The Architects' JOURNAL for April, 10 1958

THE ARCHITECTS' JOURNAL

standard contents

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

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THE ARCHITECTURAL PRESS

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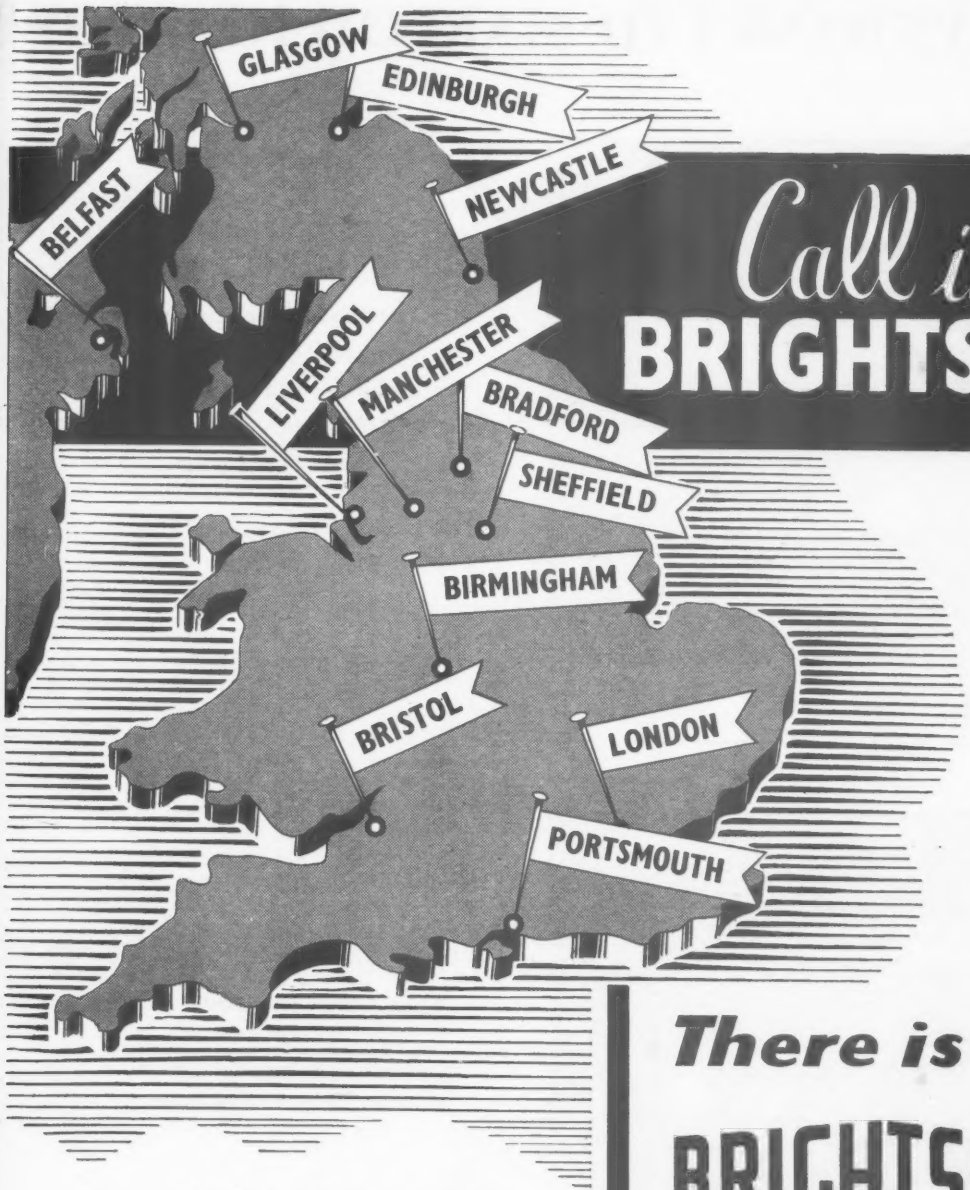
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ig one week, Ih to Z the next. In all cases where the town is not mentioned the word LONDON is implicit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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. L. Stevenson, College of Art, Hope Street, Liverpool 1.	Royal 1826
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Victoria 0447–8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ARCUK	Architects' Registration Council. 78, Wimpole Street, W.1.	Welbeck 2915
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Whitehall Gardens, Horseguards' Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 4040
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 9000
BTE	Building Trades Exhibition. 32, Millbank, S.W.1.	Tate Gallery 8134
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Newport 65491
CAS	County Architects' Society. C/o S. Vincent Goodman, F.R.I.B.A., Shire Hall, Bedford.	Bedford 67444
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Belgravia 6661
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611 Ext. 1284
CDA	Copper Development Association. 55, South Audley Street, W.1.	Grosvenor 8811
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7, Zurich, Switzerland	
COID	Council of Industrial Design. 28, Haymarket, S.W.1.	Trafalgar 8000
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.1.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DOT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 68, Gloucester Place, W.1.	Welbeck 9966
FASS	Federation of Associations of Specialists and Sub-Contractors, 14, Bryanston Street, W.1.	Welbeck 1781
FBBDO	Fibre Building Board Development Organization Ltd. (Fidor), 47, Princes Gate, Kensington, S.W.7.	Kensington 4577
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	Regent 0221
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd., Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4341
GPDA	Gypsum Plasterboard Development Association. 11, Ironmonger Lane, E.C.2.	Monarch 8888
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 2, Chester Street, S.W.1.	Belgravia 3081
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1.	Belgravia 3755
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. 1, Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266



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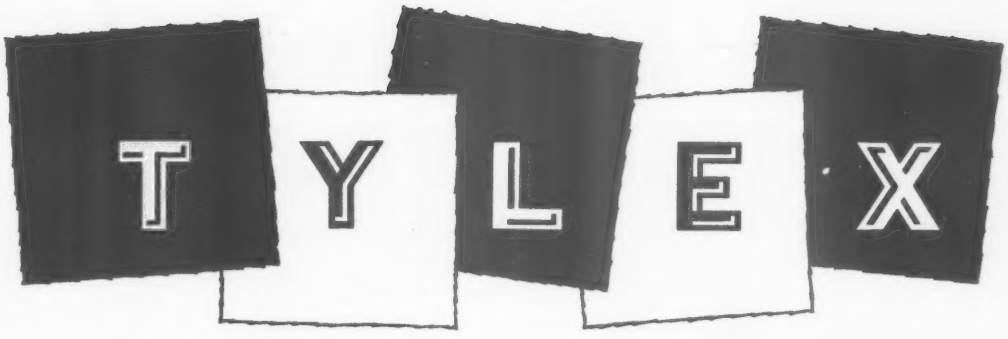

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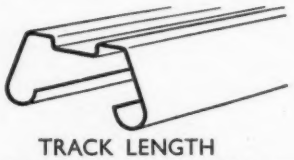
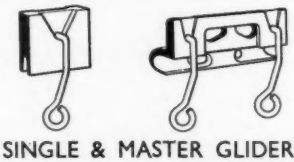


TRACK LENGTH

This diagram shows the beautifully designed lines of the track providing dust-free housing for the internal components.



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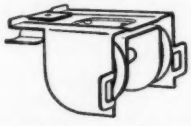
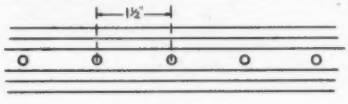
These gliders are made in nylon to give a high degree of efficiency with a minimum of noise. Curtains hang from the eyes attached to the glider.



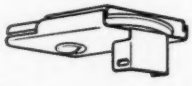
DOUBLE PULLEY UNIT

Vertical double pulleys made in nylon are fitted in this neat housing which is affixed to the end of the track.



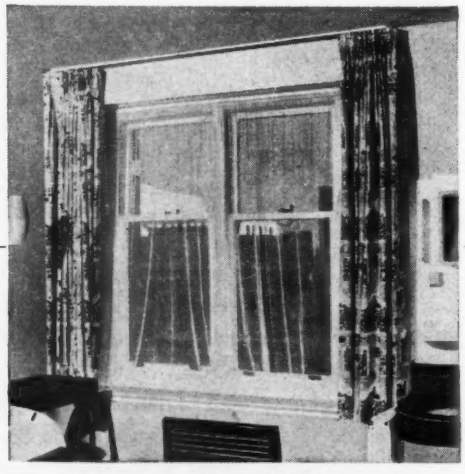
FIXING HOLES

Holes of $\frac{3}{16}$" diameter are drilled at intervals of 1½" along the full length of the Double Track section to facilitate fixing. Face fixing brackets are available if required.



SINGLE PULLEY UNIT

The single horizontal pulley made in nylon is fitted in this neat housing at the opposite end of the track.



One of the many windows equipped with 'Rufflette' Double Track at the Strand Palace Hotel, London (by courtesy of J. Lyons & Co. Ltd.)

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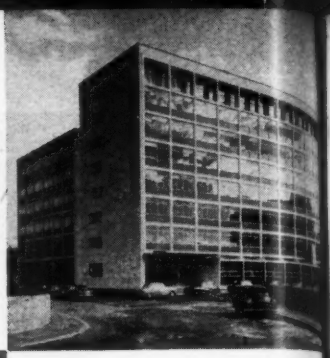

MERCERS' HALL · CHEAPSIDE
Architects:
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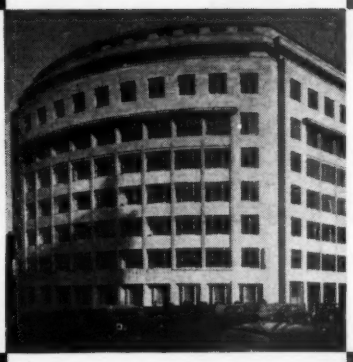

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HOLBORN CIRCUS
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T. P. Bennett & Son

1 NOBLE STREET
GRESHAM STREET
Architects:
Ellis, Clarke & Gallannaugh

ROYAL LONDON HOUSE
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Architect:
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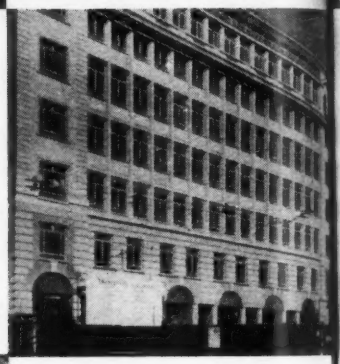
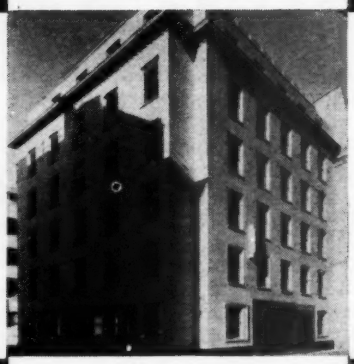


WATLING HOUSE · CANNON STREET
Architects:
Easton & Robertson



34-35 KING STREET · EC
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Architect:
Henry Tanner

12-20 CAMOMILE STREET
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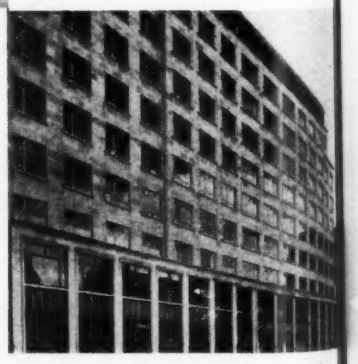

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BUCKLERSBURY HOUSE
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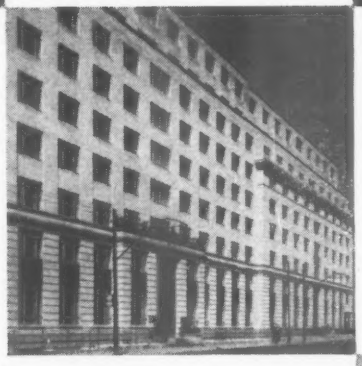

3-10 FINSBURY SQUARE
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AP-283

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Close-up view of electrical access points. All outlets will be from the Q-cells themselves and not from the header ducts.

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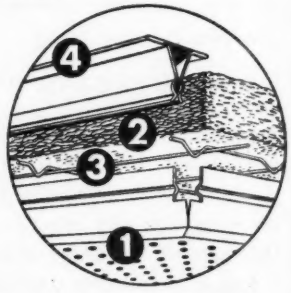

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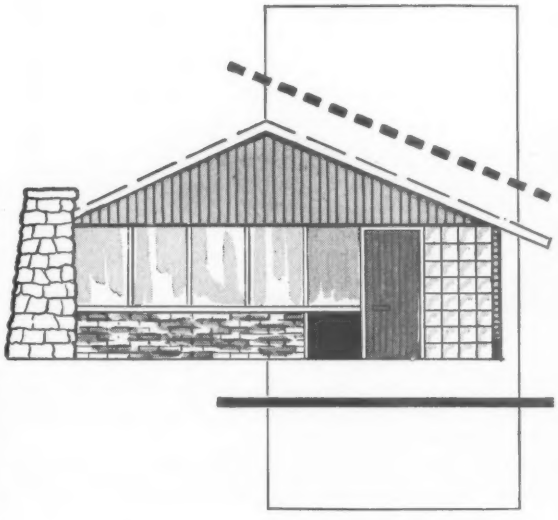

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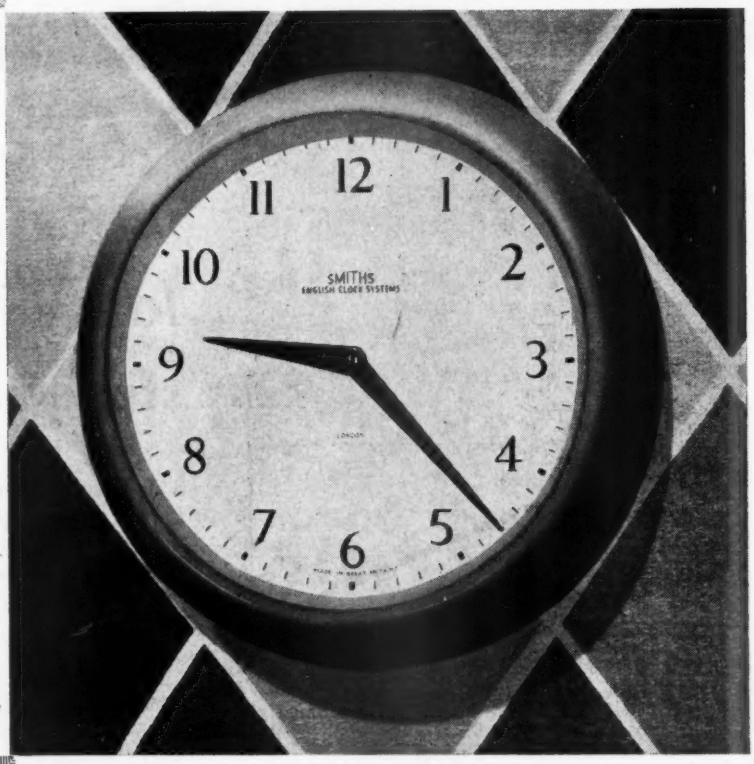

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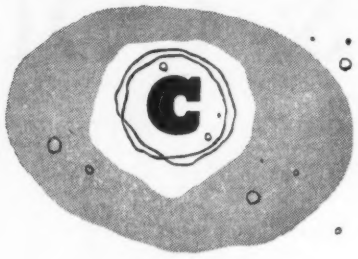

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Sample 'A'	5-7 seconds	2″	Complete disintegration with molten material dripping off
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LABORATORY REMARKS: Tests would classify Samples 'A' and 'B' as Class 4, Rapid Spread of Flame (B.S. 476: 1953 refers)

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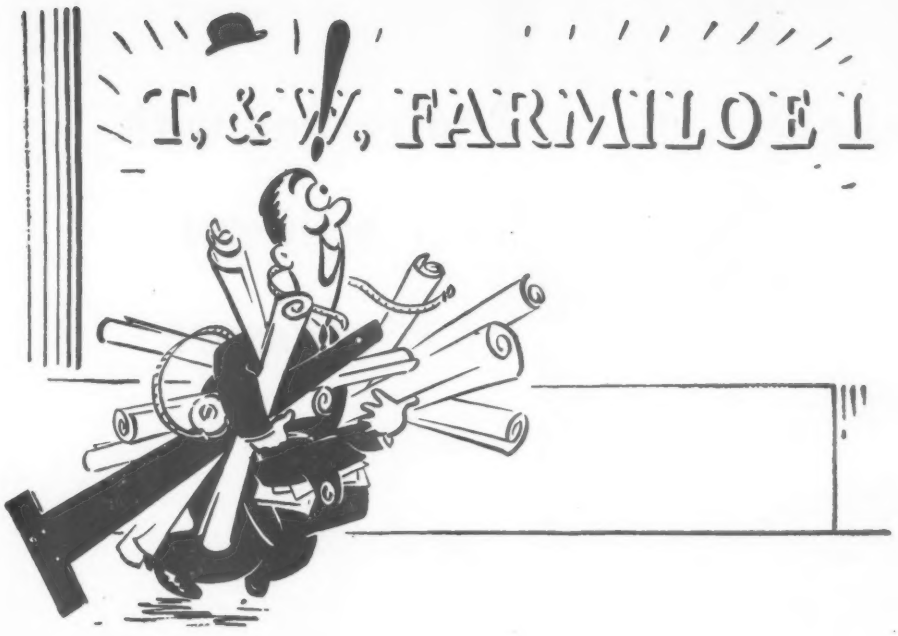

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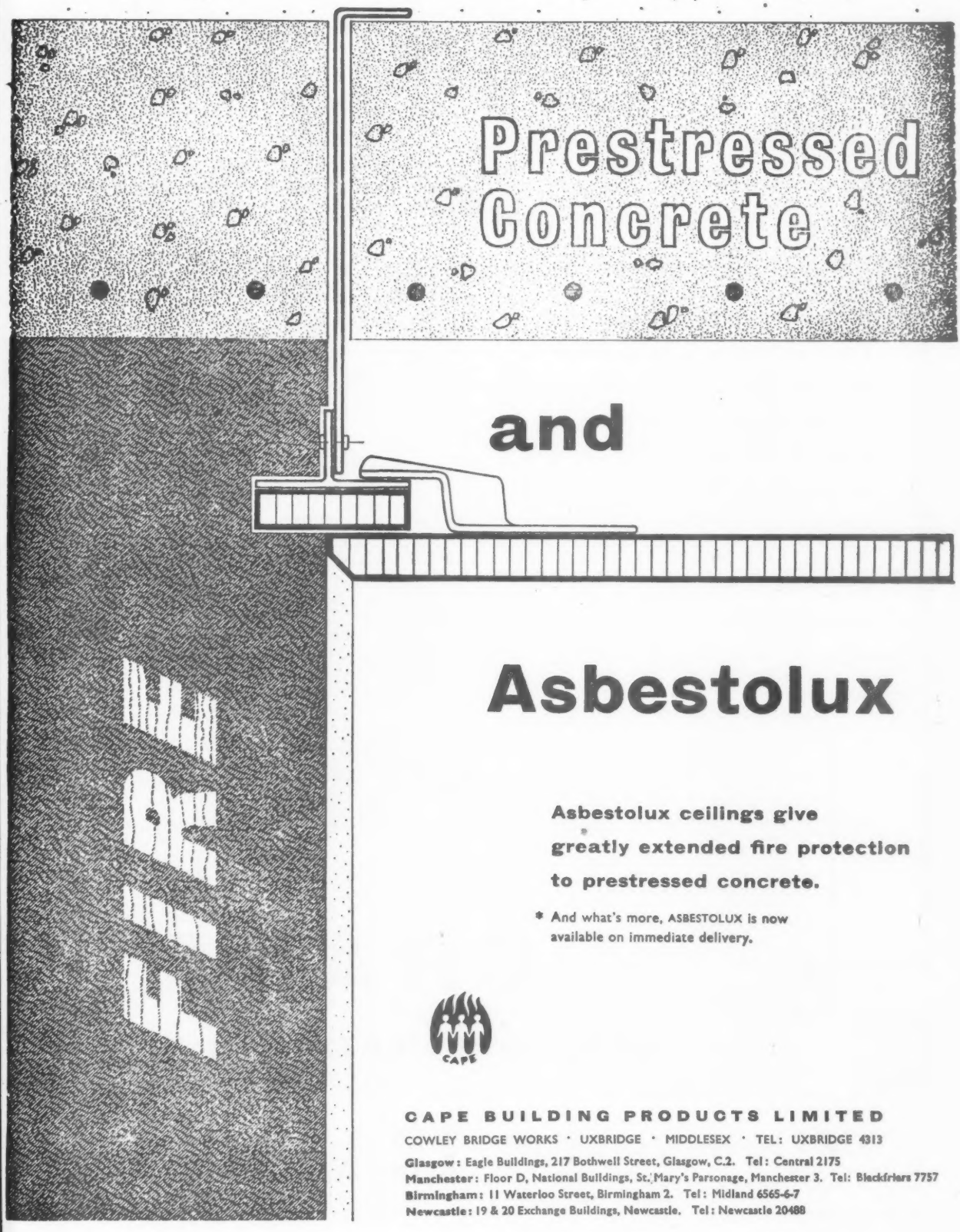

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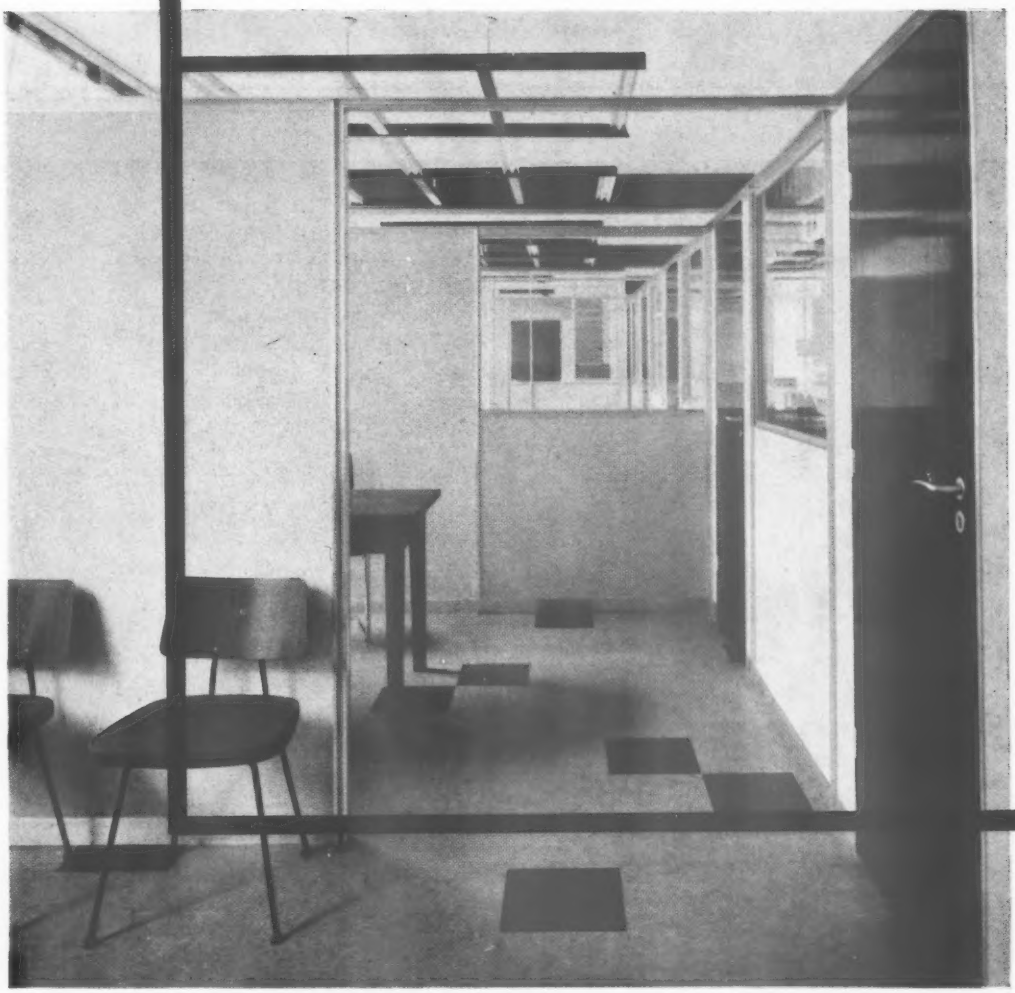

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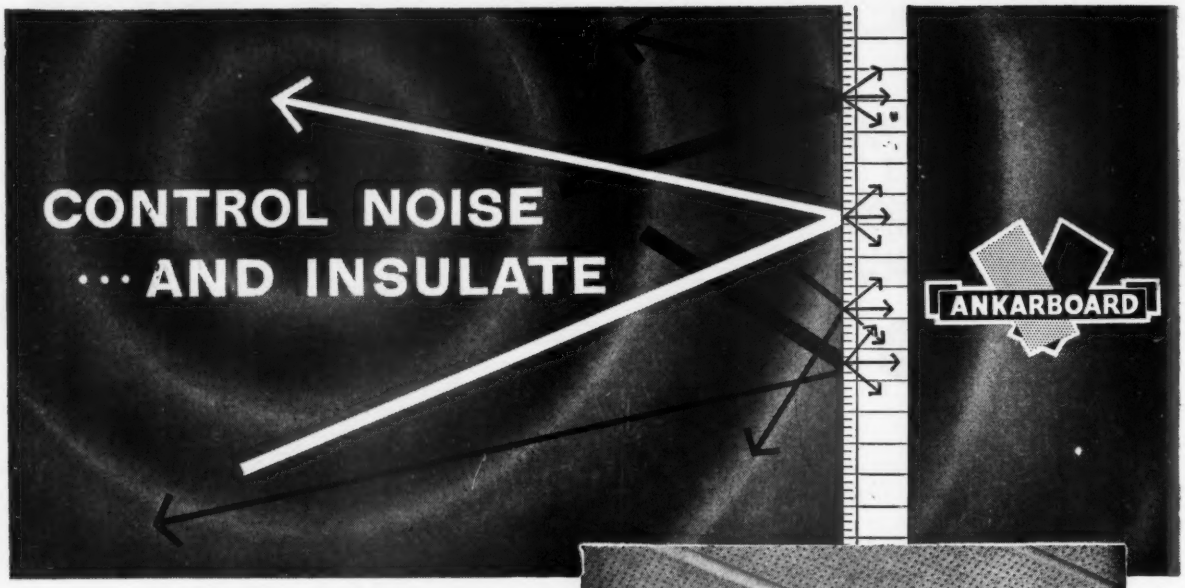

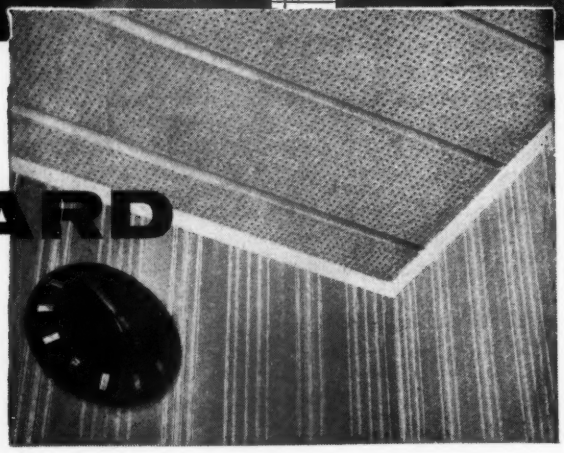

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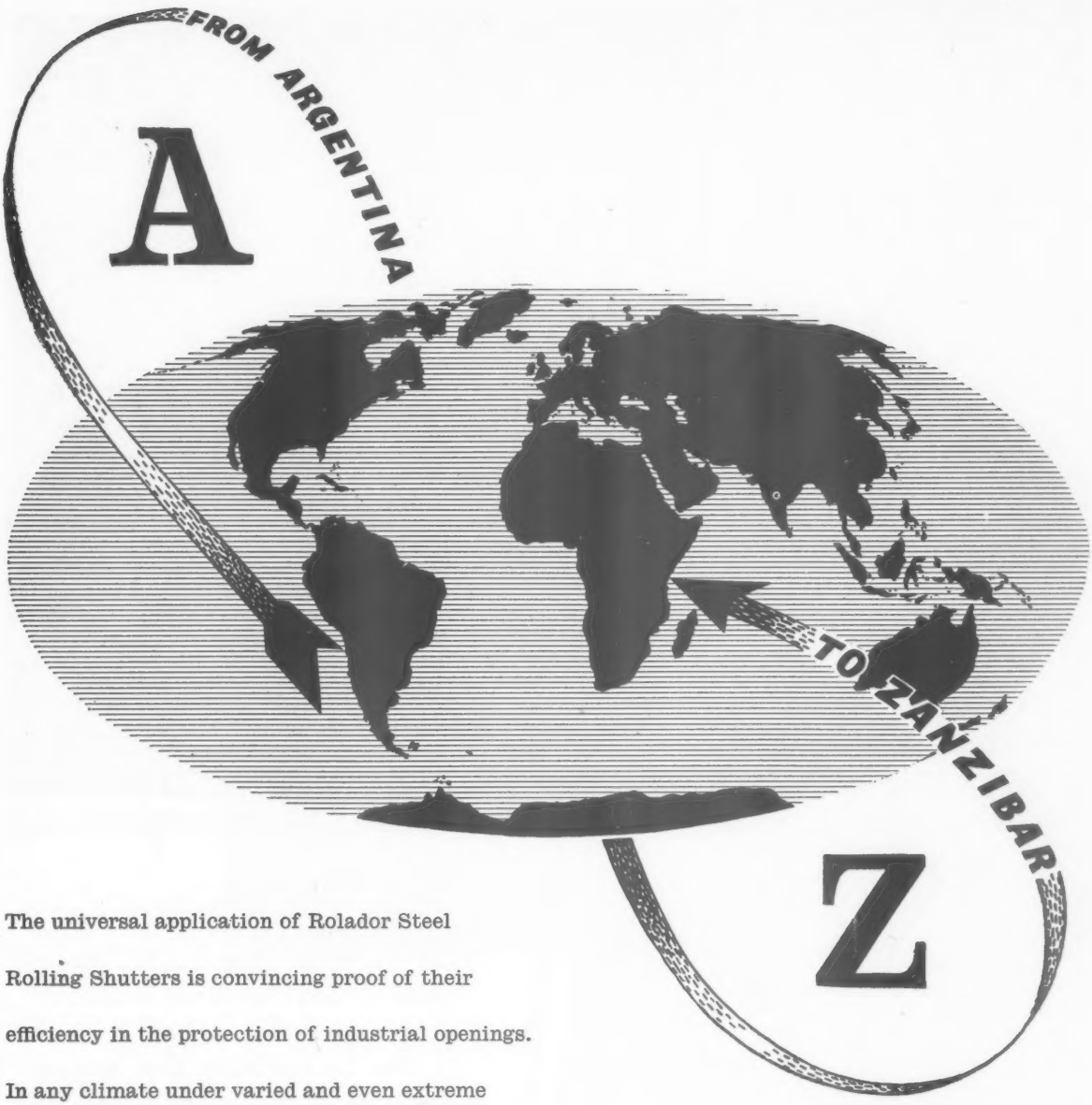

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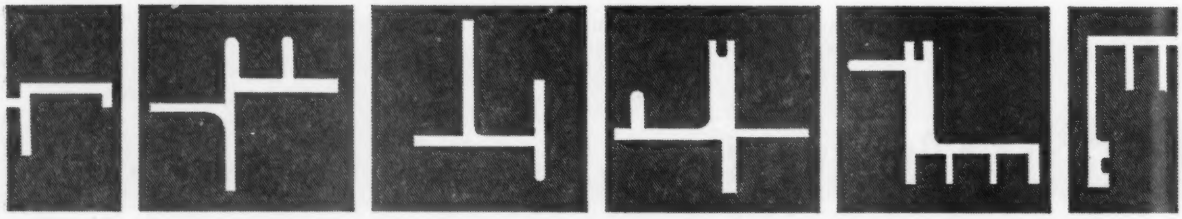

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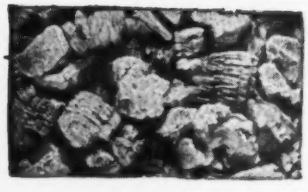

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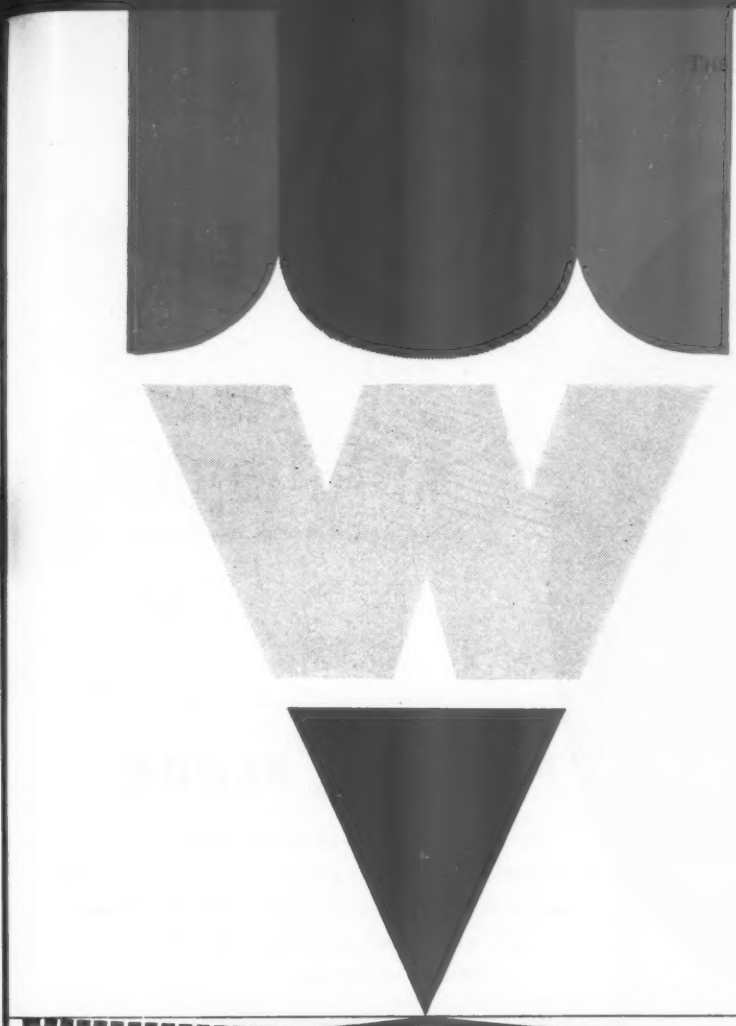

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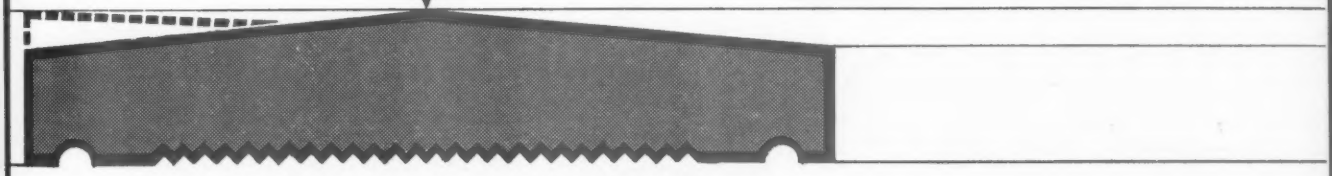

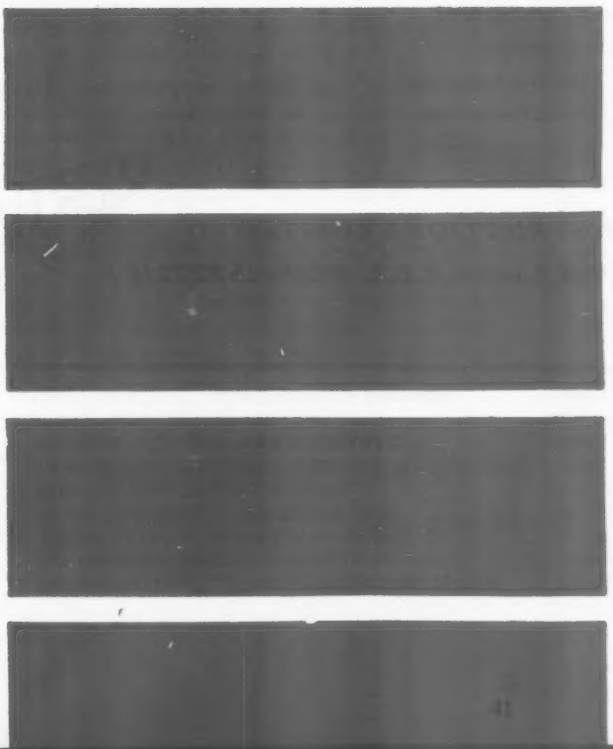

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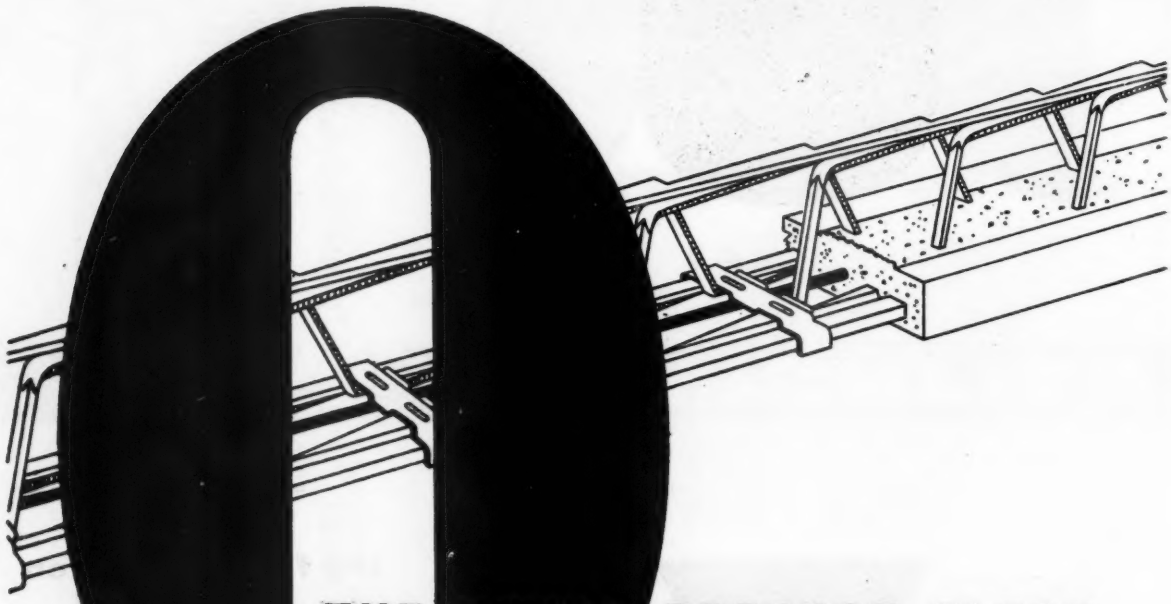

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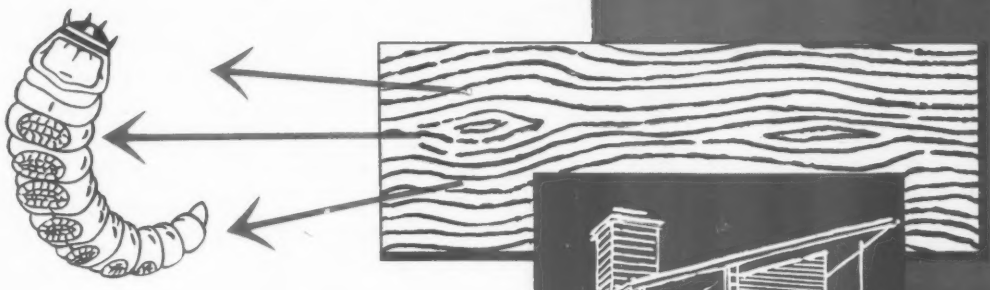

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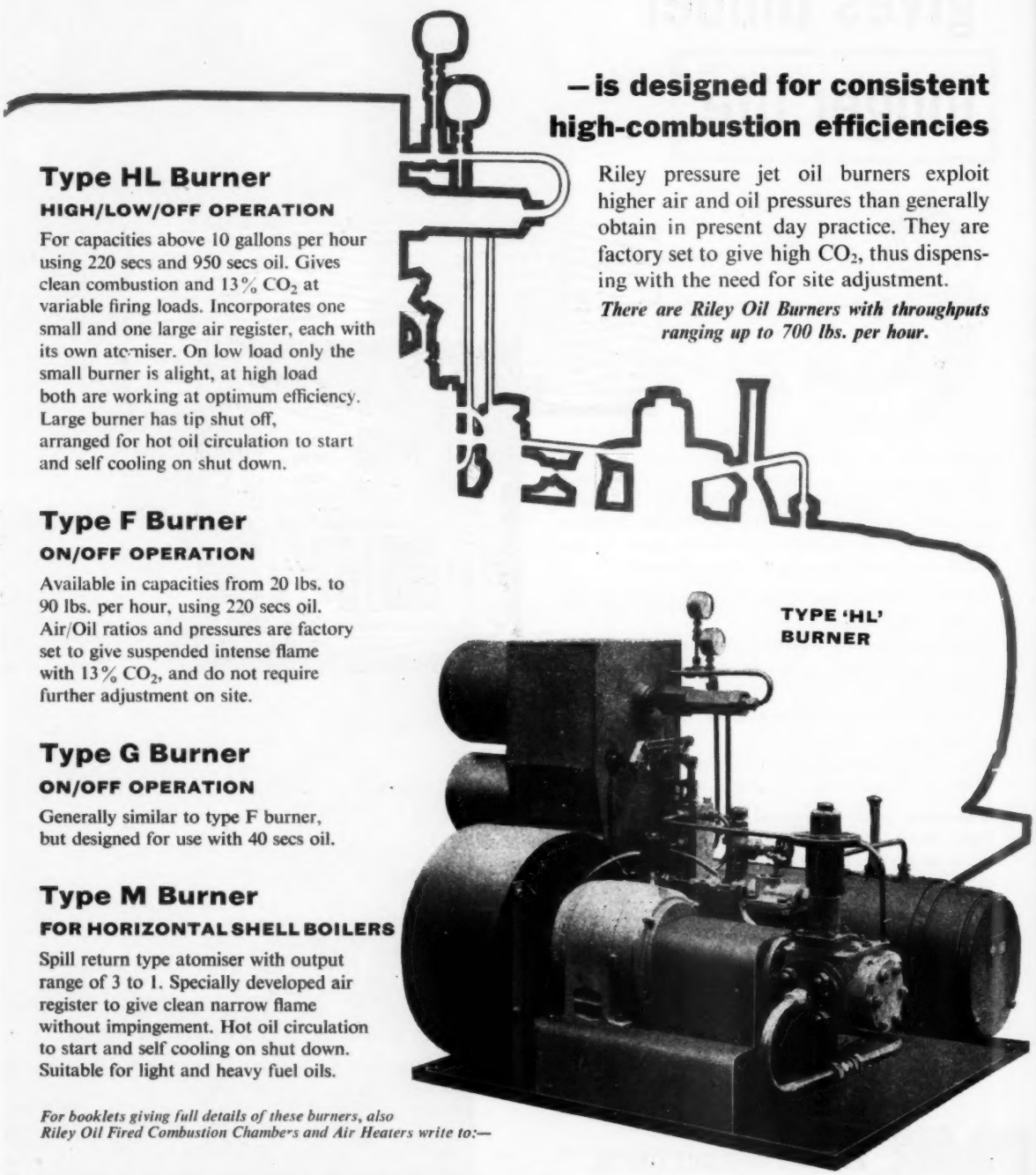

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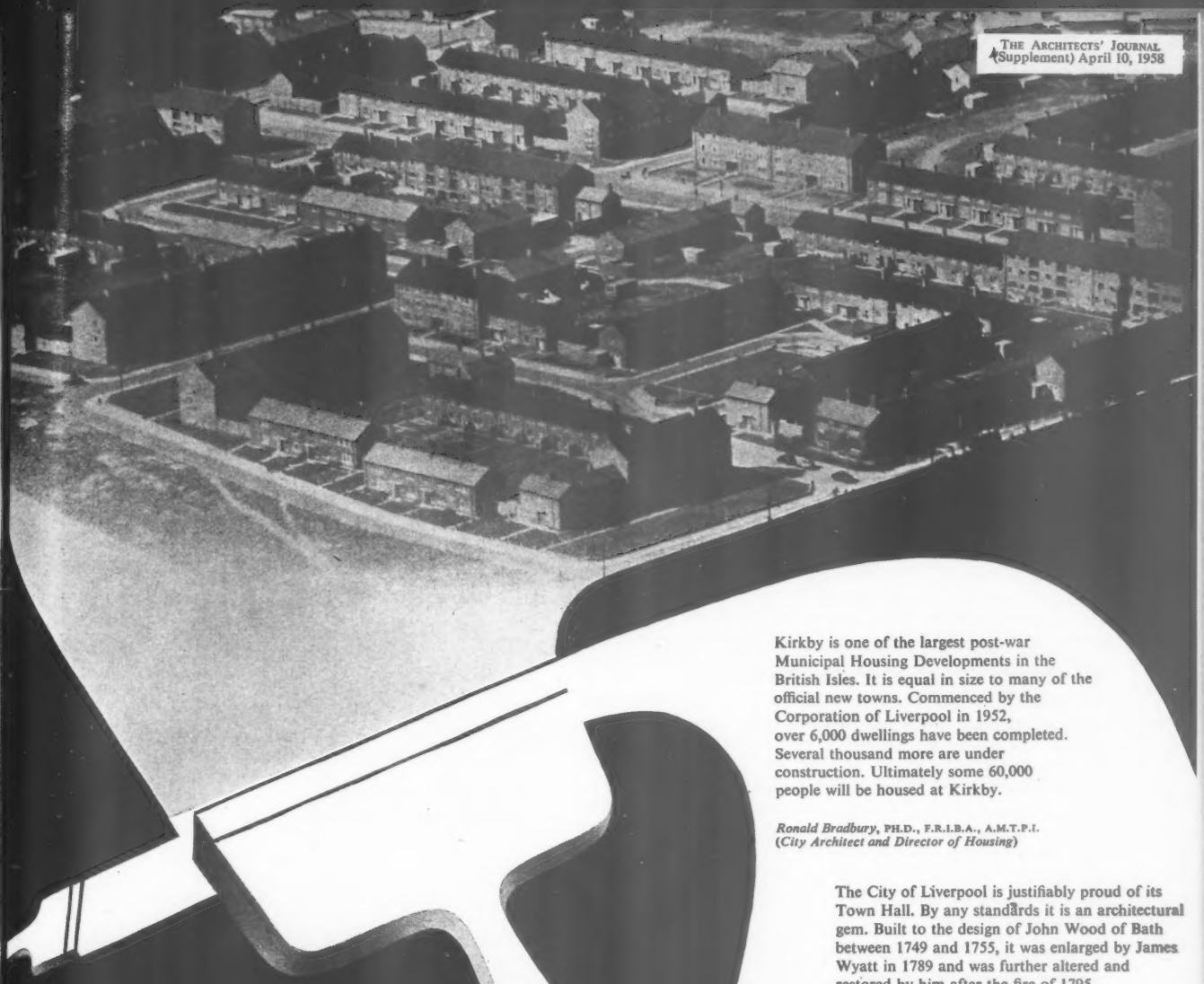

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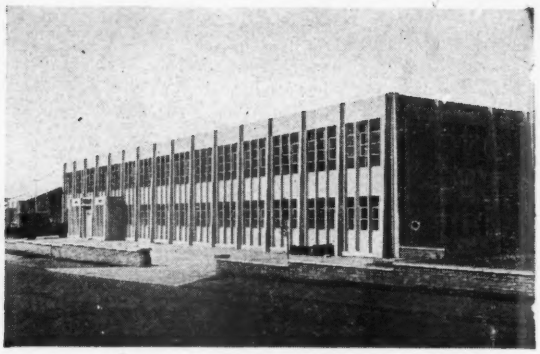

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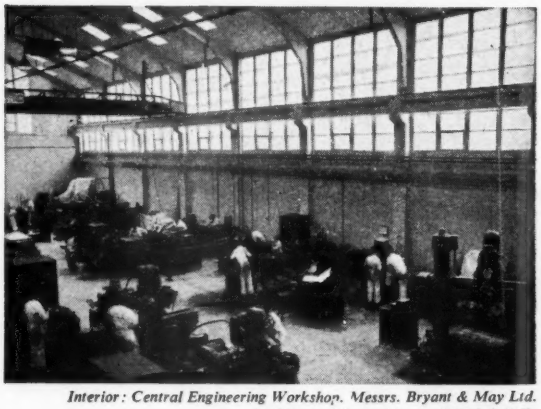
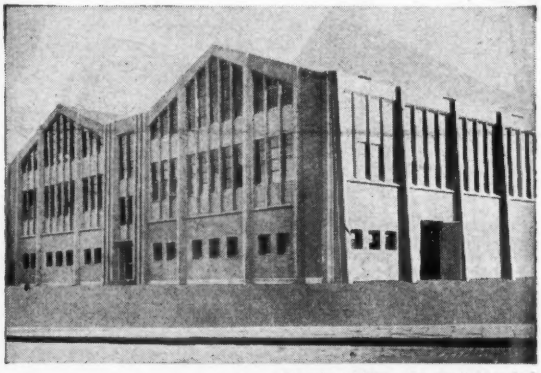


Interior: Central Engineering Workshop. Messrs. Bryant & May Ltd. Architects: Messrs. Hastie, Winch & Kelly



Exterior: Messrs. Bryant & May Ltd.

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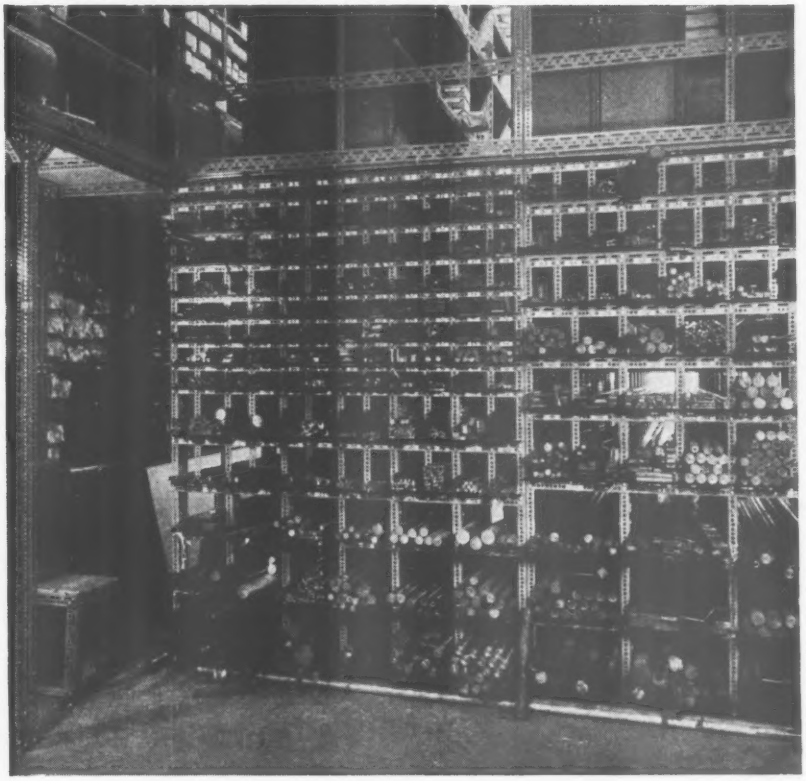

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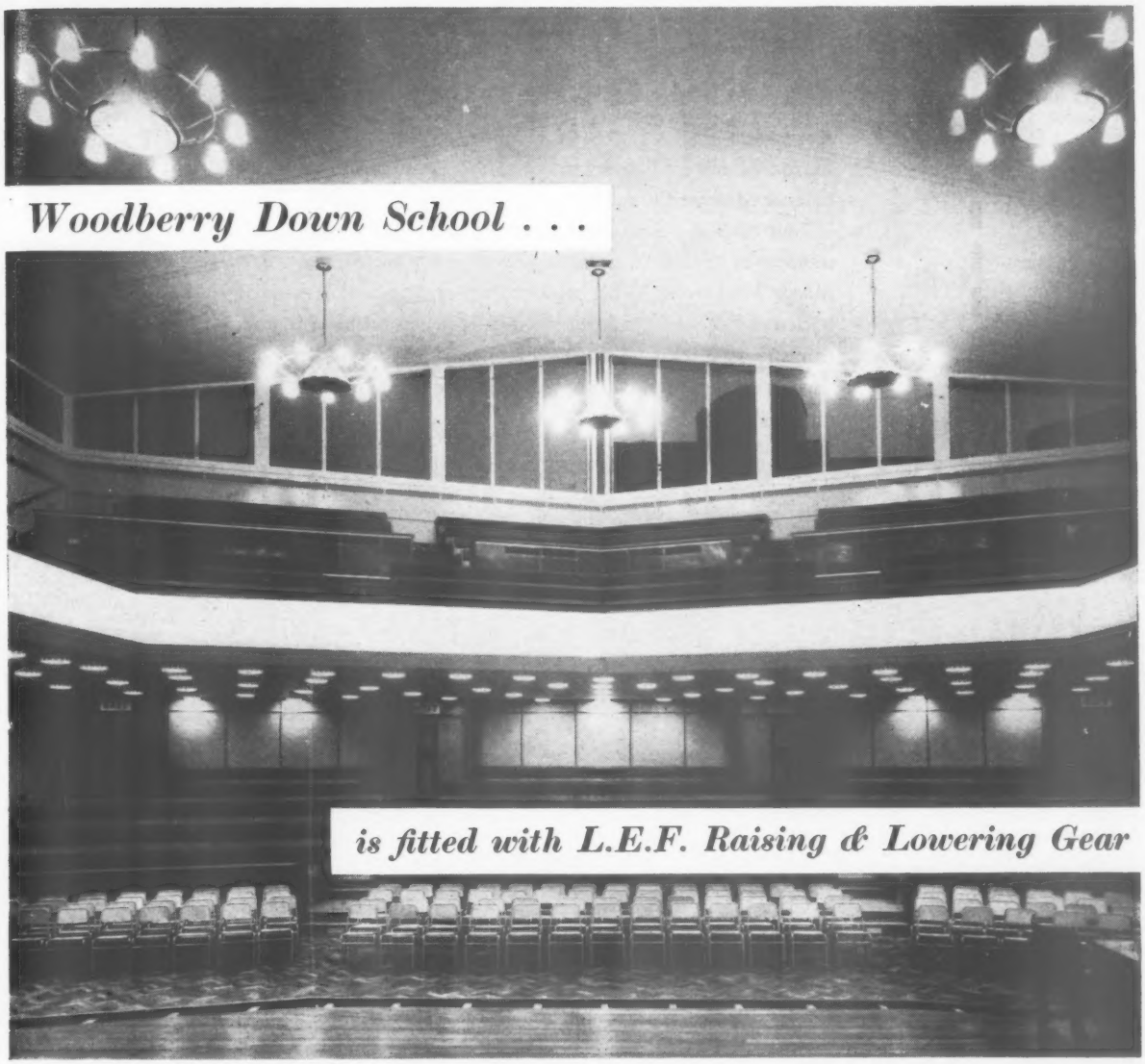

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THE means of servicing inaccessible lights in the Assembly Hall of this new school was given careful consideration at an early stage of planning by the Architect (Robert H. Matthew, C.B.E., A.R.I.B.A.) and the Chief Engineer L.C.C. (J. Rawlinson, C.B.E., M.Eng., M.I.C.E., M.I.Mech.E.) London Electric Firm Ltd., were consulted, with the result that they were able to supply Raising and Lowering Gear that was built into the ceiling with all working parts concealed.

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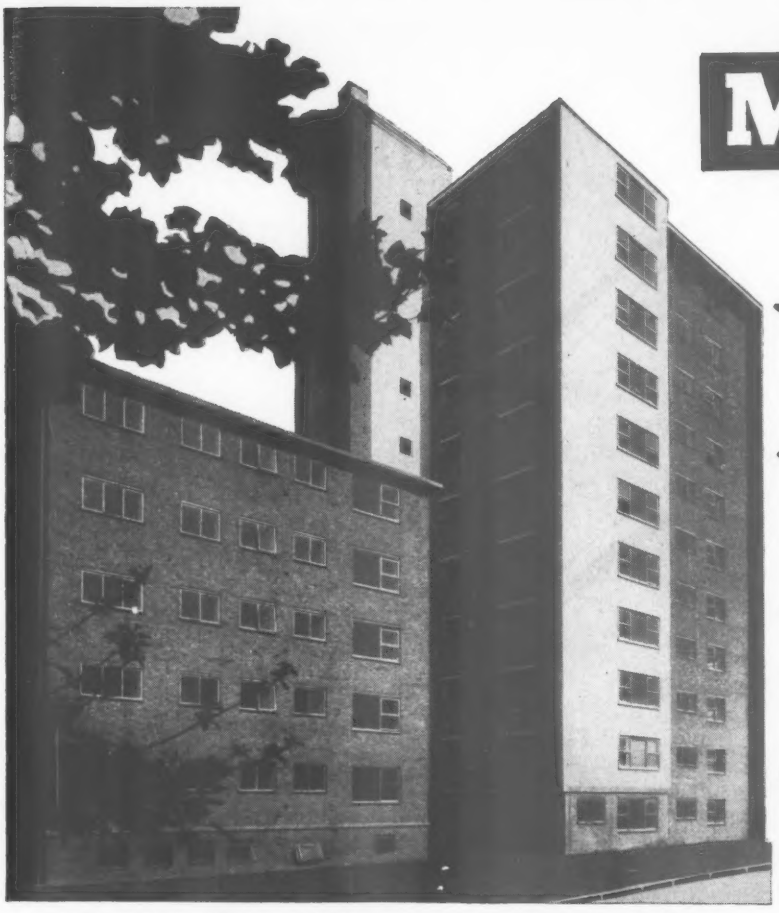

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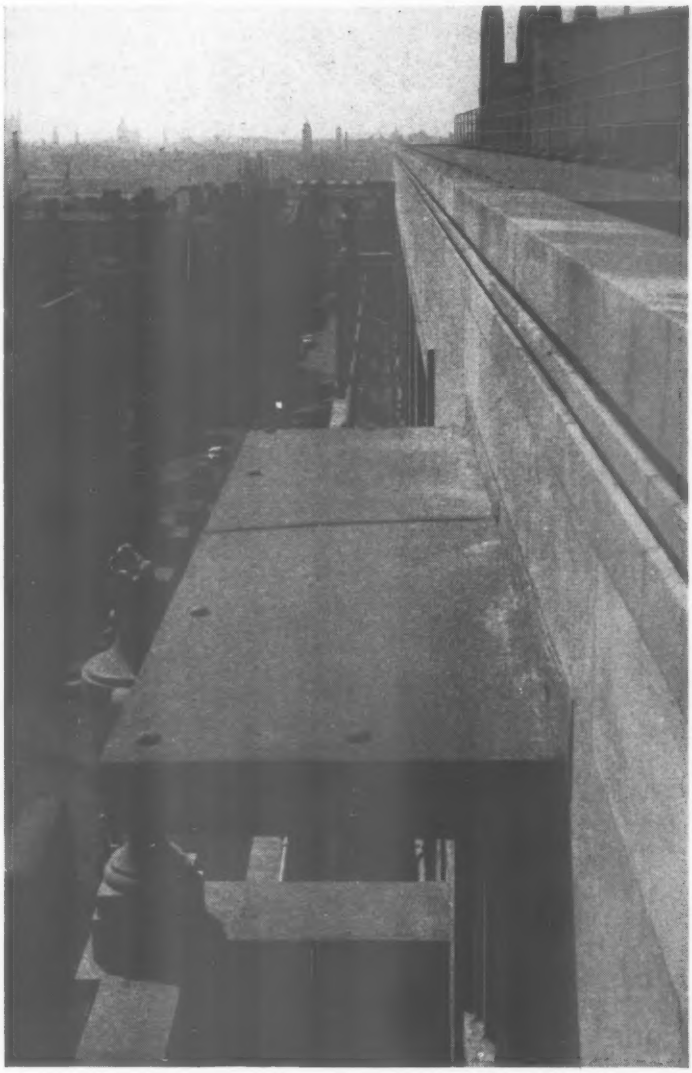

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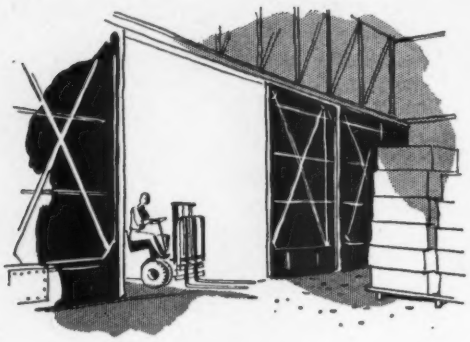

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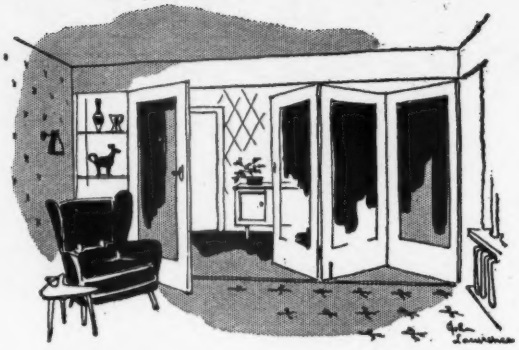
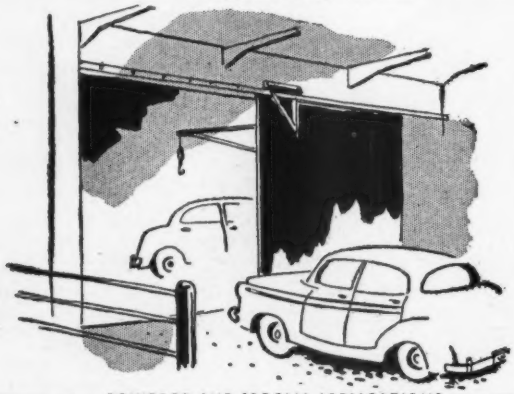


FOLDING DOMESTIC



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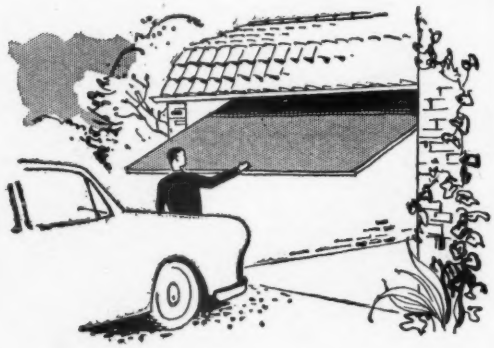

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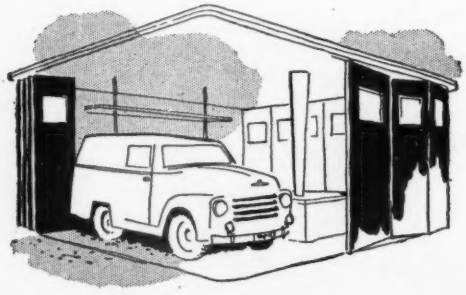

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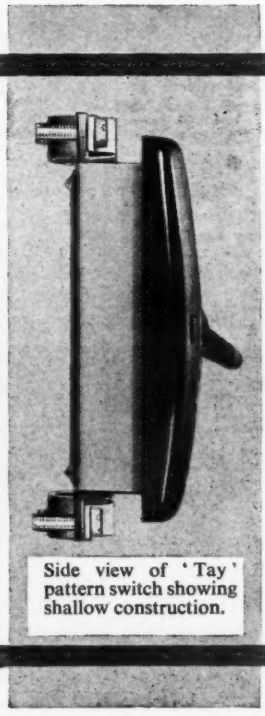

Side view of 'Tay' pattern switch showing shallow construction.

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Whatever the floor, a Hy-Rib ceiling will much increase the fire resistance

£250 design competition for a kitchen sink

BELIEVING that inventive skill has not yet produced the perfect kitchen sink, The British Sanitary Fireclay Association on behalf of its member firms is sponsoring an open Design Competition to stimulate ideas which incorporate improvements in the usefulness and appearance of this essential item of kitchen equipment.

White or coloured ceramic glazed Fireclay, of which most sinks are made, is ideal for its purpose since it can readily be moulded in complex shapes having smooth contours; it possesses great strength and resistance to wear. Already there is a choice of several good designs in fireclay sinks available to the housewife, who knows from experience how functional and hygienic they are. Now the Association is searching for designs that are even better.

The Assessors will be D. L. Medd, Esq., A.R.I.B.A., R. V. Cooper, Esq., C.G.I.A., F.I.O.P., M.R.S.H., and the President of the National Federation of Clay Industries. After the results have been announced, arrangements will be made to produce prototypes of at least the winning design (for which the collaboration of the successful competitor(s) will be invited). The Competition has been planned to appeal especially to architects, students, designers, sanitary engineers and others with a serious interest in sanitation and design.

It is already regarded as yet another progressive move by a flourishing British Industry. Considerable interest is being shown. The Competition is indeed a challenge, and the winning designs should command widespread notice. A first Prize of £100, two Prizes of £50, and five runner-up Prizes of £10 each await those who submit the best ideas. Closing date 31st May, 1958. Entry Forms are available on application to:—

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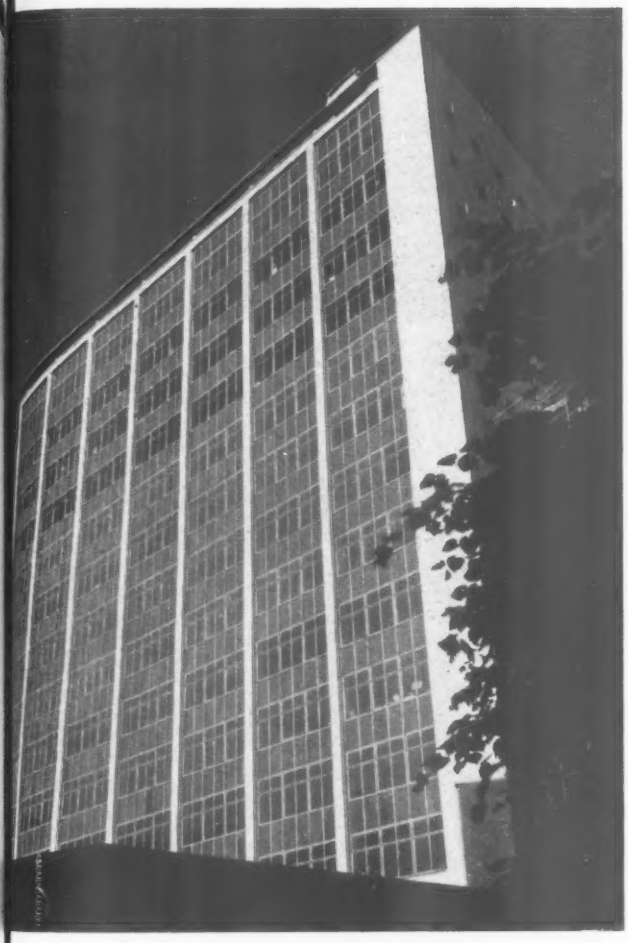

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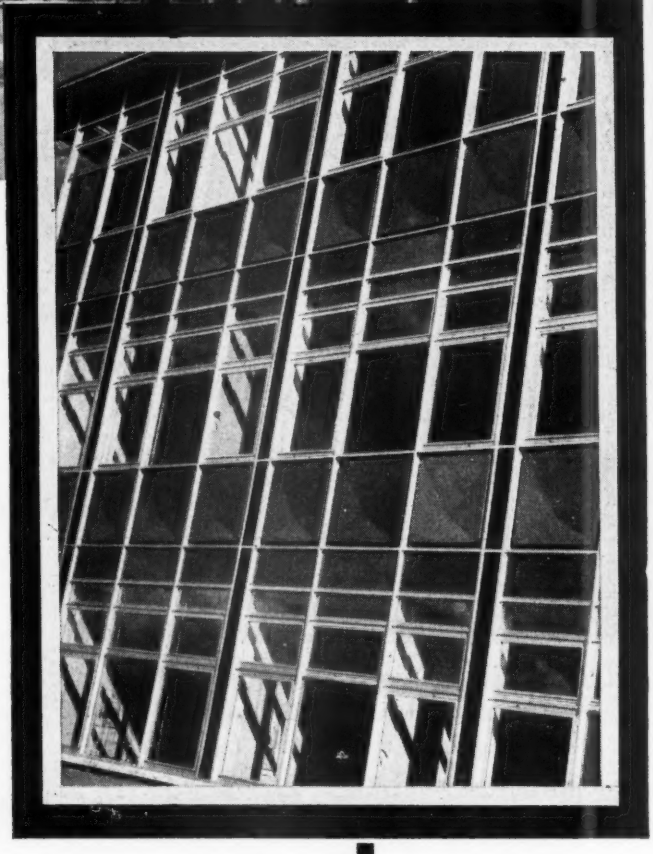


British Aluminium Showpiece clad in 'Wallspan'

Wherever it was possible to use aluminium in this building, aluminium has been used. 'Wallspan' curtain walling clads the outside, while inside, aluminium shows off its many and various talents from heated and acoustic ceilings to door handles and electric wiring.

In the entrance hall, the built-in furniture and the surround to the revolving doors are made in light and dark hardwoods set off with silver anodised aluminium sheeting. 'Imprest' sheeting lines the lift and clads the lift shaft and the lift doors themselves are lined with blue anodised fluted aluminium. Staircase balustrades are finished in silver anodised tube and strip and anodised aluminium is used for many of the light fittings.

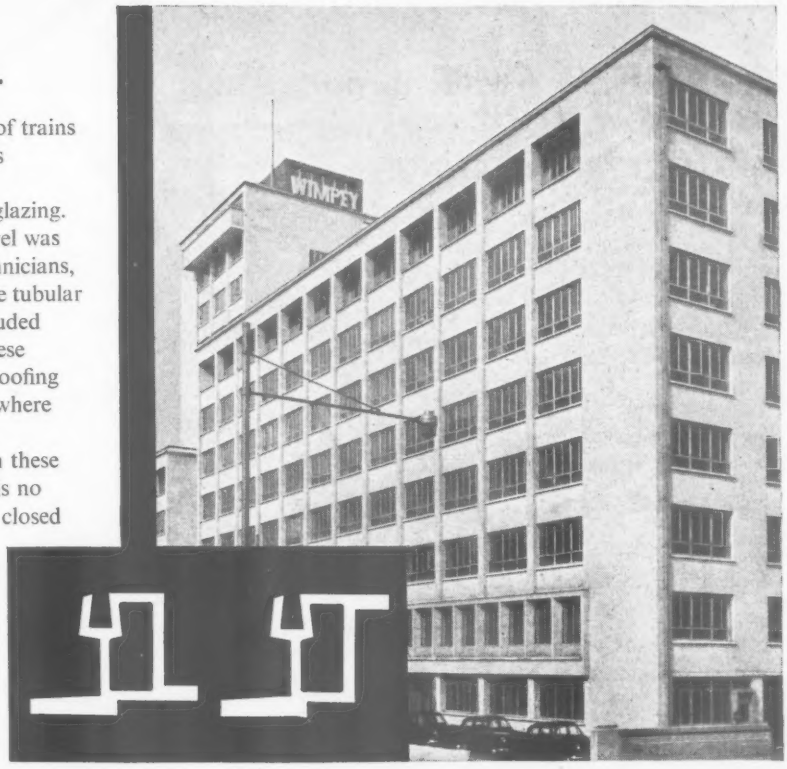
The 'Wallspan' clads the building on the long north and south walls and is fitted with Williams & Williams purpose-made aluminium windows. A point of interest is in the dished aluminium spandrel panels of BA.45 alloy. This is a 5% silicon alloy which, when anodised, turns a medium grey in colour without the addition of any dye. The anodized film gives extra protection to the metal and the colour is entirely unaffected by exposure to sun and weather. The panels are all 18 gauge, backed up with medino board with a cavity in between.

The structural columns have been faced with black slate and incorporated into the decoration of the façade. They contrast with the silver colour of the Wallspan members and the grey of the spandrel panels.

New Office Block for The British Aluminium Company Ltd., Rolling Mills, Bainsford, Falkirk. Architect: Chief Architect, British Aluminium Company.

When double glazing is not quite justified . . .

George Wimpey found that the noise of trains at the site of their new head office was sufficient to be troublesome, but not sufficient to justify the use of double glazing. The problem of reducing the noise level was given to the Williams & Williams technicians, who suggested the use of special square tubular aluminium window sections with extruded channels to house strips of P.V.C. These strips effectively perfect the draughtproofing and damp the noise down to a point where it is no longer fatiguing.
An interesting feature is that although these windows are double side-hung, there is no meeting rail. They are caught in their closed position by espagnolette bolts.



These are the special Williams & Williams window sections. The P.V.C. is firmly held in the channels shown and will not perish through exposure to weather.
Architect: E. V. Collins, A.R.I.B.A., Chief Architect, George Wimpey & Co. Ltd.

Architect: F. Reginald Steele, F.R.I.B.A., R.I.B.A. Dist. T.P., F.R.I.C.S., M.T.P.I., A.M.I. Struct. E.

Two Schools for West Sussex County Council

Left. Williams & Williams purpose-made and off-standard steel windows and doors were used in the new Weald County Secondary School at Billingshurst.*
Above. The new main entrance at the Grammar School, Midhurst has Williams & Williams purpose-made swing doors. A new gymnasium has also been built, using Williams & Williams purpose-made steel windows.

* *The photograph is taken from inside the hall, with one of the classroom blocks in the background.*

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THE ARCHITECTS' JOURNAL

No. 3293 Vol. 127 April 10, 1958

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NOT QUITE ARCHITECTURE

BRUSSELS GETS A MOVE ON

The British, who have apparently a constitutional inability to plan for the motor vehicle, have really no right to criticize the Belgians for the astonishing feats of road building they are performing in and around Brussels. But splendid as is the determination the Belgians have shown to get the traffic moving, and exciting as it is to plunge at 50 m.p.h. or more down an underpass and then to be whisked up on to an elevated roadway, one cannot help thinking that it looks like a road engineer's crash programme executed with hardly a thought for the future appearance of the city.

*

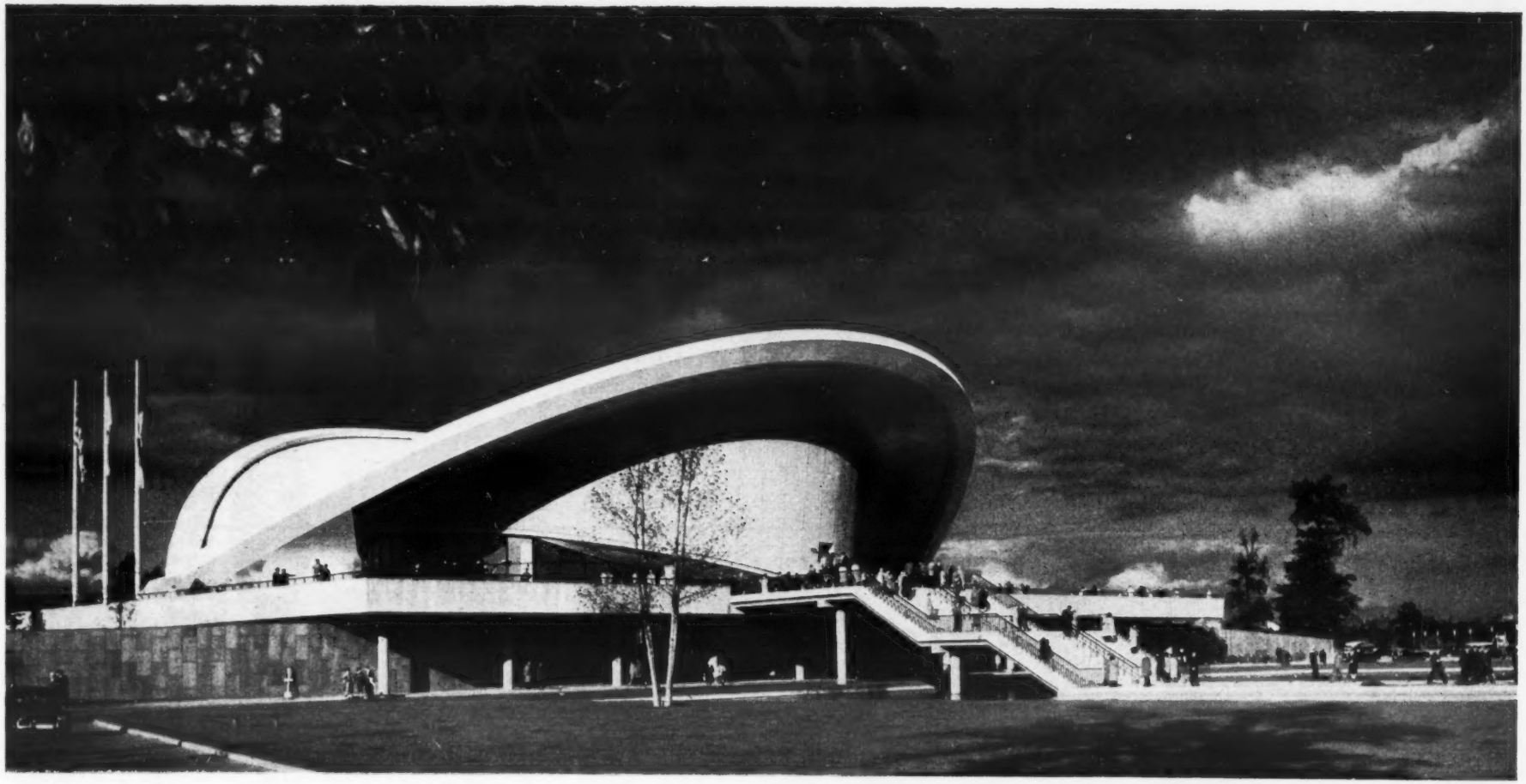
But it is certainly a sign that the Belgians can get things done, and get them done quickly, and are not frightened of spending money to make the international exhibition a success. The grounds of the World Fair (or Part-World, really, as Asia, Africa and the British Commonwealth are not at all well represented) are now the scene of a last-minute frenzy as the promoters of the national pavilions and the Belgian authorities move heaven and earth (particularly earth) in an attempt to get everything ready for the press day on April 15.

*

Although the pessimists shake their heads knowingly, and tell you that the French have no intention now of being ready before June or even July, nobody else is prepared to admit that his pavilion will be late, however great the apparent chaos in which it is plunged, and however immense the labours that have still to be performed. The exhibition authorities refuse to commit themselves: "we hope . . ." is as much as they will say.

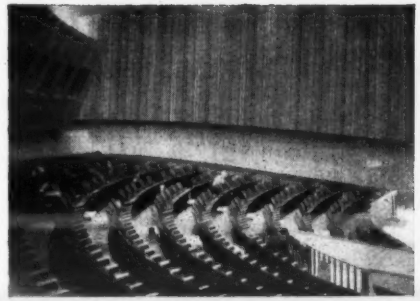
*

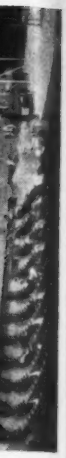
Only the French have completely given up hope; although the furthest behind they are making the slowest progress. The steel boom, which is intended to act as a counterweight to the cantilevered girders of the roof structure, still lies forlornly half-finished, propped up by four cranes and lying on the pedestrian bridge. It has become



A Building in the Landscape

In these days of credit squeeze and cut budgets the full landscaping of new buildings is a rarity, confined mainly (and ironically) to large exhibitions. When the Congress Hall in West Berlin (seen above from the south) was opened last autumn, the landscaping was almost complete; the whole operation was achieved in the fifteen months since foundation work was started in June, 1956. Visitors to Berlin this year will consequently be able to see a modern building set in a landscape with all the appearance of maturity. Right, are two views of the main auditorium, which seats 1,200. Further pictures and a description of the bulding appear on pages 535 to 537.





maturity. Right, are two views of the main auditorium, which seats 1,200. Further pictures and a description of the building appear on pages 535 to 537.

a serious obstruction at the very heart of the international section, and it would be surprising if the French have not been given an ultimatum either to get the thing up, or to take it away and let the exhibition get on.

*

In a determined effort to get the work finished the authorities closed the exhibition to the press on March 31. In the few days before that, remarkable transformations were taking place, as roads, paving, lawns, hedges, shrubberies, orchards and even a small forest went down. Walking from one pavilion to another became more and more hazardous, if one wished to avoid being scooped up by a shovel, pushed aside by a bulldozer, rolled flat by a roller, or merely squashed into an irregular shape by a lorry or a fire-engine.

*

These are trying days for the architects, except for the happy few (among whom the Germans and the British take first place) whose pavilions seem certain to be ready. To find the architect of a large pavilion is quite a feat. Where is the Russian? The uniformed gentleman whose job it is to keep visitors at bay looks inside the vast glass pavilion, and shrugs his shoulders: he may be in the cinema, in the coal mine, in the oil-well; who can tell? The American is to be seen arguing with Belgian contractors about the way to execute the details of another architect's design. The Yugoslav has left to see about some glass. The Venezuelan has had his kitchen, finished only the day before, destroyed by fire. The Spaniard is engaged in lengthy conferences with his Minister, who seems to disapprove vehemently of the arrangements—although that may merely be Spanish eloquence. The Czechs are having to operate from a tiny little office, approached by a narrow stairway up which burly men try to force their way, ducking under scaffolding while a workman patiently tries to get on with the painting.

*

One thing that seems certain is that the public is going to have a bellyful of atoms, nuclear energy, reactors and electricity. The Americans, who have adopted the slogan "no boasting," and have played down their industrial might, may prove to have been far-sighted. But the more recently industrialized nations can hardly afford to take their achievements for granted. The 370-ft. high Atomium, with its nine metal balls representing the structure of the atom, dominates the entire exhibition. It is bigger, and far more impressive, than one would gather from the photographs.

*

But the atoms on show are strictly for peace. A visitor from Mars would never learn from Brussels that anything so unpleasant as an H-bomb exists; nobody has been so indiscreet as to put one on show. It is going to be worth going to Brussels, not only to see the architecture and the individual exhibits, but to see the nations in their party suits and on their best behaviour, trying to look not as they are, but as they would like the rest of the world to see them

M. M.

The Editors

THE ARCHITECT'S VIEW ON EDUCATION

WHAT are the architects who are taking part in the Oxford Conference on architectural education going to say? Are they going to speak with a babel of tongues, or are they going to present some clear, well-thought out ideas? Unless they do the latter it seems unlikely that a conference which is a very mixed bag, including architects, educationalists, university dons, art teachers and builders, can come to any useful conclusions in the short space of two days.

It seems obvious that as the whole building industry moves forward with increasing impetus from the craft stage into that of the application of science and industry to building and planning techniques, so a great deal more co-operation and co-ordination among the specialists becomes necessary at the educational stage. And we need at the same time both to improve our existing specialists and to create new ones. The proposal for a University Faculty for the building industry which was advanced by Percy Johnson-Marshall has met with little adverse criticism, and seems to be the soundest method of creating an educational organization which would be comprehensive and strong enough to cope with future needs. But between this idea and its achievement lie a number of stumbling blocks.

It is very sad that there is still any argument in the profession as to whether architects should be taught by the articled pupillage method. The whole system of articled pupillage and external examinations is obsolete and needs to be changed as soon as possible. So the first objective is to get all students into schools of architecture.

Second, schools of architecture are an odd enough collection of educational bodies at the present time. They are attached to university faculties of arts, schools of art, polytechnics, and two are even independent institutions. One might well ask what the medical profession would think of such a muddle. The second clear objective should be to get as many as possible of the schools into universities.

Third, and far more important than worrying about details of the curriculum, although that is important too, is the quality of staff. Teaching should attract the best men, and a whole session could be spent on this problem.

Fourth, busy architects criticize the schools for being too theoretical, and for not having enough practical work in their courses. Here the Birmingham School, as we said last week, has given an excellent lead in organizing practical work, and this principle, or variations of it, could be safely recommended to all the other schools.

Fifth, schools of architecture, compared with other places of learning, are extraordinarily deficient in facilities for post-graduate research. Both Liverpool and Edinburgh have been taking active steps to remedy this deficiency, and here again their lead might well be followed by the others. And, one might add, what about post-graduate refresher courses for

rusty architects and jaded teaching staff?

The suggestions outlined above would at least give us a competent educational machine for today. But we need to think in broader terms than the school of architecture by itself. Some schools have been doing this in a limited way for years, as the departments of town planning bear witness. But what about all the other associated disciplines, some of which have never been heard of within the portals of a university? Why don't the university schools take a cue from the Polytechnics and start joint courses for architects, building managers, quantity surveyors and structural engineers?

HOW MUCH DO WE EARN?

The Ad Hoc Committee of the RIBA, by collaborating with the Royal Commission on Doctors' and Dentists' Remuneration in taking a random survey of architects' remuneration, is taking another important step forward in its work. The results will be valuable to the Royal Commission, but that is of minor concern to us. The important thing is that for the first time the RIBA will be in possession of information that is absolutely vital to the work of raising the status and the rewards of the profession. Success does depend, however, entirely on the questionnaire being properly completed and promptly returned by the 20 per cent of the profession to whom it is being sent. We do urge all those who are included in the sample to realize that the questionnaire must, at the latest, be returned this week-end.

BRUSSELS: A FIRST OPINION

Political columnists don't usually take notice of architecture. But James Cameron, the *News Chronicle's* top political writer, took time off to look at the Brussels Exhibition a fortnight before the opening. His comments were pungent. He wrote with respect of the German pavilion and was tolerant about the experimental structure of the French. This, alas, is what he had to say of the British pavilion:

*

". . . a sad sight it is, one must admit —a group of pallid, tent-like shapes, pretentious and meaningless, something between an Atzec shrine and the Pyramids reproduced in pistachio ice-cream. . . . It is said to represent the formation of a crystal, though why it should I cannot imagine. . . . Outside this enfeebled essay in the bizarre stands a sort of seaside flagpole. The whole thing is an æsthetic aberration."

*

Not very encouraging for a first national press comment on Britain's major public relations effort of 1958. ASTRAGAL, who has already given some guarded opinions about the Exhibition, hopes he will be able to say something more cheerful than this in a week or two.

HATFIELD'S RUEFUL DECISION

After an eight-day sitting the Hatfield roof inquiry was still unfinished. This did not suprise ASTRAGAL who, as you will remember, was present on the first day. But what does seem surprising is that the whole thing should be adjourned for two months. Is this to suit the convenience of the lawyers? Have they got some juicy briefs that they are reluctant to give up? There must surely be a better reason. But what is it?

*

The architects, the builders, the clerk of works and others who have been criticized all want to know the inspector's verdict as soon as possible. So do people who have used the same or a similar roofing system. But the inquiry will not be renewed until six months after the roofs blew off. And this, of course, is the second inquiry.

*

Couldn't an official inquiry, in the hands of a technical man, have got to the bottom of the matter, without the help of a single lawyer, in less than eight days?

LOOK, NO HANDS!

Over the last few years the V and A has done a good job in re-organizing its exhibits on a shoe string, culminating in the great floodlit exedra—if that is the word—which backs up the big Bernini sculpture. The back of the exedra used to bulge into a cheerfully chaotic Costume Court, full of antiquated glass cases containing not-very-well-dusted period costumes. But ASTRAGAL is shocked to find that all this has now been disastrously cleared up. The dressed figures have been pushed back into large glass cases which fill the four giant niches in the diagonal corners of the octagonal court. The blocking-in of these niches has wrecked the architectural shape of the room, and what is worse, the centre of the court is now a great empty waste which gives an unobstructed view of the disaster.

*

Costume students are complaining that they can't circulate round the exhibits any more, and have to be content with only one view of each dress. ASTRAGAL was also disturbed by the new headless, handless dummies. They may be all right as a display conven-

tion. But when invisible wires are used to fix hand and head accessories the effect is distinctly off-putting. Free-flying fans are not too bad, but empty bonnets hovering above severed necks are really macabre.

THE TUC'S EPSTEIN

It was rather hard luck on the architect, David Aberdeen, that the news stories about the new TUC headquarters were centred on the Epstein sculpture rather than on the architecture. But the unveiling of the sculpture was, after all, the central part of the ceremony. And the building itself can hardly be regarded as news, because some parts of it have been occupied for 18 months.

*

This is a pity because, for all its faults, the building is not only a notable addition to London's street architecture, but also a superb bit of planning. But the Epstein? ASTRAGAL, who hates being on the same side as those who have decried the sculptor for years out of prejudice and bigotry—and is angry about the Blackpool Genesis story—cannot be enthusiastic about this new work.

*

His view is simple (though, of course, these things are a matter of taste). Epstein, the modeller in clay, is a great artist, and especially a great portraitist; but Epstein, the stone carver, seems a lesser artist altogether, and his unchanging mannerisms carry less significance as time goes on. At least the TUC had the courage to choose an original artist, not an academic *pasticheur*, for their memorial. But what a pity they didn't specify that it must be in bronze.

*

The building's embellishments will not be complete until the sculptural group alongside the main entrance, which *is* to be in bronze, is in place. This work, by Bernard Meadows, is now being cast at the foundry. You may remember that an abortive competition was held for both these groups of sculpture, and that no awards were made because the assessors (Herbert Read, J. M. Richards, the architect and a member of the TUC council) found nothing up to standard. It was after this that Meadows and Epstein were appointed.

In a way Meadows has the trickier job. A sculpture group in an enclosed courtyard is one thing. A group that has to make its mark in the bustle of a London street is quite another.

WOVEN PAINT

Graham Sutherland's final design for the 70-ft. high tapestry to hang at the east end of Coventry's Cathedral was published in colour in a recent issue of the *Builder*. Judging from this sketch (and it may not, of course, be entirely fair to do so) Mr. Sutherland has paid little attention to tapestry technique. The sketch is very much a painting, showing brush strokes and the addidental marks which are characteristic of free-hand work. It seems odd that these personal, painterly touches are to be meticulously reproduced within the strict geometrical limits of a woven material. Large parts of the background to the throned Christ are roughly washed-in areas of plain green—some of them carpet size (10 ft. by 15 ft.). In the great period of tapestry design such large areas of plain colour (pointless with a hand process) were eschewed by the artist-weaver, who constantly enlivened his work with varying detail. In the Sutherland tapestry the humbler craftsman will have the extraordinary task of reproducing monochrome brush strokes enlarged to enormous proportions. Tapestry has certainly declined as a creative art.

DO IT THEMSELVES

ASTRAGAL, who likes to see new teaching methods put on trial, looks forward to hearing the results of a new AA School course on "Discovery of Materials." It was introduced by Peter Matthews, the senior construction lecturer, and it is intended to encourage individual study of building materials as an alternative to the usual straight lectures which send students to sleep with their highly-compressed mass of facts. A weekly programme provides a basis for study—required reading, useful references, appropriate exhibits and trade literature for the students' technical reference files. From time to time small groups of students discuss with the lecturer any problems they have come across, particularly problems of site supervision and practical application. The course is also designed to persuade students to use the reference library more fully.

Sir Jacob Epsteins' statue of a mother holding her dead son was unveiled at the new TUC building on March 27. It is a memorial to the trade unionists who lost their lives in two world wars. See ASTRAGAL'S *comment on this page.*

EXHIBIT FOR MOSCOW

ASTRAGAL learns, rather belatedly, that the British exhibit for the International Union of Architects' Congress at Moscow is to be on show at the Building Centre for a week only, from April 11 to 18. The theme of the Congress is Construction and Reconstruction of Towns 1945-47. The British exhibit will show post-war developments in London and Harlow.

ASTRAGAL

DIARY

Prestressed Concrete. First of three Cantor Lectures by G. W. Kirkland. At the RSA, 6, John Adam Street, W.C.2. 6 p.m. APRIL 14

How Successful is Counter Attack? Talk by Ian Nairn. TCPA meeting at the Planning Centre, 26, King Street, W.C.2. 6.30 p.m. APRIL 14

Presentation of RIBA Gold Medal. At the RIBA, 66, Portland Place, W.1. 6 p.m. APRIL 15

Engineering in the Landscape, talk by G. B. Jackson and Brian Hackett. ILA meeting at the Housing Centre, 13, Suffolk Street, S.W.1. 6.15 p.m. APRIL 17

LETTERS

Graeme Shankland, A.R.I.B.A., A.M.T.P.I.

M. A. Booth

C. F. Colt
Director, W. H. Colt & Son Ltd.

Michael Haskoll, Student R.I.B.A.

Jack Whittle, A.R.I.B.A., A.M.T.P.I.
Deputy Borough Architect, West Ham

SPUR

SIR,—ASTRAGAL, I am glad to see, has been converted. When I suggested, in my paper at the AA in February last year, that a new society was needed to secure the radical reconstruction of Britain's cities, ASTRAGAL'S "jaw dropped" and he contemplated emigration.

Now that this threat has apparently been averted and the new body "SPUR" has been born, may I join ASTRAGAL in appealing to all architects and others whose view of their purpose in life is wider than the confines of their immediate job to help make SPUR an informed and lively forum for urbanists?

GRAEME SHANKLAND.

London.

Now I Understand

SIR,—As a lay woman interested in architecture and a regular reader of your JOURNAL, may I say that I am not surprised at any Town Planning officer refusing to accept the elevation submitted by Messrs. Emmerson and Sherlock. The revised design has hidden an ugly chimney and masked ugly windows. It may not be what architects call architecture, but at least it looks like a house and is more pleasing to the eye.

I now understand why the average person does not consult an architect when he decides to build.

M. A. BOOTH.

Notts.

Colt Bungalow

SIR,—I thank you for the copy of the ARCHITECTS' JOURNAL in which is illustrated our Demonstration Bungalow, and it certainly looks very well in the write up.

A small point, namely, the criticism of the porch. This is not really a part of the design, but we felt a door in the wall would be a little "naked" looking, and we wished to avoid spending money on a porch. The "rusticated porch surround" is in fact made from *offcuts* from stair strings, which are normally burnt. We consider these have come in very handy for a door surround, and make an amusing entrance!

C. F. COLT.

The Canterbury Maisonettes

SIR,—In his criticism of the maisonettes in Military Road, Canterbury, Kent (AJ, March 27, 1958), Mr. Richards described the row of balconies as cluttering up the rear elevation "without serving any apparent purpose."

Before moving, about a year ago, into a flat with a similar type of detail in the living room, I wholeheartedly agreed with Mr. Richards' criticisms. Now, for the following reasons, I must wholeheartedly recommend the inclusion of this feature.

The glazing down to floor level, in our case, does provide worthwhile lighting—we have 10-ft. of window in a 17-ft. wall. Observation leads me to believe that, in any case, the light reflected from the floor immediately in front of the door is well worth having.

It is possible to sit in an easy chair and see out of the window; a striking advantage we noticed after having lived in a flat where the sky was all that could be seen.

The air currents in a room with this type of detail are found to be far more general. Instead of a layer between the sill and head of the window and the entrance door to the room being cleared all levels in the room benefit from a more frequent rate of air change. Naturally, there is the drawback that these more general air currents can occur in winter as draughts, but that is a question of detailing. In hot weather, when no relief can be expected elsewhere, some breeze can usually be found in front of these doors. This breeze probably occurs immediately in front of any window, but it is possible to sit in front of the doors and effectively gain benefit from it. Further it is possible to sit in the sun more easily, and completely, than can be managed with a 2-ft. 6-in. to 3-ft. high window sill.

It may be possible to detail these doors in a way more satisfying to Mr. Richards, but I disagree that they serve no purpose—indeed these reasons lead me to believe that they are a desirable feature, and more satisfactory than the usual projecting balcony, with its solid floor, and often with solid front.

MICHAEL HASKOLL.

London.

SIR,—The idea shown in your article on the Canterbury maisonettes of combining architectural criticism and cost analysis is a novel one, but there are certain aspects of it which I would wish to criticize, although in doing so I do not wish to appear unappreciative of your enterprise or of the achievement of the City Architect of Canterbury.

My main interest is your comparison between the cost of Canterbury maisonettes and that of maisonettes erected at the Claremont Estate, Forest Gate, by the County Borough of West Ham. Apart from difference between prices applicable in London and those in the Provinces, I am not sure that these comparisons are valid either in detail or in total cost.

First, as to detailed costs, experience in maisonette building in West Ham has tended to show that the effect of crosswall construction on cost is at present limited, and tends to result in a re-distribution of cost within the total building figure. There is little doubt, however, that savings made are on the structure, but the variation which you quote between the 5s. 1d. per sq. ft. at Canterbury and 9s. 9d. per sq. ft. at West Ham, if expressed in percentages of the total building cost per sq. ft. shows less difference: 18.1 per cent at Canterbury and 25.3 per cent at West Ham. If floors are included, which, in my opinion, they should be, as they form an integral part of the structure and framework of the Ministry block, the figures become—Canterbury 7s. 5½d. per sq. ft. (26.6 per cent), West Ham 12s. 11½d. per sq. ft. (33.5 per cent). The difference in price between partitions is not strictly comparable in that West Ham partitions are 2-in. breeze rendered and plastered both sides as opposed to the unplastered egg crate plasterboard used at Canterbury. There is unquestionably a tangible saving in roof construction, although the experience at West Ham would not support the extensive saving quoted in your article.

On total costs the great interest arising from the article is the opportunity it gives to compare the cost of the Canterbury maisonettes with those of similar design which are being built in West Ham as part of the Ministry of Housing and Local Government experiment. Under the direction of the Borough Architect and Planning Officer, Thomas E. North, two blocks of Ministry maisonettes, comprising 48 dwellings, are being erected as part of a larger contract of 215 dwellings. Figures comparable to your analysis are not available for this Contract, but the basic price per sq. ft. (that is, the price for the dwelling plus certain external works) is for the Ministry maisonettes 41s. 3d. The 28s. per sq. ft. of your cost analysis for the Canterbury dwellings would need to be adjusted to compare with the basic price per sq. ft., but the increase would be a small part of the difference between the 28s. and the 41s. 3d.

In order to obtain comparative costs, this contract also includes two more blocks of maisonettes totalling 48 dwellings designed in the Borough Architect's Department. The design of these is based on the crosswall construction principle, but with brickwork front and back, and pitched slated roofs; the basic price for these maisonettes is 38s. 10½d. per sq. ft. There are variations in floor areas of the dwellings which invalidate a direct comparison between two figures on the same contract at West Ham but they show that a crosswall construction with traditional materials used externally is as cheap as crosswall construction with lightweight panels, and may result in a building requiring less maintenance. It appears that in order to reduce the weight of the superstructure, extra costs over traditional methods are incurred and that until a light, durable cladding material is produced which will withstand impact, fire and require little maintenance, and which, including fixing, will compete in cost with the external materials of brick or rendered blocks, crosswall techniques will not show the savings of which they are capable.

In the architectural criticism Mr. Richards is fully justified in his dislike of the fencing and "brick sheds" illustrated. The difficulty of keeping prices down and at the same time providing attractive stores for the tenants, reasonable fencing and interesting site development is one of the outstanding problems of "low-cost" multi-storey housing development. When the building itself has to be limited in cost with an unavoidable and undoubted effect on the architecture, it seems necessary to spend more money on external works in order that the resultant effect of the scheme as a whole will be acceptable.

There would seem to be one outstanding point which calls for attention in these comparisons and that is the difference in cost between the construction of a similar maisonette at Canterbury and West Ham. The price variation here seems extraordinary and one which is apparently outside the control of the architect. An investigation as to why there should be this difference in price between two localities might well result in much more substantial savings in cost than can be achieved by the architect in redesigning within the now restricted limits of local authority housing.

The Ministry experiment in collaborating with local authorities in the construction of new types has been well worth while, but it is only a beginning. This part of the Ministry's work should be broadened and extended, with ample funds made available from Central Government sources, so that the fear of occasional failure should not hamper vigorous research and experiment which could result in economies and increased speed in housing—an essential need if the slum clearance programme is to succeed.

JACK WHITTLE.

West Ham.

NEWS

PRESERVATIONISM

John Summerson's Views

John Summerson, in a talk on the preservation of Georgian and Victorian architecture at the RICS on March 31, expressed the friendliest feelings towards the newly announced Victorian Group, but added that some recent cases suggested the "new protestants" were apt to run rather wild. "Dreadful nonsense" he said "was written about the St. James's Theatre, one very reputable Sunday paper even illustrating a disgusting piece of Victorian Louis XV pastiche over a caption exclaiming upon its elegance and beauty. With admirers of the Imperial Institute I go a long way—Collcutt's idiomatic handling of renaissance detail in brick and stone is brilliant and unique to its period; but it is curious, as Lord Salisbury unkindly pointed out in the House of Lords, that so few of us recognized it as a masterpiece till it was threatened. And, indeed, in the whole picture of Victorian achievement in architecture, I cannot see that the Imperial Institute stands as high as all that; and although I agree that its preservation was worth serious consideration, I believe the outcome was, in the circumstances, the right one.

"Where there is such a vast field of selection as in the Victorian period, preservation policy must proceed very cautiously and on ground carefully explored and continually subject to the tests of historical scholarship. Up to 1870, the Victorian genius ran mostly into church building and the major works of Pugin, Butterfield, Street and Pearson are not in any grave danger. The Houses of Parliament and the Law Courts are, I take it, likely to be with us for some considerable time. If the Transport Executive takes it into its head to remove the old St. Pancras Hotel there will be a storm indeed but it will be one of those tragi-comical storms where every protagonist knows in his heart that the subject of argument is not really a great work of art. It would be fun to keep the St. Pancras Hotel, and I believe sometimes in preserving for fun; but this might prove to be more expensive fun than we can afford.

"A rather similar case, now under review, is the extraordinary white elephant with which Baroness Burdett-Coutts sought to raise the moral tone of the East End in 1866—the Columbia Market. The pathos of its misdirected idealism belongs to the theatre rather than to real life. The costliness of its carved ornaments (£200,000 in 1866 allowed for quite a lot of carving!), its dreaming Gothic lines, make it, in decay, vocative in a high degree. Yet to preserve it would be quixotic—an encumbrance and a waste. Moreover, as a preserved monument the pathos would vanish and we should become conscious only of the rather indifferent technical powers of its architect.

"Among later Victorian things I can think of some, not necessarily famous, which should be protected with the utmost rigour. We must keep some at least of Richard Norman Shaw's town houses and country houses; he was an artistic innovator whose works will never be mere curiosities, and the name of Shaw leads one to think of the men who inherited the freedoms he claimed for architecture—C. F. A. Voysey, C. R. Mackintosh and Sir Edwin Lutyens among them; so that preservation problems begin to creep up into our own day.

"Are we trying to preserve too much? I do not think so. As public opinion stands today, I believe we are only just keeping abreast of what it feels ought to be done, and not a jot more; for in this matter public opinion is very exacting and very suspicious of laxity. Today more people are more conscious than ever before of architecture as history and architecture as art. Such waves of curiosity and expanding interest are not easily explained but I sometimes wonder if this one has something to do with our lack of success in producing a contemporary architecture which is warmly and instinctively loved. I wonder if the present enthusiasm for historic architecture foreshadows a parting of the ways in the history of the art—if it may not be that architecture as the word has been understood since the renaissance is now virtually a closed book and if the architecture of the future will be a kind of industrial designing—fine and elegant, exquisitely convenient, but impermanent, impersonal, classless and of low emotional content. If that proves to be the case, then the retention of the ancient, from Stonehenge to the Albert Memorial, from hut settlements to model villages, may take on an even more striking significance than it does today."

VICTORIAN SOCIETY

Affiliated to SPAB

The Victorian Society was formally launched as an organization affiliated to the Society for the Protection of Ancient Buildings at a meeting held last month. It was agreed to invite Lord Esher to be Chairman, and the members of the Committee include Sir Hugh Casson, Mrs. Christiansen, Dr. N. Pevsner, W. Gaunt, Christopher Hussey and Mr. Goodhart-Rendel. The object of the society is "the study and appreciation of Victorian Architecture and Decorative Arts with a view to preserving outstanding examples." The minimum subscription is £1 1s., and life membership £15 15s.

V & A

Finnish Rugs On Show

The V. and A. Museum is to be congratulated on its exhibition of Finnish handwoven rugs, which is on display until May 4. The exhibition, beautifully and simply arranged by architect Mrs. Johansson-Pape, is in two parts—an introductory room, showing some of the 18th- and 19th-century rugs on which the work of modern designers is based, and the main gallery, containing about 40 superb examples of the present day Finnish renaissance. Although they are called rugs, these textiles are not intended for use as floor coverings; originally designed as bedcovers or wall hangings, they have now developed into works of art to be hung as are paintings.

The rugs are all *ryijy* or long pile rugs, with individually knotted tufts—a laborious technique but one which imposes no limitations on pattern or colour—and are the combined work of designers and weavers—the designers, who have weaving experience, produce sketches for weavers, with whose work they are familiar. Many of the designs are inspired by the cold light and muted colours of the Finnish scene, or in contrast, by the Finns' warm hearted reaction to their environment. Compare, for instance, Eila Annikki Vesimaa's Winter Feeling and Midsummer Bonfire and Kirsti Ilvessalo's Milky and Woodpecker. With their characteristic richness of texture and subtlety of colour, these rugs enhance considerably the simple Finnish interiors for which they are designed. Their use might well be extended to this country, as copies of these rugs can be imported from Finland or alternatively weavers here can be commissioned to produce special designs.

RIBA

Earnings Survey

As part of their approach to the problem of establishing equitable rewards for doctors, the Royal Commission on Doctors' and Dentists' Remuneration are conducting a comparative income survey involving twelve professions. They have asked for the RIBA's co-operation in this and as it was the Ad Hoc Committee's intention anyway to undertake an inquiry into architects' incomes, the Council have readily consented. A questionnaire drawn up in collaboration with the Royal Commission has accordingly been sent out from the RIBA to a 20 per cent. sample of the corporate membership in the United Kingdom—some 3,000 architects chosen at random. With this were covering letters from both Richard Sheppard, Chairman of the Ad Hoc Committee, and Sir Harry Pilkington, Chairman of the Royal Commission. Mr. Sheppard acknowledges in his letter "the undeniable nuisance of filling in a pretty voluminous paper" but points out that this is a unique opportunity to get reliable comparative figures gathered on a common basis. "For the first time we shall have something more than hearsay to guide us in assessing how much better or worse we fare than other professions."

Members concerned are urged to return the completed forms not later than April 15. Elaborate precautions have been taken to ensure that completed forms remain strictly anonymous, and they will all be destroyed as soon as the information on them has been transferred to punched cards.

SCHOLARSHIPS

Travel Grants

The English-Speaking Union announces the offer of four Travel Grants to the United States, application for which is open to men and women of British nationality, aged between thirty and fifty, who are experienced and practising in a branch of the arts such as painting, sculpture, music, architecture or design. Each Grant will cover the cost of travel to and from the United States and travel within that country. There will also be a subsistence allowance for each day spent in the United States, up to a maximum of 70 days, the recommended length of the visit. The Grant may be taken up any time after mid-September, 1958, but must be completed by June 30, 1959. The closing date for applications is Saturday, June 7, 1958.

Further particulars and application forms are obtainable from: The Secretary, The English-Speaking Union, 37, Charles Street, Berkeley Square, London, W.1.

BASA

Students' Conference

A conference of the British Architectural Students' Association will be held at Brentwood School, Essex, from April 24 to 26, at which the report of the preliminary conference held in September, 1957, will be discussed. Any communications should go to the Secretary of the BASA, Liverpool School of Architecture, Liverpool, 7.

Rolf Rosner, an architect with British experience now working in Western Germany, attributes the success of the West German post-war housing effort to a number of factors, including modular co-ordination, the development of highly efficient traditional methods (such as the use of load-bearing brickwork for multi-storey blocks of 8-storeys or more), mechanization of small sites, and hard work both by operatives and management. He also describes the organization and finance of house-building, and refers to the failure of the Germans influenced by free enterprise philosophy, in the field of town planning.

HOUSING IN WESTERN GERMANY

What are the outstanding aspects of the West German Housing effort which has resulted in the construction of more than 4 million dwellings in nine years? After having worked for more than two years in Hamburg I shall attempt to deal with some points of interest to British architects, planners and everyone interested in housing. In 1939, 39.3 million inhabitants lived in the territory which is now the German Federal Republic. In 1951 this figure had increased to more than 50 millions through the influx of refugees from the East and this influx continues. About 2¼ million dwellings or more than one-fifth of the total number of dwellings existing before the war, were destroyed or severely damaged and most of these have been reconstructed by now, though to a large extent smaller in size than previously. 600,000 households are still

The Bogahausen estate in Munich. All dwellings are heated from a central boiler house.

housed in camps or emergency dwellings. Many of them are living in unbelievable squalor, even large families having just one room to themselves.

There are other factors which influence current housing problems: The annual setting-up of 300,000 new households and indications that the annual housing output is now likely to taper off from its peak figure of 570,000 dwellings in 1956. Furthermore, the passing of the second Housing Act last year favours the purchase rather than the renting of dwellings and so makes it practically impossible for many a poor if deserving householder to obtain an adequate form of accommodation. Lastly, quite a few re-housed families, no longer figuring on waiting lists, live in new dwellings, which must be regarded as overcrowded. From personal experience I know of a seven-person family living in a four-room flat, a five-person family living in a three-room flat; many terrace houses are Duplex types housing two families. This is not at all a rare occurrence, even if it is mostly unknown to the foreign visitor to new housing estates. Therefore the official claim that with the building of another two million-odd dwellings the West German housing deficit will be cleared by about 1961 must be regarded with some caution. It seems more likely that without any drastic change in the current situation another 10 years will be required to house all the people adequately.

Nevertheless, 4,000,000 dwellings built in 9 years is a remarkable achievement and one must ask what methods of rationalization have been used to make possible the recovery of a defeated country?

First of all there is the German system of modular co-ordination adopted by the Federal Government after the war and based on the work of Professor Neufert during the previous decade.

When the country returned to normal in 1949 the reconstruction of partially destroyed buildings required the use of traditional materials such as bricks and concrete blocks. A further factor determined the German attitude towards rationalization: the structure of the building industry had little changed since before the war; the average contractor employed no more than 10 to 20 operatives and the average housing site consisted of less than a dozen dwellings. Large building sites where advanced techniques, for instance prefabrication, could be applied economically were, and are, relatively rare. In the past the Germans have readily experimented with such techniques but the slump of 1930 and the subsequent neglect of domestic and school building as a result of rearmament prevented a fair trial of new methods.

Therefore, when considering past experience and the state of the country after the war, those responsible for introducing some measure of rationalization into the building industry decided to increase the efficiency of traditional methods: they were far-sighted in adopting the metre as the basis of measurements. However, they seem to have been unaware of any advantages obtaining from the adoption of the 10-cm. module; rather did they base the division of 1 metre on an existing grid of 12·5 cm. which permitted the placing of four handy stretchers within exactly 1 metre: the 25 cm. by 12.5 cm. brick, inclusive, that is, of one thickness of mortar, was adopted as the standard unit for Western and Eastern Germany, superseding a variety of bricks of different dimensions. As a further measure the production and use of wall blocks was boosted to an extent hitherto unknown. A few figures will illustrate this point:

Production of Wall Units in Western Germany (in percentages)

Total production		*Common bricks*	*Concrete blocks*	*Sand-lime bricks*
1949	100	67	18·5	14·5
1953	100	46	38·5	14·0

Experience has shown that through the use of wall blocks the pace of building can be appreciably increased and an excellent degree of thermal insulation achieved; also rendering is less problematical than in Britain because the climate of Germany is mostly continental. All wall-blocks are dimensioned to align with the standard brick. Building materials manufacturers have adapted their plant to these dimensions and most technicians and operatives now take them for granted. Preferred dimensions for windows, doors and pre-cast lintols were worked out as well but their practical use is confined to the Land of Schleswig-Holstein where a progressive group of official architects is at work. Nominally the modular system is compulsory in all federal Lands, but in fact, exceptions to the rule are only too evident when architects, and people on the site, ignore the modular rules.

It would be unwise, indeed, to read too much into German modular co-ordination in order to introduce a similar system in Britain. There are members of the Modular Society who have been impressed by one of the German Standard Specifications, which lays down a preferred series of dimensions for the interiors of dwellings based on 10 cm. This has remained unused; 12·5 cm. and 25 cm. are the governing dimensions.

Secondly, the development of highly efficient traditional methods of construction has led to the use of load-bearing brickwork, up to a height of eight storeys or even beyond. This is cheaper than any other established or experimental form of construction for multi-storey dwellings.

Thirdly, there is the mechanization of small building sites with the aid of tower cranes, auto-cranes for two-storey buildings, belt conveyors and various simple but ingenious implements such as special carts and shovels for moving concrete and mortar, and roller conveyors for moving bricks and larger blocks.

The use of machines increases every year as the following figures will show:

Type	1952	1956
Tower cranes	1,259	5,518
Belt conveyors	8,135	15,892
Hoists	28,363	42,238

These implements cost little yet improve output appreciably. They have received inadequate attention by British contractors. Fourthly, the use of the "Taktverfahren," *i.e.* the phasing of site operations, which means that one gang of operatives carries out the same type of work throughout a project. This, of course, requires a restricted number of type plans and

Terrace houses at the St. Lorenz-Sud estate in Luebeck. The houses are staggered to give more privacy to tenants. Most contemporary terrace houses in Germany are only provided with a small paved terrace which may be surrounded by shrubs and flowers as the tenant desires. The remaining open space between rows of houses is either looked after by the owners or by the local authority. Chain link fencing and concrete posts are unknown.

Terrace housing in a Hamburg suburb.

The outer suburban estate of Formsen, Hamburg, with 2,000 dwellings grouped in terrace houses, and 3- and 6-storey blocks of flats. The estate was built in little more than two years.

there is the danger of monotony. In fact, a typical German housing project is likely to have less variation than a British one.

Fifthly, the proverbial readiness of the German operatives to work hard. This is based on the natural desire to see their devastated cities reconstructed and is no particular national characteristic. British workers would react likewise under similar conditions. Further incentives are widespread: bonus work and, in a negative sense, regular periods of mass unemployment, particularly during the winter. There also is the influx of workers from the East, who toughened by traditionally more primitive conditions are ready to work exceptionally hard in order to build up a new existence. They naturally tend to put a brake on improvements in general labour conditions. When a long day's work is done, and also during weekends, such people will build their own houses with the aid of relations and friends. But there is a price to be paid for all this hard work: the intense pace and physical strain, such as results from working with two-hand wall blocks (the use of which is now declining), has permanently injured the health of many a worker.

Sixthly, in this feverish rush to get the country rebuilt the top managerial people have set a good example. I know of managing directors of leading housing companies, who often start work at 8 o'clock in the morning and do not stop for 12 hours or hold conferences during weekends if there should be the need. But they, too, eventually pay the price; every week half-page obituaries headed " suddenly and unexpectedly " tell of the passing away of such men in their forties and fifties.

German housing has also been furthered by the efforts of the building research institutes in Hanover and Stuttgart. These institutes undertake work studies and test site organization and the use of various materials in all parts of the country. They are not equipped like the Garston BRS; various laboratory tests are carried out by selected technical colleges or universities. The two institutes utilize the experience gained for the persistent propagation of a series of relatively simple facts: the use of the modular system, the advantages of building with blocks larger than standard bricks, careful preplanning of site operations, the use of simple auxiliary implements, the most economic depths of dwellings and many similar points likely to make traditional methods more efficient. This constant propagation of a limited set of measures likely to cheapen and speed traditional building has had a more profound effect on the average German builder than (it seems) the more diversified and discreet work of our BRS on the average British builder. This brings me to an additional point: the leading men in, and close to, the two German research institutes are of considerable professional attainment. In spite of the current adulation of commercial success, most people in Germany respect this kind of distinction and are ready to benefit from it. Can one say that a similar attitude prevails in the British building industry?

Finally it cannot be overlooked that until now Western Germany remained free of any defence commitments which in the case of Britain have cost £1,500-£1,600 million annually. More money was therefore available

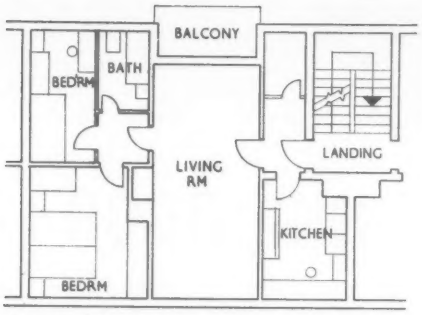
A point block in Kassel.

The Wedel estate by the river Elbe. This project consists largely of terrace houses for the employees of a large industrial concern.

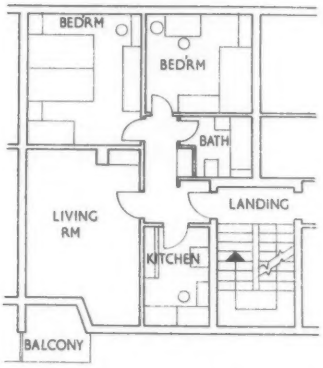
for housing and inflationary tendencies resulting from armament expenditure have been non-existent in the federal republic.

After the collapse of the Hitler-regime which had neglected the development of housing on contemporary lines the Germans had to draw on their valuable experience during the nineteen-twenties and also on experience gained by their neighbours, the Swiss and the Scandinavians. One cannot help being impressed by the fact that many German architects are somewhat more concerned with the well-being of the people to be rehoused than with formalisms of architectural expression and structural experiments, however important. Man is truly at the centre of things. Considering what a limited amount of sun is available in our part of the world it is inconceivable to Germans, and many other continentals, that gardens should be made to face east or even north so that an agreeable street architecture may be achieved through this kind of layout. By experience I have found that with blocks facing south-south/west and west it is possible to work out layouts which would be acceptable both in Britain and on the continent. But even schemes which, on paper, may appear monotonous with most blocks facing south-west, can look lively in reality if contours

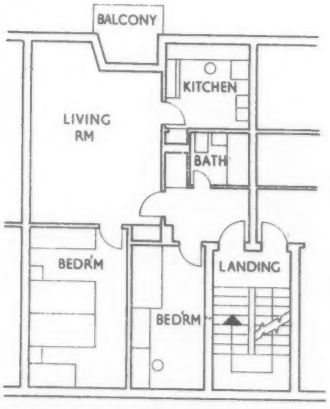
The Hohneskamp estate in the outer suburbs of Hamburg. There are 1,600 dwellings grouped in terrace houses and 3- and 6-storey blocks of flats. The estate was built in two years, mainly because the number of type plans remained strictly limited. Superb landscaping has overcome the dangers of monotony.



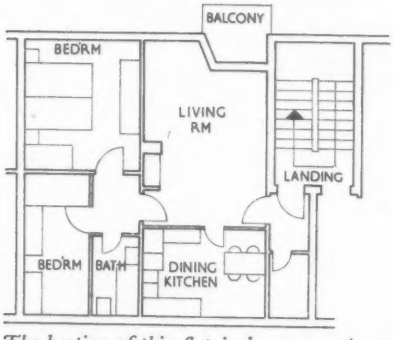
The type plans in this column are all for three-room staircase access flats in Hamburg. The one above has a through living room of 281 sq. ft. and convection heating. Scale 1/100



This flat has an internal bathroom, facilitating a relatively narrow frontage. Heating is by warm air from the living room.



Another design with internal bathroom, a frontage of 23-ft. and a depth of 36-ft. All three rooms are heated from the centrally situated slow combustion stove.



The heating of this flat is by warm air passing through ducts from a large slow combustion stove in the living room.

have been fully utilized and if the site has had the benefit of landscaping at which the Germans excel; we are often carried away by geometric shapes on paper, when our imagination, and reality at eye level, ought to guide us. Point blocks and tall slab blocks are very rarely designed for families, and are regarded as unsuitable for children. I have heard the Alton Road point-blocks criticized both for that reason and because one flat per floor is facing east.

Balconies of adjoining flats are, as far as possible, kept apart so that privacy is safeguarded. Living rooms in flats tend to be larger than in Britain, and parents' bedrooms which are accepted by the LCC would be unthinkable. By-laws govern the provision of storage space per flat either in the loft or basement ranging from 90 to 140 sq. ft. according to the size of dwelling. Often space for the drying of washing is also provided. Access balcony flats are rare because they are unpopular and are regarded as slightly more expensive to build than staircase access flats. The four-storey staircase access block is regarded as the cheapest type of multi-storey block not only in Germany but in Scandinavia and the Soviet Union as well.

The most economic depth of a block of staircase-access flats lies between 33 and 36 ft. There is no lift of course. In some parts of the country it is provided from the 5th storey, in other parts from the 6th storey, upwards.

German architects have distinct ideas about the planning of kitchens. The arrangement of a kitchen, based on work studies carried out by the Research Institute in Hanover, is as follows: cooker, working top, sink, draining board top and/or dresser. For up-to-date cooking the Germans favour electricity and the provision in new estates of gas and electricity services competing with each other is unknown. Trouble is also taken to improve upon the most common form of heating; the small combustion stove in each habitable room. These stoves are not as well designed as British prototypes and it is hard work for the housewife to clean out several of them at frequent intervals. A considerable improvement is a system of warm-air heating fed by a large, slow combustion stove, which may be serviced from the entrance hall of a two-storey house or a flat. The heating of a flat by means of radiators and a boiler in the kitchen and central heating from the basement of a block of flats is more common than in Britain but not as much a routine matter as in Denmark. This is simply a matter of expense. In very large schemes like the new 10,000 dwelling development in Bremen, district heating will be provided and a similar system is being considered for the reconstruction area of Hamburg-Altona. In fact, here the planners are not only insisting on a smokeless but also a soot-less method of heating for the central boiler-house. This means no coal or coke, because storage and fuelling would cause a lot of dust. Oil or gas are acceptable.

Now a brief description of the organization and finance of housing. Subsidized housing is delegated by the authorities to agencies, be they municipal companies, co-operative housing associations or housing companies generally. Anyone can start the

latter, but he is bound by many rules, the most important requiring limitation of profits. The most important of these companies is "Neue Heimat" in Hamburg, heading 25 subsidiary companies in various parts of Germany. This group is backed by the German Trade Union Congress with capital amounting to £10 million. It owns about 100,000 dwellings and many other types of buildings, kindergartens, laundries, offices, etc.

The landscape gardening of its own estates is also the responsibility of "Neue Heimat" and it is magnificently done. On its Hohnerkamp estate with 1,600 dwellings, 18 gardeners are regularly employed. Other activities of this organization include the monthly publication of an illustrated town planning and housing journal for architects, and a magazine of a more varied kind for the tenants. A well-equipped home is available for the tenants' children who can stay there for up to four weeks at a time. The organization also produces as a supplement to its annual report, a colour film showing the most recent estates.

Working like private business organizations, the German housing companies often are a driving force more powerful than our local authorities. At the head are financiers whose main aim is to obtain funds from all available sources and to invest them as quickly as possible in order to get the substance and rental income necessary to cover loans and credits. Speed and quantity so much govern all activities that quality suffers in some respects. The delegation of power by the State to approved housing organizations also accentuates this uneasy balancing between quality and quantity because all layouts, type-plans and elevations must be approved by the local authority and all the necessary by-laws must be adhered to. In many large towns building land has became scarce, be it through extensive reconstruction or speculation. Under the circumstances some housing companies attempt to persuade the local authorities to free proposed open spaces for use as housing sites. They may also choose to build at the fringe of the suburbs even if transport to the city centre and the chances of local employment are inadequate.

People are entitled to a wholly subsidized dwelling if they have the necessary points on the housing list of their municipality and if the weekly income of the head of a family does not exceed £13 15s. A sum of £1 10s. is allowed for any further member of a family. Fifty to 60 per cent. of the cost of such dwellings is provided by the State at an interest rate of 1½ per cent., 30 per cent. of the money as mortgages, by banks, insurance and finance companies at 7½ per cent. interest and the remaining 10-20 per cent. of the capital through the profits of the housing companies, employers' loans or contributions. In fact, employers' loans, which qualify for tax remission, have been used fairly often, particularly when industrialists have built estates for their own employees but this immediately brings up the vexed problem of the "tied cottage."

The average rent amounts to about 20s.-27s. a week, but this relates to dwellings with an area of 520 to 600 sq. ft.

However, under the provisions of the recent Housing Act steep increases in the rents of newly completed dwellings must be expected, increases of 25-35 per cent. above previous rental levels.

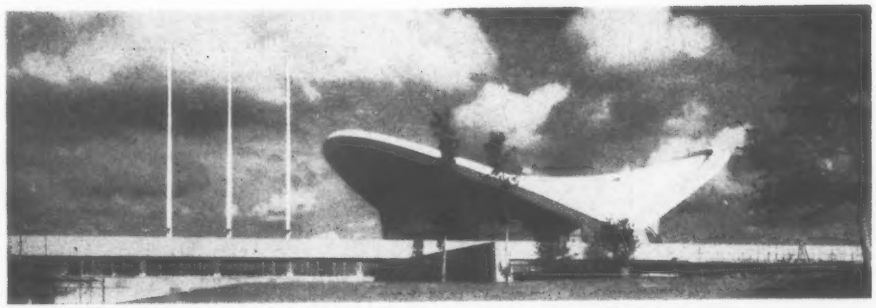
Rents which are calculated on the basis of so many marks and pfennig per habitable sq. metre have been grouped into three different levels in the case of fully subsidized housing. The levels vary according to the equipment and finishes of the dwelling.

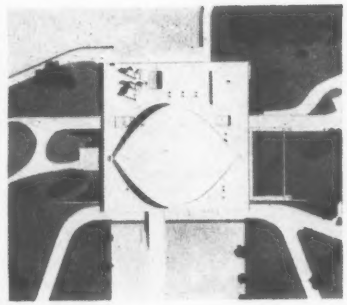
Two- and three-room flats have been the predominant types of dwellings in Western Germany so far. But they have gradually increased in size. In Hamburg the average dwelling during the period 1948-52 had an area of 535-570 sq. ft.; now the average area is 610 sq. ft. To give the relative value of the average rent of 20s. to 27s. a week, the average earnings of a German worker are between £8 and £9 a week before deductions.

For higher income groups the housing companies require contributions from tenants amounting to as much as £600-£1,000 for well-equipped four-room dwellings, but these are paid back free of interest over a period of 10 years. When dwellings are offered by private estate agents prospective tenants may be required to pay similar amounts without seeing a penny back. This is quite legal; there is still a grave housing shortage and everything is governed by the law of supply and demand.

There are special provisions for refugees from the East and the bombed-out. Special grants enable them to bridge the last 10-20 per cent. of the capital required. The miners also have a special housing programme and much American money has gone into it. Since the passing of the Second Housing Act last year nearly half of the State money available for subsidies has been set aside for the purchase of dwellings, be they houses or flats. A typical suburban terrace house with basement and central heating may now cost about £3,000 in Hamburg. One-third of this money the State will give at 1½ per cent., one-third will be taken as a mortgage at 7½ per cent. and a third the purchaser will have to provide himself. Here he may be helped further if he is a refugee or bombed-out or again his employer may give a loan.

In one field, German housing has not been allowed to develop as fully as it might have been and that is in the field of town planning. The country's economics and politics are dominated by a philosophy of private and free enterprise and if this has been successful in re-starting a broken country, it has prevented the working out of proper development plans. Compulsory purchase is a lengthy and cumbersome business and therefore rarely used. Stubborn property owners can hold the developer of a new estate to ransom, and ugly, arbitrary gaps splitting new blocks into two, show where someone is holding out to the bitter end. Speculation in the inner urban areas is rife and forces developers towards the countryside. The consequences are known in all major towns of Britain. In some instances the owners of adjoining plots have been persuaded to get together and to permit the unhampered re-development of their combined properties with the provision that they will be entitled to the accruing benefits according to the share of their interests. But this is mostly a slow business and cannot be regarded as a general solution.





Site plan

Out of the wholesale ruins of war the City of Berlin created a site for its new international congress building which could be called "ideal" if it were forgotten how these eleven acres of level land at the geographical, political and historical heart of the city, came to be available for new building on such a scale. The site is bounded by the Tiergarten, the River Spree and the Platz der Republik, and the building has been organized by the architects, Hugh Stubbins and Associates, into two distinct elements: the congress hall itself, and a low base block containing all the ancillary accommodation and roofed with a paved plaza. The lower floor of the base block is at the former natural level of the site, and the ground has been given a slope upwards from this level on the east and west sides (see top photograph, from the west), subordinating the base block to the more important congress hall. The crown of the rise occurs opposite the support points of the hall roof so that the twin arches of the roof continue the upward sweep of the site. On the south side of the building, shown in the frontispiece on page 522, the main entrance is approached by a looped driveway, while a separate paved pedestrian way leads across a pool with fountains (left) and gives access direct to the plaza at the higher level by means of steps. On the north side the lower floor of the building gives directly on to a boat landing stage on the River Spree. Parking is provided on the east side, where stairs and ramps give access to all levels of the building. On the ground floor, offices for conference personnel open off the large central lobby. A two-level lounge and snack bar on the east side is furnished for informal meetings,

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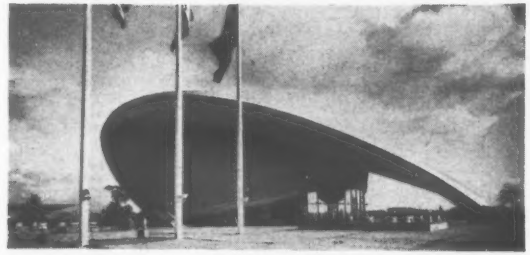
CONGRESS HALL IN BERLIN: continued

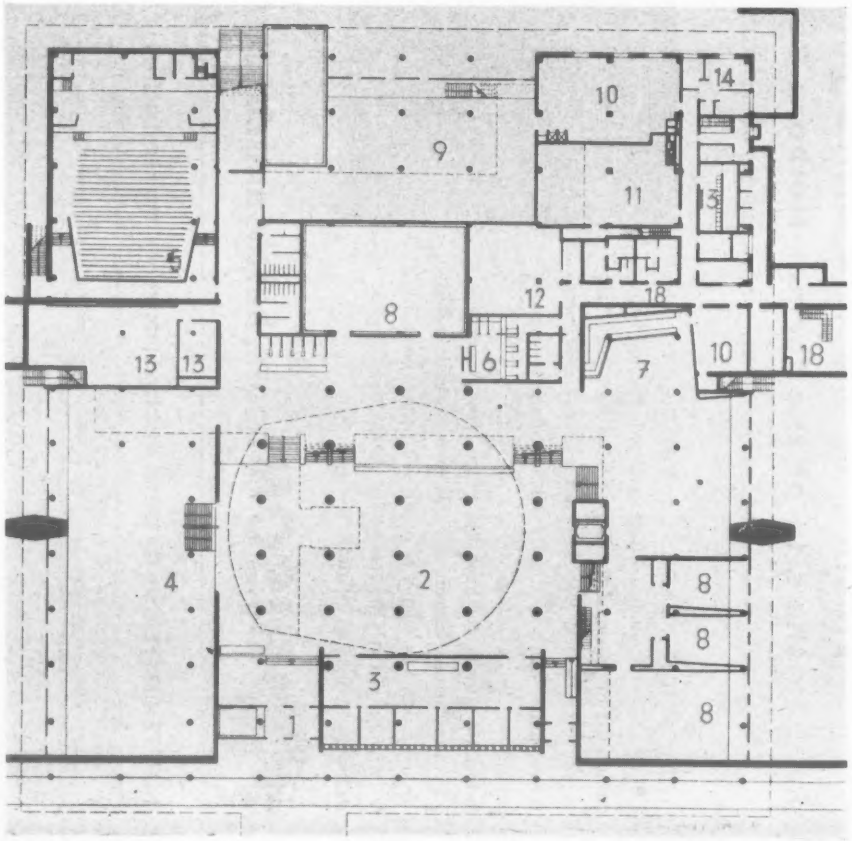
KEY :

Ground Floor
1. Entrance
2. Great Hall
3. Congress administrative facilities
4. Exhibition hall
5. Theatre
6. Telephone and wire facilities
7. Bar and lounge
8. Conference rooms
9. Restaurant
10. Kitchen
11. Boiler room
12. Receiving room
13. Services
14. Caretaker's apartment

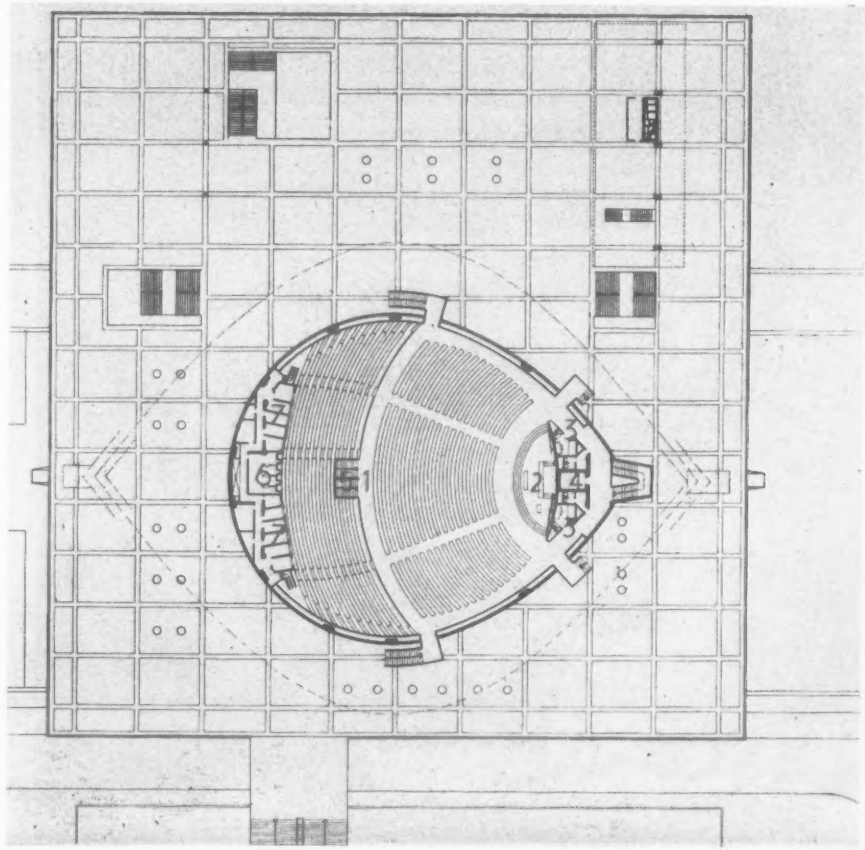
Auditorium
1. Main auditorium
2. Speakers' platform
3. Retiring rooms
4. Elevator
5. Main entrance
6. Projection booths
7. Translators' TV and radio booths



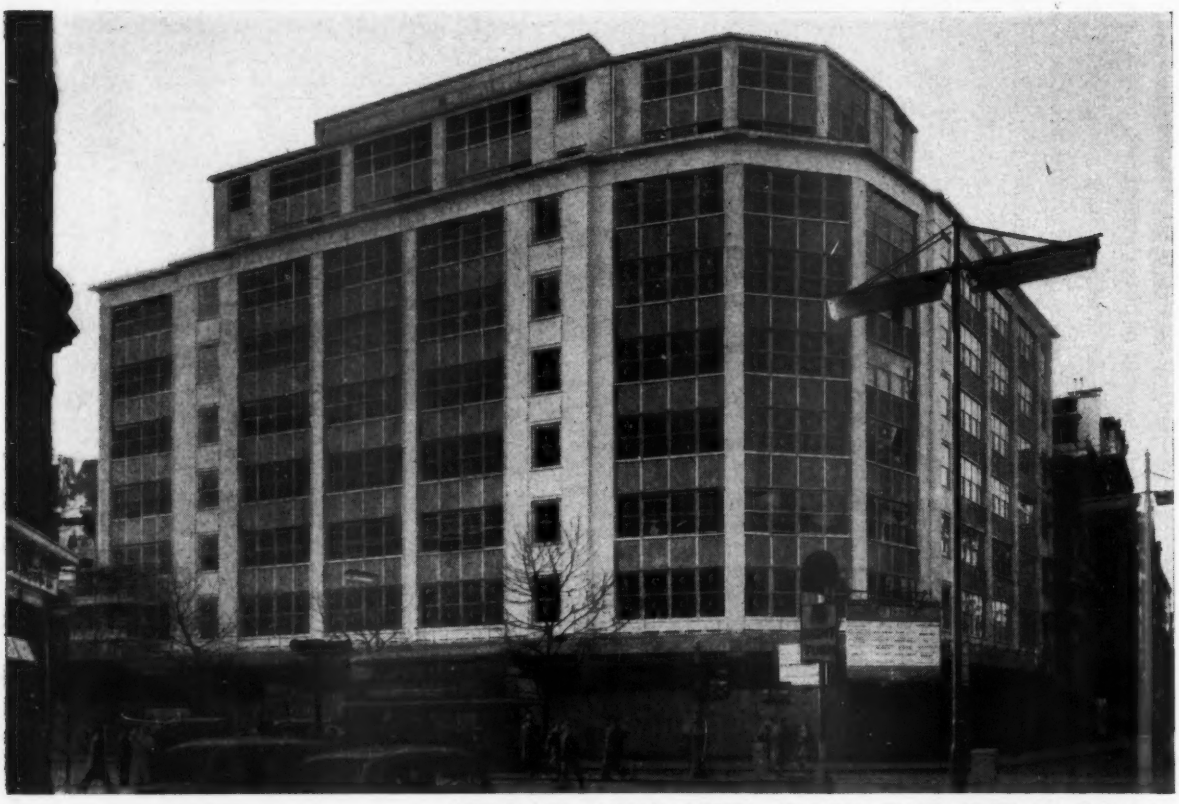
with adjacent small conference rooms. On the west side there is a large exhibition hall, opening into a garden, and a small theatre. There are also committee rooms for groups of twenty-five to a hundred people, some of which open into a walled garden. Stairs from the ground floor rise to the upper lobby—a mezzanine balcony overlooking the main lobby—which gives access to the plaza and the



Ground floor plan



Auditorium plan



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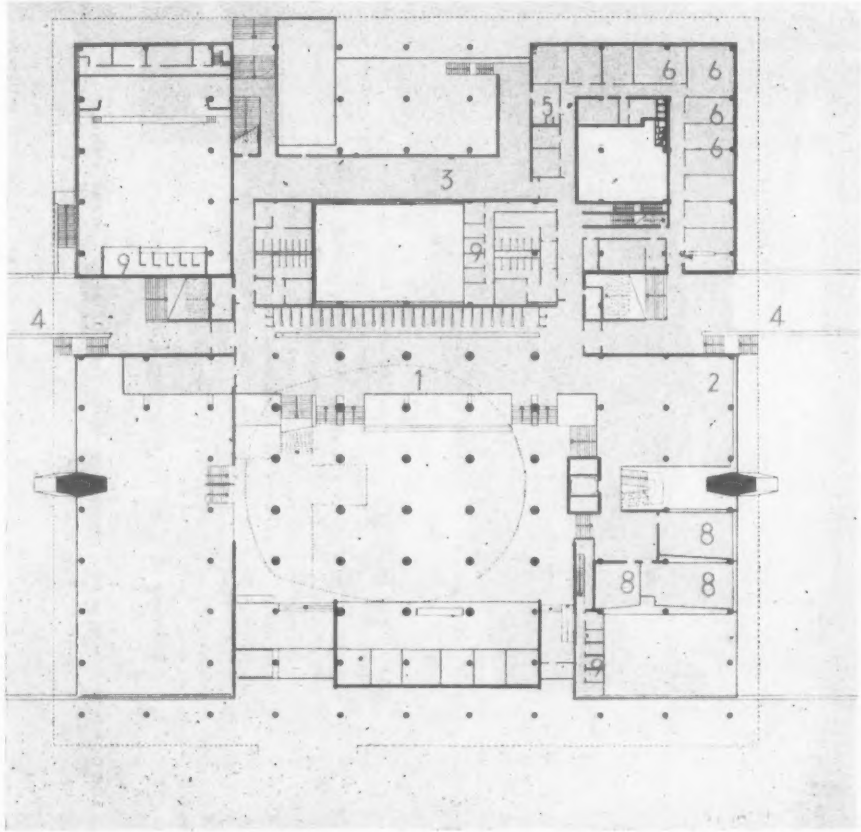
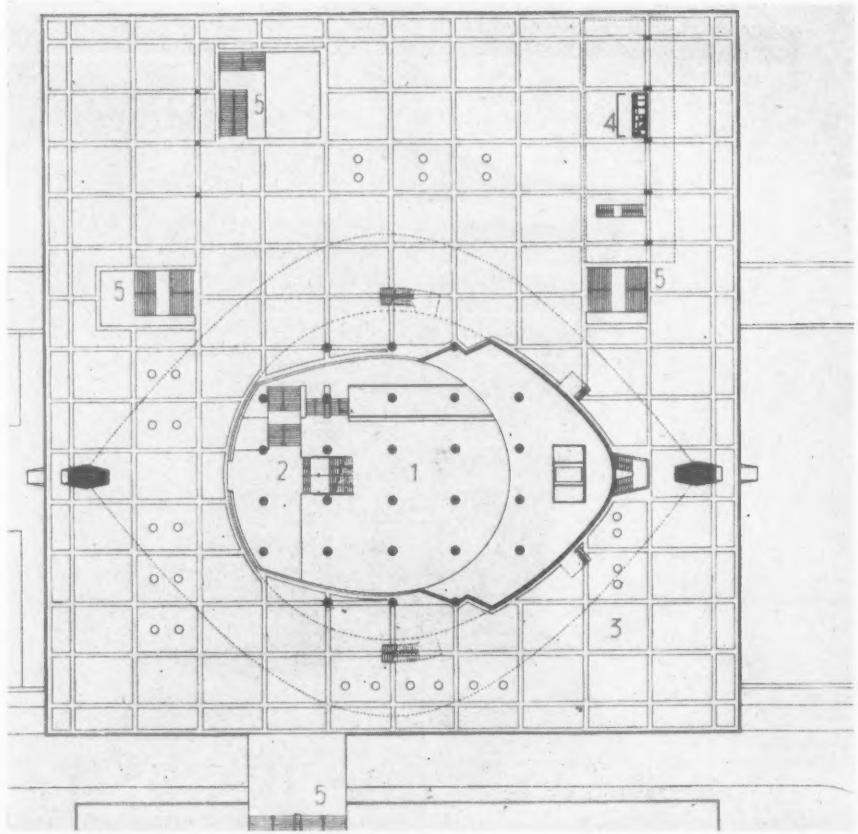
main congress hall. The clerestory windows beneath the congress hall (seen on page 536, from the plaza) light the two levels of lobby space in the centre of the building. The congress hall itself seats 1,200 people and has special provision for the press, photographers, and radio and television technicians. There are also multi-lingual translation facilities. The main roof is a tensile structure hung from the two arches which are visible externally, with an extra compression ring surrounding the auditorium. Of this roof the architect has said, " It is a roof of great promise, and puts no limitations on the achievements that may be made beneath it."

Mezzanine
1. Foyer and wardrobe
2. Lounge
3. Restaurant
4. Entrance ramps
5. Serving pantry
6. Permanent administration
8. Conference rooms
9. Translation booths

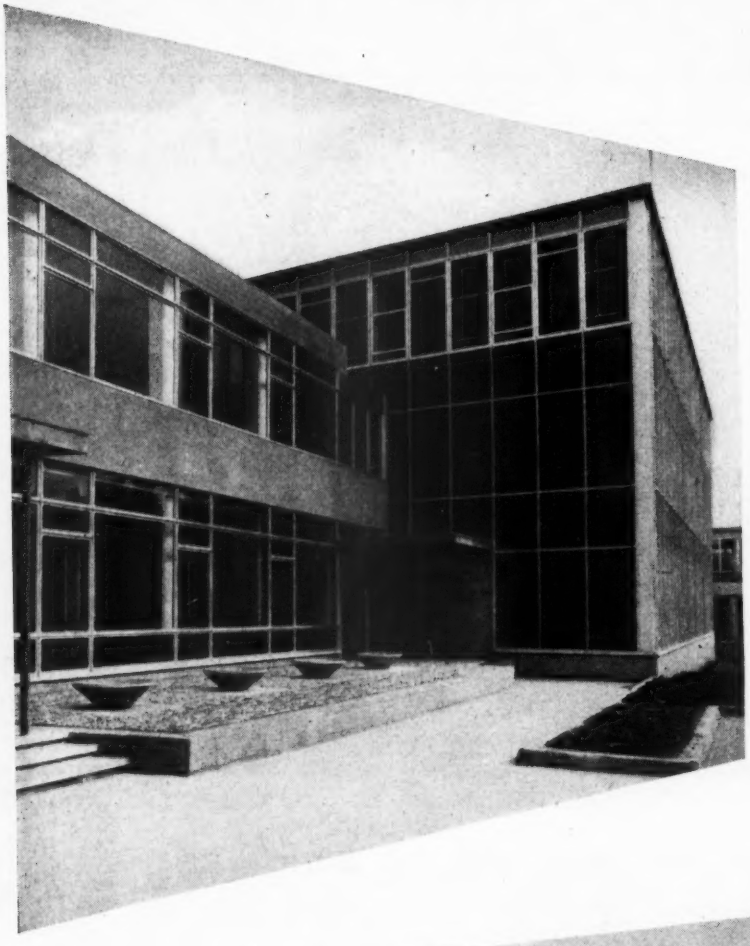
Plaza
1. Upper part of Great Hall
2. Foyer
3. Plaza
4. Cafe bar
5. Stairways



Mezzanine



Plaza



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for girls
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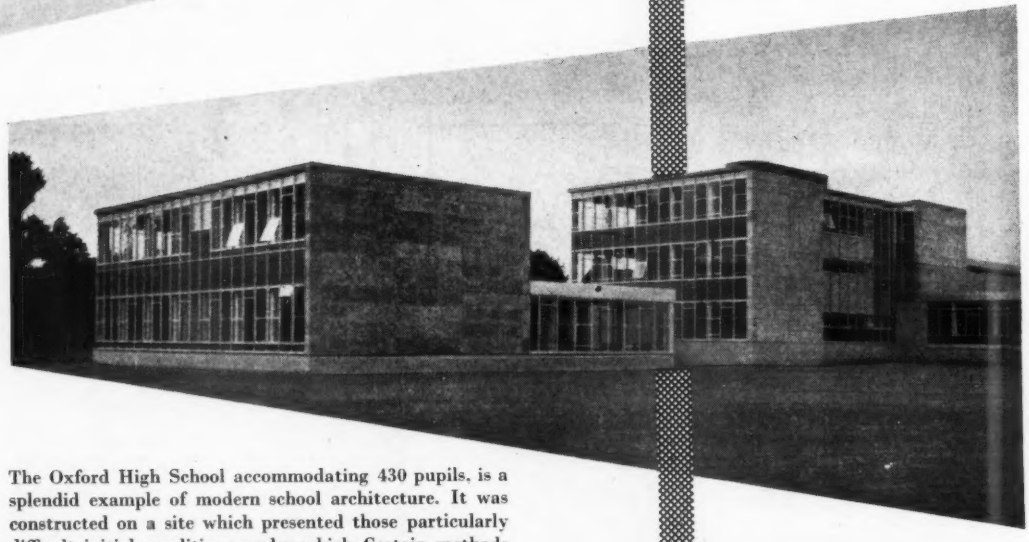

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THE INDUSTRY

This week Brian Grant describes a new use for venetian blinds, a range of reversible windows, a method of fixing plasterboard and data sheets on laminated sheeting.

Venetian blinds by Horsley, Smith & Co. used on factory skylights.

Blinds for skylights

The illustration on the right shows Venetian blinds used for a factory skylight. Apart from light control during the day they have the further advantage that they can be closed at night, when they will reflect a very large proportion of the artificial light which would normally be lost through the skylight, while they also provide a certain amount of heat insulation during the winter. Operation is by remote cord control and offers no particular installation difficulties. (*Horsley, Smith & Co. (Hayes) Ltd., Dawley Road, Hayes, Middlesex.*)

Reversible windows

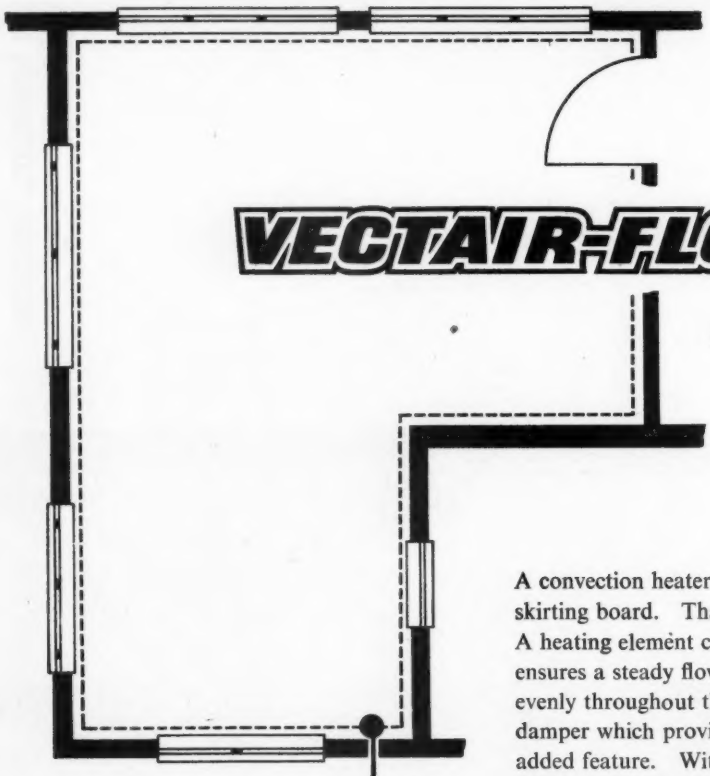
Not long ago Hopes held quite an interesting small exhibition, at their Berners Street showrooms, of standard centre-hung reversible windows. It seems that architects have been asking for windows on a larger than domestic scale for tall blocks of flats and offices, where it is desirable for painting and cleaning to be possible from inside the building. The windows are horizontally pivoted casements hung on specially designed watertight friction pivots which hold the windows firm in any position, while for ventilation and safety a side arm restricts the opening to a few inches so that children cannot fall out. For cleaning, the side arm can be released and the casement will then turn through 180 degrees, allowing both sides of the glass to be cleaned from within the building. When reversed, the casement is held fast by an automatic catch. These windows are produced in widths of 3 ft. 3¼ in. and 4 ft. 0¼ in., and in heights varying from 3 to 4 ft.: they can also be coupled, either together or with other types, to form larger composite windows. (*Henry Hope & Sons Ltd., Smethwick, Birmingham.*)

Plasterboard fixing

One of the things which one couldn't see at the Ideal Home was the method used to provide a wall finish in a number of the houses. In four out of the six the Artex Backbond system was chosen, largely, one imagines, because of the amount of time which it saves, but there should also be considerable advantages in houses built to a less tight time schedule, as the U value of the walls is improved to about 0.17, and also because the drying-out period necessary with normal plastering methods is to all intents and purposes eliminated. The Backbond system is a method of applying standard plasterboards to brick or block walls. Strips of plasterboard are fixed horizontally to the top and bottom of the wall in plumb with one another, and vertical strips are applied between them at 18-in. centres. The strips are fixed with dabs of Backbond adhesive, which has a setting time long enough to allow the strips to be properly plumbed, and the strips thus perform the same function as the floating coat in traditional solid plasterwork, that of straightening the wall, but at the same time it provides an air space to improve the thermal insulation. When the dabs of adhesive have set hard the face of the strips are given a coat of the adhesive, and plasterboards, cut to wall height, are pressed into position and nailed to hold them tight against the strips while the adhesive is setting. Before papering, the nail head and the joints between boards are filled and rubbed down and then coated with a sealer before the paper is applied in the ordinary way. (*Artax Products (Decorations) Ltd., Rustington, Sussex.*)

Laminated sheeting

A series of quite well prepared data sheets provide information about the uses and working of Pagwood, a laminated product made from veneers of beech bonded with a thermo-setting melamine plastic. The material is available in sheets up to 5 ft. by 2 ft. 6 in. and also in channel, beading and angle form, and is intended for decorative panelling and furniture of all kinds, and has the advantage of being proof against acids and alkalis, as well as cigarette burns. Moulded shapes for such things as chair seats are also available. (*C. M. Sanderson (London) Ltd., 9, Southampton Place, London, W.C.1.*)



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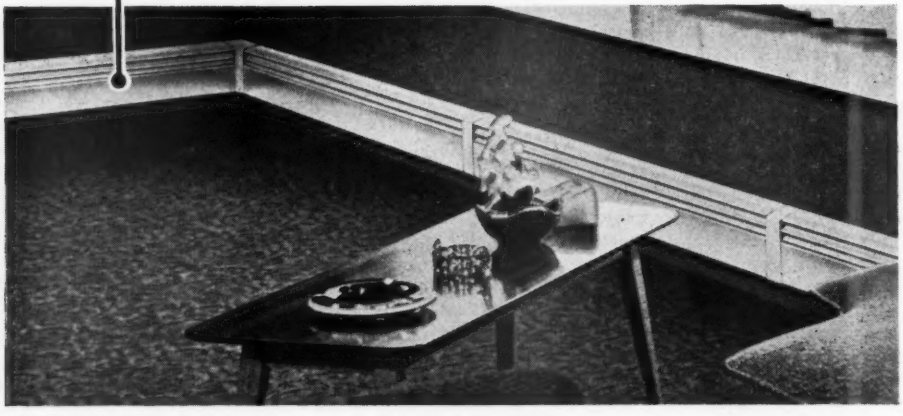

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technical section

1 SOCIOLOGY

social enquiry on Scottish housing estate

Records of what use people make of the buildings architects provide for them are all too few. We have great satisfaction, therefore, in publishing this week a report prepared by John Madge and Vere Hole* of a study made by BRS of the reactions of Scottish tenants who had been moved from 19th century tenement dwellings to a variety of types of houses and flats on a new estate. Among the more interesting findings were that people *must* be able to eat in the kitchen, that the storage of the bicycle is more of a problem than that of the pram (since the pram is regarded as a movable cot which will not be out of place in a bedroom), that there is a real need to provide somewhere to put dirty working clothes out of sight, and that 10 sq. ft. per person seems a workable basis for providing storage space.

Following the introduction of space-saving designs for local authority housing, the Building Research Station carried out a field study in Lanarkshire with the object of discovering how acceptable various economies were to the tenants themselves. The facts disclosed in the study were used in the recent revision of the Scottish Housing Handbook, but certain of the more detailed findings may well be of interest to architects as well as to housing authorities. While the detailed results of a small-scale inquiry, carried out in one area, do not necessarily apply elsewhere, such work can suggest the kind of innovation or economy which will be accepted easily, and that which is likely to meet with resistance on the part of the tenants. To some readers some of the results disclosed in surveys of this kind may seem self evident, but the fact remains that some houses, for the design of which architects have been responsible, continue to be built which ignore them.

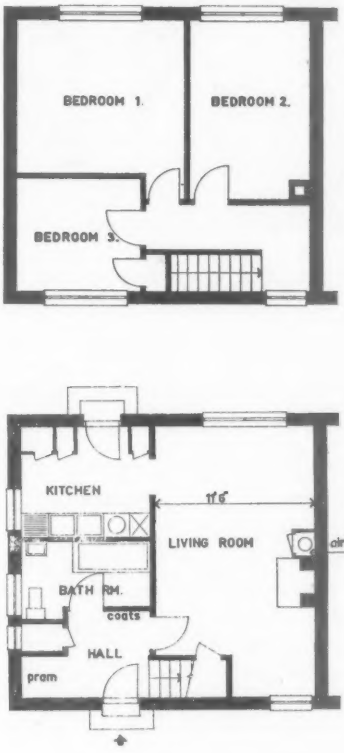
The design of the study was such that the experiences of tenants in a space-saving house were to be compared with those of tenants in more orthodox types of housing. The space-saving house chosen (Fig. 1) was one which had been designed by the Department of Health for Scotland and was then being erected in substantial numbers; this house was of timber and illustrated in a practical form the economies then being advocated. The study itself was carried out on a new housing estate in one of the industrial burghs of Lanarkshire, where a number of such houses, together with other types suitable for comparison, were located. According to the declared policy of the burgh, tenants were distributed amongst the various house types on the basis of family size, and were charged the same rent, whatever the house type of given family capacity they occupied. With such a design, any differences in satisfaction between occupants of the various house types could be attributed to the houses themselves, and not to initial differences between types of tenants, or different localities.

The study was based on 88 families who were interviewed by two trained sociologists on four or five occasions during the course of a year after these dwellings were first occupied. Each visit provided an opportunity to see how the dwelling was being used and to discuss a great variety of relevant topics with the housewife.

THE NEW HOUSES

Most of the tenants moving into these new houses came from nineteenth-century tenements from which they were being transferred either because they were overcrowded or because the building was condemned.

Fig. 1, ground and first floor plans of the three-bedroomed space saving house. (Note these plans are diagrammatic only. The actual construction of these houses was timber; the external walls were therefore thinner than shown).
[Scale: $\frac{1}{16}$" = 1' 0"]



* *A Case Study of Tenant Experiences in Some New Scottish Houses.* By V. Hole, M.A., and J. Madge, M.A., A.R.I.B.A. Crown Copyright reserved.

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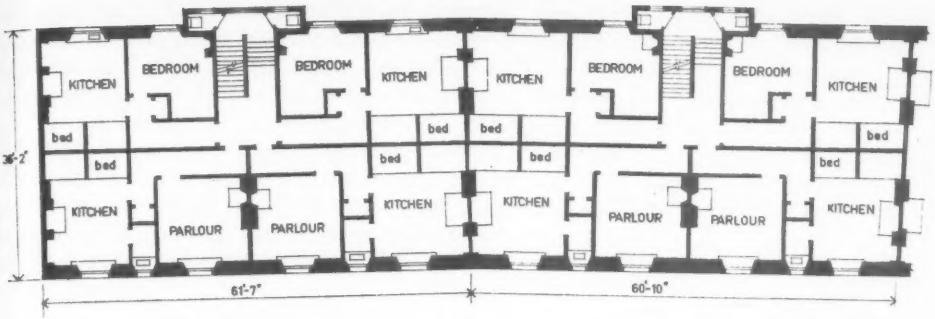

Fig. 2, plan of typical tenements from which the tenants had come. Note the shared w.c. accommodation on the stairs and the built-in beds in the kitchen. [Scale: $\frac{1}{24}$" = 1' 0"]

About one-fifth of the families had been living in more modern houses, but most of these were occupied under sub-tenancies, so that cooking and sanitary arrangements were shared with another family.

The tenements were usually built in 3-storey blocks, each dwelling consisting of one or two rooms

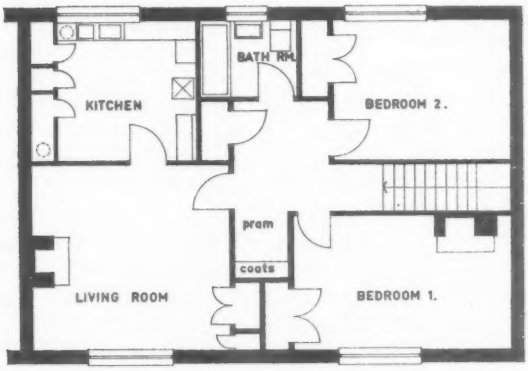

Fig. 3, plan of two-bedroomed flatted house. Note the awkward shape of bedroom 1. The shape of bedrooms was felt to be more important than their size. [Scale: $\frac{1}{8}$" = 1' 0"]

Fig. 4, plan of house built to orthodox post-war standards. The hatch was on the whole not favoured and the narrow space between fire surround and the opposite wall made placing of furniture round the fire difficult. [Scale: $\frac{1}{8}$" = 1' 0"]

About one-fifth of the families had been living in more wall of the kitchen, which also served for cooking, eating, personal washing and so on. W.C.s were shared, being located on landings or in the yard behind the block, where the communal washhouse was also situated. Some of these tenements were in poor structural condition, but many were found to have been very carefully decorated and furnished by the occupants, and within the overriding limitations of space and equipment made warm and comfortable homes.

The new houses offered a very substantial increase in the area and subdivision of living space, in the provision of storage and in the standard equipment. When allowance was made for the communal w.c.s and washhouses and the coal cellars in the two-roomed tenements, their average area was just over 500 sq. ft., whereas in the new houses the areas ranged between 740 (two-bedroomed flats) and 985 sq. ft. (three-bedroomed houses). Equipped kitchens and bathrooms, with circulating hot water, offering full privacy, took the place of the primitive installation in the tenements. Instead of the single built-in cupboard of 5-6 sq. ft. in the tenement, the provided storage space in the new houses was at least 40 sq. ft. and in most cases was very much greater.

The new dwellings included in the survey were all either 2-bedroomed (50 dwellings) or three-bedroomed (38 dwellings).* They included 12 flats in a three-storey block, 16 flats in two-storey flatted houses (Fig. 3), 32 houses of what had previously been orthodox post-war standards (Fig. 4), and 28 houses of the special space-saving design. The space-saving houses, all of which were three-bedroomed, were 180 sq. ft., or nearly 20 per cent. less in area than the largest three-bedroomed house of orthodox post-war standards.

The orthodox standard houses were built in blocks of four. The specially designed space-saving house was semi-detached and could not easily be adapted for use in terraces. The plan incorporated a number of slightly unusual features which were not found in the orthodox standard house plans. The bathroom is downstairs off the front hall, thus preventing any direct way through from hall to kitchen. The staircase runs straight up across the front elevation, which achieves a well-lit stairway and landing at some expense to the front end and front window of the

* Usually referred to as 3-apartment and 4-apartment houses in Scotland.

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through living room. The kitchen provides no reasonable position for a table. Storage space, particularly in the bedrooms, is less than in other plans. The space-saving house is also unusual in that it is built of timber with tongued and grooved boarding on a timber framework. Heat insulation is increased by incorporating a plasterboard leaf between the inner skin, also of plasterboard, and the outer skin of timber.

RESULTS OF THE SURVEY

The method of investigation provided a great deal of detailed information and the following sections are confined to points that have the closest relation to design decisions.

Living rooms

The old tenement kitchen-living rooms had been required for such a variety of purposes that little zoning or specialization was possible. With the sink in front of the only window and the cooker beside it, the typical large table in the middle of the floor, and one wall given over to bed recesses, there was no great scope left for other furnishing.

In contrast, the living rooms in the new homes are designed solely for sitting and eating. The furniture provided by the tenants followed a standard pattern, consisting of a dining suite comprising a table, sideboard and about four upright chairs, and a three-piece suite of settee and two matching armchairs. All except three of the 88 tenants had acquired a dining suite and almost all were buying a three-piece suite, although at the date of the survey only three-fifths had got all three pieces. The armchairs were placed on either side of the fireplace. In the houses with through living rooms the dining table and chairs were normally against the back window and the sideboard either grouped with the dining table or opposite the fireplace.

In the flats, whose living rooms are squarer and more like the tenement kitchen-living rooms, the dining table was usually in the centre of the room. In all cases the function of the fireplace as focal point for furniture arrangements tends to produce some congestion across the centre of the room, and this is clearly aggravated in those plans in which the room narrows to as little as 8 ft. opposite the fireplace (Fig. 4). Circulation is further impeded where direct communication between kitchen and dining table is only through a hatch, and a door such as was provided in the space-saving house was much more acceptable.

In addition to the basic furniture mentioned, some other pieces tended to recur. A glass-fronted cabinet for the display of ornaments or china was the most prized; tallboys, desks and bookcases were occasionally found. About half of the sewing machines (usually treadle) owned by the tenants stood in the living room, so that wall space is needed for these extra items.

As the single living room is almost universal in Scottish housing, much attention was paid in this survey to whether the varied activities taking place there tended to conflict with each other, since this is an argument usually advanced in favour of parlour-type houses. In spite of questioning, very few complaints were expressed, even with respect to entertaining visitors. In other respects it was important to householders that their living rooms should be suitable for guests, and tenants were ready to criticize rough joinery or the presence of an inappropriate feature such as an airing cupboard.

Kitchens

All but two of the kitchens in the new houses are too small to be classed as dining-kitchens, and this emphasizes the difference in intended function between the tenement kitchen and the new. However, very few families ate all their meals in the living room; when no allowance of space had been made for a table in the kitchen, an eating position was improvised. In the kitchen of the space-saving house, which was 65 sq. ft. in area, some tenants deliberately blocked their back door by a table, this being the only position available. Other kitchens in the sample were between 80 and 100 sq. ft. All these kitchens left space for a small work table, but such tables were commonly used for meals and they, and the kitchen as a whole, were generally regarded by the tenants as adequate in size. Few housewives commented on the working sequences provided, although many of such sequences fell short of the recommendations of kitchen planners. In general, the idea of convenience was taken to mean easy to clean or plenty of cupboards rather than the saving of time, movement or physical effort.

As most of the housewives had been previously accustomed to using a communal washhouse in the tenement yard, using the kitchen for clothes washing meant acquiring a new habit. All the kitchens in the sample incorporated the normal Scottish "tub" and the hot water supply must have been more convenient than the washhouse copper, but it became clear that some housewives regretted the loss of freedom to splash water about without messing up their homes. Up to the last interviews, there were still some complaints about the location of the washing equipment in the kitchen. One-third of the tenants would have preferred their own separate utility room, to avoid steaming up the kitchen and to keep the kitchen work surfaces free for food preparation. Half the housewives mentioned difficulties in drying clothes in the kitchen, although a ceiling rack was provided: this was mainly because the new kitchens had no heating other than the cooker, and the tenement kitchens had had fires.

Bedrooms

As many of the tenants in the sample had been transferred because of overcrowding, the new homes brought a great improvement in privacy for sleeping, quite apart from the separation of sleeping and living

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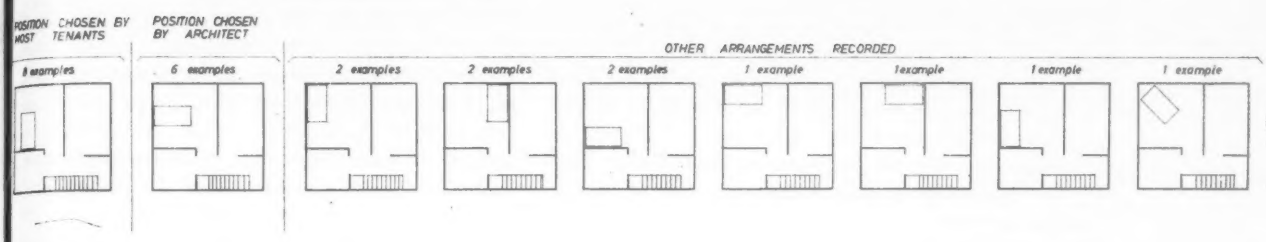

Fig. 5, diagram showing the positions chosen for the bed in bedroom no. 1. of the space saving house (see fig. 1). Note that the most popular position was facing towards the window.

accommodation. Habits of sharing sleeping accommodation still continued, however. The majority of beds acquired as replacements for bed recesses used in the tenements were small double beds (4 ft. wide), which were chosen partly because families possessed bed linen for this size of bed but partly also for preference. Such a double bed was commonly put even into the smallest (72 sq. ft.) bedroom, which left little room for other furniture. These beds were shared by two children, or sometimes were provided for a single child; such an arrangement allowed guests to be accommodated without the necessity of a special room for this purpose.

It was common for parents to have their youngest child sleeping in their bedroom from choice rather than necessity (in some cases another bedroom was thereby left unoccupied). The parents' bedroom was also regarded as a show room of the house, second in importance only to the living-room, and it was the aim of most families to furnish it with a bedroom suite, though only one-third had completely achieved this by the end of the field work. The following four items were found in addition to the bed or beds in at least one-half of the first bedrooms studied: wardrobe, tallboy or chest of drawers, dressing table and chair. Four first bedrooms contained no more than bed and chair.

The second and third bedrooms were generally much more sparsely furnished. Apart from the bed or beds, a chair and a chest of drawers were the only articles found in nearly one-half of the second bedrooms and in nearly one-third of the third bedrooms. Wardrobe and dressing table were each found in one-quarter of the second bedrooms, but while dressing tables were again found in one-quarter of third bedrooms, these small rooms rarely contained wardrobes. Nearly a tenth of second bedrooms were furnished only with bed and chair and a few, mainly in the two-bedroomed houses, were not furnished at all. Of the third bedrooms, over a third were furnished only with bed and chair, but in only one case was this bedroom left unfurnished.

The much fuller furnishing of the first bedroom justifies this room being made substantially larger than the second double bedroom. At the same time, the probability that the occupants will provide wardrobes and other storage space makes it less necessary here than in the smaller rooms to provide cupboards.

The tenants were critical of rooms with no clear wall space suitable for taking furniture. In general, flexibility was regarded as more important than size. It is sometimes suggested that bedrooms should not be designed so that the bed faces the window (*i.e.*, the foot of the bed towards the window), but tenants were not found to have any widespread objection to such an arrangement, and in about one bedroom in four the bed was facing the window (see Fig. 5). There was very little evidence of the regular use of bedrooms, whether heated or not, for study or entertaining. Some informants clearly disapproved of using the bedrooms for purposes other than sleeping or dressing, and the possession of a heating appliance did not seem to extend the daytime use of the bedroom.

Bathroom and w.c.

In the old accommodation, only three families had their own w.c.; the remainder had to share with up to four other families. Two families had a bath for their exclusive use, eleven shared a bath with one other family, but the majority had no fixed bath available at home. Hence the provision of a bathroom with running hot and cold water and of a private w.c. probably constitutes the most important amenity in the new home, and was clearly regarded as such by the tenants who complained of the lack of privacy afforded by the facilities in the tenements.

It was not found, however, that personal washing in the new homes was confined to the bathroom. Infants were sometimes still washed in a portable tub by the living room fire and older children were washed in the tub in the kitchen on the nights they were not given a bath. Furthermore, the kitchen sink was used for washing by at least three-quarters of all families in the sample although all bathrooms were provided with hand basins. In particular, the men returning dirty from work almost invariably washed in the kitchen sink even when the kitchen was farther from

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the entrance door than the bathroom basin. Washing in the sink was preferred for a variety of reasons, such as that the kitchen was warmer than the bathroom in the morning because the cooker was on, or because it was handier for kettles of hot water used when the backboiler was not lit or because the bathroom basin was too small* to have a thorough wash or because the bathroom was too clean and precious to be dirtied by regular use.

In the space-saving house the bathroom with w.c. was on the ground floor, whereas in all other houses it was upstairs. Two-thirds of the tenants preferred the arrangement obtaining in their houses; some tenants, in the absence of a second w.c., expressed a preference for the w.c. downstairs within easy reach of children during the day and the bathroom upstairs.

Storage

The old tenements had been provided with little storage space, and it had therefore been customary for many possessions to be kept under beds, while bicycles, toys and so on were kept in lobbies or bedrooms. Removal to the new homes offered a considerable expansion in storage space, even though the space-saving house provided less storage space than had hitherto been incorporated in post-war dwellings.

In the new homes, it was found that the storage of bicycles raised difficulties. Nearly half of the families possessed at least one bicycle. In one house type, bicycles could be kept under the stairs, though there were some complaints that bringing the bicycles in messed up the hall and carpet. Tenants of other houses had no such suitable storage space for bicycles; one-quarter stored bicycles out-of-doors in the garden while others stored them away from home.

On the other hand it appeared that a separate storage space for prams, as commonly provided, was not felt to be so important. In the 3-storey flats, for example, pram stores had been provided in the common staircase hall, but by the end of the inquiry nearly all tenants were using their pram store for coals and taking their prams and bicycles upstairs. It was not felt to be inappropriate to keep a pram in the children's bedroom, and the pram was often used as a cot, especially during the day.

The storage of coal frequently constituted a problem which was aggravated by the fact that some tenants received concessionary coal which was delivered in half-ton loads, while other tenants tried to store up coal in the summer months. The space-saving house design had an outside bunker with a capacity of 8 cwt. Many tenants found this inadequate, although the outside position seemed quite acceptable. The commonest arrangement was to have the fuel store in the kitchen, and in this case complaints of inadequate size, though encountered, were overshadowed by the inconvenience of having the coalman delivering coal straight into the kitchen. In one plan (Fig. 4) the door to the fuel store was in a narrow neck 3-ft. wide so that the opposite wall was frequently marked. Many tenants felt that an outside bunker would have been preferable, and one-fifth had themselves provided outside bunkers, reserving the original fuel store for the storage of other possessions such as step-ladders, garden tools and working clothes. This desire for a suitable place to put dirty working clothes was frequently found; pegs in the space-saving house which were clearly visible from the front door were removed by half the tenants and in other house types such pegs were often unused. Provision for these clothes might be more suitably located in the kitchen.

In the houses studied there was no direct relation between the provided storage space and the size of family to be accommodated. In fact, nearly all the two-bedroomed houses had a greater total area devoted to storage than the three-bedroomed houses. Examination of some of the plans suggested that storage space was made up of corners in the house for which the designer could find no specific use; this is illustrated by the fact that the two floors of the flatted house, otherwise almost identical in plan, differed substantially in storage area (58 sq. ft. on the ground floor and 77 sq. ft. on the first floor).

In the analysis a comparison was made between households provided with up to 10 sq. ft. per person storage space and households provided with 10 sq. ft. or over (measured in terms of floor area). While this division is arbitrary, it is of interest that a significantly higher percentage (94 per cent. as opposed to 66 per cent.) of those with 10 sq. ft. or more per person expressed themselves as satisfied with their storage arrangements. There was no evidence from this study that families supplemented their provided storage space to bring it up to some previously-conceived level. The purchase of some articles of furniture used for storage would appear to have been determined less by convenience than by custom.

Circulation

Most of the tenements from which the tenants came were reasonably up-to-date in their circulation layout, providing a small hall or lobby (often occupied by the cooker) leading to the kitchen. In most cases the bedroom, where there was one, opened off the kitchen but in some tenements there was also independent access to the bedroom.

Of the new homes, the space-saving house was unusual in that, in order to conserve space, there was no direct access through the house from front hall and staircase to kitchen. Although these houses were semi-detached, giving direct access out-of-doors from the street to the back door, this feature was criticized by nearly half of the tenants, largely on the grounds that it made the living room into a passageway between kitchen and bathroom-w.c., an inconvenient arrangement especially in homes with children. Of the objecting tenants, however, only two would have liked a through way at the expense of the area of the living room.

* The wash basin in all the houses conformed to the standard i.e. 22 in. × 16 in.) advocated by the Department of Health for Scotland, which is the smaller of the two British Standard sizes. The deep sink in the kitchens measured 21 in. × 17 in. × 15 in.

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In the three-storey flats and the flatted houses, the living-room had to be crossed to reach the kitchen and this was objected to by a few of the tenants. Two of the house types had rather large halls, which appealed to some tenants because they enabled the entrance to the dwelling to be made more attractive.

Ceiling heights

Many of the tenements had high ceilings, some as much as 12 ft. high, and it seems that the heights of rooms in Scottish houses have traditionally been greater than in England. Apart from the space-saving houses, which had 7 ft. 6 in. ceilings, all the new dwellings had 8 ft. ceilings.

The great majority of those tenants in dwellings with 8 ft. ceilings would not have liked them to be any higher. There was evidence of some increasing acceptance with experience of the 7 ft. 6 in. ceiling, but there remained a small, though not negligible proportion of householders, who were not entirely happy about the lower ceilings.

Some objections were perhaps a little fanciful, for example, that the low ceilings were bad for health or that they encouraged steam from cooking to go right through the house, but others were more straightforward, for example, that tall members of the family hit their arms against lighting fittings or found that ceiling clothes-drying racks got in their way.

Windows

One of the big changes in the new houses concerned windows. The tenement property with its high rooms had mostly tall sash windows. Owing to the density of development, these were large and expensive in curtain material in relation to the light that they let in.

In the new houses the windows were lower and wider and admitted much more light. The windows varied greatly in type, including wooden sash, wooden casement and metal casement.

Tenants did not much like to have windows that were out of the ordinary. For example, the space-saving houses had a staircase running up inside the front elevation, so that there was only room for a small front window in the through living-room: this drew adverse comments.

With fairly small front gardens, the problem of privacy was raised by many tenants, particularly in respect of living-rooms. This was partly the reason for the widespread custom (followed by three-quarters of all tenants) of leaving living-room curtains permanently drawn across at least half of the window area. As is well known, however, the "dressing" of living-room windows is very susceptible to local fashions and at least some of the curtains may have been kept partly drawn for reasons of display rather than of protection.

As has been found in other surveys, there were some complaints about the difficulty of cleaning windows that cannot be reached from the ground outside the house. Cleaning difficulties were mentioned by one-quarter of tenants with sash windows and by two-fifths of tenants with casement windows. The "easy clean" hinges at present in use on most casement windows do not appear to give sufficient clearance for the housewife's arm.

Sound insulation standards

In the new homes, a very big contrast between houses and flats was found in respect of noise. The houses were built to a normal modern standard with party walls in cavity brickwork or lightweight concrete, and there was a negligible number of complaints of noise disturbance from neighbours.

A very different situation was found in the flats, where noise was a constant cause of irritation. The offence was mainly due to noise transmission through the floors, which were constructed of T and G boarding floating on glass-silk quilting. This type of floor gives sound insulation 3-4 decibels below the B.R.S. Grade II and this is sufficiently low to account for the dissatisfaction on this score.

The difference in the two standards is shown by the fact that only 14 per cent. of families in houses were disturbed by noise while 69 per cent. of families in the two and three storey flats were disturbed.

Heating

In the one or two roomed tenements from which the majority of tenants had come, the problem of heating had seldom been serious. Furthermore, as the kitchen-living room was also the main bedroom the problem of heating sleeping quarters hardly existed. On the other hand, only 30 per cent. of the tenants in the sample had had any form of water heating apart from kettles.

The new houses were all equipped in living rooms with improved open fires with back boilers for water heating. Provision for heating in the bedrooms varied. Before 1950 it was customary to provide a fireplace in at least one bedroom but at present nothing more than an electric point need be installed in bedrooms. In the present sample, however, the flatted houses had a fireplace (first bedroom), the three bedroomed flats in the 3-storey blocks had a gas fire; the space saving houses had electric power points only, and the remaining houses had either warm air ducts from the living room fire to the first and second bedrooms or contained an airing cupboard in the first bedroom.

The open fires in the living rooms were generally satisfactory; there were few days in the year on which they were not lit for part of the time, and the back boilers therefore assured a fairly regular supply of hot water. Only the longest of the through living rooms proved difficult to heat at each end; the hatch was also said to be a source of draughts. There were fairly frequent complaints of inadequate heating in other rooms, particularly in the bedrooms. In the flatted houses, about 70 per cent. of tenants sometimes lit the bedroom coal fire in very cold weather. These fireplaces were appreciated particularly for possible

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use in case of illness; where no fireplace was provided the sick bed was sometimes moved into the living room. However, there was some criticism of these bedroom fireplaces because, due presumably to their being added to standard plans, they increased the awkwardness of an already awkwardly shaped room (Fig. 3).

Either for intermittent use in bedrooms or for heating other cold spots, two thirds of all tenants had some supplementary heating device. Most of the appliances brought from their previous homes were electric fires, but those who had bought a heater since moving had usually chosen a paraffin heater. Only a fifth of tenants complained that their kitchens were cold.

The space-saving house, although the only type in the sample with no regular provision for heating apart from the living room fire, was on the whole found to be comfortably warm. This may have been due partly to the plan, which omitted a through passage, and partly to the construction, which incorporated triple leaf external walls*.

CONCLUSIONS

Any conclusions on the success of the new houses in meeting the needs of their occupants must be related to the wider context of the change. Removal to the new scheme involved many changes in school and church attendance, shopping habits and friendships, as well as a change in physical environment. Furthermore, this particular estate was believed by tenants and housing authorities alike to be socially inferior to others, and this may have affected the tenants' views on their new homes.

On the whole, satisfaction with the new locality was at its highest just after removal, and specific criticisms of the different houses tended to emerge only in later interviews. On first moving, for example, tenants were prepared to make the best of whatever house type they had been given; for example, those allotted a flat when they hoped for a house, or *vice versa*, said at the first interview that they were just as well pleased with what they had. As time went on, tenants tended to become identified with the type that they were occupying, and the majority of them came to claim that theirs was the best type on the scheme. There is some indication, however, that tenants of the space-saving houses and of the three-storey flats were less convinced of the merits of their houses than occupants of the other types. The space-saving house, with its unusual form of construction and external appearance, was commented upon adversely both by them and by tenants of other house types; there is evidence that the rather low standing of this house reflected the general local feeling that it was a "utility design" and was not directly based on criticism of any particular design features. There is little evidence that those living on the estate had any specific knowledge of the design of interiors of house types other than the one that they themselves occupied, and those occupants of the space-saving houses who would have preferred another type were attracted to one on the estate of more substantial appearance than theirs. The acceptability of the economies introduced into the design of the space-saving house was undoubtedly reduced by the fact that this house was of timber construction.

The attitudes of tenants interrogated in this inquiry do not suggest that satisfaction increases directly with the size of rooms. Different housewives expressed themselves as satisfied with rooms of widely differing sizes, and only complained when some inconvenient feature caused a specific difficulty, for example in arranging furniture. As the rooms in the space-saving house were well shaped, their reduced size was acceptable. In general, the cost of furnishing and heating large rooms is an important curb on the demand for space.

The kitchen in the space-saving house was considerably smaller than that in any other type. This made it extremely difficult to eat any meals in the kitchen, thereby conflicting with a widespread custom. The space-saving kitchen is well designed, with a better working sequence than in some of the other houses, but with tenants the desire for dining space overshadowed appreciation of the layout of equipment, the amount of work surface or the provision for storage.

The objections raised to the absence of a through passage from front to back of the space-saving house were no greater than complaints of inconvenience in the more orthodox houses which were provided with hatches; certainly a reduction of living space to provide a through passage would have been less acceptable.

Various other economies were incorporated into the design of the space-saving house. As has been stated, the reduction of the ceiling height to 7 ft. 6 in. was accepted by the majority of tenants, and among those dissatisfied feeling was not strong. Tenants were sorry to have pegs in the hall instead of a downstairs cupboard for dirty working clothes, and the elimination of cupboards from all but the third bedroom was felt to be rather a severe lowering of standards in comparison with other house types being built on the estate. In these houses, kitchen-storage space was not much below normal in contrast to storage elsewhere, and this enquiry suggests that if there is to be any economy in storage provision the reductions should be shared more evenly between kitchen and bedrooms.

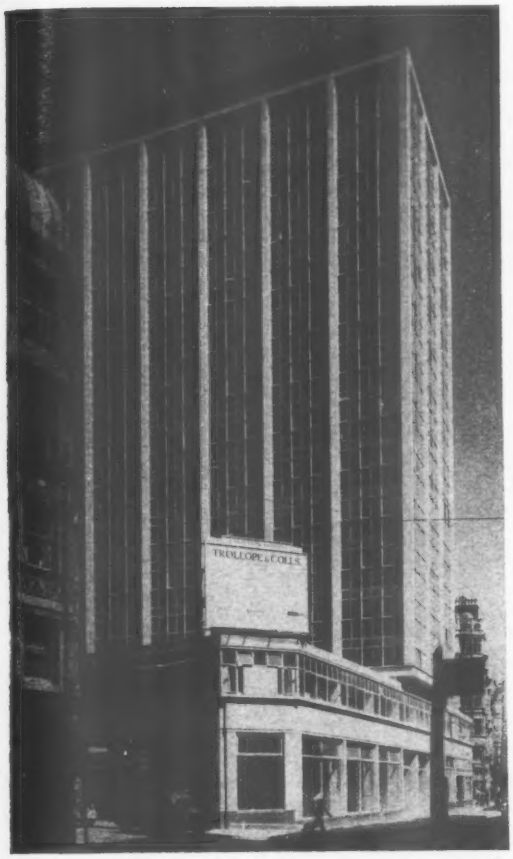
One general principle to be applied to decisions involving reduction of costs is that the need for utility should not allow poor craftsmanship; it may even be better to omit an item of equipment than to countenance rough joinery or finishing, which may lead tenants to conclude that they have been given an inferior product and are therefore victims of discrimination.

The investigation described was undertaken as part of the programme of the Building Research Board; this paper is published with the permission of the Director of Building Research.

* The U values for the various house types show that the space-saving house did provide the best insulation. For this house the U value was 0·22, for the two traditional houses 0·28 and 0·31, for the three-storey flats 0·31 ground floor, 0·27 upper floors, and for the flatted houses 0·36.

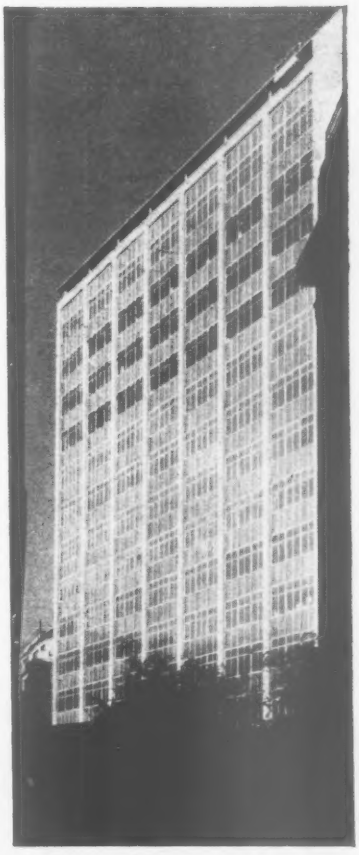
planning study

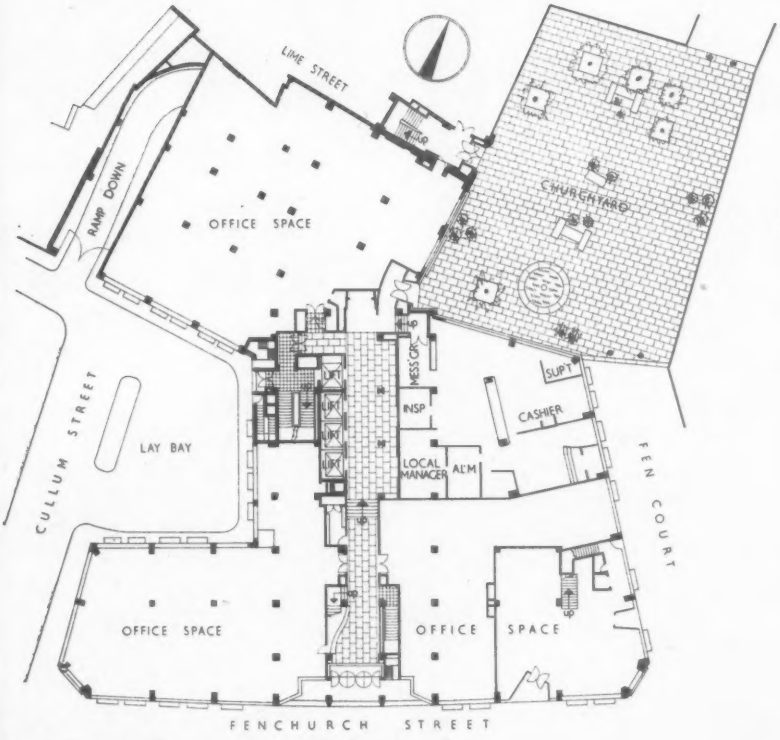
TOWER OFFICE BLOCK IN THE CITY OF LONDON



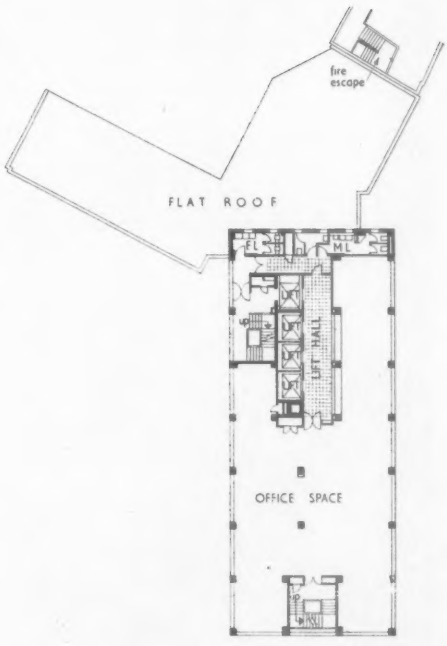
One of the commonest forms of real estate activity in big cities is the redevelopment, by a large company, of a group of adjacent sites in separate ownerships after sometimes lengthy negotiation. In London—and the City in particular—the disagreeable results of this activity can be seen on every hand; squat blocks of building of six or seven storeys, hugging all frontages and set back at the top to comply with bylaws and private rights of light, and invariably " in the classical manner." The purpose of this kind of redevelopment is, of course, to provide the maximum permissible accommodation (and hence revenue) on each site, and this is usually achieved by the laziest method—cramming the accommodation into the precise form of the " jelly mould " dictated by the " bylaw angles" and rights of light.

There is, however, the optional use of the daylight factor protractor as an alternative and the advantages to be gained are often considerable. Fountain House, Fenchurch Street, which we illustrate here, is the first large redevelopment scheme in the City of London to depart from the usual practice. Here it was found that a tower-shaped block could be built at the centre of the site with no restriction on height, giving better daylighting to surrounding properties than a lower, wider building. The photograph (left) shows how the main tower is disposed in relation to





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



Typical upper floor plan

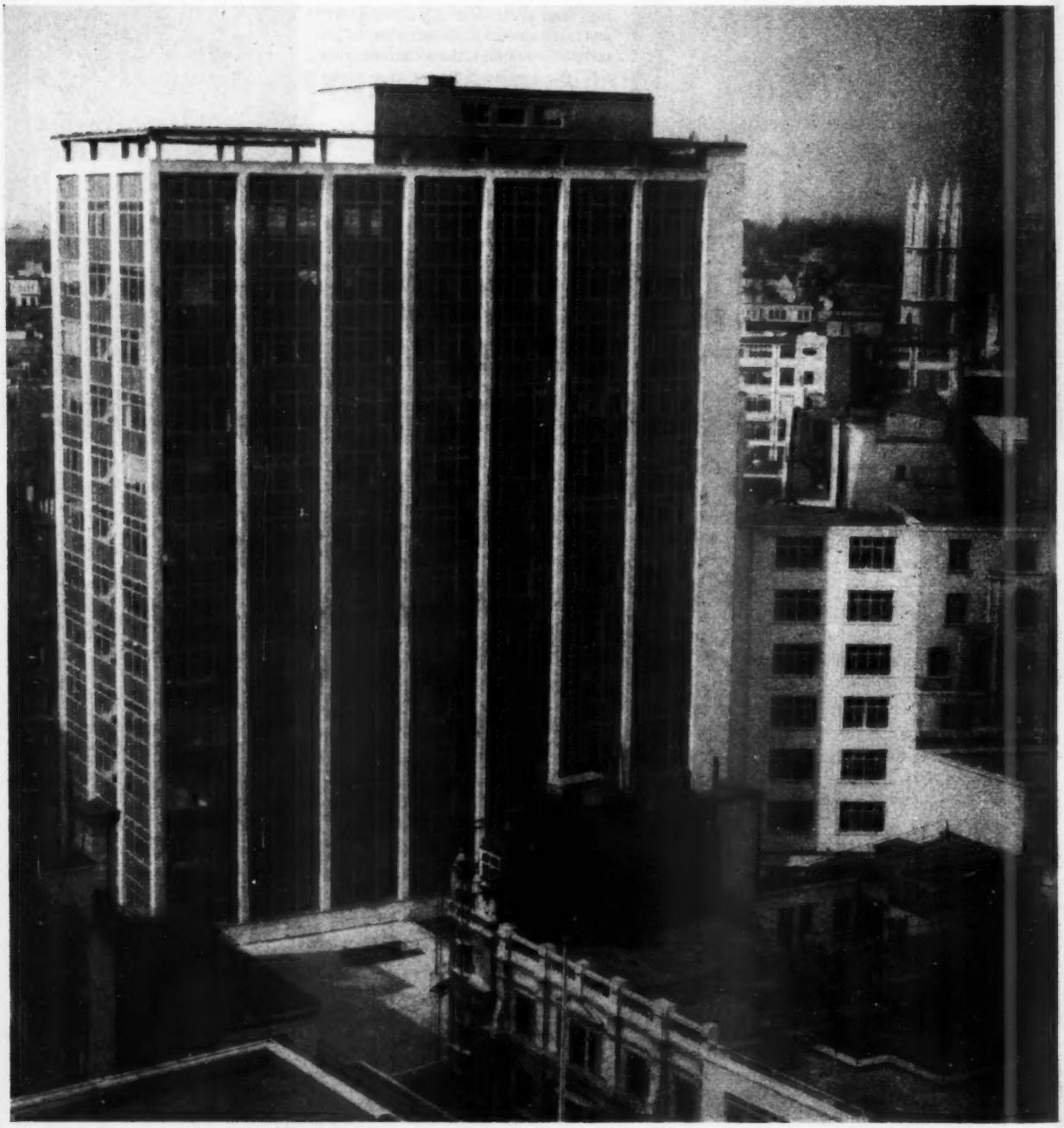
planning study

TOWER OFFICE BLOCK IN THE CITY OF LONDON: continued

the two-storey block which covers the entire site. This lower block is perhaps the least successful part of the building; it follows the exact frontage lines (perhaps because of a belief that this gives maximum " foot run " of display window) and in its splayed corners, entrance doors and general detailing reveals the classical pedigree of the building. The second photograph on page 547 shows the 14-storey tower from the opposite corner, looking down Fen Court. At the top right-hand corner is the window-cleaning cradle which is slung from the pergola on the roof.

The size of the building in relation to the surrounding properties can be seen below. The height above road level is approximately 170 ft. The building provides 100,000 sq. ft. of office space and cost approximately £750,000.

The clients are the City of London Real Property Company Ltd., the chairman of whom, Edmund Howard, was nominated one of the Men of the Year by the AJ in our 1956 New Year issue, for taking the initial decision to depart from the City's classical jelly-mould tradition. The architect is W. H. Rogers of the clients' own architectural department, the consulting architect was Sir Howard Robertson, and the structural consultants were G. A. Dodd and Partners. The general contractors were Wimpey & Co. Ltd. and Trollope & Colls Ltd. For sub-contractors see page 556.

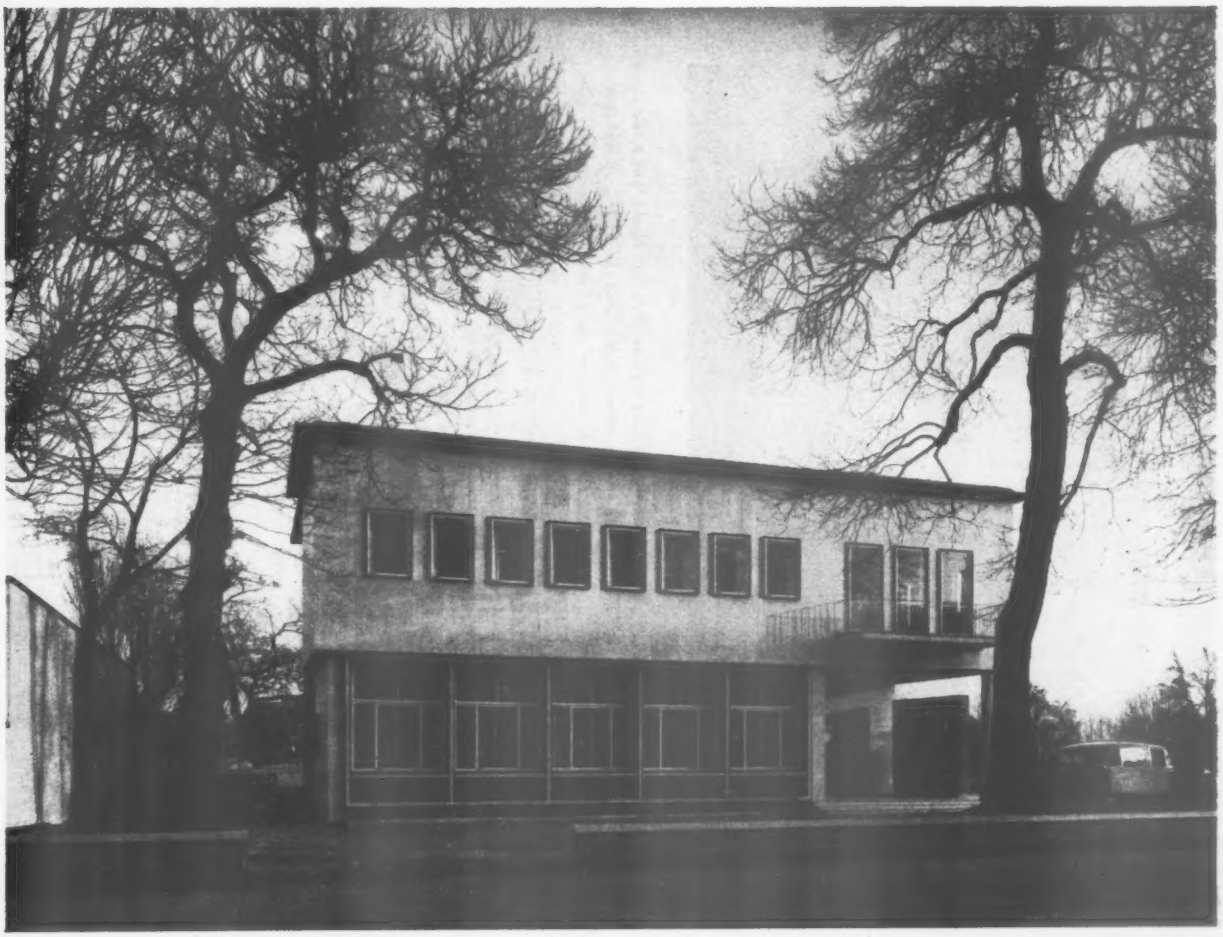


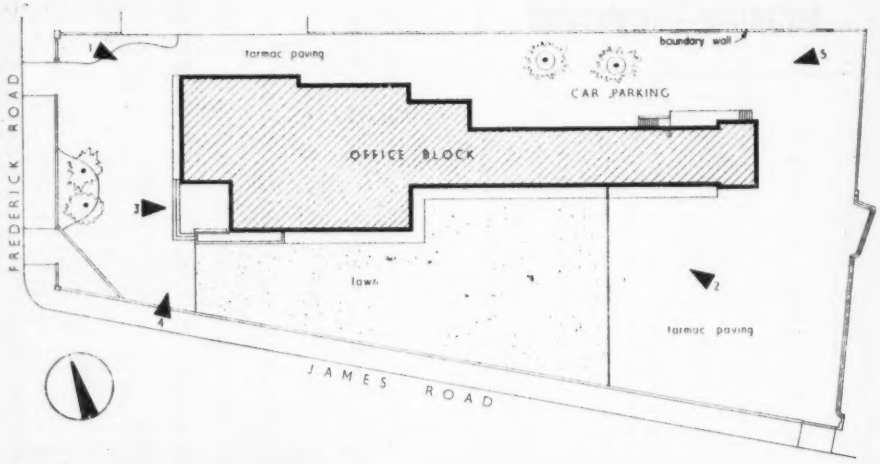
OFFICES

in FREDERICK ROAD, EDGBASTON, BIRMINGHAM; designed by JOHN M. D. MADIN; architect-in-charge DOUGLAS V. SMITH; quantity surveyors SILK and FRAZIER; consultants (acoustics) B.R.S.

St. James' House at Edgbaston is the new headquarters of the Engineering and Allied Employers' Association, the objects of which are to promote good relations between management and labour and to negotiate conditions and rates of pay with the trade unions on behalf of the employers. The clients therefore required a building to house their own office staff, dining rooms and other facilities for members, and conference suites.

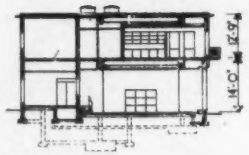
Viewpoint 1 : *the building from the north-west.*



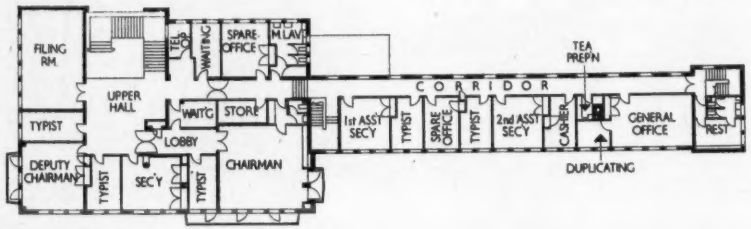


Site plan with photographic viewpoints.

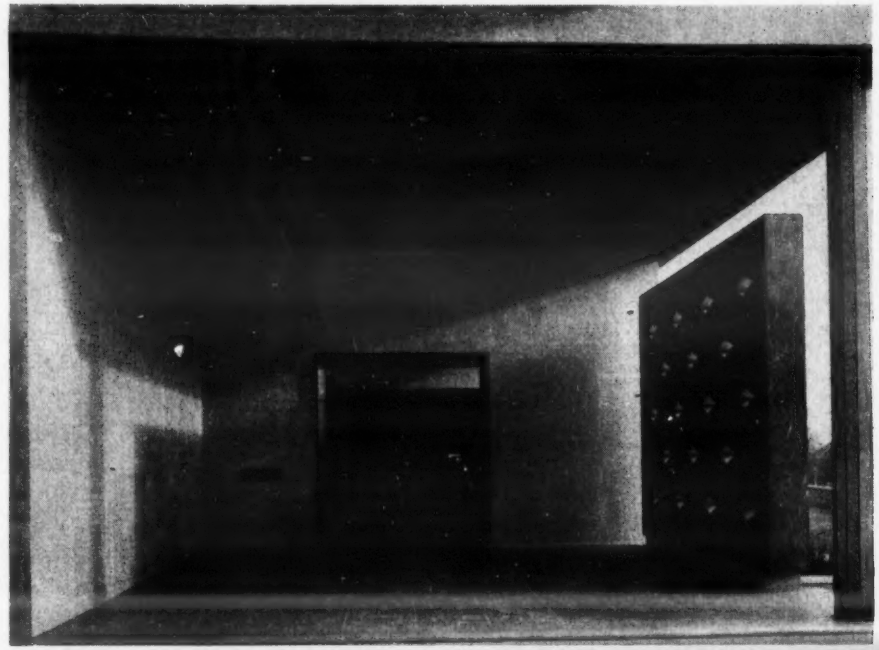
The building has been organized in two blocks, one squarish in plan with greater storey heights, and the other long and thin in plan. These can be seen in the photograph taken from viewpoint 2, above. The main block is of framed construction and the subsidiary block of load-bearing brickwork. The architect states that "the external appearance has been designed in order to create a dignified building which would also be in keeping with the Regency character of Edgbaston"; but at times this has meant using Regency motifs, such as the first floor balconies and windows or the achievement of an almost neo-classical character, as in the main entrance porch, viewpoint 3, right. This last view shows the cream travertine used as a veneer to some of the faces of the main block, and the green marble pierced slab on the south side of the porch.



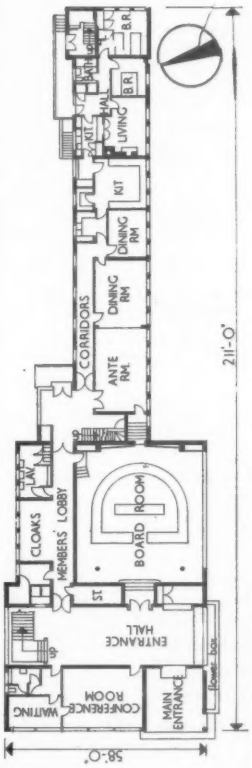
Cross section



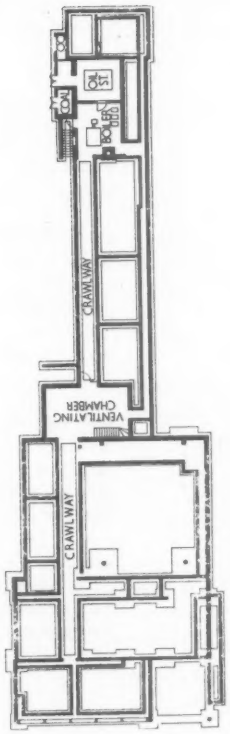
First floor plan



Viewpoint 4 shows the south side of the main block. The ground floor windows on the right are those of the boardroom; above them is the balcony of the chairman's and typist's offices. The deputy chairman has the smaller balcony on the left of the photograph.



Ground floor plan [Scale: 1/16" = 1' 0"]



Basement plan

analysis

SITE

The site is a long narrow one at the corner of Frederick Road and St. James's Road, previously occupied by two houses that were destroyed by enemy action. The long side is orientated north and south and there is a fall to the eastern end. When excavations began in 1955 extensive cellars were uncovered; also three old wells, which may have provided a water supply in the 19th century.

PLANNING AIMS

The aim of providing a south aspect to as many rooms as possible dictated the general plan. The building is in two units, a main block and subsidiary block, the former of r.c. frame construction with brick infilling panel walls, the latter of brick load-bearing construction for economy reasons. The larger and more important rooms are within the main block, and the spans of these called for frame construction. The subsidiary block contains anterooms, dining rooms, caretaker's flat and offices, all of a reasonable size. The flat comprises a living room, two bedrooms, bathroom, hall, cloakroom and kitchen, and has a private entrance and kitchen entrance. All conference rooms and parts of the building to which the public is admitted are on the ground floor, while the first floor is used for administrative offices. The entrance hall separates a self-contained trade union suite, consisting of conference room, anteroom and lavatory accommodation on the west, from the Association's suite, comprising a large boardroom, with adjoining anteroom and dining rooms and a separate entrance, toilet accommodation and lobby for members of the Management Board. Negotiations with trade union representatives are held in the boardroom, and this arrangement allows both sides to retire for private discussion to their own respective conference rooms. The remainder of the ground floor at the eastern end contains the kitchen and service pantry and the caretaker's flat. The more important offices, i.e. those of the chairman, deputy chairman and secretary of the Association, have been placed in the main block, where the storey height is greater, enabling the plenum ducting to be installed above suspended ceilings. The other administrative offices have been placed in line along the south side of the subsidiary block, with an access corridor to the north. The architects designed the fitted carpets, curtain material and furniture for all the principal rooms and selected the remainder, but this was carried out under a separate contract.

	s	d
price per sq. ft.		
preliminaries and insurances	2	6¾
contingencies		8

Work below ground floor level 8 9¼

Strip foundations and r.c. stanchion bases and ground beams. Separate basements for ventilation and heating plant. Connecting crawlways and underground ducts. Walls within ducts of fair-faced semi-engineering brickwork. Granolithic floors and skirtings to basements, etc. Steps down to heating chamber, concrete with granolithic finish.

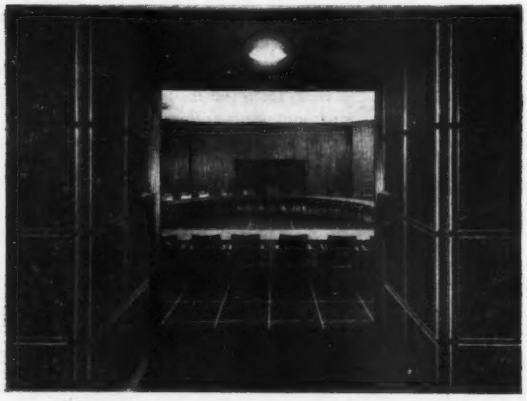
STRUCTURAL ELEMENTS

Frame or load-bearing element 9 1

Main block: r.c. frame, i.e., columns, beams and ground beams, and *in-situ* concrete floors and roof. Subsidiary block: load-bearing walls, facing brick externally and common brickwork internally.

building illustrated

The subsidiary block contains dining rooms, a kitchen and caretaker's flat on the ground floor, and less important offices on the first floor. The porch in the foreground of the photograph (viewpoint 5), above, is the entrance to the caretaker's flat; the glazed porch in the background is the members' entrance.



The largest room in the building is the boardroom, where negotiations with trade unions are carried on. The photograph above shows the boardroom seen through the leather-panelled doors which separate it from the main entrance hall.

The ante-room and dining room, above, are separated by sliding folding doors. The furniture in the ante-room was designed by the architect, together with the lighting fittings and carpet. The furniture in the dining room is reproduction Regency. Quite apart from blending the exterior of the building with the character of Edgbaston, it would seem that a preference for things Regency has decided the character of the building.

analysis

	s	d
External walls	17	2½

Main block: 11-in. cavity panel walls to frame in common brickwork with external cladding of 1-in. polished travertine on front elevation, and of facing brickwork elsewhere.
Subsidiary block: 11-in. cavity walls with external facings of buff bricks. Window surrounds to west and south elevations of 1-in. Westmorland slate.

$$\text{Ratio: } \frac{\text{solid wall}}{\text{floor area}} = \frac{\cdot 599}{1}$$

Windows	3	0½

Hot-dipped galvanized heavy universal section with metal head for glazing internally. Boardroom and entrance hall windows, box section pressed metal mullions and transoms with aluminium glazing beads externally to fixed lights. Staircase window, solid steel mullions with pressed metal transoms arranged to take polished teak glazing beads on both sides.

$$\text{Ratio: } \frac{\text{windows}}{\text{floor area}} = \frac{\cdot 231}{1}$$

External doors		7¼

Armour-plate glass to main entrance and members' entrance.
Elsewhere, softwood, glazed in one pane or solid-core flush doors, with external quality ply.

$$\text{Ratio: } \frac{\text{external doors}}{\text{floor area}} = \frac{\cdot 010}{1}$$

Upper floors (cost included in frame)
In-situ r.c. on steel shuttering, using a retarder to obtain a good key for plaster. (Cost of screed is not included here but under floor finishes.)
Span of each type: in the main block span varies depending on planning. In subsidiary block greatest span is 14 ft. 9 in. between walls.
Area in main block: 4,264 sq. ft.
Area in subsidiary block: 2,748 sq. ft.
Super loads: 50 lb. per sq. ft.

Staircases	2	10¾

In-situ r.c. Cost of tread finishes, whether granolithic or rubber, are given under floor finishes.
Number of staircases: 3.
Widths: one, 6 ft. 6 in.; two, 3 ft. 6 in.
Total rise: one, 14 ft.; two, 10 ft. 6 in.

Roof construction	2	7¾

In-situ concrete with lightweight screed to falls, averaging 4 in. thickness. This is a floated bed of lightweight concrete, weighing 31 lb. per cub. ft., coefficient of thermal conductivity, 0·68 B.Th.U./sq. ft./hr./deg. F./in.
Area: 936 sq. yd.

Roof lights		7½

Steel lantern type with gearing to six and with wired cast glass domes.
Number of lights: 10.
Total area: 192 sq. ft.

Glazing	2	11

All windows are double glazed in laminated glass with exception of panes over 20 sq. ft., for which patent sealed double glazed units are used.

Total of structural elements	39	0¼

analysis

Internal partitions — s 1 d 2
Types of partition: half brick, hollow block.
Area of each type: 412 sq. yd.; 558 sq. yd.

Screens — 3½
Walnut screen to telephone operator's room.
Softwood screen in general office.

Internal doors — 3 0¾
Flush doors, some in Australian walnut veneer, others painted.
Some double doors in mahogany.
Number of single doors: 80 (18 veneered).
Number of double doors: 21 (8 veneered).

Ironmongery — 1 2½
Mortice locks or latches (master key system).
Lever handles in bronze or polished aluminium depending on whether the door is polished or painted. Floor springs to double doors.

Fittings — 2 10¾
Cupboard units to chairman's office, and secretary's office. Telephone booths; entrance doors to boardroom covered with leather. Sundry cupboards etc.

Total of partitions and fittings — 8 7¼

Floor finishes — 6 10½

Type of finish	*Area in sq. ft.*	*Price per sq. yd.* s.	d.
Grano	2,169	13	6
Terrazzo tile	1,269	38	6
Rubber tile	1,152	50	0
Teak block	8,946	42	3

Wall finishes — 5 8
Generally plastered.
Boardroom treated with moulded sycamore strip panelling on plywood backing and studding to two ends. Acoustic blanket hung behind studding.

Ceiling finishes — 5 5
Generally plastered.
Suspended ceiling to offices where there is plenum heating and to boardroom and trade union conference room (plaster on expanded metal lathing).
Slotted acoustic panel ceiling to corridors, cloakrooms and lavatories on timber bearers.

Roof finishes — 2 3¾
Two layer asphalt on felt sheathing. Area: 8,424 sq. ft.

Decorations — 2 5
Gloss or flat paint to woodwork and metalwork.
Emulsion paint in BSS colours to ceilings and walls.
Wallpaper has also been used in a number of public rooms and offices.

Total of finishes — 22 8¼

External plumbing — 10
Cast-iron r.w.p.s, copper flashings and covering to ventilation housing, roof traps, etc.
Graphited copper strip under roof slab of subsidiary block for thermal movement.

Cold water installation — s d 4¼
Copper, painted. Lagged in crawlways.

Sanitary fittings — 11

Type of fitting	*No. of each type*
Sinks, stainless steel	2
Lavatory basins, vitreous china pedestal	10
Urinals, glazed fireclay	3
W.c.s, vitreous china, low level	9
Baths, porcelain enamel	1

Heating, ventilation and hot water — 11 3
A system of radiant heating units with plenum heating system to boardroom, anteroom, dining rooms and five principal offices on first floor.
Boardroom heating can be run at 55 deg. F., when the room is not in use.
Boiler, oil fired and fully automatic, capacity, 811,000 B.Th.U.s per hour. Three accelerators, 1 for plenum, 1 for water circulating and 1 standby.
Hot water system for two calorifiers is run off heating with electric immersion heaters for summer use.
The plenum is controlled by a time clock.
2 inlet fans with filters and heater batteries are fed from the boiler plant, and there are 2 extract fans. All fans are of low speed type, mounted for quiet running.
Internal temperatures: 65 deg. F. in offices; 60 deg. F. in corridors, lobbies and cloakrooms, 55 deg. F. in lavatories.
Air change: 9 changes per hour in boardroom, 3 in anteroom and dining rooms, with reversing switch. 5 to 7 changes per hour in principal offices.
" U " of walls, 0·30
" U " of roof, 0·12.

Electrical installation — 3 11
Cost of electrical fittings — 1 0

Type of point	*No. of each type*
Lighting	283
Cold cathode tube	206 ft.
Power points	76
Bells	6
Clock points	3

Wiring to fan motors, circulating pump, immersion heaters, motorised valves, electric fires, etc.

Total of services — 18 3½

Drainage — 1 4½
Combined system in salt glazed pipes, brick manholes with medium duty manhole covers.

Other elements not shown above — 6 11¾
External works: boundary walls in facing bricks with reconstructed stone coping. Tar macadam paving to car park and roads. Grassed areas and planting. Timber gates to St. James's Road exit. Concrete flower tubs.

Total per sq. ft. : £77,946 (net cost excluding external works) / 15,293 sq. ft. (floor area measured inside external walls) = 101 11½

analysis

SUMMARY

Ground floor area: 7,385 sq. ft.
Total floor area: 15,293 sq. ft.
Type of contract: RIBA
Tender date: May 1955
Work began: September 1955
Work finished: July 1957
Tender price of foundations, superstructure, installations and finishes: £77,946
Final contract price not yet available.
Tender price of external works and ancillary buildings: £5,333
Total: £83,279

COST COMMENTS

The long narrow plan shape chosen in response to the various site conditions has had its repercussions on the cost.

(*a*) The high perimeter walling area is reflected in an unusually high cost of 17s. 2½d., although it should be noted that this includes large areas of travertine and the slate window surrounds, both of which would increase the cost of walling above the average.

(*b*) The long service runs from the heating chamber at the extreme end of the building have required more circulation pumps and larger flow and return pipes than would have been the case had the plant been centrally placed. But the complicated heating and ventilation system has affected the cost of other elements besides that of the boiler and ventilation equipment, and this very substantial influence is not easily shown in the analysis. The underground crawlways and ventilation chamber, the extensive suspended ceilings with ventilation trunking above, and the provision of double glazing must all be considered as stemming from the requirement of first-class comfort, and therefore any comparison with other forms of heating must take these extra constructional requirements into account. It is to be hoped that the feeling of warmth and well-being induced by these conditions will contribute to an atmosphere of goodwill in the negotiations for which the building has been designed. The high standard of finishings provided in the boardroom and main conference rooms also increases the cost. Finishings in the greater part of the building are of normal office standard.

CONTRACTORS

General contractor: W. J. Whittall & Son. *Sub-contractors—Steel fabric and bar reinforcement:* Guest, Keen & Nettlefold (Reinforcements) Ltd. *Special facing bricks, air bricks and sill tiles:* Blockleys Ltd. *Common bricks:* London Brick Co. Ltd., Kings Norton Brick Co. Ltd. *Engineering bricks:* Aldridge Brick & Tile Co. Ltd. *Broughton Moor slate surrounds and marble work:* W. H. Fraley & Son Ltd. *Asphalt roofing and paving:* The General Asphalte Co. Ltd. *Insulating roof screeds:* Celcon Ltd. *Reconstructed stonework and copings, granolithic floors and steps:* John Ellis & Sons Ltd. *Special steel windows, lantern lights and gearing:* Henry Hope & Son Ltd. *Special double glazing and armour plate doors:* Glass (Coventry) Ltd. *Luve Tile plastic ceiling louvres:* Harris & Sheldon Ltd. *Aggregates:* Midland Gravel Co. Ltd. *Cement:* Cement Marketing Co. Ltd. *Electrical installation:* B. French Ltd. *Switchgear, general lighting fittings and installation of cold cathode tube lighting:* General Electric Co. Ltd. *Other light fittings:* Merchant Adventurers Ltd. *GPO and internal telephone systems:* Greenwood's & Airvac Ventilating Co. Ltd. *Internal telephones:* Siemens Bros. & Co. *Electric switches:* Britmac Electric Co. Ltd. *Drying cabinet heater:* E. K. Cole Ltd. *Venetian blinds and electrically controlled venetian blind:* Venetian Vogue Ltd. *Cellar drainage pumps:* James Beresford & Son Ltd. *Heating, hot water and Plenum systems:* Brightside Heating & Engineering Co. Ltd. *Electric fires:* H. Frost & Co. Ltd. *Acoustic blanket and insulating materials:* Stillite Products Ltd. *Special leatherwork and light fittings:* H. M. Roberts Ltd. *Gas services:* West Midlands Gas Board. *Gas Appliances:* Ascot Gas Water Heaters Ltd. *Gas cookers and kitchen extraction equipment:* Radiation & Group Sales Ltd. *Wrought iron balustrades and steel staircases:* Best & Lloyd Ltd. *Special folding sliding doors:* The Bolton Gate Co. Ltd. *Duct covers and general metalwork:* H. E. Breaker (Metalwork) Ltd. *Tarmacadam paving and felt roofing:* Neuchatel Asphalte Co. Ltd. *Steelwork:* Charles Wade & Co. Ltd. *Waterproofing compounds and mastics:* Evode Ltd. *Stone pitching:* Rowley Regis Granite Quarries Ltd. *Wood block floors:* Vigers Bros. Ltd. *Terrazzo floors and paving:* Standard Pavement Co. Ltd. *Rubber flooring:* Marshall Davies & Co. Ltd. *Glazed tiles:* Pilkingtons Tiles Ltd. *Tile fixing:* J. W. Meredith. *Sliding door gear:* P. C. Henderson Ltd. *Special flush and veneered doors:* Leaderflush Ltd. *Suspended ceilings:* The Expanded Metal Co. Ltd. *Door furniture designed by the architect, locks and general ironmongery:* James Gibbons Ltd., Parker Winder & Achurch Ltd. *Sanitary fittings:* Charles Winn & Co. Ltd. *Plasterers:* T. Hawkins. *Plaster, plastering materials and acoustic panels:* Gyproc Products Ltd. *Plumbers:* David F. Wiseman & Sons Ltd. *Decorators:* J. Patrick & Co. Ltd. *Decorating materials:* Docker Bros. Ltd., Permoglaze Ltd. *French polishing:* A. Woodward & Son. *Furniture, carpets and curtains to the architect's design, made up and fitted:* Hampton & Sons Ltd., I.C. Steel Ltd. *Special curtains designed by the architect:* Tibor Ltd. *Other furniture:* Bell Barn Ltd., Restalls Ltd. *Wooden door handles to design of architect:* Richard Swale. *Hat and coat racks designed by architect:* A. Edmonds & Co. Ltd., *Fireplaces:* W. H. Fraley & Sons Ltd., The Griffin Foundry Fireplace & Sanitary Fittings Ltd. *Safes:* Thos. Withers & Sons Ltd. *Haulage:* C. Williams & Sons Ltd. *Scaffolding:* Horstel Ltd. *Doormats:* Birmingham Royal Institute for the Blind. *Landscape gardening:* Garden Developments Ltd. *Concrete flower tubs:* Stuart's Granolithic Co. Ltd. *Flag pole:* Poles Ltd. *Indoor plants:* Neale Bros. (Nurseries) Ltd.

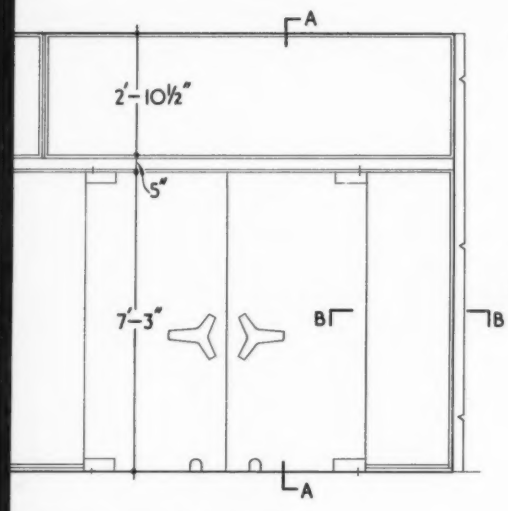
ENTRANCE DOORS: SHOP IN ROTTERDAM

Marcel Breuer and A. Elzas, architects

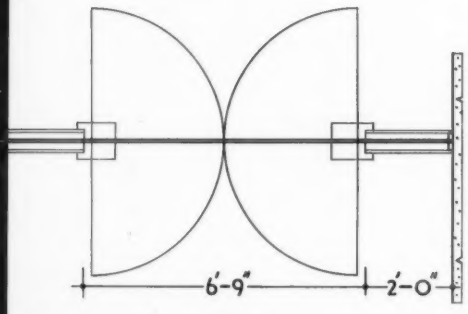
The quality of these doors seems to derive from the simplified (but appropriately massive) form of the gear and the use of extruded aluminium beads of constant section to hold the glass and cover the joint with adjacent materials.

ENTRANCE DOORS: SHOP IN ROTTERDAM

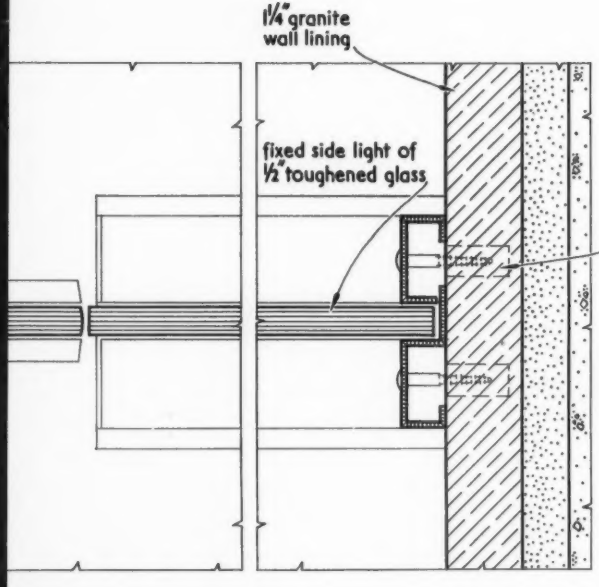
Marcel Breuer and A. Elzas, architects



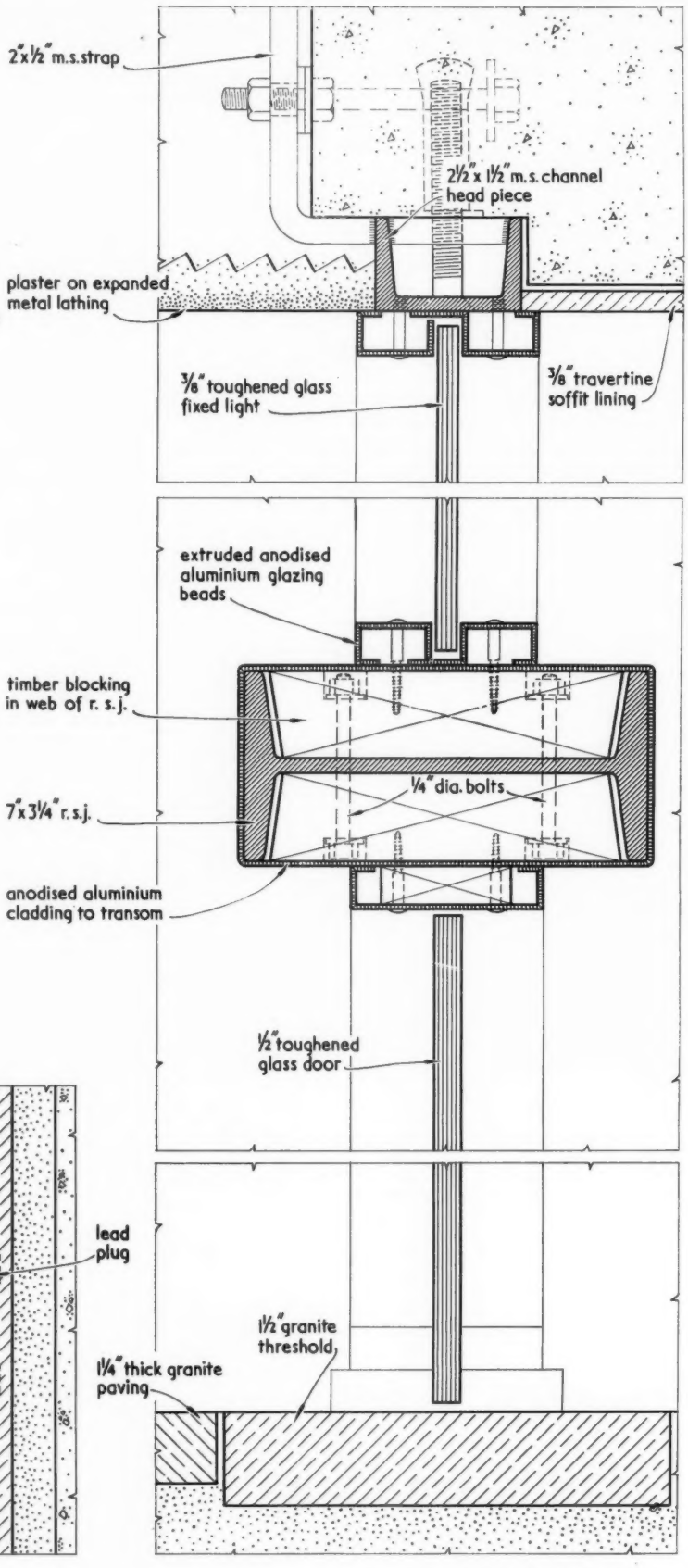
ELEVATION. scale ¼" = 1'-0"



PLAN. scale ¼" = 1'-0"



PLAN AT B—B. scale ⅜ full size

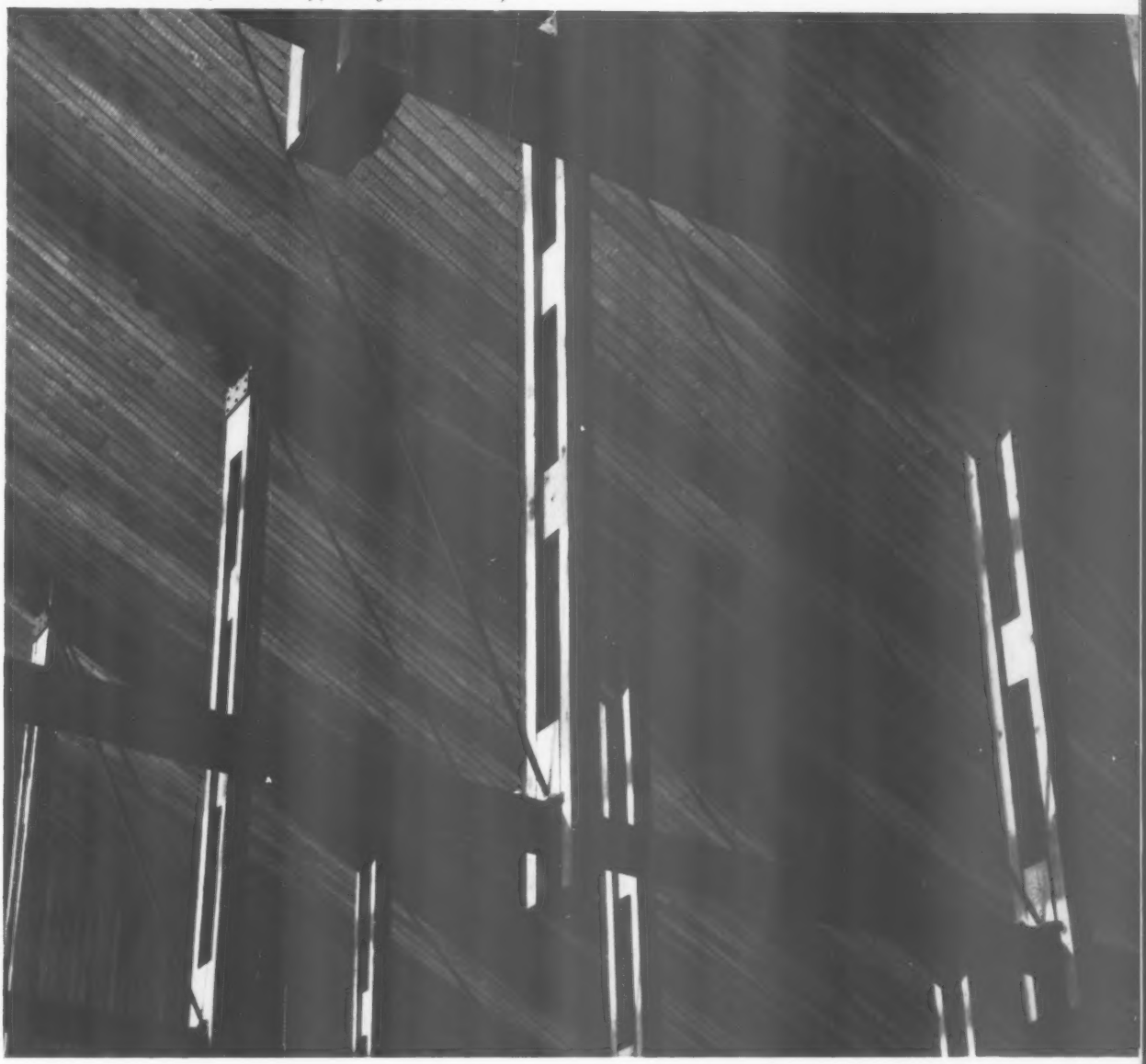


SECTION A—A.

note: figured dimensions in feet and inches are approximate

ROOF TRUSS: CHAPEL AT OTANIEMI, FINLAND

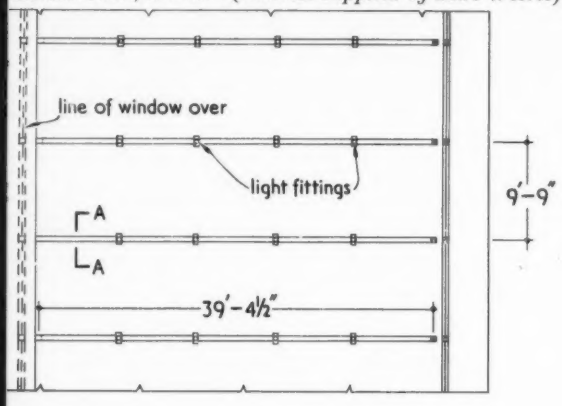
Heikki Siren, architect (material supplied by Imre Weores)



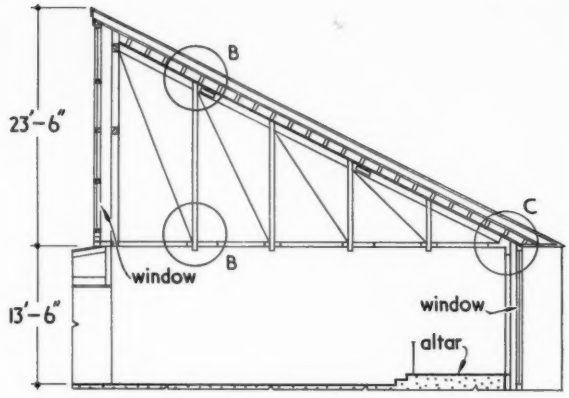
This celebrated roof truss is a good example of the expression proper to timber. Technical interest lies in the liberal use of mild steel tie and fishplates to reduce the size of the timber sections. Note the unobtrusive fixing of the lights at the foot of each post.

ROOF TRUSS: CHAPEL AT OTANIEMI, FINLAND

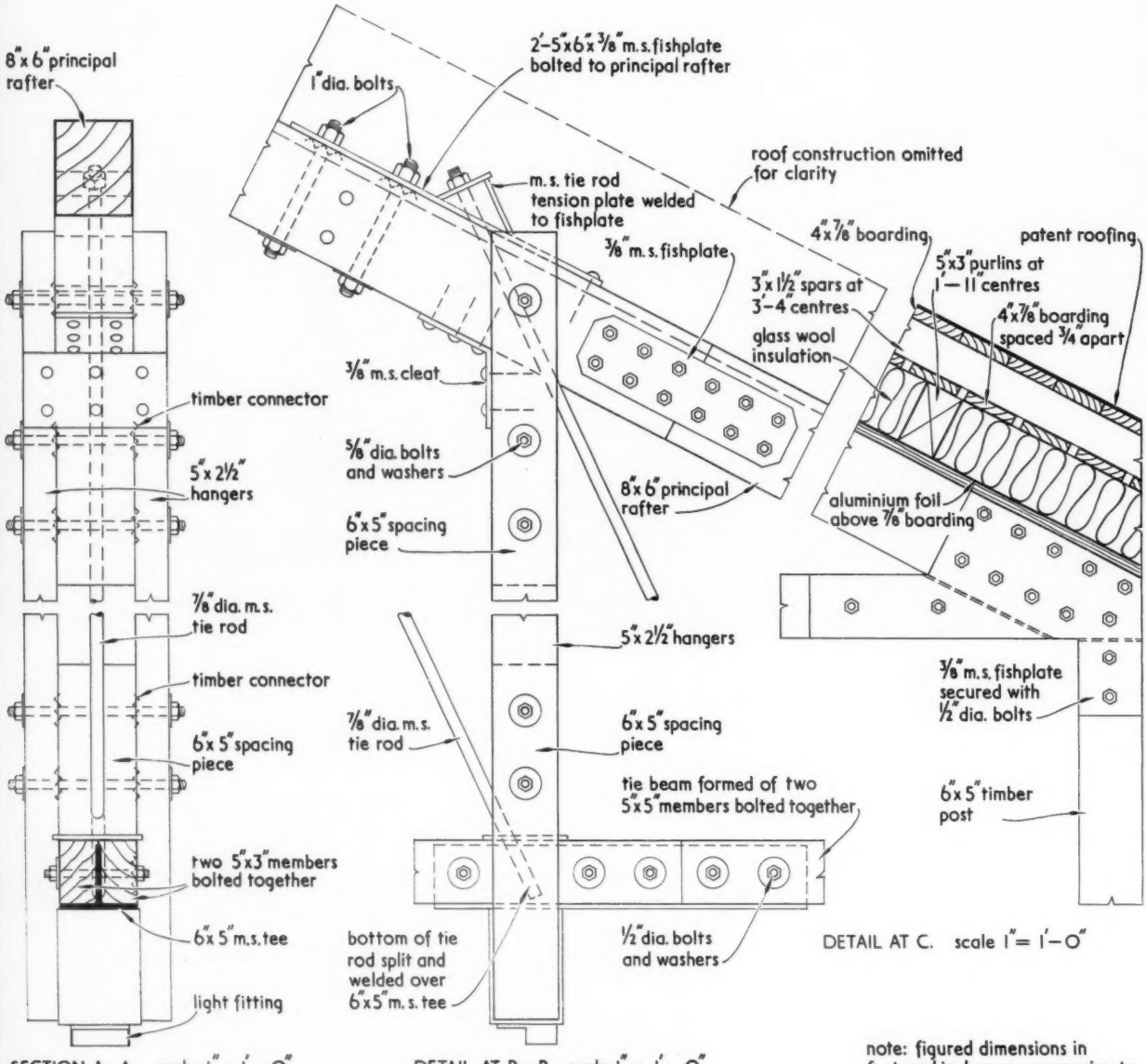
Heikki Siren, architect (material supplied by Imre Weores)



REFLECTED PLAN OF ROOF. scale ⅛"= 1'– 0"



SECTION. scale ⅛"= 1'– 0"



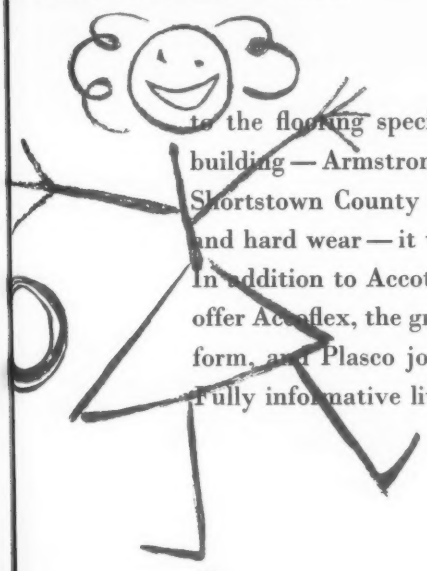
SECTION A–A. scale 1"= 1'– 0"

DETAIL AT B–B. scale 1"= 1'– 0"

DETAIL AT C. scale 1"= 1'–0"

note: figured dimensions in feet and inches are approximate

...y Architect: S. Vincent Goodman, F.R.I.B.A *Specialist Contractor: Rowan & Boden, Ltd., Luton.*



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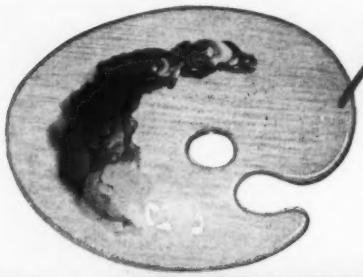

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Acknowledgements to K.L.M.-Royal Dutch Airlines *Architect: J. Stroud Foster, A.R.I.B.A. Linoleum Installation: Cellulin Flooring Co. Ltd.*

THELMA . . . . stands for The Linoleum Manufacturers' Association, 127 Victoria St., London, S.W.1. For further information write to the Association or to any of the following members :—

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82

A Linoleum floor at the Bond Street offices of K.L.M.-Royal Dutch Airlines. Notice how skilfully the architect has selected a contemporary pattern muted in tone to accentuate his decorative theme. Linoleum, more successfully than any other modern flooring, provides resistance to wear coupled with quietness of tread, which a busy office demands.

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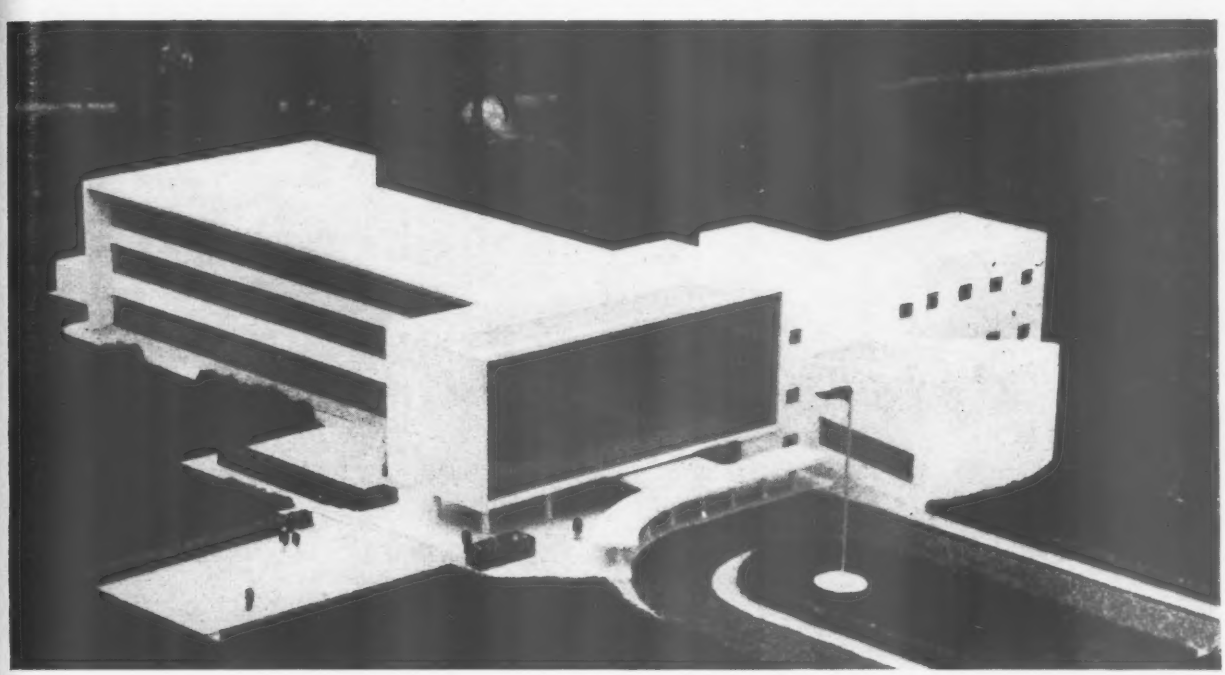
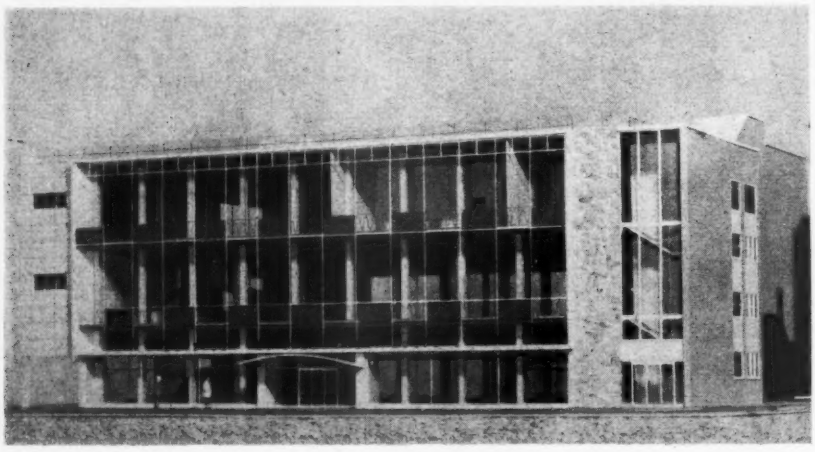


Work has just started on a new building for the faculty of Architecture and Engineering in the University of Santo Domingo, Dominican Republic. The building, of which a model is shown here, will cost half a million dollars and cater for 1,680 students. It contains 14 lecture rooms, seven drawing offices, two large laboratories, a library and reading room, an amphitheatre seating 350, and general faculty and administration offices. The Centre was designed by Dominican architect Jose Antonio Caro.

CO-OPERATIVE STORE AT WESTON-SUPER-MARE



This glass-roofed store, with a flat roof which could become a landing stage for helicopters, is designed by the Bristol Co-operative Society's architect, S. T. Wyatt, and is to be built in the next 18 months in Weston-super-Mare, and will replace all the Society's local shops, except the food shops. The store is being built on a concrete raft, since trial holes going down 80 ft. revealed nothing but silt under the site, at the corner of High Street and St. James Street. Both frontages are identical and almost entirely of plate glass, and on the side facing the sea an electronic eye will control the shop's blinds according to the strength of the sun. Counters, stands and lighting within will all be movable since flexibility is needed in a shop catering for local people all the year and for large numbers of summer visitors.

Contractors

*Fountain House, Fenchurch Street, London, E.C.*3 (Pages 547-548). For the City of London Real Property Co. Ltd. *Architect:* W. H. Rogers, A.R.I.B.A. *Consulting architect:* Sir Howard Robertson, M.C., A.R.A., P.P.R.I.B.A., S.A.D.G. *Consulting engineers:* G. A. Dodd & Partners. *Consultants, heating and electrical:* Engineers Department, C.L.R.P. *Quantity surveyors:* E. Howard & Partners. *Clerk of Works:* G. S. Peters and C. W. Thomas. *General contractors (demolition and foundation):* C. Wimpey & Co. Ltd.; (*Superstructure*): Trollope & Colls, Ltd. *Sub-contractors: Steel frames:* Boulton & Paul, Limited. *R.c. work:* Caxton Floors, Limited. *Stone:* The South Western Stone Co. Ltd. *Granite:* Brookes, Limited. *Marble:* J. Whitehead & Sons, Limited. *Asphalt:* Faldo Asphalte Co. Ltd. *Lifts:* Otis Elevator Co. Ltd. *Wood blocks:* Vigers Bros. *Glass infill:* Plyglass, Limited. *Plaster infill:* The Unit Construction Co. Ltd. *Lightning conductor:* J. W. Gray. *Heating and ventilation:* Rosser & Russell, Limited. *Electrical work:* The Berkeley Electrical Engineering Co. Ltd. *Plumbing:* Ellis (Kensington), Limited. *Sanitary fittings:* W. N. Froy & Sons, Limited. *Terrazzo, internal and external:* Alan Milne, Limited. *Artificial stone:* Copper Wettern & Co. Ltd. *Metal staircases, balustrades and metal handrails:* S. W. Farmer & Son, Limited. *Paints (emulsion):* H. E. Gaze; (*Gloss*): I.C.I. *Astrapole wall finishes:* Roffe, Limited.

Announcement

R. Seifert, F.R.I.B.A., has taken into partnership H. G. Marsh, A.R.I.B.A., and A. G. Henderson, A.R.I.B.A. The title of the firm will be R. Seifert & Partners, practising at 28, Great Ormond Street, W.C.1.

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ACKNOWLEDGMENTS:

L.C.C. Brandon Estate, Southwark. Hubert Bennett, F.R.I.B.A., Architect to the Council.

British Railways, Great Eastern House, Cambridge. H. H. Powell, B.Arch., F.R.I.B.A., Regional Architect (Eastern Region) British Railways.

Monsanto Chemicals Limited. Oil additives engine test laboratories, Newport.

St. Aidens Church, Speke, Liverpool. Architect: Bernard A. Miller, B.Arch. F.R.I.B.A.

Office Building, Slough. Architect: Richard Sheppard & Partners.

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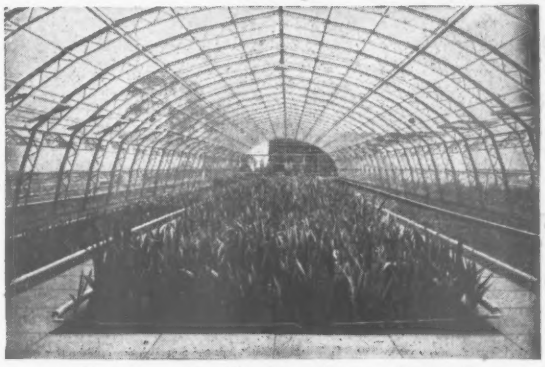

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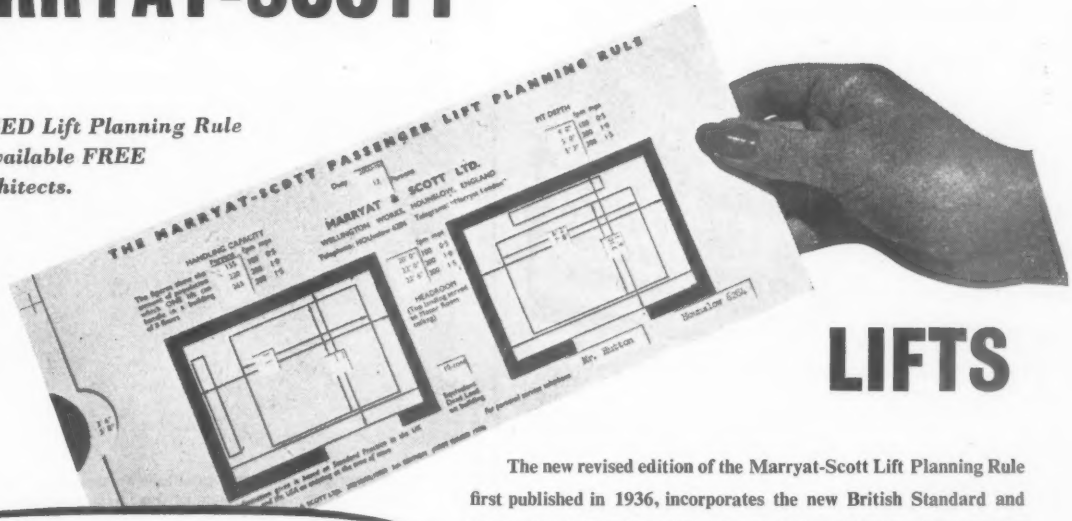

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Replies to Box Numbers should be addressed care of "The Architects' Journal," at the address given above.

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LANCASHIRE COUNTY COUNCIL
APPOINTMENT OF COUNTY ARCHITECT

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Forms of application, together with particulars of the terms and conditions of the appointment, may be obtained from the undersigned, to whom applications should be submitted not later than the 9th May, 1958.

R. ADCOCK,
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