The Architects' Journal

for November 7, 1957. Price one shilling

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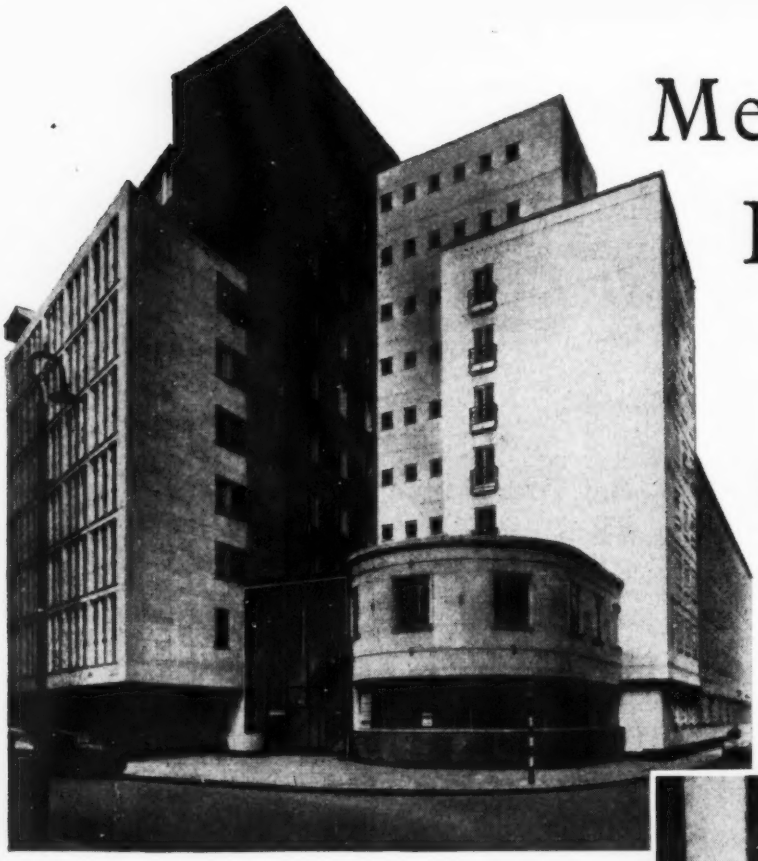

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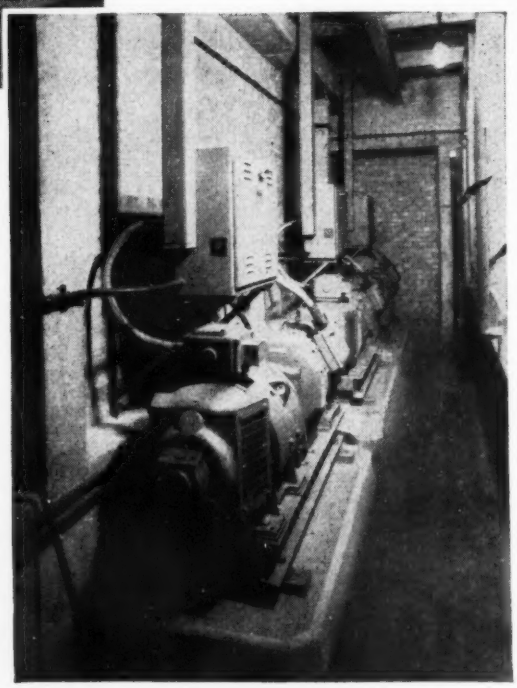

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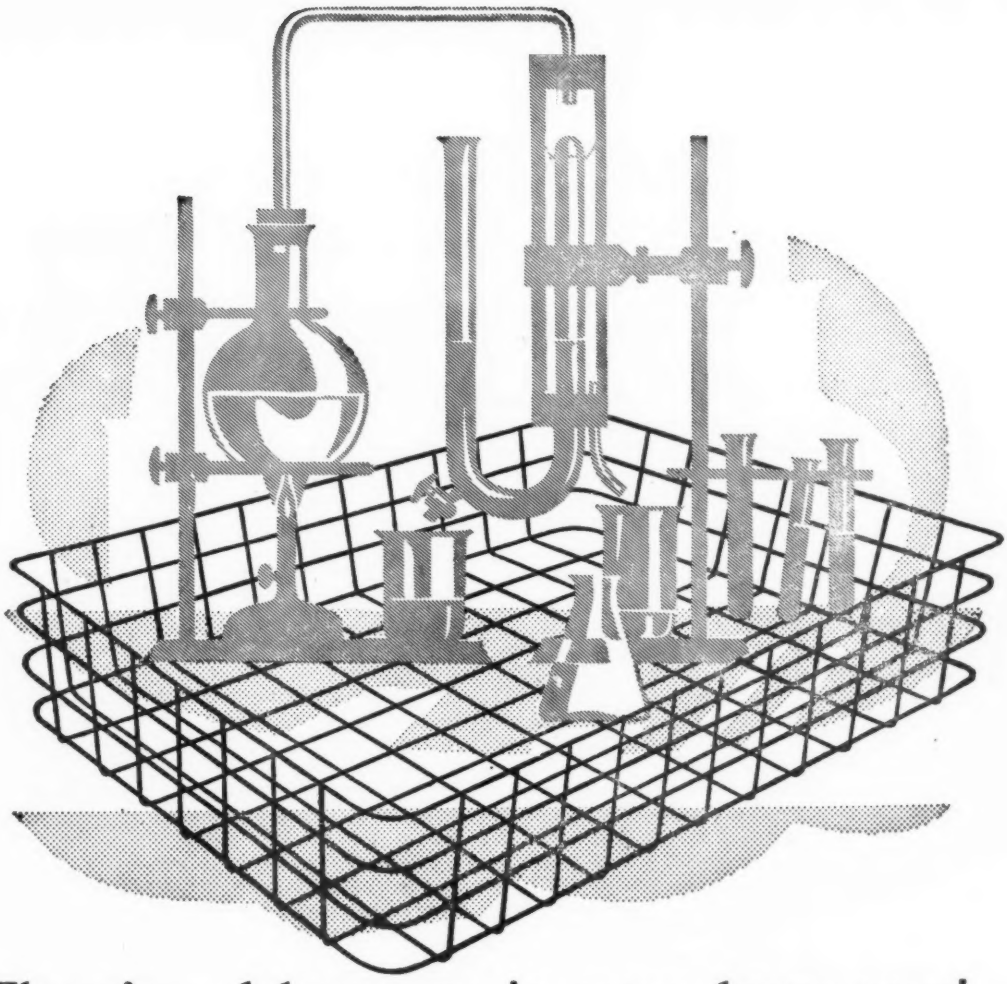

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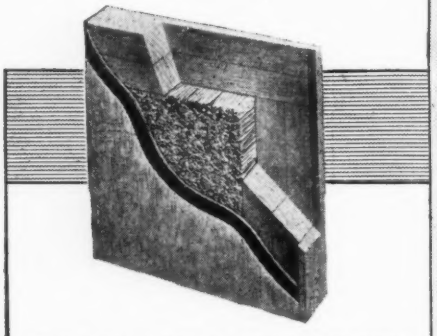

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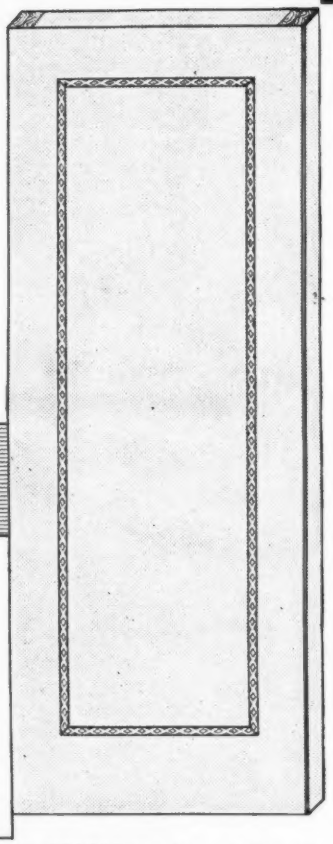

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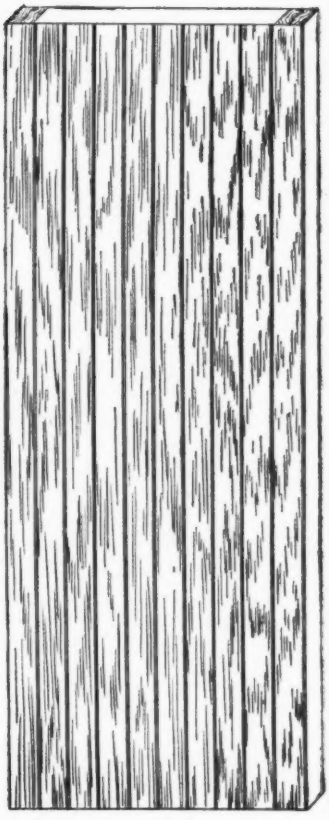

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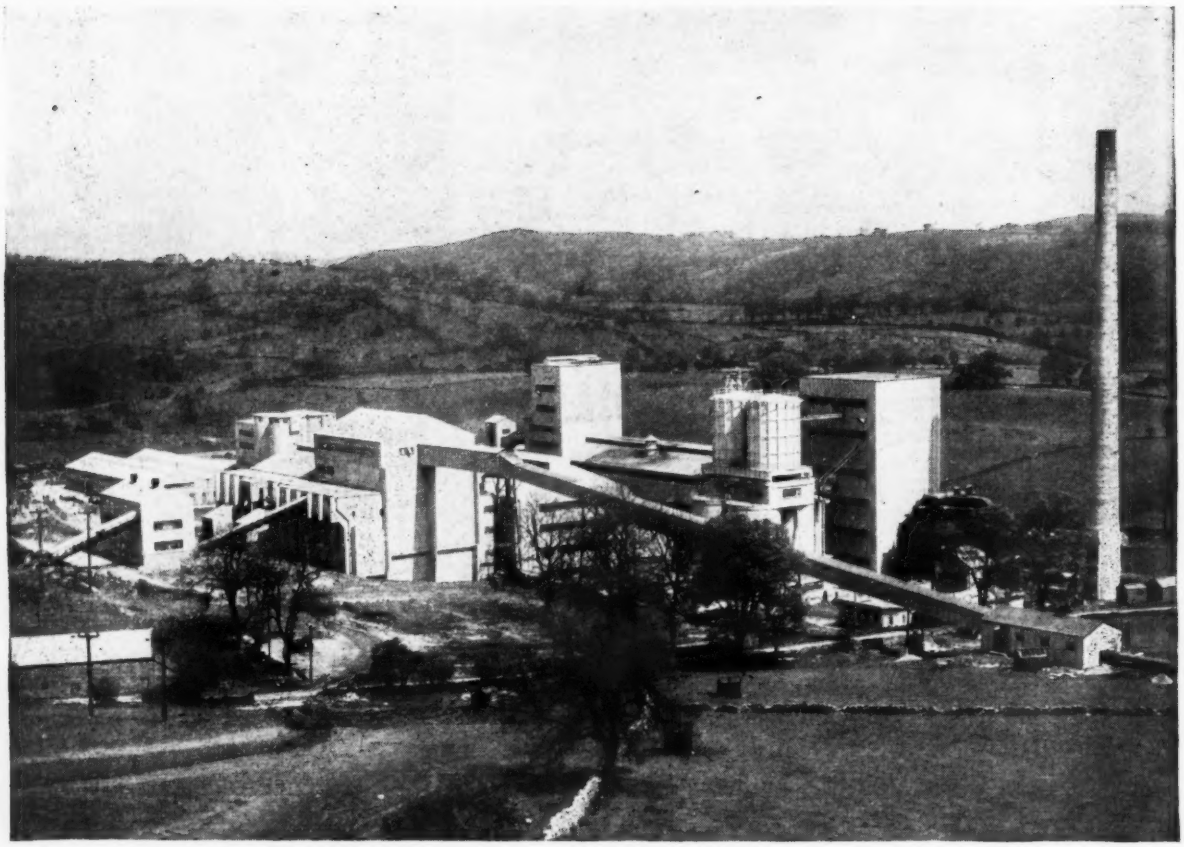

New Blue Circle Group Works opened in Staffs.

Another 220,000 tons a year

Cauldon Works, opened recently by the Rt. Hon. Hugh Molson, M.P., Minister of Works, will add 220,000 tons to the Blue Circle Group's annual output of cement. About £3½ million was spent on the plant, which is situated in Staffordshire between Ashbourne and Leek.

The manufacturing process is unique in that it is the only dry process in the country. Annual fuel savings in the kiln are likely to be as much as 40%.

8 million tons a year

Introducing the Minister, Mr. J. A. E. Reiss, Chairman of the Blue Circle Group of Companies, recalled that due to the restrictions which were imposed it was not until 1950 that the first cement works to be built in post-war years was opened. Since then, however, improvements and additions had raised the Industry's capacity to over 13 million tons a year, the Blue Circle Group's deliveries now amounting to about 8 million tons. "Output has now so increased," he said, "that there are ample supplies to meet all demands at home and from overseas markets."

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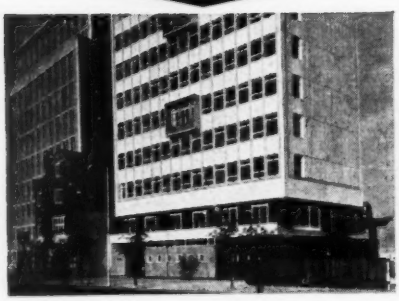

OFFICES OF DOCK LABOUR BOARD
by courtesy of Frederick Gibberd

For old buildings

ALL SAINTS' CHURCH, HASTINGS
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Proof of the effectiveness of these treatments is shown in this table

		% Water absorption after 24 hours immersion	
		Initial test	*Retested after 3 years' natural weathering*
Sandstone	untreated	7·0	6·2
	DRI-SIL treated	0·1	0·2
Cement Block	untreated	6·0	5·9
	DRI-SIL treated	0·4	0·7
Common Brick	untreated	20·0	20·1
	DRI-SIL treated	0·1	0·3

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Byrom Paint & Varnish Co Ltd, Stockport
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Samuel Courtney Ltd, Belfast
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W. David & Son Ltd, London, N1
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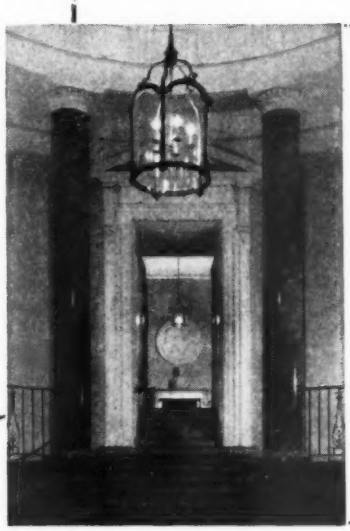

✲

ABOVE: Part of the Secretary of State for Scotland's room featuring Crane Pall Mall radiators.

✲

LEFT: A view of the Entrance Hall which has four Ionic columns rising to an elegant dome, the crown of which is glazed with an extremely delicate grille.

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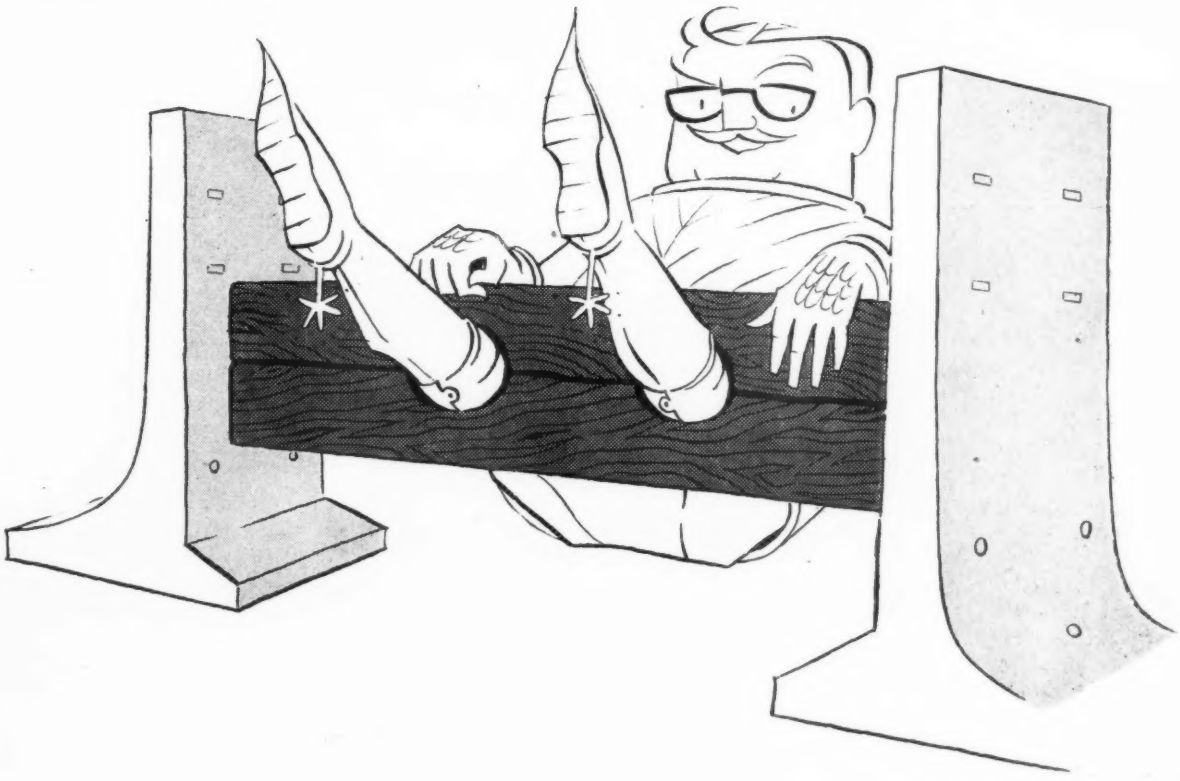

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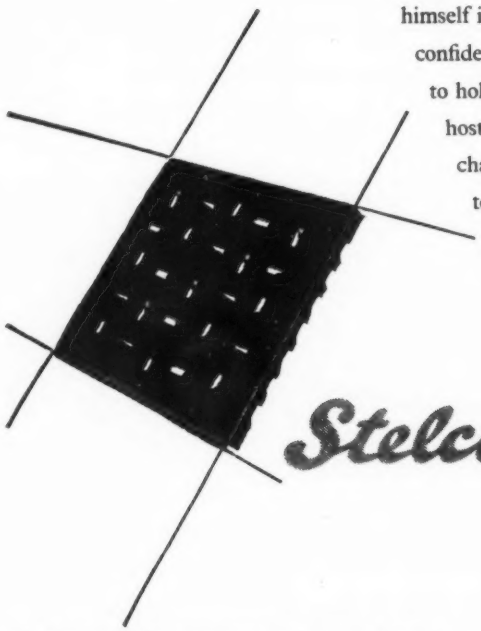

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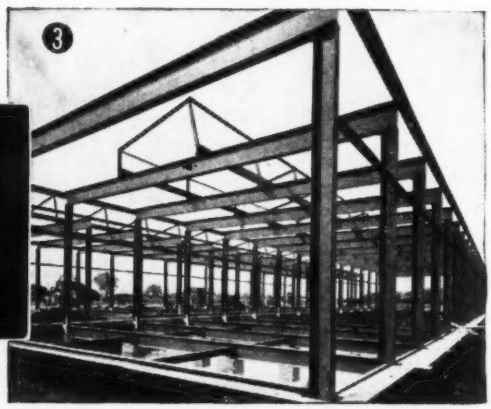

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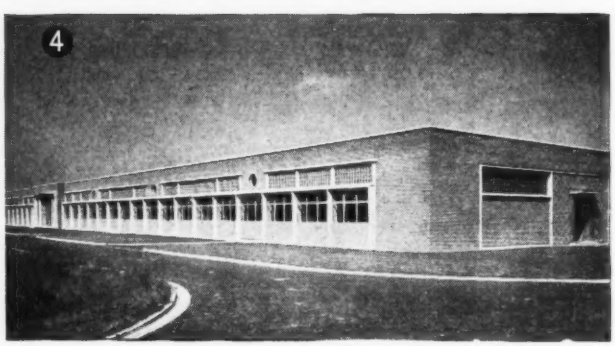
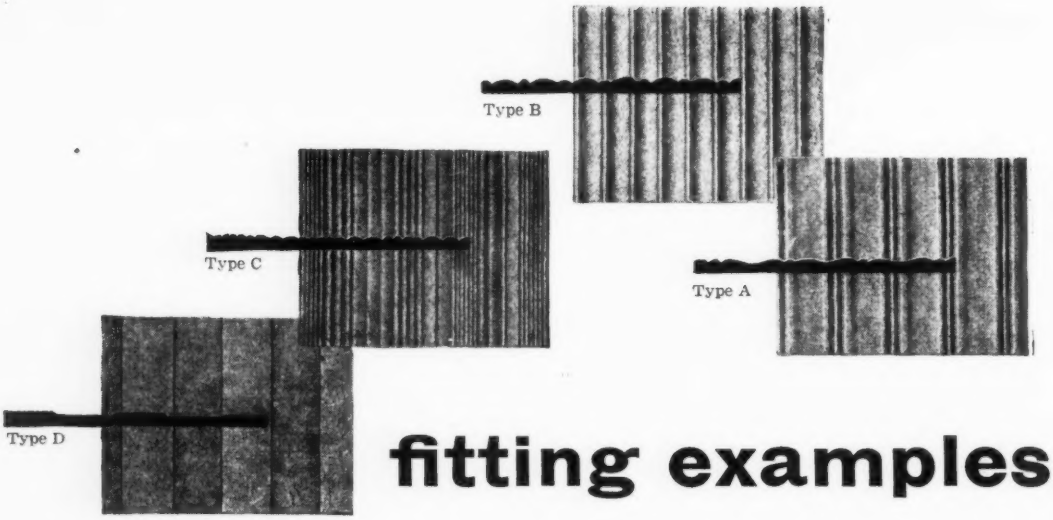
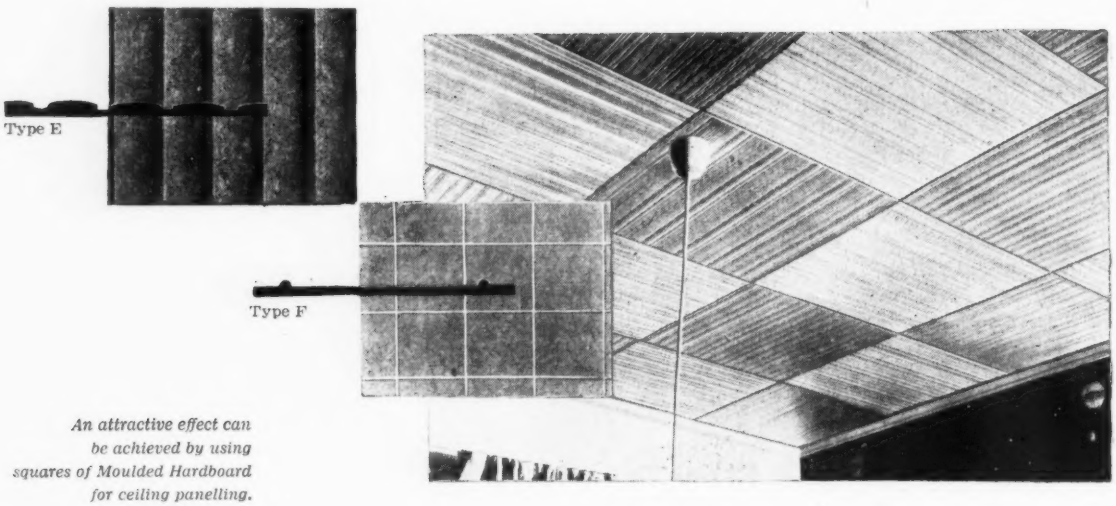




fitting examples...



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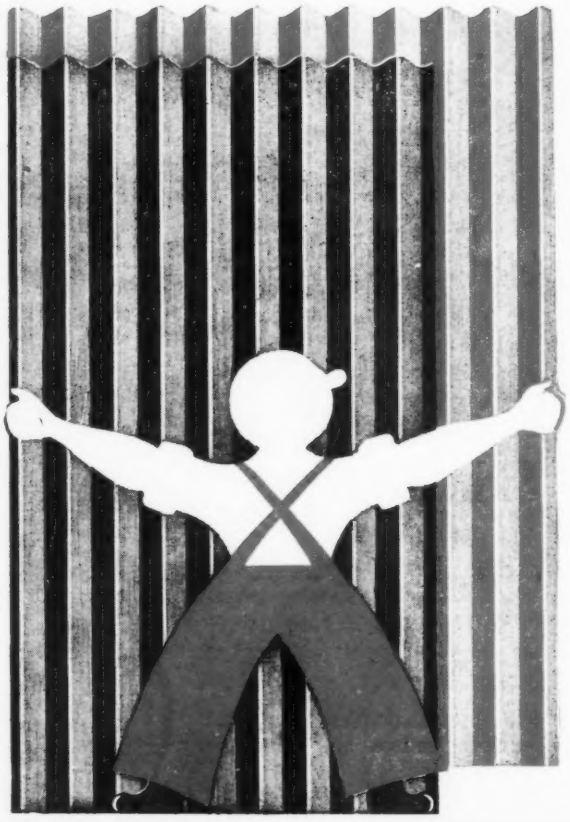

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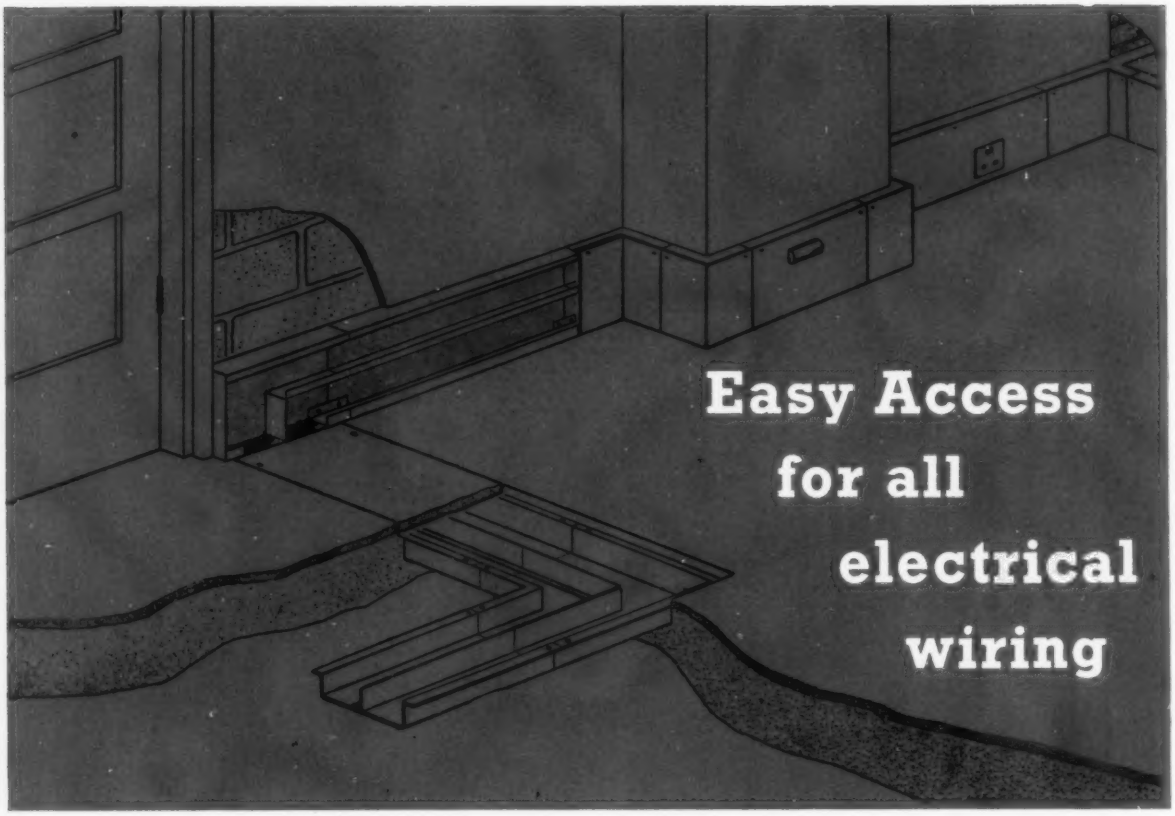

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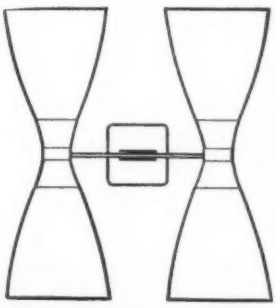

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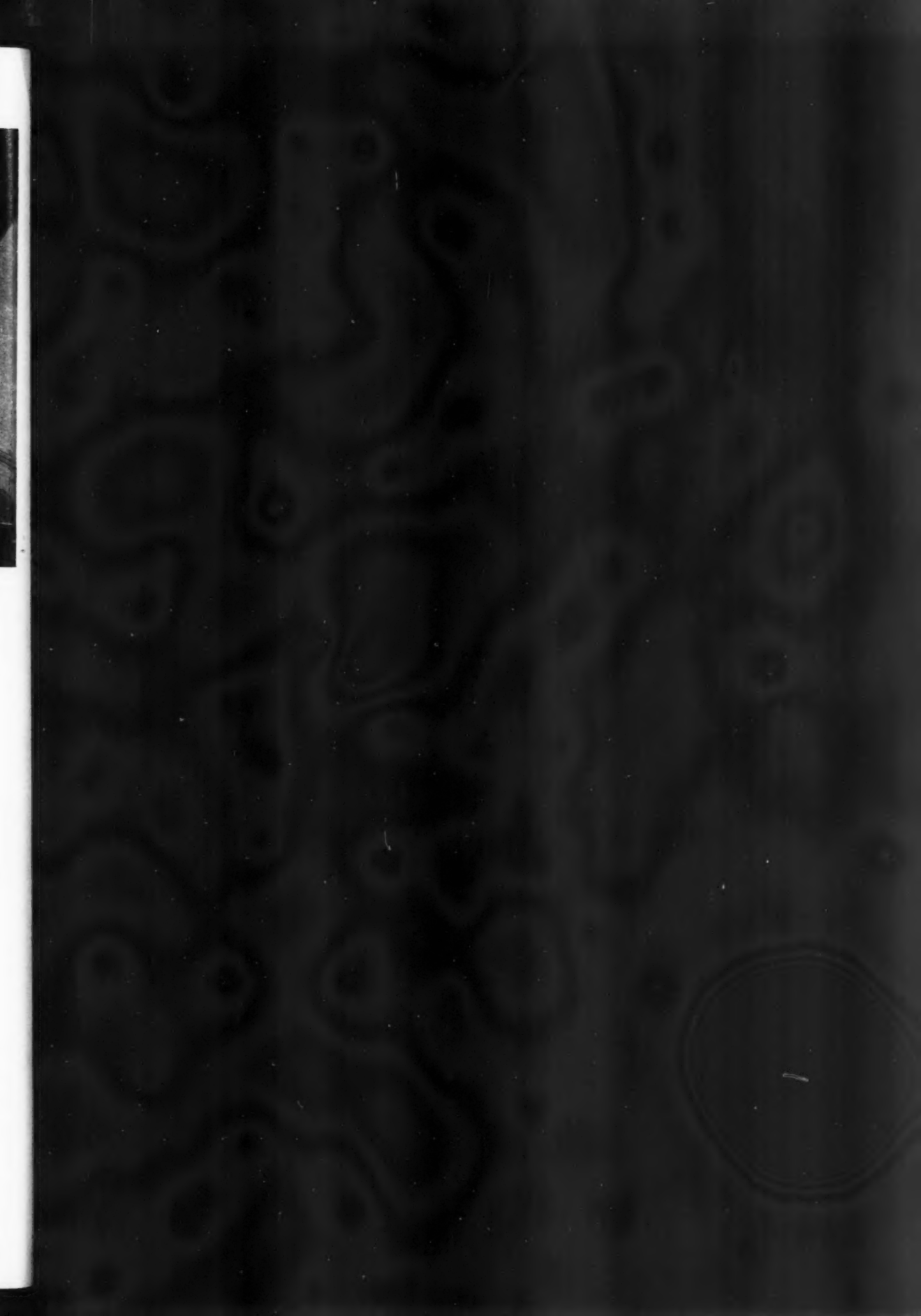

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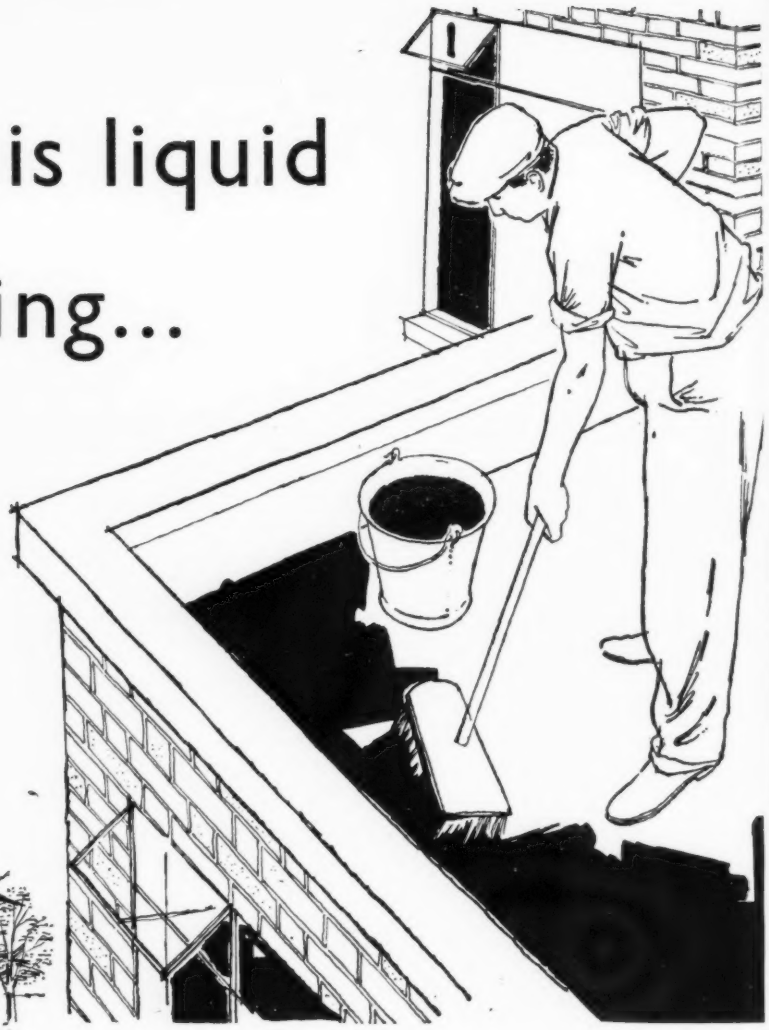

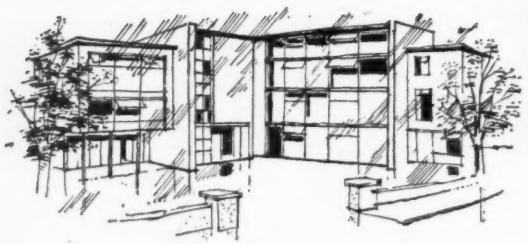

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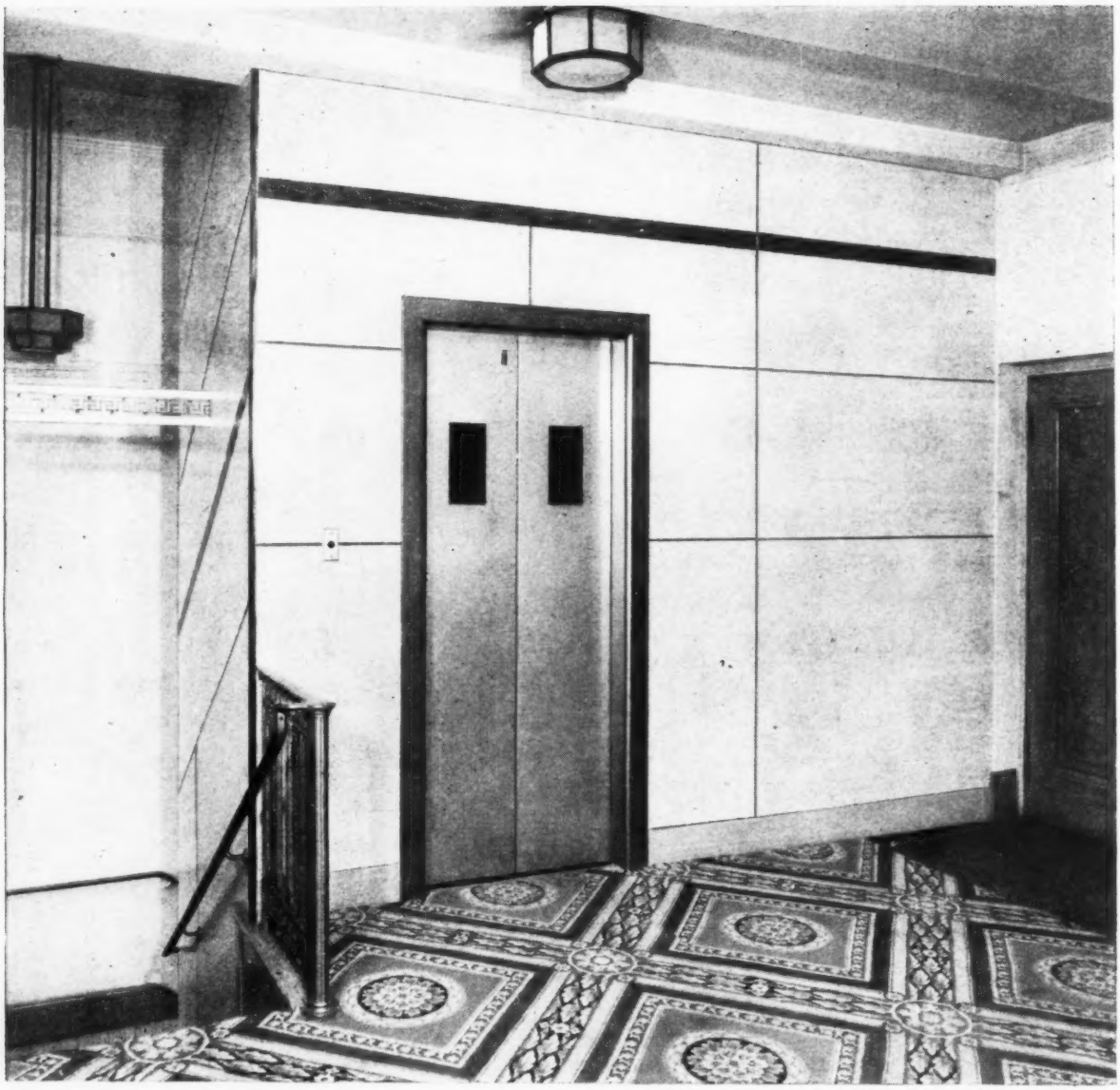

Lift shaft at the Connaught Rooms, London. ✻

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✻ *WARERITE Veneered Plywood in a Birds Eye Maple woodprint with a decorative cross band in a contrasting WARERITE Walnut woodprint is used for panelling the lift shafts on all five floors of the Connaught Rooms, Great Queen Street, London, W.C.2.*

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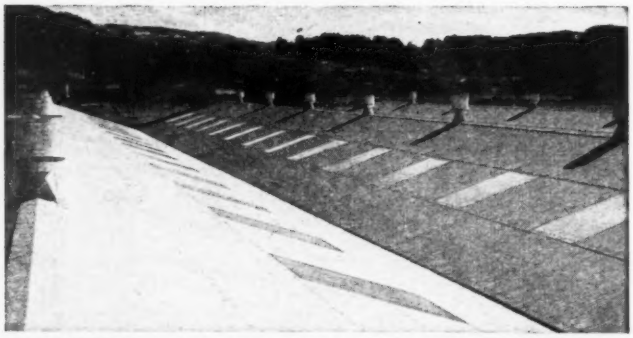

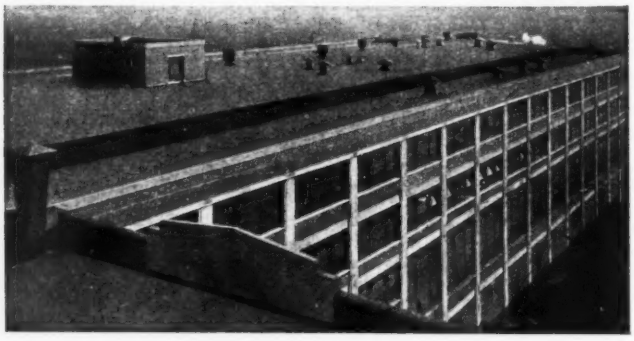

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Illustrations show:

Top: *Robertson Q-DECK with Robertson DECKLIGHTS and ROBERTSONRIDGE VENTILATORS at the Chance-Pilkington Works. Consultant Architects: Ormrod & Partners, Liverpool. Main Contractors: Holland & Hannen and Cubitts, Ltd.*

Centre: ROBERTSON PROTECTED METAL Sheeting with ROBERTSON ROUND VENTILATORS on the roof of the new factory erected for Messrs. Electrolux Ltd., Wellington, New Zealand.

Bottom: Robertson Q-DECK roofing the extension at Messrs. Kellogg Company of Gt. Britain. Robertson Round Ventilators were also supplied. Consulting Engineers: L. G. Mouchel & Partners, London.

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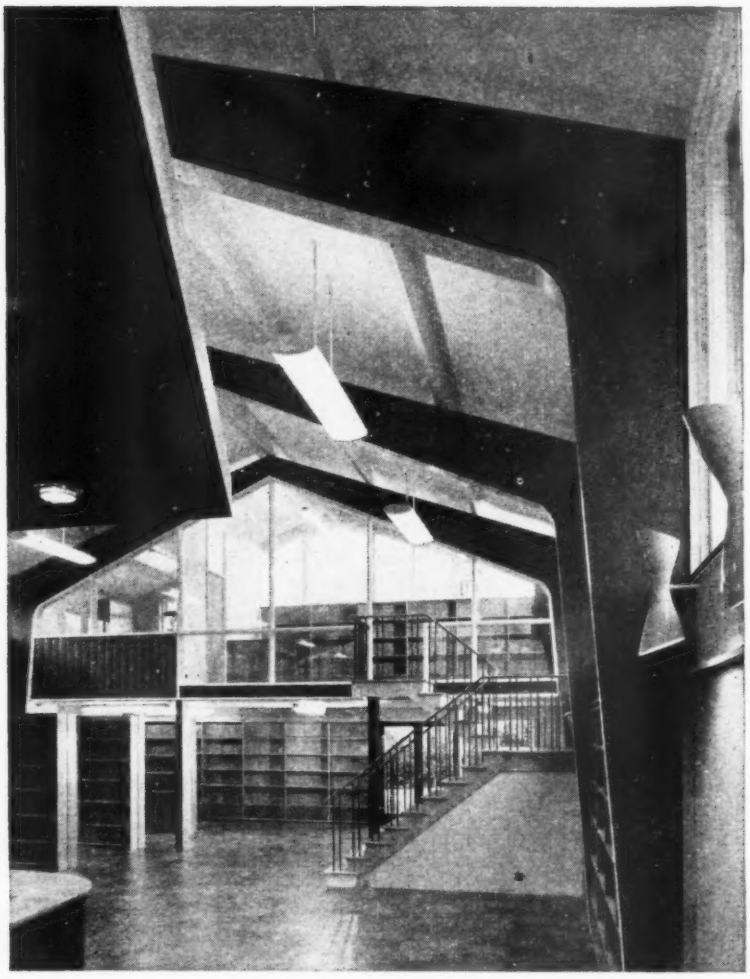

(Photograph by courtesy of Frederick B. Pooley, F.R.I.B.A., A.M.T.P.I., A.M.I.Struct.E., Buckinghamshire County Architect)

Supporting evidence

The inherent beauty and simplicity of this new library at Beaconsfield owe much to the design of the timber structures. The three-hinged frames shown in our photograph were built to the design and patent specifications of Mr. D. W. Cooper, B.Sc., A.M.I.Struct.E., by F. & H. Sutcliffe Limited, using Aerolite 300 resin glue to bond plywood webs rigidly to Douglas fir and withstand the considerable bending stresses involved. Aerolite 300 has proved particularly suitable for structures such as these. It is cold-setting, outstanding in strength and durability, simple and economical to use—and it is gap-filling, which avoids the need for high clamping pressures during setting. Glued Portal Frames are described in detail in *Aero Research Technical Notes* No. 175, July, 1957. May we send you a copy?

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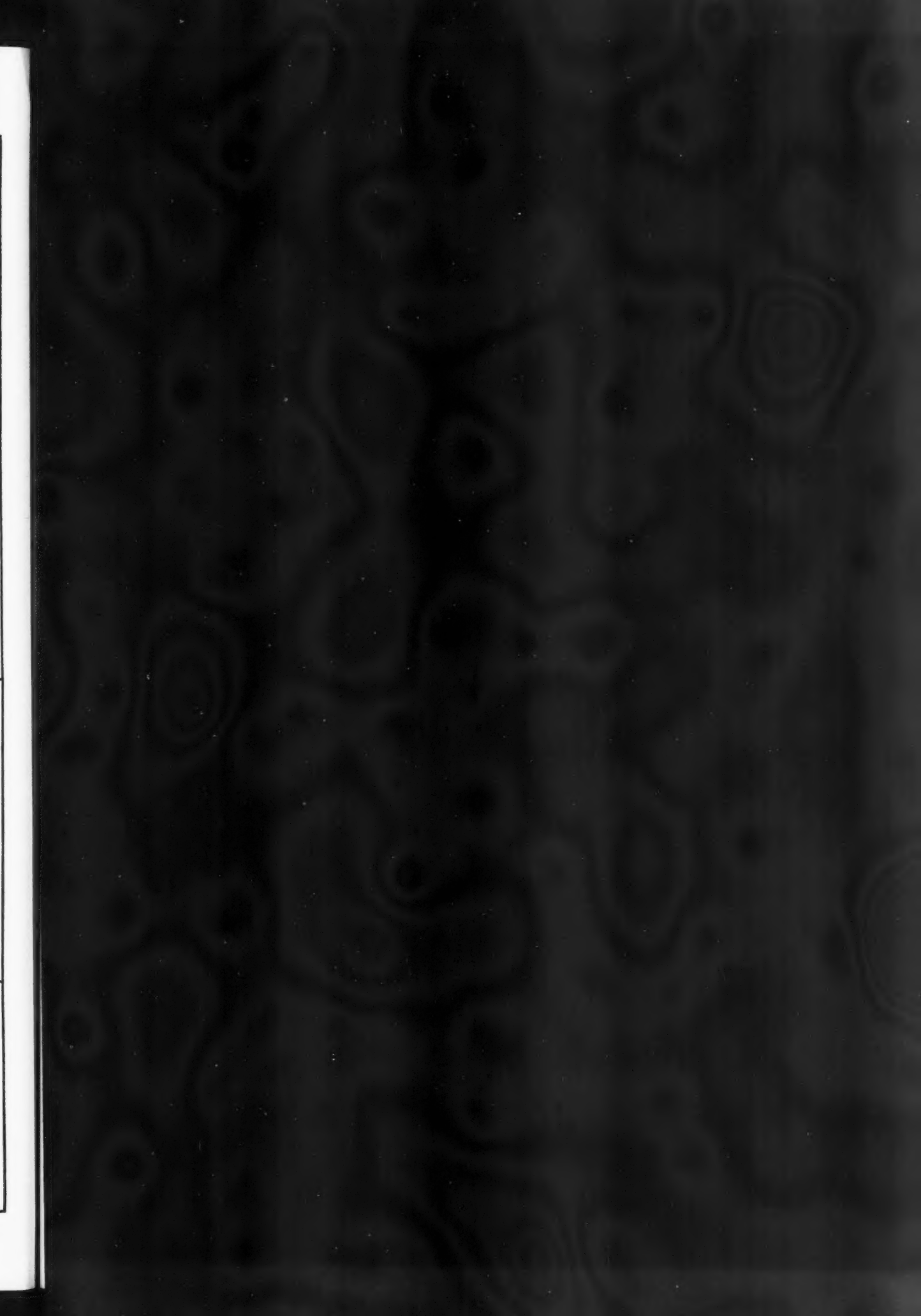

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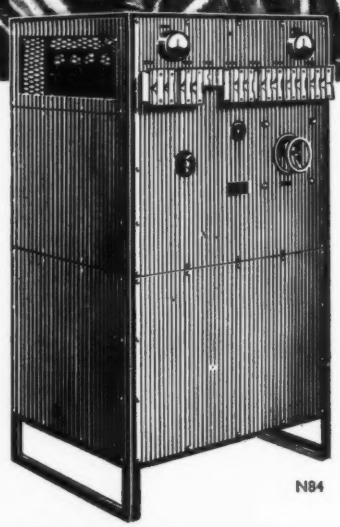

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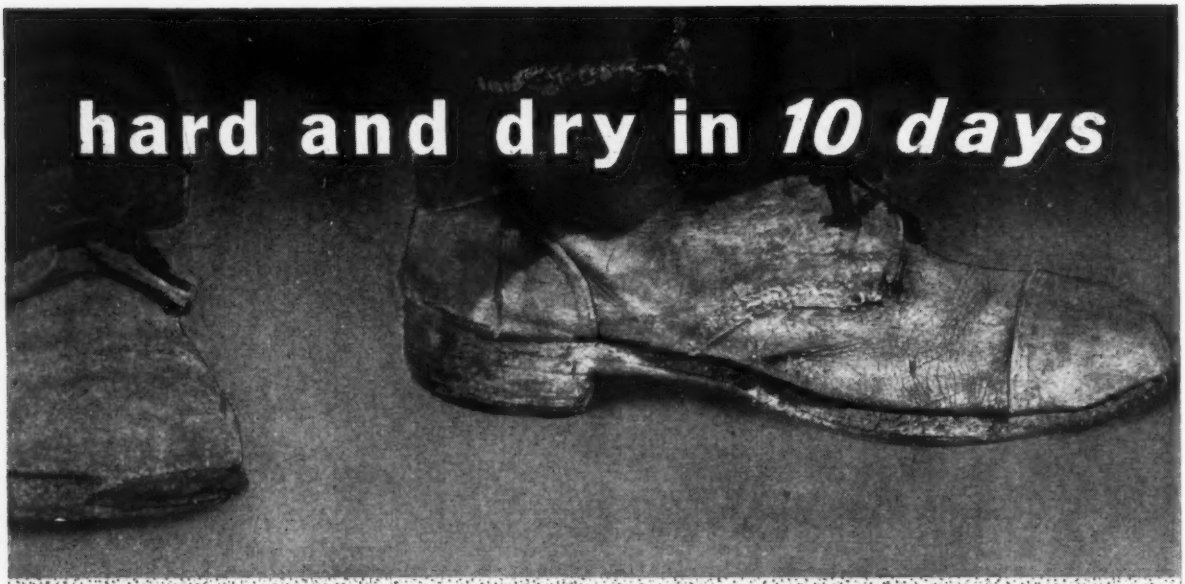

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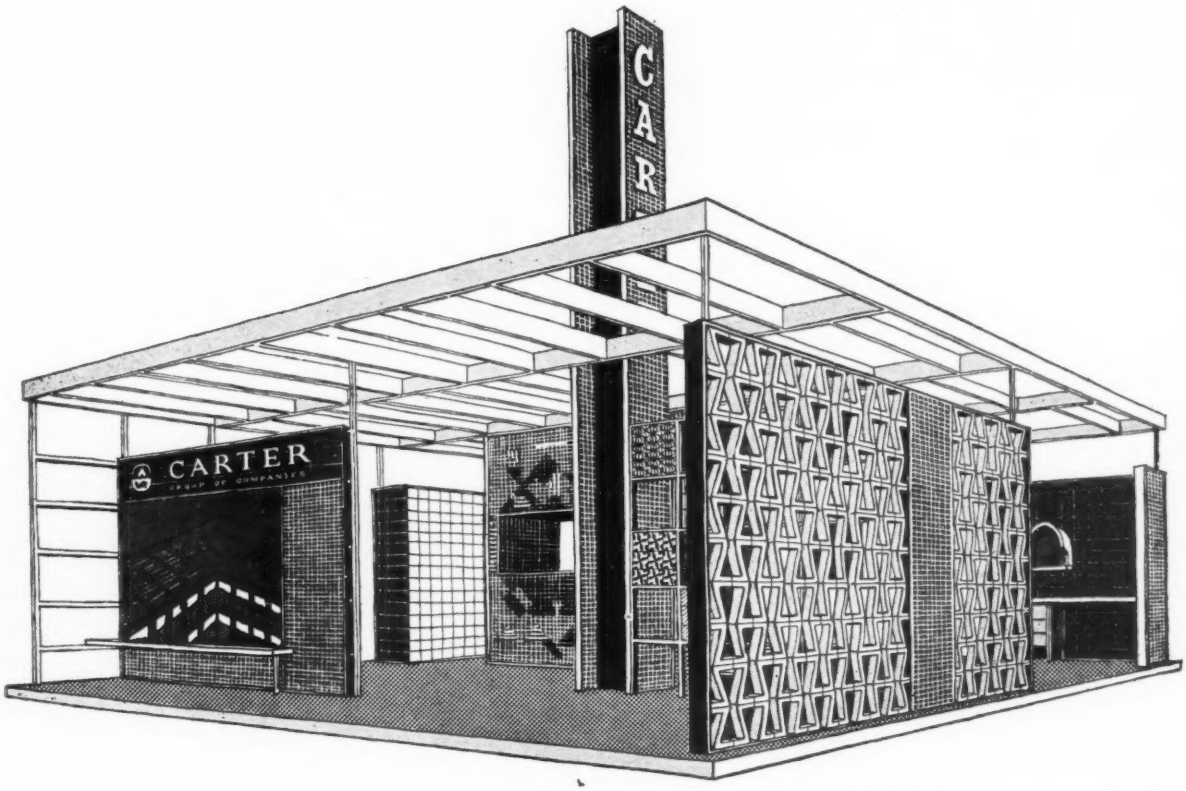

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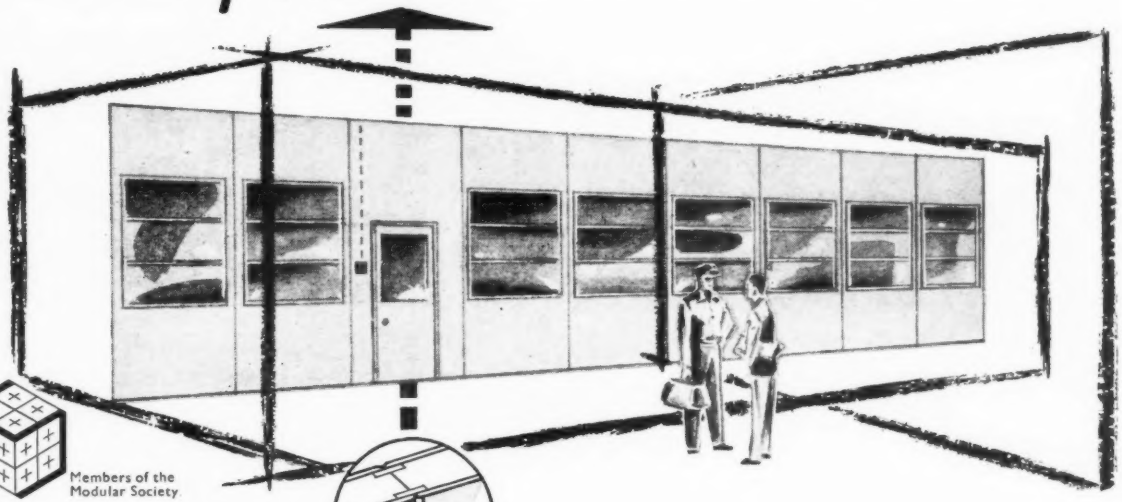

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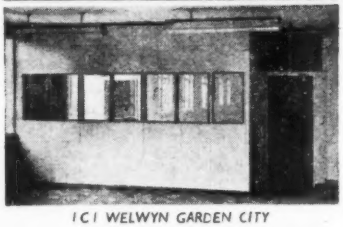

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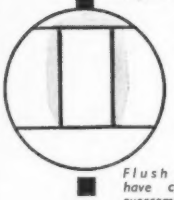

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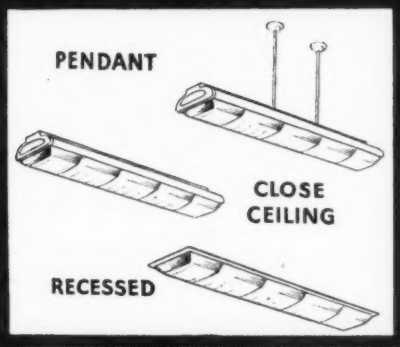

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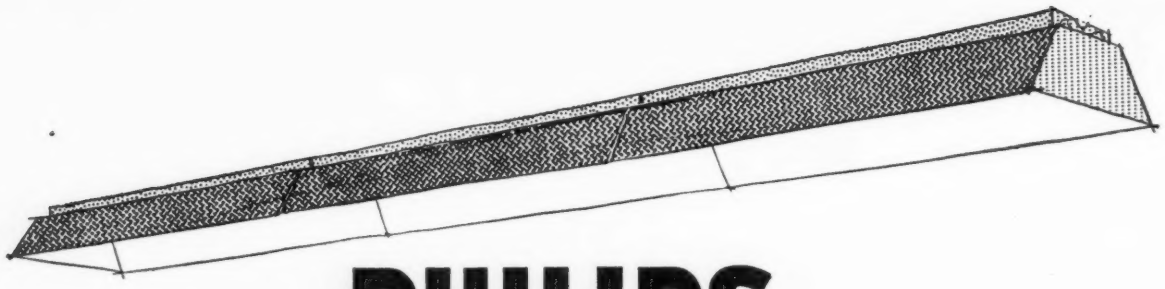

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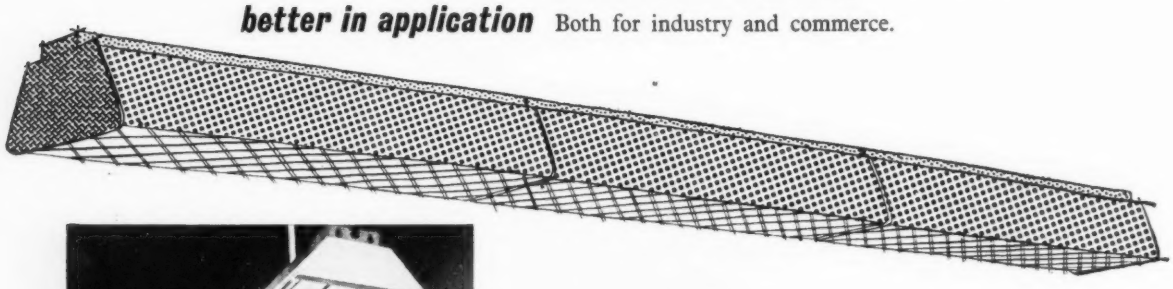

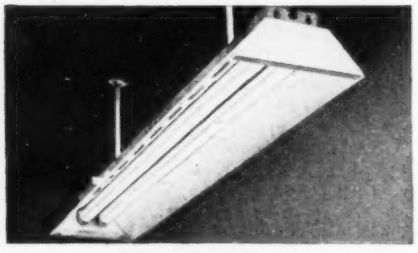

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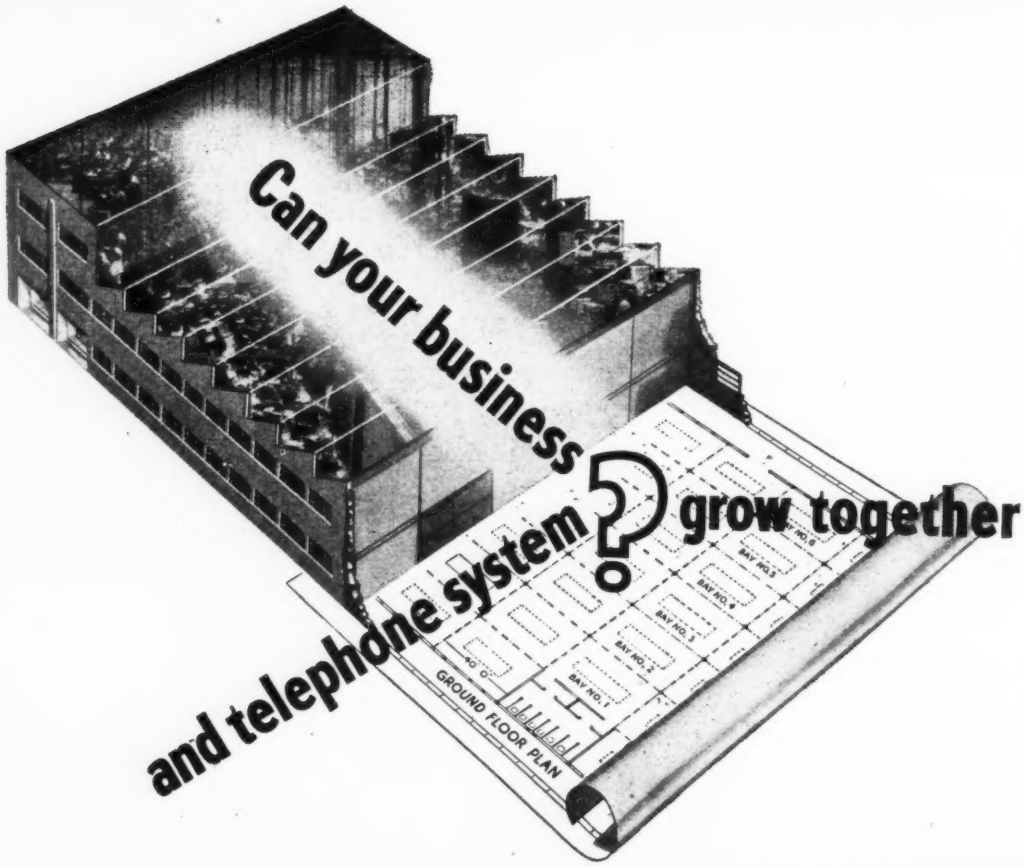

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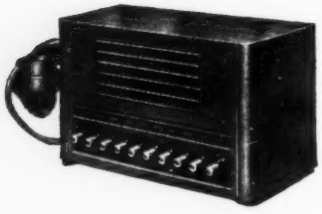

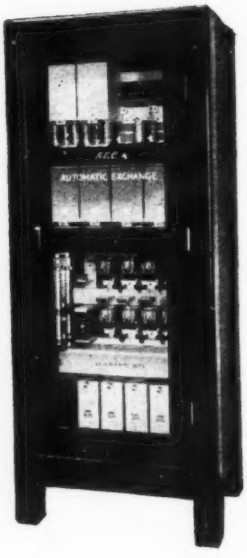

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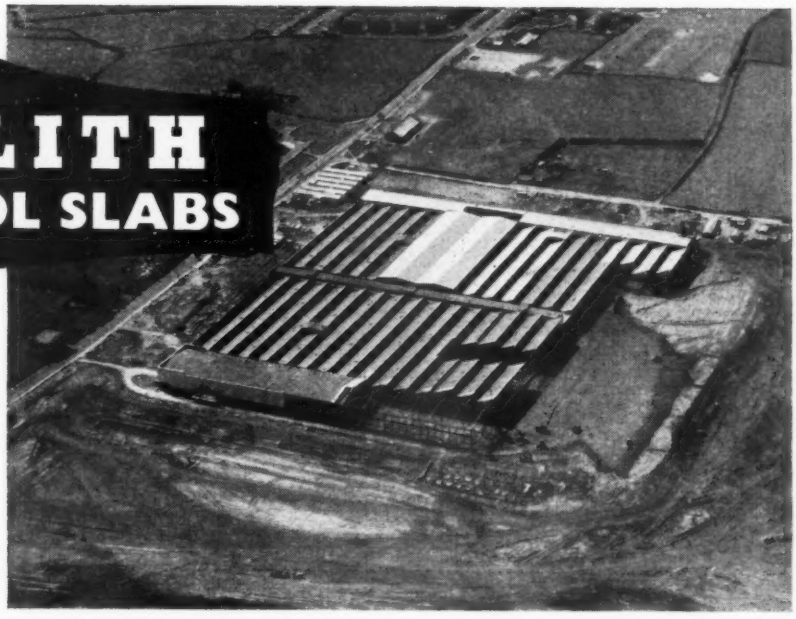

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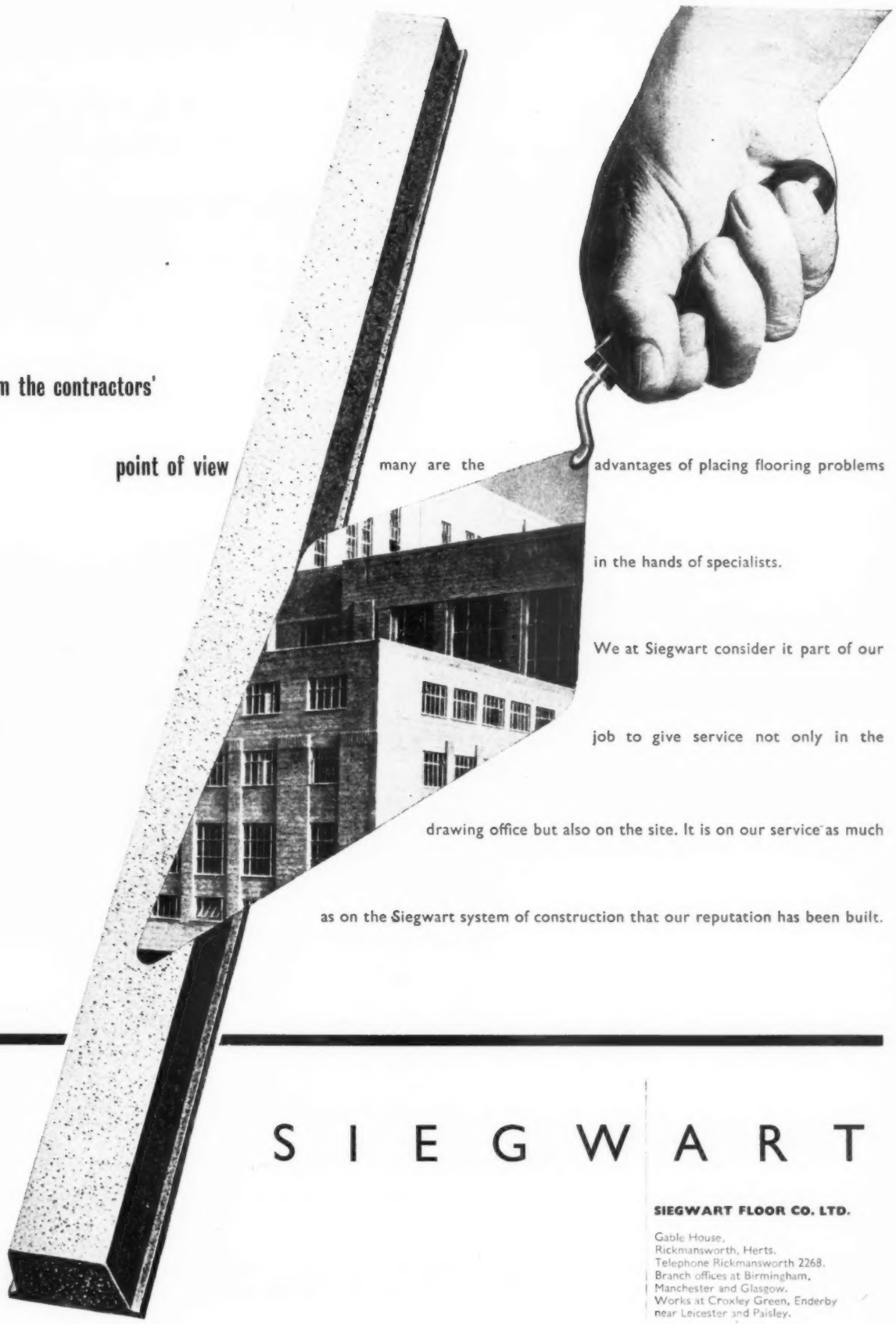

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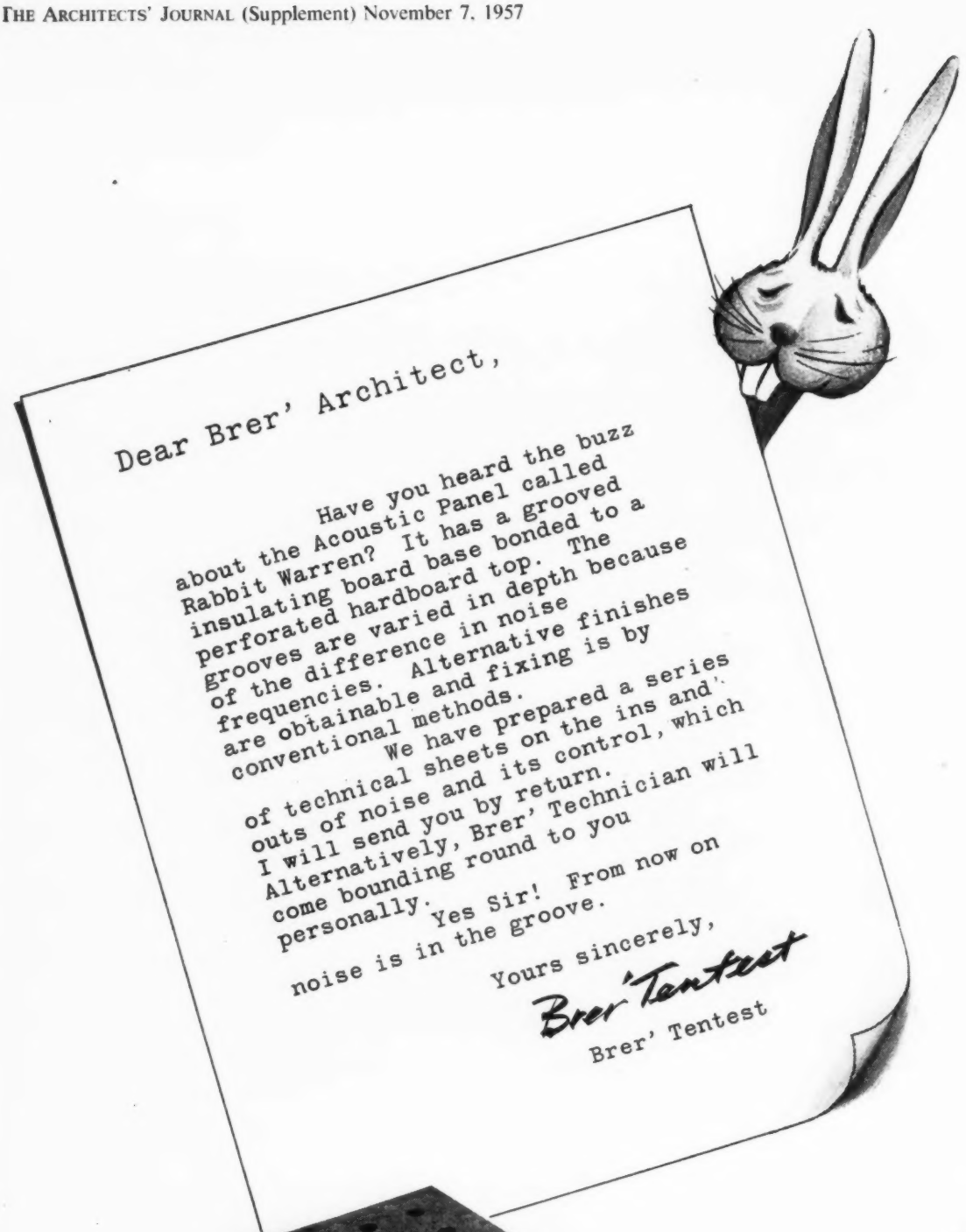

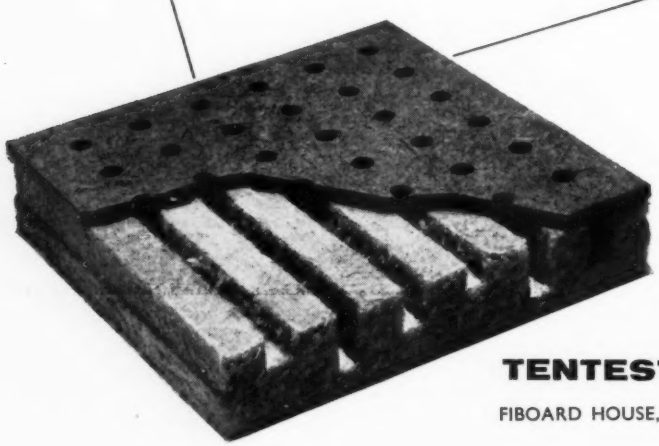

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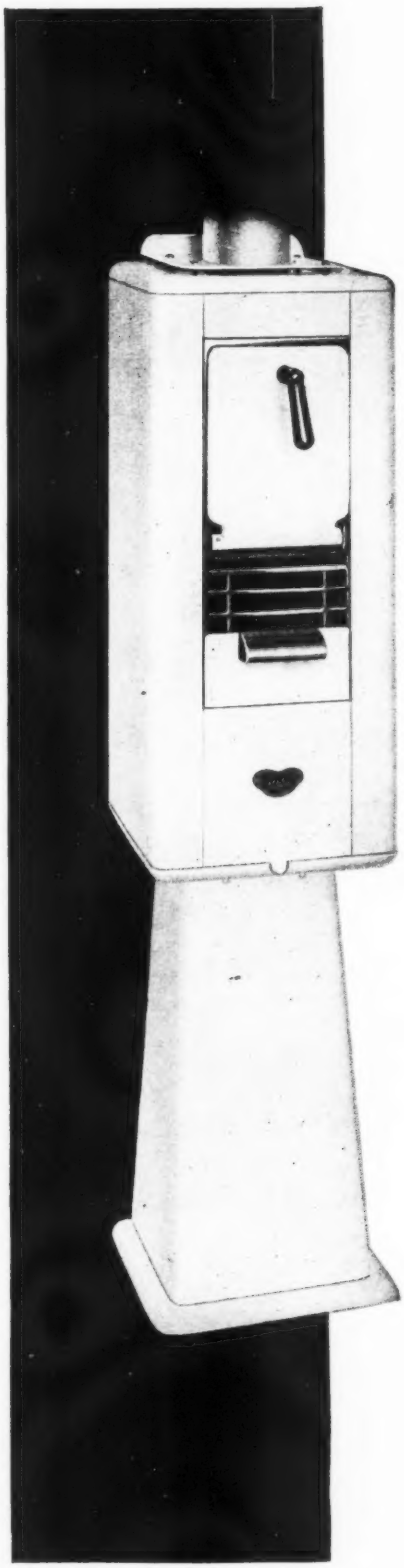

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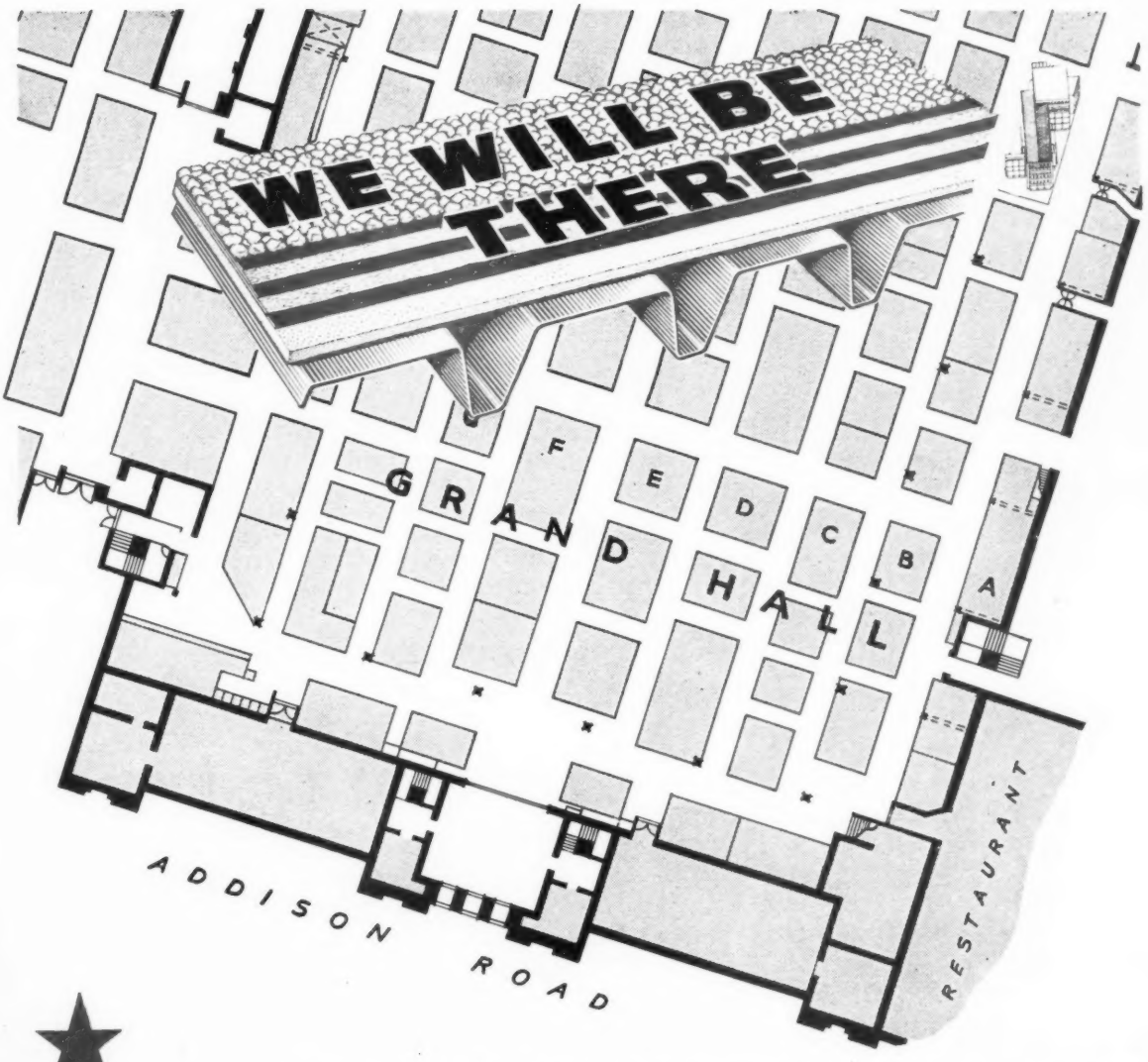

The Building Exhibition, Olympia

NOVEMBER 13-27

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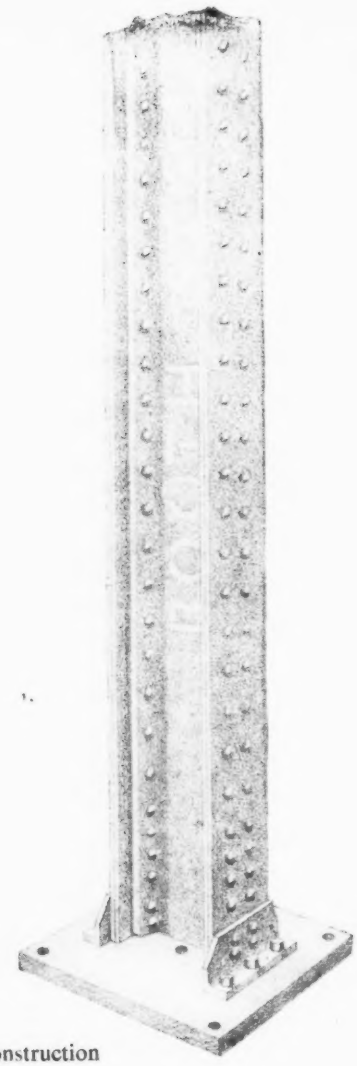

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Ronald Bradbury, PH.D., F.R.I.B.A., A.M.T.P.I.
(City Architect and Director of Housing)

The City of Liverpool is justifiably proud of its Town Hall. By any standards it is an architectural gem. Built to the design of John Wood of Bath between 1749 and 1755, it was enlarged by James Wyatt in 1789 and was further altered and restored by him after the fire of 1795.

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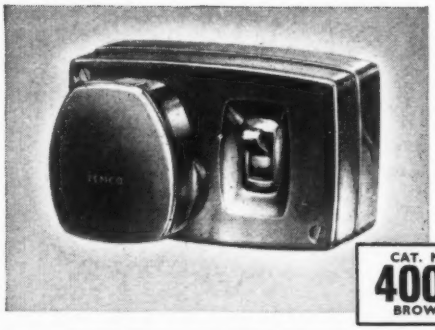

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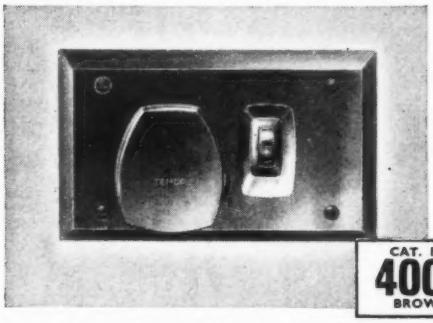

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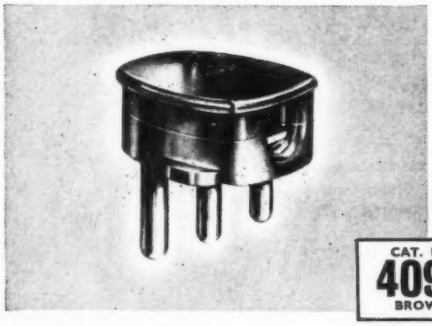

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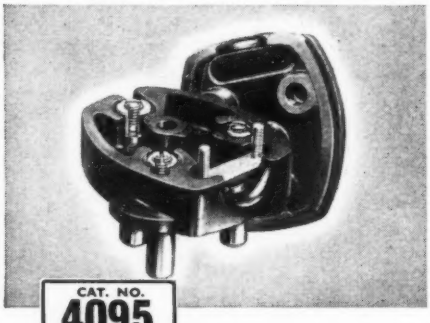

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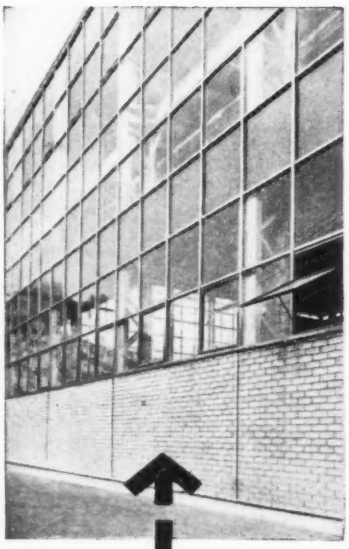

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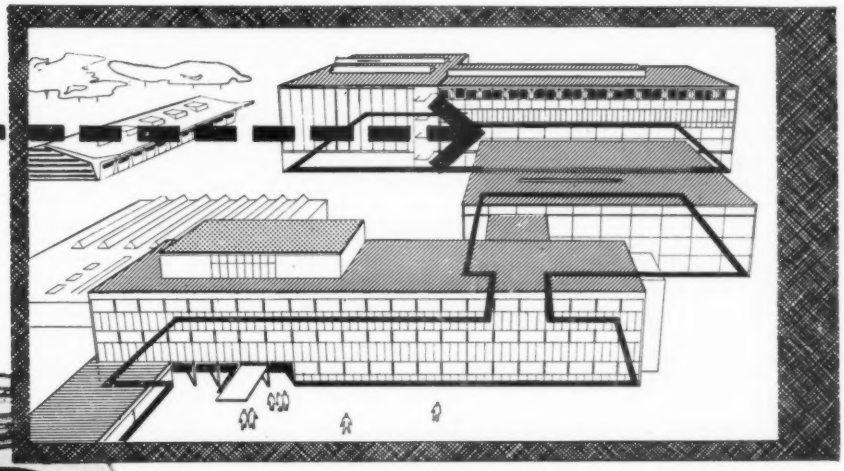
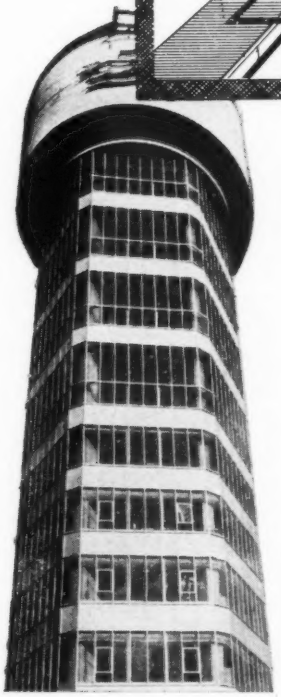
Illustration top left: Stove-enamelled units behind glass with a plinth wall of Uxbridge Flint Bricks.

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





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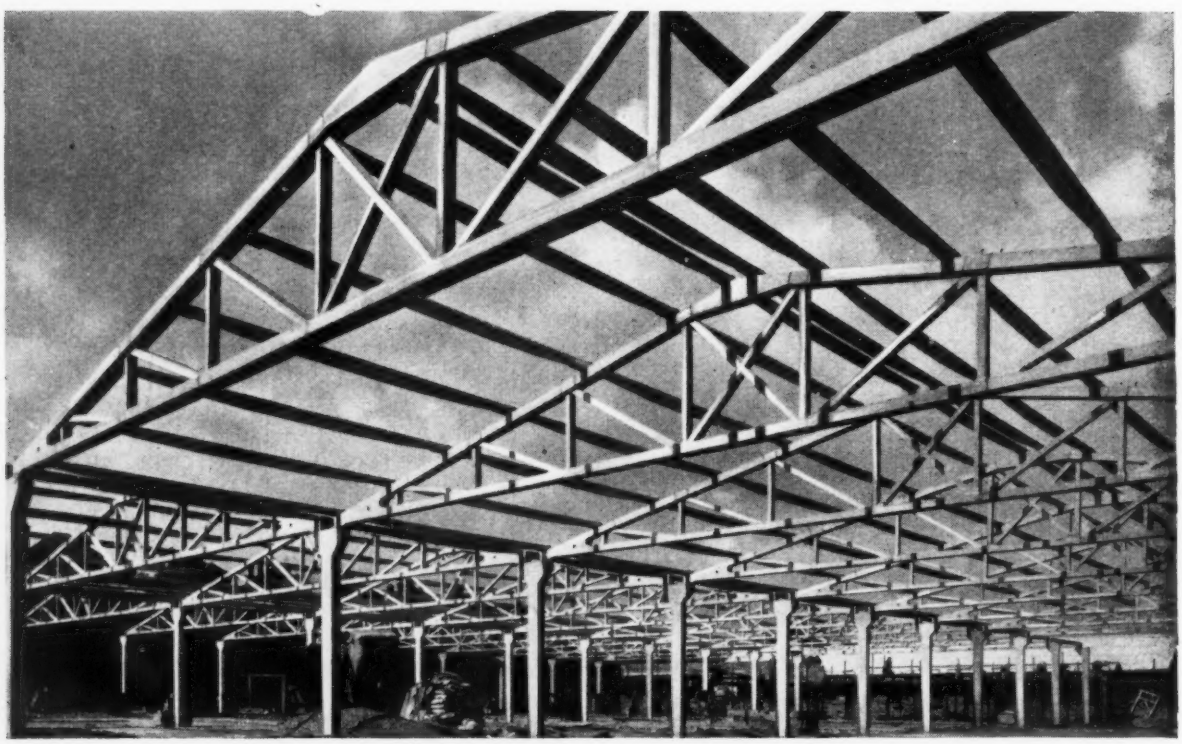

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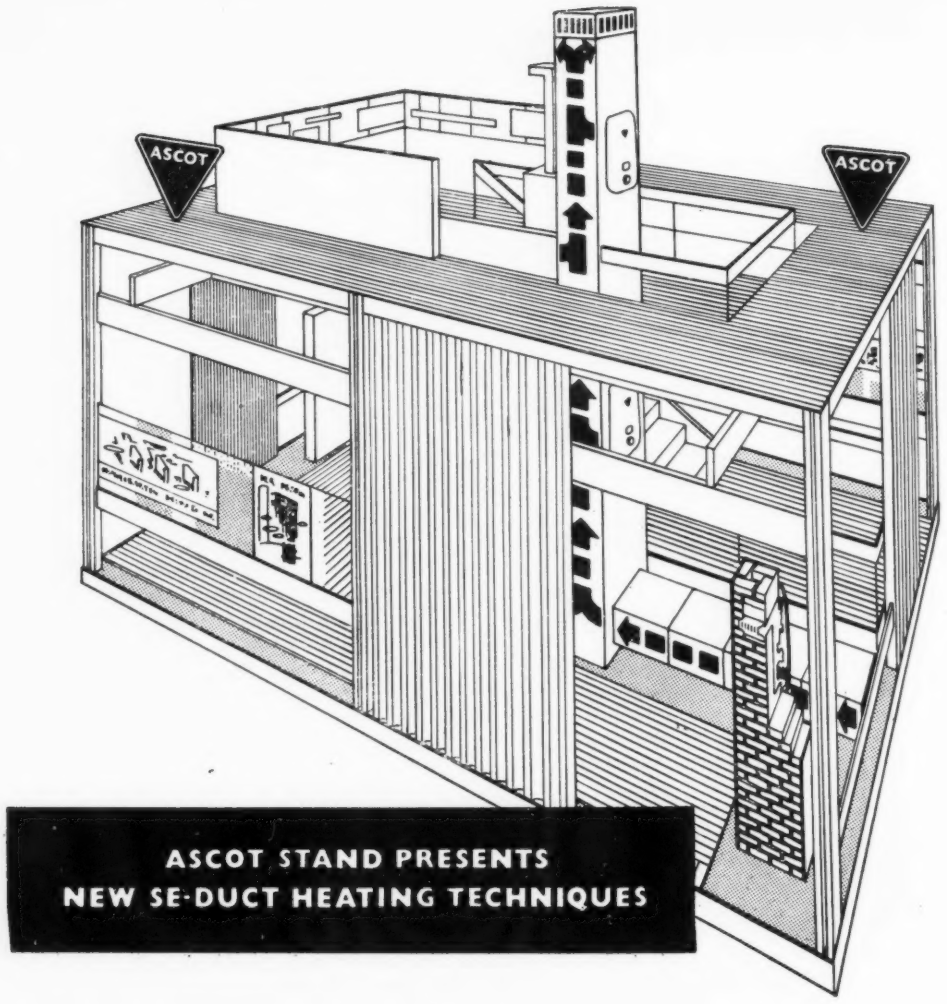

ASCOT STAND PRESENTS NEW SE-DUCT HEATING TECHNIQUES

The first demonstration at the Building Exhibition of the new Se-Duct system of installing gas appliances of room-sealed design is to be staged on the stand of Ascot Gas Water Heaters Ltd. (Stand 227, Row P) at Olympia from 13th-27th November.

The stand will feature an actual Se-Duct installation of Ascot water heaters and Sugg "Halcyon" space heaters, together with photographs of work in progress on the first Se-Duct installation in Britain in a block of flats under construction at Gateshead.

The Se-Duct, the development of which has been sponsored by the Gas Council, is basically a vertical duct through a building, open top and bottom, which supplies air for combustion and also carries away products of combustion from gas appliances connected to it, so sealing off the appliances from the rooms in which they are fitted.

Several outstanding advantages are provided by the Se-Duct: gas appliances need no longer be vented through outside walls; the flueway for space heaters, water heaters and drying cabinets can be placed where the architect desires; high efficiency appliances can be employed to afford the greatest economy; as one small duct will supply the needs of a complete range of gas appliances on all floors of a multi-storey building, the chimney space so saved can be added to living space; the compact Se-Duct installations are cheaper to build than multiple chimneys.

A new book describing the Se-Duct will be available on the stand to architects, surveyors and builders. This is the latest addition to the Ascot series of technical publications.

REGD. TRADE MARK ASCOT

Stand 227 · Row P · Olympia

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The height of SPUR brackets can be altered without the use of tools whenever storage needs change. Alignment is automatic. Both right-angled and slanting brackets are available.

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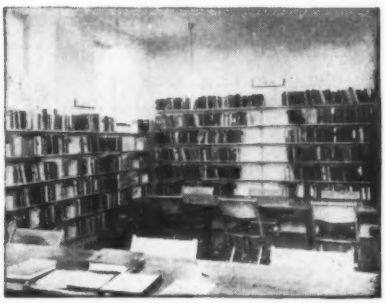
Uprights are available in lengths up to 94½ in., and brackets are supplied in seven standard sizes up to a maximum of 18½ in. Loadings have been calculated for each size, and the largest will support 1½ cwt.



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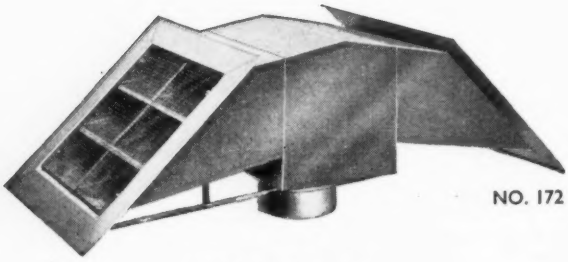
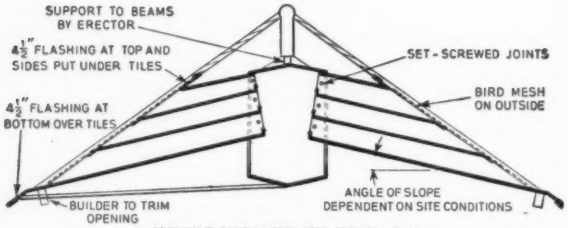


NO. 172

'HARCO'

Concealed Roof Ventilator

Where it is desired to preserve the roof line, or where the use of other forms of air-extraction is not practicable, the 'Harco' Ventilator No. 172 provides a satisfactory solution to ventilation problems. It is extremely effective under the most adverse weather conditions, the louvres being specially designed to deflect the wind and prevent down-draught.



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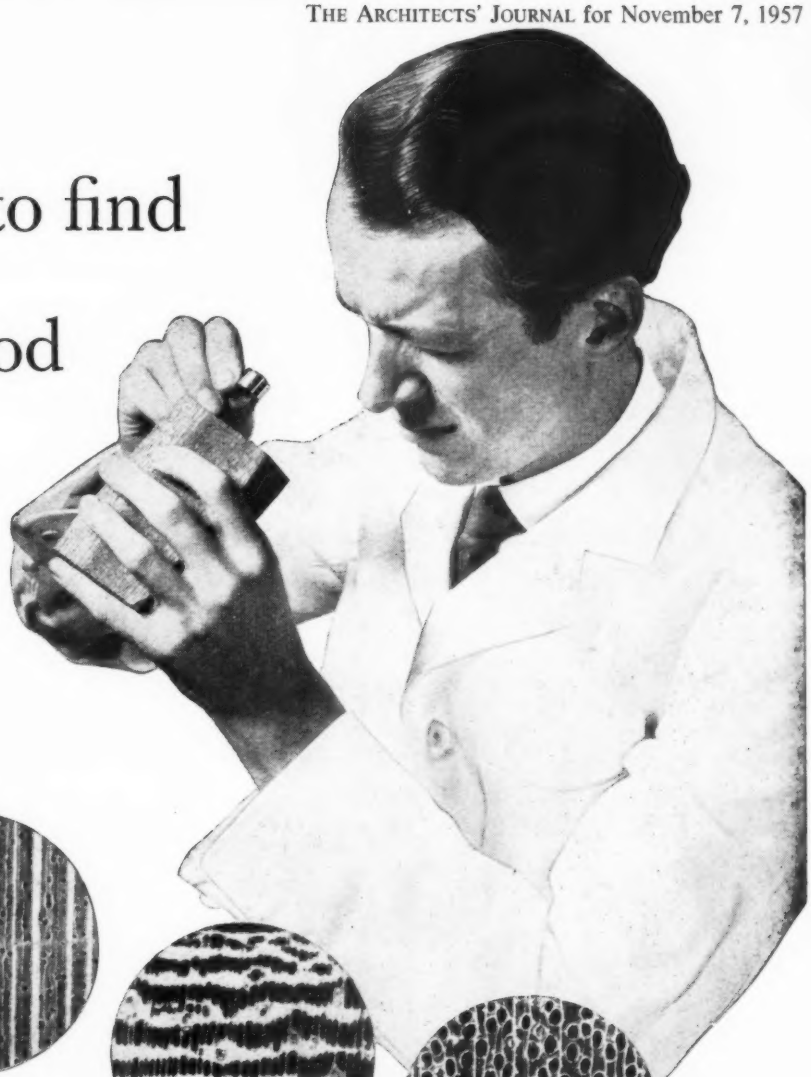

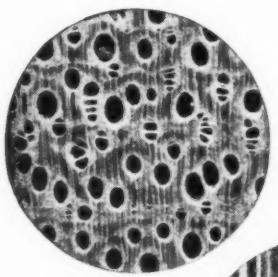

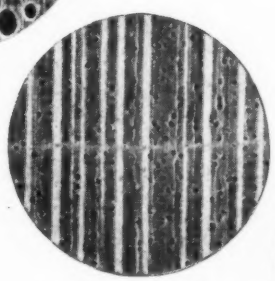

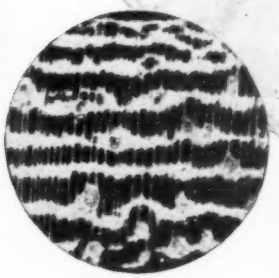

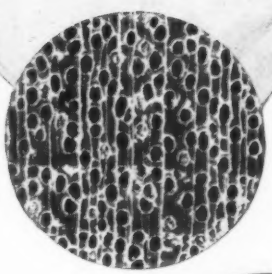

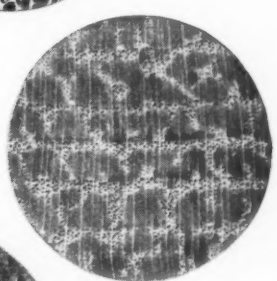

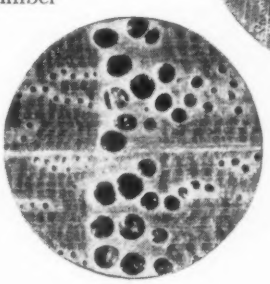

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THE BUILDING EXHIBITION 1957 Olympia, London November 13-27
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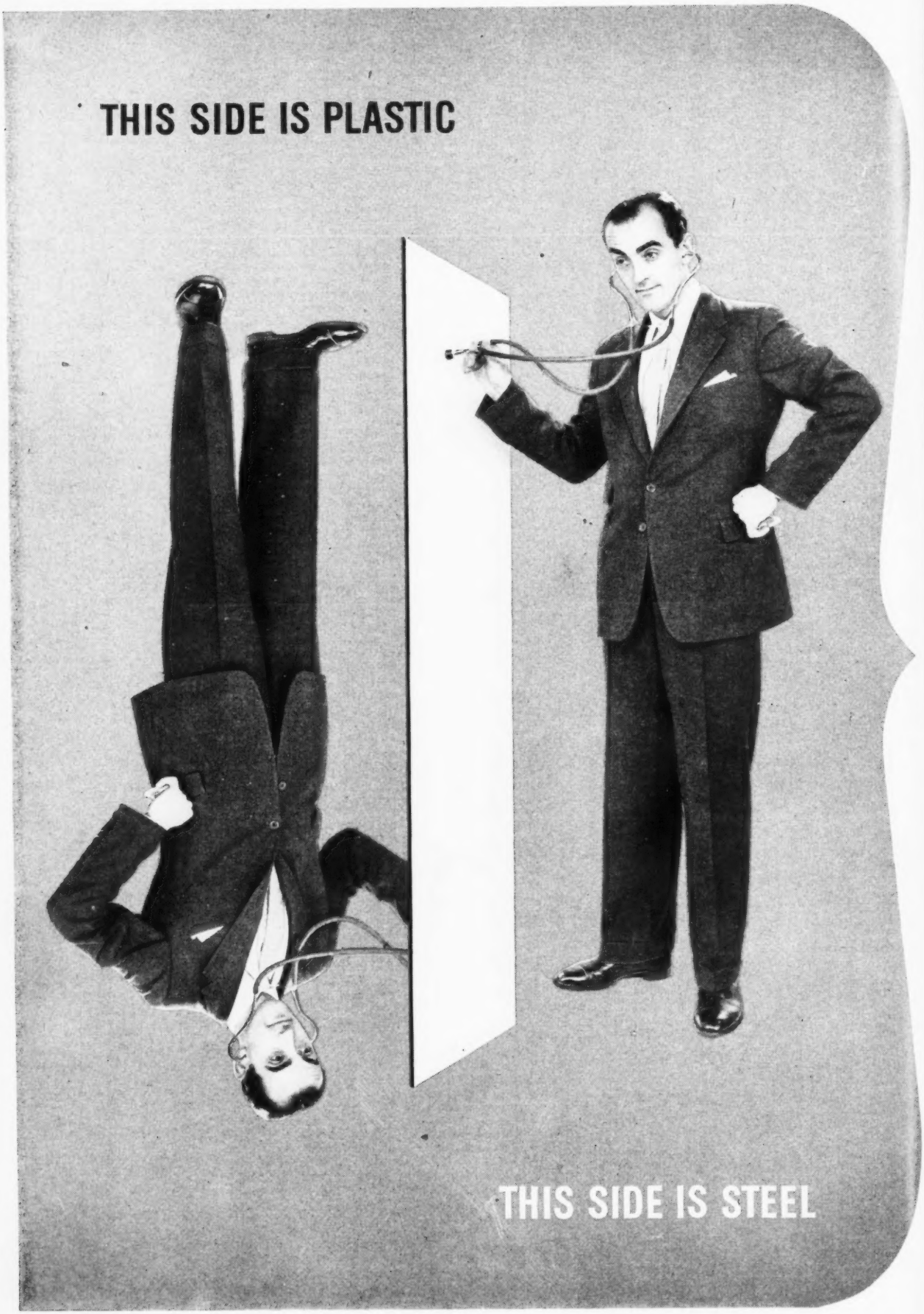
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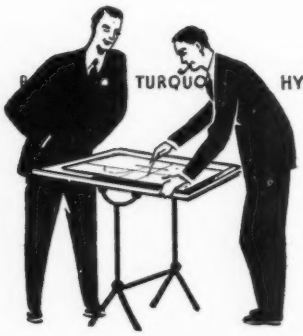

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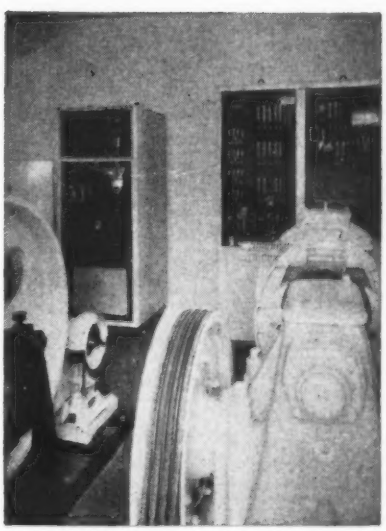

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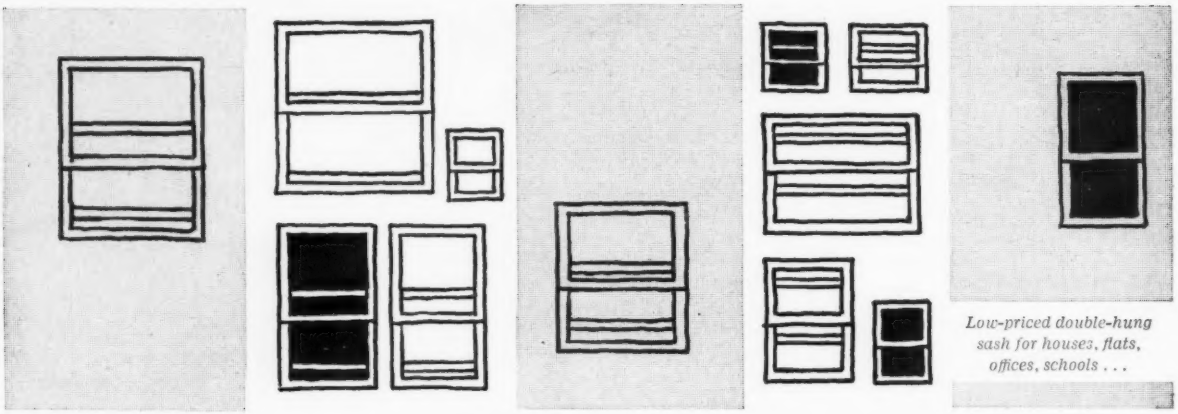

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(*Quantities over 48*)

It is primarily the new design that brings about this new low price; because there is no counterbalancing mechanism and, therefore, no need for bulky hollow jambs to house it. Also, there are several new, cost-saving techniques on the assembly line.

Interesting use of PVC. The ALOMEGA window makes full use of this versatile plastic: first, in jamb runners, for silent, easy movement and draughtproof fitting; second, as glazing beads; and third, for draughtproofing, by metallic silver PVC weathering brushes at head, sill and meeting rail.

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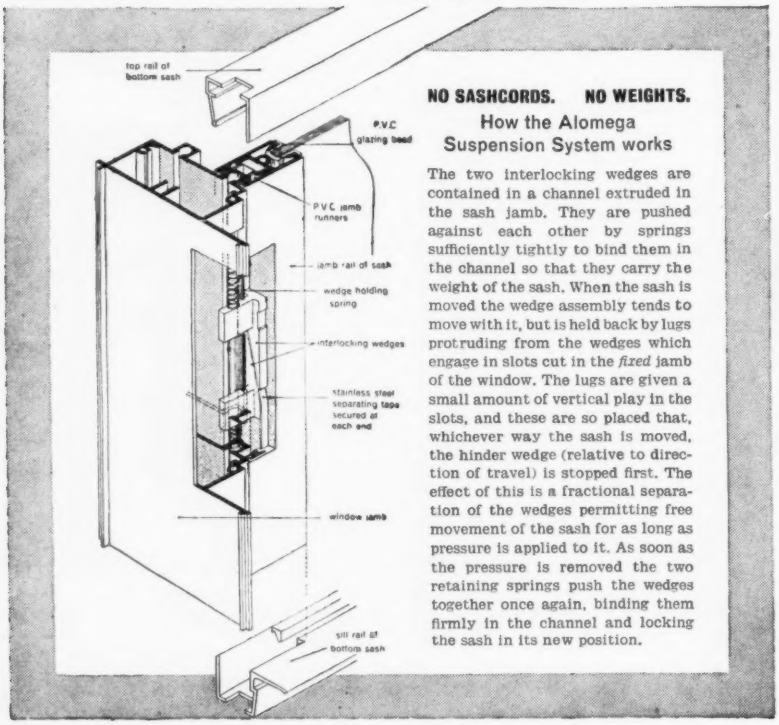
3. Next-to-no building-in: windows are completely prefabricated and assembled at the works; mounting is by woodscrews in Rawlplugs set direct into the masonry: no sub-frame.



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

Owing to the method of construction, purpose-made sizes present no difficulty and are available up to a maximum of 19′ perimeter, at approximately pro rata prices—although, of course, there will be a certain delay.

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'No other material goes up as fast as Stramit!'

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Messrs. Brooking Brothers, contractors of London, recently erected Stramit partitions at the offices of Max Rayner (Artwork) Ltd. in Lexington Street, W.1. They stated that, in their opinion, no other material could go up at the speed with which they were able to erect Stramit partitions.

But speed is only a small part of the Stramit story. Stramit partitions are smart, as you can see from this picture. There is a notable absence of drumming, too, when Stramit is employed. And this material positively resists fire.

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THE ARCHITECTS' JOURNAL

No. 3271 Vol. 126 November 7, 1957

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NOT QUITE ARCHITECTURE

NOT QUITE ARCHITECTURE?

Where every prospect pleases, and only (modern architectural) man is vile. . . . This it seems, was the hymn sung by the councillors of Coulsdon and Purley when they learned that Coombe Hill Road was about to be desecrated by a house and garage that would be "the solitary discordant feature" in an otherwise "harmonious street picture." For 20 years the council had watched, with swelling pride, the advance along Coombe Hill Road of houses that were, without exception, "of good rateable value." And if the rateable value was all right, what could be wrong with the architecture? What indeed, when it could also be said (and we quote the Council Clerk) that they were built "in various types and designs in traditional style and materials," and had "architectural features which merit recognition."

*

Coombe Hill Road wanted but one jewel to complete its crown. Plot No. 8 alone remained vacant. And Plot No. 8, in the council's view, should also be filled, like all the others, by a house built in "traditional style and materials" (and, presumably, "in various types and designs"). But, to the councillors' horror, the architects for Plot No. 8 produced a design for a modest house and garage that exhibited not mock Tudor timbering, but exposed cedar board, not a hipped roof or a gable, but a monopitch roof, not a house that looked as if it would fall off the steep cross-slope altogether, but one that nestled snugly into the hill.

*

Naturally planning permission was refused. Freedom, after all, could not be allowed to degenerate into license, and tradition had to be defended. The architects appealed to the Minister, with a letter which must have

The New New Zealand House

These superbly-faked photographs give some idea of the scale of the New Zealand Government office building which is to be built, to the design of Robert H. Matthew, on the site of the Carlton Hotel, in the Haymarket, London. All planning permissions have been received and it is hoped that building will commence about the middle of 1958. The picture above shows a model of the office block superimposed on an aerial view taken above St. James's Park. The photograph on the right shows Trafalgar Square in the foreground.

touched the councillors of Coulsdon and and Purley to the quick.

"We say that if the Planning Authority wish us to conform with a style which exists in the vicinity: (*a*) The result of trying to do so would result in the mediocre, for nearby properties are just that. (*b*) The existing "style" is in fact a mixture of several styles which is apparently acceptable because the mixture is a common one.

*

"For instance in this short road we see:
Brick walls of various colours, with white pointing, with black pointing.
Rendered walls with brick trimmings.
Rendered walls coloured yellow.
Rendered walls coloured white.
Brick walls colour washed.
Walls with mock timbering.
"We see:
Windows with plain glass.
Windows with diamond leads.
Windows with square leads.
Windows with horizontal glazing bars.
Windows with horizontal and vertical glazing bars, and an infinite mixture of these.
"We see:
Hipped roofs.
Gabled roofs.
Roofs which have both.
"We see:
Square bay windows.
Round bay windows.
Cant bay windows.
Oval bay windows.

*

"We say that if our proposal is 'out of keeping' that this is a good thing and not a bad thing: (*a*) a note of interest will appear among the decidedly commonplace and boring buildings in the road, and (*b*) even in the last plot in the road it is desirable to break away from the mediocre.

*

"We say that if the Planning Authority consider that the appearance of built-up bituminous roofing with a mineral finish is unsightly, (*a*) this is not the opinion of the LCC and many other authorities; (*b*) the road levels are such that the roof surface will not, in fact, be seen except possibly at a considerable distance. We say that the appearance is interesting and pleasant and not obstrusive.

*

"We say that our client is entitled to an architect's skill in the design of a bungalow of character, making the best use of his site, making the best use of the severe cross fall on the site, of economical design; and that the design properly fulfils these demands as a more orthodox design would not."

*

The Minister, it must be recorded, allowed the appeal: the bungalow would look different from its neighbours, but it would do "no serious harm." How much harm, or good, it has done to Coombe Hill Road you can judge from the pictures on page 685. What worries me, as a good friend of Coulsdon and Purley, is this: is the rateable value all right?

M. M.

The Editors

AN ARCHITECT FOR THE ARMY

EXPECTATIONS that the report of the Weeks committee on Army building would contain sound recommendations on administration and on how a more progressive building programme could be achieved—expressed by ASTRAGAL last July—have proved justified, at least in the first respect. Last week the Secretary of State for War announced that the Weeks report had been accepted "in broad outline". The broad outline includes the key to progressive and efficient building: the organization is to be headed jointly by a Director General of Works and an Assistant Under-Secretary of State. This is the pattern of joint responsibility and joint control—a form of partnership between the professional man and the administrator—which has proved so successful in the Ministry of Education. If the right people are chosen for these two key posts—and the importance of the job should not be underestimated, the expenditure on building in the Army is £15,000,000 a year—then there is every chance that economic methods of building quickly and well will be developed for barracks and married quarters as they have for schools.

The vital thing is the selection of the right kind of architect for the position of Director General of Works. The salary offered is good: £4,250, but that is not enough to attract people to a post which may involve a great deal of very hard work and the ability to get one's own way in the face of the innate conservativeness—to put it gently—which one must expect when dealing with the Army. It is significant that when the Civil Service Commission recently advertised for a Director of Works to succeed Sir Charles Mole at the Ministry of Works, none of the applicants was considered suitable. The reason is not far to seek: the calibre of man required for these important but onerous jobs is not the type who works with one eye on the "situations vacant" column. He is almost bound to be very fully committed to a programme of work which he will have to be *persuaded* to leave, not by mere financial inducement, but by the challenge of another task which is yet more important than the one he is doing and which it is his duty to society and the nation to accept. It would be very unfortunate if this new appointment of Director General of Works to the War Office had to be filled merely from the best of a list of applicants. Those responsible for making the appointment must not sit back and wait for volunteers to step in, they must undertake a little persuasive recruiting.

PLANNING AND THE FRANKS COMMITTEE

The government's decision to publish the reports of inspectors at town planning and similar enquiries or appeals is to be welcomed, as is its acceptance of some of the other recommendations of the Franks committee. It will go a long way to remove dissatisfaction with planning procedure if the principles of openness, fairness and impartiality are clearly applied, so that the individual knows the case he has to meet before the enquiry begins, knows what the government's policy in the matter is, and can examine officials of ministries and of local authorities at the tribunal itself.

There is a danger, however, of imagining that planning questions can best be settled by lawyers' arguments in what could virtually become a court of law, and the government's reluctance to concede the payment of costs to successful objectors or appellants is understandable. And it remains essential that, provided the procedure is fair, the government will support applications for the compulsory purchase of land to enable comprehensive planning to take place. The government has not said whether it accepts the recommendation that in cases of minor importance the inspector himself should be empowered to take the decision. This would save an immense amount of time and labour, and help to remove one of the principal sources of grievance—the delay in settling town-planning applications.

LIVING AND LEARNING

About £13,000,000 a year is currently being spent on university building. Both the JOURNAL and the *Architectural Review* have printed criticism of post-war university architecture, but now a more positive step has been taken in that an exhibition of university building has been prepared, with some financial support from the Arts Council, to tour the universities and open the eyes of bursars, registrars, vice-chancellors, dons and students to the better work that has been or is being achieved in university building abroad and in this country.

*

With architects of the standing of Lionel Brett on the exhibition committee it goes without saying that the standard of the exhibits is the highest obtainable. Even so the captions are occasionally critical, non-committal or near-sceptical. The committee has obviously realized that without first-hand knowledge of the buildings, and careful study of them in use, it is impossible to claim that they are the world's best. The implication is that these buildings, and their layouts, are a challenge for other universities to emulate. It is chastening to discover that only one completed English university building has been considered good enough to include—Professor J. S. Allen's lecture block at Durham. However, the English projects shown promise to be fully the equal of the slick American and Danish work on view.

*

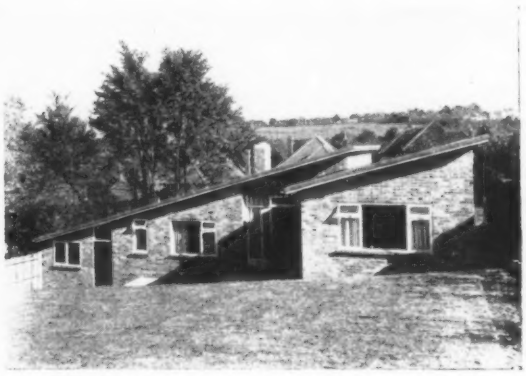
This is an exhibition which all architectural students at universities should insist on having. It is presented with beautiful simplicity, on plain transportable screens, and is just the right size, with the right contents, to stimulate the lay mind. The originator of the exhibition was the architect John Morton, and it was prepared and designed by Tom and Ruth Lupton (the producers of the excellent LM furniture). It has obviously taken many hours of labour for no material award. The profession, and the university world, owe a lot to these disinterested and public-spirited three.

50 YEARS YOUNG

In the late 'twenties and early 'thirties the very few bold spirits who were designing modern buildings owed much to the *Architectural Review*, Dell and Wainwright, and Troughton & Young. The *Review* illustrated their work, Dell and Wainwright took such excellent photographs that the buildings looked very much better than they in fact were, and Troughton & Young were the only people making lighting equipment fit to put inside them. Post-war architects will hardly realize how much the efforts of an earlier generation were helped by the diffused glow from this firm's pendant balls—the shape which is perhaps the best remembered of these pioneer fittings. Last week, ASTRAGAL is pleased to learn, the firm gave a dinner to celebrate the fiftieth anniversary, to which they invited a number of eminent architects and, of course, their one-time designer, A. B. Read.

SOME THOUGHTS ON THREE-DIMENSIONAL COMPOSITION

John Brandon-Jones, the new president of the AA, gave his inaugural address under the title printed above. It is a typical AA paradox that it should have as a president a man who has been a life-long admirer of Cowles Voysey and Lethaby. He was trained under, and proudly remains influenced by, the Beaux Arts system. As always, it is stimulating to have someone expounding architectural theory, sincerely held, however wrong-headed—and in



This is the house described in "Not Quite Architecture," on page 631. The architects were Hugh Macintosh and Partners.

parts somewhat naive—it may appear to the listener. He neatly compared function, structure and æsthetics with the three legs of a stool, and pointed out that it is difficult to say which is the more important leg of a three-legged stool, and that anything less than three legs leads to trouble. He might have added that it is not the absence of legs which worries the client, but their varying and unequal lengths. Every architect agrees with the three-leg principle, but in deciding on the height, and in cutting to equal lengths, he is liable to show the faults of all amateur carpenters.

*

Hope Bagnal enthusiastically proposed a vote of thanks. He suggested that we should now enter a period of consolidation in design, both for the traditionalist with his emphasis on experience and the modernist with the emphasis on experiment. Architecture he described as "shelter against the enemy," and the enemy today is distraction. So we need privacy, he suggested, to be obtained through cloistral planning, and the acceptance of the traditional solution, it being the outcome of long-term experience and simplification. He also pointed out that symmetry and axial planning was indispensable as a discipline, and said that he was glad that in the case of the Shell building the architects have designed from rational data and have not followed irrational critics.

THE NASH TERRACES

Last week the editors produced a short, severe leader about the threat to the Nash terraces, and ASTRAGAL feels that the danger of destruction is so great that the JOURNAL can risk repeating itself.

*

The simple truth is that these terraces are the finest of their kind in England and perhaps in Europe—of equal importance, in their way, as St. Paul's and Salibury Cathedrals. To dismiss their preservation (as one writer to *The Times* has done) because they appeal to dollar tourists would only seem to indicate that Americans are more architecturally conscious than ourselves. We have become a race of philistines, selling off our pictures and destroying our buildings without the slightest attempt to replace the loss with anything of equal quality. Indeed, many people seem to be proud of this philistinism, in the belief that there is really something immoral about art and beauty.

*

It is said that it will cost 8 millions to convert the terraces, yet we have never been shown any proposals. Col. Cart de LaFontaine suggested in *The Times* correspondence columns that the 15-ft. room heights cause difficulty, but Le Corbusier has dealt with that problem at Marseilles as did Tecton at Highpoint 2. It was a great pity that London University could not use the terraces, but then we have long ago abandoned the idea that this particular university is interested in preserving the London scene. Sir William Holford has suggested that they could be made into housing for all income groups if dealt with imaginatively and boldly and that is clearly the best solution. Not only would such a solution help the housing problem, but it would bring life and prosperity to the park and its environment.

There are many who would jump at the opportunity of a flat in the terraces both high and low, big or small, and if the Commissioners can be persuaded that it is the outside that is important, and to abandon attempts at preserving all the interiors intact, then we could get somewhere. ASTRAGAL looks forward to hearing what the Commissioners have to say in the statement they have promised to make before Christmas.

TOO SERIOUS TO BE SERIOUS

Pulling his hat down over his grey hairs, ASTRAGAL slipped into the RIBA the other day to hear *junior* architects, quantity surveyors and builders debate the motion—"That the combination of architectural, surveying and building services in the same organization is *not* in the best interests of the building owner." But it was not a debate—just several speeches of the "we're all juniors so let's be jocular" type, the client is a sucker, the builder a rogue and the architect a "gentleman" (laughter). Bernard Shaw was right when he said —several times—that the English can't discuss serious subjects seriously without embarrassment.

*

ASTRAGAL sniggered faintly at some of the jokes, wondered why architects are such poor speakers and went away asking himself what no one had thought to invite someone with experience of team collaboration. Why, for that matter, couldn't the all-in service organizations themselves have told us their experiences? But then, of course, it might have been a serious meeting . . . .

ASTRAGAL

Representation of salaried architects

On September 26 we published an open letter to local authority architects from the RIBA's Ad Hoc Committee of Salaried Architects and Structure of the Profession. This letter, which was signed by Richard Sheppard, has brought us many letters from readers. Two more are published below, and beneath them are the comments of the JOURNAL *editors.*

What readers think

SIR,—We (25 members of the staff of the Bucks County Architect's Department) wish to make the following observations on the points raised in the open letter to members in local authorities:

1. We fully support the view that the profession should be equipped with an organization able to appoint representatives to negotiate for its members, as and when required.

2. We attach importance to the suggestion that such an organization should be linked with the RIBA for the following reasons:

(*a*) The organization could benefit from the influence the RIBA could exert in the process of gaining the necessary recognition from the various existing negotiating bodies;

(*b*) The organization would require the *solid* backing of the profession, which the RIBA could confer.

3. We feel that an organization on the lines suggested could, and indeed should, be developed to look after the interests of not only members in local authorities, but also all salaried members. We feel that the potentialities of such an organization should first be fully investigated and a further report circulated to *all* members of the profession.

If the RIBA now finds itself able to sponsor an association such as that envisaged in the open letter, we see no reason why it should not go one stage further and give its blessing to the formation of an all-embracing association which could perform for our profession duties similar to those performed for the medical profession by the BMA.

25 LOCAL AUTHORITY ARCHITECTS
(*names supplied*).

Bucks.

SIR,—The letter from "15 Local Government Architects" (October 24) neatly assesses the ludicrous position in which the bulk of local government architects now find themselves.

In the meantime what will happen? A look at the rear of the JOURNAL provides the answer. Every local authority in the country is advertising within one grade! This special grade is not a grade—it is a lucky dip!

Architects are now so impoverished that they must be offered assistance with house purchase and grants towards cost of removal expenses. And even worse, like Lazarus we are glad to accept these crumbs of comfort.

Those to whom we look for leadership have made a poor showing up to now: like Nero they fiddle while Rome burns—with indignation.

"DISGUSTED"

Essex. (*name supplied.*)

What the Editors think

The proposal which Richard Sheppard invites architects to consider seems to amount to this: local government architects should join with their counterparts in law, engineering, accountancy and education to form an amalgam which could represent the higher local government professions before the employing authorities. This amalgam would co-operate with, and work through, NALGO, but its aim would be to see that the interests of *professional* officers (*i.e.* those qualified to university standard) were kept distinct from those of all the other people who make up the general local government service and account for the bulk of NALGO membership.

There are several points about this proposal which should be clearly understood. The amalgam would consist of constituent societies, and each constituent society would represent only one professional interest. Membership of the constituent societies would be open only to people who were employed in local government. The reasons are as follows.

Local government employers have made it abundantly clear that they will not contemplate any extension of the number of the unions with whom they already deal. As far as architects are concerned the employers are only willing to listen to the voice of NALGO, and a very strong case would have to be made out to persuade them to negotiate with a second union. It is clear therefore that a start would probably have to be made by way of NALGO. However that may be, it is established beyond any doubt at all that the greatest difficulty will be encountered in persuading local government employers to negotiate with any body or organization representing only one particular profession.

A proposal for such an amalgam has already been initiated by the other professions. They have found themselves in a similar situation to local government architects and each professional society has reached the conclusion that its only strength lies in joining forces with the other professions of equal status whose needs are comparable with its own. They have decided that individuals cannot join the amalgam direct but only through the appropriate professional society. The virtue of this decision lies in the fact that each profession should have an equal voice in the activities of the amalgam irrespective of the numerical strength or weakness of its membership. Consequently, if architects are to participate they must form their own society, and since the others are well ahead they must do so quickly, if they are to do so at all.

If these proposals (and the reasons for them) are carefully examined, it will be appreciated that they should go a long way to achieving what, at one time, it was thought an "architects only" trade union could achieve. At the same time they overcome many of the objections which unavoidably exist to such a union.

To the objection that a new union could get nowhere on its own, the proposal provides the answer: this is a new union operating, initially at any rate, through a well-established and powerful existing union.

To the objection that local government employers will deal with only one major body, the proposal answers—they will still deal with only one major body.

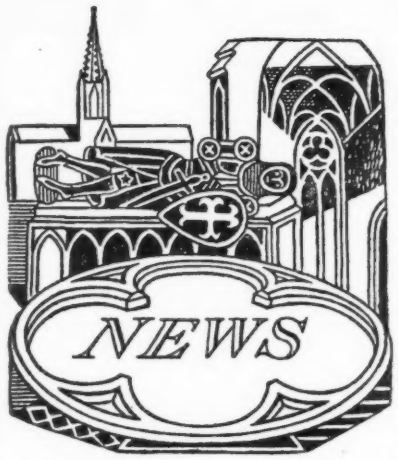
To the old objection that architects can have only a small voice in NALGO, the proposal answers—the amalgam means that this will no longer be the case.

How does this proposal affect the RIBA? The RIBA is prevented by its Charter from acting as a trade union. Nothing in its Charter, however, prevents it from encouraging the formation of a local government architects' society, and there is no reason why it should not actively encourage its members to join—it is estimated that the society could be serviced adequately on subscriptions of about 10s. a year. Through the medium of such a society the RIBA could promote the interests of its salaried local government members at least as effectively as it promotes those of principals in private practice. No one will deny that the first object of the Royal Charter, namely the "general advancement of civil architecture," is best served by maintaining the status of the architectural profession, with all that this implies by way of rewards and conditions of work commensurate with professional status. This indeed is already recognized in the close association between the RIBA and the Architects' Registration Council, and a similar relationship can be visualized between the RIBA and a new local government architects' society.

The new proposal indicates growing acceptance of the view that a single trade union organization cannot serve the needs of all architects. Already there exist two associations which deserve a passing glance in this connection. The County, City & Borough Architects' Association is an association of Chief Architects to Counties and County Boroughs. The Institute of Professional Civil Servants is in effect the civil service counterpart of the proposed local government amalgam, and the Building and Engineering Group of that Institution, consisting of architects, engineers and surveyors, bears a similar relationship to it as the Architects' Society would bear to the amalgam. Both organizations have achieved a great deal. In the same way that the RIBA helps, and to some extent, services the Architects' Registration Council, it could also, without exceeding the limits of its Charter, assist and co-ordinate the activities of these three representative associations, and of any private architects' society which might eventually be formed.

Such servicing clearly involves a considerable amount of research into the rewards and conditions of service of the profession. Because one part of the profession cannot be treated in isolation without detriment to the profession as a whole, it is clear that the task of research is a duty which must fall on the RIBA. Indeed, it is deplorable that until Mr. Sheppard's *Ad Hoc* committee got to work the real state of these conditions and rewards was largely a matter of guess work. To elicit a true and reliable picture of how the profession works is surely one of the learned functions of the RIBA, and it is imperative for a healthy future of architecture that this work should continue vigorously and its results be applied.

No one can be certain that the proposal for a local government architects' society as part of a professional amalgam will provide all the answers to the many problems that must be solved. What is certain, however, is that an association of professions enjoying high and equal standing is the best solution yet conceived for ensuring that *status* has a voice as powerful as any that relies simply on strength of numbers. All previous attempts by the RIBA to advance the interests of its local government membership have proved abortive. If the opportunity is not seized immediately for positive action along these lines, it seems highly probable that the RIBA, particularly under the financial pressure it is now finding itself, will abandon all further attempts. Local government architects, therefore, should lose no time in giving their active support to the formation of this new society and amalgam, and all who value the interest and status of the profession as a whole, or who fear the continued depression of the professional classes in this country, owe the project their sympathy and backing.



WAR OFFICE

New Building Organization

In future, a new civilian works organization combining technical, administrative and financial responsibility for planning, execution and control will carry out all Army building. It is to be headed jointly by an architect or engineer under the title of Director-General of Works, and an Assistant Under-Secretary of State, who will be responsible to the Quartermaster-General and to the Permanent Under-Secretary of State. This decision has been reached following the recommendations of a special committee set up last October under Lord Weeks. These appointments will be the first step taken, so that the holders can be jointly and fully associated with the building up of the new organization from the start. The primary object of the Army's building programme over the next decade or so is to ensure that officers, soldiers and their families are provided with up-to-date living accommodation. Only one-third of the barrack accommodation in the United Kingdom is permanent and, of that, half was built more than 50 years ago. The remaining two-thirds are temporary. At home the building of new barracks to accommodate troops now living in temporary hutted accommodation and the modernization of existing barracks, where this can be done satisfactorily and economically, is to be pressed forward. More married quarters will also be needed and hospitals, workshops, technical and training accommodation will be improved or rebuilt where necessary. Overseas many troops are still living and working in temporary accommodation. Where the long-term future of the garrison is clear, this is to be replaced with modern barracks.

The details of the proposed re-organization have not yet been settled and their consideration must necessarily await the appointment of the joint heads. But it is contemplated that within the new organization a development group will be set up, responsible for research into the design of Army building, and the devising of cost-control formulæ. The results will, it is hoped, enable the system of financial control to be rationalized.

CAPITAL INVESTMENT

Housing, Schools to be Restricted

A 20 per cent. reduction in house-building by public authorities in the next two years was announced by the Chancellor of the Exchequer in the House of Commons economic debate last week. Housing, he said, had over the past four or five years absorbed a very large proportion—between a quarter and a fifth—of our total investment, and some reduction was inevitable. It was expected that public authorities would complete rather more than 150,000 houses in 1957-8, and there would be a progressive slowing down so that by 1959-60 the provision would be about 80 per cent. of the present level. This is a reduction of rather more than 30,000 houses a year, but the Chancellor did not indicate how this reduction was to be effected: whether it was expected to result automatically from high interest rates, or whether some other measures of control (such as the elimination of some of the remaining subsidies) were envisaged.

He confirmed that the hospital programme would be £23 million next year and £25 million in the year after. This, he said, should allow some increase in the amount of work in 1959-60, but how much would depend on the movement of building costs.

The major school building programme for 1958-9 is to continue unchanged, with what is called "some slight rephasing" in Scotland, and the five-year programme for technological education remains unaltered. But the minor improvement projects (on each of which local authorities can spend up to £10,000 on their own initiative) will be "severely restricted," and the programme for the reorganization of rural schools is to be slowed down. A Ministry of Education circular explains that the start of certain projects in the 1958-9 programme for rural reorganization, designed to improve existing conditions, is to be deferred. The circular states that relatively few projects are affected.

The circular states that expenditure on minor works, other than for the school meals service, has risen to about £14 million a year from £8 million in 1954. Nearly half is spent on improvement projects. "In present circumstances these must be severely restricted and priority given within the resources available to projects providing new places or essential teaching accommodation." The method to be adopted to restrict expenditure is that for County and Controlled Schools authorities will be informed as soon as possible of the total value of projects which may be started during the period January 1, 1958 to March 31, 1959. Managers or governors of aided and other schools will have to submit applications individually. New offers of capital grants to local authorities for physical recreation or training will be made only in exceptional circumstances of urgent need, such as in a new town or a large housing estate.

LCC

Planning Appeals

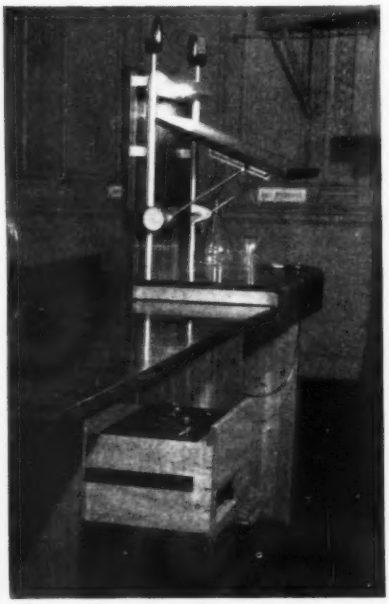
Some figures published by the LCC last week put the problem of procedure at planning appeals in perspective. Between April 1 and September 30 5,493 town planning applications were made. In 4,559 cases the applications were granted, and in 934 refused. In the same period 132 appeals to the Minister of Housing and Local Government were heard; in 100 cases the council's decision was upheld, and in 32 the appeal was allowed, subject usually to conditions or to a variation of existing conditions.

PLANNING

Inspectors Reports to be Published

The government has accepted the main recommendations of the Franks' committee's report relating to the compulsory purchase of land and town and country planning. The reports of inspectors at appeals or inquiries are to be published, inspectors are in some measure to be given a more independent position under the Lord Chancellor, acquiring or planning authorities will have to ensure that their case is fully set out before the inquiry is held, and more will be done to make government policy known at inquiries. These decisions were announced by Mr. Butler, the Lord Privy Seal, in the House of Commons last week. Many of the committee's recommendations and of the government's decisions are primarily concerned with agricultural and other tribunals of no direct concern to architects or planners. But the government's acceptance of the guiding principles of "openness, fairness and impartiality" applies to tribunals and inquiries of every kind.

Mr. Butler said that the government had in mind considerations slightly different from those of the committee: The government had a duty to discharge their responsibilities effectively; the citizen had a right not to be submitted to too much delay, and a balance had to be struck between the claims of the citizen and the nation and the



This lecture 'bench, designed by Professor R. D. Russell, is a gift to the Royal Society of Arts from the Duke of Edinburgh, the Society's president. The Duke presented the gift at a meeting held this week.

needs of carrying on the business of the country effectively. The spirit of recommendation urging the setting up of two councils on tribunals to exercise a general oversight of their working was accepted, but the government proposed to set up one council to be appointed jointly by the Lord Chancellor and the Secretary of State for Scotland. This change, he indicated, would be put first among those requiring changes in the law.

Mr. Butler declared the government's full sympathy with the committee's purpose in that part of the report dealing with compulsory acquisition of land and with town and country planning, which was to give the citizen a greater sense of fair hearing, and to bring the process by which a final decision was reached as far as possible into the open. The government was prepared to accept a great number of the committee's proposals. Some would be carried out without any change in the law. No amendment of the law was required for the publication of the inspector's report, and this change would be brought into effect as soon as possible. Mr. Butler did indicate, however, that in many cases he thought appellants would be satisfied with a full account of the inspector's findings and the reasons for the Minister's decisions, and would not want the report itself, which was sometimes very long.

Dealing with the recommendation that appellants or objectors should know the case they had to meet at appeals or inquiries, Mr. Butler said it would be made obligatory for planning authorities to set out their case before the inquiry opened. He did not go so far on the recommendation that the deciding Minister should, wherever possible, make available before the inquiry a statement of policy relevant to the particular case. In future, responsible Ministers would, he said, ensure that far more was done to make their policies understood, and that appellants were told where to find the information that might help them.

The recommendation that the full-time inspectors of the MOHLG should be placed under the control of the Lord Chancellor was not accepted by the government. It seemed essential, said Mr. Butler, that the Minister of Housing should retain his present responsibility for them. He had to arrange something like 5,000 to 6,000 inquiries a year. They had to be arranged promptly, and the inspectors had to keep in very close touch with the department, and to be fully au fait with the Minister's position.

The Government proposed that the Minister would only appoint Inspectors after consulting the Lord Chancellor, and would only be free to dismiss them with the Lord Chancellor's consent. No change was proposed in the existing practice of the Scottish Department or the Ministry of Education, which appoint persons from outside the public service to conduct inquiries.

The government accepted generally the recommendations on the procedure to be followed at inquiries, including the recommendation that officials of the department should, if required, give factual evidence in support of any views expressed. If the Ministry of Agriculture expressed positive views on the agricultural quality of land on which somebody was proposing to build, officials of that department should be prepared to explain their view at the inquiry. Mr. Butler said that the proposal that the Minister's letter of decision should set out in full the evidence and instances of fact and the reasons for the decision were absolutely right, and would now be adopted by every department.

On costs, the government reserved its decision. The government felt unable to accept the recommendation that costs be awarded to successful objectors or appellants, but preferred before making any final statement to hear the views of the House.

COST ANALYSIS

AJ Study Group's First Report

In February, 1955, the JOURNAL published its first cost analysis (Barnet Lane School, Herts). Since that time some 85 cost analyses and numerous articles explaining the technique have been published. By the end of 1956 it had become clear that an increasing number of architects, quantity surveyors and builders were making use of analyses and that practical experience of their use was accumulating. Hence, in collaboration with the School of Architecture, the Regent Street Polytechnic, we organized a course of six public lecture-discussions on the subject. These revealed the need for a reassessment of the form adopted for published analyses and of the kind of information given. Hence the JOURNAL invited a small group of people, architects, quantity surveyors, and a builder, to make this reassessment and provide the JOURNAL with recommendations for future publication.

Several meetings of the group have now taken place and we give below a summary of the conclusions reached so far.

Evidence presented by the group shows that analyses are used not only by the professions but by administrators, builders and even by clients. Administrators and clients use them for the overall comparison of similar buildings, and some builders use analyses as a basis for programming.

Analyses are thus used for more than one purpose. Their chief value is that they provide general knowledge of the way money is distributed in buildings, knowledge which did not exist before. Architects speak of a "cost pattern" which can guide the amount of investigation devoted to the different elements of a project. Without the guidance of analyses there might be, for some building types, a more extensive investigation of constructional methods for the frame than for the services—where the latter take more of the money. Again, much time may be spent at a late stage, reducing the cost of ironmongery or floor finishes—yet these elements may take a very small proportion of the total cost. The value of a considered and controlled distribution of the cost by architect and quantity surveyor together is that each element can carry an economic proportion of the whole cost in relation to the rest of the elements.

More specifically, *published* analyses can provide a starting point for the cost plan of a building of a type which neither architect nor quantity surveyor has dealt with before. Until approximate estimates and quotations are available there is no other guide, except a cost analysis, as to the distribution of money within a given total cost.

So far, few architects or surveyors use analyses (published or otherwise) *directly* to prepare a cost plan. Quantity surveyors use the JOURNAL's list of headings for analyses they prepare themselves, for approximate estimating. Some make a practice of analysing most of the tenders they receive, often calculating unit rates per square foot or per number of each element. Published analyses seem to be quite widely used as a check in approximate estimating.

The limits of usefulness of published analyses are set by the data from which they are prepared—namely builders' tenders—which are subject to certain variables. Within these limits, usefulness could be improved by more precise indication of the contents of each element and by changes in the information given as to quantities in each element. This latter point is of significance in the use of analyses for approximate estimating, and for comparing analyses of buildings of different size and shape. Broad comparison of analyses may sometimes be made more fairly when elements are grouped into collective headings. There is need for a larger number of analyses of different building types to be published. At present the study group is preparing a suggested revision of the JOURNAL's form of analysis. They would be glad to receive comments and suggestions from readers, addressed to the Editors.

DIARY

British Railways in the Atomic Age. Talk by Dr. F. F. C. Curtis, Architect to the British Transport Commission. ABT meeting at the BC, 26, Store Street, W.C.1. 5.30 p.m. NOVEMBER 8

A review of present architectural thought and trends by H. T. Cadbury-Brown; November 7. *School design* by David Medd: November 14. *Modern planning trends in office buildings and factories* by John Bickerdike: November 21. *Planning the interior* by Bryan Westwood. Series of lectures organized by the IES and the RIBA Science Committee. At the RIBA, 66, Portland Place, W.1. 6 p.m.

Below Street Level. Talk on controlling services under the ground, by John Craig. At the Planning Centre, 28 King Street, W.C.2. 6.30 p.m. NOVEMBER 11

Here is a list of the people responsible for exhibits referred to in the article on page 692.

INTERNATIONAL EXHIBITION OF MODERN ARCHITECTURE: arch. Erberto Carboni, arch. Marcello Grisotti, arch. Agnoldomenico Pica.
EXHIBITION OF MUSEOLOGY: arch. Giulio Cesari, arch. Piero De Amicis, arch. Pier Angelo Pallavicini, arch. Fulvio Rabor' arch. Ferruccio Rezzonico.
EXHIBITION OF ITALIAN POPULAR ART: arch. Angelo Bianchetti.
EXHIBITION OF ARTS AND CRAFTS: *Metal.* arch. Guido Frette, arch. Giancarlo Ortell *Glass.* arch. Ettore Sottsass jr., ing. Guido Strazza. *Ceramics.* pittore Giovanni Gariboldi, arch. Pier Luigi Spadolini. *Basket work.* arch. Raffaella Crespi, arch. Lorenzo Forges-Davanzati, Carlo Cavallotti. *Textiles.* arch. Edoardo Sianesi.
INTERNATIONAL EXHIBITION OF HOME INTERIORS: arch. Marco Comolli, arch. Edoardo Gellner, arch. Finn Juhl, arch. Augusto Magnaghi, arch. Giancarlo Malchiodi, architetto Roberto Mango, arch. George Nelson, arch. Mario Terzaghi. *Technical consultant*: ing. Edoardo Nova.
EXHIBITION OF GARDENS AND FLOWERS: arch. Pier Fausto Bagatti-Valsecchi, arch. Antonio Grandi.
EXHIBITION OF GRAPHIC ART: pittore Egidio Bonfante, pittore Franco Grignani.
INTERNATIONAL EXHIBITION OF "INDUSTRIAL DESIGN": arch. Sergio Asti, arch. Gianfranco Frattini.
CENTRAL AREA: arch. tti Achille e Pier Giacomo Castiglioni.
SPANISH SECTION: arch. Francisco Javier Caravajal Ferrer, arch. José María García de Paredes.
CZECHOSLOVAK SECTION: arch. Frantisek Tröster.
FINNISH SECTION: Timo Sarpeneva.
GERMAN SECTION: prof. Arnold Bode.
JAPANESE SECTION: prof. arch. Junzo Sakakura, prof. Kiyoshi Seike.
"100 YEARS OF PHOTOGRAPHY": arch. Mario Tedesch[illegible].
UNITED STATES [illegible]IBIT: Paul McCobb.
OPEN-AIR SCU[illegible]RE: arch. Renato Radici, arch. Luigi V[illegible]ti.

CRITICISM

by J. M. Richards

OFFICE BUILDING at TWICKENHAM
designed by the Chief Architect's Department, Ministry of Works
senior architect in charge E. H. BANKS

The building from the other side of Heath Road, the Twickenham shopping street in which it stands

This is a small building, accommodating 70 people, put up to house the local offices of the various welfare services (Ministry of Pensions, Public Assistance Board, WVS) and to provide office space for the local branch of HM Customs and Excise and the South Middlesex rent tribunal. It is thus essentially a building serving local needs (as distinct from the office buildings for central Government departments that are sometimes sited in the suburbs) and has properly been kept in scale with the ordinary suburban shopping street on to which it faces.

It is nevertheless an official building, playing its small part in the machinery of government, and I think there are sound arguments for giving all such buildings, however modest their scale, a certain formality of character to distinguish them from commercial buildings serving a similar purpose. I don't mean that they should affect any kind of fancy dress; only that the Ministry of Works, who are responsible for such buildings (and for others, like post-offices and telephone-exchanges, which come in the same category), are entitled—and should perhaps be expected—to cultivate a recognizable style that exhibits the qualities of restraint and formality proper to their official rôle and eschews the experimental and the bizarre. Whether such a style should be achieved by the use of a vocabulary of clichés is another matter that I must return to later.

I must first comment briefly on the functional organization of the building (which is fully illustrated and analyzed on pages 705-708 of this issue). The plan is the normal one for office buildings, with rooms on either side of a central corridor. This is reached by a staircase at one end of the building (a height of three storeys does not require a lift) and at the same end a single-storey extension, which also wraps round the back, provides the large office areas required by the Public Assistance Board. The Ministry of Pensions also required a large public office. This is at the front alongside the main entrance, and has been given sufficient depth by including in it the width of the corridor above. The structural frame of the building is two bays deep, the internal row of columns being placed off-centre so as to give offices of equal depth when the corridor is subtracted from one side, and give an extra depth without columns for the public office just mentioned.

The columns are at 12-ft. centres, and the windows along the road frontage at 6-ft. centres, every alternate mullion therefore coinciding with a structural column. At the back the windows are similarly spaced, and they produce a well-lighted interior, though I suspect the light may be too strong in the offices at the back (which face south) on a sunny day. Should there not be some form of screening against glare? The layout of the structural frame in relation to the windows creates interior spaces of fairly clean design in spite of the presence of exposed beams—I believe the Ministry is using beamless floor-slabs in future buildings of this kind, which should produce an even tidier result.

An office building does not present many opportunities for spatial effects, but the entrance-hall in this building is airy, well-proportioned and well-lighted and therefore a great improvement on the poky vestibule which is the public's usual introduction to official offices. Even more important, the finishes are good and the colours light and clean, instead of the usual dingy browns and greens. Good—which need not mean extravagant—finishes play an important part in creating that atmosphere of formality that I said an official building ought to have; anything that savours of the flimsy or makeshift immediately destroys it. And the quality and robustness of the finishes—outside as well as in—is here quite up to standard.

There are also one or two external details that I think are very well designed, like the railings and gates leading to the car-park and service-yard at the back, and the main entrance doors and porch. On the other hand certain details strike me as not at all up to standard;

for example, the way the rainwater pipes cut across at an angle from the concealed eaves-gutter before running down the gable wall. A couple of rainwater pipes may sound unimportant, but in this instance their clumsy treatment does much to destroy the impression of neatness and thorough consideration of detail that the architects have obviously aimed at. Presumably the idea was to keep the pipes off the street façade. If it was really impossible to bring them down inside the building, would not the better solution have been to let one pipe appear on the front and another on the back, perhaps painting them a less eye-catching colour than black?

The gable-end, with its decorative projecting headers that occur nowhere else in the building, strikes me as a rather casual piece of design. The fact that its outline is not symmetrical does not worry the eye and is logical since the ridge is placed above the internal row of columns which, as I said, is placed off-centre. But the placing of the windows—asymmetrical in the other direction—seems to have less logic about it. If there are good reasons for this perhaps the architects could explain what they are. Would not a more balanced arrangement have been more in character with the formalized style of façade that has been employed on the main front? If you attempt formalization of this kind you have to be consistent about it—as I have already remarked when criticizing the clumsily treated rainwater pipes as being inconsistent with the care taken over detail elsewhere.

And now what of the street front, where the main attempt has been made to impart style to the building? The fact that it is "contemporary" and not Georgian must not blind us to the fact that it is a piece of façade treatment and not a direct expression of the structure. The former is not necessarily undesirable—a screen wall, with the elements arranged in a pattern suggested by, but not wholly controlled by, the internal planning and construction, is a traditional and a quite acceptable basis of architecture. My criticism is that this façade is neither one thing nor the other.

To the left of the main entrance the group of windows reflects the structure to the extent that every other mullion coincides with a structural column, and the character is that of a framed building with infill panels. On the right, however, the frame disappears behind a brick wall. This has the odd effect of giving to the whole the character of a brick-walled building to one part of which the familiar contemporary cliché of a grid of windows enclosed in a projecting frame has been applied—odd because this is in fact the one part in which structure and internal planning are given some expression.

If the treatment is either that of a framed building or of a screen-wall building, a well-controlled arrangement of the various geometrical elements can create

Side view, showing gable-end and rainwater pipes criticized in this article.

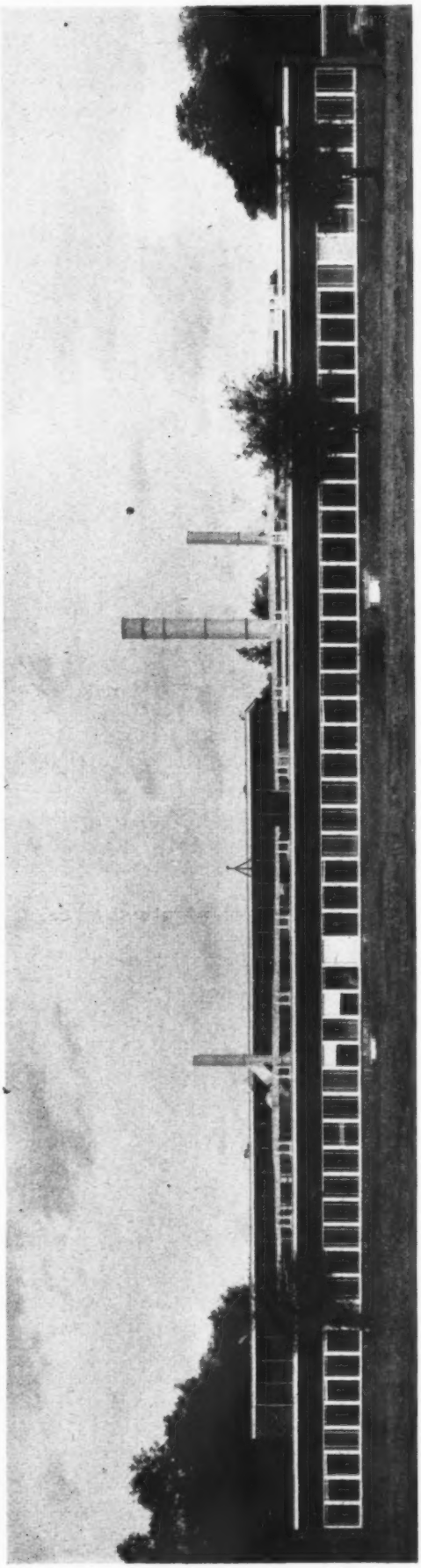
Part of the rear elevation from the service yard, showing the junction of the wing with the main block, referred to below.

the sense of formality required to identify the building's official character; but not if it is a haphazard mixture of the two. The cliché is never a satisfactory substitute for logic.

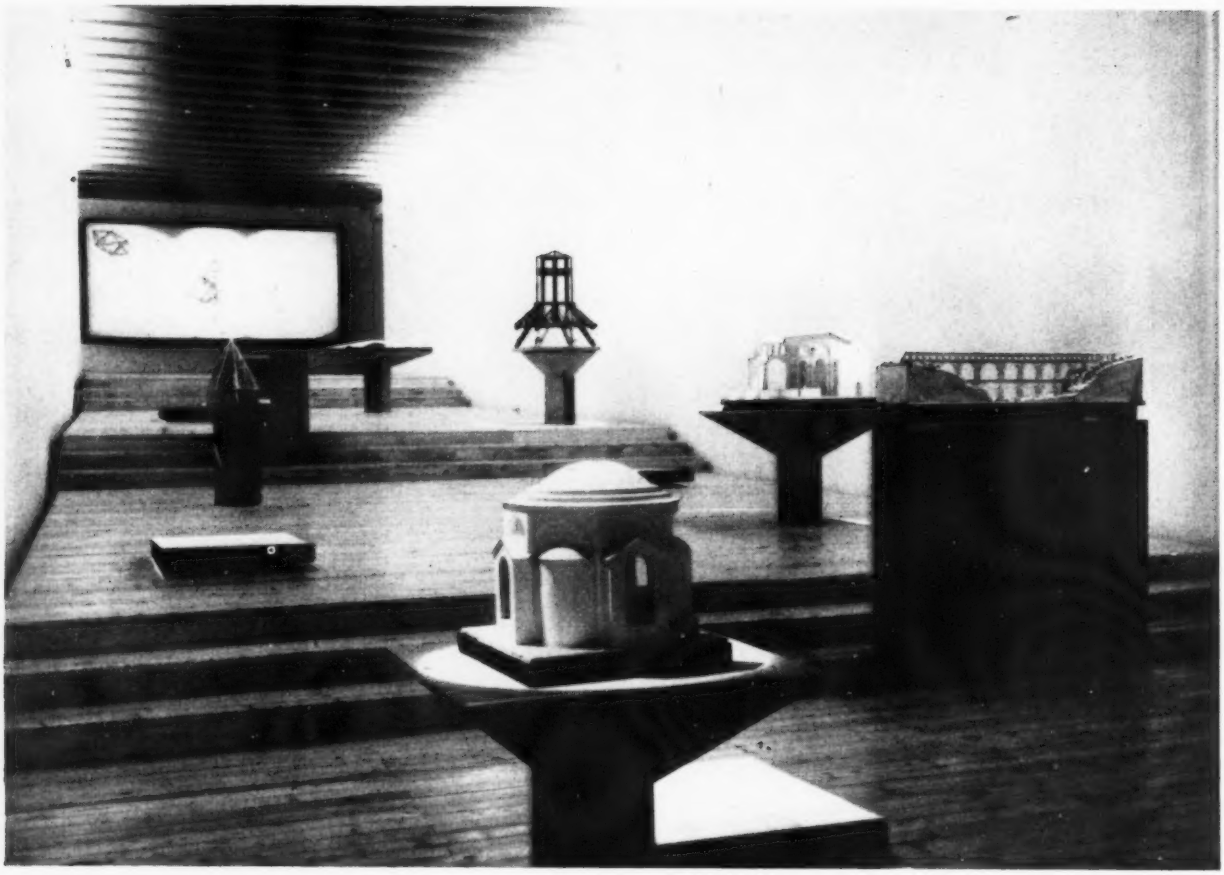
Another example of the way the relationship between the frame construction and the external wall-treatment has not been fully worked out is to be found at the back, at the point where the single-storey wing joins the main block. The wing is also of frame construction, clothed in brickwork, and one would therefore expect the wall to make its contact with the main block just outside the main frame. In fact it meets it (rather clumsily) just inside the frame, suggesting that the columns in the wing do not continue the line of the main row of columns. Can the architects give an explanation of this?

To offset the criticisms I have made I should add that the general external form and proportions of the building are pleasant enough, the facing materials well chosen (except that the grey mineralite with which the panels beneath the main group of windows are faced is too similar in colour to the reconstructed stone facing of the surrounding frame) and the scale just right for the setting. The very low pitch of the roof (made possible by the use of copper for covering it) suits this type of building well. The building gains dignity, of course, from being seen in isolation, set back from the pavement behind a grassed area, and it must be borne in mind that it will not be in such a happy position for long. The reason it is set back is to conform to a street-widening scheme, and so it will eventually have to take its place as one unit in a continuous street façade.

RADIOCHEMICAL CENTRE (OF THE U.K. ATOMIC ENERGY AUTHORITY) AT AMERSHAM, BUCKS.



Two new buildings at the Radiochemical Centre of the United Kingdom Atomic Energy Authority, Amersham, were inaugurated by the Marquis of Salisbury last week. The Centre, which has been in public ownership since 1946, produces radio isotopes for hospitals and industry throughout the world. The new laboratory, above, is a single storey building for processing isotopes and a two-storey office block has also been recently completed which also contains changing rooms where the staff are tested for radio activity, and a canteen. The architect is E. D. Jefferiss Mathews of J. Douglass Mathews and Partners; consulting engineers (structural) A. C. Aston; (mechanical services) G. H. Buckle and Partners; quantity surveyors, Gardiner and Theobald.



OPPOSITE PAGE: *top, the introduction to the International Modern Architecture Section is by a ramped floor through models and drawings of historical examples of structure. A photograph cannot convey an accurate impression of the lighting which consists of low background light infiltrating on each side of the suspended ceiling, leaving in comparative darkness the models and photographs being spotlit by concealed projectors. A screen at the top of the ramp has an animated shadow projection show with continually changing colours. Bottom, the conference space on the first floor consists of simple softwood and metal benches in a large rectangular space. The walls and ceiling are covered with unpainted white plaster, and a concentration of black industrial lighting reflectors defines the seating space. In this neutral-toned hall all the colour is provided by the mixture of daylight and artificial light. Indirect blue daylight is reflected from the two side walls and mixes with the glowing reddish-yellow artificial light causing subtle gradations of pinks and purples.*

The Milan Triennale is, as most architects will know, unlike any kind of exhibition held in this country. It embraces practically every aspect of visual design: architecture, painting, sculpture, the industrial arts, photography and even popular or folk art. Apart from minor contributions, Great Britain sends nothing but visitors. Two of them have written the following article about this year's Exhibition.

NO GIMMICKS IN MILAN

The Triennale reviewed by John and Sylvia Reid

The Milan Triennale is a series of exhibitions grouped together in and around the Palazzo dell' Arte. Apart from the basic sections which are selected and mounted by the Italians, there are the national sections where different nations each have a space in which they exhibit the work of their own architects, designers and industries. This year the United States, Germany, Japan and some 16 other countries—several from behind the Iron Curtain—are participating. Britain, as usual, is absent.

This series of exhibitions is linked together not by the similarity of subject matter so much as the universally high standard of selection and the excellent standard of presentation. Everywhere the lighting and display work is of the highest order, and nowhere does it drop below the "very good" standard; more often it is quite brilliant. It is, in fact, an object lesson which shows how an exciting exhibition can be achieved by the effective use of simple means.

The self-conscious display gimmicks, which are all too unfortunately synonymous with most exhibition work in this country, are completely and refreshingly absent. The Triennale architects and designers have taken well-chosen material, mounted it sympathetically and with good taste, and then enhanced its latent qualities with light.

An exhibition such as this proves, apart from anything else, that "good taste" is not necessarily effete and that simple, honest methods are not necessarily crude or brutal(ist).

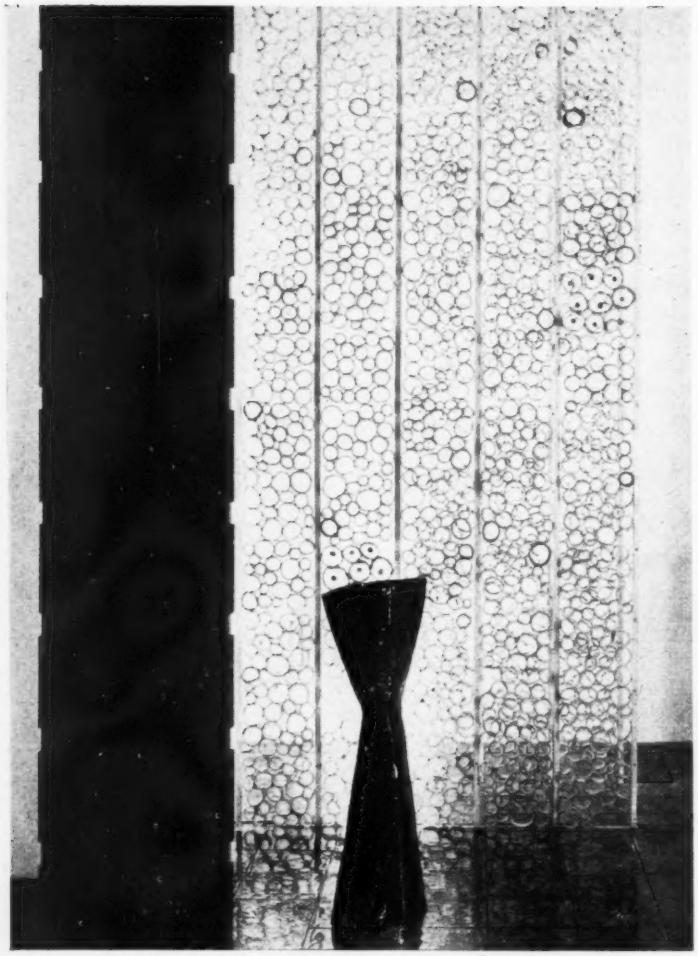
The first display to be seen on entering the building is a selection of objects representative of the national sections which acts as a preview for these sections. A very large space is devoted to the exhibition of modern architecture, the introduction being formed by a section showing, by means of photographs, drawings and models, the historical development of the basic structural forms. Although all the examples shown are well known to most architects, the dramatic lighting and spacious setting gives new life and interest to every one.

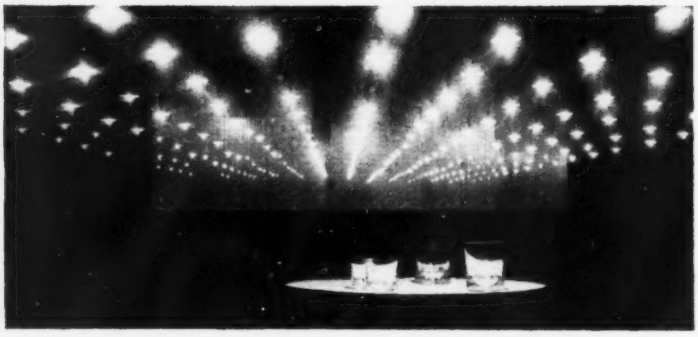
All the modern buildings are also inevitably well known, and most visiting architects will be unable to resist treating this as a form of quiz game, guessing the architect and building before reading the caption. Among the modern work the LCC's Roehampton housing scheme shows up well—but laymen will be handicapped by the lack of explanatory captions—the few captions on photographs and plans being in English only.

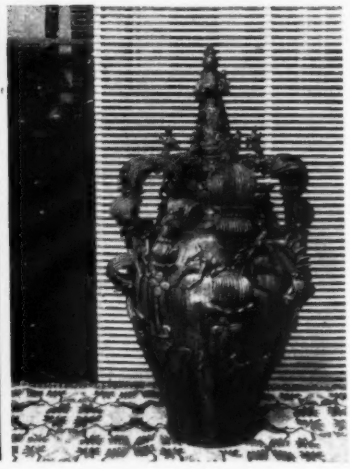
There is an impressively large model of a Dutch neighbourhood unit which should serve as an awful warning of the dangers of town planning with a tee-square and set-square.

The next section is devoted to the present day problems of museum-display and, after a brief historical introduction, a number of examples of presentation methods are shown, different types of exhibits and the use of both natural and artificial lighting being demonstrated. The pleasurable feelings aroused by this section are damped by the thought of the opportunities being missed in most of the smaller museums (and some of the larger ones) in this country, because of the failure to employ people with the right kind of specialized display knowledge.

The exhibition of modern jewellery, together with a few antique pieces, follows on so naturally from the preceding section that it is some time before the







change of emphasis becomes apparent—and after studying these very subtle examples it is a stimulating change to arrive at the Italian popular art.

This is gay, uninhibited work, and is inevitably a little inclined to be in part "folksy"—the tourist industry is an important one in Italy—but many of the objects displayed are the sort of things that are in common use in the country districts of Italy.

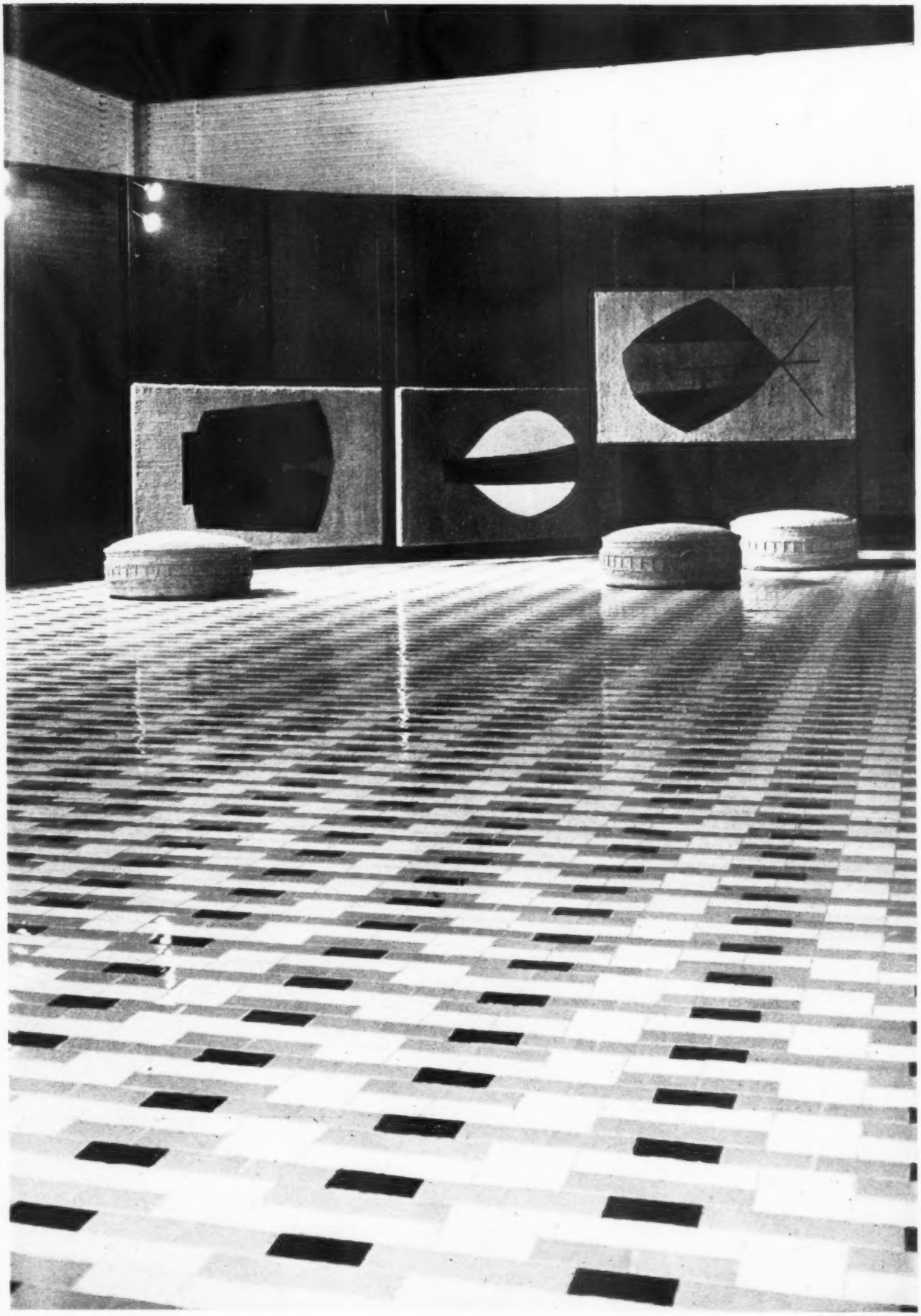
Italian craft-based industries are contained in the next gallery—metal objects and decorative sculpture; glassware, some of it beautifully coloured; ceramics, tiles and pots; basketwork, and finally tapestry all combine to present an interesting commentary on the work of the present day Italian artist-craftsman.

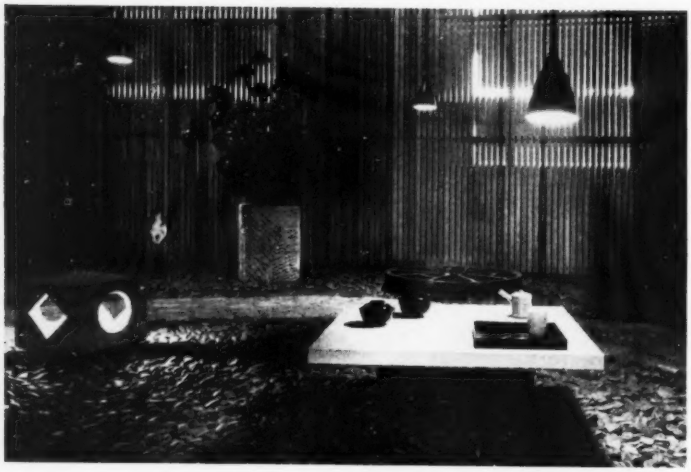
Then international design reappears in the section devoted to the Graphic Arts. An exciting, pleated suspended ceiling gives a powerful three-dimensional lift to what has to be a two-dimensional exhibition. The form of the ceiling is further emphasized by the lighting which is directed at it—the graphic exhibits

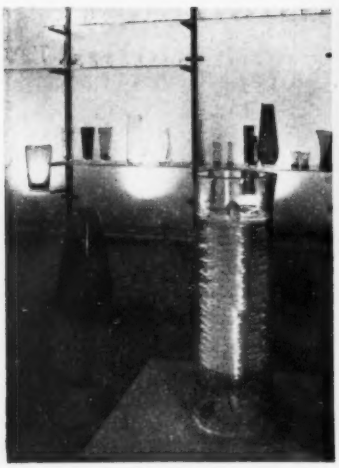
Top left: Fausto Melotti has created this screen in the Italian Ceramic Section. Random-sized cylinders of glazed ceramic are joined together to form small sections which are then combined to make a delicate screen. Above: although individually interesting, the exhibits in the Graphic Art Section could have led to an unexciting two-dimensional display, but instead the brilliant introduction of twin strongly-modelled suspended ceilings has created one of the most vigorous and exciting sections in the whole Triennale. Centre left: the lighting in the next section, on Industrial Design, is in complete contrast. Far left: one of the individual cubicles of the Industrial Design Section, showing the type of presentation used for case-histories of particular designs. Left: the epitome of Italian popular art —traditional salt-glazed pottery from Sicily.

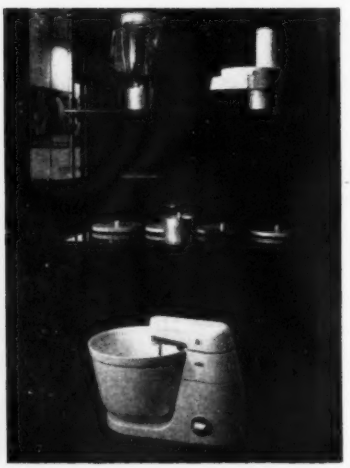
OPPOSITE PAGE: *the simplicity and freshness of the Spanish Room is probably the most pleasant surprise to be found among the national exhibits. It is dominated by the large area of blue, black and white, highly-glazed floor tiles, subdued by a black ceiling and beautifully lit with carefully-positioned spot lights, sometimes behind, and sometimes in front of the wire screen which lightly encircles the whole space.*

being uniformly illuminated by the indirect reflection. After the gently-lit examples in this part, the high-level entry to the Industrial Design Section is intensely dramatic. Suddenly the visitor is confronted by the







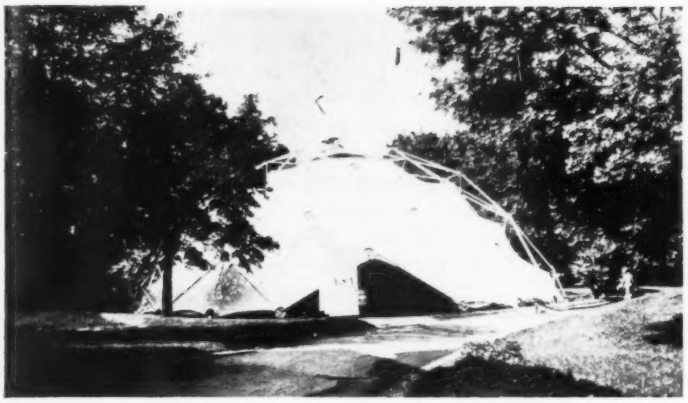


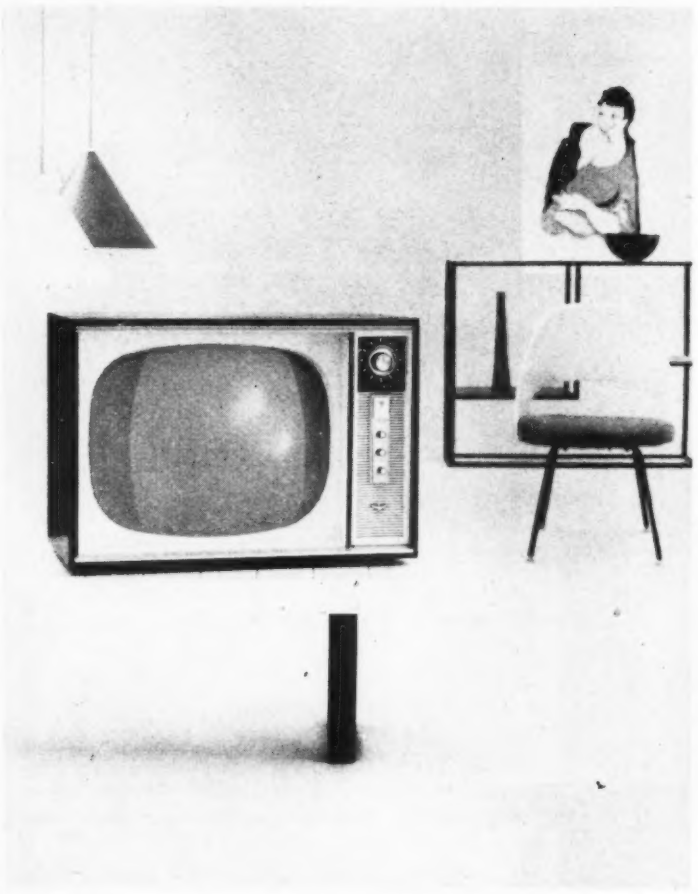
hundreds of bright bare lamps which are directly lighting the exhibits. The section is divided by screens into a maze-like pattern of small areas, each one devoted to a particular object or designer. These vary from a door knob to the complete coachwork of the latest Citroen, cunningly suspended in mid-air. A general open display then leads back to the entrance hall.

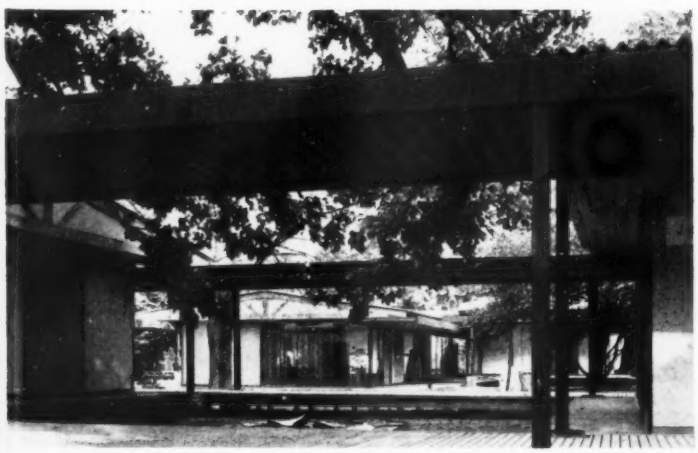
The first floor is filled mainly by the national sections, and it is interesting to compare the national

Top left: the Finnish exhibit confirms yet again the high standard that has been shown by Finnish designers since the war. All the horizontal display surfaces are glass, supported only by simple softwood frames, and all the exhibits are glass, ceramic or wood, which, combined with soft lighting and white walls and ceiling, give a tranquil, ethereal quality, strangely Arctic in character. Centre left: the Japanese have used a characteristic garden paving layout and slatted wooden screens to create their own national atmosphere. Apart from some pottery and cutlery of international style, the main features consist of strange sculptures, reminiscent of ancient idols which, on closer examination, prove to be groups of modern electrical insulators. The whole section, however, lacks the subtlety that one expects from Oriental design. Above: the French exhibit demonstrates what seems to be one of their greatest national characteristics—indecision. The design of the section lacks form and none of the objects displayed has any great intrinsic interest. Far left and left: Germany has taken a large area and dealt with it in a most businesslike manner, using it as a shop window for industry. There is a most comprehensive selection of articles from industrial to purely decorative, and all are of first class design and manufacture, and well displayed. The lack of British participation at the Triennale is all the more disquieting when the international effect of this section is considered.

characteristics shown in the displays by the various countries. As each nation obviously had an eye on the export business, there is a universal bias which has led to an over-abundance of decorative glass and cutlery.







Top left and above left: a geodetic, tubular-metal framework supports the translucent plastic dome which forms the American pavilion in the garden of the Palazzo del'Arte. Inside, cleanly-designed radios, television sets and other electronic equipment are neatly displayed in brightly coloured tents. Above and left: in the park a group of pleasant house-like pavilions, interlaced with gardens and covered walkways, have been furnished by some of the participating nations.

This is unfortunate as it is the only out-of-balance note in an otherwise well-balanced show. The sections vary in content and quality; Switzerland and the Scandinavian countries reaching a very high standard, whilst Poland, for example, has very little to show.

Czechoslovakia exhibits only glass, and gets away with it by dramatic lighting. In a blacked-out hall jewel-like cascades of glittering glass seem suspended in space—the supporting frames are virtually invisible as are the light sources. The general effect is superb, but the individual pieces of glass do not bear closer examination.

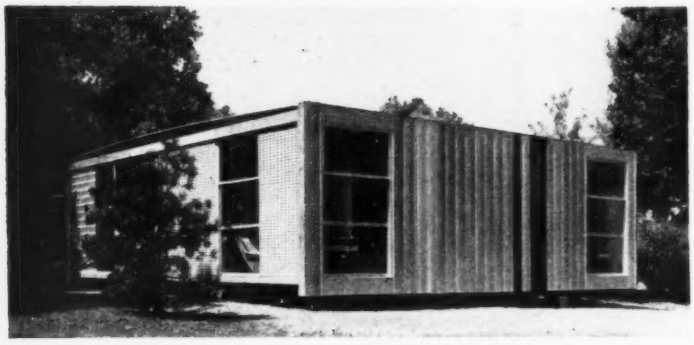
The most businesslike section, and one of the largest, is Germany's. The cameras, scientific instruments, industrial equipment, postage stamps, textiles, lighting fittings, posters, etc. etc., cannot fail to impress everyone with the strength and versatility of German industry.

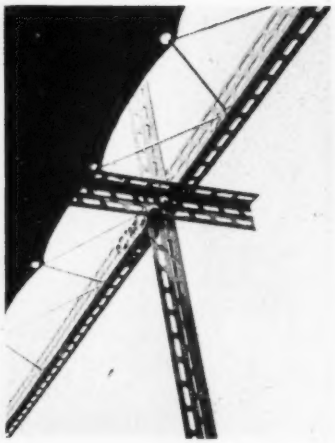
Again a small part of Italian craft-industry is housed on this floor—lace, and alabaster—and an area is also used for the incidental temporary exhibitions which are a feature of the Triennale.

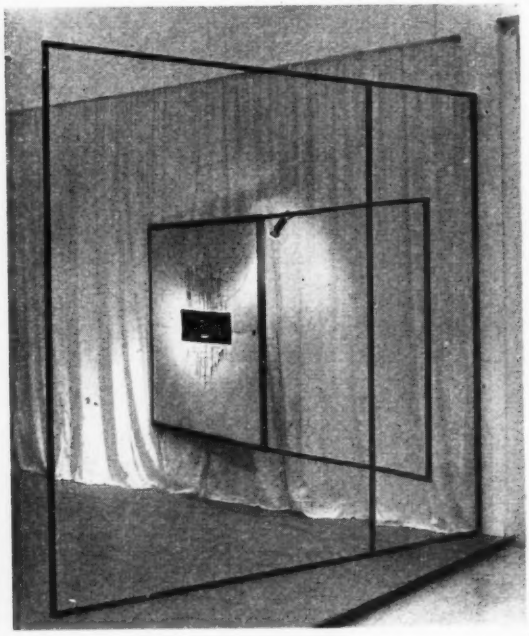
As in the past, the United States section has its own pavilion in the Park. This year a plastic dome structure, which is becoming an American trade mark it seems, has been used to create the pavilion. The plastic skin gives a pleasant all-pervading yellow light inside the dome, and it has an interesting pattern of seams and shadows.

The objects displayed are chosen as "articles in everyday use in the homes and offices of the American people" and consist, in the main, of well-designed television sets, outsize hi-fi's, dictaphones and cameras, which are housed in little black or red triangular tents. Soft background music is an essential part of any American display.

The international exhibition of house interiors in the







Top left: a living room group from Germany . . . and Italy (above left). Left: the Gio Ponti pavilion stands on its own among the trees and is a life-size sample of the structural system Ponti has designed for much larger constructions. Most of the cladding is natural aluminium, but the darker stripes show where bright colours have been applied. Below left: the covered way connecting the Palazzo del'Arte to the garden pavilions is a refreshingly simple construction in Dexian angle and canvas. Above: this photograph shows a display in one of the temporary displays, held on the first floor throughout the period of the exhibition. This display showed the use of decorative vitreous enamelled cladding panels for curtain walling.

park consists of half-a-dozen or so single-storey exhibition houses—not Olympia style, but "indications" of modern houses, interconnected by covered ways and attractive garden lay-outs. France, Jugoslavia, Germany, Denmark, Sweden, Finland and, of course, Italy, have each furnished one of these, and a very effective group they make. A simple covered way of "Dexian" angle and canvas connects these groups to the main building. On the way, it passes an Italian textile display, which is not nearly so interesting as the pavilion, itself an ingenious creation in Dexian and canvas.

Gio Ponti has his own pavilion, a metal construction of a type he has designed for blocks of flats, aluminium clad. Inside all objects and furnishings are Ponti designed.

An intriguing giant sphere, by a shallow pool, houses a rather dull display of shipping, and there is an extensive open-air sculpture exhibit.

That such an exhibition, ranging over so wide a variety of interests achieves a uniformly high standard of quality throughout, is a tribute to the Triennale selection committee. It is to be hoped that the Twelfth Triennale will contain an equally high standard British section.

For designers names, see page 688.

technical section

THE INDUSTRY

Brian Grant reviews an exhibition of oil-fired heating equipment and a new type of internal partition.

Heating with oil

As a part, no doubt, of the wholehearted campaign which the oil companies are carrying on for oil-fired central heating, Esso have arranged a permanent exhibition of oil-fired systems at their technical Sales department on the Albert Embankment. Here can be seen a number of different types of oil burner, suitable both for the heavier heating oils and for what the ordinary man calls paraffin, though for some reason the oil companies prefer to call it kerosene. Many of the burners have been designed for use with boilers originally intended for solid fuel, and while it may be assumed that boilers designed specifically for use with oil will be rather more efficient, the burners for both types are very much the same.

Among the more interesting exhibits are the display panels which show how the various controls and safety gear work.

In the gravity fed natural draught types there is very little which can go wrong, as they burn continuously with a thermostatically controlled flame, and it is only necessary to have a simple flame failure device. With the atomising burners, having a forced draught fan and an atomising spray burner various automatic re-lighting devices are necessary, and the controls are more complicated, but they are still virtually foolproof, with the further advantage that time controls can be arranged to do almost anything from turning the thermostat down during the night to keeping the temperature down during the week and turning it up every Friday afternoon for the week-end.

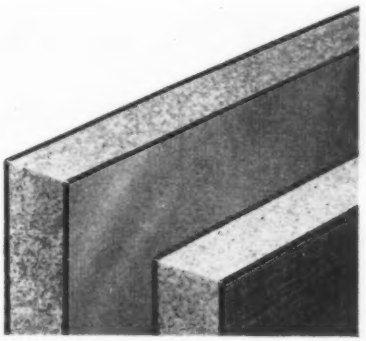
The exhibition also deals with warm air heating methods, and with various types of radiator, including skirting heaters, most of which can be seen in part section. Furthermore, it stresses the importance of adequate insulation of the house itself. It is perhaps worth adding that Esso's propaganda *doesn't* attempt to prove that oil is the cheapest form of heating, but only suggests that, after estimating running costs, you should also consider the value of convenience, freedom from attention and the ease of fuel delivery when you make the final choice. The exhibition is not intended for general public viewing, but anyone can see it if they care to make an appointment. In view of the length of the Albert Embankment I should mention that the Esso place is just round the corner on the left as you go south over Vauxhall Bridge. (*Esso Petroleum Co. Ltd., Albert Embankment, London, S.E.*11.)

Internal partitioning

A new structural panel with considerable fire resistance and good sound and thermal insulation properties has been added to the range of panels for use in Holoplast movable walls. This is the type 80 panel, which, unlike the 75 and 90 panels, has no internal webs, but a solid core of Viculite, a proprietary material with an aggregate of exfoliated vermiculite. This new panel can be incorporated in the standard Holoplast aluminium extrusions to build up complete movable wall installations. The standard thickness is $1\frac{5}{8}$ in. and it is produced in lengths of 4, 6, 8, 9 and 10 ft. with a width of 4 ft.

The sound reduction figure given by the manufacturers is 30 db. with a U factor of 0·34 for the standard thickness, while laboratory tests on a foot square panel give a fire rating of 2 hours in time and temperature condition approximating to BS. 476.

Six stove enamelled colours are available as standard, in either glossy or eggshell finish, and applied veneers can be made up to customers' requirements. Decorplast patterns and colours can also be used for the finish in five patterns and 14 colours. (*Holoplast Ltd., New Hythe, Maidstone, Kent.*)



Holoplast type 80 *internal partitioning.*

Part of the Esso permanent exhibition of oil-fired heating equipment.

technical section

The glass curtain wall

In the Information Centre review of BRS Digests 98 and 99 on light cladding, our reviewer complained that though these Digests gave much useful information on how to make a curtain wall, they gave too little on the functional performance of curtain walls, and their inherent efficiency in creating the right sort of indoor climate. This week we publish the first of a series of four articles which take this matter up where the Digests left it. The author, Thomas A. Markus, is an architect who recently spent a year studying at the Massachusetts Institute of Technology and is now on the staff of Pilkington Brothers Ltd. His thesis throughout these articles is that we are not yet clear in our minds about the functional criteria which a curtain wall must supply and that, in particular, we have underestimated the part which the glass itself must play in producing the interior climate. Taking in turn the aspects of light, heat, sound, fire resistance and the many contingent problems which arise from the actual realization of the glass curtain, he is concerned both to pinpoint the respects in which our design methods are insufficient or at fault and to draw attention to new curtain walling products which have been developed in America and which have already solved some of these problems.

19 CONSTRUCTION: DETAILS

the glass curtain wall 1, daylight transmission

Taking the problem of daylight transmission in its two aspects of how to get a good minimum daylight factor and how to avoid glare, the author, Thomas A. Markus, points out first that our present methods of daylight calculation take insufficient account of the modifying effect of the glass itself on daylight transmission. This becomes critical with ordinary glass when the angle of incidence exceeds 45°. When prismatic or obscuring glasses are used our methods of daylight computation no longer apply and for this we require a modified method. He then considers the contribution which can be made to the prevention of glare by the use of diffusing and prismatic glasses and describes the development in America of prismatic glass blocks designed to give a selective light distribution in the room and of transparent glasses which reduce glare without altering the colour of the light.

Physics and the architectural filter

Two recent American reports, which develop ideas originally explored by James Fitch, emphasise how the technique of curtain walling has enabled the conception of the wall to be changed from that of a barrier to that of a filter. A familiar distinction in biology, between the "exo-skeleton" such as that of the crab, and the "endo-skeleton," such as our own, now has architectural analogies. In the former the entire internal organism is carried by a dead, external shell which is both skin and skeleton; changes or growth are impossible without cataclysmic upheavals. In the latter the highly adapted skin grows with the internal skeleton it protects; but it does more than protect—it controls heating and cooling of the body, it breathes, controls moisture and houses various "services."

This complex function of the building skin—the "live" curtain wall—brings the architect up against physical problems the solution of which demands skill and experience on his part and a broad approach on the manufacturer's. Glass manufacturers have special reasons for regarding the problems comprehensively for, whilst they now supply one material for the entire wall, both opaque and light-admitting portions, the increased window sizes which curtain wall style and construction dictate have also increased the traditional window problems: glare, excessive solar heat gain, excessive heat loss and sound transmission. These problems must be viewed together with those of the opaque panel—fire resistance, thermal insulation, moisture control, sound insulation, solar heat gain, jointing and weathering. Seen in this way, the interplay between the various parts of a curtain wall is significant and this is the justification for the inclusion in this article of all three major parts—the light-admitting, the opaque and the jointing portions. The curtain wall framing itself is not considered except in relationship to these three subjects.

Daylight

Frame and panel systems of construction, fully developed in the curtain wall, have led to increased window size for stylistic, constructional and economic reasons. It is now normal for the window to stretch the full width between columns or structural cross walls and the full height from sill to ceiling. Both quantity and quality of daylight have been affected by this change in style, and the flexibility offered by various types of glass for windows has become more

technical section

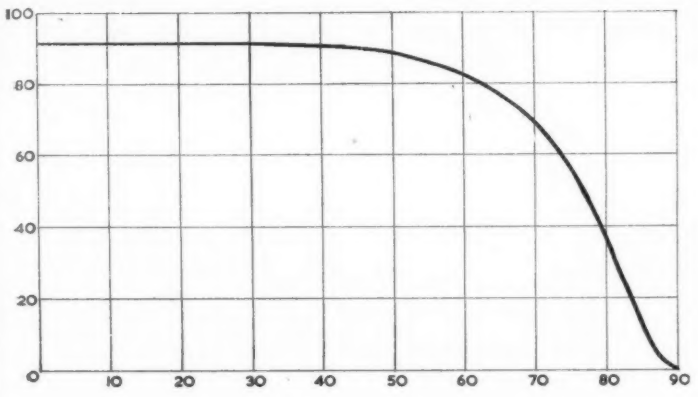


Fig. 1, graph showing the variation of light transmittance according to the angle of incidence of the light for a glass of refractive index 1·5. The vertical readings are percentage transmittance, the horizontal readings are angles of incidence in degrees. Note that there is no significant drop in transmittance up to an angle of 45°.

important. The problems created by windows of this size can be solved in several ways, many of these being questions of architectural design, *e.g.* the shape of the window, louvres, external projections and other devices, and some of them being capable of solution alternatively or in addition with the use of the correct type of glass. In order that architects should be able to assess at an early stage the cost and efficiency of various methods they must know the performance characteristics of various glasses and how they enter into daylighting assessments.

(*a*) DAYLIGHT FACTORS: The illumination levels required for various tasks form the first daylight criterion and are usually expressed in the form of the daylight factor. This concept—being an expression of the amount of light at a point in the room as a percentage of the total illumination occurring simultaneously outside under a hemisphere of unobstructed sky—is now familiar to architects. Methods for calculating its three components are standard design practice. The three components are: (*i*) the sky component—light directly received from the sky; (*ii*) the external reflected component—light reflected from external surfaces such as trees, rising ground, building façades, etc.; (*iii*) the internal reflected component—light reflected from the walls, floor, ceiling and contents of the room.

As yet there has been little work on the effect of various types of glass on the daylight factor and where it is proposed to use anything but normal sheet or plate, *e.g.* a green heat-absorbing glass or an obscuring diffusing glass, it will be necessary to make certain corrections for these glasses and these notes outline current methods and point out gaps where a great deal more work is required.

The sky component is the illumination received directly through the window from the sky. It is the sky factor (previously known as the daylight factor) corrected for the differences in brightness of various parts of the sky. The sky factor is a function of the geometry of the room, the window and obstructions; such methods as the Waldram diagram, the BRS daylight factor (now "sky factor") protractors and the tables of graded sky factors in the BS Code of Practice CP.3—Chapter 1 (A) (1949)—Daylight (Dwellings and Schools), are available for its prediction. The sky brightness factor applied to the sky factor, to give the sky component, is determined, according to Table 1 of BRS Digest 80, by the average angle of altitude of visible sky, the zenith of an overcast sky being about three times as bright as the horizon.

The external reflected component can be found by considering a visible obstruction as a patch of "sky" whose brightness is a fraction of that of the sky which it obscures. BRS Digest 80 gives details as to its prediction; often a value of one-tenth of the unobstructed sky is assumed for this brightness.

The internal reflected component is the light reflected from the walls, floor and ceiling and depends on the brightness of these surfaces—*i.e.* the amount of light they receive from outside, the degree of inter-reflection between them and their colour (which determines the reflection factors). Methods for its calculation by formulae, nomograms and a table are available. Where there is more than one window the calculation is made for one window at a time with the others being taken as surfaces of low reflectance—15 per cent. This explains why increase in window area does not give the expected increase in daylight factor since every window, whilst admitting light, also subtracts from the room's ability to act as a light integrator by "letting out" some light.

The amount of light transmitted through a given glass depends on the angle of incidence. As this increases the light transmitted decreases until at grazing incidence there is almost no transmission. In addition the greater the angle of incidence the larger the thickness of glass traversed by the beam and hence the larger the absorption. Fig. 1 shows variation of transmission with angle of incidence; up to about 45 deg. the variation is small, but transmission rapidly drops off after that.

This variation with angle of incidence should somehow be recognized. Thus a window receiving light from a high altitude (large angle of incidence and hence greater reflection loss) should have a different factor from one receiving light from a small angle—*e.g.* where there is a deep overhead projecting balcony. The normal Waldram diagram is for unglazed openings; although a further diagram for glazed openings has been published,* frequently a correction factor of 10 per cent. deduction is applied to the normal diagram, and this obviously introduces a somewhat imprecise element into the calculations, especially for incident angles greater than 45 deg. In the BRS day-

**Journal of the RIBA.* October 17, 1956, p.1,072.

The house the architect hated to part with

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technical section

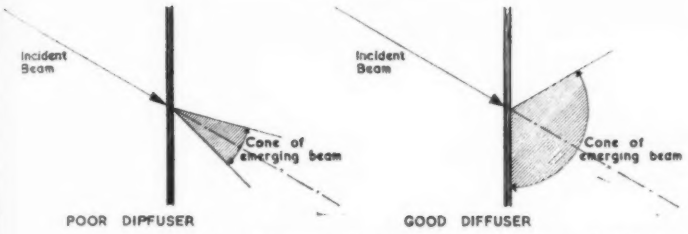
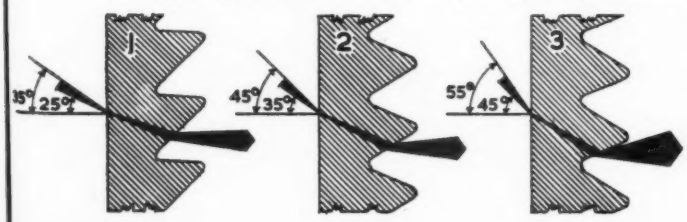


Fig. 2, diagrams illustrating the operation of diffusing glasses. The wider the cone, the better the diffusion.

light factor (now sky factor) protractors there are four pairs for glazed openings which take variation of transmission with angle of incidence into account. In the BS Code of Practice CP.3 Chapter 1(A) mentioned above, the tables of graded sky factors include a 20 per cent. deduction—10 per cent. for the glass and 10 per cent. for dirt. Again this blanket correction is likely to mean a sacrifice in the accuracy of the calculations. Where double glazing is used it is normal to deduct another 10 per cent. from the sky factor. Instead of the single 10 per cent. deduction in the Waldram diagram and the Code of Practice tables, which can introduce considerable errors at large angles of incidence, a more accurate system should be used; this could perhaps be based on the average angle of altitude, as in the calculation of the sky brightness factor.

In the case of coloured glass such as one of the green heat-absorbing types a deduction equal to the reduction in transmission should be made—*e.g.* in a window glazed with "Antisun," whose light transmission is about 70 per cent. as against 90 per cent. of normal window glass, the sky factor should be reduced by 30 per cent. instead of 10 per cent. For obscuring or prismatic glasses there is no published method; for whilst they have a reduced light transmission they may admit and reflect light selectively at various angles because of their surface patterns and some allowance for this would have to be made. Moreover, since they diffuse and reflect light, some of it always towards the ceiling, the normal relationship between direct and indirect components does not apply—rather the window itself becomes a "wall" with a certain brightness. Further work on this is required as, also, on the light transmission through glass blocks where the shielding effect of the honeycomb formed by the opaque joints raises special problems.

Fig. 3, diagrams illustrating the operation of prismatic light-directing glasses. It is to be noticed that the right-hand glass (3) is the same as the centre glass (2) but upside down.



(*b*) GLARE: Whilst large windows in curtain walls have made high daylight factors possible, the risk of discomfort from glare is also increased. It may arise from excessively bright windows (or views through windows) or from a lack of graded and balanced brightness between the window and the background surfaces in the room. The two extreme glare conditions are direct sunlight—either vision of the sun or sunlight falling upon the task—and overcast sky. The window brightness is either that of the sky and other surfaces seen through it, for clear vision glass, or that of the glass surface itself for obscuring glass. Typical approximate sky brightnesses are:

Blue sky—580 to 1,750 footlamberts.
Overcast sky—870 to 2,040 footlamberts.
Sky near the sun—2,000 to 7,000 footlamberts.
Sun—480 $\times$ 10^6 footlamberts.

In large areas even the lower brightnesses can be the cause of discomfort glare and in any case they are often the cause of disability glare.

The control of direct vision of the sun, or sunlight falling upon the task, is chiefly a design consideration involving proper orientation, sunbreaks, over-hangs and louvres or removable devices such as shutters and Venetian or roller blinds. Removable devices are the most feasible in the British climate since permanent shading may cut out too much light on dull days. A glare-reducing or coloured glass might also be of assistance, but in order to ameliorate conditions adequately unless window areas are large there may not be sufficient light on dull days. However, in tropical countries, where direct sunlight and clear blue sky are the typical conditions and where a great deal of light is also reflected from the ground upwards (within the angle of vision), such glasses are valuable even if permanent architectural devices and removable devices have been used. These glasses are discussed in detail below.

Obscuring glasses may be used against sun glare, especially if they are good diffusers; they will obscure and grade the sun image and also direct some light away from the angle of vision towards the ceiling. The measure of diffusion is the angle of the cone emerging when a directed beam passes through the glass (see Fig. 2).

Of two smooth obscuring glasses with identical light transmission, but different powers of diffusion, the better diffuser will generally appear less bright; thus a solid opal glass will be less bright than sandblasted glass; care must, however, be exercised in selecting patterned glasses for this purpose since some patterns create excessively bright spots by refractive and prismatic focusing of light from certain angles. Not a great deal of information is available about these characteristics of the many patterned glasses manufactured, but in general it is likely to be the smoother patterns which will be least liable to create these bright spots; on the other hand these are the ones with generally poorer diffusion. This means the emergent cone of light is narrow and since the beam is generally from above the horizontal the cone is within

technical section

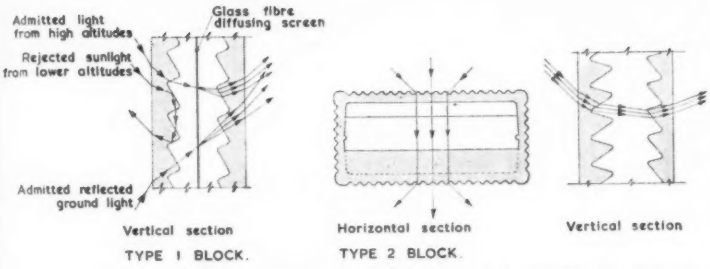
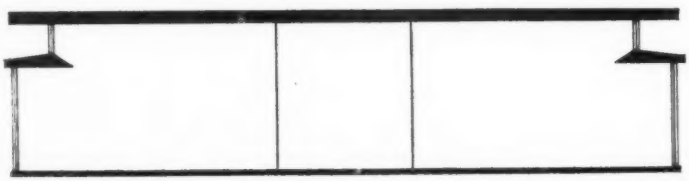


Fig. 4, diagrams illustrating the use of glass blocks to give a selective distribution of light within the room. Type 1 block (left) has horizontal prisms only and is designed to admit light from high altitudes and from the ground but to reject light from lower altitudes (i.e. to avoid glare from the summer sun on east and west elevations). Type 2 block (right) has horizontal prisms internally and vertical prisms externally. The latter collect light from the side and the former direct it towards the ceiling.

Fig. 5, section of experimental ward unit, Larkfield Hospital (architect, Richard Llewelyn Davies) illustrating the principle of the "eyebrow shield." This principle applies equally to multi-storey buildings.



the normal field of vision. Solid opal glass and sandwich glasses incorporating a glass fibre screen such as "Diffusing Plyglass" or "Thermolux" and also hollow glass blocks are good diffusers. The latter, in addition, form a shielding honeycomb with their opaque joints which is a valuable device against sun glare. It is sometimes useful to have a band of such diffusing glazing above eye-level thus limiting potential direct sunlight or vision of the sun to areas near the windows.

Prismatic glass can be used to direct light upwards towards the ceiling away from the angle of vision, increasing the ceiling brightness.

In the USA a wide variety of prismatic glass blocks are available, each designed for selective use at certain heights, seasons and orientations. Two are illustrated in Fig. 4. Type 1 has a prismatic arrangement designed to admit sunlight from favourable winter sky positions and also reflected ground light but to reject it totally from east and west from summer positions; all light that it admits whether direct or diffuse, is diffused by a glass fibre screen sandwiched into the middle of the block. Type 2 has an arrangement of vertical prisms on the two external faces; the outer collects light from wide azimuth angles and the inner diffuses it laterally. The two internal surfaces have horizontal prisms which direct the light upwards.

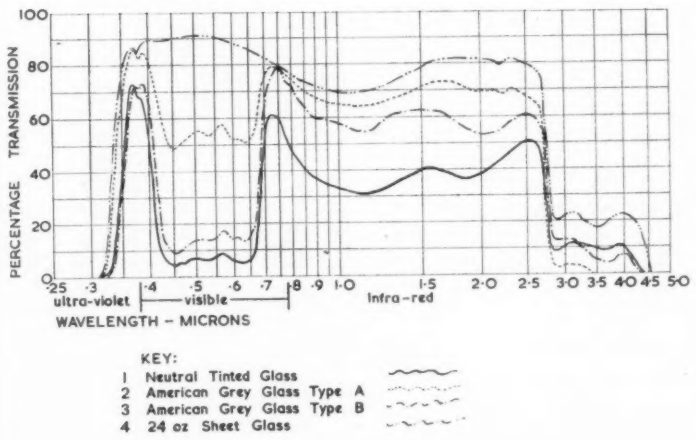
The bright overcast sky presents the typical window-glare problem in this country. Whilst special glass can be of great value here, certain basic design principles must also be observed. The fact that most curtain wall windows stretch the full width between columns or walls and up to the ceiling helps in that the ceiling and side walls are well lit and only the wall under the sill receives indirect light. This piece of wall, and any which may occur at the top or the sides round the window, must therefore be kept white or light in order to reduce contrast as much as possible. The window reveals and sub-divisions should also be white to reduce contrast and tapering and splayed sections are valuable. The deep box-section of the normal curtain wall frame is undesirable from this point of view.

The importance of high reflection factors for the ceiling and walls is recognized; the general brightness level of the environment is thus kept high and the ratio of source (window) to background brightness is kept as low as possible. This raises the tolerance for bright visible sky. In addition an "eye-brow" shield, to cut down the portion of visible sky, can be used as in the Nuffield Investigation experimental hospital ward; it will, however, reduce the daylight factor; though the reduction will be greatest near the window, where it can be afforded, and least at the back of the room.

The positioning of tasks in a room must be such that the apparent size of the window is as small as possible (oblique viewing) or that the window lies near the periphery of the angle of vision.

Glare reducing transparent glasses are available to reduce the apparent sky brightness in proportion to their smaller light transmission. Since the window will be reduced in brightness in proportion to the reduction of the other surfaces no change in brightness *ratios* can be expected. Nevertheless the absolute reduction in the window brightness can be extremely valuable. It is likely to be a more economic method than structural shields or baffles, but only where there

Fig. 6, graph comparing the percentage transmissions in ultra violet, visible and infra-red ranges of ordinary plate glass with one English and two American glare reducing glasses.



technical section

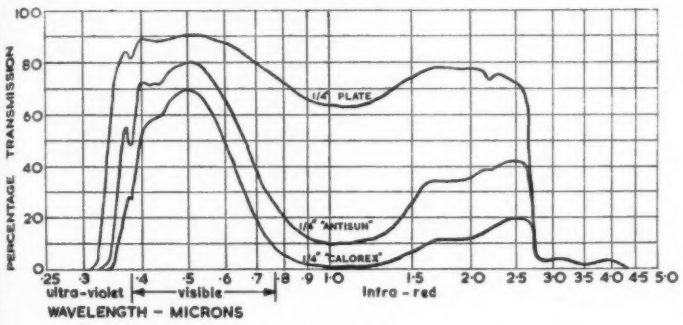


Fig. 7, energy transmission curves for normal plate glass and for two heat absorbing glasses "Antisun" and "Calorex." Note that though both the latter give relatively high transmission in the visible range, they show a dropping off at the red end of the spectrum to give the characteristic blue-green colour.

is a sufficient margin of light intensity to permit the reduced daylight factor.

In the USA special neutral or grey glare-reducing glasses have been developed. From the transmission curves (2 and 3) in Fig. 6 it will be seen that these reduce transmission almost uniformly in the visible spectrum and thus do not colour the light. A similar British glass (curve 1), neutral tinted polished plate is available; it is familiar in taxi and ambulance windows. However, with a light transmission of only 8 per cent. to 11 per cent. it is too dark for general use in this country, but it can be valuable for the upper portions of windows. In America grey glasses with light transmissions varying from 12·5 per cent. to 70 per cent. are available.

The heat-absorbing glasses (which will be discussed in a later article under "Solar Radiation") whilst being primarily designed to reduce transmission in the infra-red spectrum, also reduce visible transmission. From Fig. 7 it will be seen that the visible transmission of "Calorex" is about 60 per cent. and of "Antisun" about 70 per cent. However, the iron compound used to reduce the infra-red transmission also colours these glasses, dipping the curve down at the red end of the visible spectrum, thus giving them a characteristic blue-green appearance. Where these glasses have been used for glare reduction it has been found that the eye quickly acclimatizes itself to ignoring the colour, except where clear glass or open windows are visible simultaneously.

The use of obscured and prismatic glasses and glass blocks against sky glare is governed by the same principles as those discussed under sun glare. Here again good diffusion and absence of prismatic bright spots is the criterion. Most obscuring glasses have a light transmission of 65 per cent. to 85 per cent. and the reduction thus caused in the daylight factor must be carefully weighed up. Redirection of light by prismatic glass away from the angle of vision and to the upper parts of the room is a useful technique with sky glare.

CLASSIFICATION FOR TECHNICAL ARTICLES AND INFORMATION CENTRE

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

INFORMATION CENTRE

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

18.190 construction : theory
STRUCTURAL STEELWORK DESIGN

Plastic Design of Portal Frames. J. Heyman. (Cambridge University Press. 1957. 10s. 6d.)

Text book on plastic theory as applied to single-storey portal frames, of interest to designers and students.

Jacques Heyman's name has been associated with the plastic theory too long now to require an introduction. In this small text book, the first on plastic theory within the reach of a student's pocket, he describes in some detail the method as applied to purlins, sheeting rails and main frames of the single storey pitched roof structure and indicates by worked examples the procedure for both single-bay and multi-bay portals. Chapter I is devoted to the general principles dealing with the load factor, collapse of fixed end beams, propped cantilevers, then continuous beams. Chapter II goes into the design of the symmetrical ridged frame starting with a single load at the ridge, passing to the spread load, then the point load of the purlins and then adding in the wind load. Haunching of the joints, fixed base and pinned base conditions are analysed. An indication is given of application to the unsymmetrical frame. All these conditions have an easily identifiable form of collapse and crane loading is considered to show how with a multiplicity of loading the correct mechanism of collapse must be obtained. In dealing with the stanchions, Dr. Heyman refers to a set of charts for stanchions with a plastic hinge at one end. The stanchions designed are assumed to be stabilized by the sheeting rails. The book does not design the inner stanchions of the multi-bay frames, which are not stabilized in any way. There is an excellent bibliography.

building illustrated

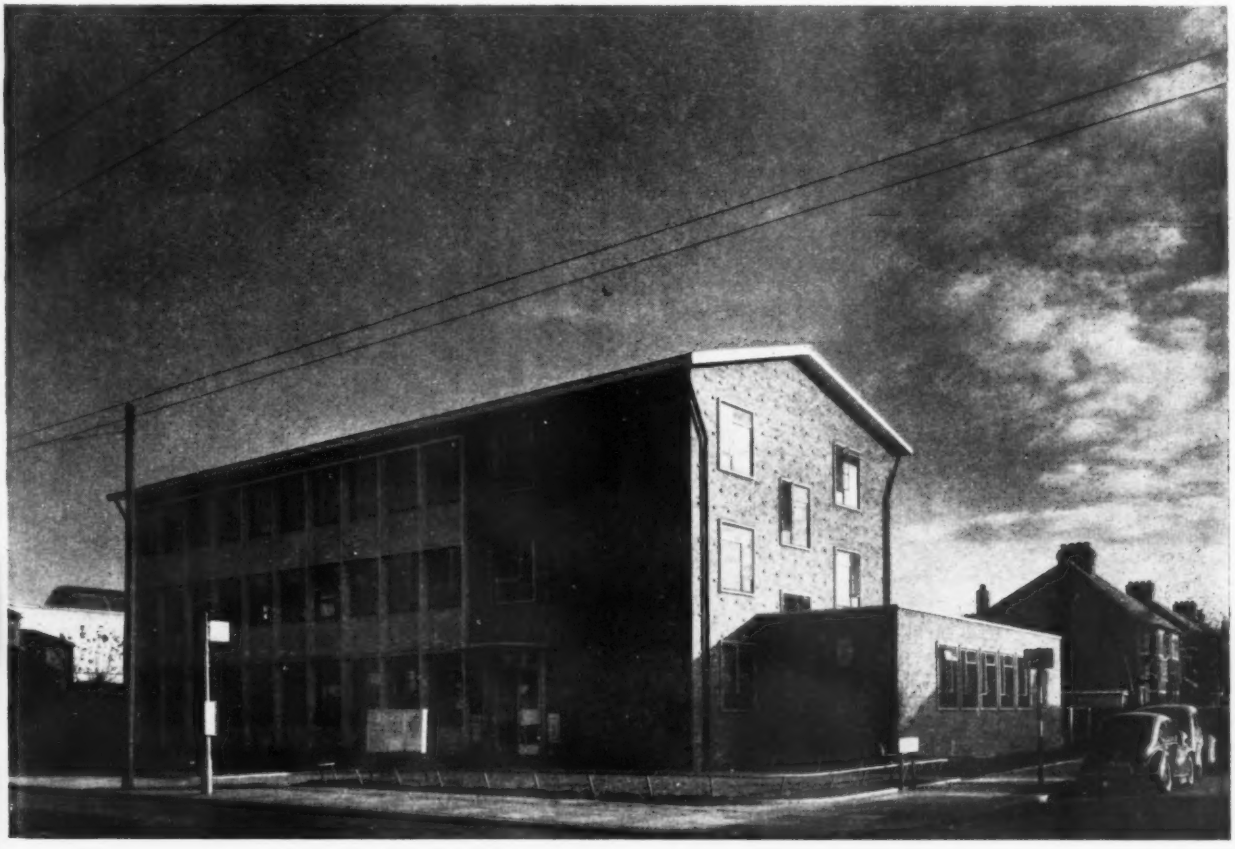
Offices in Heath Road, Twickenham, Middlesex

OFFICES

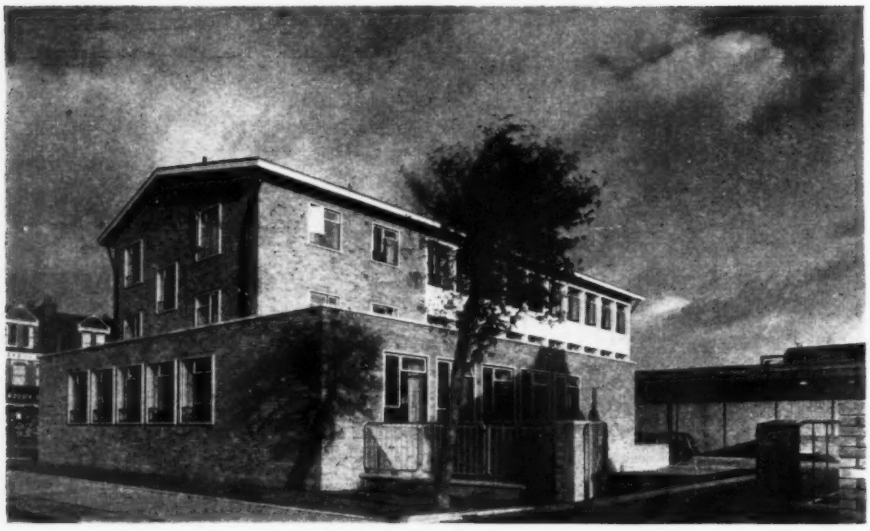
in HEATH ROAD, TWICKENHAM, MIDDLESEX; designed by the chief architect's division, Ministry of Works senior architect in charge E. H. BANKS; senior engineer (heating and hot water services) A. M. PALMER, chief engineer's division, MOW, consulting engineer (structure) R. F. GALBRAITH in collaboration with G. H. STEWART; (sanitation) F. N. SHIMMIN; quantity surveyors MOW in association with TUCKER and HUNTLEY

This small block of offices, known as Crown Building, was designed by the MOW to accommodate various Government departments, originally scattered in different premises throughout the Twickenham area. This is the first block of Government offices to be analysed in the JOURNAL, and the cost analysis is based on the final account. A critical article on the building by J. M. Richards appears on page 689.

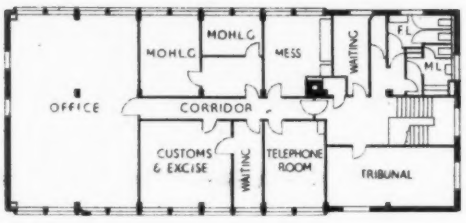
Viewpoint 1: looking across Heath Road from the north-west.

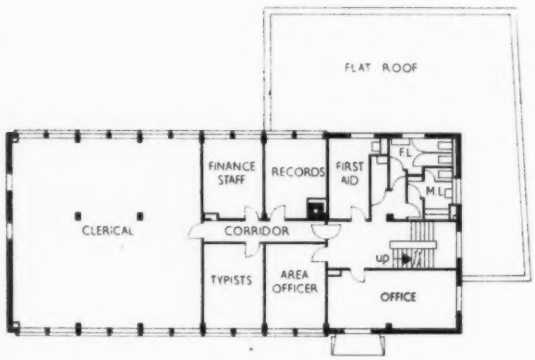


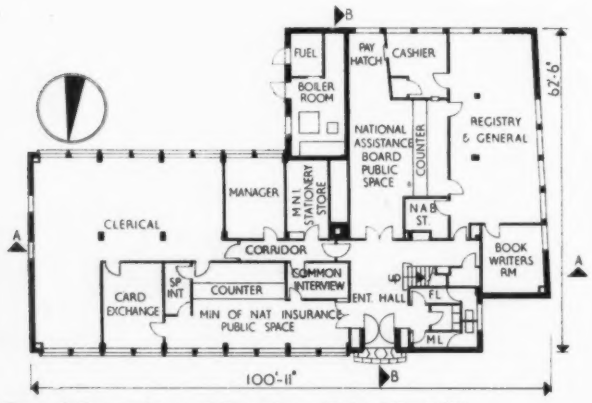
building illustrated



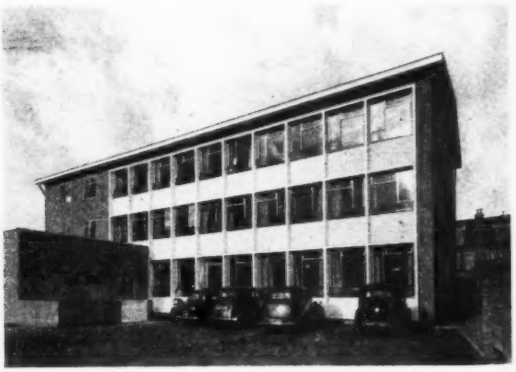
Viewpoint 2 (above left): the entrance to the service yard and car park at the south-west corner of the site. Viewpoint 3 (below): the south facade from the service yard. The purpose-made metal windows are fixed in a frame of vibrated concrete and the panels below windows are rendered. Viewpoint 4 (above right): the main entrance doors facing Heath Road. The doors are purpose-made metal, in a Portland stone surround.



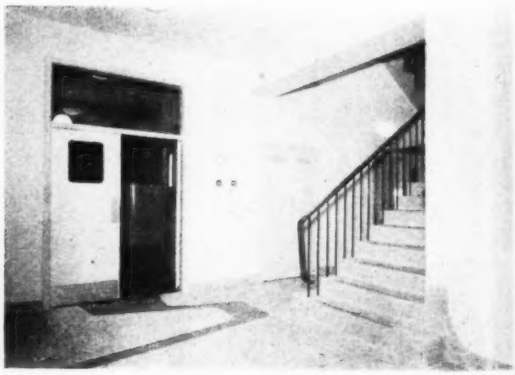


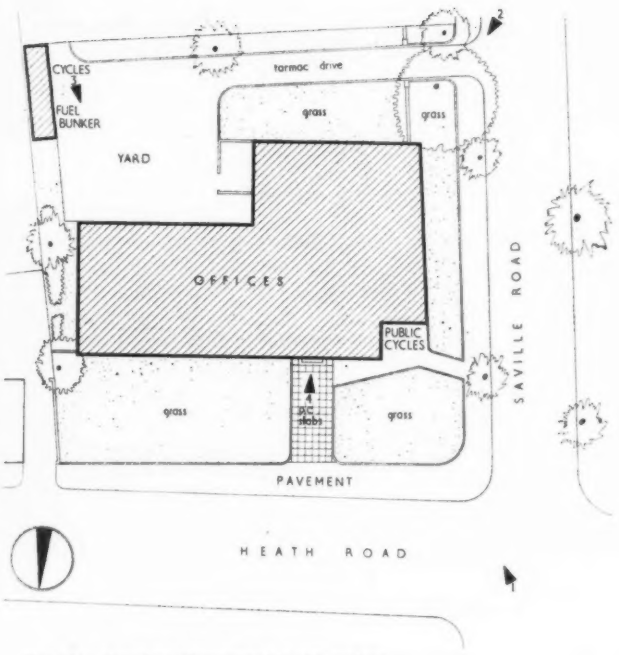


Ground, first and second floor plans [Scale: $\frac{1}{16}$" = 1' 0"]

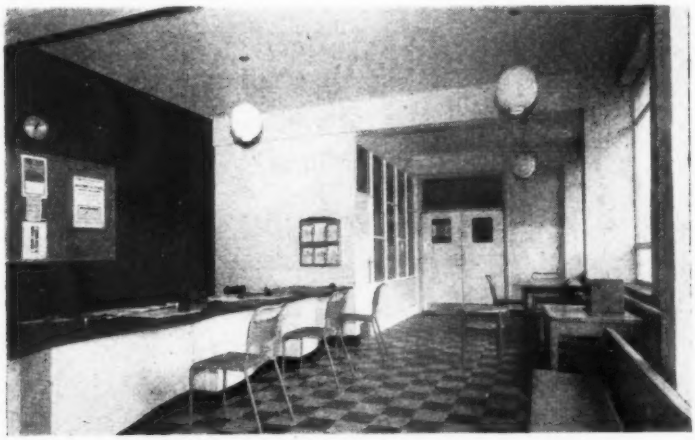


Below: The main entrance hall and staircase. The floor finish and staircase are of terrazzo and the doors are flush timber, with panels of Georgian wired glass.

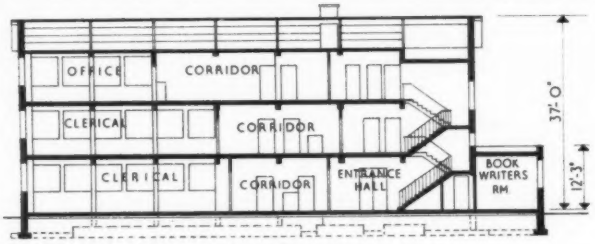




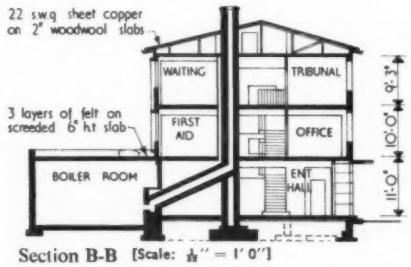
Site plan showing photographic viewpoints



The MPLNI public space on the ground floor. The floor finish is thermoplastic tiles and the walls are finished with emulsion paint. The wall behind the counter is deep maroon, BS 2660/1.024; and the other walls are light blue-grey, BS 2660/093.



Section A-A [Scale: $\frac{1}{32}$" = 1' 0"]



Section B-B [Scale: $\frac{1}{16}$" = 1' 0"]

analysis

CLIENT'S REQUIREMENTS

An office block to house various government departments scattered throughout the area, as follows: Ministry of Pensions and National Insurance (staff 39, 19 male); National Assistance Board (staff 20, 14 male); H.M. Customs and Excise (staff 2 male); Women's Voluntary Service (staff 6 female); South Middlesex Rent Tribunal (staff 3, 2 male).

SITE

The building occupies a corner site at the junction of Heath Road and Saville Road, and is set back from Heath Road to the north to allow for future road widening.

PLAN

Provides for users of block as follows: Ministry of Pensions and National Insurance, 3,692 sq. ft.; for National Assistance Board, 2,337 sq. ft.; for HM Customs and Excise, 408 sq. ft.; WVS 900 sq. ft.; S. Middlesex Rent Tribunal, 360 sq. ft.; for common user, 3,303 sq. ft.

	price per sq. ft.	s	d
preliminaries and insurances (including water supply for contractors)		3	9½
cost variation clause allowance		2	11½

STRUCTURAL ELEMENTS

Work below ground floor level Including ground floor slab.	4	3½
Frame or load-bearing element Reinforced concrete frame with r.c. floor at ground level, upper floors being reinforced beams and hollow tile construction.	5	2½
External walls Brick faced with hand-made sand-faced Leicestershire bricks. Surrounds to single windows, and main entrance are Portland stone. The mullions, heads and sills framing the large windows on front and rear elevations are in vibrated concrete. ratio : $\frac{\text{solid wall}}{\text{floor area}} = \frac{0{\cdot}596}{1}$	7	8
Windows Purpose made metal. ratio : $\frac{\text{windows}}{\text{floor area}} = \frac{0{\cdot}225}{1}$	4	4½
External doors Purpose made metal. ratio : $\frac{\text{doors}}{\text{floor area}} = \frac{0{\cdot}008}{1}$		4½
Upper floors Span of each type: 12 ft. and 13 ft. 6 in. hollow tile. Area: 714 sq. yd. Superloads: 120 lb. per sq. ft.	3	0
Staircases 1 staircase: width, 4 ft.; total rise, 21 ft.		8

analysis

	s	d
Roof construction	4	4½
Pitched steel strutting off hollow tile ceiling, 424 sq. yd.		
Hollow tile flat roof, 156 sq. yd.		
Roof lights		1½
2 glass domes.		
Glazing		6¼
Generally 32 oz. clear glass. Obscured glass on ground floor to height of 6 ft., Geogian wired glass in doors and borrowed lights internally.		
Total of structural elements	26	3¾

PARTITIONING

Internal partitions	1	9¼
Partitions generally are in hollow tile construction.		
9-in. engineering brick, 18 sq. yd.		
½-brick wall, 189 sq. yd.		
2-in. hollow clayblocks, 45 sq. yd.		
3-in. hollow clay blocks, 438 sq. yd.		
4-in. hollow clay blocks, 271 sq. yd.		
Screens		3
Glazed timber framed and blockboard.		
Internal doors	1	9¾
Flush timber. Single doors, 64; double, 2.		
Ironmongery		10
Aluminium door furniture.		
Fittings	1	3
Flagmast, statuary, counters, cloakroom fittings, fire appliance cupboard and grilles.		
Total of partitioning and fittings	5	11

FINISHES

Floor finishes			4	4½
Type of finish:	Terrazzo	Thermoplastic		
Area in sq. yd.:	32 sq. yd.	402 sq. yd.		
Type of finish:	Quarry tiles	Lino		
Area in sq. yd.:	82 sq. yd.	527 sq. yd.		
Type of finish:	Sundry			
Area in sq. yd.:	87 sq. yd.			
Wall finishes			2	0¾
Class B plaster.				
Ceiling finishes				9¾
Class B plaster.				
Roof finishes			4	9¾
Type of finish:	Copper	Felt		
Area:	424 sq. yd.	156 sq. yd.		
Decorations			2	1½
Emulsion paint and cold glaze.				
Total of finishes			14	2¼

SERVICES

	s	d
External plumbing		1
Stove enamelled pressed steel pipes.		
Cold water installation		6
Copper pipes.		
Sanitary fittings	1	9¾
Type of fitting: Fireclay and vitreous china.		
W.c's, 8; urinals, 4; basins, 7; sinks, 3.		
Heating, hot water and ventilation	4	10¼
Hospital type radiators and calorifiers supplied by low temperature, hand fired, solid fuel boilers.		
Internal temps.: 65°		
Air change: 2 No.		
" U " of walls: 0·3–0·35		
" U " of roof: 0·5–0·57.		

Gas installation (included in cost above)
2 points, for cooker and urn in mess room.

Electrical installation			2	4½
Type of point:	Tungsten	5 amp. sockets		
No. of each type:	124	14		
Type of point:	15 amp.	1 h.p. motor		
No. of each type:	2	1		
Wiring, No. 1.A. cable in conduit.				
Total of services			9	7½

Other elements		9½
Sundry occupational services and fire fighting equipment.		
Drainage		9¼
Surface water and soil pipes, cast iron or salt glazed stoneware.		
External works	3	9
Boundary walls, site works, fencing, paving.		
Shillings per sq. ft. of floor area		
(cost excluding drainage, external works and proportion of preliminaries etc.)		
£37,205		
= ———	= 67	7¾
11,000 sq. ft. (floor area measured inside external walls)		

COST SUMMARY

Ground floor area: 4,600 sq. ft.
Total floor area: 11,000 sq. ft.
Type of contract: ccc/WKS/1
Tender date: January 13, 1955
Work began: April 19, 1955
Work finished: October 15, 1956
Final price of foundations, superstructure, installations, finishes: £37,205
Cost of external works and ancillary buildings: £2,596
Total: £39,801

CONTRACTORS

General contractors: E. Gostling Buildings Ltd. *Sub-contractors—Portland stone:* Frank Mortimer & Co. *Cast concrete:* Conallcrete Ltd. *Felt roofing:* Pinkington's Asphalte Co. Ltd.). *Copper roof:* Holloway Metal Roofs Ltd. *Roof decking:* Stramit Boards Ltd. *Thermoplastic tiles:* Marley Tile Co. Ltd. *Cold glaze dados:* Robbs Cement Enamel Finishes Ltd. *Metal work:* W. Goldstone. *Metal windows:* G. E. Welstead Ltd. *Hardwood joinery:* F. Wildey Ltd. *Flush doors:* J. Sadd & Sons Ltd.

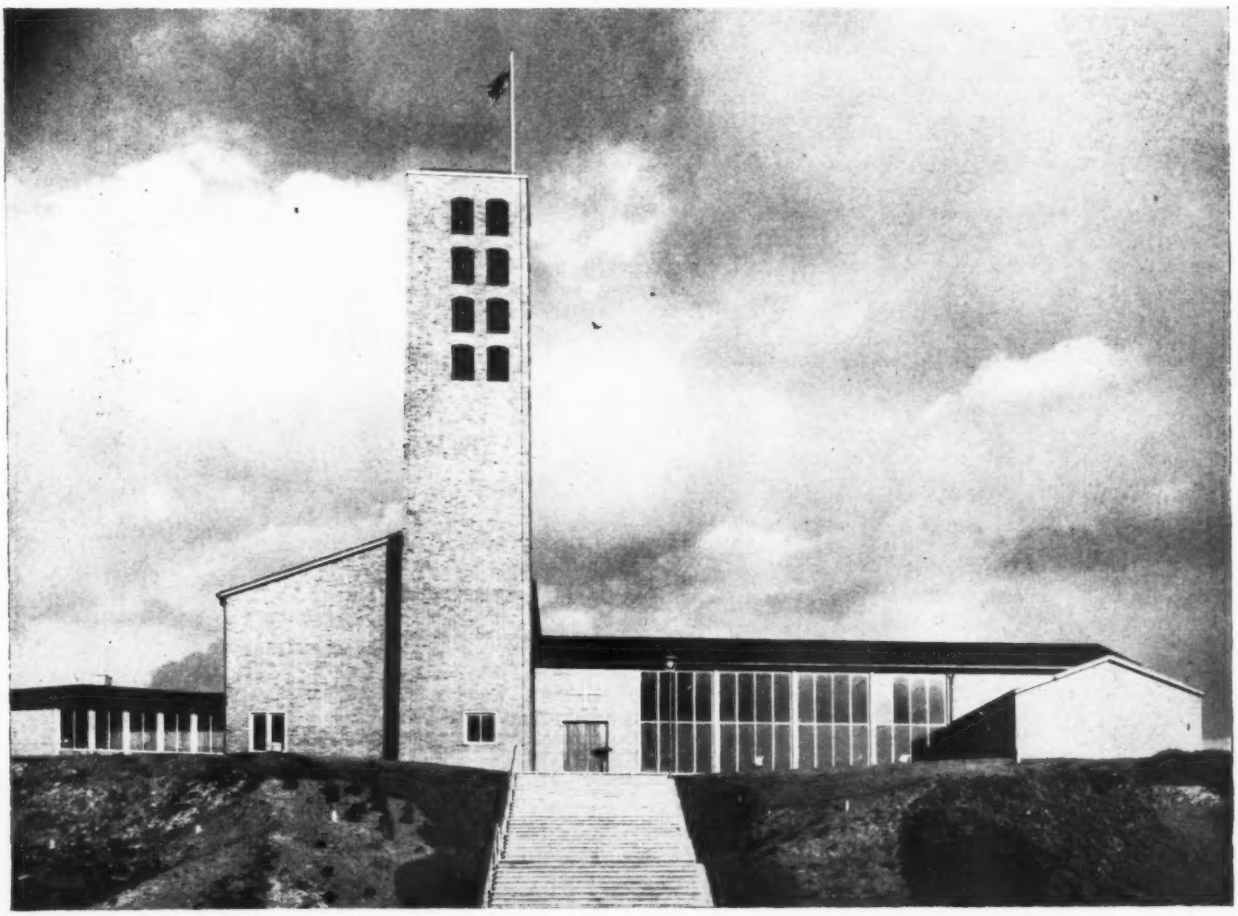
building illustrated

CHURCH and HALL

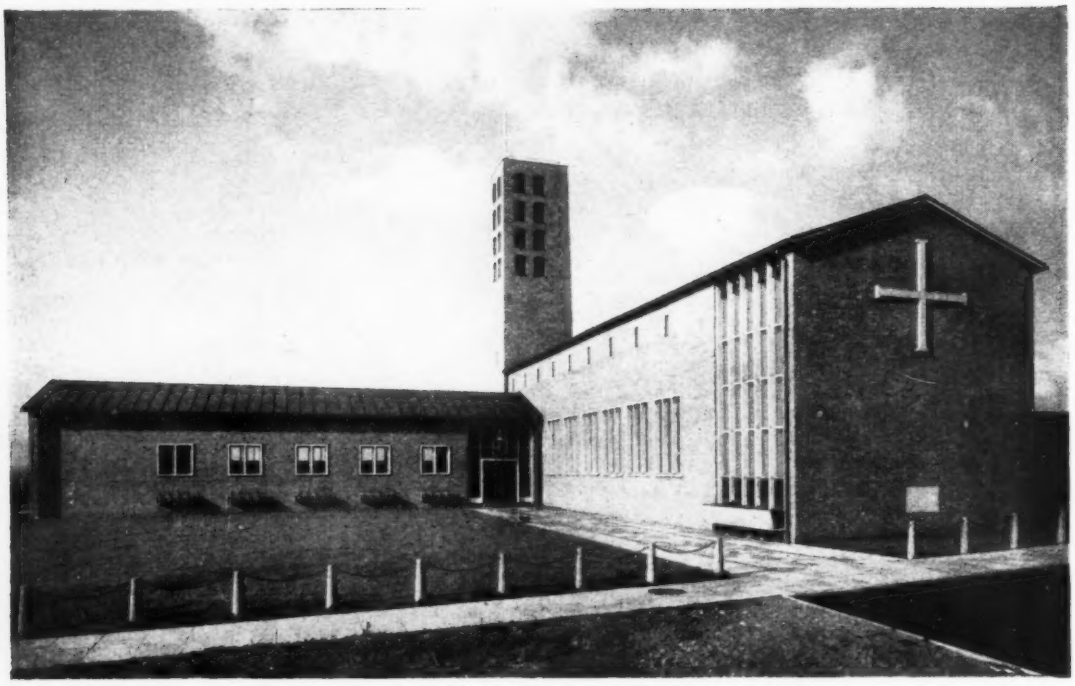
in BENTLEY, nr. DARLASTON, STAFFS., designed by LAVENDER, TWENTYMAN and PERCY
assistant architect G. W. SIDEBOTHAM; assistant C. E. MASON; quantity surveyors HENRY VALE & SON

Emmanuel church and hall at Bentley, near Darlaston, serves a newly-developed area between Walsall and Willenhall. The building has a Z-shaped plan, with the church, seating a congregation of 325, on an east-west axis, a hall seating 225 to the south, and a wing containing vestries and the vicarage to the north. A small chapel at the north-west corner of the nave seats 38 and is equipped with electric tube heaters to supplement the floor heating, so that the temperature can be raised quickly for week-day services. The church was built at a cost of £36,258.

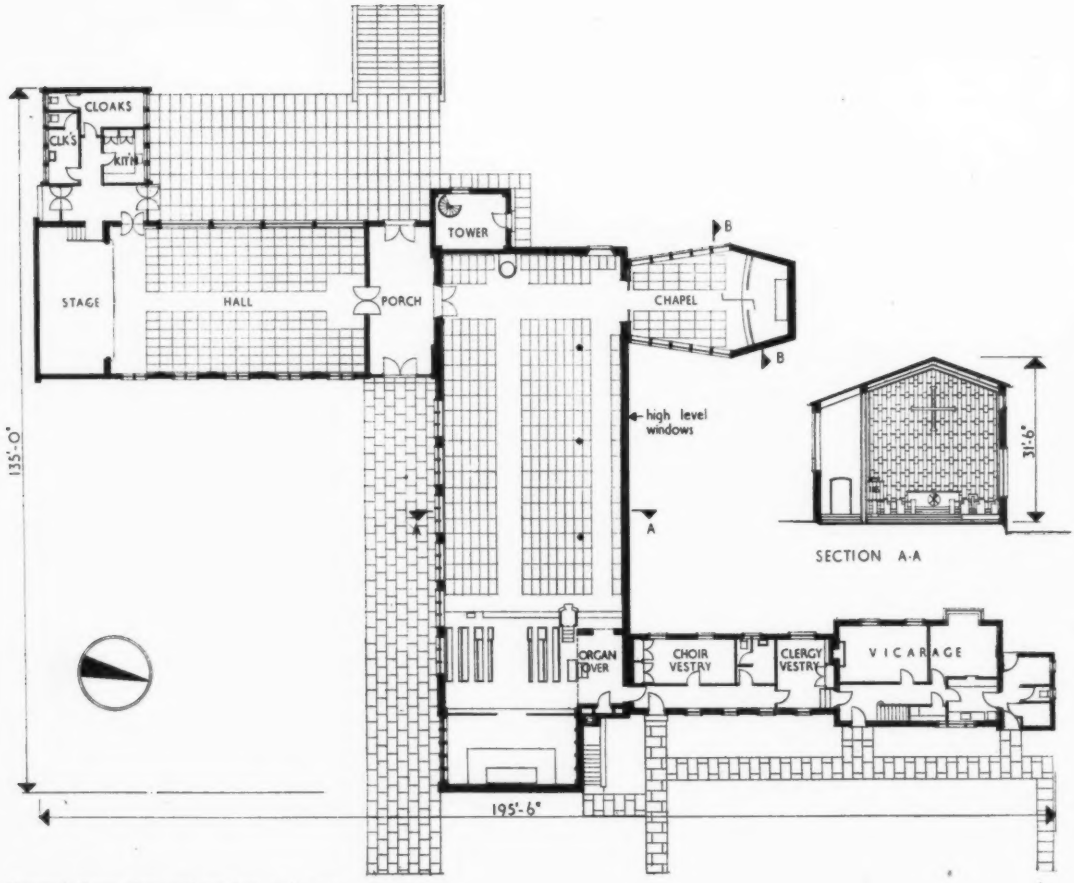
The west facade and the main approach steps.



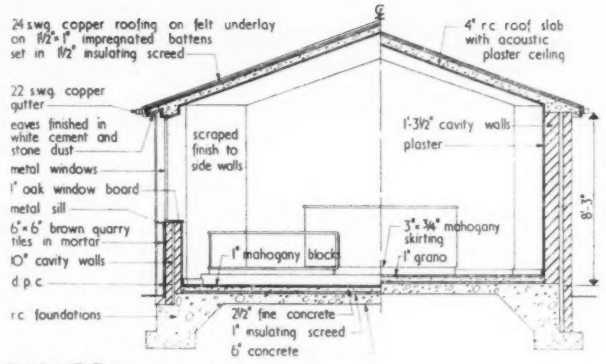
building illustrated



From the south-east.

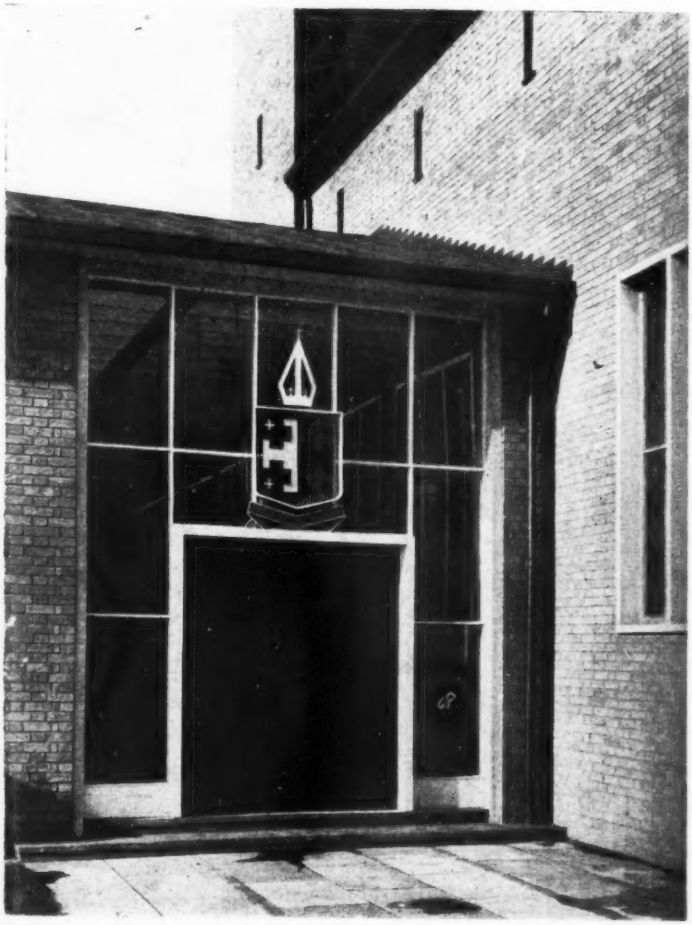


Ground floor plan and section A-A [Scale: $\frac{1}{32}$" = 1' 0"]



Section B-B [Scale: ⅛" = 1' 0"]

The east doorway to the porch, which divides the hall from the church itself. The diocesan shield over the entrance doors is of painted aluminium.



analysis

CLIENT'S REQUIREMENTS

A church to seat about 325, plus a chapel to seat about 38. A hall to seat about 225, with stage, kitchen and lavatories. A vicarage was also built as part of the scheme, but is not included in this analysis.

SITE

This church, hall and vicarage were built to serve a newly developed area lying between Walsall and Willenhall. The surroundings have been levelled, leaving a high mound for the church site. Pedestrian access is by a flight of steps leading up the western slope of the mound, while a road for vehicles leads up to a car park on the east side.

PLANNING AIMS

To design, with the budget available, buildings suitable for their purpose, and built of first-class materials so that future maintenance can be low. The church to be dignified and with an atmosphere conducive to worship. The buildings on their prominent hilltop site to be designed to compose well when seen from all angles.

The main porch is entered from both east and west sides and serves the hall as well as the church. The vicarage is placed on the north side, connected to the church by the vestry block; the clergy vestry also serves as the vicar's study.

The church seats 296 in the nave, 30 in the choir and 38 in the chapel, a total of 364. The hall seats 226.

The church is planned with one aisle on the north side, not normally used for seating, but useful as an overflow on special occasions. The 70-ft. high tower contains four bells; the south wall is vertical, the north wall has a batter of 1 in. in 4 ft. and the east and west walls a batter of 1 in. in 18 ft.

Daylighting: this was considered to be one of the most important factors in giving the right atmosphere for the church. The intention here was to produce soft, glare-free conditions with a fairly low intensity at the west end and a high intensity in the sanctuary. The south windows of the nave are fairly low so as to avoid excessive sunlight penetration, while the north windows are high. All windows have thin deep mullions to soften the light.

CONSTRUCTION

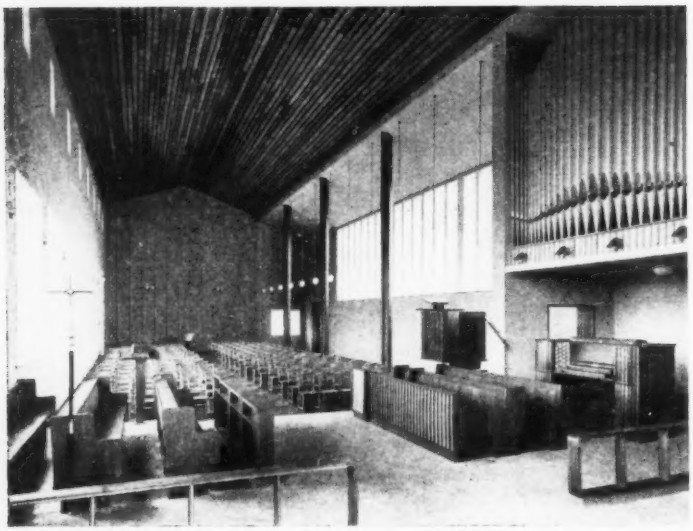
The church has a reinforced concrete frame with piers at 18-ft. centres supporting a r.c. roof consisting of two 4-in. thick inclined slabs. There are no trusses or ties, the outward thrust of the roof being resolved by triangular beams in the gable ends. There are three 12-in. diam. cruciform concrete columns between nave and aisle, to reduce the span of the north roof slab. The walls between columns are of cavity brickwork and the roof is lined with woodwool slabs. The tower is of simple concrete frame construction, faced with brick and with slate louvres in the openings.

The chapel has a similar type of roof to the church, except that the ridge slopes to suit the plan shape.

The hall has load-bearing brick walls, except where there are steel stanchions between the big windows, steel roof trusses and purlins supporting timber rafters and insulating board. The vestry block and the vicarage have load-bearing brick walls and timber roofs. Settlement joints are provided between church and vestry block, and between the church and hall.

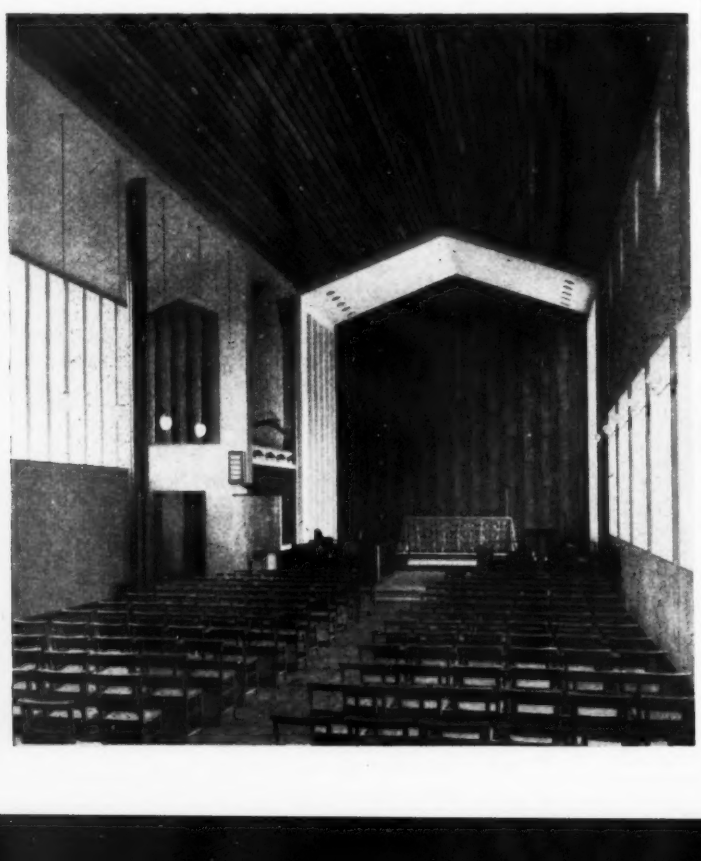
Walls faced with hand-made golden buff bricks. Roofs, gutters and downpipes of copper. Concrete window mullions faced with cast stone, and spandrels faced with Welsh slate. Bronze wall-ties and cramps. The diocesan shield over the main doors is of aluminium, painted.

building illustrated



The nave, seen from the sanctuary. The west wall is faced with perforated hardboard and the ceiling is of African walnut boarding with slots between for sound absorption.

The nave, looking towards the altar. The east wall is aced with patterned panelling in reeded walnut and the south and north walls are finished in rough textured plaster, coloured pale grey.



analysis

element and price per sq. ft.	s	d
preliminaries and insurances	5	0½
contingencies	1	0½

STRUCTURAL ELEMENTS

Work below ground level — 11 3½
Heating chamber, brick walls, concrete floor.
Stairs, concrete, grano finish.
Foundations, reinforced concrete.

Frame or load-bearing element — 5 3½
Church and tower, r.c. frame; chapel, r.c. mullions; hall, steel stanchions.

External walls — 14 3¾
Brick cavity walls generally. Brown quarry facing to walls under chapel windows. Slate facing above sanctuary windows. Cast stone surrounds and mullion facings.

$$\text{Ratio: } \frac{\text{solid wall}}{\text{floor area}} = \frac{1 \cdot 513}{1}$$

Windows — 2 9
Galvanized steel windows. Slate louvres to tower openings.

$$\text{Ratio: } \frac{\text{windows}}{\text{floor area}} = \frac{0 \cdot 273}{1}$$

External doors — 7
East porch doors, flush timber, painted dark blue with applied silver-gilt crosses. Specially designed handles of ebonised mahogany and silver-gilt. West porch doors, seeded hardwood, painted dark blue. Hall doors, glazed with deal frames. Tower and vestry, flush timber.

$$\text{Ratio: } \frac{\text{doors}}{\text{floor area}} = \frac{0 \cdot 027}{1}$$

Upper floors — 4½
Reinforced concrete floors to organ chamber and tower.

Staircases (cost included under " work below ground ")
Stair to heating chamber, concrete, grano finish. Width, 3 ft. 3 in. Total rise, 5 ft.

Roof construction — 4 8½
Church, chapel and tower, reinforced concrete; vestry block, timber trusses; hall, steel trusses.

Roof lights
None.

Glazing — 5½
Reeded glass in sanctuary and chapel windows. Clear glass elsewhere.

Total of structural elements — 27 5

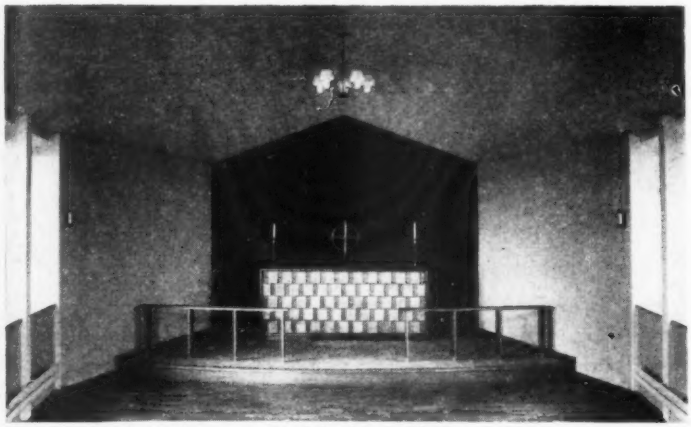
PARTITIONS AND FITTINGS

Internal partitions — 3½
Brick walls and breeze blocks.

Internal doors — 9½
12 single, 3 double doors in African mahogany.

analysis

	s	d
Ironmongery		4½
Door furniture, bronze in church, aluminium elsewhere. Lever handles.		
Fittings	3	1
Choir stalls, altars, lectern, hymn boards, cupboards, pulpit, etc., in African mahogany with small amount of grey sycamore. Font in Portland stone and green slate with polished bronze bowl.		
Four bells, with ringing equipment, iron stairs and ladders, in the tower.	3	0½
Total of partitions and fittings	7	6½



The chapel at the north-west corner of the church. The floor finish is with mahogany blocks and the ceiling with acoustic plaster.

FINISHES

Floor finishes — 4 5½

Type of finish:	Quarry tile	Grano	Thermo-plastic tiles
area in sq. ft.:	477	1,052	405
price in shillings per sq. yd:	21s 6d & 27s	7s 6d	19s
Type of finish:	Hornton stone	Wood blocks	Soft wood
area in sq. ft.:	830	4,644	380
price in shillings per sq yd.:	52s 6d & 66s	38s & 28s 2d	18s

The nave floor is finished with mahogany blocks, the sanctuary floor, Hornton stone, the porch, Hornton stone and Welsh slate, the hall opepe blocks, and vestries, thermoplastic tiles.

Wall finishes — 3 2½

North and south walls finished in rough textured plaster coloured pale grey, contrasting with smooth white plaster round windows. West wall is faced with perforated hardboard, painted grey-green with glass-silk absorbent behind. East wall is panelled with a pattern in reeded walnut and walnut-veneered blockboard.
In the porch, wall surrounding the doors to the church is faced with Painswick stone. Other walls of rough textured plaster, painted green.
Hall and vestries have plastered walls.

Ceiling finishes — 5 2¾

The nave ceiling is of slightly fluted African walnut boards with slots between for acoustic absorption. Chapel ceiling is of acoustic plaster, sprayed pale blue.
Hall and vestries have plain plastered ceilings.

	s	d
Roof finishes	9	3¾
117 sq. ft. of asphalt. 3,897 sq. ft. insulated copper.		
Decorations	1	2½
Water paint and emulsion paint inside.		
Total of finishings	23	4¾

SERVICES

External plumbing		10
Copper gutters and rainwater pipes		
Hot and cold water installation		1
Cold water service only, except for local electric water heater in kitchen.		
Sanitary fittings		3
3 high level w.c.s; 3 lavatory basins; 1 sink; 1 urinal; 1 water heater.		
Heating and ventilation	6	6½
Heating is by warm water coils buried in the floors, which are of a sandwich type with a vermiculite layer in the middle. Auxiliary heating by electric tubes is provided in the Chapel, so that it can be warmed up quickly for week day services. The rest of the buildings are heated by radiators supplemented by blower heaters in the hall. All heating is from a boiler house below the sanctuary, containing an oil-fired boiler.		
Electrical installation	2	3¾
All lighting by tungsten fittings, 78 fittings, 6 skirting points. Electric tubular " top up " heating in chapel.		
Total of services	10	0½

£33,885 12s. 6d.	Shillings per sq. ft. of floor area: (net costs inc. external works)	= 86 9
7806 sq. ft.	(floor area measured inside external walls)	

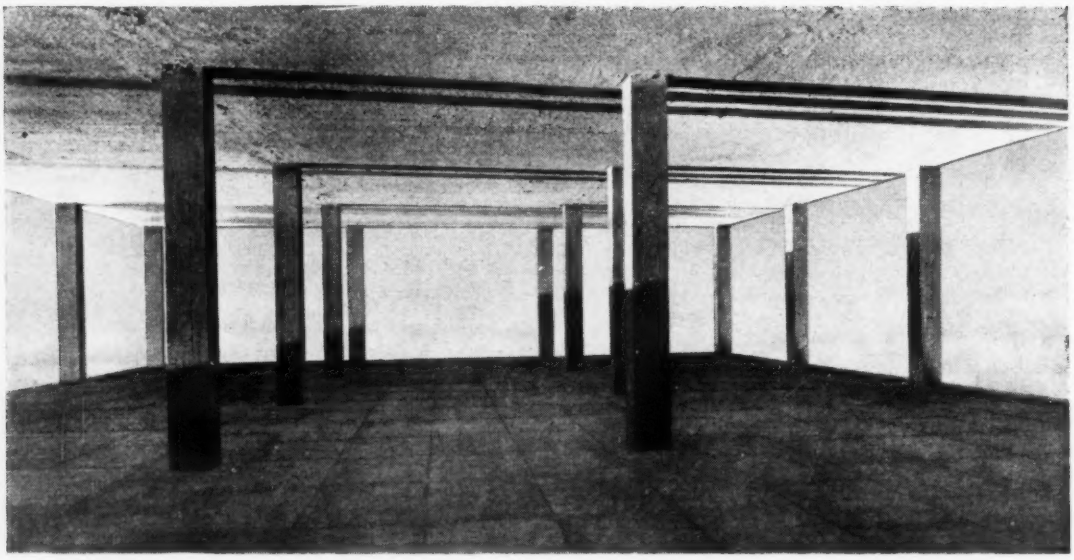
COST SUMMARY

Ground floor area:	7,537 sq. ft.
Total floor area:	7,806 sq. ft.
Type of contract:	Lump sum
Tender date:	November 18, 1955
Work began:	March 1, 1954
Work finished:	June 30, 1956

Tender price of foundations, superstructure, installations and finishes: £33,885 12s. 6d.
Tender price of external works and ancillary buildings: £2,372 12s. 4d.
Total: £36,258 4s. 10d.

CONTRACTORS

General contractors: Henry Willcock & Co. Ltd. *Sub-contractors—Reinforcement and concrete design:* Twisteel Limited. *Metal windows, ironmongery and wrot metal work:* James Gibbons Ltd. *Cast stone:* Gloucester Stone Co. Ltd. *Slate and marble:* W. H. Fraley & Sons Ltd. *Sanitary fittings:* A. D. Foulkes Ltd. *Asphalt roof to tower:* Limmer & Trinidad Lake Asphalt Co. Ltd. *Copper roofing (church and chapel):* Holloway Metal Roofs Ltd. *(elsewhere):* Broderick Insulated Structures Limited. *Bells:* John Taylor & Co. *Suspended lath to aisle ceiling:* Colterro Ltd. *Lightning conductor:* W. Furse & Co. Ltd. *Heating installation:* G. N. Haden & Sons, Ltd. *Electrical installation:* W. H. Podmore Ltd. *Painswick stone in porch :* South Western Stone Co. *Flooring (woodblock and semastic):* J. A. Hewetson & Co. Ltd. *Organ:* W. Hawkins & Son. *Garden layout:* D. N. D. Hoddy.



Illusion v.v.

It depends which way you look at it. With the Plate System by Truscon a floor, seen upside down, becomes a ceiling. And v.v. (*vice versa*). Can you tell which is really the floor?

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The Plate System does not compress an architect's work within the framework of a stereotyped plan nor does it attempt to do his work for him. It is more than a system of design, for combined with careful planning and the use of cranes and precast components we have made it a very rapid system of construction. It is cheap in cost but not in appearance.

The outstanding application of the Plate System is to flats and offices : and recent developments have widened its scope to industrial work.

q.e.d. Truscon

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Architects' Journal 7.11.57

working detail

COVERED WAYS AND CANOPIES: 25

CANOPY OVER ENTRANCE: CONCERT HALL IN BERLIN

Paul Baumgarten, architect (material supplied by Hans Haenlein)

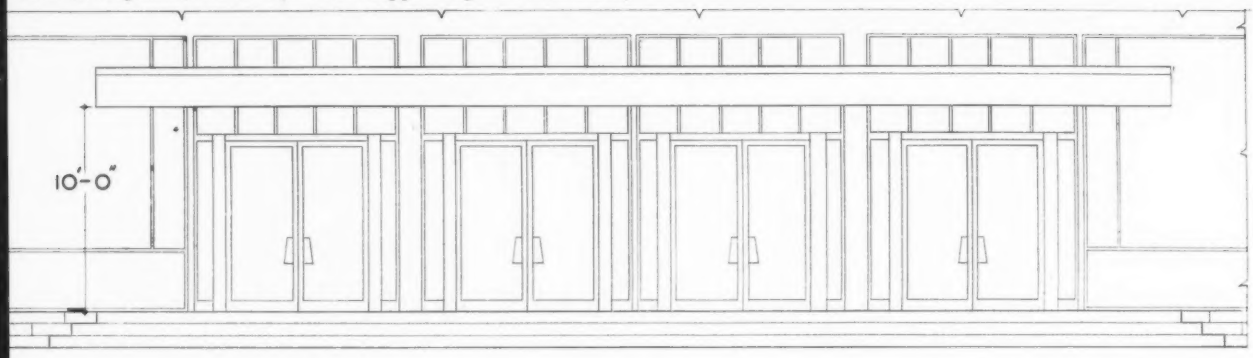
This is a good example of a type of canopy which is cranked in section, with patent glazing on the surface adjacent to the facade and zinc cladding on a steel and timber frame on the surface farthest from the facade. Both surfaces discharge into a central gutter from which water is conveyed inwards to the building face by a single pipe which continues in the line of the outer slope. The horizontal ribbing on the underside is formed by the zinc welts.

working detail

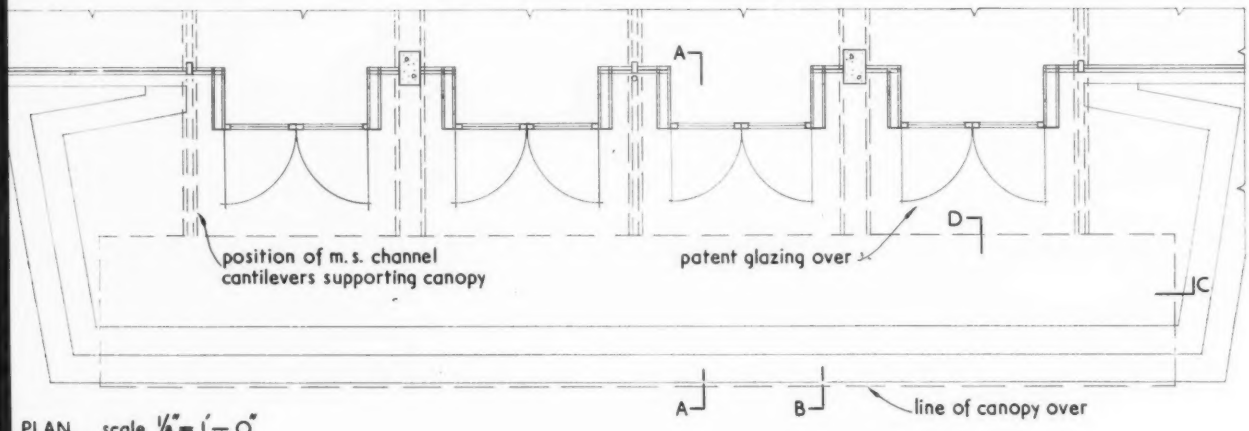
COVERED WAYS AND CANOPIES: 25

CANOPY OVER ENTRANCE: CONCERT HALL IN BERLIN

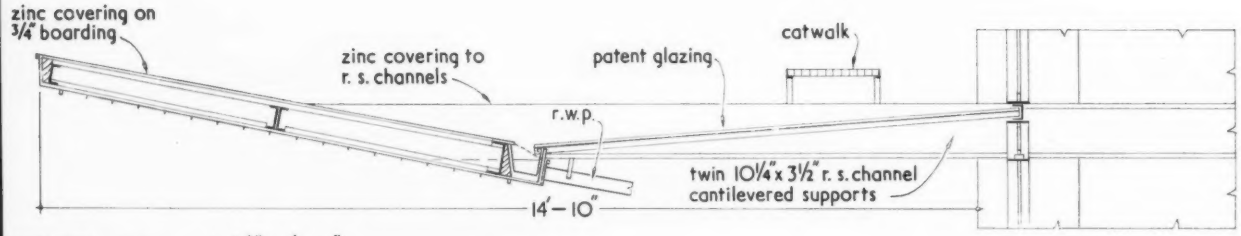
Paul Baumgarten, architect (material supplied by Hans Haenlein)



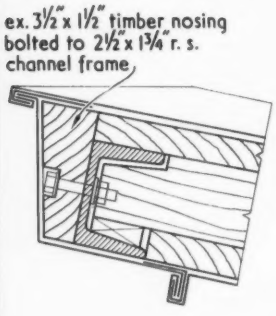
ELEVATION. scale 1/8" = 1'-0"



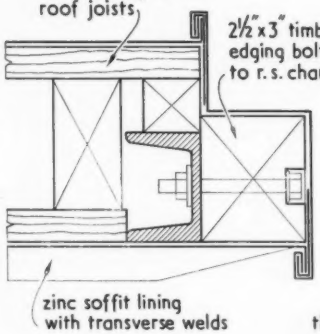
PLAN. scale 1/8" = 1'-0"



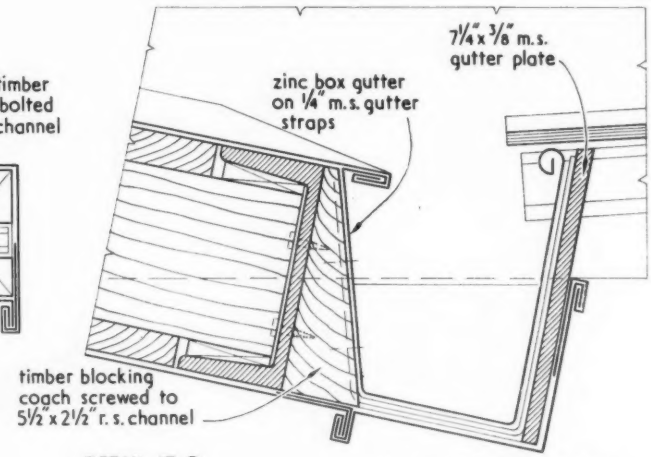
SECTION A-A. scale 3/8" = 1'-0"



DETAIL AT B.
scale 1/4 full size



DETAIL AT C.



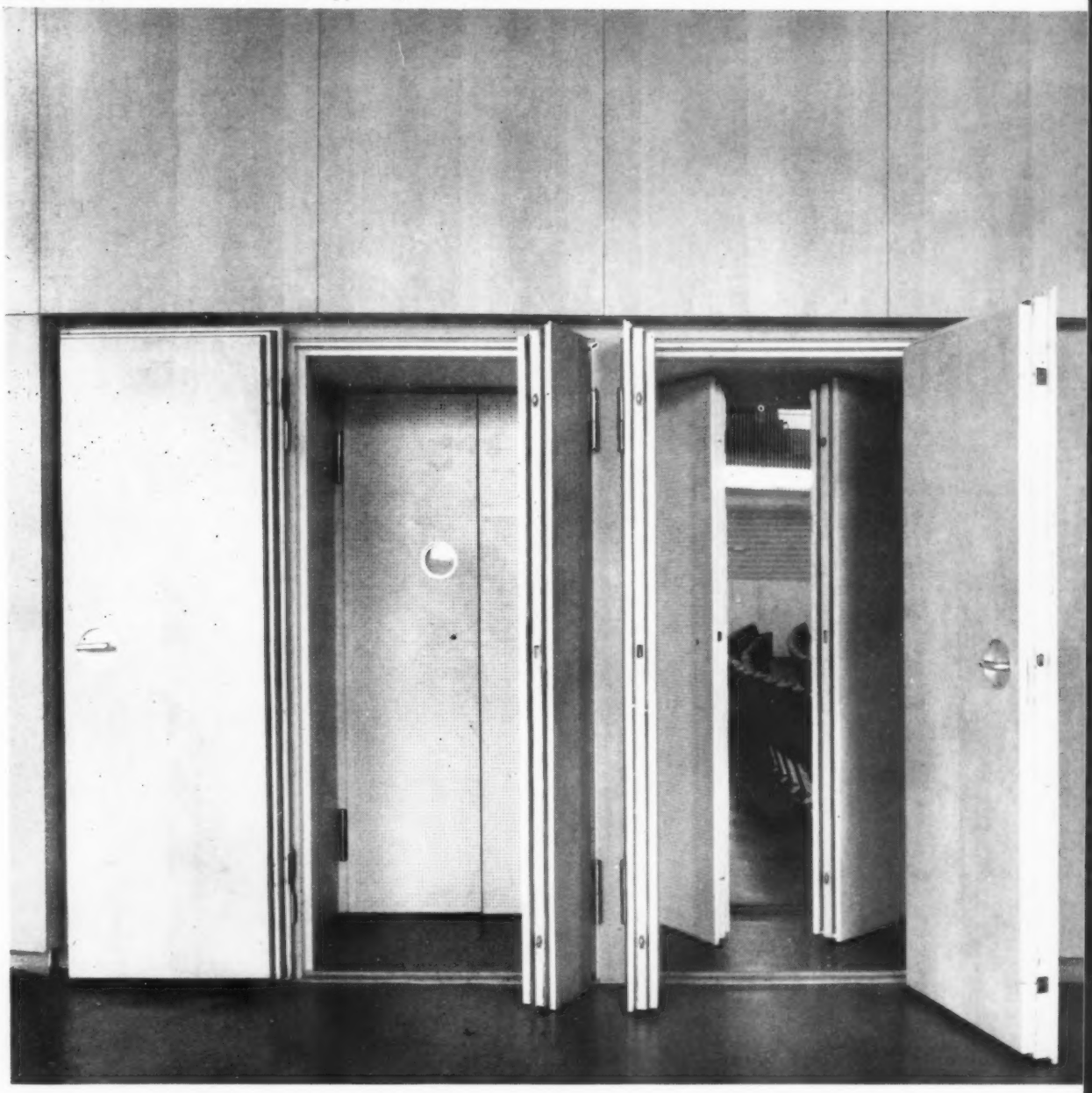
DETAIL AT D.

note: figured dimensions in feet and inches are approximate

working detail

ACOUSTIC DOORS: CONCERT HALL IN BERLIN

Paul Baumgarten, architect (material supplied by Hans Haenlein)

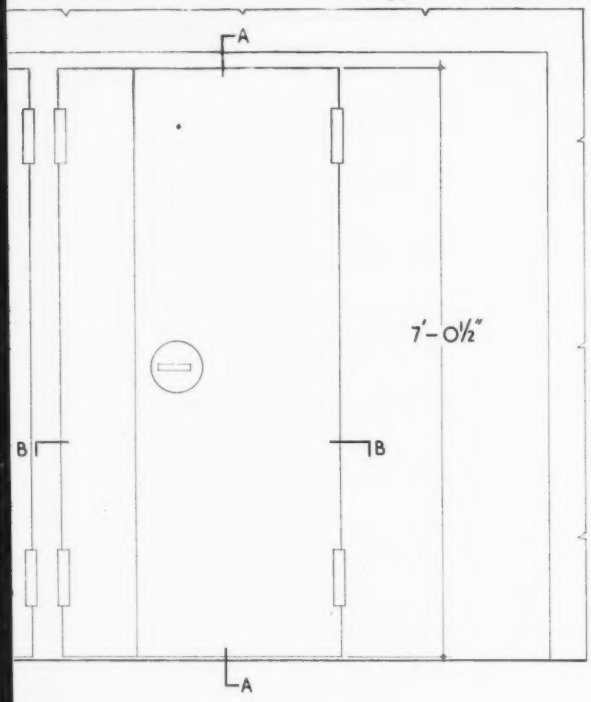


An unusual feature of these acoustic doors is that both door frames and jambs are formed in mild steel angles. All doors are double-rebated (including the thresholds), the metal parts which enclose the mineral wool core are screwed together with felt seatings between and rubber sealing strips are glued to the re-entrant angles of the door rebates to ensure silent closing.

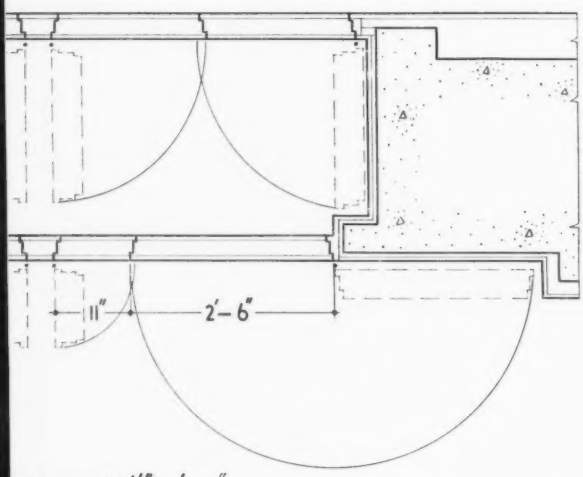
working detail

ACOUSTIC DOORS: CONCERT HALL IN BERLIN

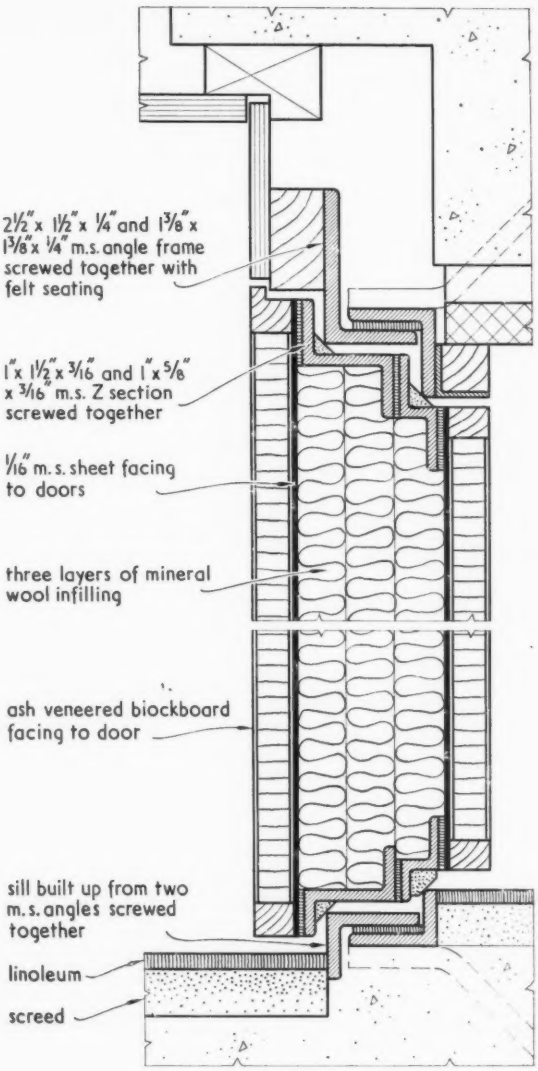
Paul Baumgarten, architect (material supplied by Hans Haenlein)



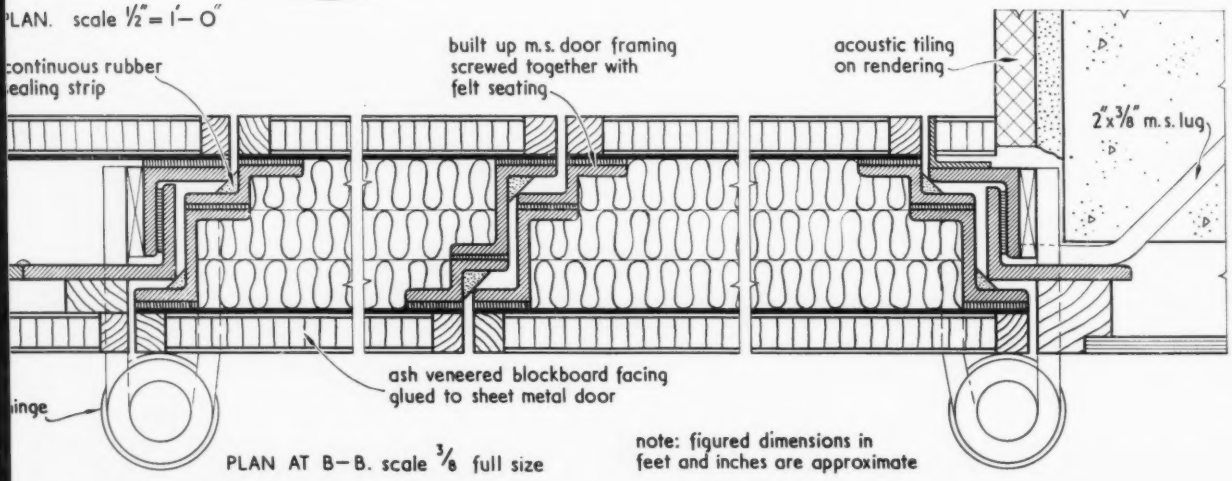
ELEVATION. scale ½" = 1'-0"



PLAN. scale ½" = 1'-0"



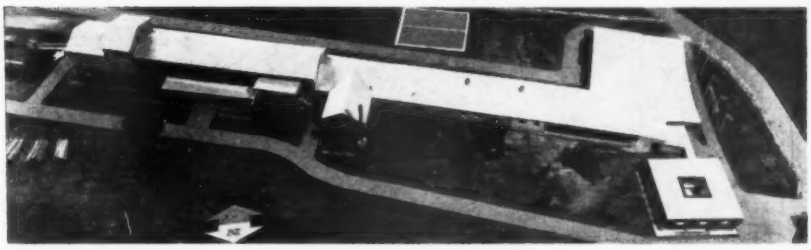
SECTION A–A. scale ⅜ full size

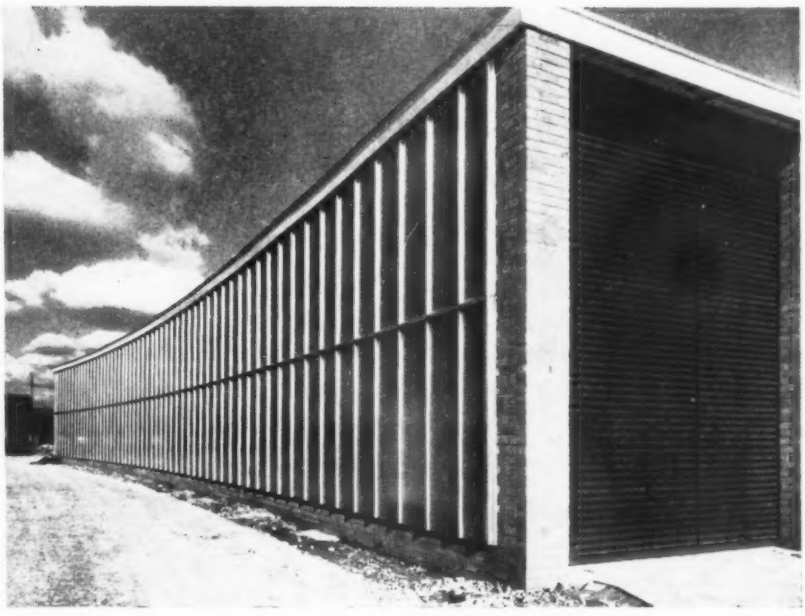


PLAN AT B–B. scale ⅜ full size

note: figured dimensions in feet and inches are approximate

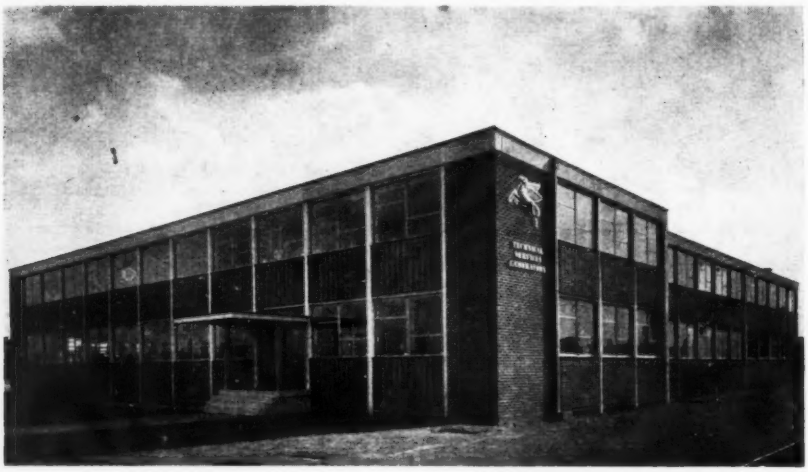
BOARD MILL AT QUEENSFERRY, NR. CHESTER





The new insulation board mill for J. R. Gordon and Co. Ltd. at Queensferry, near Chester, was designed by Ronald S. Biggins and Associates. It has a capacity of 100,000 sq. ft. of board a day and produces wood pulp from local forest thinnings by a German process. The illustrations show, top, a model of the mill, and below, the front elevation. Abroad it normally takes two years from placing the machinery contracts to build a plant of this kind; production began in May, 14 months after the signing of the machinery contract and 9 months after site work began. A very careful schedule of work was prepared and adhered to, to enable installation to proceed as each section of machinery arrived.

LABORATORY AT CORYTON. ESSEX



Mobil's new Technical Services Laboratory at Coryton, architect S. Greenwood, was specially designed and constructed to enable laboratory work to be expanded and more closely co-ordinated. The structure is in three main blocks, with a floor area of 25,000 sq. ft. and is built on an approximately 10-ft. grid on piles, of r.c. framed construction, faced with silicone treated precast concrete facing units, with through end walls and panels below windows in facing brick. The flat roof is surfaced with built up felt roofing. Quantity surveyors, D. G. Burrell and Partners. Contractors, John Laing and Sons Ltd.

Announcements

PROFESSIONAL

Covell and Matthew, F./A.R.I.B.A., of 34, Sackville Street, Piccadilly, W.1 (telephone: Regent 2291), announce that they would be pleased to receive trade literature concerning all systems of the slotted angle.

The S.W. Essex Technical College and School of Art announce that their annual architects' ball will be held at the College on November 13. Old scholars requiring tickets should contact Miss J. Fulford, secretary, or P. J. Barton, chairman of the ball committee.

TRADE

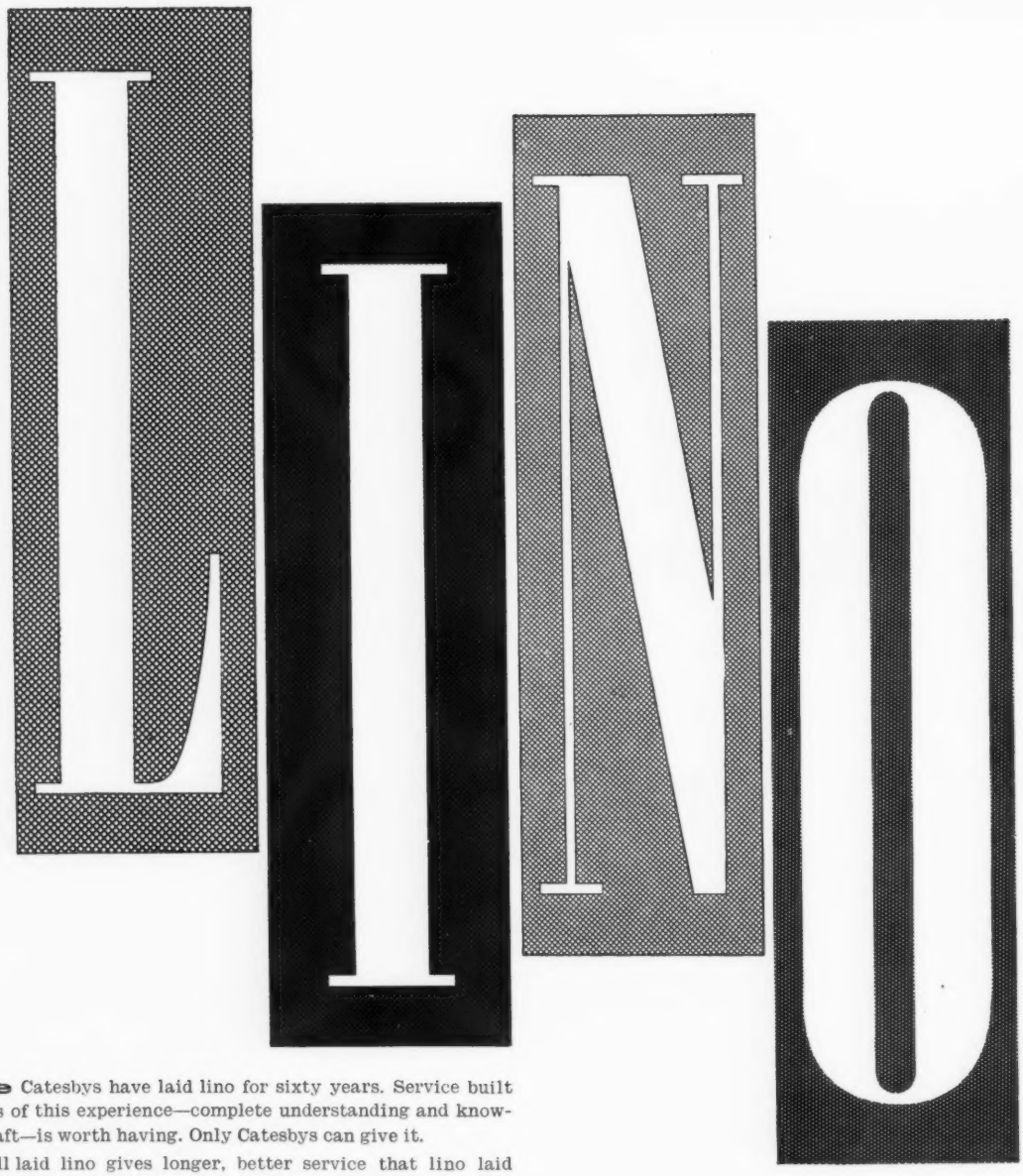
British Aluminium Co. Ltd. announce that their Midland branch sales office has moved to 109, Hagley Road, Edgbaston, Birmingham, 16 (telephone: Edgbaston 4521).

Lumenated Ceilings Ltd., of Alliance House, Caxton Street, London, S.W.1, have formed a subsidiary company in Germany. The head office is at: 123, Hansaring, Cologne, where M. K. Hansen is in charge.

Key Engineering Co. Ltd. announce that their head offices have moved to Larkfield, near Maidstone, Kent (telephone: Maidstone 7461 and 7233).

Richard Hill Ltd., steel contractors, have moved to 299, Oxford Street, London, W.1 (telephone: Mayfair 3538) where they have opened a design department.

Fitted Interiors Ltd. announce their inauguration as specialists in fitted furniture and interior design. Their address is 5, Suffolk Street, Pall Mall, S.W.1 (telephone: Trafalgar 5322) where they would be pleased to receive trade catalogues, etc.



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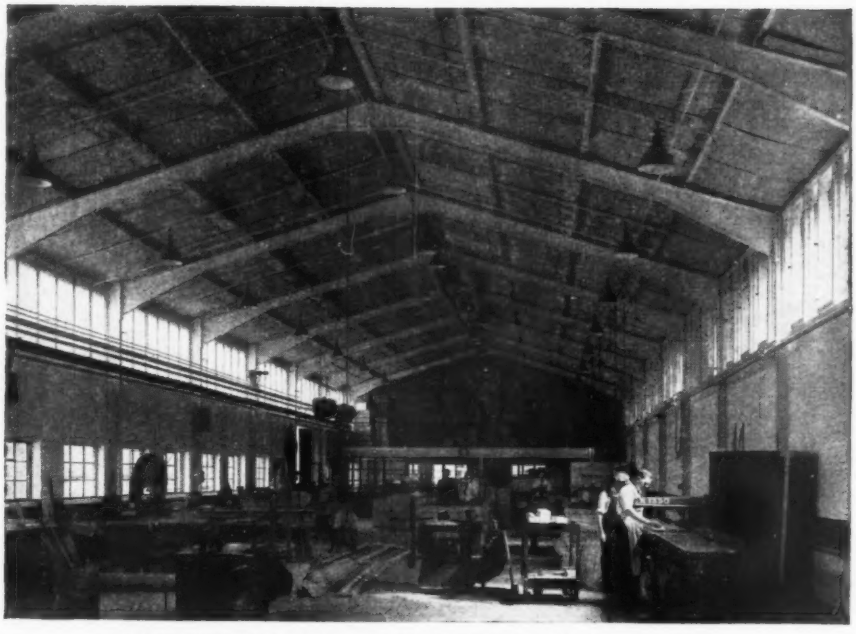

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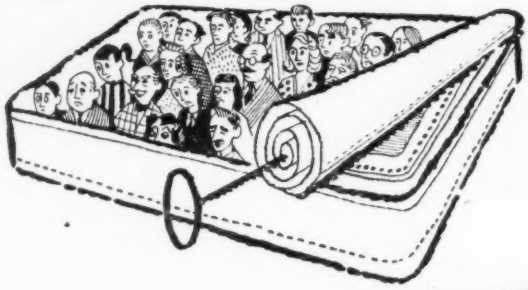

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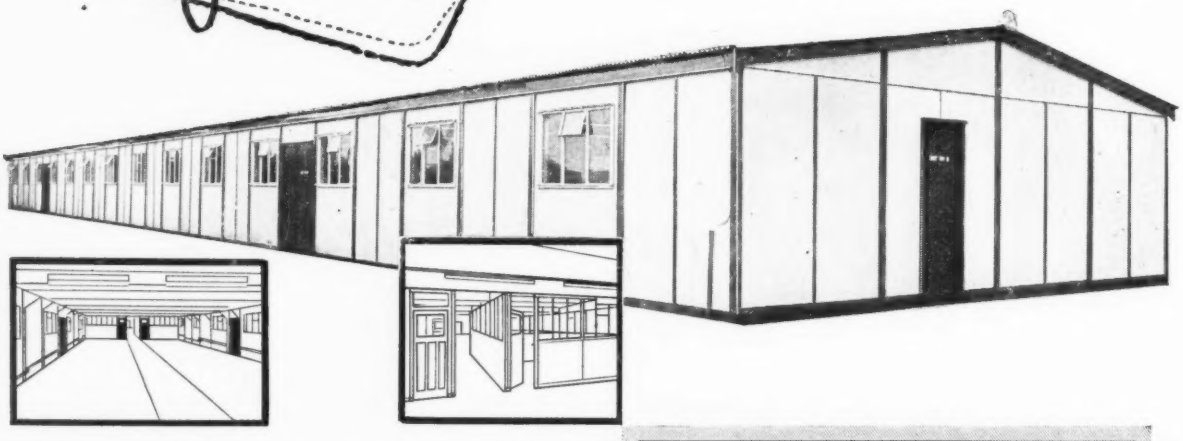

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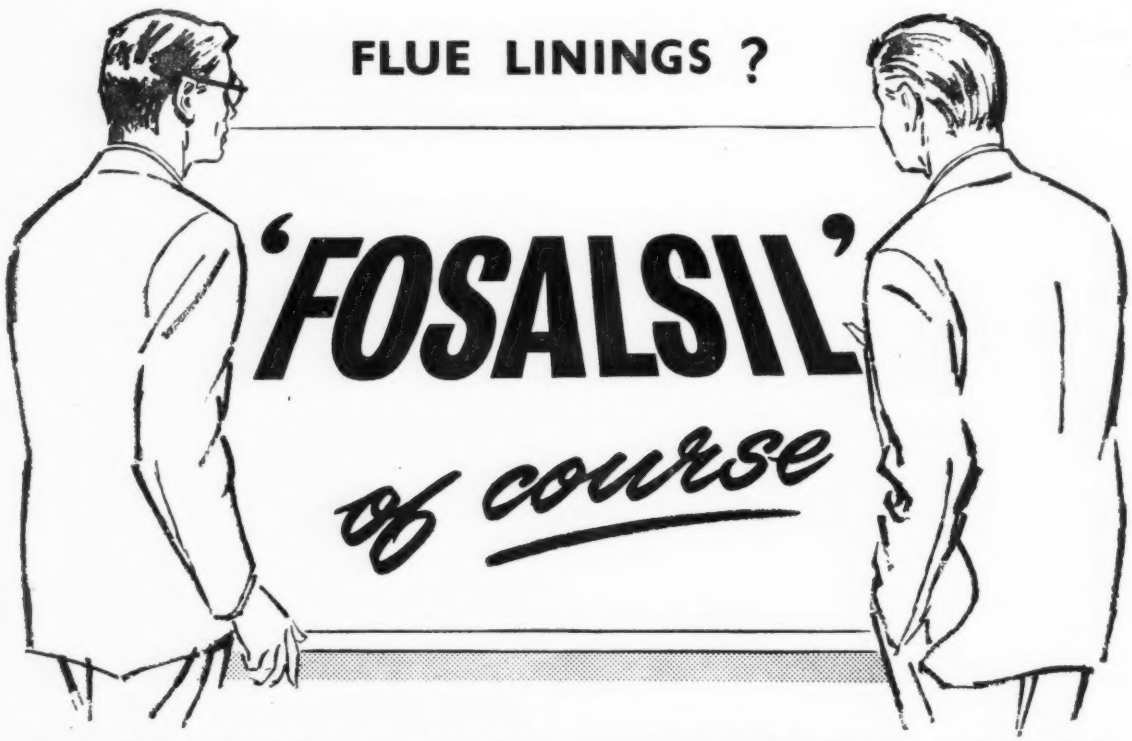

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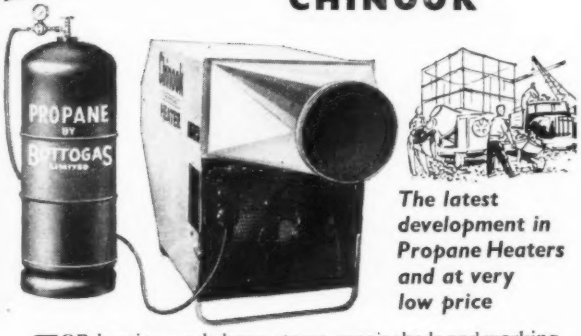

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FOR heating workshops, stores, repair sheds and working on open sites; for carpet and in situ-drying etc., and for preheating frozen plant and equipment. Operated on Bottogas Propane, the Chinook combines new portability with precision heat control. Completely self-contained with a special built-in engine, it is mounted on semi-pneumatic ball-bearing wheels to be ready for use anywhere.

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TILLEY BOTTOGAS FLOODLIGHTING EQUIPMENT

THIS equipment is ideal for building operations, road and mains repairs, floodlighting buildings, tunnel inspection, etc.

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10,000 *mean reflected* **Candle Power**

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BT 26 TILLEY SITE LIGHT (Portable Hurricane Lamp).

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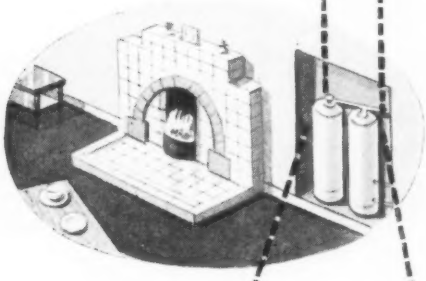

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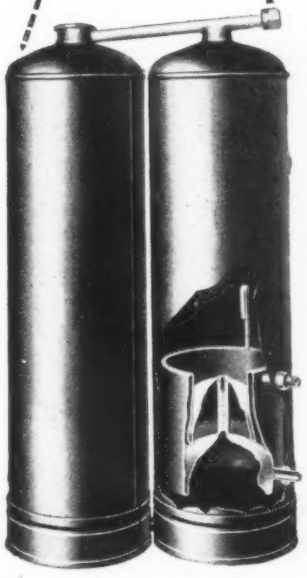

Cuthell's DUBLOTANK is an outstanding example of very high efficiency in compact form. Occupying floor space of 1ft. 11ins. by 11ins., it can be easily fitted in a cupboard or wall recess. The standard DUBLOTANK, a scientific development of the orthodox copper cylinder, is of ample strength, and tests to 70 lbs. per sq. inch. The DUBLOTANK, when fitted with the Primatic Unit, gives an output capable of supplying *Background Heating* for other rooms, as well as domestic hot water needs.

Full particulars on request.

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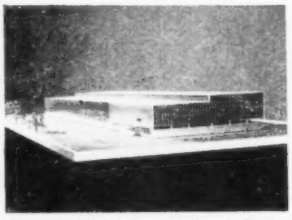
Preview

January Architectural Review

Each New Year, the Review devotes an entire special issue to a survey of what the leading architectural offices in Britain have in hand on the first day of the year.

Assembly Hall of a girls' comprehensive school at Southwark. Architects, Chamberlin, Powell and Bon.

The view presented by *Preview* is an extremely varied one; the buildings it covers range from a pub to a synagogue, by way of schools, universities, colleges, hostels, hospitals, factories, office blocks, churches, airports, planning schemes, housing layouts, a market and a seaside pavilion; and the offices and architects responsible for these projects-in-progress read like a directory of the country's top talent (as indeed they are)—the L.C.C., the Ministry of Works, ACP, T. P. Bennett and Sons, Bridgewater and Shepheard, James Cubitt and Partners, Llewelyn Davies, Easton and Robertson, Frederick Gibberd, Erno Goldfinger, Gollins, Melvin and Ward, Sir William Holford, Arthur Ling, Sir Leslie Martin—and so on down the alphabet to Yorke Rosenberg and Mardall.



Factory at Wokingham. Architects, Yorke, Rosenberg and Mardall.

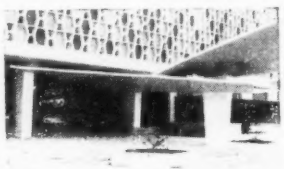
The reflection in *Preview's* mirror may prove flattering or alarming, but even where there appear to be grounds for satisfaction at the design of the buildings themselves, the environments into which they are being fitted still leave much to be desired, and though this is beyond the architects' control, it is not exempt from the watchful eye of the *Counter Attack Bureau*, whose month by month vigilance will be maintained even in this special issue.

Smithsons
Building Exhibition
ONNO

November Architectural Review

The controversial Smithsons will make their first appearance as contributors to the Review in November, with an illustrated study of the Shape of the Community, in which they set against the exhausted diagrams of CIAM planning their vision of a more humane type of city. For non-visionaries—and for visionaries too—*Skill* will provide a full coverage of the Building Exhibition from the technical point of view, as well as an *Interiors* treatment of G. A. Jellicoe's restaurant and shopping floors at Harvey's of Guildford.

Visionary qualities, spurred by hard practical necessities, illuminate Kenneth Browne's proposals for applying the ONNO traffic-directing technique to Park Lane and west Mayfair. The study of the functional tradition is advanced by Brian Spiller's article on Georgian Breweries. Buildings described in this issue will include the new Bowater Factories by Farmer and Dark, whose cladding provides a practical follow-up demonstration of patent-glazing techniques, and Rangoon University and Technical Institute, by Raglan Squire and Partners, extensively illustrated in colour. Professor



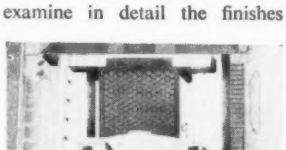
Entrance to the Library of the new Rangoon University. Architects, Raglan Squire and Partners.

Pevsner reviews Tschudi Madsen's important book on the Origins of Art Nouveau, whose character is summed up in the title *Beautiful and, if need be, useful*, and Dr. S. Lang will provide a note on Architectural Visitors to Padua, based upon a register kept by the university there, in which practically every English architect and amateur of note signed his name when passing through.

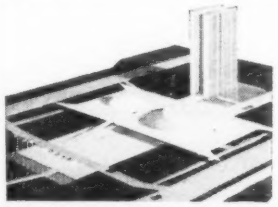
TUC
Brasilia
Street Lighting

December Architectural Review

Design for public and administrative functions will form the subject of the two most important features in the Review for December. The *TUC Memorial Building*, designed by David Aberdeen, which is only the second public building of consequence to go up in London since the War, will be described and illustrated for the first time in completed form, and a supporting article in *Skill* will examine in detail the finishes and mechanical equipment that make this one of the most lavish buildings—outside the commercial field—of recent years. The other major feature is concerned with *Brasilia*, the projected new capital city for Brazil, typically grandiose and Latin-American in conception, but more likely than most such schemes to achieve completion. Sir William Holford,

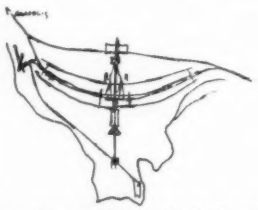


Airview drawing of David Aberdeen's TUC Memorial Building.



Oscar Niemeyer's design for the Congress Building at Brasilia.

who was one of the jury who assessed the competition for the new capital's plan, introduces the project and its site, discusses the competition, and adds a few words by way of introduction to the brilliant and unconventional winning scheme, by Lucio Costa, father of Brazil's modern movement, whose report is published in English for the first time.



One of Lucio Costa's sketches for Brasilia.

Another father of his art, *John Britton*, founder of English topographical studies, will be the subject of an historical article by Peter Ferriday, and the bicentenary of the birth of the great neo-Classical sculptor *Antonio Canova* is celebrated by one of England's leading neo-Classical scholars, F. J. B. Watson, with a chronicle of English visitors and admirers at the sculptor's studio in Rome. Gordon Cullen will tackle one of the most vexed and debated problems of outdoor detailing, *Street Lighting*, in terms of distribution and siting, as well as the design of equipment, and interiors to be described include the IBM offices and the Garden Centre, both in new office blocks in Wigmore Street. Foreign reports will cover the *Triennale di Milano*, and the *Berlin Interbau* exhibition, and regular features like the *Counter Attack* Bureau and Robert Melville's provocative art-criticism will continue.

CLASSIFIED ADVERTISEMENTS

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

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

Public and Official Announcements

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

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Vacancies for ARCHITECTS and SURVEYING ASSISTANTS in the Building Regulations Division as follows:—

(*a*) For surveys of existing premises and consideration of proposals for alterations and new construction in the Theatres Section; and

(*b*) For building control work in connection with applications under the London Building Acts and Bye-laws as regards compliance with the Council's construction and means of escape standards.

Salaries up to £860, with starting rates according to qualifications and experience.

Application form and particulars from the Architect (Ref. AR/EK/47/57), The County Hall, S.E.1. (1610) 7707

OXFORD REGIONAL HOSPITAL BOARD

Applications are invited from qualified Architects for the appointment of ASSISTANT ARCHITECT (£700 × £25 (3) × £30 (1) × £35 (6)—£1,015 p.a.), in the Regional Architect's Department. Previous hospital experience is not essential.

Candidates may obtain further particulars from the Regional Architect.

Applications stating age, training, qualifications and details of experience, with the names of two referees from whom testimonials may be obtained, should be submitted to the Secretary, Oxford Regional Hospital Board, 43, Banbury Road, Oxford, by not later than 22nd November, 1957. 7935

LANCASHIRE COUNTY COUNCIL

PLANNING ASSISTANTS required at PRESTON, LIVERPOOL, BURY and MANCHESTER. Applicants should be studying for or possess a qualification in architecture, civil engineering, planning or surveying. Experience of development control and/or the preparation of town maps is desirable.

The posts carry a maximum salary of £1,030 per annum and qualified candidates will rise to this. Appointments will be made, having regard to qualifications and experience, in accordance with the Scheme of Conditions of Service of the National Joint Council.

Applications, stating appointment applied for, giving age, qualifications, present appointment, and two referees, to County Planning Officer, East Cliff County Offices, Preston, by 13th November, 1957. 7976

CANNOCK RURAL DISTRICT COUNCIL
ARCHITECTURAL ASSISTANT

Applications are invited from suitably qualified persons for the above permanent post on the staff of the Engineer and Surveyor. Salary—Grade A.P.T. III (£845—£1,025).

The starting salary will be fixed at a point within the Grade depending on the qualifications and experience of the successful candidate.

Housing accommodation in the form of a self-contained maisonette will be available, if required, at a reasonable rent. Travelling allowance will be paid on essential-user scale. It is the Council's usual practice to operate the assisted car-purchase scheme, when necessary, and to assist with removal expenses.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, medical examination and one month's notice on either side.

Applications, giving full details of age, qualifications and experience together with the names and addresses of two referees, to reach the undersigned by Tuesday, 12th November, 1957.

JOHN P. ROBERTS,
Clerk of the Council.

Council Offices,
Penkridge,
Stafford. 7946

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

Applications are invited for the appointment of DIVISIONAL ARCHITECT for the Northern area of the Administrative County based upon Harrogate. Salary range £1,460 × £55 (2)—£1,570.

Applicants must possess in an ample degree the professional and administrative ability to undertake responsibility for the organisation and supervision of a large volume of maintenance and adaptation works to County owned buildings and for the supervision of staff.

The appointment is subject to the provisions of the Local Government Superannuation Acts.

The successful candidate will be required to pass a medical examination.

Applications on forms obtainable at this office should be delivered not later than the first post on Wednesday, 20th November, 1957.

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

Bishopgarth, Westfield Road, Wakefield. 7980

NOTTINGHAMSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT
ASSISTANT ARCHITECTS

Applications are invited for posts within the A.P.T. Special Scale (£750 × £40—£1,030). Applicants must be qualified and registered Architects.

Forms of application may be obtained from D. E. E. Gibson, County Architect, County Hall, Nottingham, to whom they should be returned as soon as possible.

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

7961

BRACKNELL DEVELOPMENT CORPORATION

Applications are invited for the appointment of STRUCTURAL ENGINEER on the staff of the Chief Architect. Salary Grade £1,100 × £55 (4)—£1,320. Applicants should be Corporate Members of the Institution of Structural Engineers and have had good all-round experience. The successful applicant will be required to advise the Chief Architect on matters relating to structural work and foundations to buildings, including factories, public buildings, etc., to prepare designs and to supervise specialist works.

Superannuation schemes. Medical examination. Housing available in due course. Apply by 18th November, 1957, giving age, education and qualifications, experience and appointments held (with dates and salaries), and two referees, to General Manager (S.E.), Bracknell Development Corporation, Farley Hall, Bracknell, Berks. 7981

CUMBERLAND COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the appointment of an ASSISTANT ARCHITECT within Special Grade/A.P.T. Grade IV (£750 × £40—£1,030 × £50—£1,175), commencing salary in accordance with qualifications and experience but not less than £870 per annum. Housing accommodation available if required.

Applicants must be A.R.I.B.A., with experience of handling large contracts and supervision of staff. Post pensionable. Subject to medical examination. N.J.C. service conditions.

Application forms and further particulars obtainable from John H. Haughan, F.R.I.B.A., County Architect, 15 Portland Square, Carlisle, to whom completed applications should be returned not later than SATURDAY, 23rd NOVEMBER, 1957.

G. N. C. SWIFT,
Clerk of the County Council.

7988

MERTON & MORDEN COUNCIL REQUIRE ARCHITECTURAL DRAUGHTSMAN. Salary within Grade APT.I (£575—£725 p.a.) plus London Allowance up to £30 according to age. Commencing salary dependent on experience, etc. Applicants should be good draughtsmen with experience in architectural work including housing. Applications to Engineer and Surveyor, Morden Hall, S.W.19, by 19th November, 1957. 7984

ROYAL BOROUGH OF KINGSTON-UPON-THAMES
APPOINTMENT OF PLANNING ASSISTANT A.P.T. GRADE II
(£725 to £845 plus London Weighting)

Applications are invited for the above-mentioned appointment. Experience in development control essential. Preference will be given to candidates who have passed the Intermediate Examination of the Town Planning Institute or equivalent.

Details and application forms obtainable from the Borough Surveyor, Guildhall, Kingston-upon-Thames, to whom applications must be returned by the 25th November, 1957.

A. B. ROGERS,
Town Clerk.

Guildhall,
Kingston-upon-Thames.
1st November, 1957. 8000

BUCKS COUNTY COUNCIL

Applications are invited for the appointment of a qualified STRUCTURAL ENGINEER on A.P.T. Grade IV £1,025—£1,175 p.a.

This post offers good prospects to applicants with experience in design and detailing of reinforced concrete and steel structures.

A weekly allowance of 25s. 0d. and return fare home once every two months may be paid for six months to newly appointed married officers of the Council unable to find accommodation.

Applications, on forms provided, must be returned by 23rd November, 1957.

F. B. POOLEY,
County Architect.

County Architect's Department,
County Offices,
Aylesbury. 7987

NOTTINGHAMSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT
ASSISTANT ARCHITECT

Applications are invited from suitable qualified persons for the post of Assistant Architect in the Minor Works group within the Department.

The duties include preparation of sketch plans, working drawings and details of new buildings, and alterations and extensions to existing buildings. Previous Local Government experience is not essential.

The salary range is £750 to £1,030 per annum.

Forms of application from Donald Gibson, County Architect, County Hall, West Bridgford, Nottingham, to whom they should be returned as soon as possible and in any case not later than 22nd November, 1957.

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

7999

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Selections for appointment are now being made from ARCHITECTS who have passed their Final Examinations this summer. Starting salaries up to £712 10s. a year, in scale £637 10s. to £860.

Vacancies also for ARCHITECTS of experience at starting salaries up to £1,090.

Full programme of Houses, Flats, Schools, and many other interesting buildings.

Application forms and full particulars from the Architect (Ref. AR/EK/46/57), The County Hall, S.E.1. (1609) 7708

DERBYSHIRE COUNTY COUNCIL—COUNTY PLANNING DEPARTMENT. Applications are invited for the appointment of a SENIOR ASSISTANT (ARCHITECT) on Special Scale Grade (£750—£1,030). Applicants should be members of the Town Planning Institute and have passed the final examination of the Royal Institute of British Architects or have graduated in Architecture. Experience in the layout and design of estates and schemes of development and redevelopment in central areas is desirable. Knowledge of statutory planning procedure will be an advantage. Applications together with one testimonial and the names of two referees to reach the County Planning Officer, 8A Bold Lane, Derby, by November 18th. 7986

CWMBRAN DEVELOPMENT CORPORATION

Applications are invited for the post of ASSISTANT ARCHITECT, in salary grade A.P.T. V (£815 × £40—£994), with a commencing salary according to qualifications and experience.

Candidates should be Associates of the R.I.B.A., with suitable office experience, and should have had good experience in House Design, Construction and Layout.

The post is superannuable, and housing accommodation will be provided within approximately one month of commencing duties, or, alternatively, a lodging allowance will be paid for a limited period to a married man.

Applications, stating age, qualifications, experience, present and former employment (together with applicable salaries), and the names and addresses of two referees, should reach the undersigned by first post on 21st November, 1957.

J. C. P. WEST, A.R.I.B.A., M.T.P.I.,
Chief Architect.

Victoria Street, Cwmbran, Mon.
26th October, 1957. 7960

CHESTERFIELD RURAL DISTRICT COUNCIL invite applications for the appointment of ASSISTANT QUANTITY SURVEYOR. The appointment offers excellent experience in a district with a population of 93,000 and which is rapidly developing both residentially and industrially.

Candidates must have passed the Intermediate or Final Examination of the R.I.C.S. or Final Examination of the I.Q.S. Salary scale will be determined by reference to the qualifications and experience held by the successful candidate, as follows:—

Intermediate R.I.C.S.—A.P.T. I (£575—£725)
Final I.Q.S.—A.P.T. II (£725—£845)
Final R.I.C.S.—Special Grade (£750—£1,030)

The Council are prepared to assist with housing accommodation.

Application Forms may be obtained from the Council's Engineer, Mr. J. B. Wikeley, M.Eng., M.I.C.E., Barrister at Law, Rural Council House, Saltergate, Chesterfield, and they should be returned to the Clerk of the Council by the 25th November, 1957.

H. O. HAWKINS,
Clerk of the Council.

8002

BUCKS, COUNTY COUNCIL

Applications are invited for the following permanent appointments:—

(*i*) ASSISTANT QUANTITY SURVEYOR
A.P.T. IV £1,025—£1,175 p.a.
Applicants must be Associates of the Royal Institution of Chartered Surveyors with considerable experience in the preparation of Bills of Quantities and settlement of final accounts.

(*ii*) JUNIOR ASSISTANT QUANTITY SURVEYOR
A.P.T. I £575—£725 p.a.
Applicants must have passed the Intermediate examination of the R.I.C.S.

The appointments are superannuable and subject to medical examination.

A weekly allowance of 25s. 0d. and return fare home once every two months may be paid for six months to newly appointed married officers of the Council unable to find accommodation.

Applications, on forms provided, must be returned by 23rd November, 1957.

F. B. POOLEY,
County Architect.

County Architect's Department,
County Offices,
Aylesbury, Bucks. 7989

COUNTY BOROUGH OF WOLVERHAMPTON
APPOINTMENT OF SENIOR PLANNING ASSISTANT

Senior Planning Assistant required in Borough Engineer's Department. Salary Special Grade (£750—£1,030 per annum).

N.J.C. Conditions of service. One month's notice on either side. Medical examination, superannuable post. (Housing accommodation will be provided in approved cases.)

Applications stating age, training and experience, and naming two referees to the Borough Engineer, Town Hall, Wolverhampton, by 19th November. 7990

BOROUGH OF EPSOM AND EWELL
BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT
APPOINTMENT OF ARCHITECTURAL ASSISTANT A.P.T. I

Applications are invited for the appointment of an Architectural Assistant on Grade A.P.T. I commencing salary up to £755 per annum including London weighting.

Applicants should have had experience in the preparation of plans, specifications, etc., connected with the development of housing estates and maintenance of buildings and preference will be given to candidates holding the Intermediate Examination of the R.I.B.A.

Applications stating age, qualifications and experience, with the names of three referees should be sent to Mr. C. G. Cobbett, A.M.I.C.E., M.I.Mun.E., Borough Engineer and Surveyor, Town Hall, The Parade, Epsom, so as to reach him not later than the 21st November.

EDWARD MOORE,
Town Clerk.

November, 1957. 8003

GOVERNMENT OF NORTHERN NIGERIA
ARCHITECT, PUBLIC WORKS DEPARTMENT

To prepare sketch plans, working drawings and detailed specifications for various types of buildings and carry out the general work of a very busy architectural office.

Contract appointment. Salary range £1,170—£1,824 p.a. Gratuity £37 10s. for each completed 3 months' resident service.

Free passages for officer and cost of passages for wife and children up to maximum of two adult passages. Allowances of £120 to £288 p.a. payable for maximum of three children under 18 years. Government quarters, if available, at low rent. Generous leave. Low income tax.

Candidates must be A.R.I.B.A., with wide general experience.

Write Director of Recruitment, Colonial Office, London, S.W.1, giving age, qualifications and experience, quoting BCD.11/408/07. 7978

LEEDS REGIONAL HOSPITAL BOARD

Applications are invited for the appointment of temporary ARCHITECTURAL ASSISTANT. Salary scale: £525 (at 21 or over) × £20 (4) × £25 (5)—£730 per annum.

Applicants must have passed the Intermediate Examination of the R.I.B.A., and have a sound architectural training and some practical experience in a practising architect's office is essential.

Applications, giving full particulars, together with the names of two referees, to the Secretary, Park Parade, Harrogate, by 14th November, 1957. 7972

NORTHUMBERLAND COUNTY PLANNING DEPARTMENT

ONE AREA PLANNING OFFICER required on A.P.T. V Scale (£1,175—£1,325).

A.M.T.P.I. essential. Additional qualifications in Engineering, Surveying or Architecture an advantage.

Application forms and further information from County Planning Officer, County Hall, Newcastle upon Tyne, 1.

Closing date is 15th November, 1957. 7962

NORTH RIDING EDUCATION COMMITTEE

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

(*a*) ASSISTANT ARCHITECT. Salary N.J.C. Special Grade, £750 × £40—£1,030. A.R.I.B.A. required.

(*b*) ASSISTANT QUANTITY SURVEYOR. Salary N.J.C. Special Grade, £750 × £40—£1,030. A.R.I.C.S. or equivalent required.

(*c*) ARCHITECTURAL ASSISTANT. Salary N.J.C. A.P.T. I Grade, £575 × £30—£725.

Commencing salary according to previous experience and maximum may be paid. Car, travelling and subsistence allowances where applicable. Local Government Superannuation Act. Canvassing disqualifies. Closing date for completed applications 29th November, 1957. Further particulars from F. Barraclough, County Hall, Northallerton. 8001

Architectural Appointments Vacant

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

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

ASSISTANT of Intermediate standard, with office experience, good draughtsman, required for work on Flats and Houses. Please state experience, age and salary required to: R. Jelinek-Karl, F.R.I.B.A., 22, Chancery Lane, W.C.2. Hol. 5695. 7866

WELL-KNOWN London Architects require ASSISTANTS between Intermediate and Final standard. Interesting projects. Five-day week.—Write, Box 861, c/o 7, Coptic Street, W.C.1. 7589

W. J. SIMMS SONS & COOKE, LTD., manufacturers of Timber Buildings for home and overseas markets, have a vacancy in their Architect's Department for a SENIOR ASSISTANT. Applicants should have considerable general experience and be in the age group 30-45. Salary will be commensurate with age and ability. Housing accommodation available.—Apply to the Staff Architect, W. J. Simms Sons & Cooke, Ltd., Haydn Road, Sherwood, Nottingham. 7912

ARCHITECTURAL DRAUGHTSMAN required, with experience of Civil Engineering and Allied Trades, and fully capable of working on own initiative. Age not exceeding 30 years. Excellent salary conditions and pension fund.—Applications in writing to Staff Supervisor, Shell-Mex and B.P., Ltd., Shell-BP House, 7, Oxford Road, Manchester, 1. 7889

ARCHITECTURAL ASSISTANT, Intermediate to Final standard, not over 30 years of age, required immediately for Bank's Architect's Department in Manchester. Permanent position. Contributory pension scheme. Salary range: £690 at age 27, rising by annual increments to £825 at age 31 and thereafter upon merit. —Box 7910.

BUCKINGHAMSHIRE firm of Architects, within 30 miles of London, with a varied practice, require TWO ARCHITECTURAL ASSISTANTS, approaching Final R.I.B.A. standard. 5-day week. Salary according to age and experience.—Please write, giving full particulars, to Box 7768.

ARCHITECTURAL ASSISTANT required in busy London Office with varied practice. Good salary and prospects for suitable applicant. Five-day week. Write, giving particulars of age, qualifications, experience, etc., to Box 862, c/o 7, Coptic Street, W.C.1. 7593

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

APPLICATIONS are invited for the following appointment in the above Branch Office undertaking interesting and varied commercial and industrial projects:—

ASSISTANT ARCHITECT, capable of preparing working drawings from preliminary details. There is a 5-day week in operation, and the appointment will offer prospects of upgrading.

Applications, stating age, experience, qualifications and salary required, to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester. 7941

SENIOR ARCHITECTURAL ASSISTANT required in Blackpool office, with varied practice.—Write, giving full particulars of age, qualifications, experience, etc., to MacKeith, Dickinson & Partners, 4, South King Street, Blackpool. 7938

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