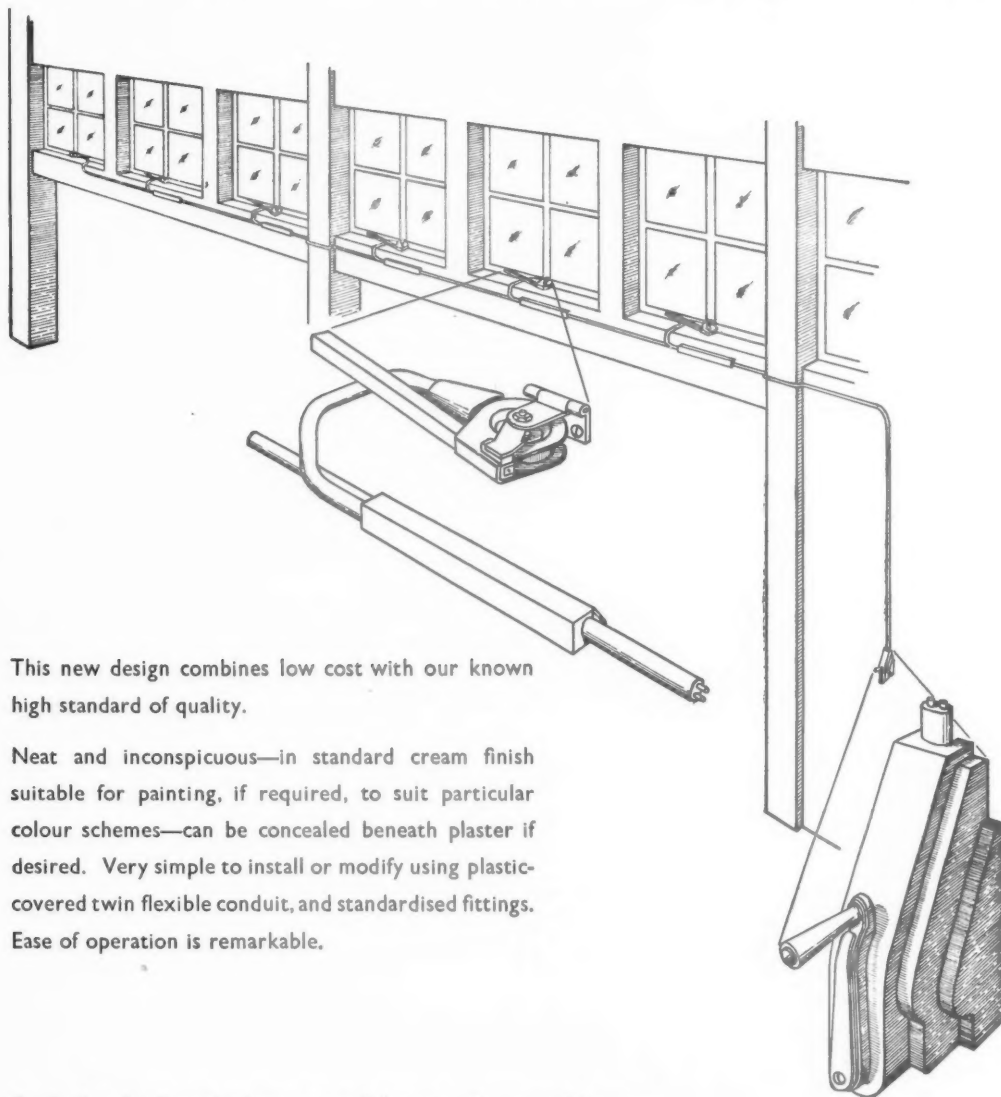
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DOMESTIC ELECTRIC WATER HEATING

ELECTRIC IMMERSION HEATERS IN SOLID FUEL INSTALLATIONS (1) DIRECT SYSTEMS

In many cases where a solid fuel water heating system is present or proposed, it is required to use electricity to supply hot water during the summer months. Excellent results can be obtained by fitting an electric immersion heater with thermostatic control in the hot water storage tank or cylinder if the layout of the pipework is carefully considered and the following simple rules observed.

The Hot Water Storage Vessel

In new work this must be sited as near as possible to the kitchen sink as the length of draw-off pipe to this tap should be reduced to the minimum (see WH 2). The best results are obtained when the tank or cylinder is placed vertically, its height being considerably greater than its greatest horizontal dimension. The thermostatically controlled immersion heater is fixed horizontally at low level, clearance being required between the heater and the bottom of the vessel as shown in Fig. 1, especially in hard water districts when a hand hole and cover plate should be provided for cleaning.

When considering the size of the hot water storage vessel it should be borne in mind that the useful storage capacity is the volume of water above the heater, not the nominal or even actual capacity of the tank or cylinder. If it is intended to install a second immersion heater and thermostat near the top on the dual-element principle (see WH 1) it should be placed so that the volume of water between the heater and the top of the vessel is about 6 gallons.

In order to prevent undue mixing of cold water with the stored hot water when hot water is drawn off, the cold feed pipe must enter the hot water storage vessel at the side near the bottom in such a manner that the incoming stream of cold water is not directed upwards. The point of entry must be below the immersion heater (Fig. 1).

Draw-off Pipes

Only one pipe, the combined vent and draw-off pipe, need be taken from the top of the storage vessel, and it should at once turn horizontally for about 18 inches before rising, as shown in Fig. 3b. This is to prevent single pipe circulation (Fig. 2) which is liable to occur in any pipe rising vertically from a hot water storage vessel above the level of the immersion heater, e.g., the cold feed pipe and the vent pipe in Fig. 3a. Do not make any draw-off connections to the flow pipe.

In order to reduce the loss of heat from draw-off pipes, they should be kept as small and as short as possible, any reduction in rate of flow being avoided by increasing the size of the feed pipe (which does not cause any waste of heat) and reducing the number of bends to the minimum. In some cases it may be advisable to run a separate small bore draw-off pipe to the kitchen sink, rather than feed this tap from the larger pipe serving bath and basin: the arrangement is shown in Fig. 4. See also Table 2, WH 2.

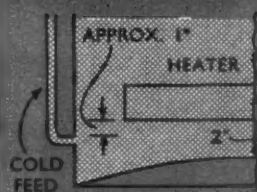


Fig. 1 Clearances

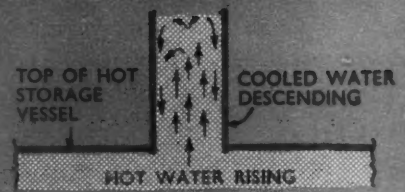


Fig. 2 Single pipe circulation

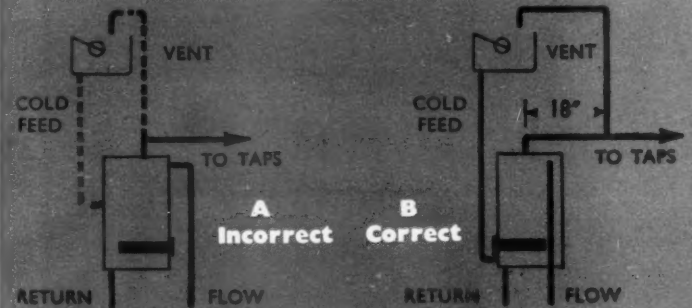


Fig. 3 Connections to hot storage vessel

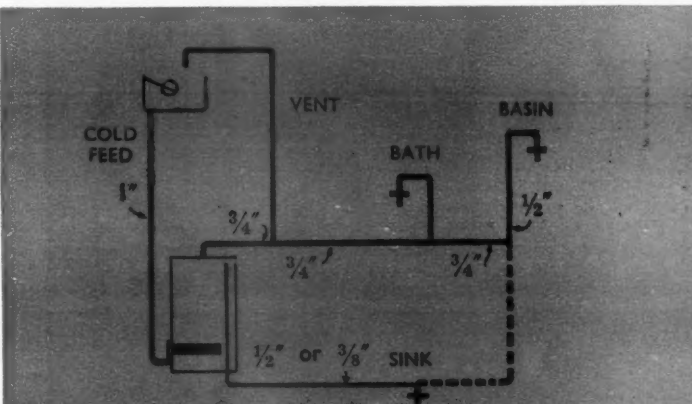


Fig. 4 Connections to sink tap

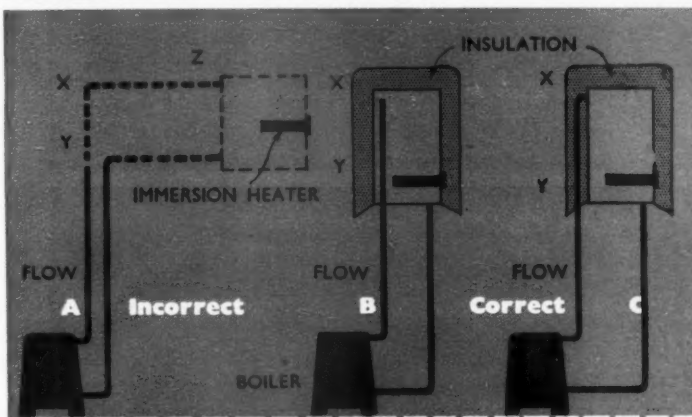


Fig. 5 Connections between boiler and hot storage vessel

WH.3

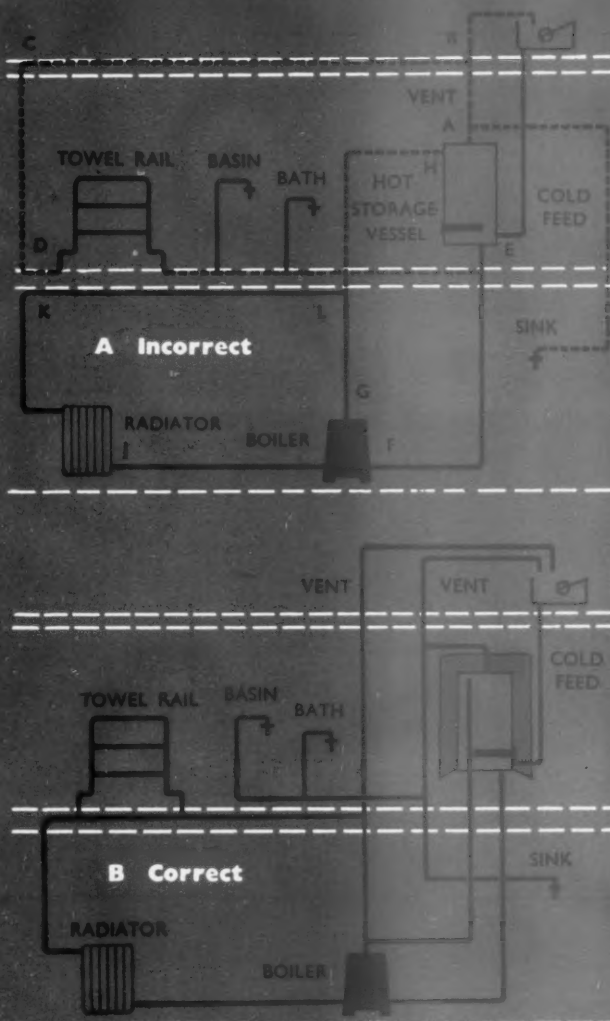


Fig. 6 Layout of pipework in Direct System

TABLE 1 INSULATING MATERIALS

Material	85% Magnesia Compound	Granulated Cork	Slag Wool	Glass Fibre
Density in lb./cu. ft.	12	7.5 7.5	8 11	10
Conductivity in B.Th.U./sq. ft. per °F./hour/inch thickness	0.42	0.33 0.16	0.28 0.30	0.28

Conductivity of some frequently used insulating materials.

TABLE 2 HEAT LOSSES FROM INSULATED CYLINDER

Material	85% Magnesia Compound	Granulated Cork	Slag Wool	Glass Fibre
		5.5 lb./cu. ft.	11 lb./cu. ft.	
Storage Temp.:	140° 160°	140° 160°	140° 160°	140° 160°
1" thickness	22.3 28.0	18.2 22.6	16.8 20.9	15.8 19.7
2" thickness	12.3 15.6	10.0 12.5	9.1 11.5	8.8 10.8
3" thickness	8.9 11.2	6.9 8.6	6.3 7.9	6.0 7.4

Heat losses in units of electricity per week from a nominal 20 gallon cylinder, variously insulated, air temperature 60°F.

Circulation of Electrically Heated Water

As already pointed out (WH 2) circulating loops to towel rails, radiators, etc., must not operate when the electric heater is in use. This is a simple matter to arrange, the only real difficulty in practice being to identify possible routes for the circulation of electrically heated water, in some of which the flow may even be in reverse direction to normal.

An incorrect method of running flow and return pipes between a boiler and an electrically heated hot water storage vessel is shown in Fig. 5a. When the boiler is not working, and electric heating is being used, the water in the vertical length of pipe XY cools down and tends to fall, causing electrically heated water to circulate in a reverse direction through the boiler, which will then be acting as an unwanted radiator. This is most likely to occur when there is little height between hot water storage vessel and boiler and the horizontal run XZ is of appreciable length. Other faults in Fig. 5a are the square shape of the storage vessel and the high level of the immersion heater.

The methods shown in Figs. 5b and 5c eliminate this risk by providing that the vertical length of flow-pipe XY is maintained at very near the storage temperature. The practice common in the Midlands and the North of bringing the flow pipe into the storage vessel at low level also avoids the risk of reverse circulation.

Layout of Pipework

To illustrate possible errors, an incorrectly designed system is given in Fig. 6a with the necessary corrections in Fig. 6b. In the incorrect layout there are three circuits causing waste of electricity. The towel rail, basin and bath taps are on one loop ABCDE through which electrically heated water will circulate: a similar movement will probably take place through the boiler loop HGFE and the radiator loop HLKJFE. These faults are eliminated in the correct design by providing direct draw-offs for all taps and connecting the towel rail to the radiator circuit which will only function when the boiler is in use. Note that the flow pipe of this circuit originates at the boiler itself instead of branching off the flow-pipe to the cylinder. Other faults in Fig. 6a are the running of the vent pipe vertically from the hot water storage vessel causing single pipe circulation in AB, the length of draw-off pipe to the sink tap which is excessive, and the omission of insulation to the hot water storage vessel.

If pipe runs are arranged on the lines explained above and in accordance with standard practice, and the instructions with regard to the hot storage vessel carried out, it will be found that no additional work is required on the average small installation to provide an economic alternative electric water-heating service.

Insulation

The hot water storage vessel *must* be *efficiently* insulated. A minimum thickness of 3 inches of high grade material having a thermal conductivity of 0.30 B.Th.U./sq. ft./°F./hour/inch of thickness or less is required, which is a simple and inexpensive matter to provide. Table 2 gives heat losses from a cylinder variously insulated. As the heat losses from a bare cylinder of the same dimensions would be 86 units per week at 140° and 115 units at 160°, with an air temperature of 60° the importance of proper insulation is manifest.

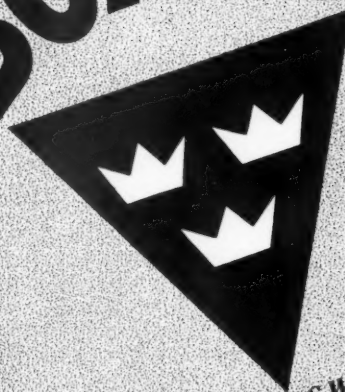
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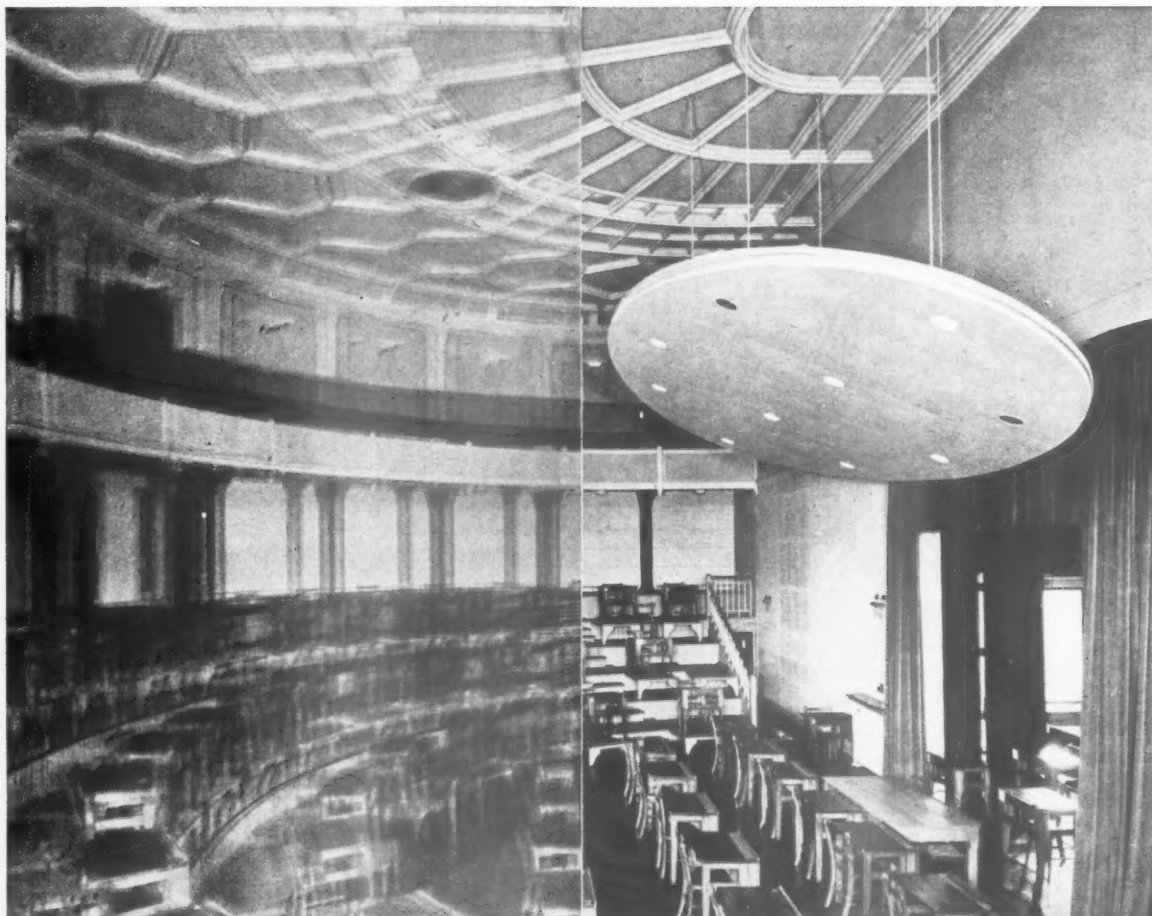
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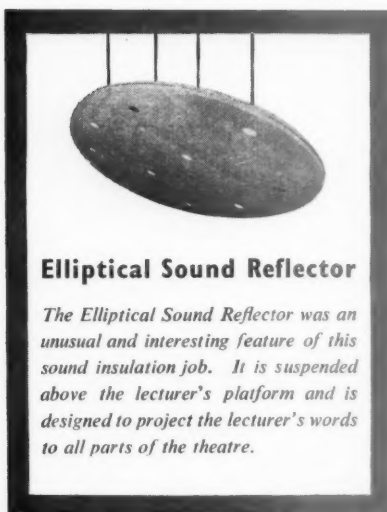
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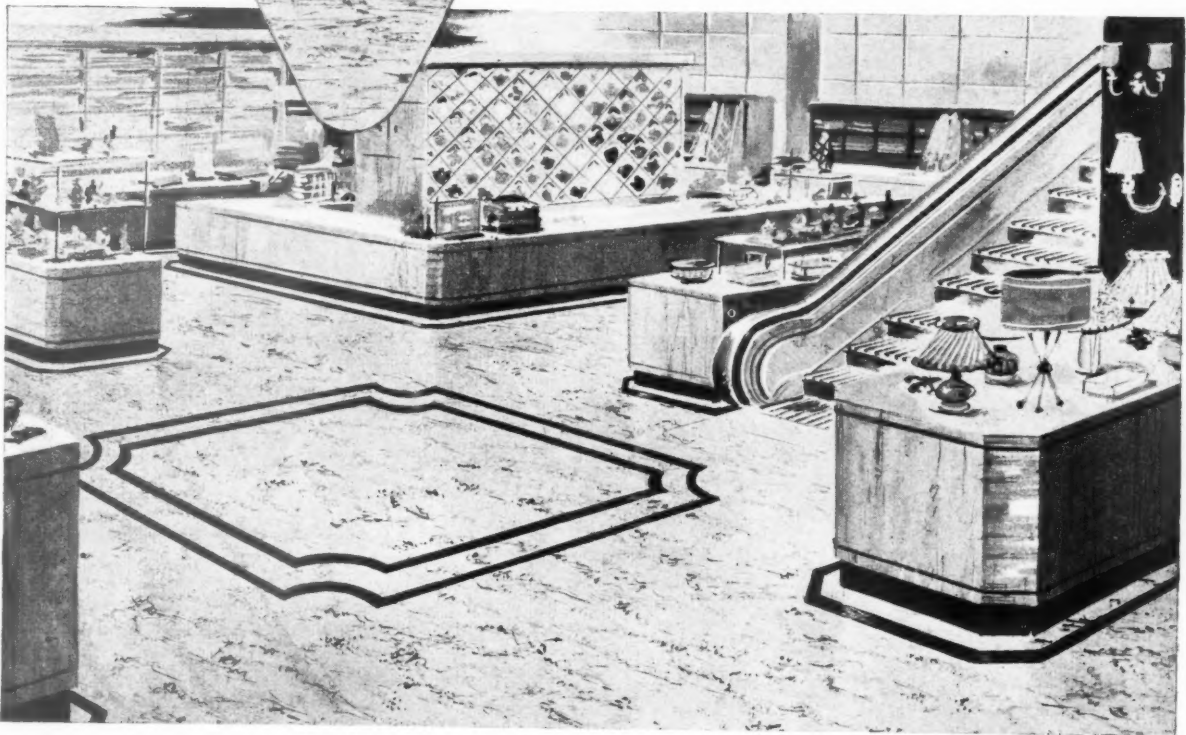
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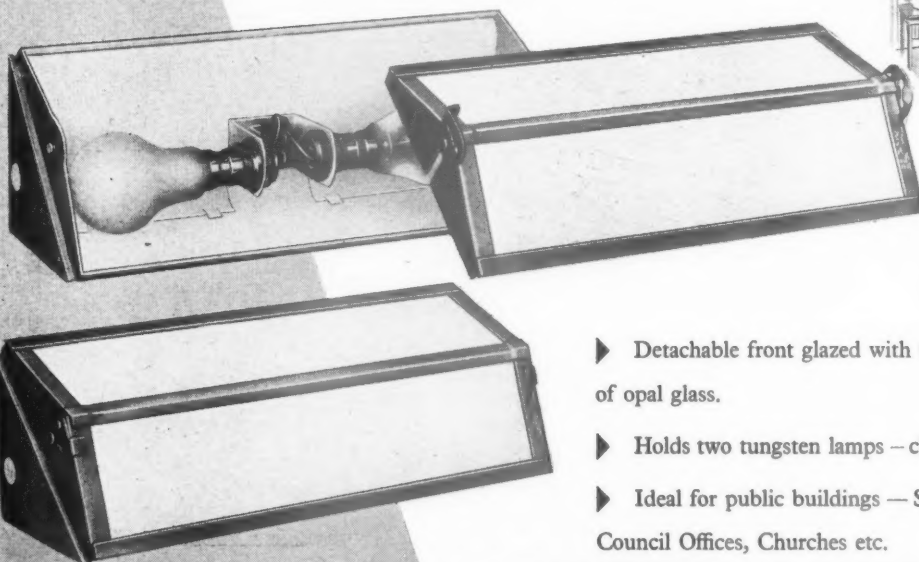
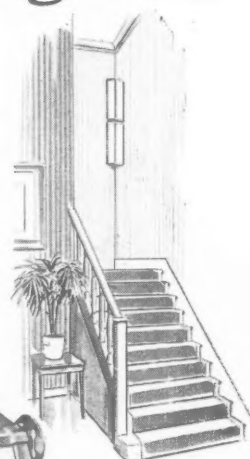
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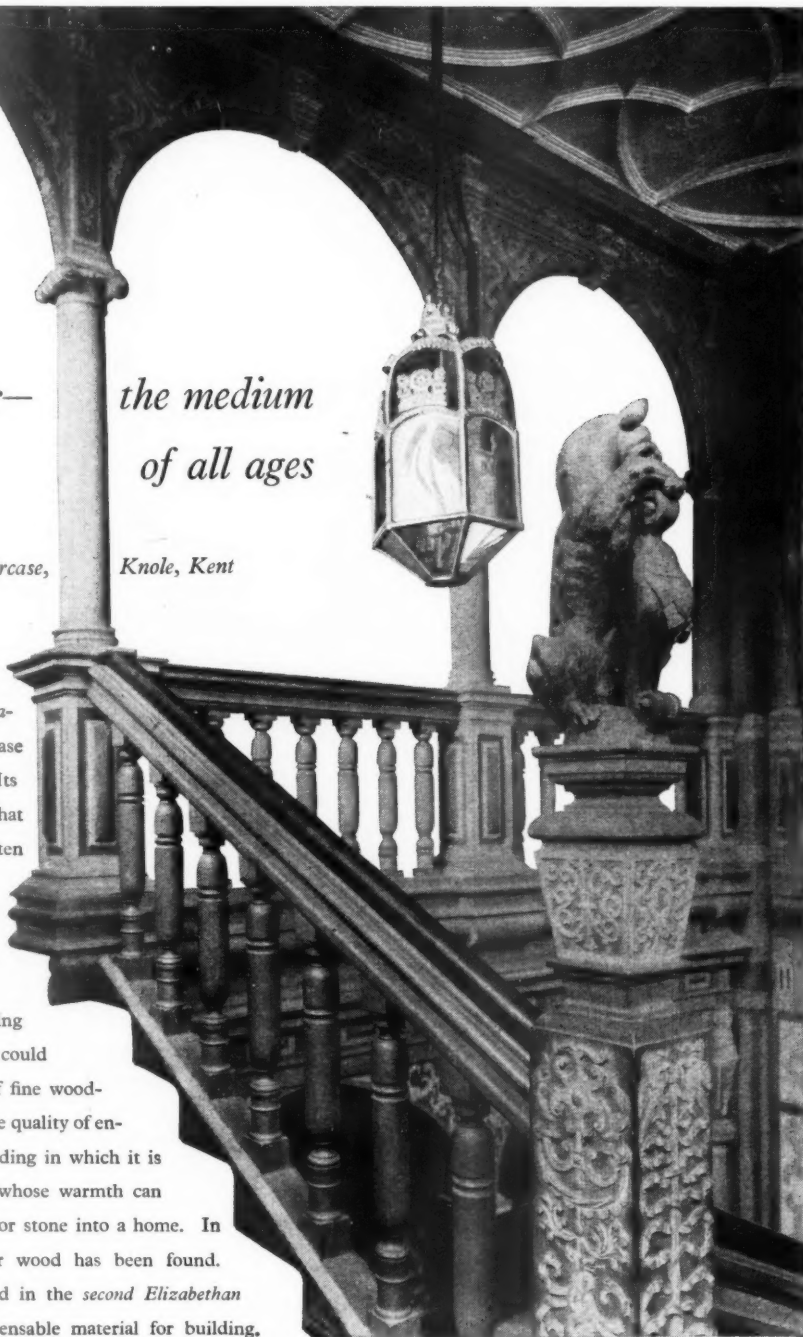
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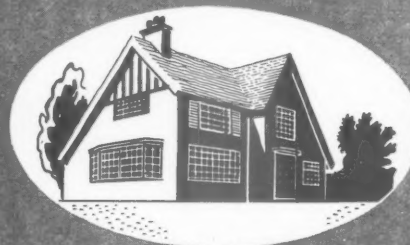
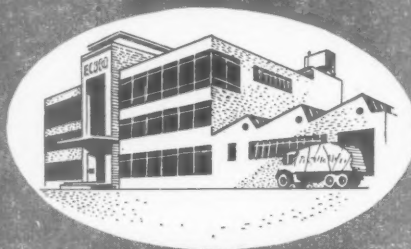
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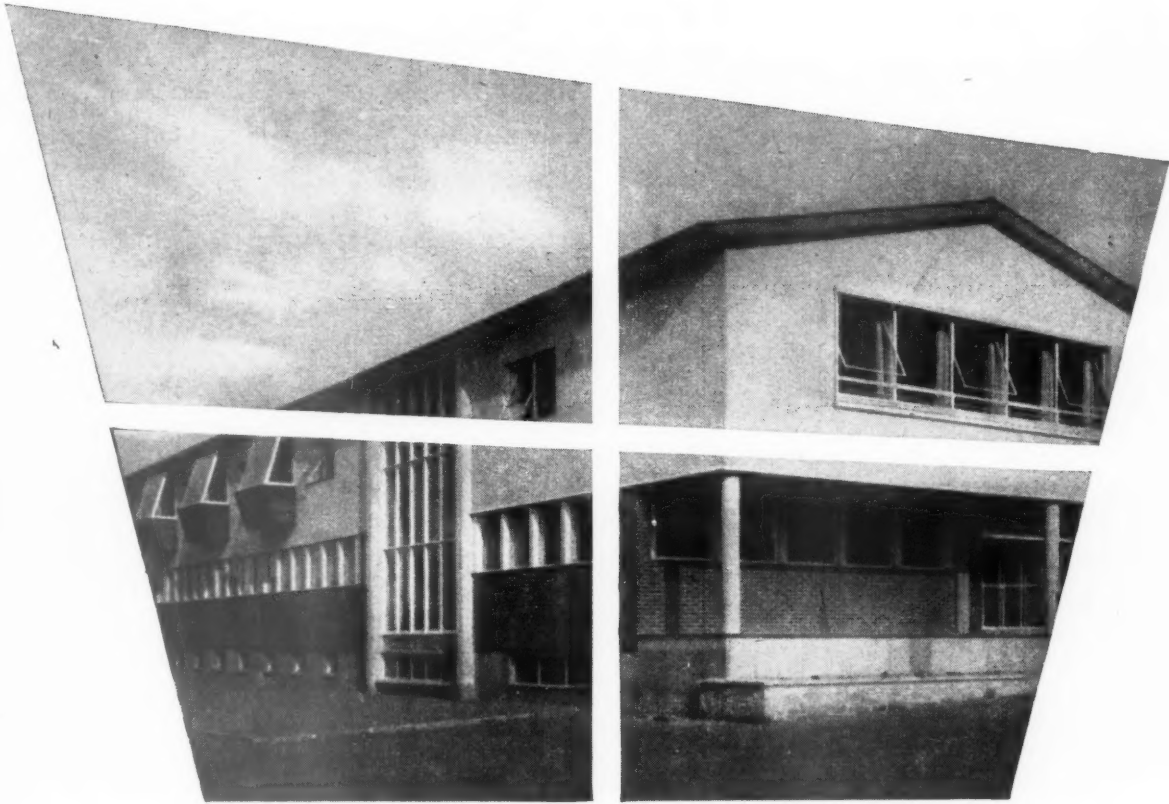
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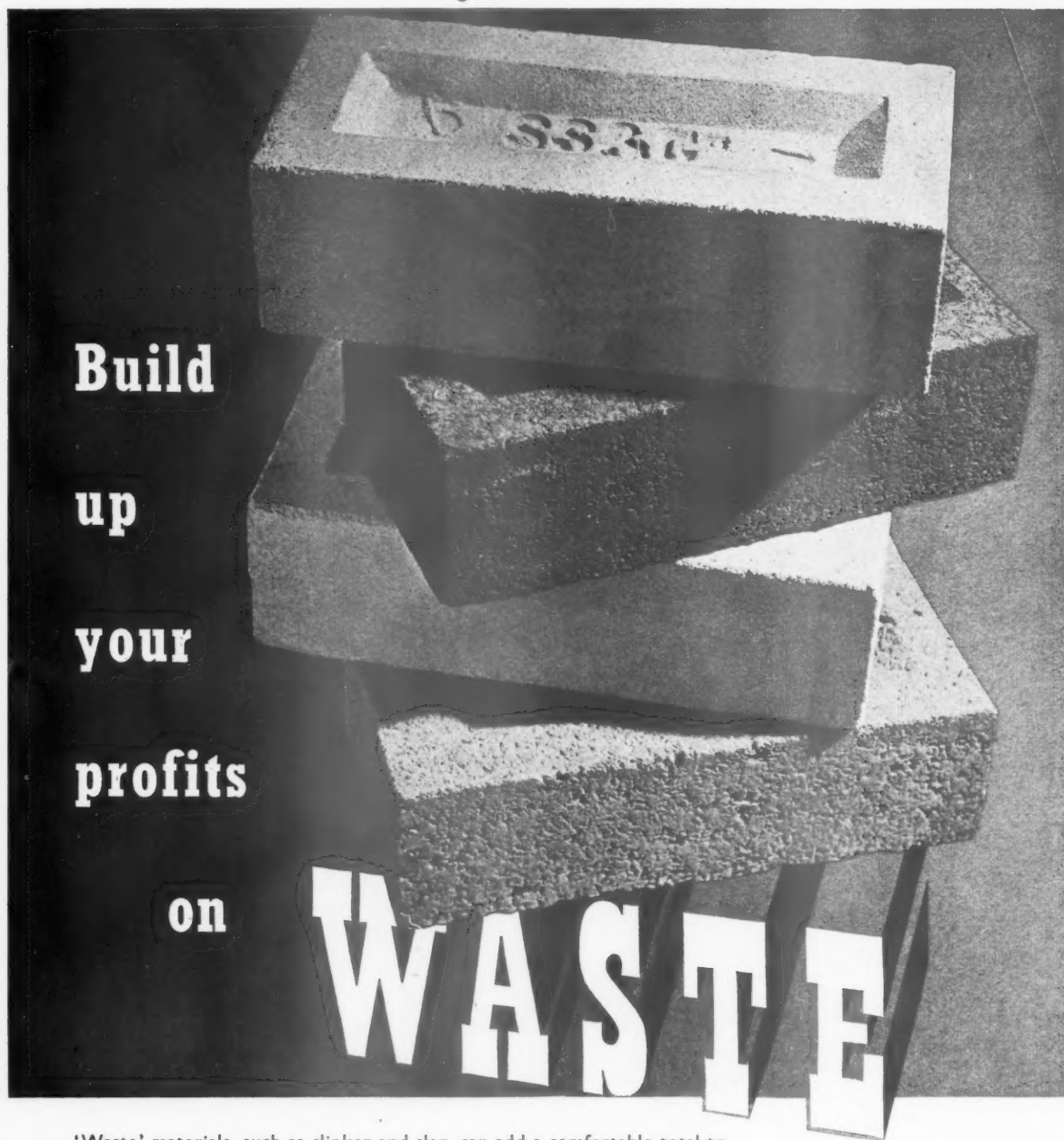
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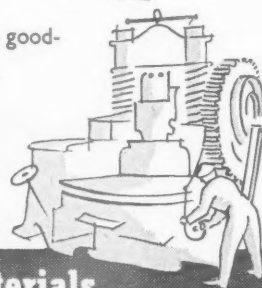
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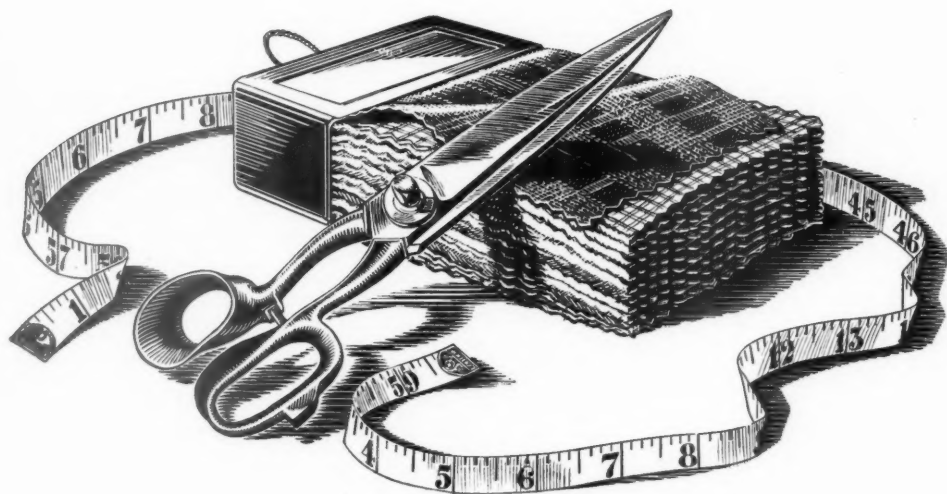
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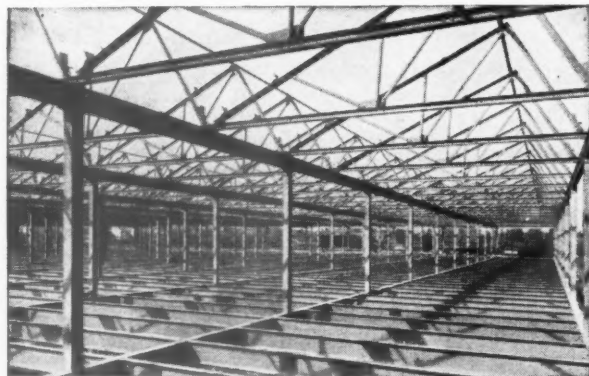
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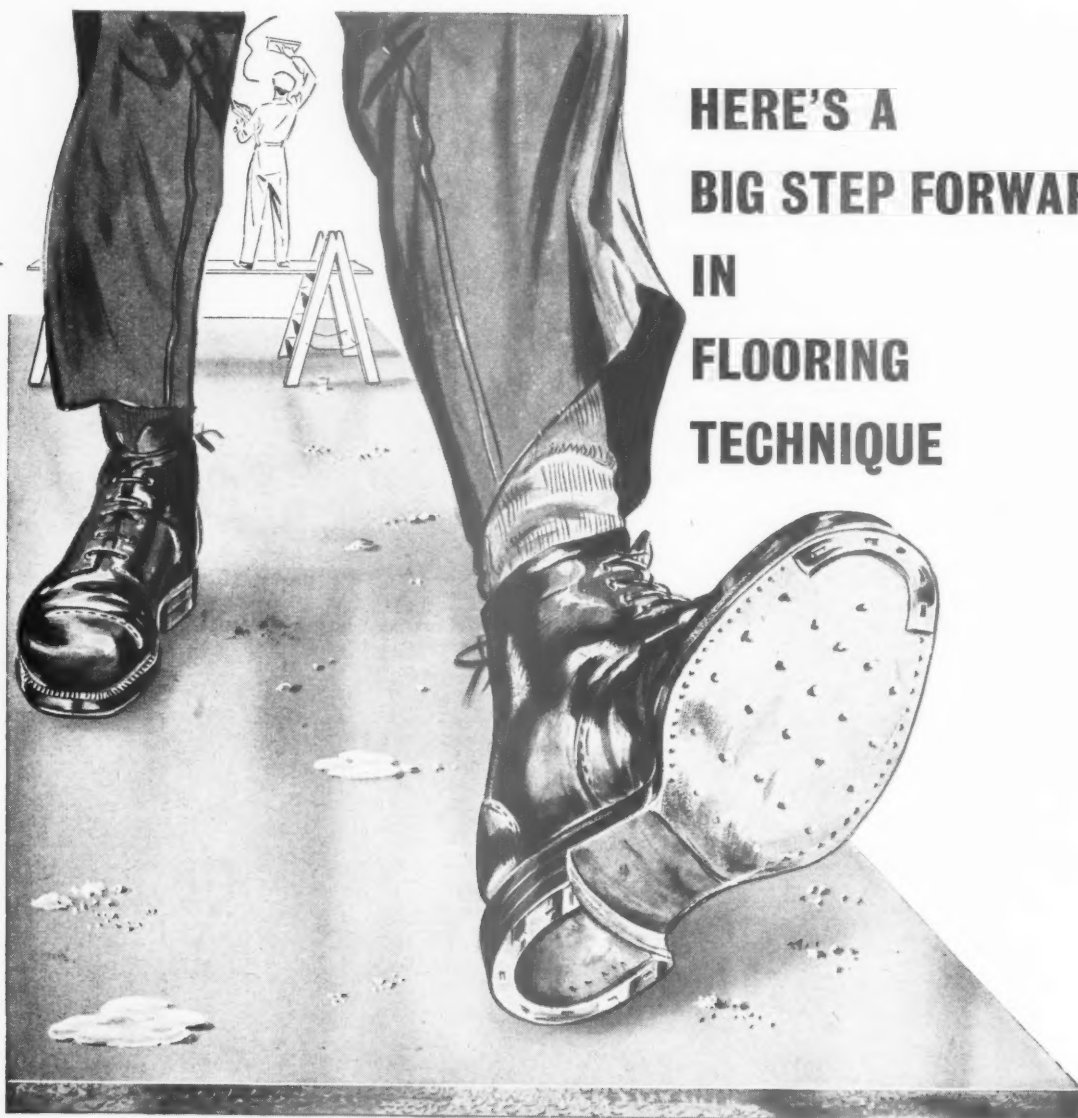
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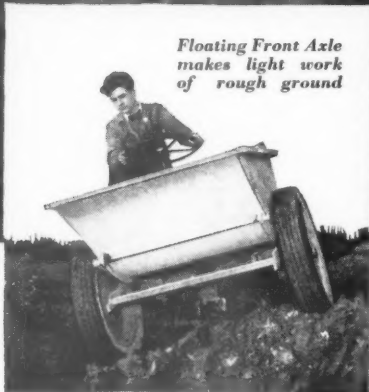
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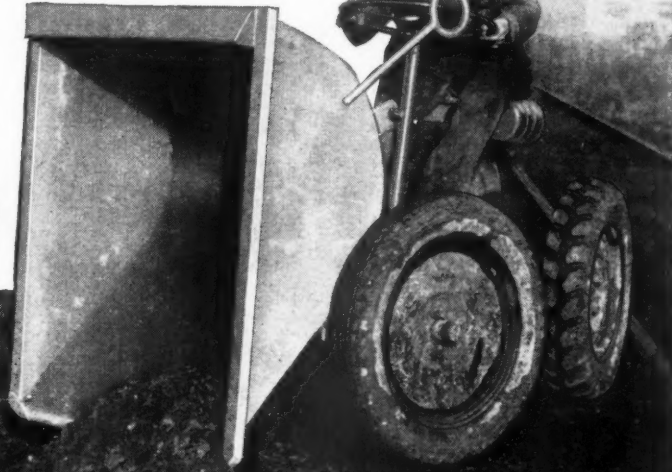
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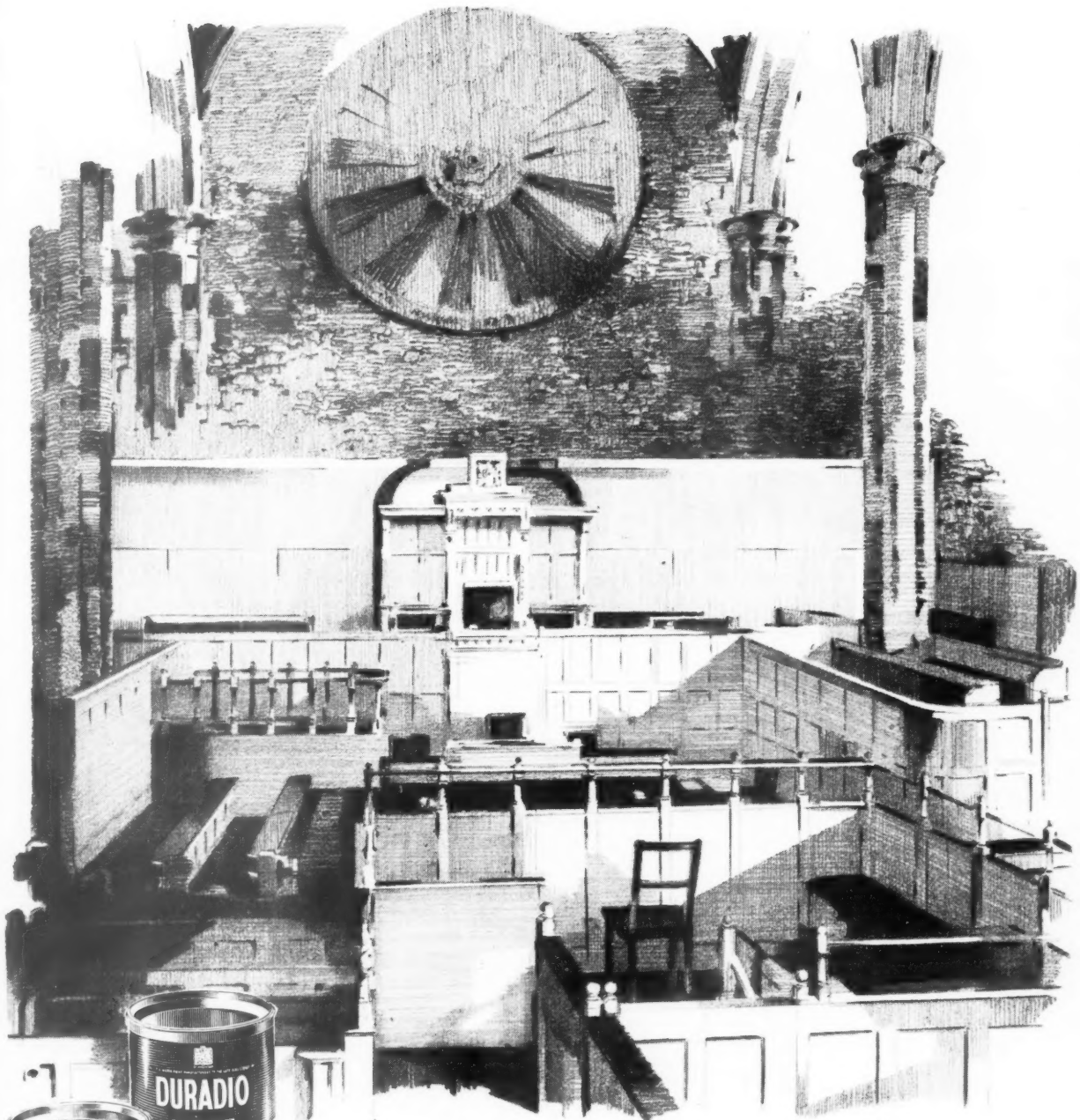


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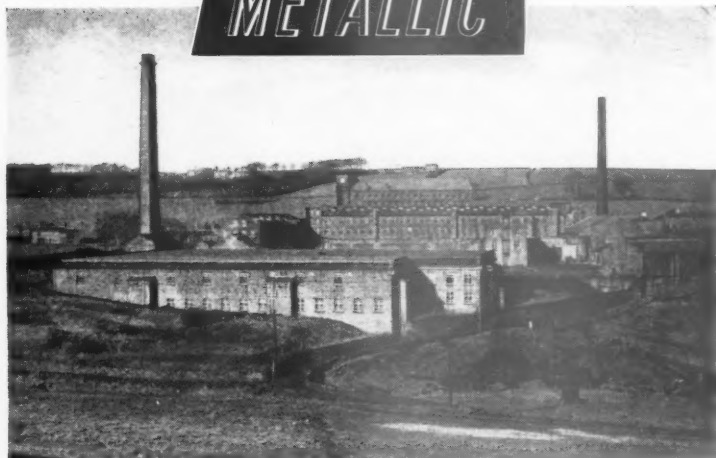
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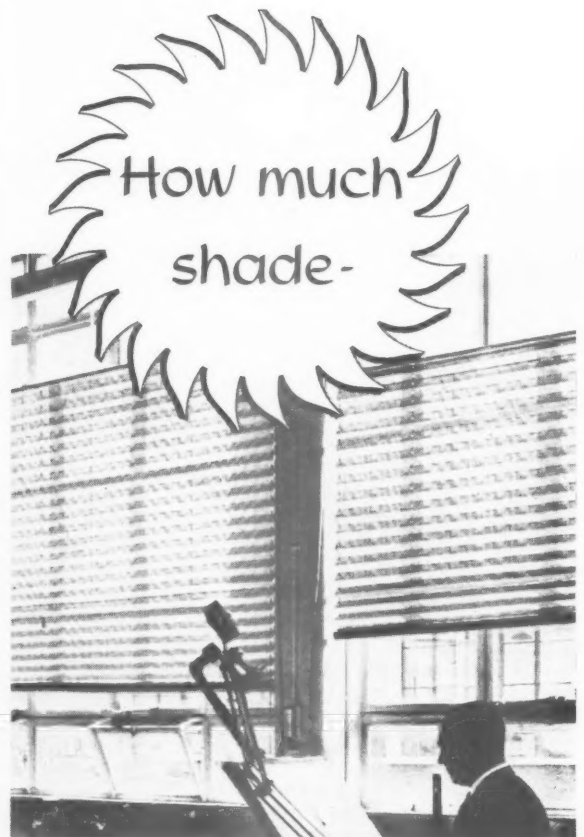
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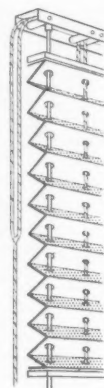
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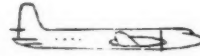
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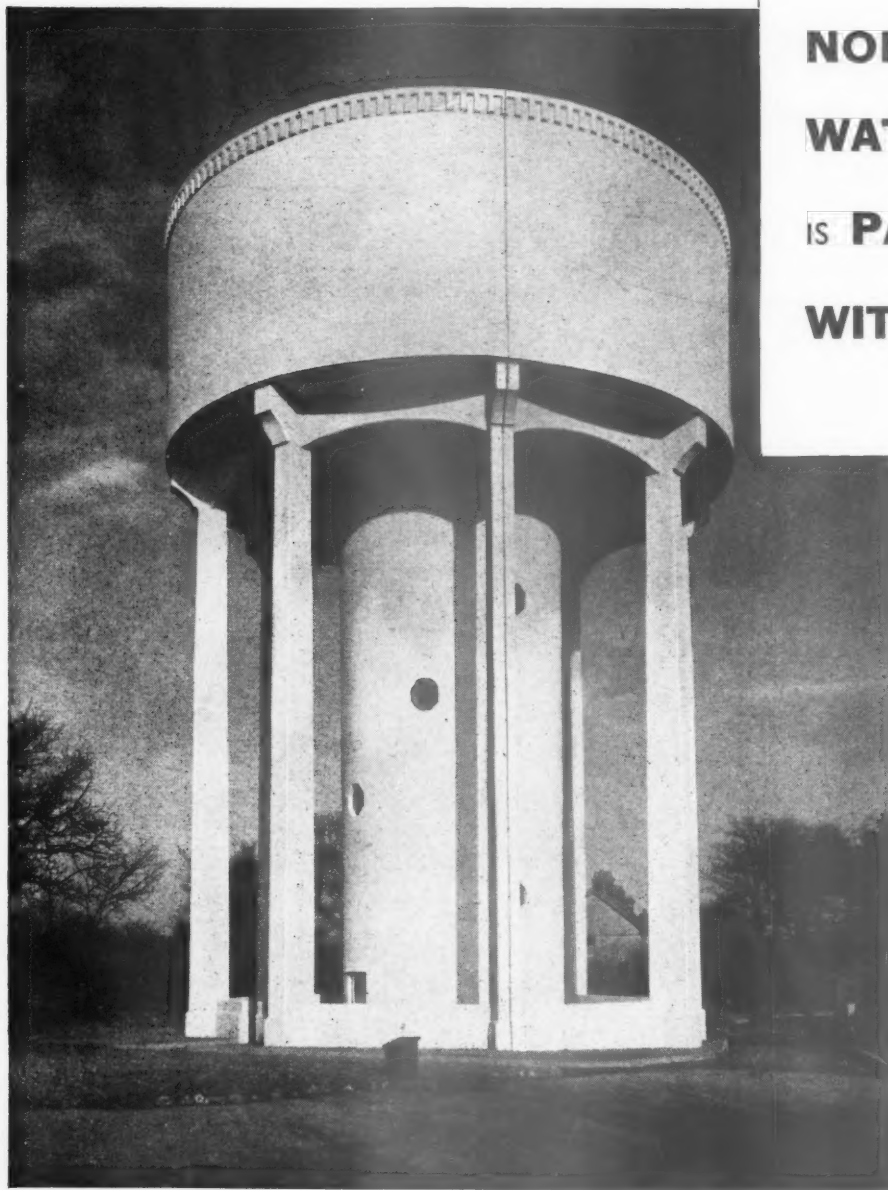
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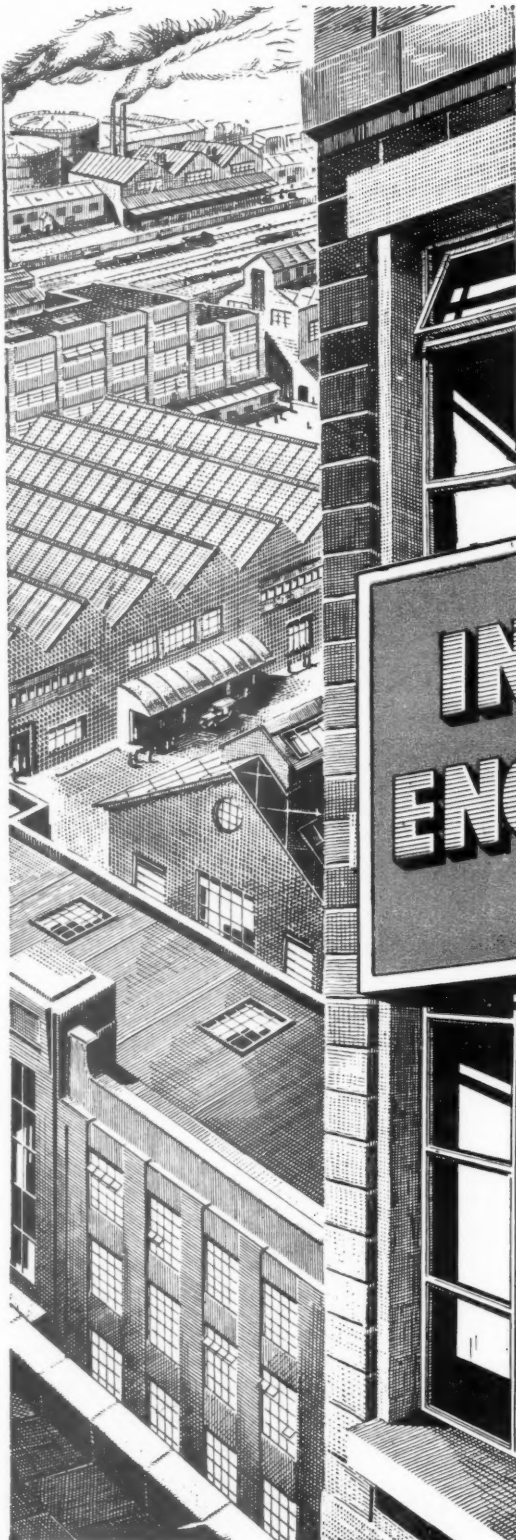
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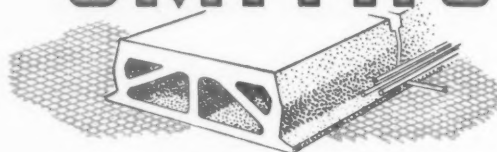
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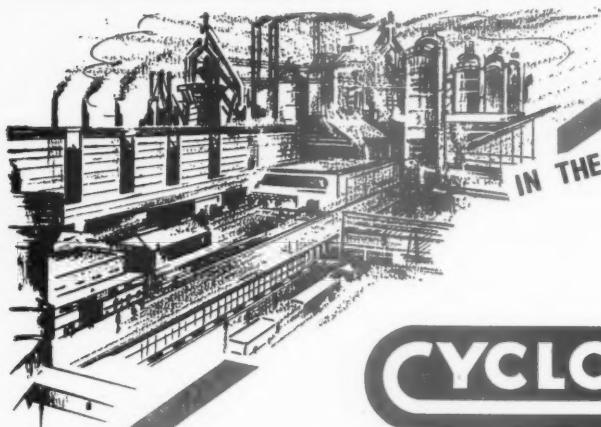
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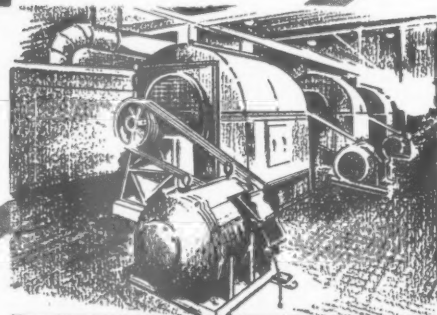


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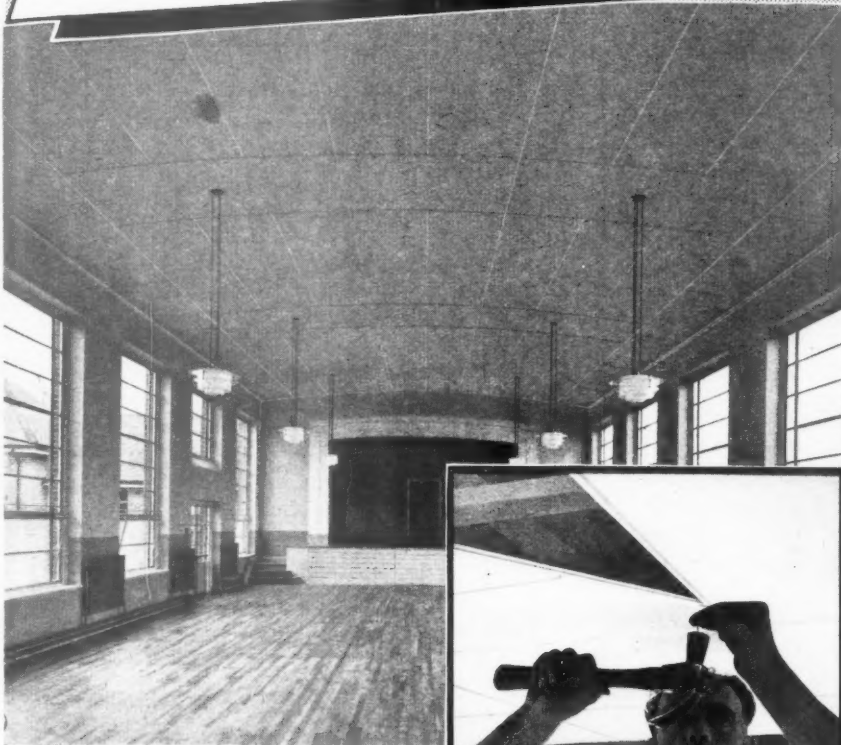
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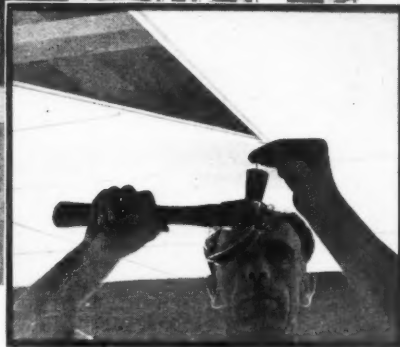
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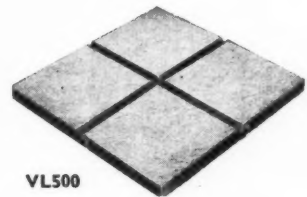
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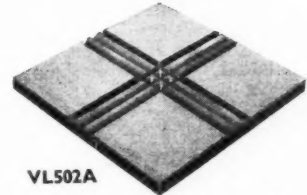
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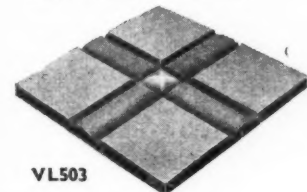


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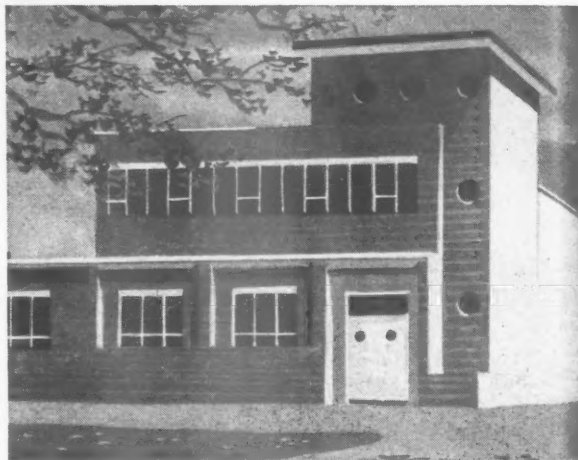


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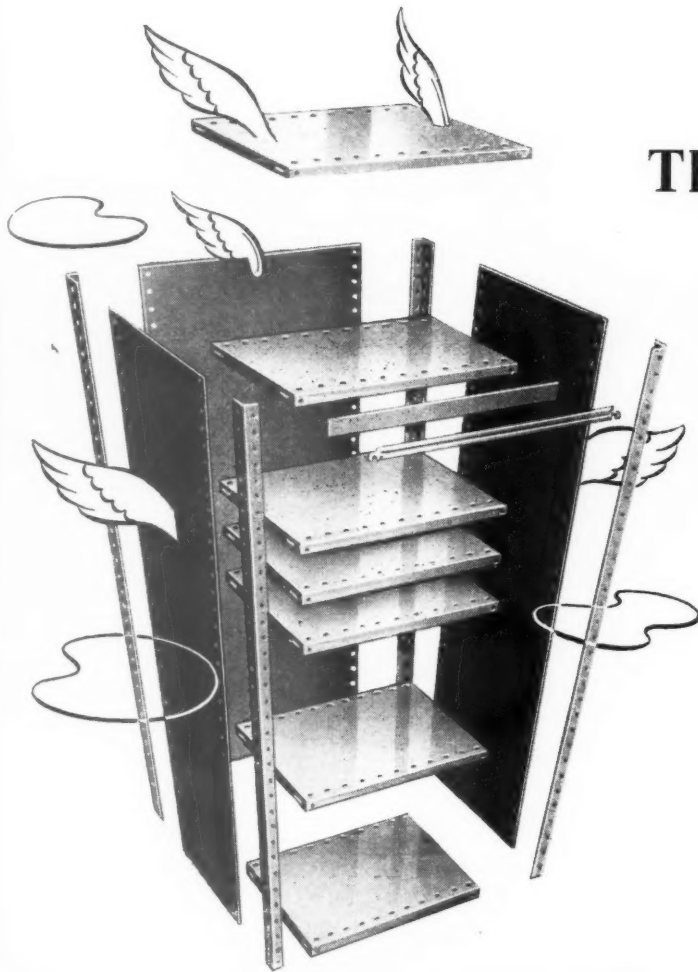
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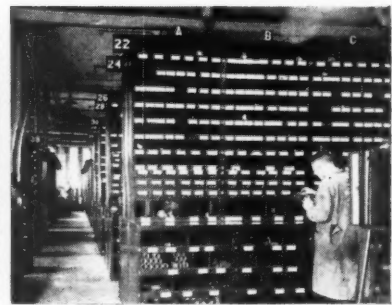
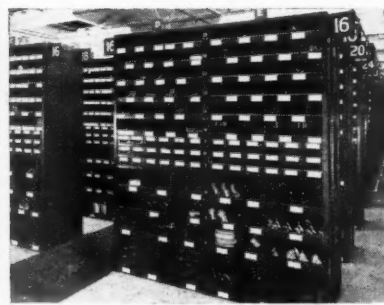
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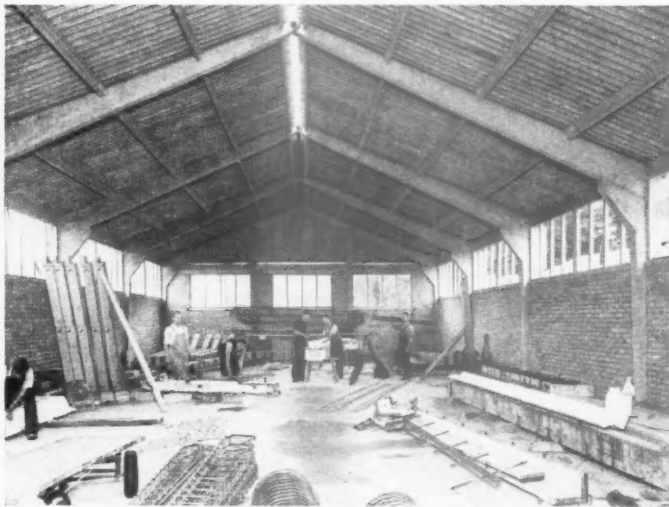
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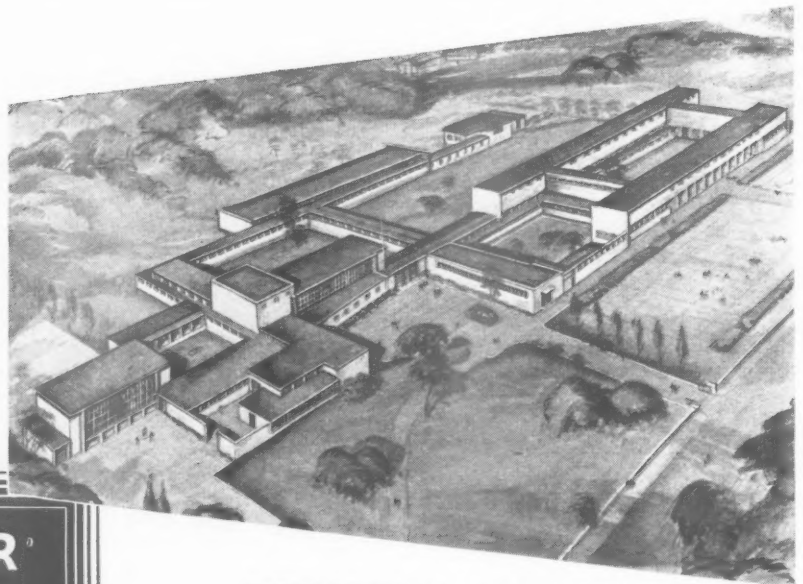
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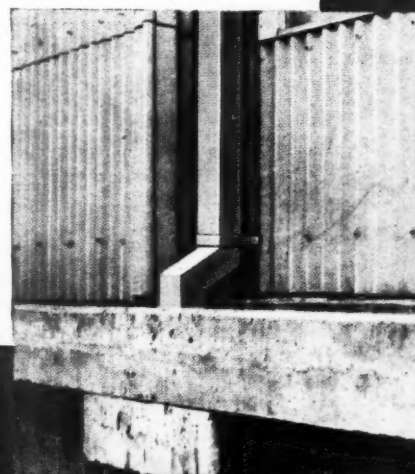
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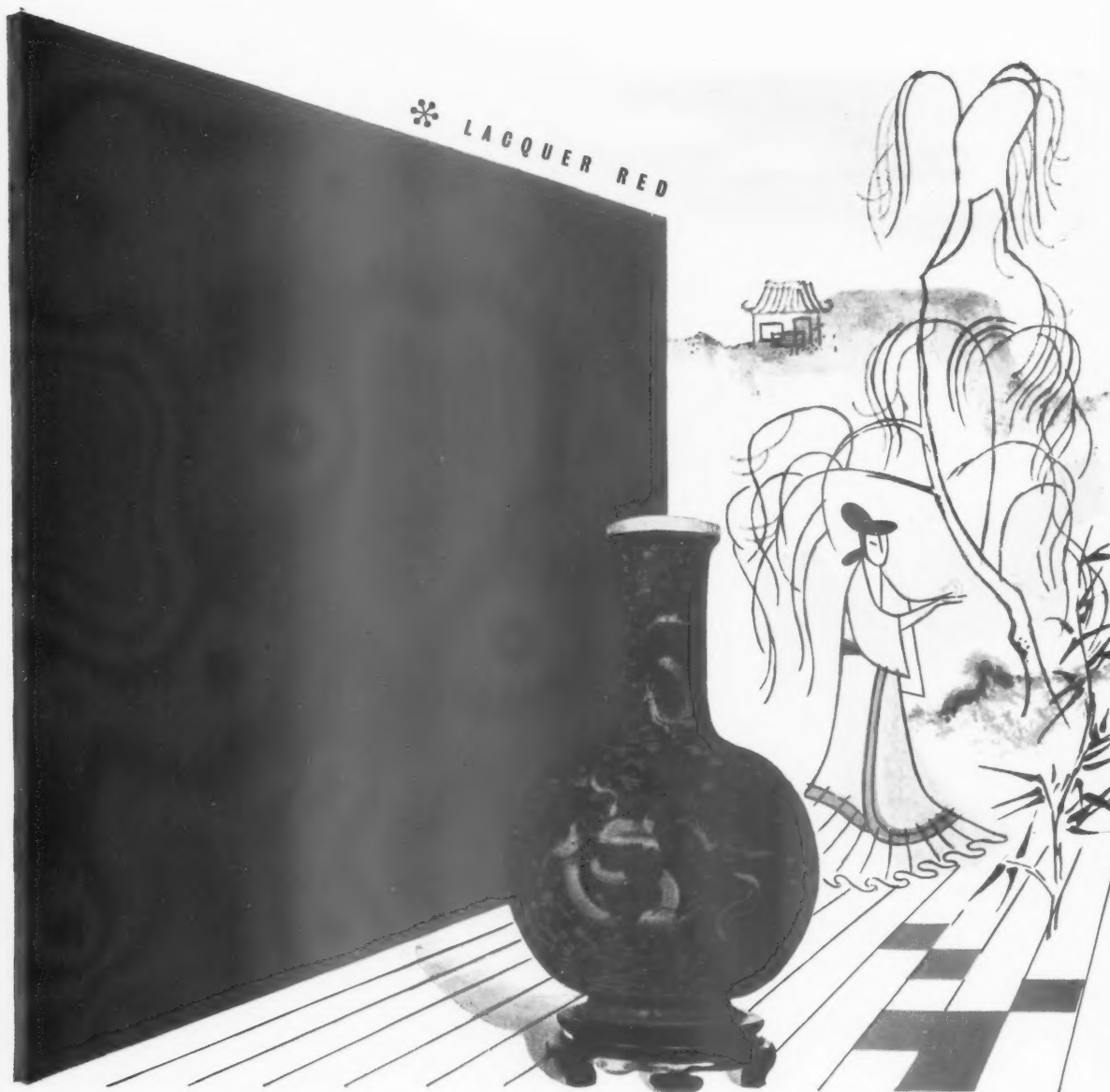
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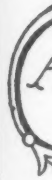
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TENDERING PROCEDURE

In the autumn of 1952, you may remember, there was a good deal of parliamentary fuss about restrictive practices in the building industry, culminating in a letter from David Eccles asking the RIBA to take the lead in "more active steps to reduce costs and review contracting arrangements." A joint committee of the RIBA, RICS and NFBTE has been meeting fortnightly since March of last year and the results of its deliberations were announced last week. (See article on page 437.) Only tendering procedure was considered and the most important conclusion published is that selective tendering only from firms competent to do the job should be "universally adopted," and that the

number of tenderers should be limited according to the price of the job, with a maximum of twelve for work over £200,000.

This is what builders have been wanting for a long time, and is no more than common sense. Otherwise there is not very much new—disapproval of any form of payment for tendering, and the hope that the fluctuation clause may be ultimately abolished. There is no comment on "an organization whose activities were, we understood, referred [to] . . . the Monopolies Commission." One sensible step is that in future the joint architect and builder committee is to be reinforced by representatives from the quantity surveyors.

Having dealt with tendering, the committee must get on with the other more important question of reducing costs. After the Working Party and US Productivity Team reports, are there really any changes in the building industry, or have we just rolled over and gone to sleep again?

WHEN IS A COMPETITION?

In recent months ASTRAGAL has joined the JOURNAL editors in repeated complaints about the lack of adequate reports from competition assessors. This week he is faced with something quite new—an example of assessors being too conscientious. You will have seen from last week's issue that although five awards were made for designs submitted in the Scottish competition for a church at Sighthill, Edinburgh, the assessors said that they preferred eight "outstanding designs" which would, however, be too costly to build. They went further than that; they recommended

that the promoters—the Church of Scotland National Church Extension Committee—should not build any of the prize-winning designs, but that they should invite the eight "also rans" to review their work and submit it again. An architect for the church would then be chosen from the eight amended designs and the five winning ones, which could also be amended and submitted again.

Is this fair to the winners? I hardly think so. If you have won a first prize in a competition, you do not expect to be told that several other people, who have ignored one of the competition conditions—the cost limit—did much more agreeable work than yours. And if you are told this, then you deserve to know why the rejected designs pleased the assessors more than your own. In other words, the assessors of the Sighthill competition—Professor Robert Matthew, Harry Taylor and Professor Rev. J. Ridell—should have made a full report explaining just how the "also rans" were improvements on the winners.

But even if they had done this their verdict could not have been considered satisfactory. In recommending that none of the winning designs should be built, they are encouraging the promoters to break the conditions of the competition, which state that the winner's design shall be constructed unless a good reason is given, in which case the second design will be used; and if not the second, the third—and so on. Presumably the RIAS, which helped to prepare the competition conditions (these are similar to the RIBA conditions),

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will point out to the Church Authority that it should ignore the assessors' recommendations.

ASTRAGAL sympathises with the assessors, who were, after all, trying to do their best in the interest of good architecture. Why, one wonders, did they not decide to make no awards at all. If they had asked all competitors to review their designs (with particular regard to costs), they might then have found a first prize-winning scheme which they would like to see constructed. As it is, they will find their good intentions defeated by competition conditions the implications of which they surely ought to have foreseen.

HOW NOT TO HAVE AN ARCHITECT

The *Planahome Book of Houses* is not the sort of document to come upon at the moment, for it will effectively curb any temptation you may have to cheer up or feel better because spring is more or less here. It is, in fact, a means of telling the public that it doesn't need an architect. It offers them, in a series of attractive double-page spreads, some thirty-odd conventional house designs, for which plans may be bought, complete with specifications, for fifteen guineas, and warns them that any alterations they may want to suit their own requirements will cost them more money (it does not say *how much* more money), even if they are standard mods. which Planahome have on their books. If a client wants to examine a plan in more detail he may do so, but he must pay ten guineas for the plans, and he can't get his money back if he doesn't like the scheme.

What really rankles is the gratuitous crack at the profession contained in the second paragraph of the introduction, which reads: "It would probably cost you £200 or more for specially drawn-up plans and specifications, not to speak of months of frazzled nerves and the risk of a culminating disappointment." Do we *have* to put up with this sort of thing?

By the way, the "Planahome publishers of technical information" have a consulting architect who is an ARIBA. So that's all right—or is it?



Not, as one might suppose, in Paris, this unusual building stands at the foot of Bennett's Hill, Birmingham. Behind the zig-zag bays, which cantilever over the pavement of New Street, will be housed the local offices of Shell-Mex and B.P. (Designed by Messrs. Cotton, Ballard and Blow.)

DESIGN INTELLIGENCE

A friend of mine recently came across another instance of the continuing influence of the 1951 Festival. He decided he needed a haircut, and on entering the nearest barber's, found he had chosen the one patronized by the local Edwardian-suited youths who frequent the dance-hall next door.

Great importance, it seems, is attached to the hair-do among such young people. It includes waving as well as cutting, and on the walls of the shop customers were offered the choice of three different styles: the "Military," the "Olympic," and the "South Bank." Sir Hugh Casson must take care what he starts next.

NEWS

AA

Report on its Position

Sir Hugh Casson, the AA president, has sent the following letter to AA members:—

"I think that all members might wish to have a brief report upon the possibility of the return of the student vote and upon the future policy of the school.

"Last July the council agreed that it would be desirable to recommend to the membership that the student members of the association should have the additional privilege of nominating candidates and voting for members of council. This proposal involves a change of articles for which the assent of the Board of Trade has to be obtained. This has been applied for and rejected, but further negotiations are in progress. These have not yet reached the stage where the full membership can be approached and asked to vote upon the merits of the proposal.

"The question of establishing a sound financial policy for the school has been under consideration for some time by this and pre-

vious councils. Now that the FET grants to students have ended and the size of the school has been reduced, we must expect a fall in income without a corresponding reduction in expenditure. In 1952 it was necessary, in order to balance the school budget, to raise the fees from £100 to £120 per year. In addition, as many economies as possible were made and proposals to extend some of the school facilities were regretfully postponed. We believe that these remedies cannot be pursued much further if academic standards are to be maintained and the AA is not to lose the educational leadership it has enjoyed for so many years.

"This problem has now become of critical importance to the future of the school. The council has considered many alternative solutions and we hope before the end of this session to put our recommendations before you."

Evening Classes in Design

Although the number of tutors for evening classes in design has been increased, the classes are still over-subscribed. The council of the Association have therefore decided that no new applications can be accepted for these classes until September 1.



Nautical Style?

Whereas most of Britain's luxury liners have the third-rate interior of the average first-class hotel, the Orient's ships have decor that is as good as our best hotel interiors. But is that a complimentary thing to say about a ship? Should passengers in mid-ocean be made to think they are in the middle of a town? If not, what can be done to make floating hotel interiors more ship-shape? One answer has been provided in several liners; a lounge-restaurant, such as the one shown in the top photograph of the Orient's *Orsova* (designer, Brian O'Rorke), can be placed so that it is surrounded by large windows and its

inhabitants are made aware that they are at sea. But not all the accommodation on board can have a sea-view, and the photograph above shows how a nautical flavour has been introduced in another lounge of the *Orsova* by means of a design feature—the work of Humphrey Spender. This and several other features on board, shows that an attempt has been made to give the *Orsova* a less landlubber-like atmosphere. These imaginative touches are superior to anything of the kind done before, but isn't it strange that large passenger ships have not evolved a nautical style below deck as they have above?

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ARCHITECTS' UNION

BAG Replies

The secretary of the architects' trade union, BAG, which has been registered by the IAAS, has written to us as follows:—

"ASTRAGAL refers, a little critically, to the fact that the rules of the guild as at present constituted provide that the council of the body shall consist of one-third members of the IAAS and one-third members of the RIBA. He states, quite rightly, that this is not proportionate to the membership of the two bodies.

"The reason for this provision, however, was not a desire to give equality to the IAAS, but to ensure that the two professional bodies possessing corporate and non-corporate members were indirectly represented in the management of a new body which might otherwise be severed entirely from the steady influence of existing organizations.

"In fact, the proportions are not as undemocratic as ASTRAGAL implies. In the first place a very large number of IAAS architect-members are members also of the RIBA, and of the one-third seats allocated to members of the IAAS it is possible that all their occupants might be members also of the Royal Institute. Secondly, the remaining one-third not specifically provided for would undoubtedly consist in the main of members of the Royal Institute and thus there would inevitably be a considerable majority of RIBA members on the council of the British Architectural Guild.

"In any case this rule, and indeed all the rules as at present formulated, can be very simply amended by a resolution carried by a two-thirds majority in council."

. . . . and ABT Comments

The ABT has announced that it "deplores the ill-advised formation of yet another organisation — the British Architectural Guild" and that it "fully supports the views expressed by the RIBA on this question."

MOHLG

February Housing Figures

The MOHLG announces that 19,786 permanent houses were completed in Great Britain in February, compared with 20,118 in February of last year.

CORRECTION

We regret that in announcing the death of Niel Martin-Kaye we wrote, in error, that he had been editor of *Architecture Illustrated*. The editor is—as it has always been—Hugh William Martin-Kaye.

DIARY

Architectural Criticism. Viewing of Lansbury Housing Scheme, conducted by P. Johnson-Marshall. Contact the ICA, 17-18, Dover Street, W.1, for meeting place.

APRIL 10

The Planning of Lift Installations in Commercial Buildings. At the RIBA, 66, Portland Place, W.1. 6 p.m.

APRIL 13

British Architects' Conference, Torquay. For full particulars apply to the Secretary, RIBA, 66, Portland Place, W.1.

MAY 26 TO 29

POINTS FROM THIS ISSUE

The Sighthill Competition results ..	page 415, editorial below, and page 423
Report on Tendering Procedure reviewed ..	pages 415 and 437
Changes in the Festival Hall ..	page 439

The Editors

THE JOURNAL'S STUDENT AWARDS

THIS week we are offering two awards of £200 to student readers. All you have to do is to fill in the form on page 421, saying what sort of research you would carry out with the prize money should you win it. The two students with the most original and creative ideas will each be given £200 to spend on research they wanted it for. What will the assessors look for? They hope to find two entries as unorthodox as the competition itself—entries, perhaps, from the type of student who does not normally go in for prizes, scholarships or competitions because his mind doesn't work that way. It is this student who often turns out to be the most brilliant when he has left his training days behind; but because he is not temperamentally suited to scholarship work he is unlikely to earn the prize money that he could put to such good use in furthering his education.

The JOURNAL's competition is just what this student will welcome. Indeed, most students will surely welcome a competition that does not involve them in any work. In our opinion, they have quite enough to cope with in their school programmes without taking on additional work which may get them nowhere. And if they are not successful in winning the JOURNAL's competition they will, at least, have the consolation of knowing that they wasted no more of their time on it than it took to fill in the entry form.

It is our hope that the JOURNAL competition will be successful enough to become an annual event.

A STRANGE AWARD

When Professor Robert Matthew and Harry Taylor put in their report (in collaboration with a third assessor who was not an architect) on the competition for a church at Sighthill, Edinburgh, they made a unique recommendation. They suggested that none of the premiated designs should be built by the competition's promoters, and they recommended that eight "also rans" should review their "outstanding designs" and submit them again. An architect would then be chosen from the five winners or the eight "recommended" losers.

This raises a number of difficulties which are discussed by ASTRAGAL on page 415. We shall not argue the case here. We merely point out that we have given readers a chance of deciding for themselves whether or not the assessors were justified in making their recommendations by printing in this issue not only the five winning designs, but also the work of the eight "also rans."

AJ STUDENT AWARDS

WHY DO YOU WANT £200?

If you are a student reader (on the RIBA Register) here is your chance to spend £200 on the research work you most want to carry out. All you have to do is to tell us why you want the money.

Win without working

It is as simple as that. Unlike most organizers of research scholarships we are not asking you to work before you win—or fail to win—the prize money. We think that if you have a good and original reason for needing £200 for research you should be given that sum without having to waste precious time on preliminary work. If you are not successful in getting the money then you will have wasted no more time than it takes to fill in the form opposite. If you *are* successful you will spend £200 doing whatever you said you wanted to do with that sum.

Two awards to be won

The two awards of £200 will be given to the two students who, in the opinion of the assessors, have the most original and creative reasons for wanting the money. These reasons must be written on the entry form opposite. On the other side of the form you may fix sketches or other illustrations to amplify what you have to say. If you are placed on a short list by the assessors (the JOURNAL editors and a principal of one of the architectural schools) you will be asked to call on them. And at this interview you may be asked to produce examples of your work.

How the winners will be chosen

What, you may be wondering, will the assessors be looking for? If there is no competition in the ordinary sense of

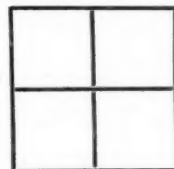
the word, how can the judges select the winning entrants? Their task will, in fact, be very simple. They will be looking for original, unorthodox ideas. This is not an orthodox scholarship for the kind of people who invariably win scholarships with flying colours. It is designed for the student who does *not*, as a rule, win scholarships—the student who is full of brilliant ideas for his own higher architectural education, but is short of the cash to carry them out. In other words, the assessors will be looking for the entrant who, though allergic, by temperament or conviction, to the whole idea of scholarships, would know very well how to put scholarship money to a good use. So if you think you may have brilliant and unorthodox ideas, here is your chance to prove it to yourself. You may even have the chance of proving it to JOURNAL readers, for any reports that the prizewinners prepare as a result of their research will be considered for publication in this paper.

Closing date

Entries (marked COMPETITION) must be received by the Editors, THE ARCHITECTS' JOURNAL, 9, Queen Anne's Gate, S.W.1, by May 3. The Editors reserve the right to withhold the prizes if no adequate entries are submitted. If there is a good response to the competition it may become an annual event.

ENTRY FORM FOR A J STUDENT AWARDS

Entries cannot be accepted unless the competitor is on the RIBA Register of Students. Nor can they be accepted unless they are submitted in the spaces allotted on each side of this sheet. Written statements and sketches may be made on separate sheets of paper only if they are pasted (not pinned) in the space available. Entries must be in the assessors' hands by the first post, May 3, 1954.



Name in full..... Date of birth.....

Name of School..... Full or Part-time student?.....

Address.....

State in the space below how you would use £200 to further your architectural education. If you wish to amplify your answer with some form of illustration, please put it on the back of this page.

Cut along this line

I hereby declare that if I win one of the two prizes of £200 I shall use it for the purpose stated above.

Signature of competitor.....

Date.....

A J STUDENT AWARDS

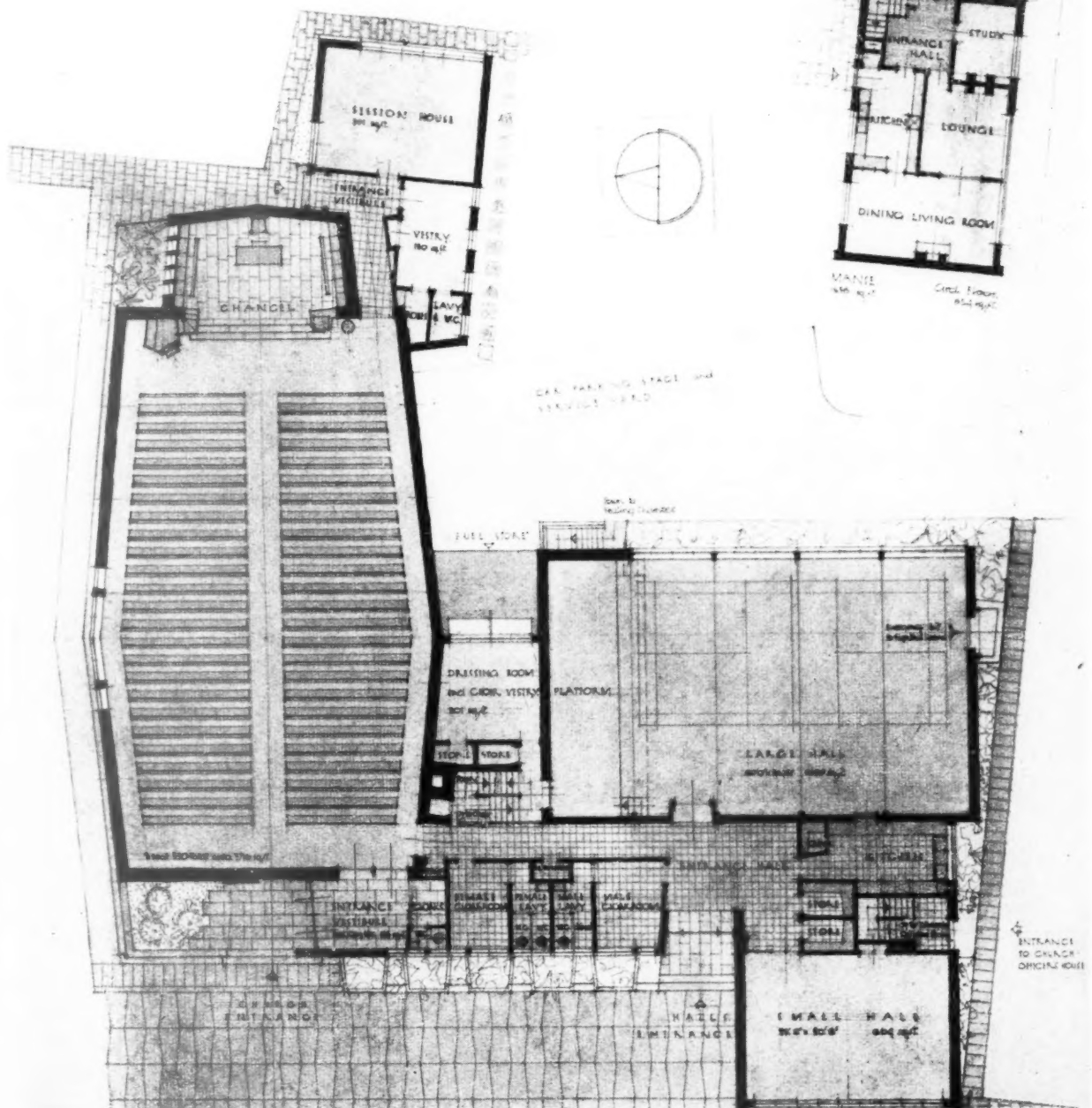
Any illustration needed to amplify your answer on the previous page should be provided here. Sketches on separate sheets of paper will be accepted only if they are pasted (not pinned) within the space available.

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WINNING AND RECOMMENDED DESIGNS FOR CHURCH AT EDINBURGH

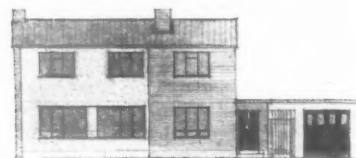
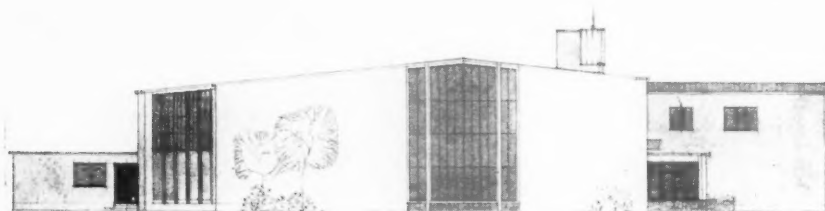
The report made by the assessors of the competition for a church and ancillary buildings for Sighthill, Edinburgh, is unique. They have advised the competition's promoters—the Church of Scotland National Church Extension Committee—not to build any of the premiated designs, and they have suggested that eight recommended "outstanding designs" be reviewed (i.e., brought within the cost limit) and submitted again, so that an architect can be chosen. We have, therefore, given space to all thirteen designs. ASTRAGAL comments on the unusual assessors' report on page 415.

Ground floor plan of first winning design, by A. M. Doak and A. R. Whitelaw



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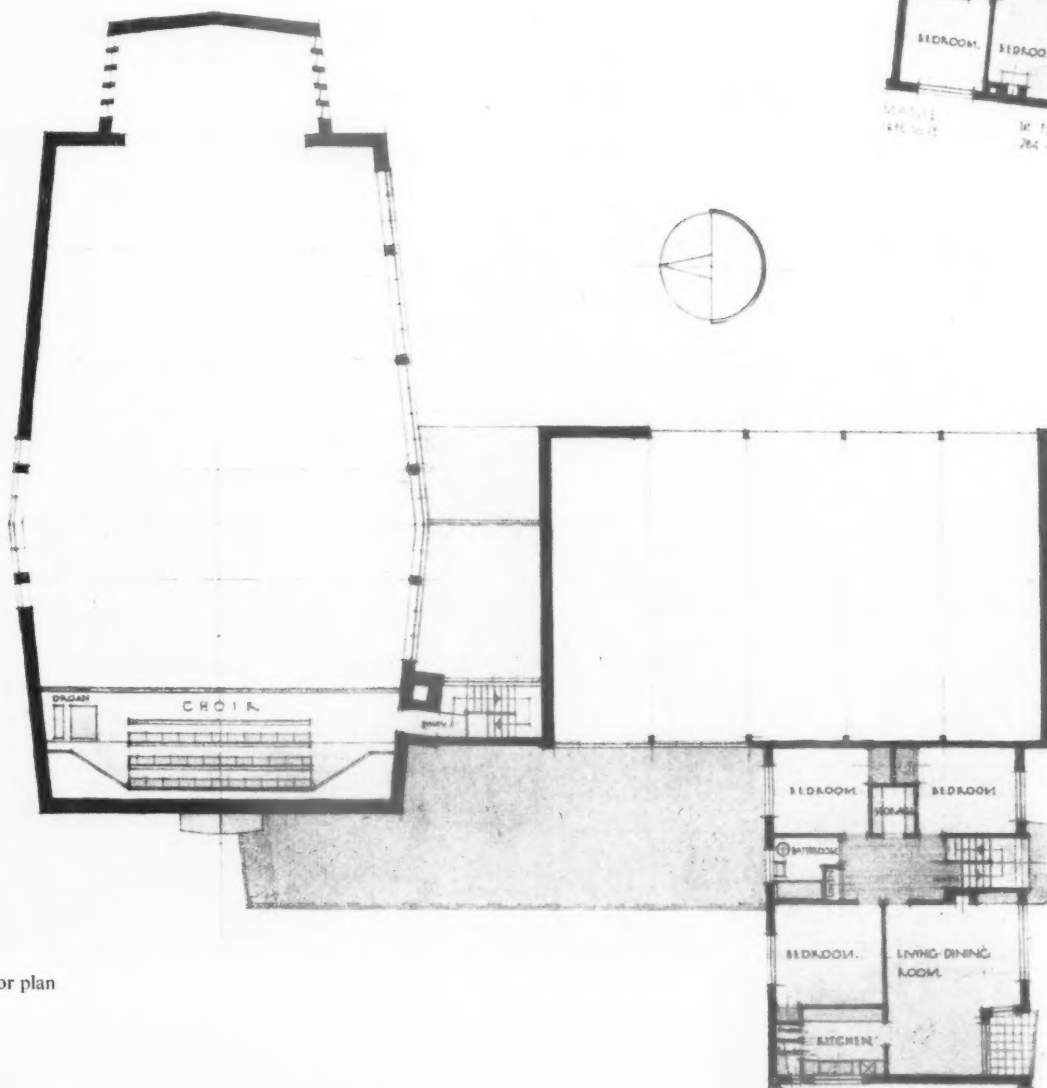
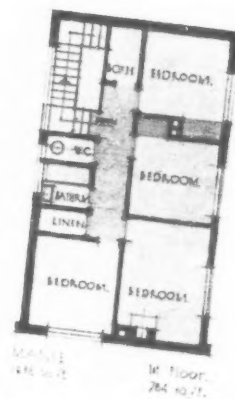
FIRST PRIZE-WINNING DESIGN BY A. M. DOAK AND A. R. WHITELOW



South elevation of manse



Top, north elevation. Above, south elevation



First floor plan

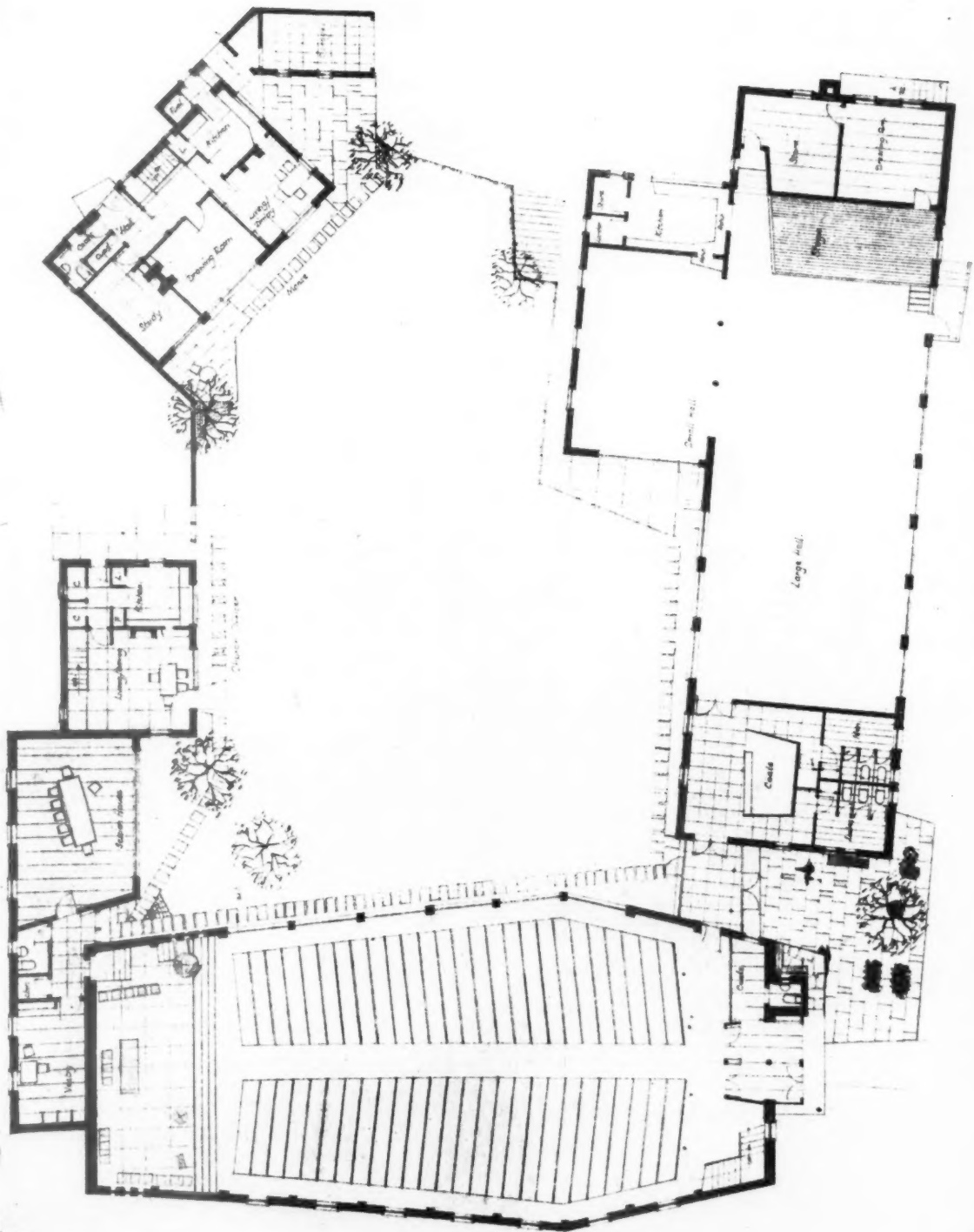
CHURCH OFFICERS' HOUSE
Including stairs 1124 sq. ft.



South elevation

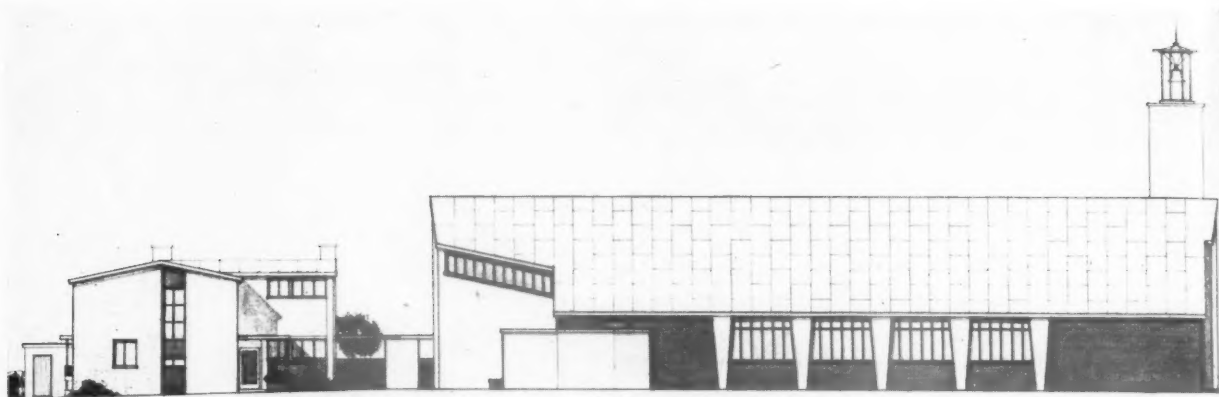


West elevation



SECOND PRIZE-WINNING DESIGN BY C. A. HOPE

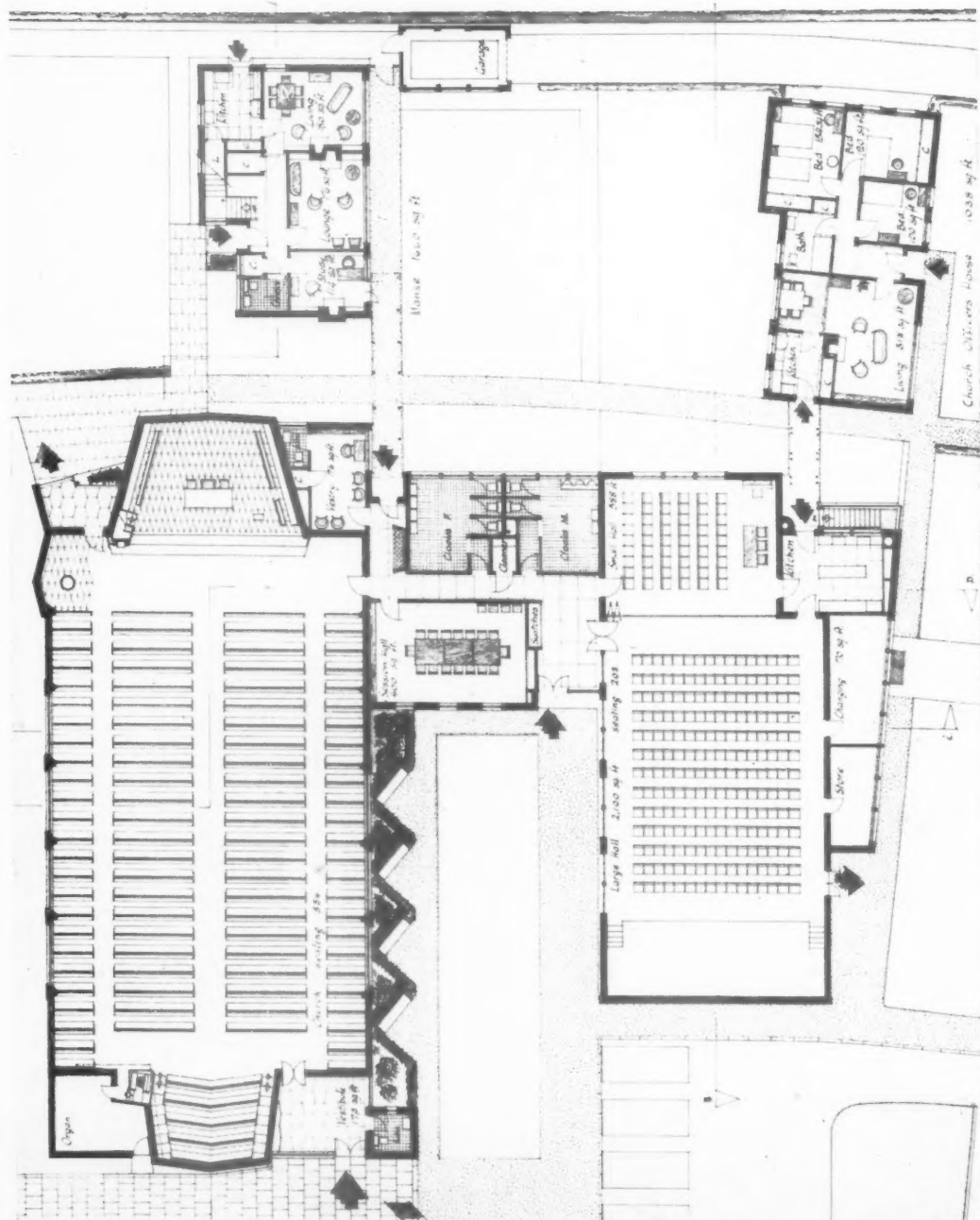
Ground floor plan



North elevation

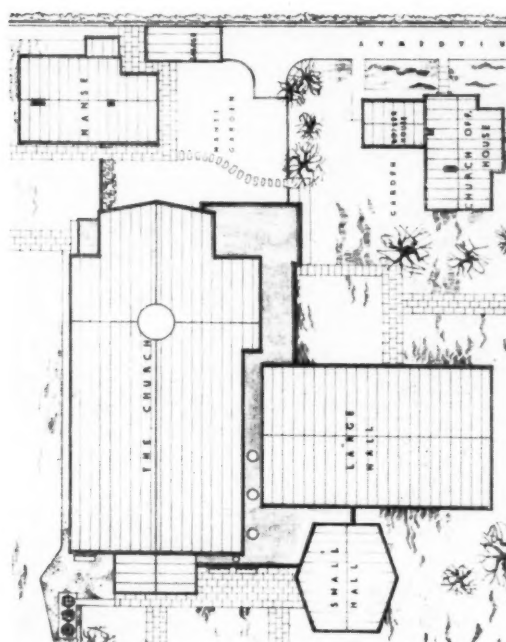
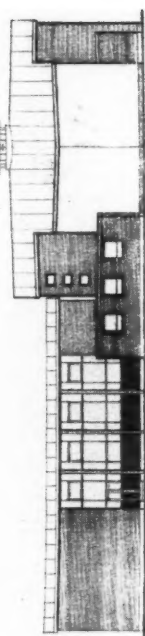
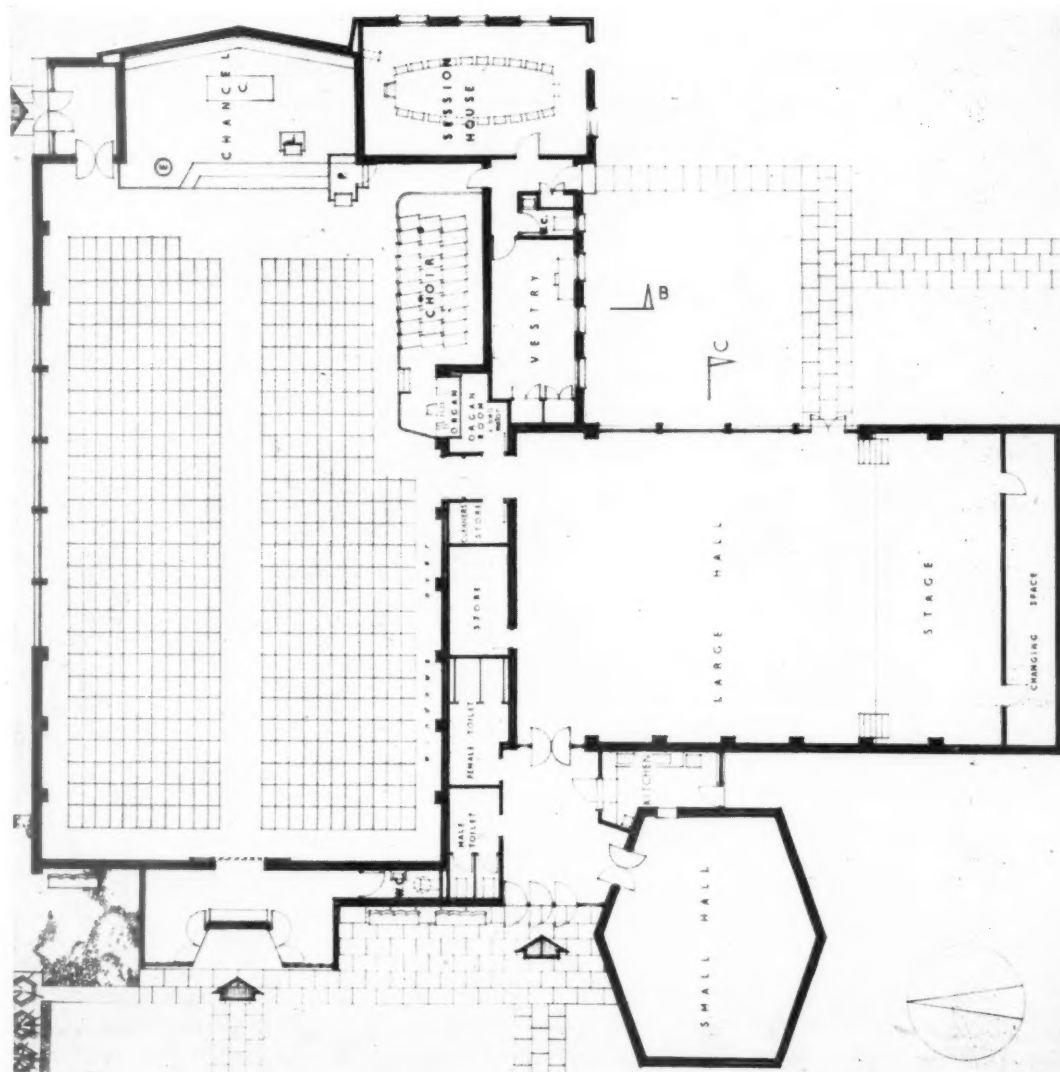
THIRD PRIZE-WINNING DESIGN BY R. S. MORRISON

Ground floor plan

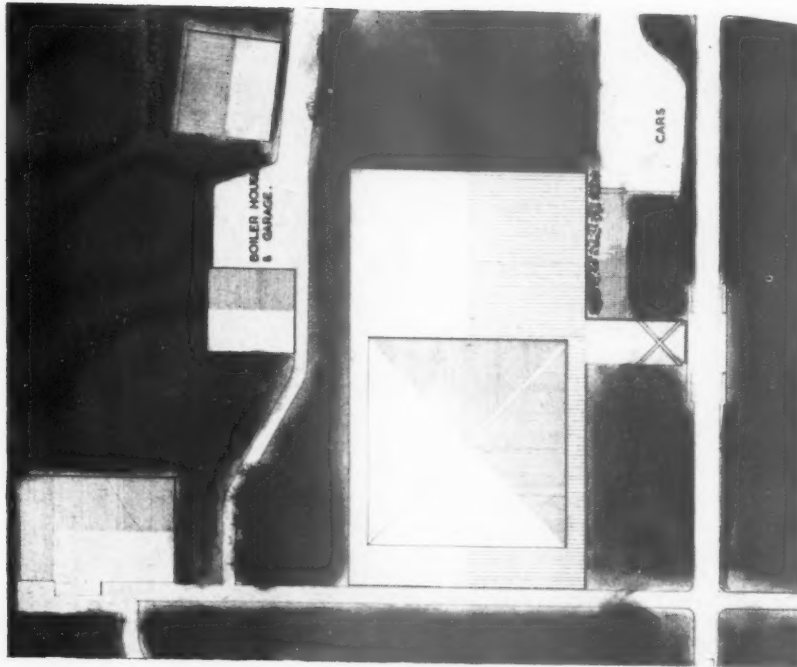


FOURTH PRIZE-WINNING DESIGN BY ALEX. R. TAYLOR

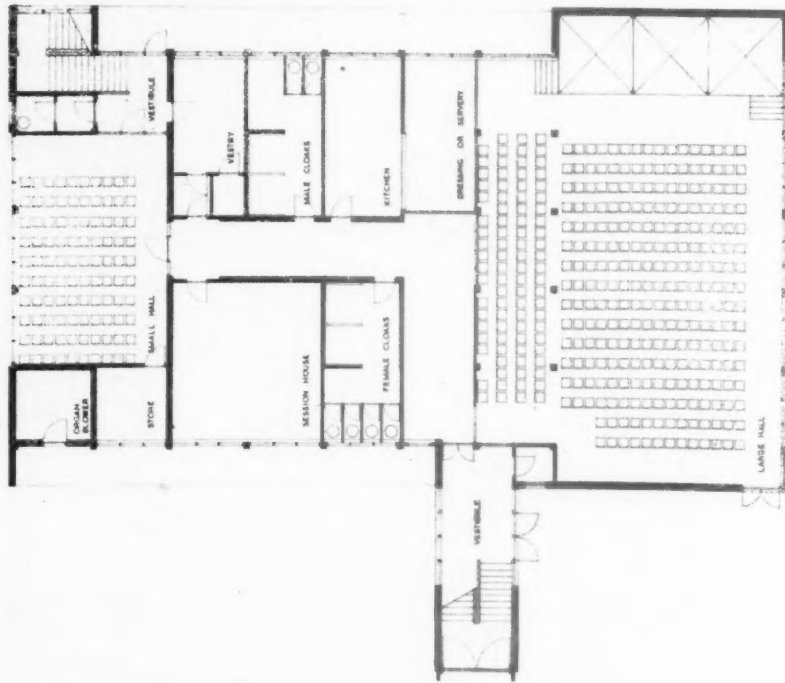
FOURTH PRIZE-WINNING DESIGN BY ALEX. R. TAYLOR



FIFTH PRIZE -
WINNING DESIGN
BY ERIC W. HALL
AND M. T. D.
MACMICHAEL



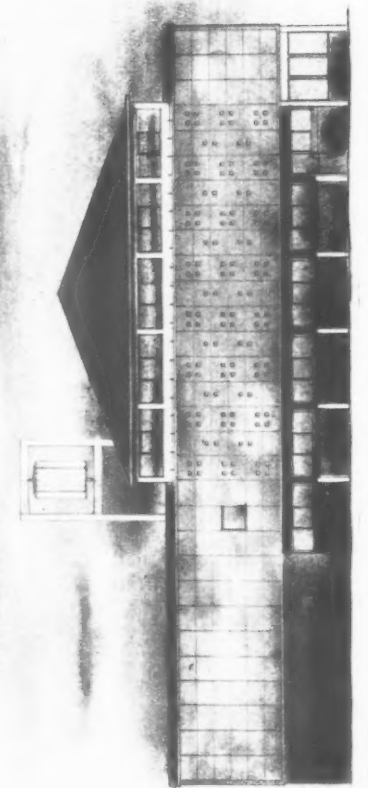
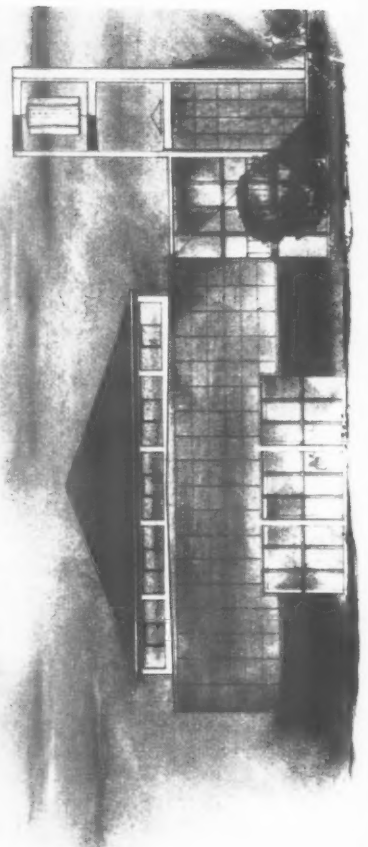
Site plan

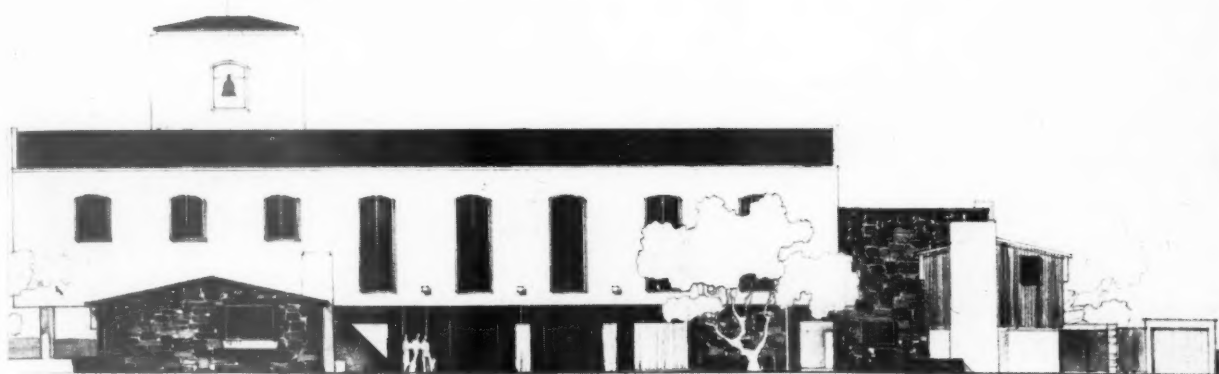


Ground floor plan

North elevation

East elevation

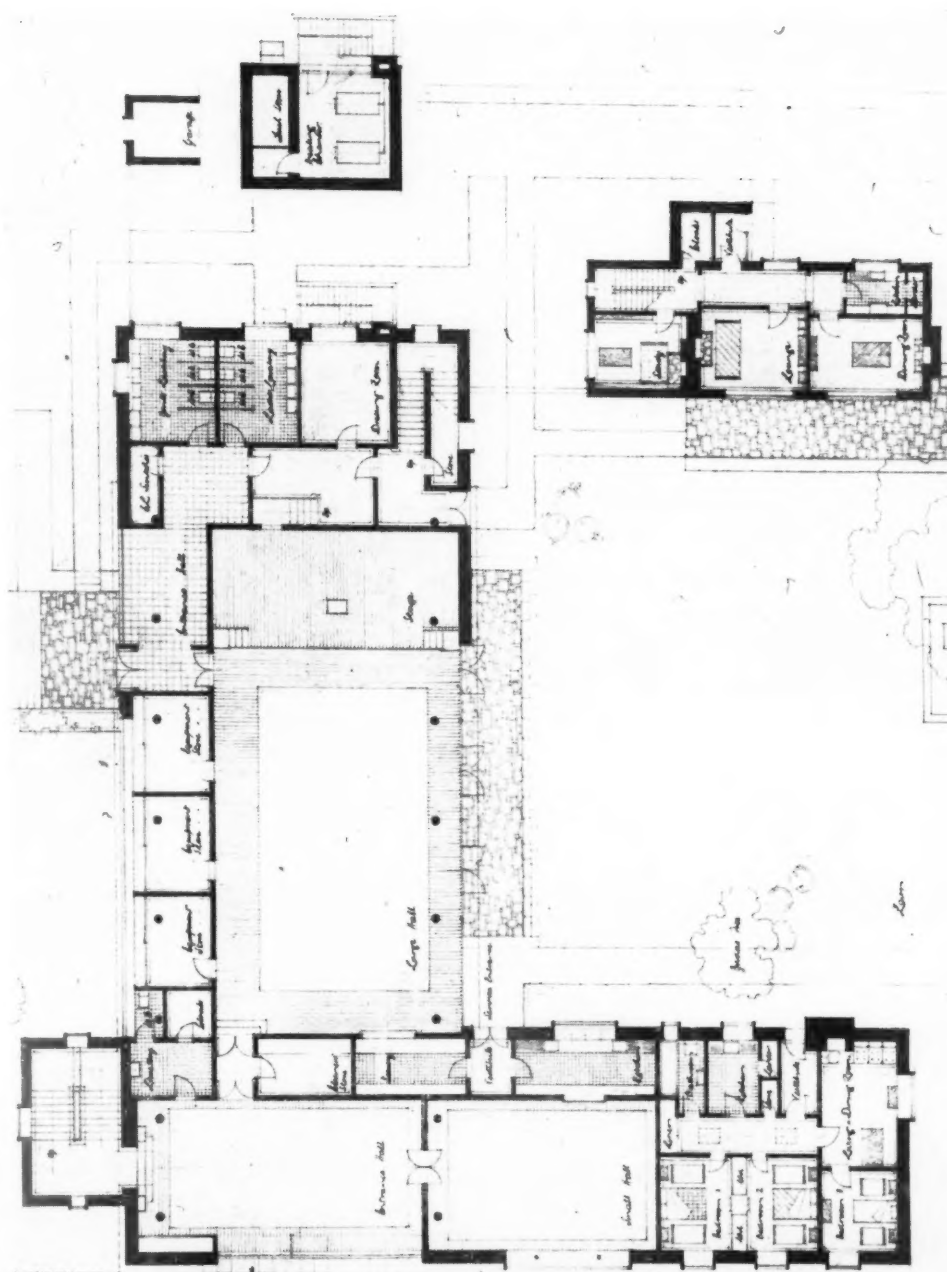


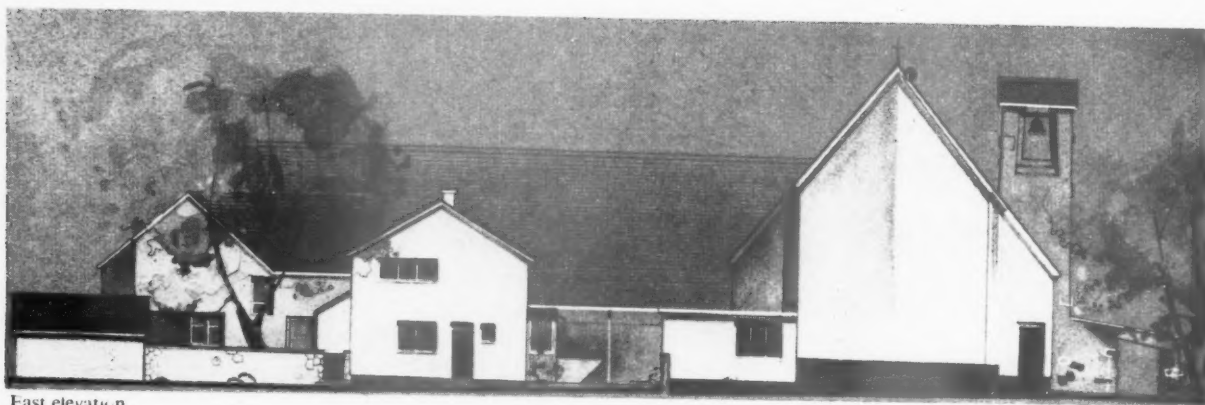


South elevation

RECOMMENDED DESIGN BY IAN W. PATERSON

Ground floor plan

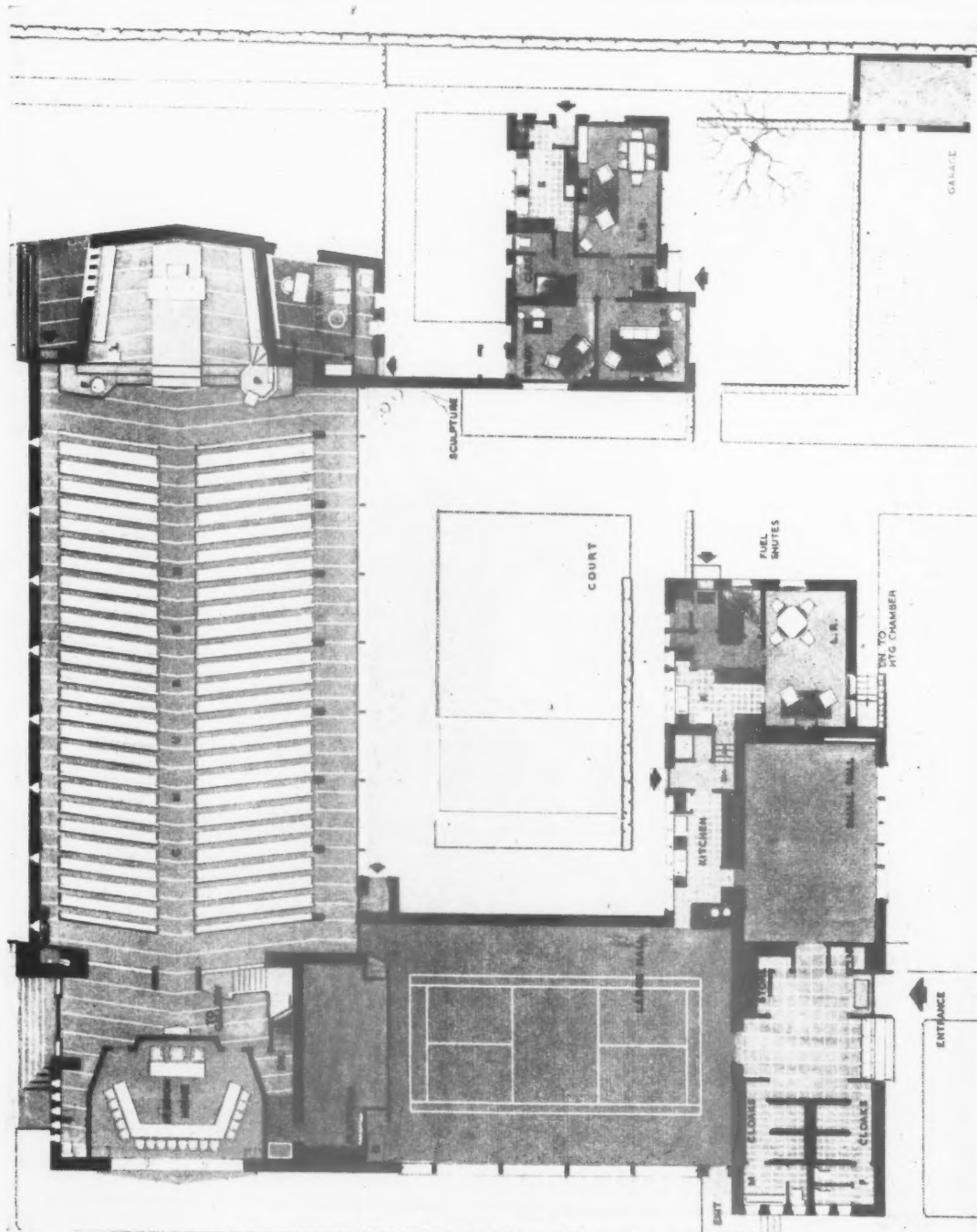




East elevation

RECOMMENDED DESIGN BY JEAN E. CRANE AND R. G. JONES

Ground floor plan



WORKING DETAIL

WINDOWS: 23

SHOPFRONT: RESTAURANT IN LONDON, W.1

James A. Crabtree architect



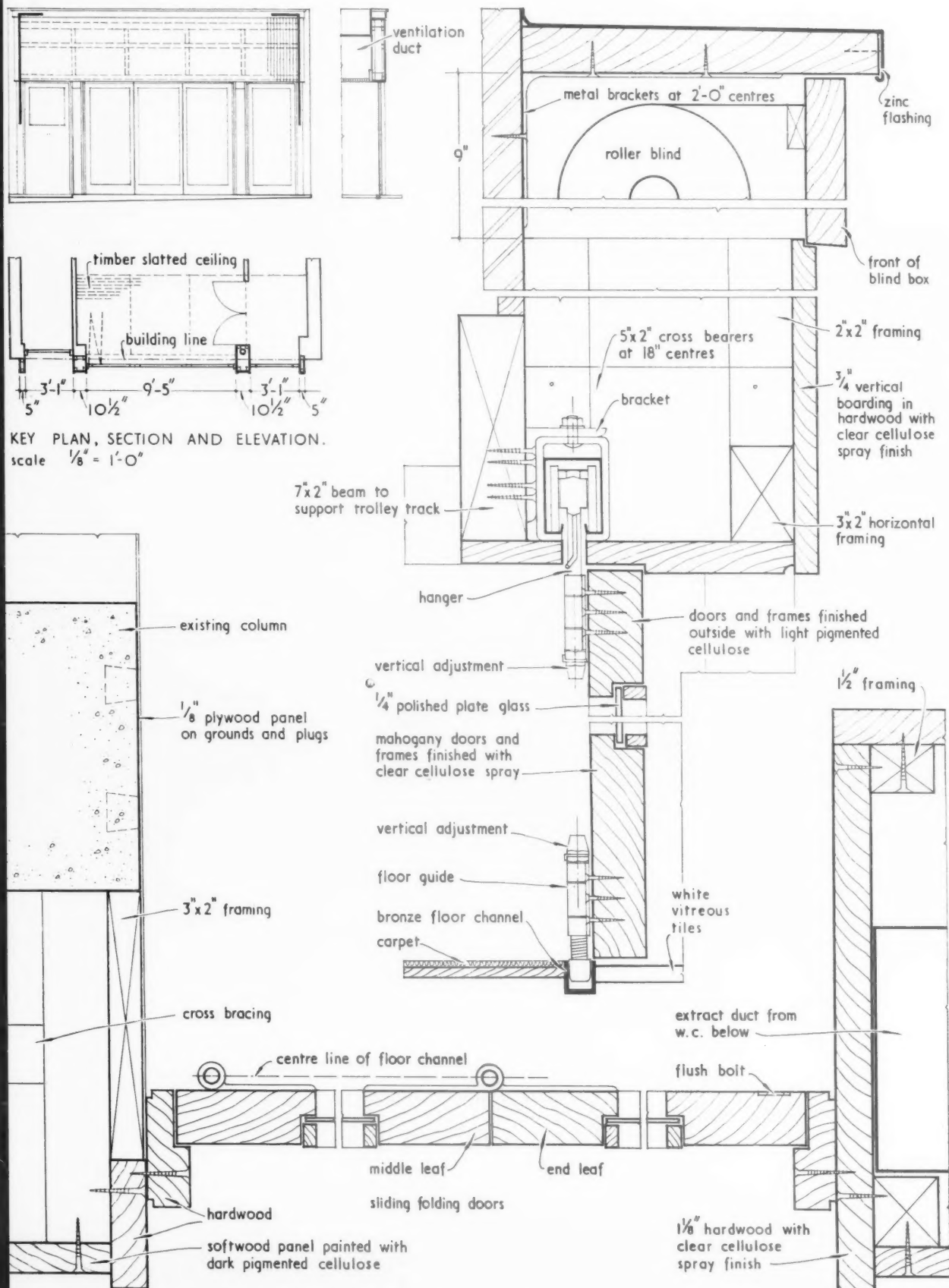
The external parts of the doors and their frames, together with the lettering, are finished with pigmented cellulose, the remainder of the exterior being sprayed with clear cellulose. The small grilles at the head of the piers are the outlets of ventilation ducts leading up from the basement.

WORKING DETAIL

SHOPFRONT: RESTAURANT IN LONDON, W.1

James A. Crabtree, architect

WINDOWS: 23



PLAN AND SECTION THRO CENTRE OF SHOPFRONT.

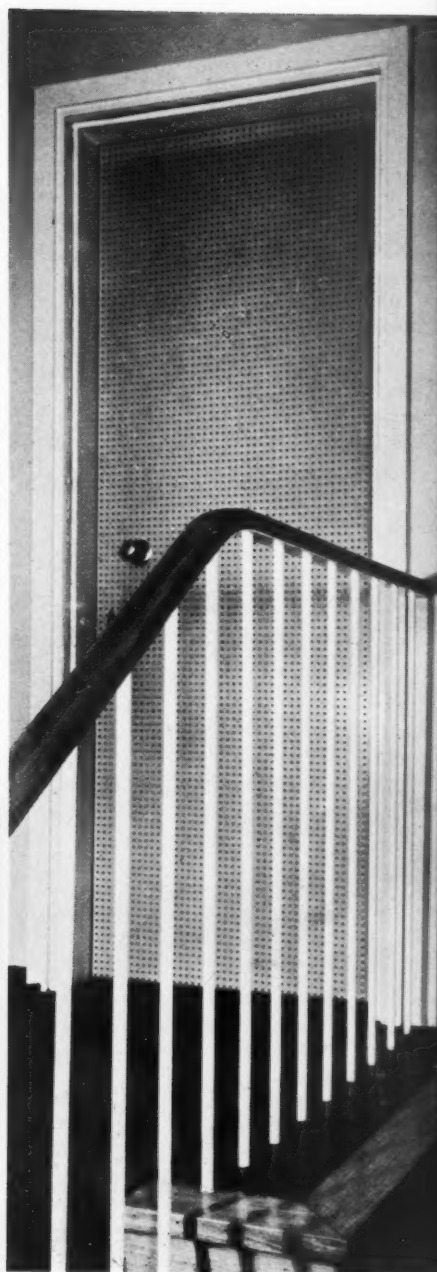
scale: 1/4 full size

WORKING DETAIL

SOUNDPROOF DOOR: OFFICES IN LONDON, S.E.1

Matthews and Son, architects

DOORS: 18



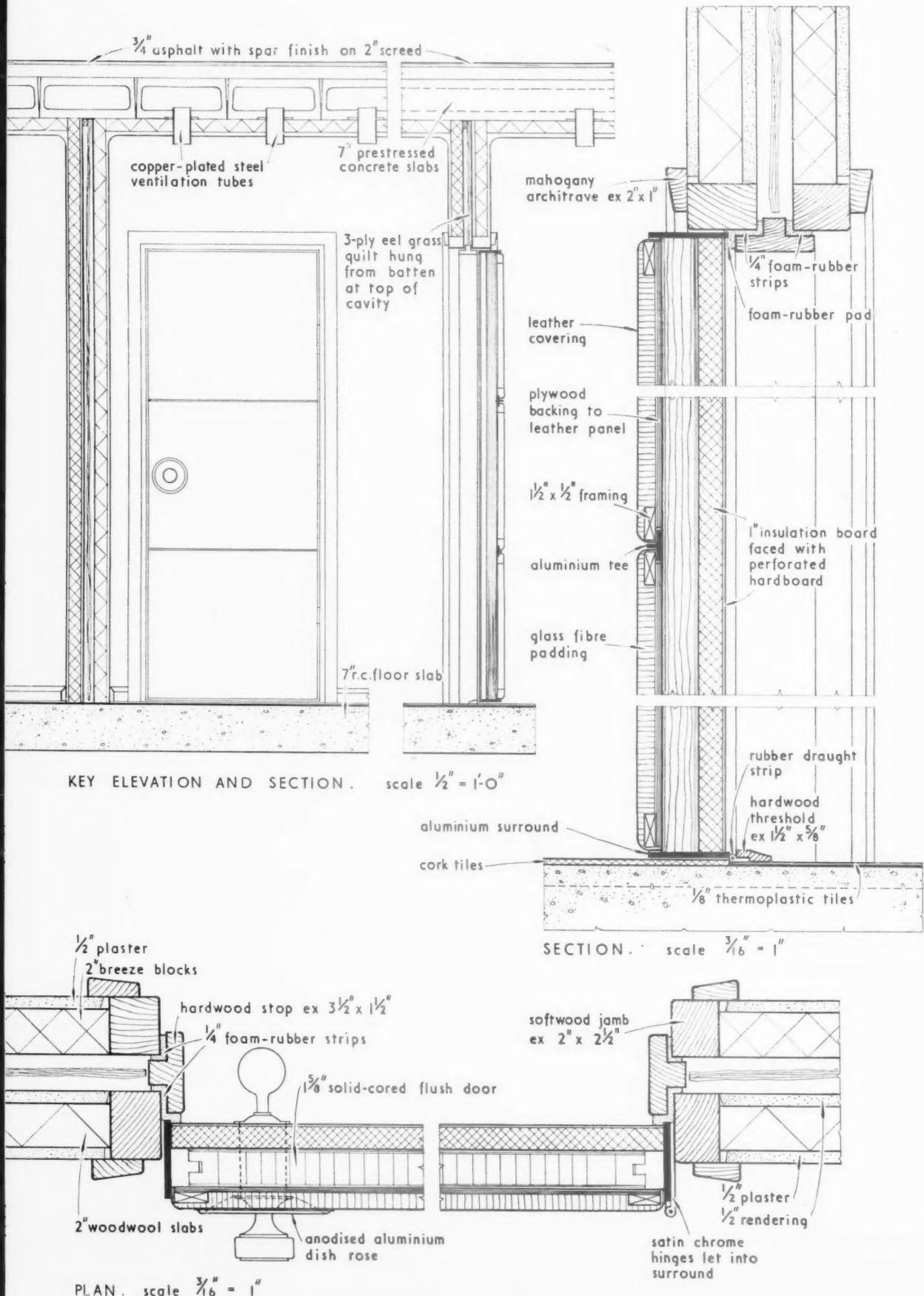
The door is fixed in a small office building which immediately abuts one of the arches of a railway bridge and is therefore designed as one element in a continuous insulated skin. The projecting tubes in the ceiling form part of the ventilation system.

WORKING DETAIL

SOUNDPROOF DOOR: OFFICES IN LONDON, S.E.1

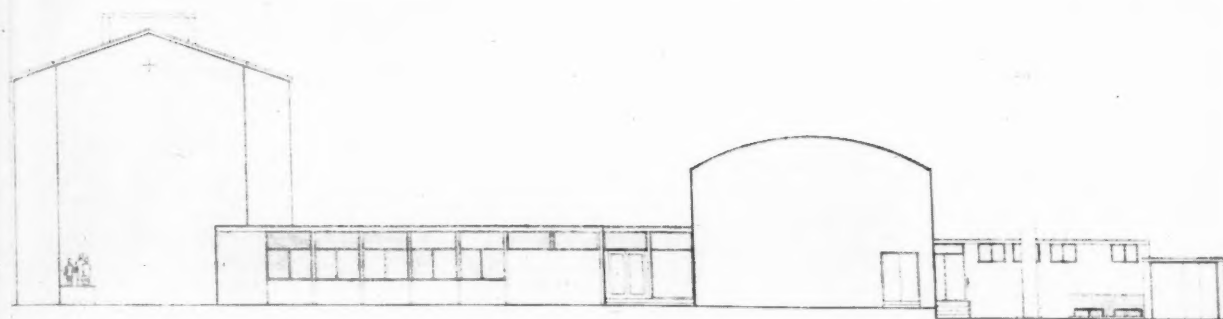
Matthews and Son, architects

DOORS: 18



Sou

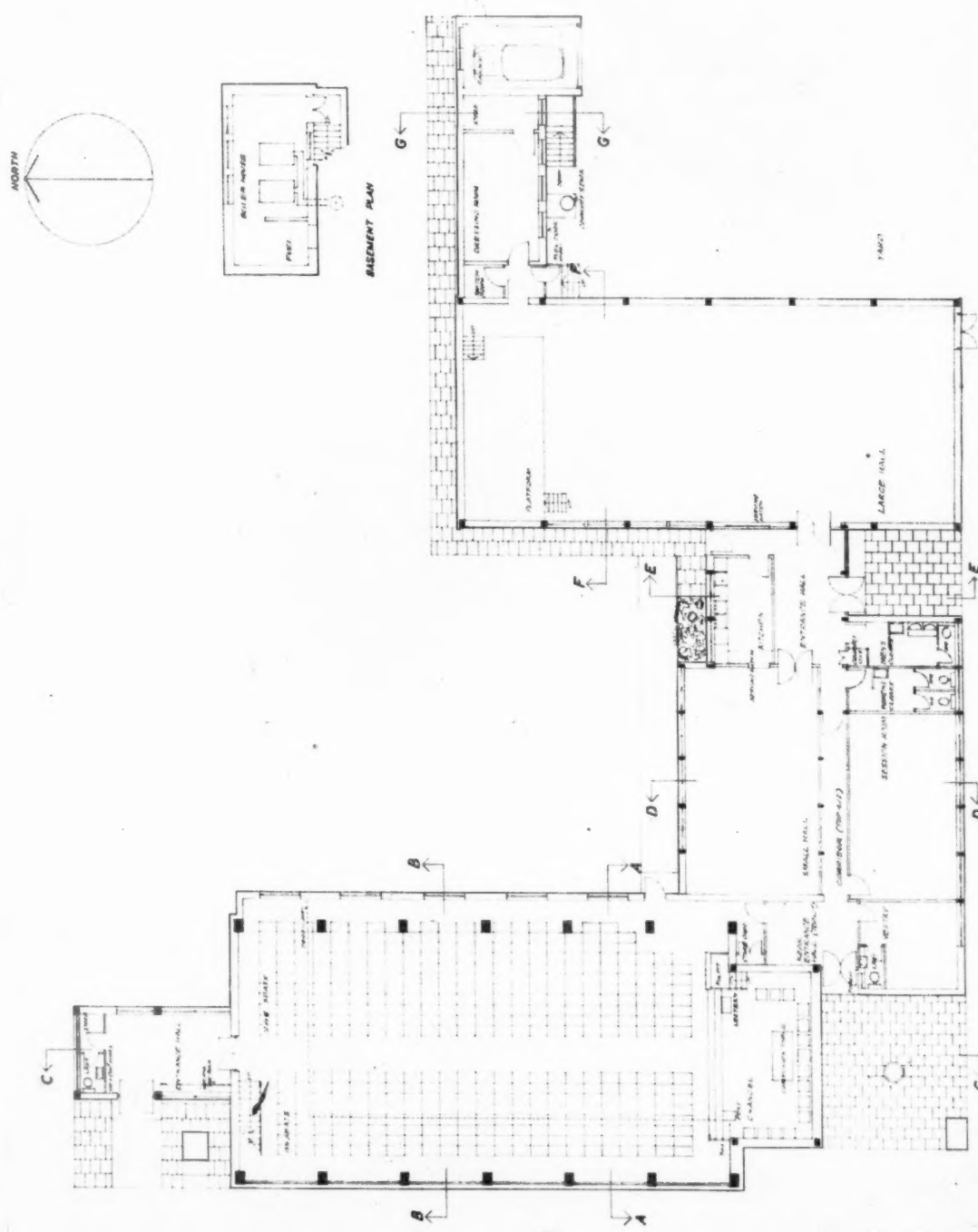
RECOMMENDED DESIGN BY R. C. STONES AND BARBARA BRODIE

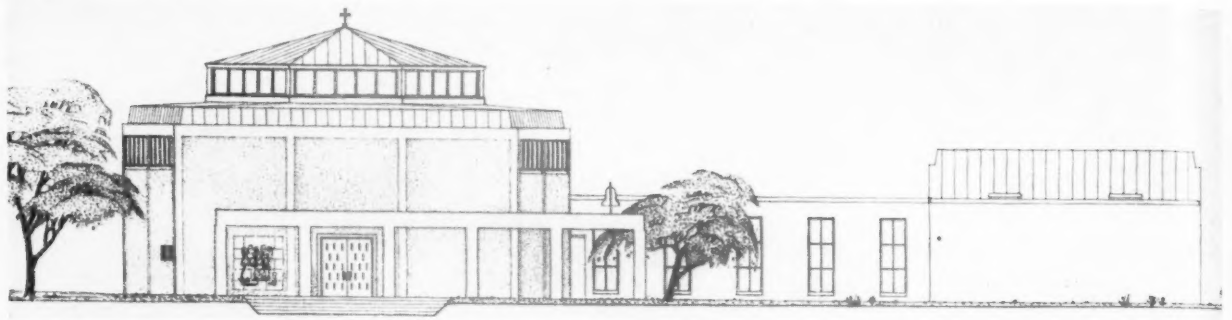


South elevation

RECOMMENDED DESIGN BY R. C. STONES AND BARBARA BRODIE

Ground floor plan

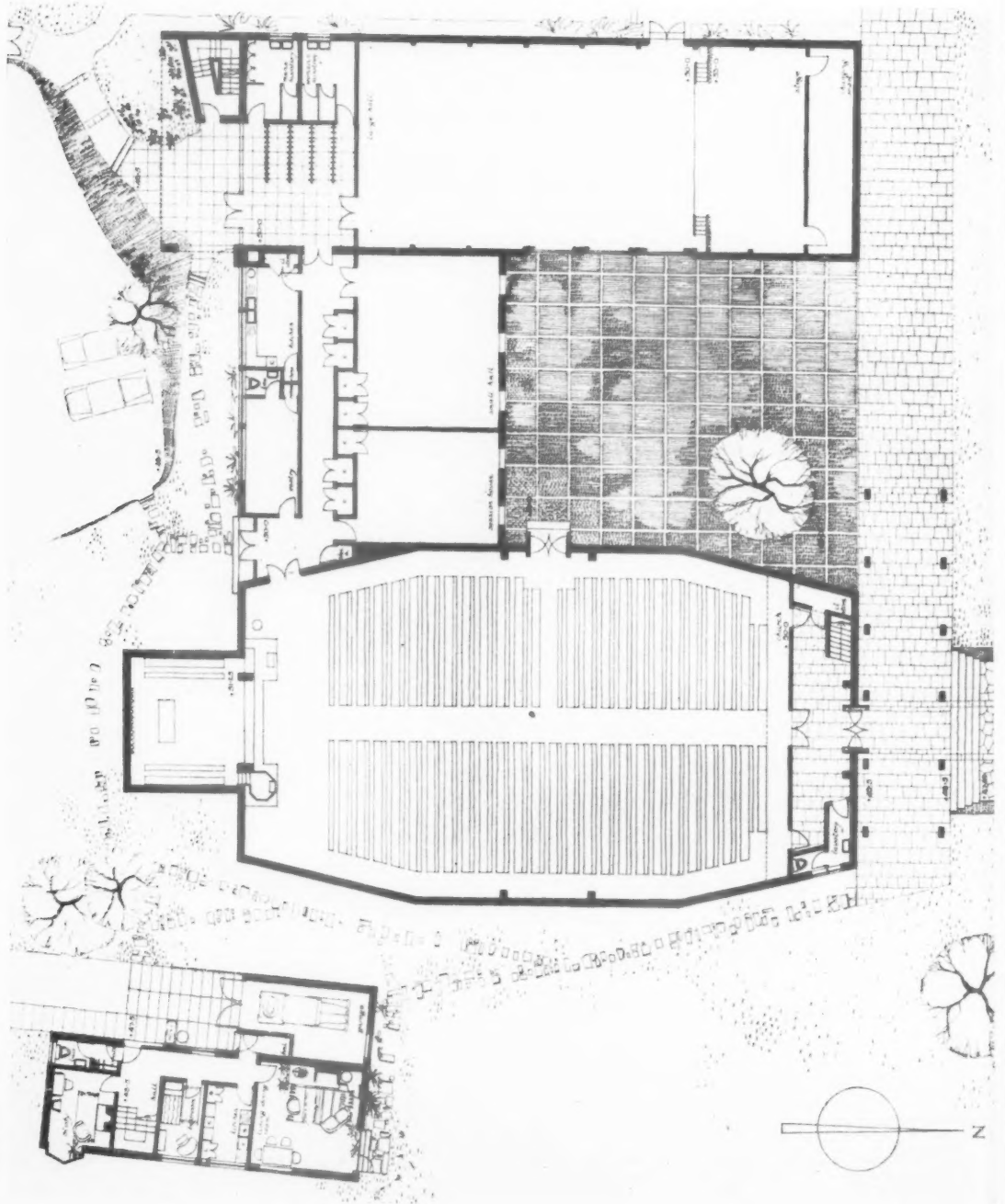


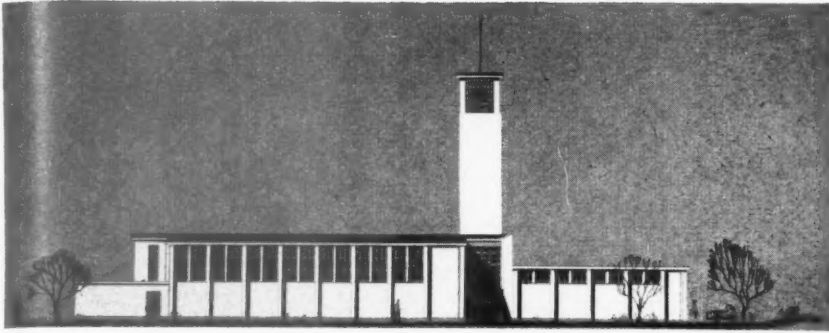


North elevation

RECOMMENDED DESIGN BY ANDREW JACKSON

Ground floor plan

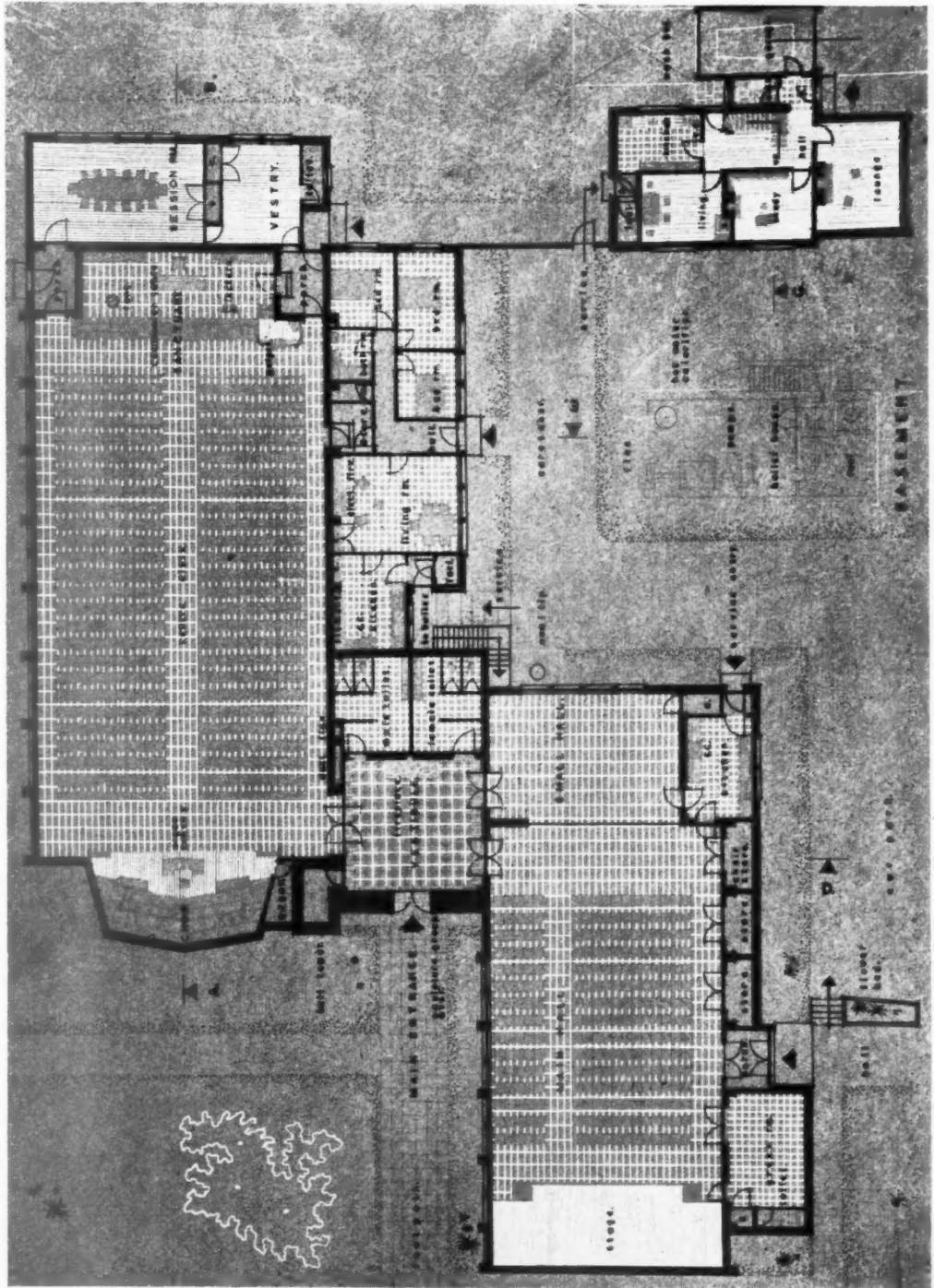




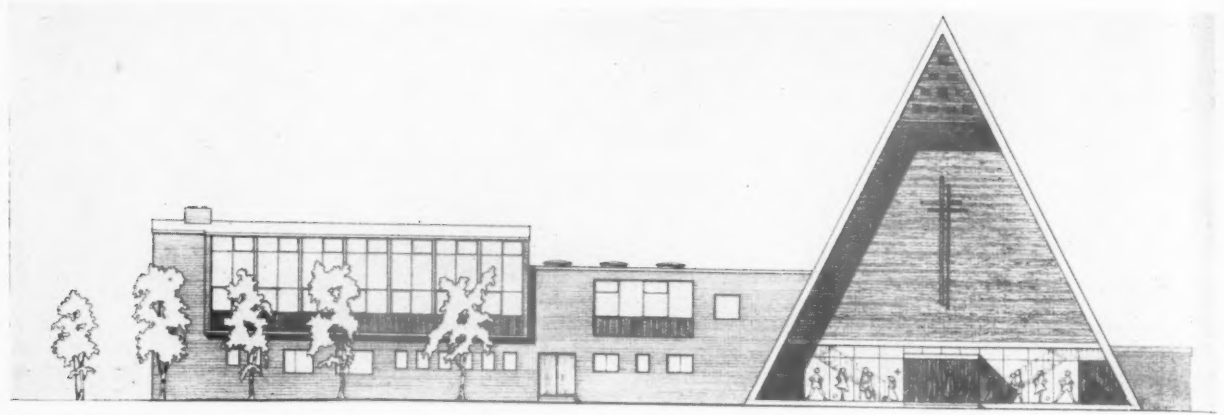
North elevation

RECOMMENDED DESIGN BY DAVID M. JONES

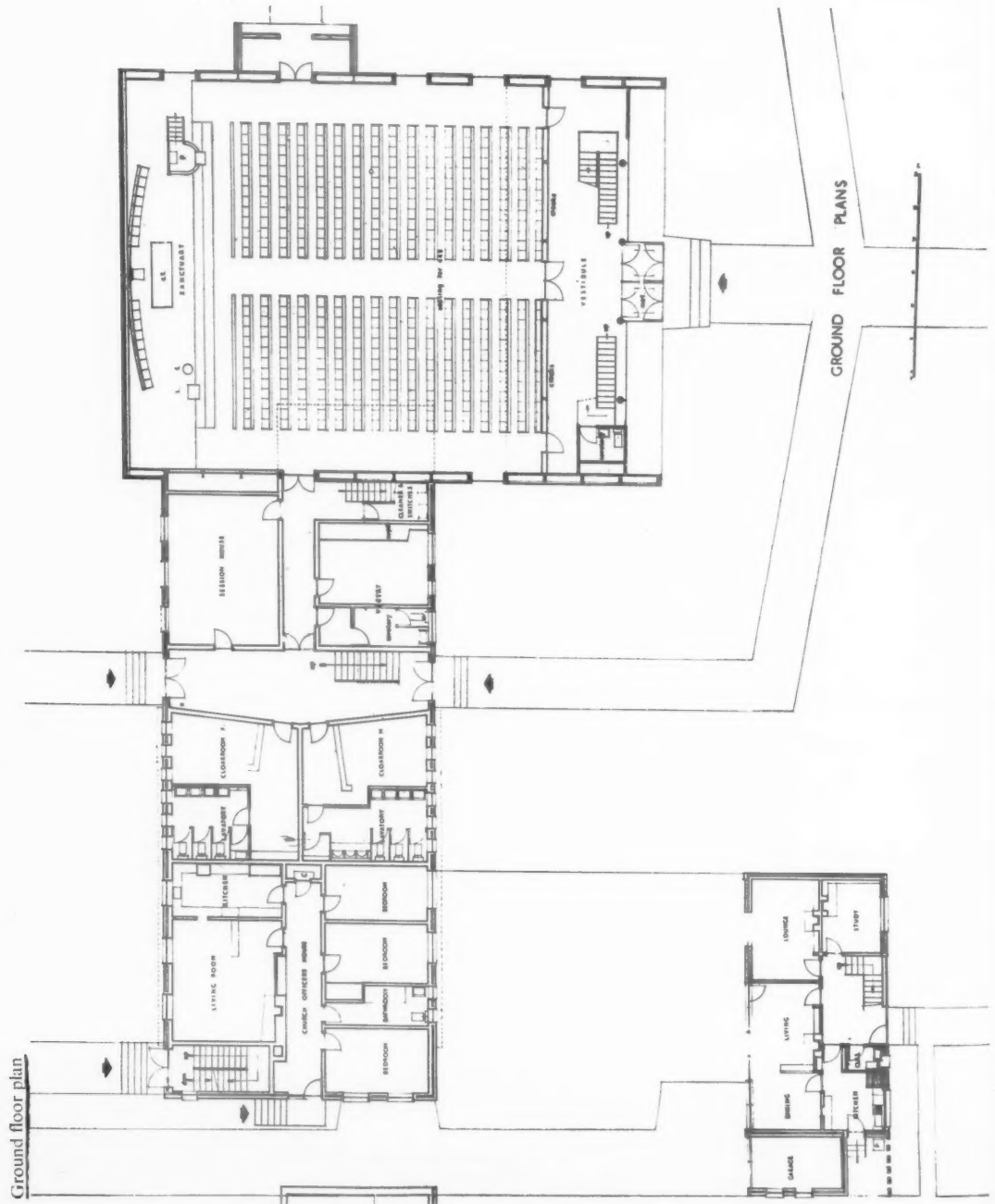
Ground floor plan

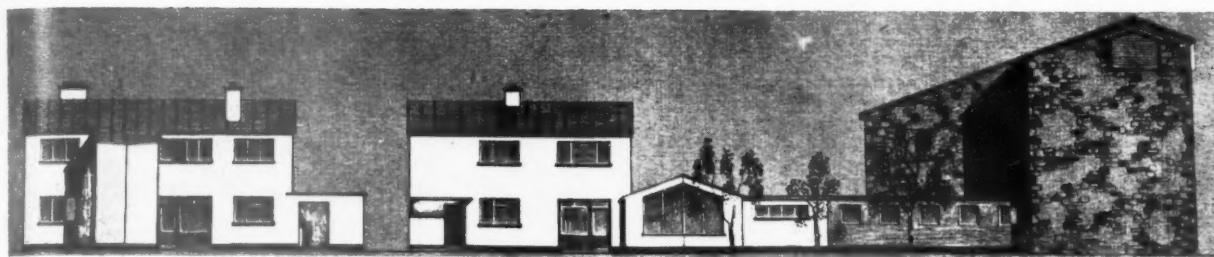


RECOMMENDED DESIGN BY PETER L. A. WILLIAMS

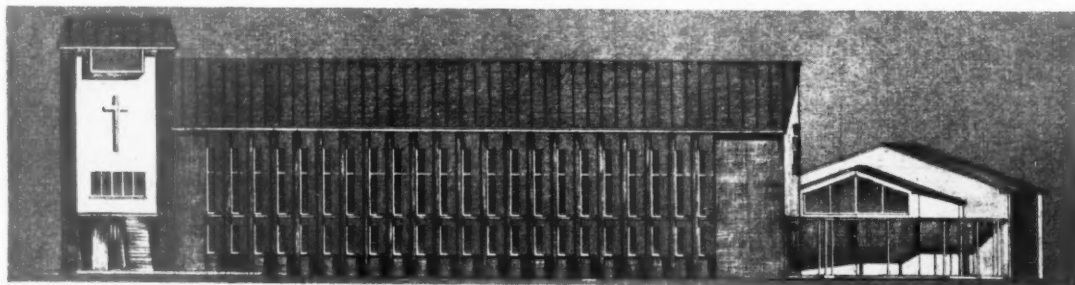


North elevation

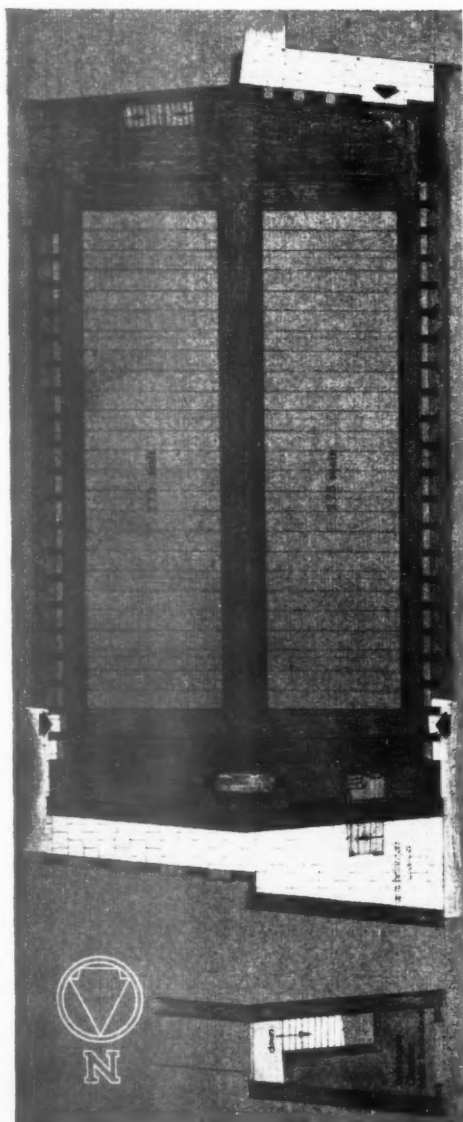




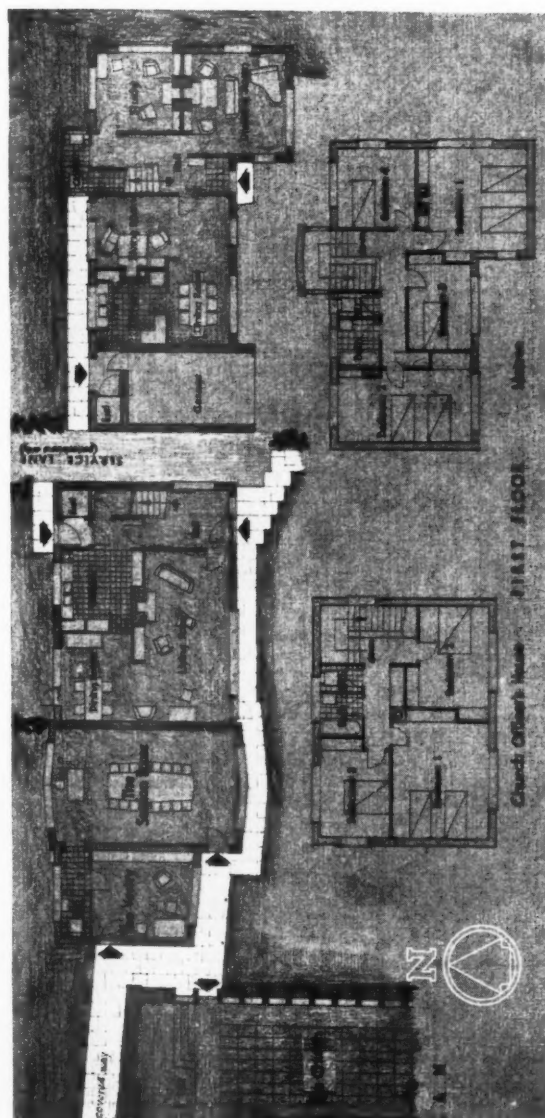
North elevation



West elevation

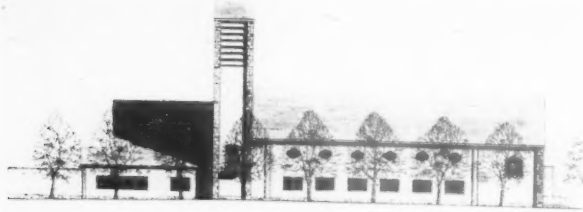


Plan of church

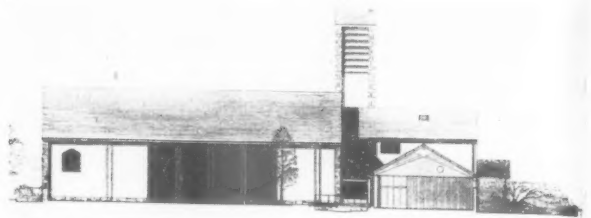


Ground floor plan of ancillary buildings

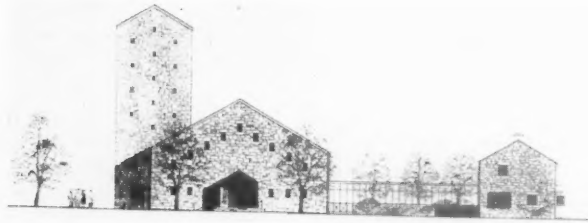
RECOMMENDED DESIGN BY W. R. ASHCROFT AND ALEXANDER D. BELL



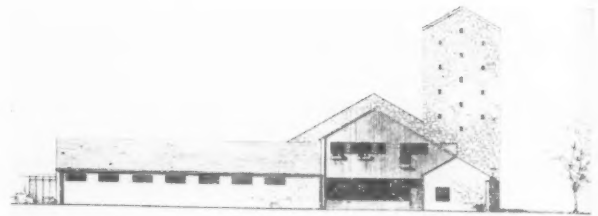
North elevation



Section looking north



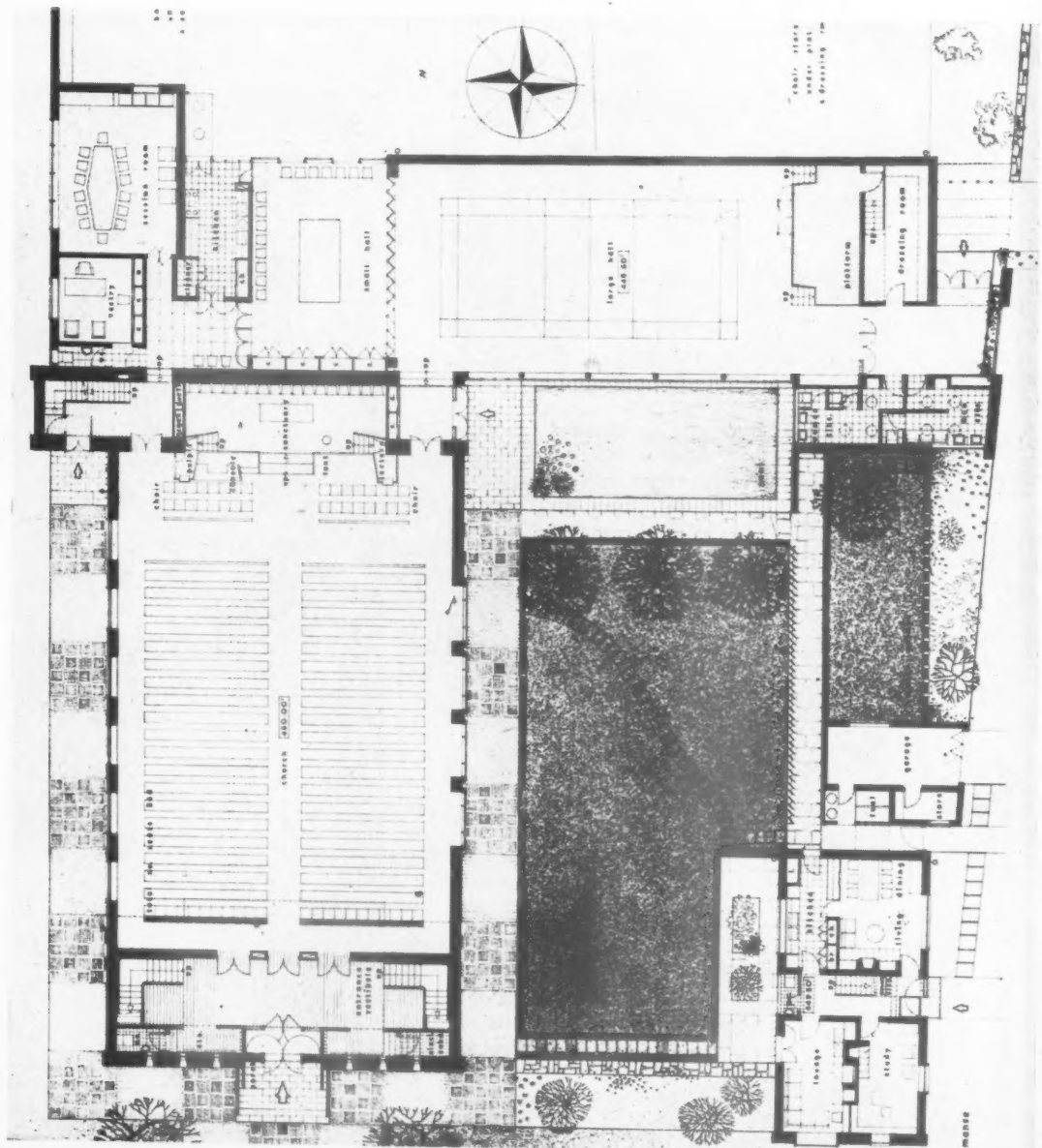
West elevation



East elevation

RECOMMENDED DESIGN BY BASIL SPENCE AND PARTNERS

Ground floor plan



TECHNICAL SECTION

As from April 1, the Council for Codes of Practice became absorbed within the British Standards Institution. To any who may have been under the impression that the publication of Codes of Practice was already the responsibility of BSI, it might be helpful to recall that the Council for Codes of Practice was an independent body set up by the Ministry of Works in 1942. The majority of the Codes of Practice themselves were in fact published by the BSI—but not prepared by them. Since the British Standard Specifications deal with the materials and workmanship of products and the Codes of Practice deal with the way these products should be used, there was inevitably much cross-referencing to be done between the two codifying bodies. Their gathering together under a single ægis was, therefore, a logical step, calculated to advance the healthful revolution which is quietly changing the background of our industry.

This week's
special feature

8 SURVEYING AND SPECIFICATION: tendering procedure

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.

This week we give an account of the Report of the Joint Committee on Tendering Procedure. Readers may remember that this inquiry was set in motion when Sir David Eccles wrote to the President of the RIBA in 1952 suggesting the need to develop " . . . contracting arrangements which will encourage the proper pre-planning and organization of the work." (Report : price 6d. from the RIBA).

In 1952 there was a stir in Parliament and the Press about the activities of the London Builders' Conference—an organization of contractors in and around London who wished to protect themselves against some of the difficulties and uncertainties of freely competitive tendering.

With the decline of belief in industrial competition (so vigorous in the 19th century), price rings and monopolies have become fairly common in industry. Steel, sugar, electric lamps,

matches and metal windows are some of the products which have arrived at, or are developing towards, a condition in which there is virtually one company operating. The reasons for this trend, so often obscured by political high feeling, are probably complex and have more to do with the exigencies of technology than is commonly assumed. Nevertheless, "news" about a price ring always occasions strong public sentiment, and so it was with the London Builders' Conference.

Assuagement in this case took the form of official reference to the Monopolies Commission, and—a more refreshing step—a personal letter from the Minister of Works to the President of the RIBA. This letter appeared to suggest that, apart from the London Builders' Conference pother, the time was ripe for a "review of contracting arrangements." It seemed fair to interpret this as a recognition of the stresses and maladjustments betrayed by the whole machinery for producing buildings which post-war demand had revealed. Recognition in fact that building was making, and needed to make more strenuous efforts to catch up with other industries in the matter of technical development, and that present contracting procedure, belonging to the older, more leisurely handcraft building methods—were no longer able to meet public need.

The President, Mr. Howard Robertson, agreed that the RIBA should take the lead and a committee was formed representing the Institute, the RICS and the NFBTE. This was some fifteen months ago, and now they have issued their report.

Those who look to the report for a penetrating examination of the problem, for the zeal and thoroughness which marked the Post War Building Studies Committees, for example, must be disappointed. The energy and hope so noticeable in the years immediately after the war finds no echo here, for the report may be summed up by saying that if everyone—architects, builders and clients did what they were supposed to do in theory, everything would be all right.

The Committee have confined their attention to tendering procedure only. Paragraph 3 says that while they agree with the view expressed by the Minister (presumably his phrase: "there is every reason for developing contracting arrangements which . . . will encourage the proper pre-planning and organization of the work") they have confined their attention to "tendering procedure." No reason is given for this adjustment of the terms of reference, but they recommend that aspects other than tendering procedure should be kept under review by the Joint Consultative Committee (an already existing body). The wording addressed to the Joint Consultative Committee (para. 54) seems, however, unnecessarily vague for, apart from other quite specific recommendations, it mentions "... attention to outstanding problems . . ." There is no mention of developing contracting arrangements. This curious evasion would not matter so much if the new kinds of contracting arrangement which are now being pioneered in this country were themselves less significant. But the truth is that they are being evolved to meet a situation in which new kinds

of building construction on the one hand, and an enhanced public need on the other, make the old kind of contracting arrangement unworkable. If these developments appear to the Committee as a passing phase, we think they are mistaken, and we regret that more attention was not given to them.

Apart from this indication of the terms of reference, Section I of the report expresses approval of the Simon Report (1944) and disappointment that its advice was not taken more to heart. Indeed, this report is largely based on the findings of the Simon Report, which it reiterates. It appears that the Committee had difficulties at the beginning of its work, for a number of bodies and organizations, including associations of local authorities who were invited to join, and whose presence would surely have been valuable "... did not feel able to co-operate."

Section II is an extended emphasis of the need for more selective tendering. Selection, that is, of only those contractors to submit tenders, who are "capable of and likely to do work of the right standard," and who are appropriate to the type and size of job entailed. The custom, apparently not obligatory, of local authorities allowing any and everyone to tender is deplored. It is recommended that tenderers, not tenders, should be selected from response to public advertisement; selection being on the advice either of the technical officers or of a panel composed of a lay chairman, an architect, a quantity surveyor, and a contractor. "Indiscriminate tendering leads to bad building, and throws upon the industry an unnecessary burden of time, effort and expense in the preparation of tenders . . ."

Granted the terms of reference, there is nothing to disagree with in this section.

Section III consists of brief comments on the cost of tendering, the recommendation being that "building owners . . . should understand that this cost must be allowed for in the price of building" and that contractors should not be reimbursed by a separate fee for their tendering costs. It would have been useful to hear the Committee's reasons for rejecting this latter device, since it would seem to be a promising method of dealing with the concealed tender cost problem.

Section IV discusses various types of contract, indicating a marked preference for the fixed price contract where proper bills of quantities form part. Paragraph 19 is oddly unrelated to the other comments in the section. It draws attention to the "developments in structural methods and equipment as well as in the client's requirements," which are increasing and "lead to a wide diversity

in the demands made on architects, specialist consultants, quantity surveyors and contractors," adding that they affect "the approach to problems of building." Reading this, one naturally thinks of those developments in which the difficulties of reconciling architect-manufacturer collaboration with competitive tendering arise—the very difficulty that one hoped the Committee would examine. But there is no further mention of the problem.

Subsequent paragraphs merely give the Committee's opinion of the following kinds of contract: (a) *Where quantities do not form part*. This should be used only where "there is likely to be a minimum of variation." (b) *Schedule contract based on approximate quantities*. This is appropriate where "it is impossible to prepare an accurate bill from more or less complete plans and particulars." Accurate bills should be prepared at a later date or the work may be measured and valued as it proceeds. (c) *Schedule contract without quantities*. Should be used only for maintenance work. (d) *Pre-priced quantities*. This is a Government Department method described as objectionable and "save in exceptional circumstances, should be discontinued." (e) *Cost plus percentage contract*. This is "unsatisfactory and undesirable" and should be used only for jobs such as church restoration, where "work cannot be determined in advance." (f) *Cost plus fixed fee contract*. Described as having "certain advantages if properly applied." (g) *Value cost contract* (as operated by the LCC). The Committee do not commit themselves about this either, merely saying that it and other contracts like it "merit a more detailed examination in their suitability to specific circumstances."

It seems hardly likely that this kind of advice will be much of a revelation to the practising architect. Section IV concludes by expressing the hope that the rise and fall clause in the Standard Form of Contract may soon be abandoned, so that contractors will be induced to buy in the cheapest market, providing thereby a stimulus to price reduction on the part of manufacturers and merchants. This opinion is part of the general affirmation throughout the report of faith in competition as the most effective spur to technical efficiency. It becomes clear that the Committee do not see the formation of the London Builders' Conference or any other price ring, as part of the general decline of confidence in the competition principle that is spreading in modern industry.

Section V is headed "Related Matters" and deals mainly with the need for planning in advance, referring with approval to the reports of the Simon Committee, the Building Industry Working Party, the Anglo-American

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Productivity Team, and to two documents issued, one by the RIBA and NFBTE jointly in 1951, the other by the RICS in 1953. The Committee note that there are difficulties which inhibit planning in advance, and paragraph 37 appears to suggest that these are for the most part due to the Governmental policy of restriction and control since the war. This is surely not quite the whole truth, for there are less transient difficulties that have arisen through the increasing complexity of constructional methods now available to the architect. Planning in advance implies the complete detailing of a job before a contractor is appointed or consulted, but the architect has not sufficient knowledge of, or control over, site and workshop resources and organization to do this. Unless he confines his work to what we call traditional construction, he must arrange many of the details and methods in collaboration with the contractor, which he can only do *after* tendering. In this kind of dilemma, which is likely to become more pervasive, the architect needs guidance which the Committee do not provide.

Paragraphs 49 to 53 deal with sub-contractors and nominated suppliers, and here the Committee do recognize that the principles of free competition, and of pre-planning are at cross purposes. If the contractor is allowed to select his own sub-contractors and suppliers, he "will command a better degree of competition." Yet pre-planning will entail the letting of sub-contracts for which "the main contractor might be given the opportunity of tendering" before the main contractor is appointed. This case covers those kinds of sub-contract where there are a number of more-or-less equally valid alternatives, and the Committee have decided that pre-planning is the more important consideration. The case where the sub-contract is the major item in the work—perhaps a proprietary system of framing and cladding quoted lump sum by the manufacturer—is not discussed in the report.

Section VI is concerned with the means by which this and the Simon Report may be "kept constantly before those who are concerned and the general public"; and the means by which "the many other problems facing the industry can be considered and regularly reported upon." This task is handed on to the Joint Consultative Committees, (which will be expanded to include representation of the RICS), in the following terms:

"(1) Make periodic statements to the Press reviewing the progress made in implementing the recommendations of the Simon Committee and ourselves, and

"(2) Devote its attention to outstanding problems, including that of closer co-operation with representatives of the associations of local authorities."

Section VII begins by reporting that the Committee has discussed the "alleged" delinquencies of contractors, the incompetence of professional men, and the mistrust of both, betrayed by both private and public clients. It is not denied that there is substance in the allegations, and the Committee puts the onus squarely on the professional bodies and the contractors' associations for—"rooting out inefficiency." It will be interesting to see how this unequivocal recommendation is acted upon.

Section VIII is a summary of conclusions. Appendix I gives the texts of letters between Sir David Eccles and Howard Robertson. Appendix II lists the reports and other documents referred to in the Committee's report, and Appendix III is a short "Note on the LCC Value Cost Contract."

Except to those who are convinced that the vigour awakening now in building technology is a passing phase, this report will come as a disappointment. Granted that the Committee did not gain the support of the largest clients—the local authorities—and that it had not the resources to make a thorough examination of the problem, there still

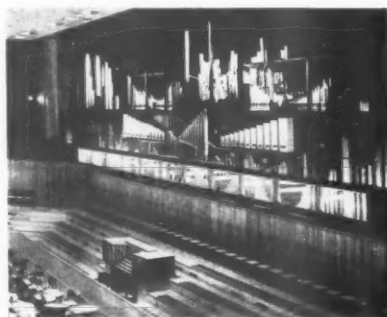
should have been a keener awareness of present portents. Their terms of reference covered a procedure which was evolved for traditional building construction in which the manufacturer (in the industrial sense) played no part. For a situation that is, where simple hand-craft methods on the site formed the greater part of the work, where economy in man-hours and speed of construction were hardly pressing considerations, and where the architect maintained a reasonable control over technique. Within their terms of reference, then, the Committee have made appropriate and on the whole reasonable recommendations.

But this situation is no longer universal. A growing number of those concerned—architects, manufacturers, contractors and engineers—are acting upon the belief that building technique should make as much use of present scientific knowledge as other industries have done. This belief and the action which follows from it is stimulated by the profound change in society's need for new buildings. This technical, social and economic change is vividly seen if we compare the schools and the dwellings of today with those of forty or fifty years ago. It is to be expected, then, that a relationship between client, architect and contractor which suited the old arrangement would hardly be workable in the new, and so we get the kind of contractual arrangement being tried out by such bodies as the Hertfordshire County Council and the LCC. For the same reason we get difficulties and problems arising where the new approach strains the framework of the old relationship. So far, such things may be in a minority, but they can hardly be dismissed as a phase which will pass.

If the Committee felt unable or unwilling to examine this growth, we must hope that some other body, representative and well equipped for the task, will come forth with suggestions for a new relationship between architect, contractor, manufacturer, specialist and building owner.

22 ACOUSTICS: AUDITORIA royal festival hall


Since its opening in 1951 there have been a number of changes in the Royal Festival Hall. The most spectacular of these—installation of the pipe organ—is now accomplished, and H. R. Humphreys contributes here an account of what has been done.



The recent official inauguration of the new organ at the Royal Festival Hall has again focused attention on the acoustical design of the hall, and prompts questions on the effect of the presence of the organ on the sound of orchestral and choral music and on the suitability of the hall for the organ

and the organ for the hall. Before dealing with these questions it will be of interest to examine the changes which have been made in the hall since its official opening in 1951. The test concerts held during the initial tuning period resulted in a condition which was regarded as generally very

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satisfactory for the hearing of orchestral, choral and solo musical items. The acoustics were, however, something of a novelty, and to concert-goers, conditioned by hearing music in the Royal Albert Hall, some adjustment in conception of orchestral sound was necessary.

MODIFICATIONS

The reverberation curve of the hall at the time of its opening (with a full audience) is reproduced in Fig. 2. This piece of evidence cannot entirely illustrate the acoustical properties of a hall, but must serve as a broad guide to its several characteristics. The acoustic consultants have stated that the reverberation time is rather less than had been aimed at, and this fact is generally assumed partly to explain the excellent definition obtained. Adverse comment has mainly centred around the slight deficiency in roundness of tone (or singing tone) described by such terms as "coldness" or "hardness," to name only two of the sixty-odd adjectives which have been applied by critics to the subject. Although it is believed that definition and fullness of tone are to a certain extent antagonistic, it was decided that a slight shift in the direction of more fullness of tone (*i.e.*, longer reverberation) might be achieved without prejudice to the excellent definition.

To this end some 575 sq. yds. of the ceiling were modified. The original construction consisted of fibrous plaster units (about 1½ in. thick), into which a vermiculite plaster mix was poured, bringing the total thickness to about 2½ in. The weight of this membrane was, however, fairly low, and it was decided to replace the vermiculite plaster filling by a denser one of sand and coarse plaster. In order to avoid overstressing the fibrous plaster panels, expanded metal was first hung over the ceiling surface and the



nearly dry sand and plaster mix was forced into the interstices of the reinforcement so that the plaster came in contact with the ceiling surface without the mass taking a bearing on the ceiling itself.

In addition, some 1,560 sq. ft. of wood panelling on the splay walls on either side of the orchestra had sound-absorbent material removed from behind, and the 5 in. deep cavities were

filled solid with Bellrock panels in contact with the wood panelling. These alterations have resulted in an increase of about 0.2 second in the reverberation time of the empty hall at all frequencies below about 500 c/s. There may not be quite so much change in the reverberation with full audience, but subjective reactions show that the change has already been appreciated by some listeners.

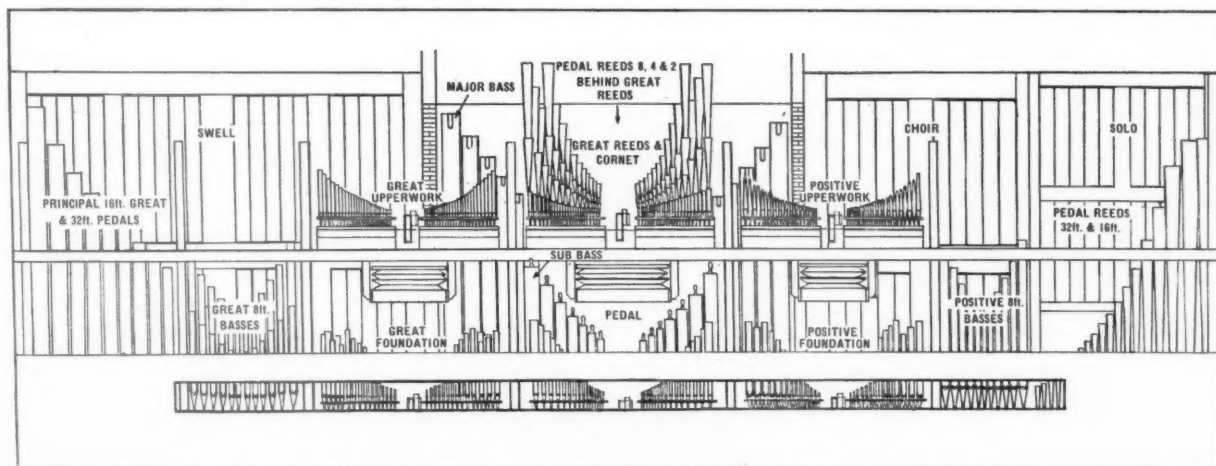
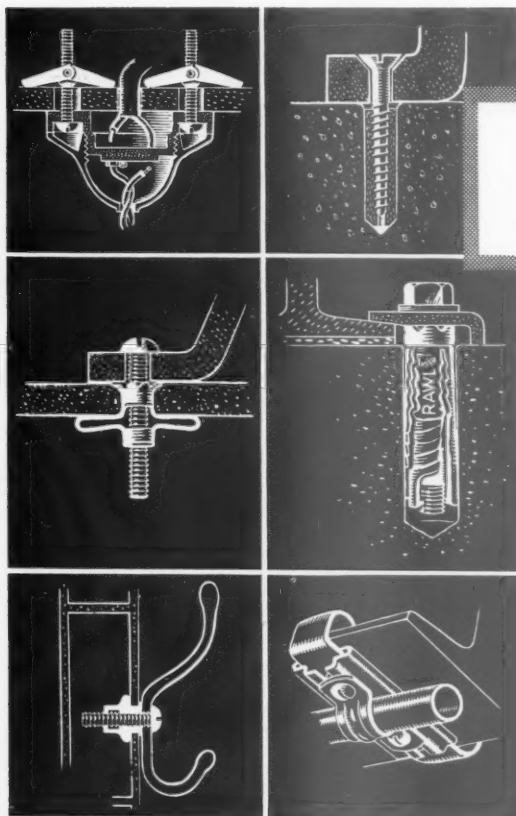


Fig. 1. Elevation of the organ facing the auditorium. Drawing reproduced by kind permission of the L.C.C.



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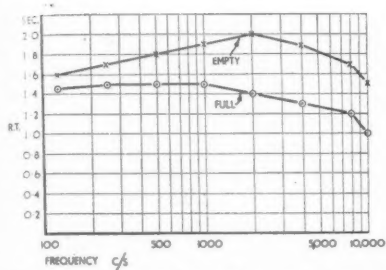


Fig. 2. Measured reverberation times of the hall at its opening in 1951.

THE PLATFORM

In the original design the front part of the platform was a mere 12 in. above the lowest part of the auditorium floor. It was considered that this arrangement, coupled with properly raked auditorium seating, would give ideal balanced sound in all seats and avoid the acoustic shadowing of the rearward players by those in front as heard in the front few rows of seating. This defect often occurs in halls with the more usual platform height of about 3 ft. During a season of ballet, when a special raised stage had been built for the dancers, it happened that an orchestra played on this stage, and it was observed that a very much better sound was received in the rear seats of the main auditorium (terrace stalls) than from the normal platform. This is believed to be due partly to the compromise that was made with the theoretically correct design of audience raking and partly to the fact that some of the orchestra is brought nearer to the overhead orchestral reflector. The formula for theoretically correct raking is given by

$$h_n = h_{n-1} + h - \frac{d(H - h_{n-1})}{D + (n-1)d}$$

Where h_n is the height of the n^{th} row above the first row, h is the head clearance (usually 5 in. for seats directly behind or 3 in. for staggered seats).

d is the horizontal distance between rows,

H is the height of the source above the first row,

D is the horizontal distance from n^{th} row to source.

This results in a slope which gradually increases as the distance from the platform becomes greater (sometimes known as an "isacoustic curve"). Here for constructional reasons a constant rake was used which departed from the isacoustic curve slightly only at the rear of the seating area. However, the grazing incidence of direct sound waves occasioned by this compromise resulted in some loss of sound in these seats which was compensated for by the raising of the platform by 18 in. The feared lack of balance in the front rows was not, however, evident with the raised platform, and it was therefore

decided to provide a permanent change in the platform height. Rostra were designed as shown in Fig. 3 to give the platform the new shape now seen.

THE ORGAN

From the earliest days of the design of the hall, the organ consultant, Ralph Downes, had insisted that the organ must "not be stowed away in some hidden chamber where it might be heard only with difficulty and not seen at all." This led to some contention with the acoustic consultants, who would have preferred to locate the orchestral reflector in a lower position than that finally adopted.

The section shown in Fig. 4 reveals how the ceiling of the organ chamber is "faired" into the ceiling shape of the hall, and although the reflector cuts across the upper part of the chamber there is a free path for sound above as well as beneath the reflector. In plan the organ chamber extends across the entire end wall, between the plays. The walls of the chamber are of concrete, finished with a smooth hard plaster, and the ceiling of wood wool slabs is similarly finished. Prior to the inauguration of the organ the chamber had been divided from the auditorium by a temporary plywood screen, which was later replaced by the present sliding and folding shutter. The acoustical effect of replacing this screen or shutter which constituted the rear reflecting surface backing the orchestra by a surface some 17 ft. further back was difficult to foresee. Similarly the serried ranks of pipes would obviously provide a very different reflecting surface from that given by a flat plywood screen. In the

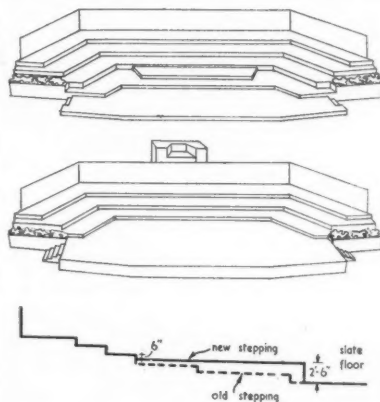


Fig. 3. Top, the original orchestral platform, and centre, the new raised platform.

event it appears that the orchestral sound is not noticeably modified by the presence of the organ, which will remain exposed for all concerts even when it is not being played. It seems likely that the extra absorption pro-

* A Working Detail of the new platform was given in the JOURNAL for December 3, 1953.

vided by the organ mechanism is compensated for by the additional volume (of some 25,000 cub. ft. or about 3.3 per cent. of the volume of the hall) introduced.

Another point of interest concerns the need to maintain adequate humidity in the organ chamber (r.h. 70 per cent.). This requirement, which is dictated by the need for maintenance of the organ tuning and for the protection of the timber parts from shrinkage is difficult to satisfy, especially as the relative humidity of the air

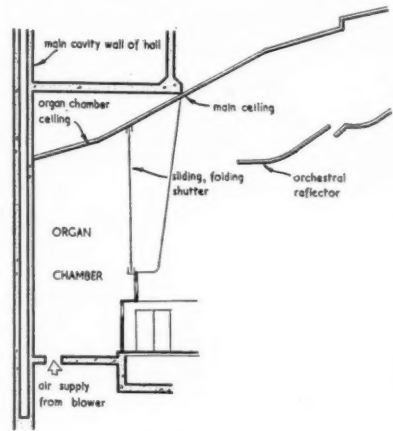
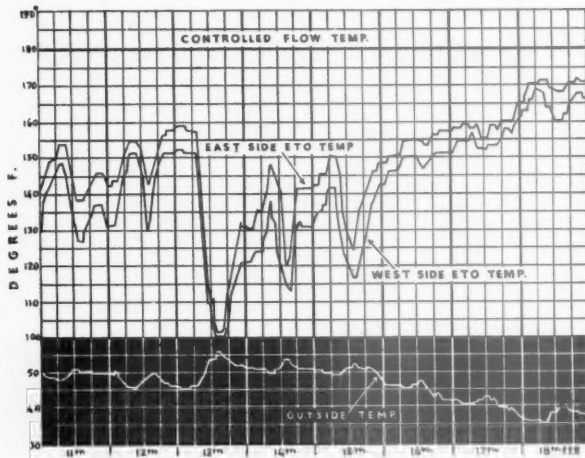


Fig. 4. Section of the organ chamber.

in the hall itself is hardly ever as high as this, and is usually considerably lower. An evaporating dish placed in the organ wind supply has not proved adequate and additional sources of evaporation have had to be provided at various parts of the organ chamber.

Acoustically, the designer has provided an instrument ideally matched to the hall. The church or cathedral organ is usually dressed up in casework and false pipes and often forced into some convenient recess in the building. The resulting sound is inevitably "well-blended" before it emerges from the organ and sounds best in the reverberant acoustic conditions found in these buildings. If the Festival Hall organ could be heard in this type of acoustic environment there is little doubt that the general reverberation would largely obfuscate the directional sounds from the various departments of the organ. In the Festival Hall, however, with its traditionally keen definition, each pipe is plainly heard and can be clearly differentiated both in position and tone, and part playing provides a new aural experience.

All circumstances have combined to grant Mr. Downes's wish that the organ shall be plainly heard. It is to be hoped that its many voices will endear themselves to the musical public as have the revelations of orchestral colour heard in this hall.



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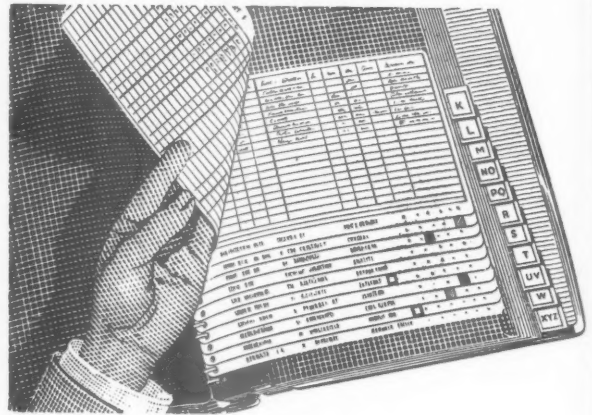
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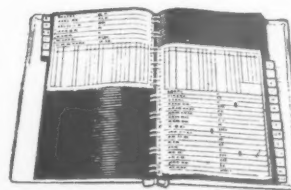
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5.50 planning: public utilities ABATTOIRS

The Siting, Construction and Management of Modern Abattoirs. A. W. Anderson. (The Journal of The Royal Sanitary Institute, pp. 22-29, Jan., 1954.)

An authoritative résumé by the Director of Slaughtering, Ministry of Food, of the principles of planning abattoirs. This appears opportunely at a time when the freeing of the meat trade from control will have repercussions on the planning of abattoirs, especially of slaughter halls. Plea for imperative need for local consultations before plans are drawn.

6.46 planning: social and recreational ATMOSPHERIC POLLUTION

Various Articles. (The Sanitarian. Feb., 1954.)

This issue of the Sanitarian contains several articles dealing with atmospheric pollution and smoke abatement. One is on the town of Widnes and one on Manchester. Most interesting is a paper by E. T. Wilkins of the Fuel Research Station, on Air Pollution and the London Fog of December 1952. This gives detailed data showing the amount of smoke and other pollution and the very close relationship between pollution and increased death rate. Incidentally it suggests that the increase in deaths during that winter was more likely 12,000 than the commonly quoted figure of 4,000, and it also largely disposes of the suggestion that the deaths might have been only slightly hastened by the fog conditions. The broad issues of atmospheric pollution dealt with in these various papers are, or should be, of considerable interest to architects.

9.42 design: general BUILDING SCIENCE

Building Science. Vol. 2. D. A. G. Reid. (Longmans Green & Co. Ltd. 1954.)

This comparatively small book covers a wide field and is intended chiefly for second year students taking a National Certificate Course in Building. It is clearly written and the author links his science and suggested laboratory experiments to the everyday problems of building in an interesting way though it could be argued that there is sometimes too much space given to laboratory work and too little to explaining fully the implications.

Three sections cover Fabric, Structure and Services. The first section deals with Dampness, Thermal Insulation, Chemical Changes and the Selection of Bricks, Stones and Timber. The second section covers Strength Properties of Materials and some elementary mechanics. The third deals with Heating and Ventilating, Electricity and Water Supply, Sanitation and Drainage.

Good for its particular purpose, but of limited value to architectural students.

9.43 design: general DSIR PUBLICATIONS

Government Publications Sectional List No. 3. DSIR. (Revised to Dec. 1, 1953.) (HM Stationery Office.)

To those who find it difficult to keep up to date with the publication of information this list will be a useful office reference. It covers BRS, FPRL, and also the other organizations of the DSIR, several of which touch upon work of interest to architects, e.g., Fire Research, Fuel Research, Geological Survey, National Physical Laboratory, Roads Research and Water Pollution Research.

9.44 design: general ROADS

Glossary of Highway Engineering Terms. B.S. 892:1954. (British Standards Institution. 10s. 0d.)

Few architects would spend 10s. 0d. for such a standard but in time its influence in reducing confusion of terms should spread to all parts of the building industry. The glossary runs to the considerable size of 50 pages, excluding a good index.

9.45 design: general BUILDING LAW

Building Law Illustrated. B. G. Phillips. (E. & F. N. Spon Ltd. 1954. 21s.)

The chief point about this book is that it sets out to assist the understanding of the building acts and byelaws by illustrating in sketch form many of the requirements. A good idea, especially for architects who so often find a diagram easier to understand more quickly than a written statement. Unfortunately, the interpretation or explanations are not always sufficiently full and the diagrams are much to crowded for easy reading.

10.111 design: building types TROPICAL ARCHITECTURE

Tropical Architecture—2. Special Number. (Architectural Design. Jan., 1954.)

The first special number on this subject (see Information Centre 10.108: 14.1.54) included some discussion of general design considerations in relation to climate. This second part consists entirely of further illustrations of buildings, chiefly in the Gold Coast, Nigeria, Sudan and the West Indies. Building types cover a fairly wide range.

19.174 construction: details HOLLOW STEEL STRUCTURE

Hollow members double as heat ducts in steel frame office building. (Engineering News-Record. 29th Oct., 1953. p.43.)

2-storey office structure in Seattle avoids exposed trunking by making use of the hollow frame and floors as heating ducts.

The frame consists of box columns comprising four 16 in. plates welded at the corners and beams of 16 in. top and bottom plates welded to 12 in. channels. The beam and column design costs more than H sections would have done. Steel floor decking was used having electrical services and one as a heating duct. The boiler installation was at roof level so hot air is blown down the columns into the hollow beams. Slots 3 in. by 10 in. cut into the beams permit the air to pass into the floor units. A metal paste applied between the bottom of the decking and the top of the beam provides an air tight seal and where the decking units about they are taped. The floor slab is formed by pouring concrete over the hollow floor units.

19.175 construction: details CONCRETE SLAB WITH GLASS LENSES

Test of concrete-and-glass panels. (Concrete & Constructional Engineering. Dec., 1953, p. 387.)

B.R.S. test of R.C. slabs 11 ft. 3 in. by 4 ft. 2 in. over a 10 ft. 3 in. span. Each panel had 7 longitudinal ribs 3 in. deep at 8 in. centres and 14 ribs transversely at 8 in. centres. One panel had 6½ in. by 6½ in. by ¾ in. lenses while the other had 6½ in. by 6½ in. holes. The panel with lenses was so strengthened by the presence of the lenses that the deflection was only one half that of the other panel at similar loading. Failure was slow and progressive, whereas the unglazed panel failed suddenly due to compression.

INFORMATION CENTRE INDEX FOR 1953

An alphabetical index covering Information Centre items and special articles published in the Technical Section during the twelve months ended December 31, 1953, is being prepared. Readers who wish to have a copy—it is free of charge—should complete the form below and post it to the Technical Editor, THE ARCHITECTS' JOURNAL, not later than May 10, 1954.

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Announcements

Sheppardson & Dixon, L.A.R.I.B.A., have moved to 2, Museum Street, Ipswich (Tel.: Ipswich 55423/4).

L. E. Martin, A.R.I.B.A., has moved from London to 18, Tawa Street, Eastbourne, Wellington, New Zealand.

A. G. Paton, L.R.I.B.A., has moved to 25, Berkeley Square, W.1 (Tel.: Mayfair 8684), where he will be pleased to receive trade catalogues, etc.

Basil Z. Gillinson, Dipl.Arch., A.R.I.B.A., has moved to Carlton Chambers, Albion Street, Leeds 1 (Tel.: Leeds 22664).

J. D. and B. Y. Tetlow, A/A.R.I.B.A., have removed their offices to Bank Chambers, 1, Bird Street, Lichfield (Tel.: Lichfield 2443).

Hill & Allum, F.R.I.B.A., of 28, East Park Terrace, Southampton, have opened a branch office at 67, High Street, Lyndhurst, Hants, where they will be pleased to receive trade catalogues.

The Council of The Institution of Civil Engineers have appointed Alexander McDonald, B.Sc., M.I.C.E., to the position of Secretary of The Institution to succeed the present Secretary, who is retiring this year.

Concrete Ltd., have appointed R. R. J. Tasker, M.B.E., as technical representative in charge of Lancashire, Cheshire and North Wales; R. Protheroe George as technical representative in charge of Berkshire, Hampshire, Isle of Wight, Sussex, Bucks., Kent, Surrey and London south of the Thames—jointly with W. V. Kilner.

Michael Lyell, A.R.I.B.A., is now practising from No. 16, Yeoman's Row, S.W.3, where he will be pleased to receive trade catalogues, etc.

H. Q. A. Reeves, 15, Berners Street, W.1, would like to receive manufacturers' catalogues on heating and ventilating, etc.

Highworth Processes Limited, in making arrangements for the construction of the Highworth Houses, have granted to Holland & Hannen and Cubitts for the area centred round London and Bristol, the right of construction of all types other than the detached house for owner occupation. Inquiries may be addressed either to Holland & Hannen and Cubitts, Ltd., 1, Queen Anne's Gate, Westminster, S.W.1, or to Highworth Processes Ltd., Highworth, Swindon, Wilts. It is hoped to continue this development and that in other districts contractors interested in the houses will communicate with Highworth Processes Ltd. The houses are accepted by building societies for maximum loans, and houses for owner occupation may be built by approved contractors with components supplied by Highworth Processes Ltd.

S. O. Bowker Ltd., announce the appointment of H. Atherton as area manager for the north west counties and north Wales. He will operate from their Manchester office at 85, Mosley Street, Manchester.

Readers wishing to retain information contained in advertisements of The British Electrical Development Association can obtain separate copies of these on application to The Press Officer, The British Electrical Development Association, 2, Savoy Hill, W.C.2.

A. W. Pyatt, technical representative for Stramit Boards Ltd., West Midlands, has removed to 4, Lakehouse Road, Sutton Coldfield, Warwicks. (Tel.: Erdington 3990).

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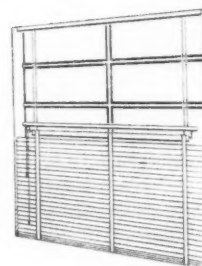
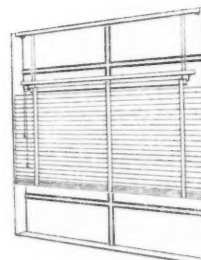
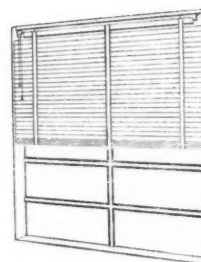
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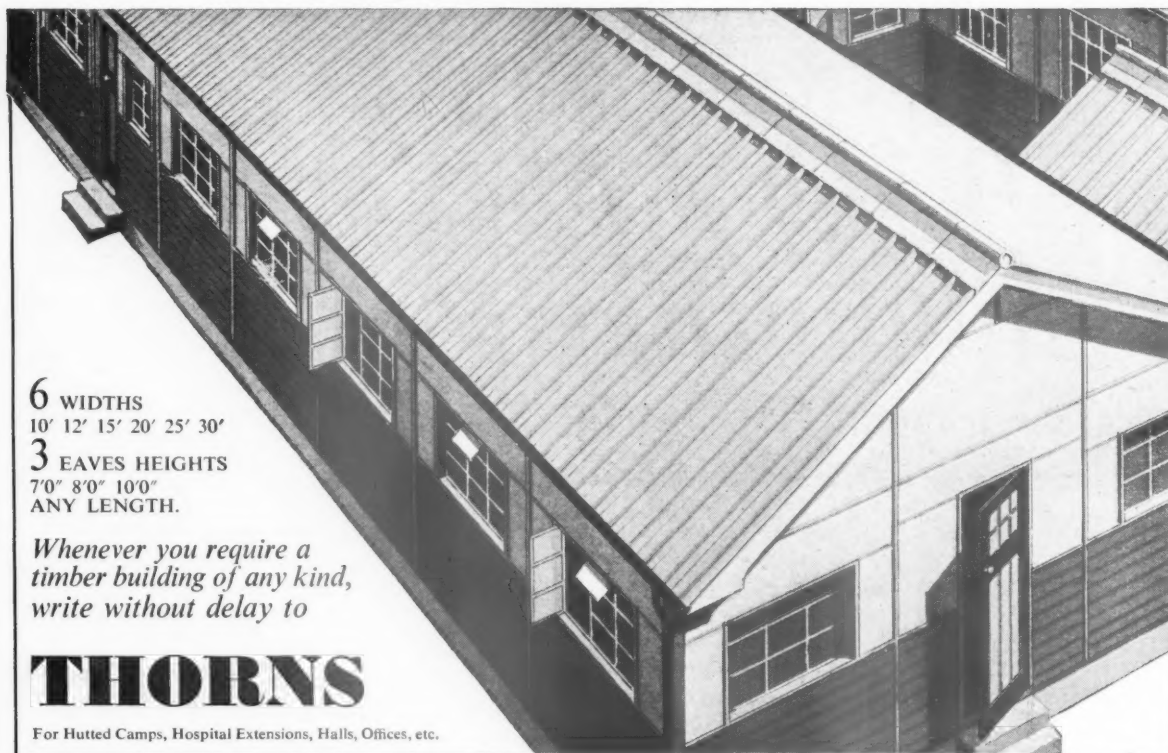
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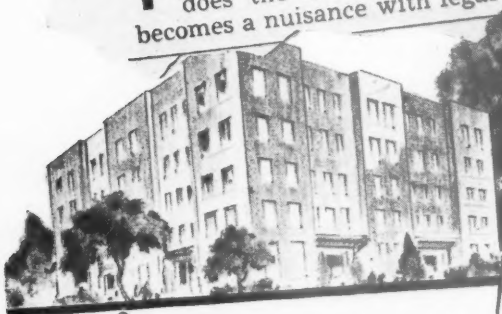
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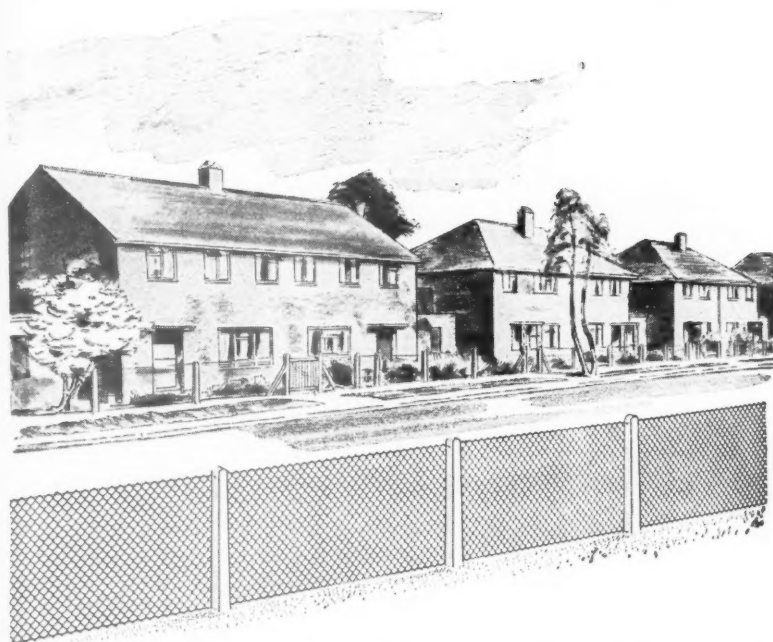
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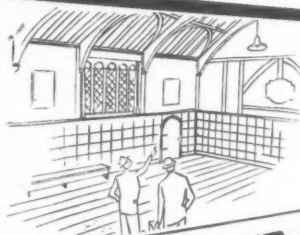
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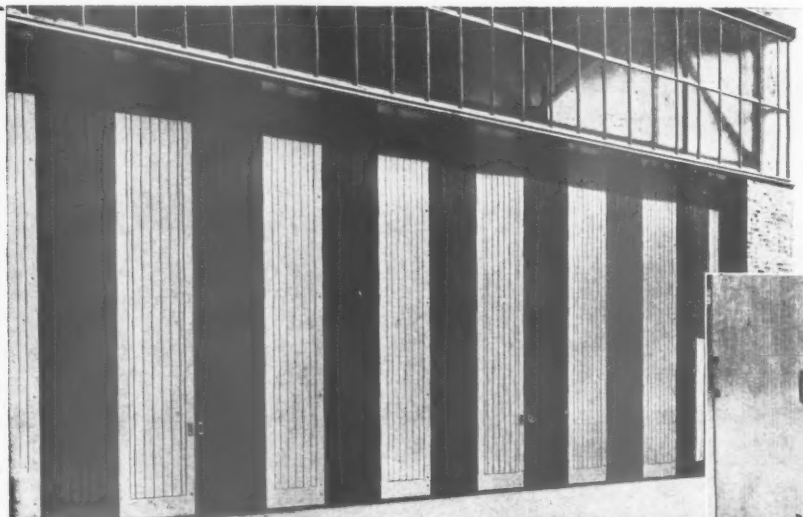
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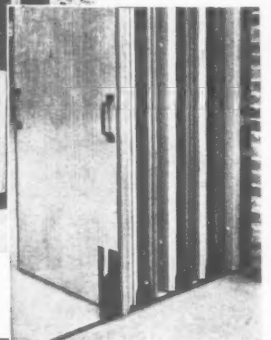
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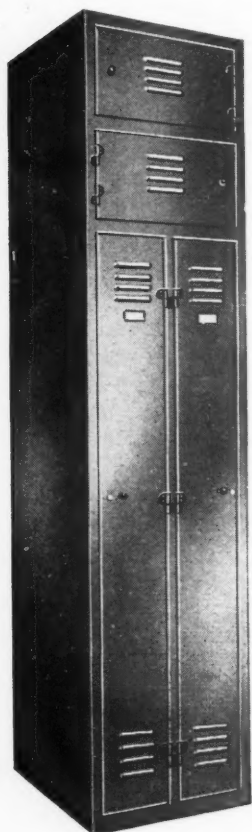
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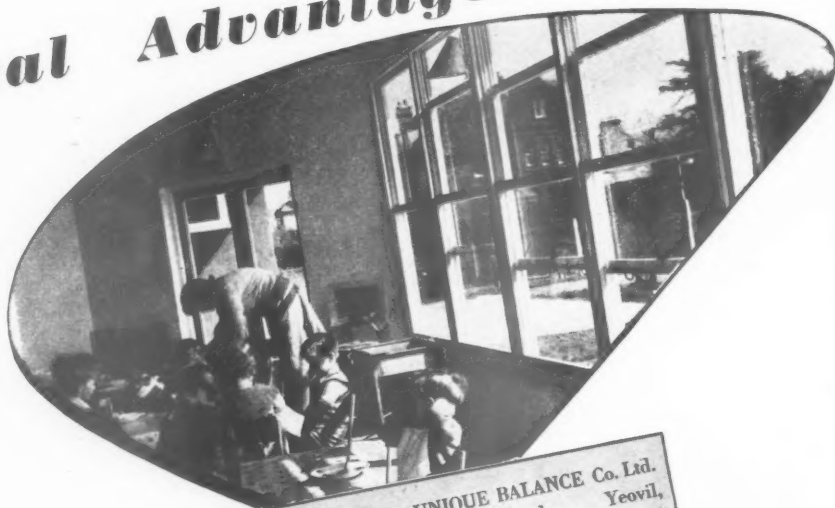
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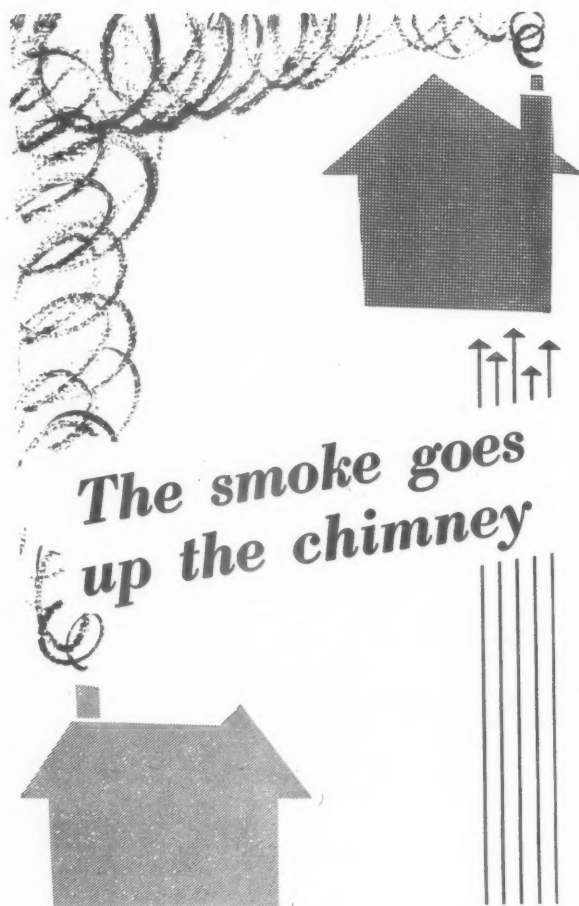
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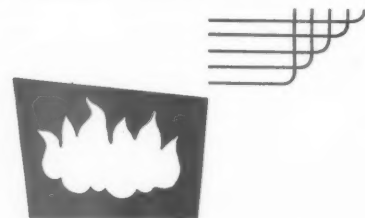
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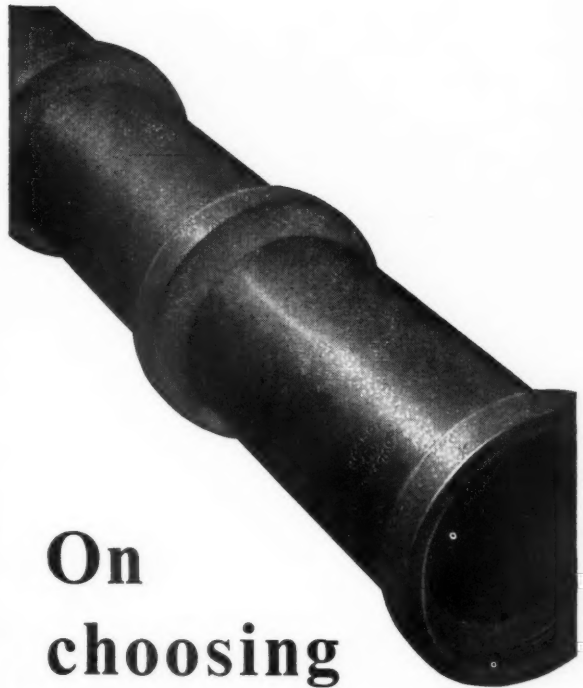


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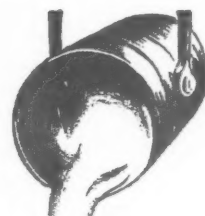
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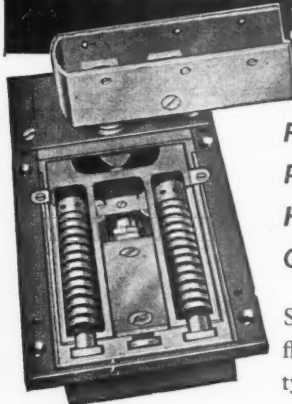
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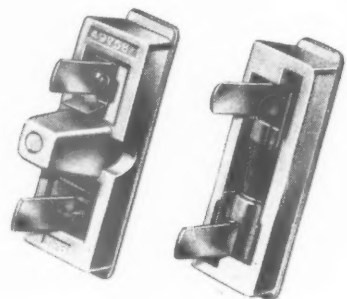


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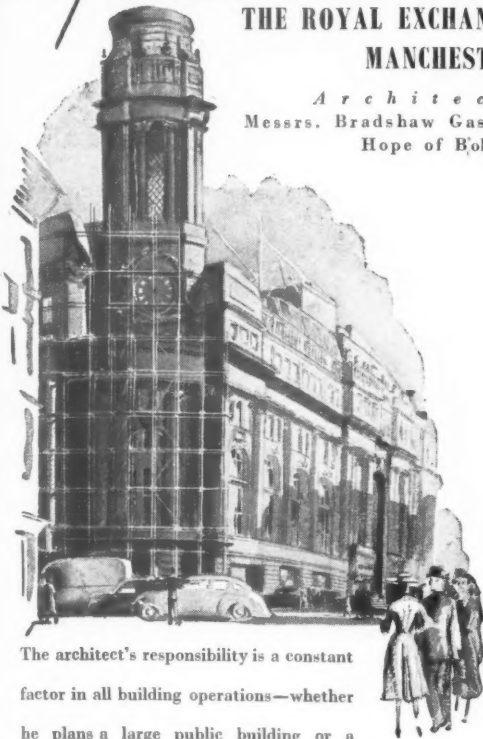
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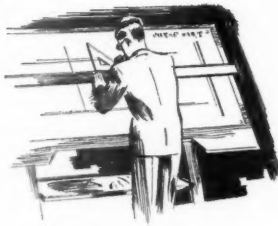
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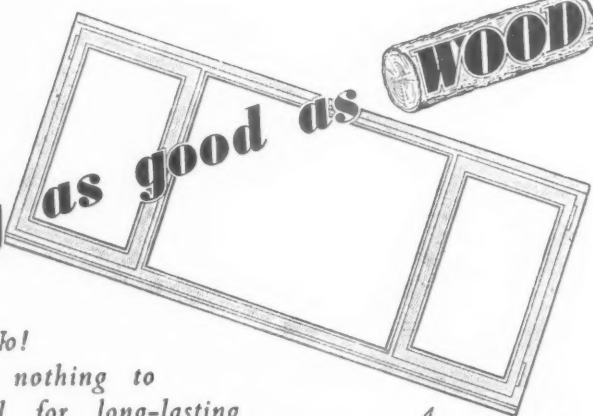
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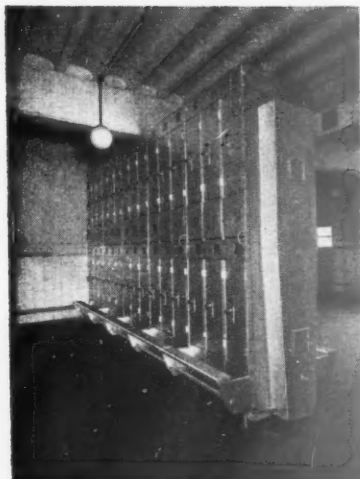
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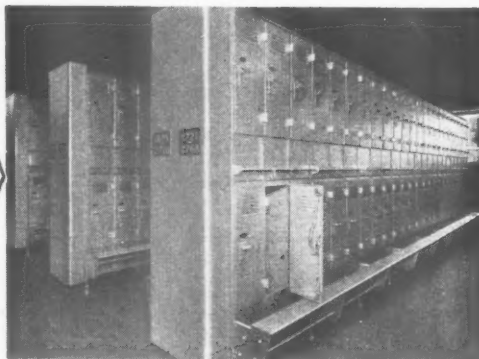
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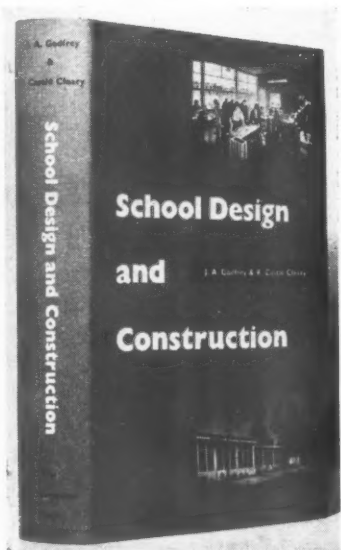


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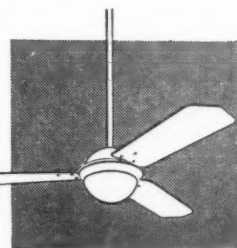
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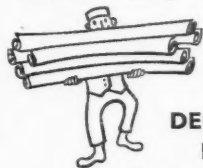
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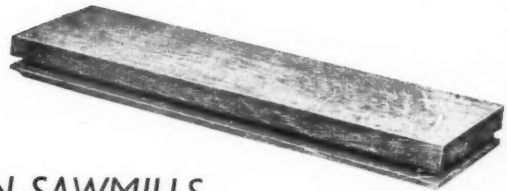
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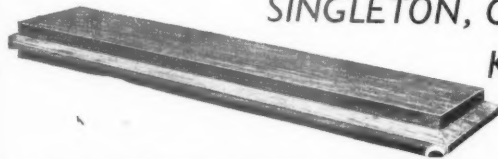
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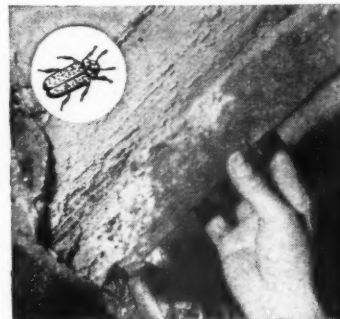
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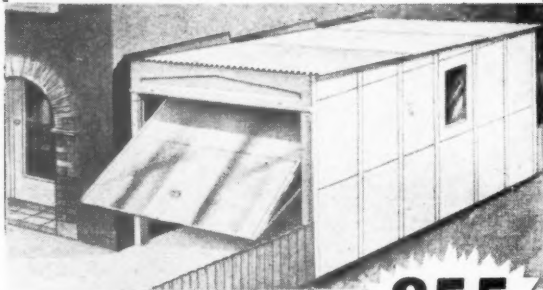
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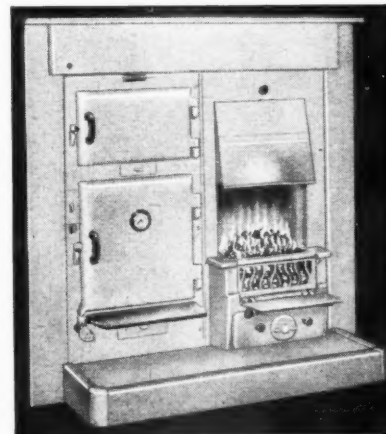
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CLASSIFIED ADVERTISEMENTS

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 as a Scheduled Employment Agency. The applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

GOLD COAST GOVERNMENT—VACANCY FOR AN ARCHITECT, PUBLIC WORKS DEPARTMENT.

Applications are invited for a vacancy in the Architectural Branch of the Public Works Department for an Architect of a senior status. Qualifications: Candidates must be Members of the Royal Institute of British Architects, and have had considerable experience of office administration and the control of Professional and Technical Staff. They should also have a contemporary approach to design.

Tropical experience will be an advantage. Duties: The Architect selected will be responsible to the Chief Architect for the efficient handling of the wide range of the large Building Development Programme, consisting of Hospitals, Schools, Flats, Quarters, Banks, Factories, Offices, etc.

Terms of Service: This post is a "Development Post" for implementation of specific projects under the Gold Coast Development Plan. The appointment will be on contract/gratuity terms for one tour of 18 to 24 months, with a possible extension to two tours. Salary will be in the range £2,200 to £2,500 per annum (consolidated), according to age, qualifications and experience. A gratuity at the rate of £37 10s. for each completed three months of satisfactory service will be payable on final termination of the contract.

Free passages on first appointment and on leave will be provided for the officer and his wife once each way during each tour of service. Officers will normally be required to travel by air. Free air passages will also be provided for a maximum of 3 children under 13 years of age.

Vacation leave with pay; seven days for each month of service. Free medical and dental attention provided for officer and family. Reasonable but sub-standard partly furnished quarters are available at low rental. Kit allowance on first appointment £30.

Intending candidates should apply in writing to the Adviser on Recruitment, Gold Coast Office, Melbourne House, Aldwych, London, W.C.2. 2120.

ISLE OF ELY COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the undermentioned appointments on the Staff of the County Architect:

(a) ASSISTANT ARCHITECT, Grade A.P.T. V (£520-£570).

(b) ASSISTANT QUANTITY SURVEYOR, Grade A.P.T. III (£550-£595).

(c) ENGINEERING ASSISTANT, Grade A.P.T. I (£490-£535).

(d) JUNIOR ARCHITECTURAL ASSISTANT (Temp.) Grade Misc.: I/II/III (£320-£460).

All posts with the exception of (d) are permanent, and all are subject to the National Scheme of Conditions of Service, the Local Government Superannuation Act, and to the passing of a medical examination.

Intending applicants should apply for forms, stating for which post they wish to apply, to the County Architect, County Hall, March, to whom they must be returned not later than Saturday, 24th April, 1954.

B. F. G. THURLOW,
Clerk of the County Council. 2158

PERTH AND KINROSS JOINT COUNTY COUNCIL require one SENIOR ASSISTANT ARCHITECT. Salary: £660-£770, with placing. House available. Applicants must be fully qualified A.R.I.B.A., and have up-to-date experience of School Building work. Particulars and forms of application from the County Clerk, County Offices, Perth Place, Perth. Applications to be lodged by 26th April, 1954. 2221

NOTTINGHAMSHIRE COUNTY COUNCIL.

COUNTY PLANNING DEPARTMENT.

APPOINTMENT OF PLANNING ASSISTANT. Applications are invited for appointment in the Development Plan Section, at a salary of £620 to £670 p.a. Applicants should have had experience in the preparation of Development Plans, and hold the qualification of Corporate Members of the Town Planning Institute. An additional qualification in engineering, surveying or architecture will be advantageous.

Further particulars from County Director of Planning, Shire Hall, Nottingham, to whom applications must be sent by 29th April, 1954. Canvassing disqualified.

A. R. DAVIS,
Clerk of the County Council. 2213

LONDON TRANSPORT require TEMPORARY STAFF for Architect's office:—

ARCHITECTURAL ASSISTANTS (F/E.V. 275). Applicants must have good background of architectural training and office experience. Duties include preparation of schemes and working drawings for road transport premises under supervision of an Assistant Architect.

Salary range £635 to £719 10s., commencing salary according to qualifications and experience; prospects of advancement to £783 10s.

QUANTITY SURVEYING ASSISTANTS (F/E.V. 276).

Applicants should be experienced workers up and able to assist in taking off under supervision. Preference given to members of Royal Institution of Chartered Surveyors.

Salary range £635 to £719 10s., commencing salary according to qualifications and experience; prospects of advancement to £783 10s.

ARCHITECTURAL DRAUGHTSMAN (F/E.V. 277).

Applicants must be good draughtsmen, capable of preparing sketch and working drawings under supervision with aptitude for architectural design; they will be expected to study for professional qualifying examinations.

Salary rising to £613 10s., subject to age and satisfactory service. Additional payments for certain recognised qualifications.

STRUCTURAL ENGINEERING DRAUGHTSMAN (F/E.V. 278).

Applicants must be good draughtsmen, able to design simple structures and prepare details under supervision, and will be expected to study for professional qualifying examinations.

Salary rising to £613 10s., subject to age and satisfactory service. Additional payments for certain recognised qualifications.

ASSISTANT ARCHITECTS (F/E.V. 279).

Applicants should be chartered or registered architects of a good standard of professional training and experience. Duties include control, under a Senior Assistant Architect, of a small unit of Architectural Assistants and draughtsmen engaged in preparation of schemes and working drawings for transport premises.

Salary range £815 to £865 with prospects of advancement to £940.

Applications quoting the vacancy number to Staff Officer, London Transport, 55, Broadway, S.W.1. Medical examination. For acknowledgement enclose addressed envelope. 2205

BOROUGH OF LARNE.

The Larne Borough Council invite applications for the undermentioned temporary posts:—

(a) DEPUTY PLANNING OFFICER. Salary range £940-£1,195 p.a.

(b) TWO PLANNING ASSISTANTS. Salary range £675-£1,000 p.a.

(c) ONE PLANNING ASSISTANT. Salary range £385-£625 p.a.

Commencing salary within the above ranges will be determined according to qualifications and experience. It is anticipated that employment will be for a period of at least two years.

Qualifications: Candidates for (a) must be Registered Architects by examination, possess a recognised qualification in Town Planning and have adequate experience in Town Planning Work.

Candidates for (b) must be either Registered Architects by examination, Corporate Members of the Institute of Civil Engineers or Associates for the Royal Institution of Chartered Surveyors. In addition, candidates must possess a recognised qualification in Town Planning or have adequate experience in Town Planning Work.

Candidates for (c) must have passed the Intermediate Examination of the Royal Institute of British Architects or have adequate drawing office experience. Preference will be given to candidates who served with H.M. Forces during war-time, providing the Council is satisfied that such candidates can, or within a reasonable time will be able to, discharge the duties efficiently.

Applications, giving date of birth, full particulars of qualifications and experience, stating the post applied for, with copies of two recent testimonials, should be sent without delay to the undersigned.

ROBERT LYTLE,
Town Clerk. 2212

Town Hall, Larne, Co. Antrim. 31 March, 1954.

AIR MINISTRY require a number of experienced SENIOR QUANTITY SURVEYING ASSISTANTS for temporary non-pensionable appointments in London.

Candidates must be of senior type, possessing considerable experience of all phases of Quantity Surveying practice, and accustomed to taking a large measure of responsibility. They must be capable "Takers-off" and in addition have a sound knowledge of the principles of price analysis, with wide experience of preparing final accounts for major contracts. Preparing up to £1,180, with starting pay according to qualifications and experience.

Write, quoting reference J.Q.S., to Room 403, M.L.N.S. Technical and Scientific Register, 26, King Street, London, S.W.1. 2226

POPLAR BOROUGH COUNCIL invite applications from Registered Architects for the established post of ARCHITECTURAL ASSISTANT, A.P.T. V. Forms obtainable from the Borough Engineer and Surveyor, Poplar Town Hall, Bow Road, E.3. Closing date: Monday, 26th April, 1954. 2225

CITY OF BIRMINGHAM PUBLIC WORKS DEPARTMENT.

Applications are invited for the following posts in the Town Planning Section:—

(a) SENIOR PLANNING ASSISTANT, A.P.T. VIII (£785-860 per annum).

(b) PLANNING ASSISTANT, A.P.T. VII (£735-£810 per annum).

(c) TWO PLANNING ASSISTANTS, A.P.T. V (£620-£670 per annum).

(d) PLANNING ASSISTANT, A.P.T. III (£550-£595 per annum).

Commencing salary in accordance with qualifications and experience.

Applicants for posts (a), (b), and (c) should be Corporate Members of the Town Planning Institute or hold equivalent qualifications and for post (d) should have passed the Intermediate Examination of the Town Planning Institute or hold equivalent qualifications.

The duties of the successful applicant for post (a) will include the preparation of plans of Areas of Comprehensive Development, both residential and industrial with special regard to the Development Plan for the City. Past experience is essential.

For post (b) applicants will be required to prepare schemes in relation to actual site, and surveying experience is essential.

For posts (c) and (d) general experience in the Planning Office of a Municipal Authority is required.

The appointments are permanent, superannuable, subject to a medical examination, and terminable by one month's notice on either side. Applications endorsed with the heading of the post applied for, stating qualifications, age and experience, together with the names of two persons to whom reference could be made, should reach the undersigned not later than 24th April, 1954.

Canvassing disqualified. HERBERT J. MANZONI, City Engineer & Surveyor. 2207

Civic Centre, Birmingham, 1.

CITY OF LIVERPOOL—EDUCATION COMMITTEE.

COLLEGE OF BUILDING.

CLARENCE STREET, LIVERPOOL, 3.

Principal: T. E. HALL, Dip. Arch., A.R.I.B.A.

Applications are invited for the appointment of SENIOR LECTURER IN ARCHITECTURE, Department of Building and Professional Studies. Duties to commence 1st September, 1954.

Salary: £1,040×£25 to £1,190 p.a. (men); £832×£20 to £952 p.a. (women).

The College offers Part-time Day and Evening Courses in Architecture, leading to the Final Associateship Examinations of the R.I.B.A., and the person appointed will be responsible to the Head of the Department for the organisation and conduct of these courses.

Applicants must possess a degree or graduate qualification in architecture, professional experience in a responsible position, and a teaching experience. Experience in the organisation of Architectural Courses will be an advantage.

Application forms (and further particulars) obtainable from H. S. MAGNAY, M.A., Director of Education, 14, Sir Thomas Street, Liverpool, 1, should be returned to him within three weeks of the appearance of this advertisement.

THOMAS ALKER,
Town Clerk and Clerk to the Local Education Authority. (J.A.3505) 2198

BOROUGH OF POOLE.

BOROUGH ENGINEER'S DEPARTMENT.

APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

Applications are invited for two general ARCHITECTURAL ASSISTANTS, A.P.T., Grade III (£550-£615-£695).

Preference will be given to applicants who have passed the Inter. R.I.B.A. Examination, and have had good general experience.

Forms of application may be obtained from the Borough Engineer and Surveyor, Municipal Buildings, Poole, Dorset, and completed forms must be returned to the undersigned not later than Tuesday, 20th April, 1954.

WILSON KENYON,
Town Clerk. 2197

March, 1954.

TOTTENHAM BOROUGH COUNCIL.

ARCHITECTURAL ASSISTANT, Grade A.P.T. II, III or IV (£520 to £565, £550 to £595, or £580 to £625; plus London weighting of £20 or £30, according to age).

N.J.C. conditions of service, Salary according to qualifications and experience.

DRAUGHTSMAN, Grade A.P.T. I (£490 to £535), plus London weighting of £20 or £30, according to age. Candidates should have had experience in the office of an Architect or Surveyor. Write to Borough Engineer, Dept. AJ, Town Hall, Tottenham, N.15, for application form and further particulars. Completed applications to be delivered by Tuesday, 20th April, 1954. 2221

CITY ARCHITECTS' DEPARTMENT.

EDINBURGH.

ARCHITECT. Applications are invited for the post of Assistant City Architect. Salary: £1,000×£50-£1,200. Candidates must be Chartered Architects by examination. Wide experience of design and construction of all types of buildings is necessary, and previous experience with Local Authorities is not required. Applications, giving age and full details of experience, to be submitted not later than 24th April 1954, to A. Steele, City Architect, City Chambers, Edinburgh, 1. 2168

NORTH-EAST METROPOLITAN REGIONAL
HOSPITAL BOARD.REGIONAL ARCHITECT'S DEPARTMENT.
Applications are invited for the following appointments:

ARCHITECTURAL ASSISTANT (£440 (at age 21 or over) × £25 (1) × £20 (8) — £625, plus London weighting £20-£30). Applicants must have passed the Intermediate Examination of the R.I.B.A. (or equivalent), and be able to make working drawings of new works, surveys, and take levels.

DRAUGHTSMAN (£360 (at age 21 or over) × £20 (8) × £25 — £655, plus London weighting £20-£30). Applicants must be Corporate Members of the R.I.C.S., having qualified in Quantities (Sub-Div. III), or, under certain circumstances, Associate Members of the Institute of Quantity Surveyors. The duties will comprise taking off, billing and abstracting, preparation of preliminary estimates, site measurements and valuation of works in progress and the preparation of final accounts. Experience in works of alteration will be an advantage.

ASSISTANT QUANTITY SURVEYOR (£600 × £25 (7) × £30 (3) — £865, plus London weighting £20-£30). Candidates must be Corporate Members of the R.I.C.S., having qualified in Quantities (Sub-Div. III), or, under certain circumstances, Associate Members of the Institute of Quantity Surveyors. The duties will comprise taking off, billing and abstracting, preparation of preliminary estimates, site measurements and valuation of works in progress and the preparation of final accounts. Experience in works of alteration will be an advantage.

QUANTITY SURVEYOR'S ASSISTANT (£440 (at age 21 or over) × £25 (1) × £20 (8) — £625, plus London weighting £20-£30). Candidates must have passed the Intermediate Examination of the R.I.C.S. in Quantities (Sub-Div. III) (or equivalent). The duties will comprise mainly "working up" and assisting generally in the preparation of final accounts, etc.

Applications, giving age, present salary, qualifications and experience (with dates), together with the names of two referees, should be sent to the Secretary, North-East Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, within 14 days. 2171

CITY AND COUNTY OF NEWCASTLE UPON
TYNE

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

(a) **SENIOR QUANTITY SURVEYOR**, A.P.T. Division, Grade VIII (£785-£860).

(b) **SENIOR ASSISTANT QUANTITY SURVEYOR**, A.P.T. Division, Grade VII (£735-£810). Candidates for the above appointments should be thoroughly experienced in the preparation of Bills of Quantities, Specifications and Estimates for Housing, Flats and Building Work of a general character and the settlement of final accounts.

Preference will be given to professional Associates of the R.I.C.S.

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

Applications, stating position applied for, age, particulars of training, qualifications, experience, present and past appointments, together with copies of two recent testimonials or the names and addresses of two persons to whom reference may be made, should be addressed to George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle upon Tyne, 1, not later than Saturday, the 24th April, 1954.

JOHN ATKINSON,
Town Clerk.

Town Hall, Newcastle upon Tyne, 1.
29th March, 1954. 2199

THE URBAN DISTRICT COUNCIL OF
CWMBRAN.

ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of an Architectural Assistant, in the Architect's Department of the above-mentioned Council, in Grade V (£620-£670), of the A.P.T. Division of the National Scheme of Conditions of Service. The commencing salary in the Grade will be determined by the qualifications and experience of the successful candidate.

Candidates must possess at least the Intermediate Certificate of a recognised Professional Institute.

The Council will, if necessary, favourably consider granting the successful applicant the tenancy of one of its houses.

Within the urban area a New Town is being built under the provisions of the New Towns Act, 1946.

Applications, stating age, qualifications and experience, and giving the names of two referees, and endorsed "Architectural Assistant," must be delivered to me not later than Saturday, 1st May, 1954.

KENNETH G. S. GUNN,
Clerk of the Council.

Council Offices, Cwmbran, Mon.
1st April, 1954. 2223

CARMARTHENSHIRE COUNTY COUNCIL.

Applications are invited for a Temporary **ARCHITECTURAL ASSISTANT**, A.P.T., II (£520-£565 per annum). Applications, stating age, present position, qualifications and experience, together with the names and addresses of two referees, to be sent to undersigned by 21st April, 1954.

W. S. THOMAS,
Clerk of the County Council.

County Hall, Carmarthen. 2170

HAMPSHIRE.

Applications are invited for the appointment of a **TECHNICAL ASSISTANT**, in the County Planning Department, on Grade III of the National Scales (£450-£595), to work in the Headquarters Office at Winchester. Candidates should have passed the Intermediate Examination of the Town Planning Institute or of a related professional body, and have had experience in the Planning Department of a Local Planning Authority. The appointment is pensionable, and will be subject to a satisfactory medical report.

In approved cases the County Council are prepared to assist newly appointed staff to meet removal and other expenses.

Applications, stating age, education, qualifications and experience, together with a copy of one testimonial and the names and addresses of two referees, should reach the County Planning Officer, Litton Lodge, Clifton Road, Winchester, by the 15th April. 2169

AIR MINISTRY WORKS DEPARTMENT requires **ARCHITECTURAL ASSISTANTS** in Design Branch. Applicants should be experienced in planning and preparation of working drawings and details for permanent and semi-permanent buildings. Professional qualifications an advantage. Vacancies mainly London, few Provinces. Appointments carry liability for overseas service, for which allowances payable. Salaries up to £780 p.a. for men, £618 for women. Starting pay dependent upon age, quals, and experience. Extra duty allowance or overtime payable. Reasonable prospects of promotion. Posts temporary and non-pensionable, but have long term possibilities. Competitions held periodically to fill established vacancies. Applications from natural born British subjects only, quoting A/C, and stating age, quals, and previous appointments, giving dates and stating type of work done, to Air Ministry, S.2(h)/NA, Cornwall House, Stamford Street, London, S.E.1. 2227

LANCASHIRE COUNTY COUNCIL.

PLANNING DEPARTMENT.

SENIOR PLANNING ASSISTANT, A.P.T. Grade VI (£695-£760); and **PLANNING ASSISTANT**, A.P.T. Grades I-V (£490-£570) required at Liverpool. Applicants for Grade VI should be qualified architects, engineers, surveyors or planners with experience. For Grades I-V candidates should be studying for or possess a qualification in architecture, engineering, surveying or planning; experience desirable. Commencing salary dependent upon qualifications and experience. Applications, stating appointment applied for, giving age, qualifications, present appointment and salary, experience and references to County Planning Officer, East Cliff County Offices, Preston, by 21st April, 1954. 2208

BILLINGHAM URBAN DISTRICT COUNCIL.

CHIEF ARCHITECTURAL ASSISTANT.

Applications are invited for suitably qualified persons for the above appointment. Salary in accordance with A.P.T. VI (£695-£760). Billingham is a rapidly expanding town with a population of 24,000, and approximately 400 houses are being built each year, under contract. The appointment is subject to one month's notice on either side, to the provisions of the Local Government Superannuation Acts, and the successful applicant will be required to pass a medical examination. Consideration will be given to the provision of housing accommodation. Applications, stating age, qualifications, experience, past and present appointments, and the names of two referees, must be delivered to the undersigned by 21st April, 1954.

FRED M. DAWSON,
Clerk of the Council.

Council Offices, Billingham, Co. Durham. 2224

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CORPORATION.

Applications are invited for **DRAUGHTSMAN** or **DRAUGHTSWOMAN** with previous experience in a Planning or Architectural Department. Salary scale: £340-£470 p.a. Conditions of service broadly similar to Local Government "Charter," with opportunity of entering or continuing in Local Government Superannuation Scheme.

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W. O. HART,
General Manager.

Westbrook Hay, Hemel Hempstead. 2210

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CORPORATION.

APPOINTMENT OF ASSISTANT ARCHITECTS. Vacancy No. 91. Salary scale: £510 × £25 — £635. Conditions of service similar to Local Government Charter, with opportunity of entering or continuing in Local Government Superannuation Scheme. Intermediate R.I.B.A. essential. Experience in housing and/or industrial development desirable.

Application forms can be obtained from this office, and should be completed and returned to undersigned by 23rd April.

W. O. HART,
General Manager.

Westbrook Hay, Hemel Hempstead, Herts. 2222

LONDON COUNTY COUNCIL.

ARCHITECTS' DEPARTMENT.

Vacancies for **ARCHITECTS** in Schools and Housing Divisions. Salary to £721.

Particulars and application forms, from Architect (AR/EK/A/2), County Hall, S.E.1. (374.) 2205

NORTHUMBERLAND COUNTY COUNCIL.

COUNTY PLANNING DEPARTMENT.

APPOINTMENT OF PLANNING ASSISTANTS.

Applications are invited for appointments as (a) **SENIOR PLANNING ASSISTANT** to take charge of the Development Plan Section, on Grade A.P.T. VIII (£785-£860); and (b) **PLANNING ASSISTANT**, preferably with architectural training, at a salary according to qualifications and experience within Grades A.P.T. I to IV (£490-£625).

Candidates for post (a) should be Associate Members of the Town Planning Institute and be prepared, if required, to provide a car for which the appropriate allowance would be paid.

Further particulars and forms of application are obtainable from the undersigned and applications must be received by 19th April, 1954.

J. B. ROSS, A.R.I.C.S.,
County Planning Officer.

43, Side, Newcastle-upon-Tyne, 1. 2209

Architectural Appointments Vacant

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

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

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(c) Three **WORKERS-UP** (commencing salary up to £600 p.a., according to age and experience).

The appointments are permanent and offer prospects of up-grading. Successful candidates will be required to undergo medical examination for compulsory superannuation scheme.

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ARCHITECTURAL ASSISTANTS required for busy practice engaged upon schools, industrial buildings, offices, etc. Write, giving full particulars of qualifications, experience and salary required, to Johns & Slater, F.A.R.I.B.A., 32, Foundation Street, Ipswich. 1536

A SENIOR ARCHITECTURAL ASSISTANT

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

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Applications stating age, experience, qualifications and salary required to be addressed to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society Limited, 1, Balloon Street, Manchester, 4. 2106

ASSISTANTS—one Inter. standard and one

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ASSISTANTS required about Intermediate

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ARCHITECTURAL ASSISTANT required,

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J. SAINSBURY, LTD., require ARCHITECTURAL ASSISTANT, of Intermediate standard, for their Building Development Department. Commencing salary: £500-£600, according to experience. Applicants must be free of obligation for National Service. Practical office experience required, together with sound knowledge of building construction, ability to survey existing premises, and prepare working drawings and details. Contributory superannuation scheme. Write, giving age, qualifications and experience, to Personnel Department, J. Sainsbury, Ltd., Stamford House, Stamford Street, Blackfriars, S.E.1. 2214

SENIOR ARCHITECTURAL ASSISTANT required, with minimum qualification of Intermediate R.I.B.A. Preference will be given to applicants having several years of office experience in the design of industrial buildings and housing. Write, stating age and details of experience and qualifications, to: Staff Office, Handley Page, Ltd., Cricklewood, London, N.W.2. 2215

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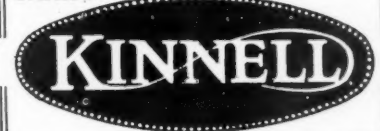
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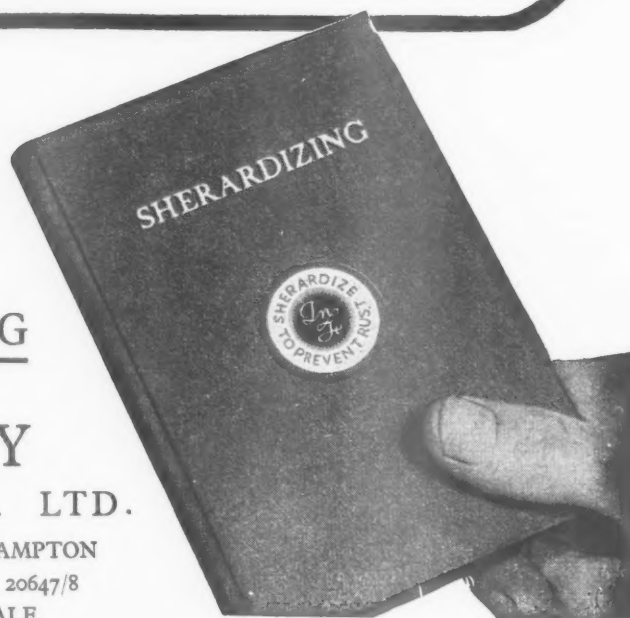
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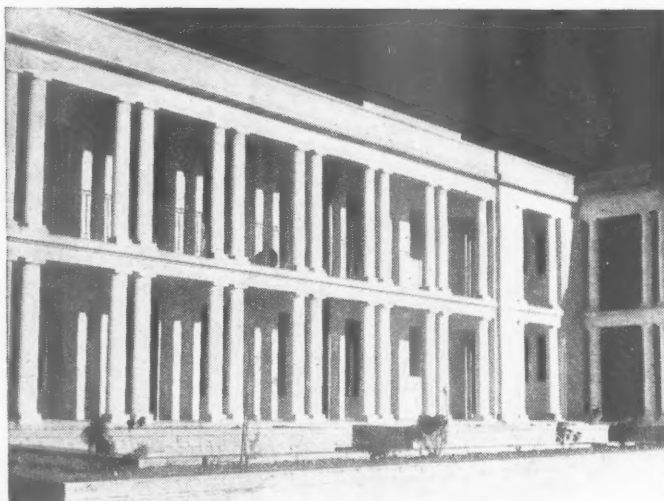
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