

THE ARCHITECTS' JOURNAL



Standard contents

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

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CURRENT BUILDING

Major Buildings described:

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A 3245] [Vol. 125
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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.

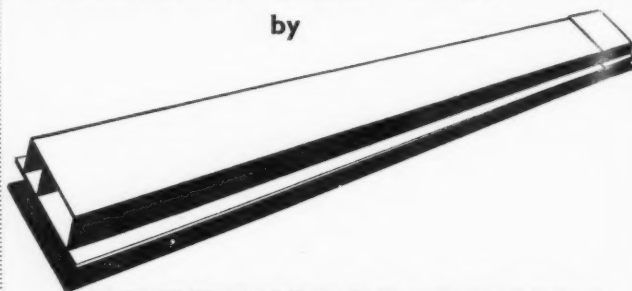
AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhamstead, Herts.	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ARCUK	Architects' Registration Council. 78, Wimpole Street, W.1.	Welbeck 2915
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Reliance 7611, Ext. 1706
BCC	British Colour Council. 13, Portman Square, W.1.	Museum 5400
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Welbeck 4185
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Tealing 9621
BDA	British Door Association. 10, The Boltons, S.W.10.	Redditch 716
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Fremantle 8494
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Temple Bar 9434
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Glasgow Central 2891
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Chancery 7772
BOT	Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Langham 2785
BRS	Building Research Station. Bucknalls Lane, Watford	Trafalgar 8855
BSA	Building Societies Association. 14, Park Street, W.1.	Garston 4040
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 0515
BTE	Building Trades Exhibition. 32, Millbank, S.W.1.	Mayfair 9000
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Tate Gallery 8134
CAS	County Architects' Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Newport 65491
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Chichester 3001
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Belgravia 6661
CDA	Copper Development Association. 55, South Audley Street, W.1.	Reliance 7611 Ext. 1284
CIAM	Congrès Internationaux d'Architecture Moderne. Dolderal, 7, Zurich, Switzerland	Grosvenor 8811
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.	
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Reliance 7611
DPT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1.	Whitehall 0540
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Trafalgar 8855
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	Regent 4448
FAS	Faculty of Architects and Surveyors. 68, Gloucester Place, W.1.	
FASS	Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, S.W.1.	Welbeck 9966
FBBD0	Fibre Building Board Development Organization, Ltd. (Fidor), 47, Princes Gate, Kensington, S.W.7.	Abbey 7232
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Kensington 4577
FC	Forestry Commission. 25, Savile Row, W.1.	Whitehall 6711
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Regent 0221
FDMA	The Flush Door Manufacturers Association Ltd., Trowell, Nottingham.	Sloane 1002
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ilkeston 623
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Ulverston 201
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Chancery 7583
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Whitehall 3902
GPDA	Gypsum Plasterboard Development Association, 11, Ironmonger Lane, E.C.2.	Langham 4341
GC	Gas Council. 1, Grosvenor Place, S.W.1.	E.C.2.
GG	Georgian Group. 2, Chester Street, S.W.1.	Monarch 8888
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Sloane 4554
IAAS	Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1.	Belgravia 3081
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Whitehall 2881
ICE	Institution of Civil Engineers. 1, Great George Street, S.W.1.	Belgravia 3755
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2.	Grosvenor 6186
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Whitehall 4577
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Temple Bar 7676



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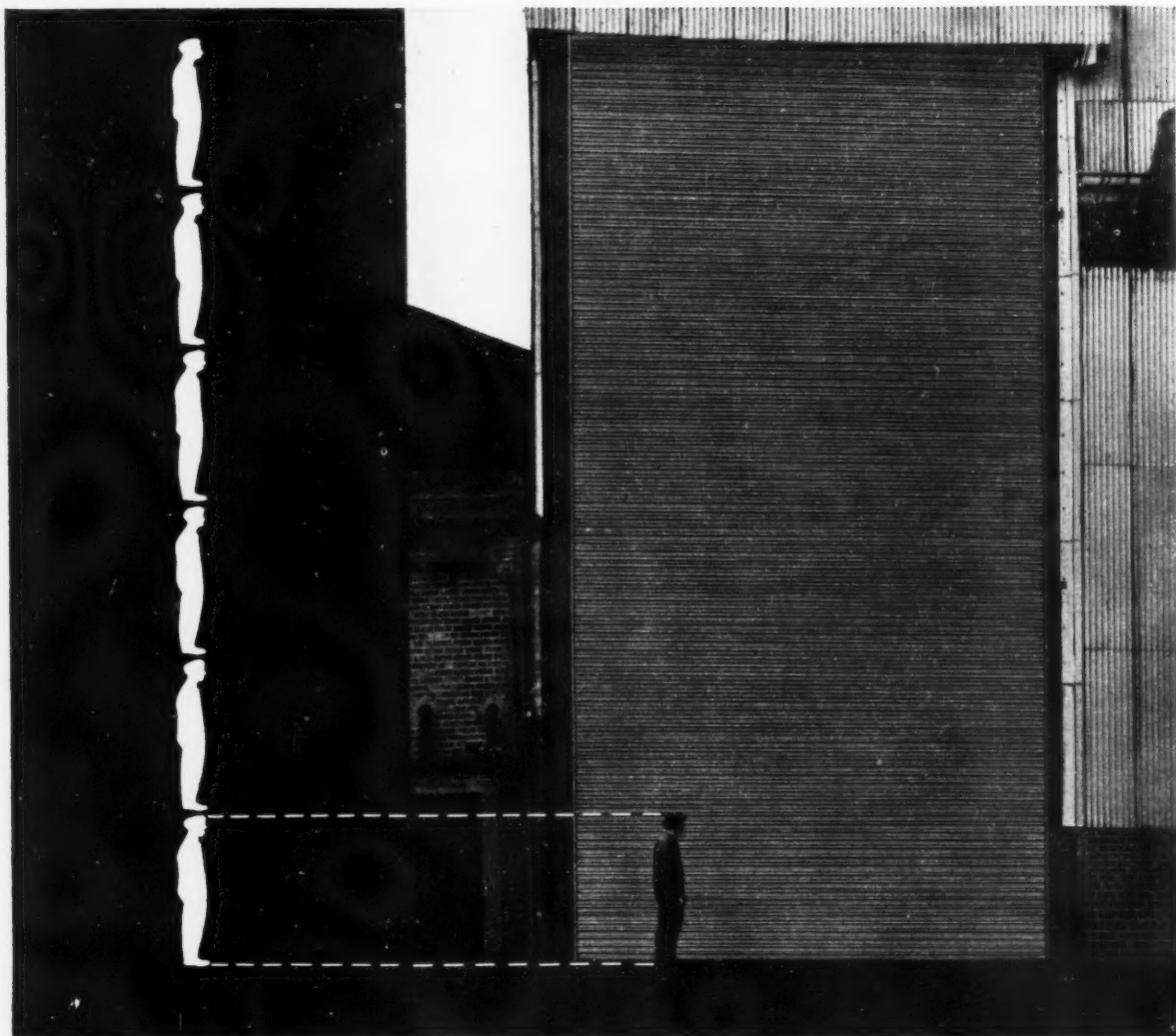
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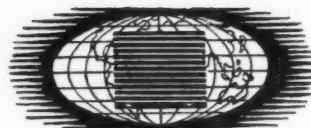
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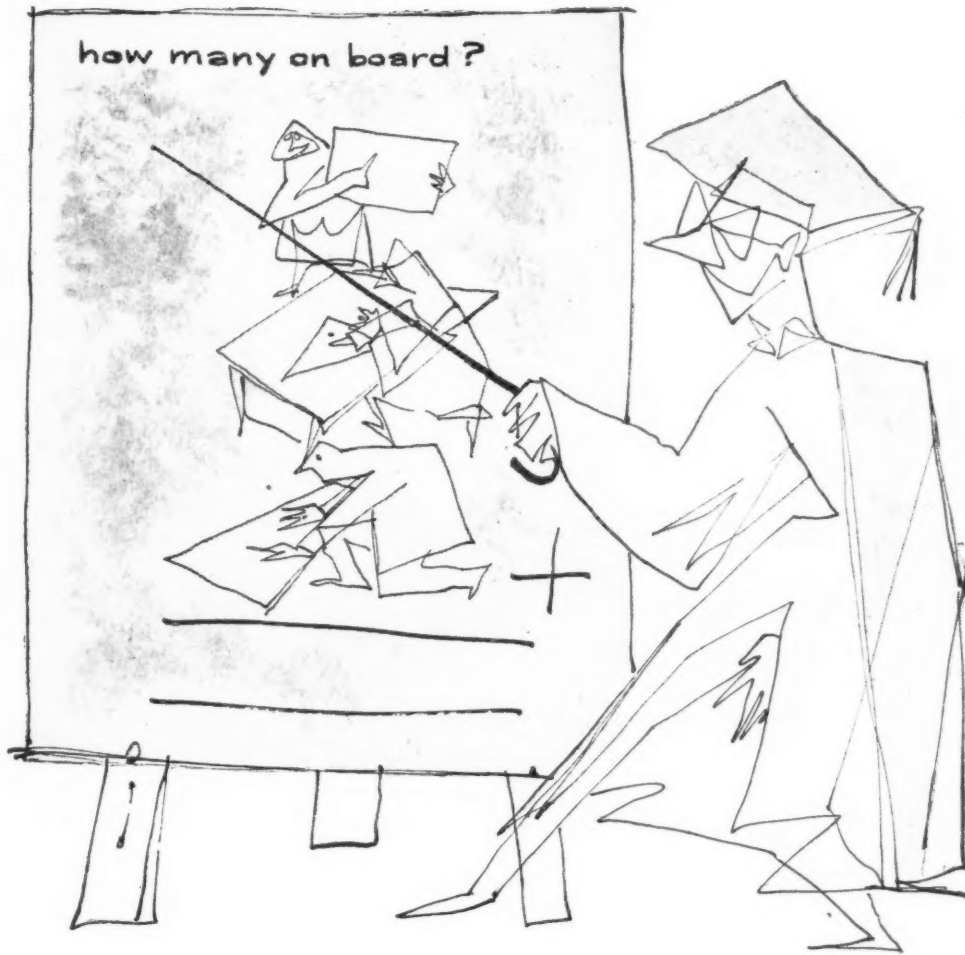
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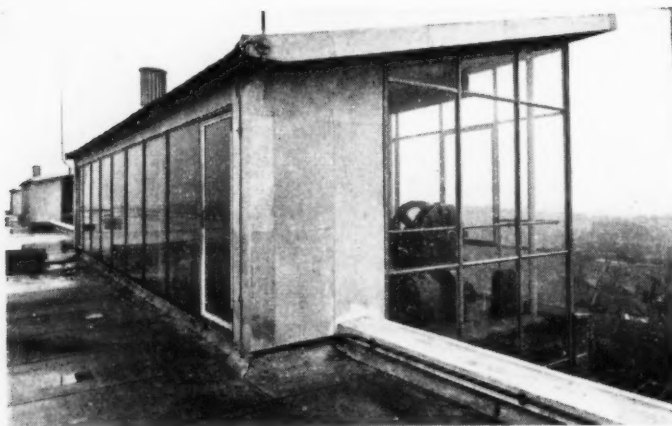
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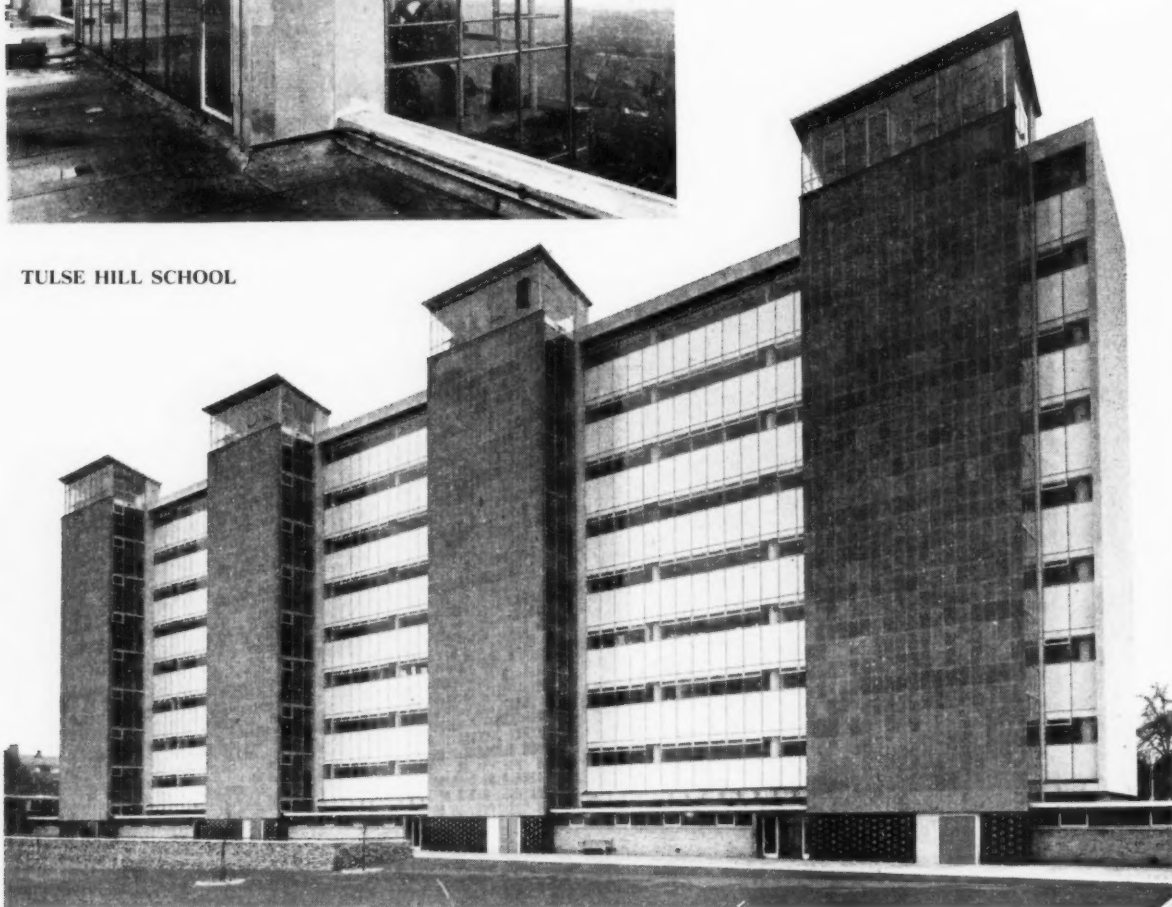
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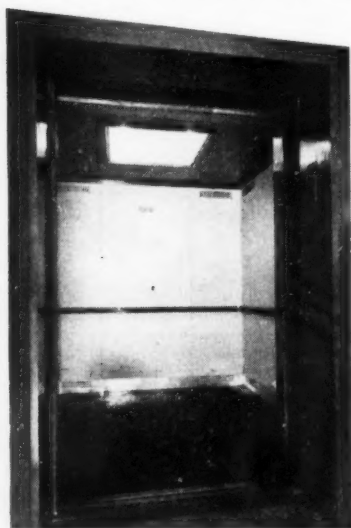


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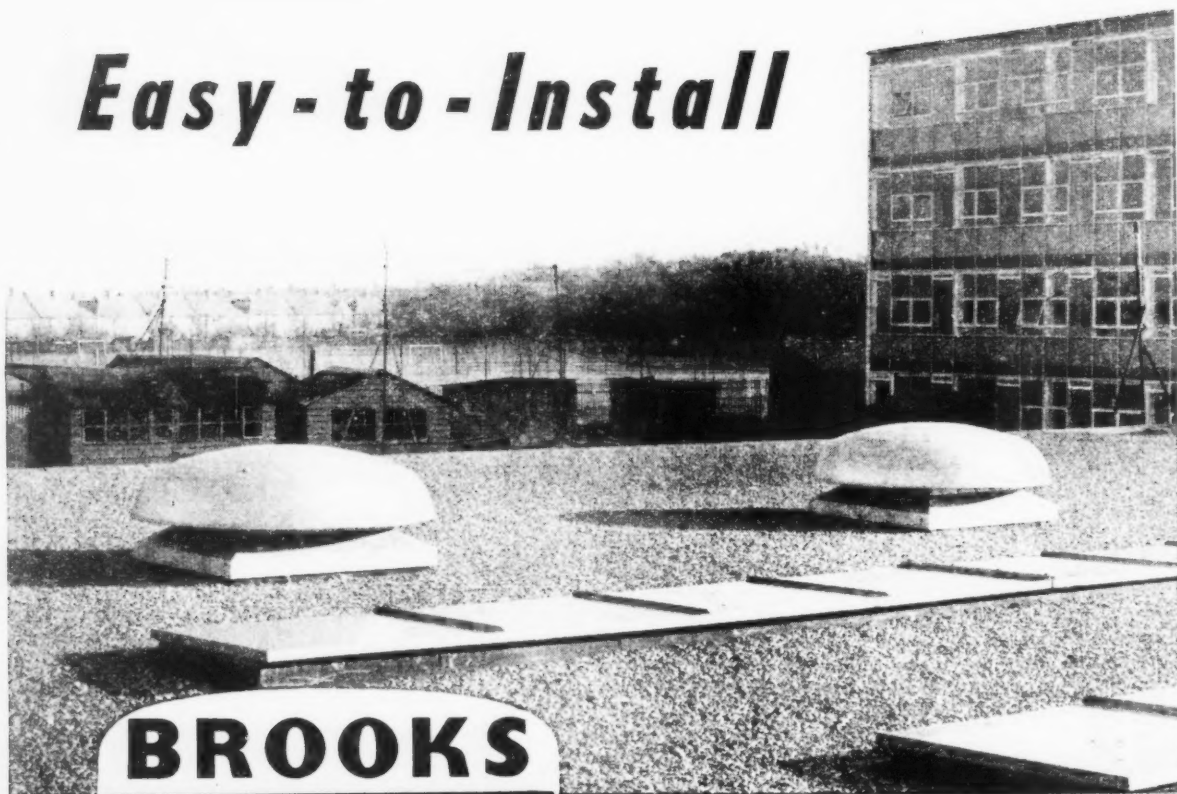
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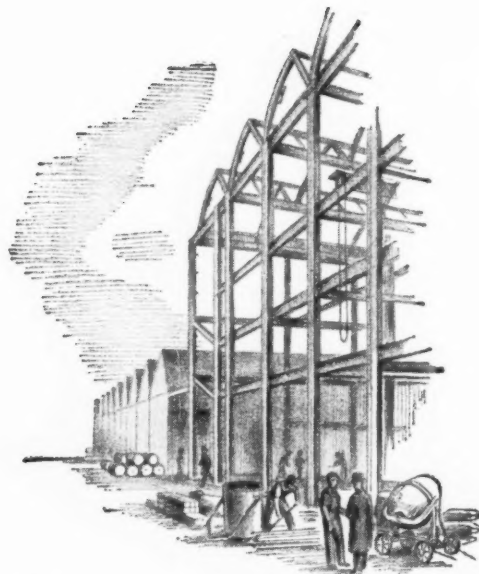
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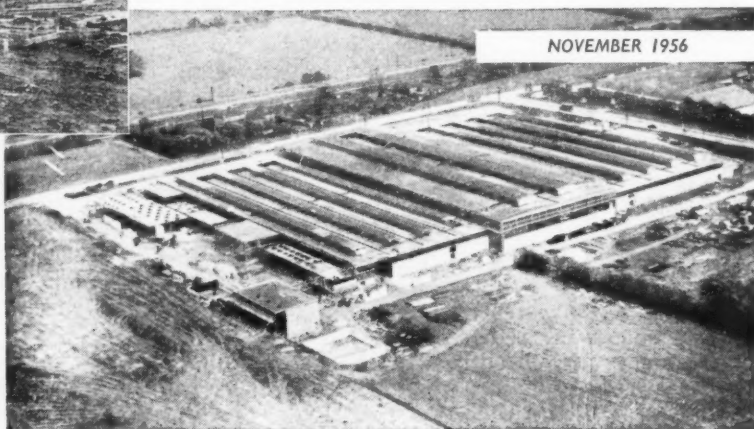
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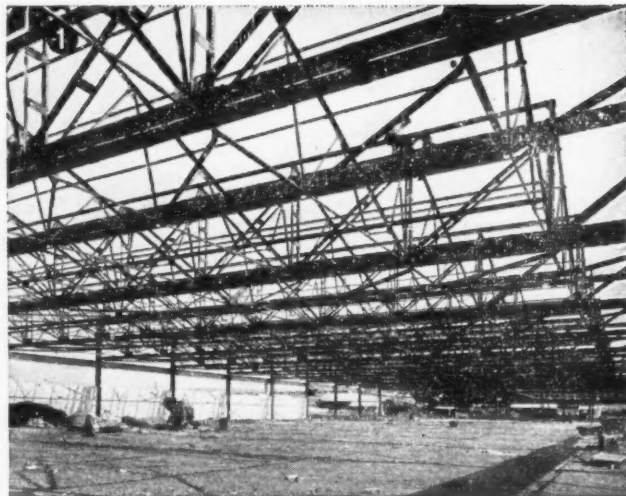
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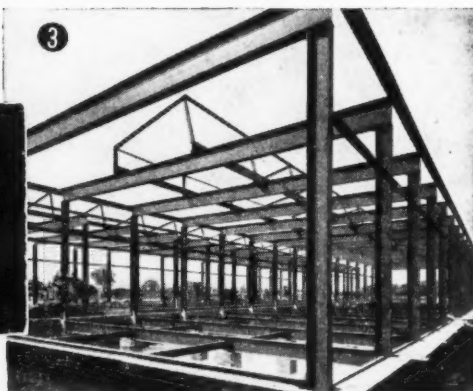
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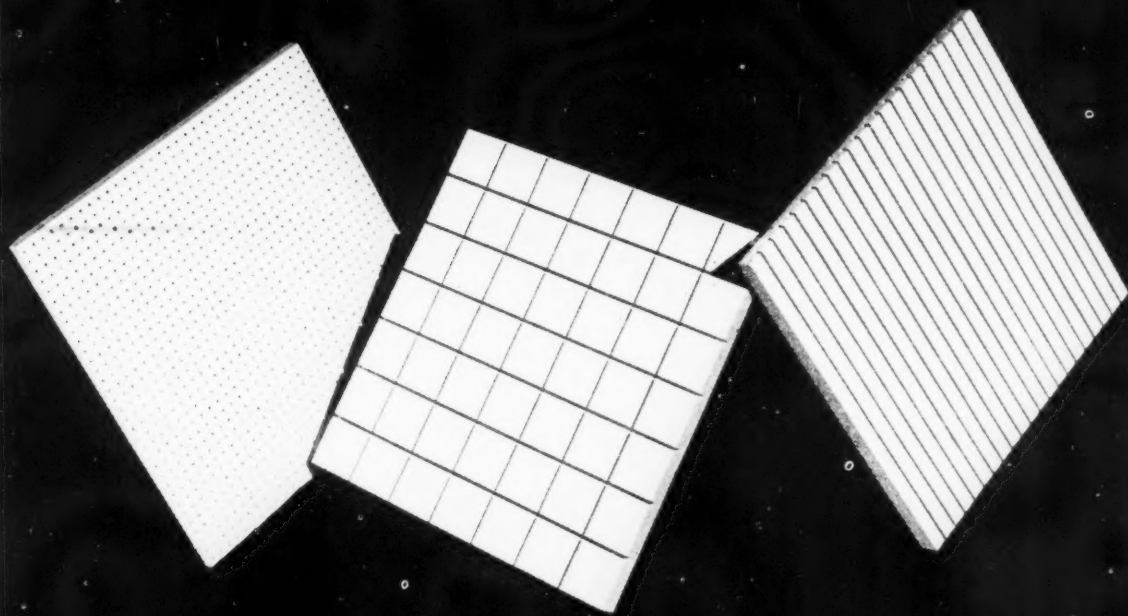
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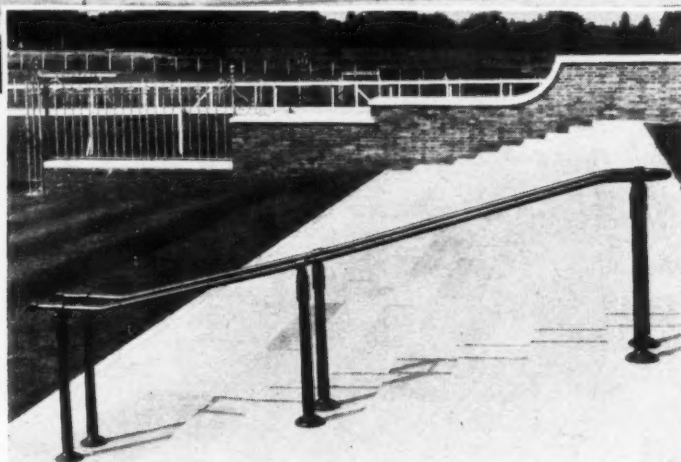
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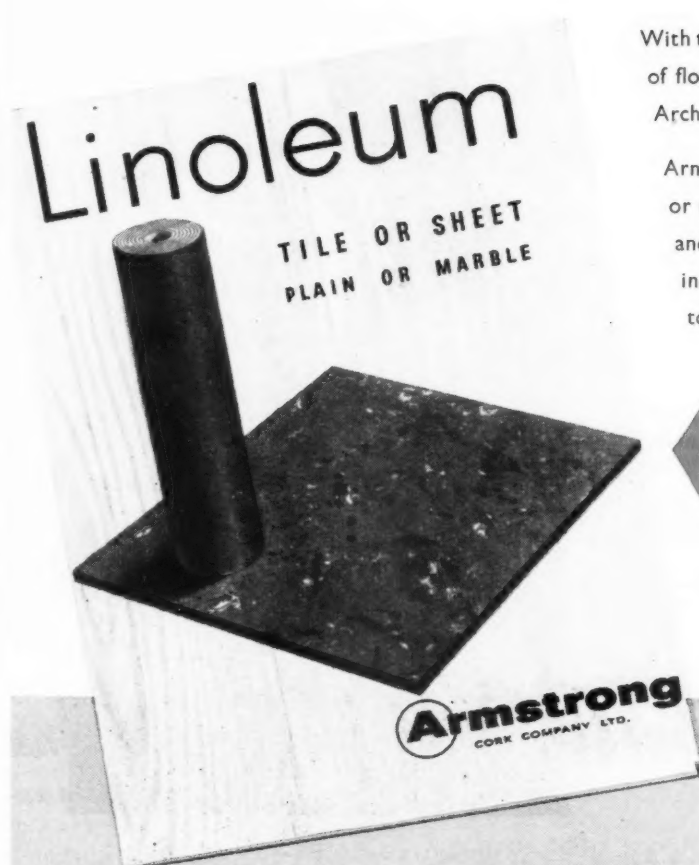


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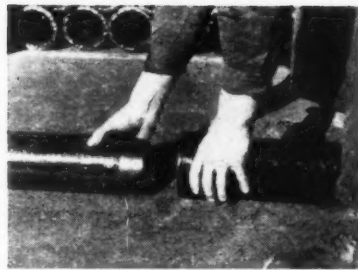
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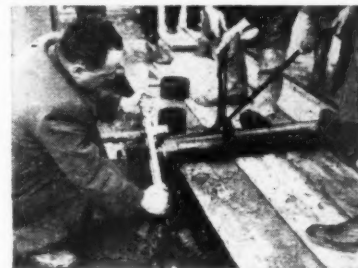
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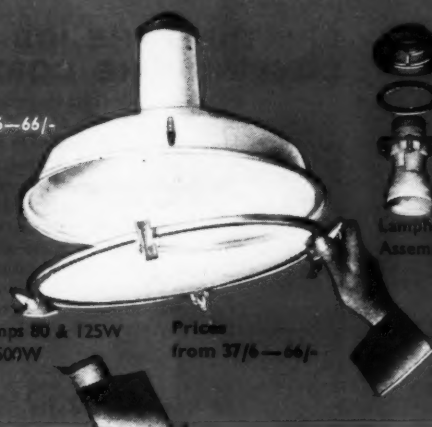
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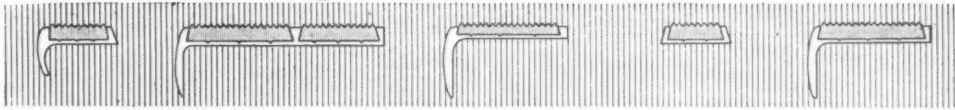
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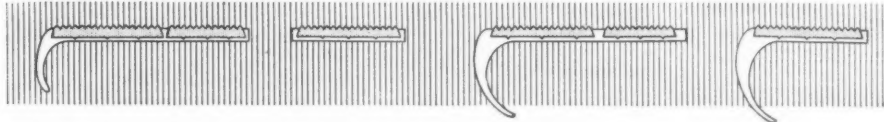
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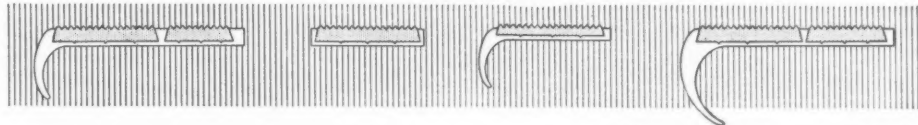
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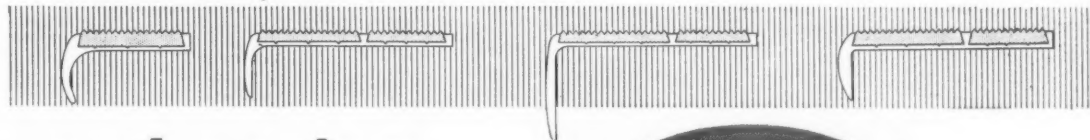
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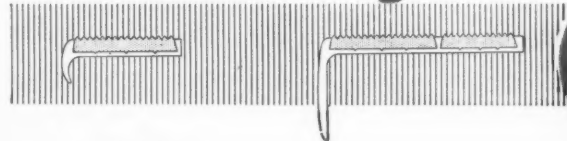
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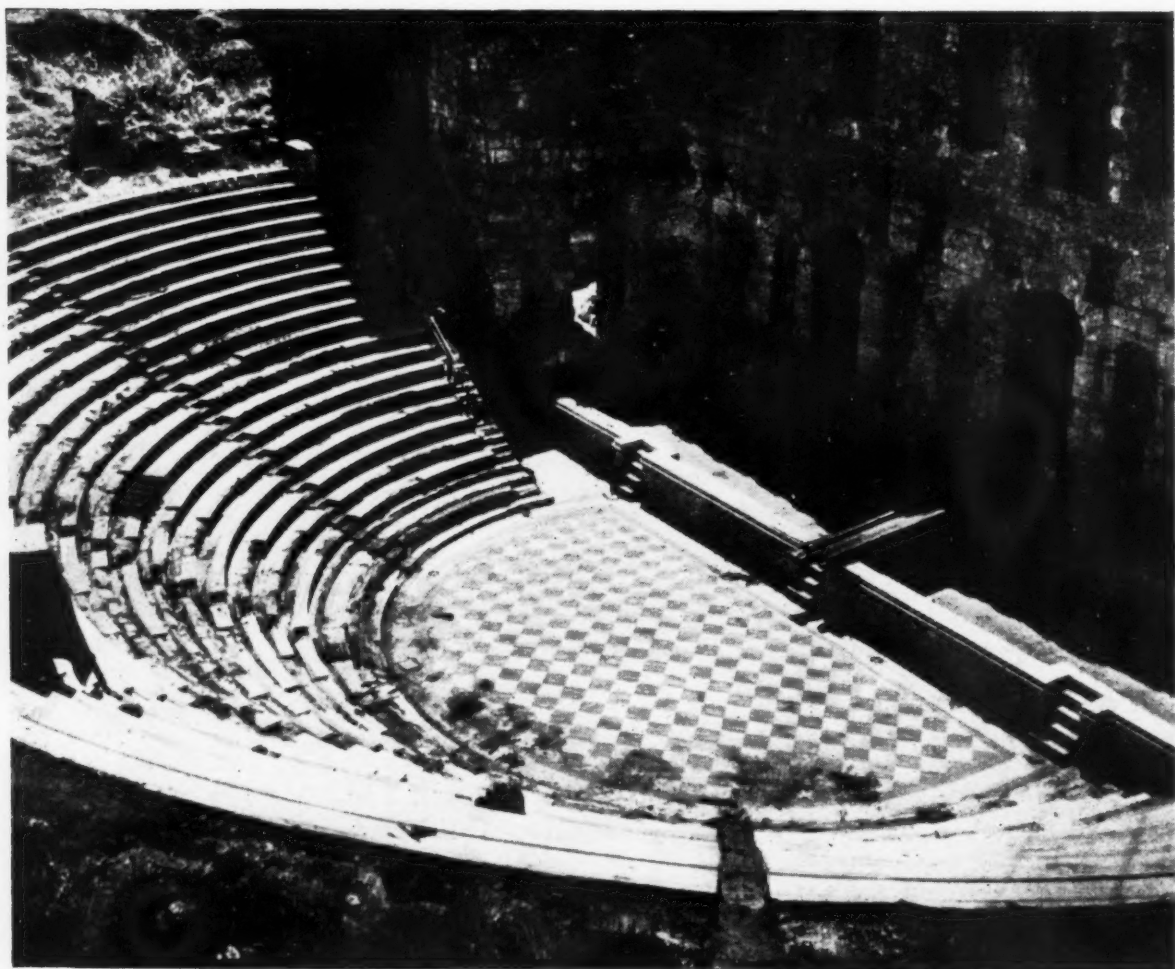
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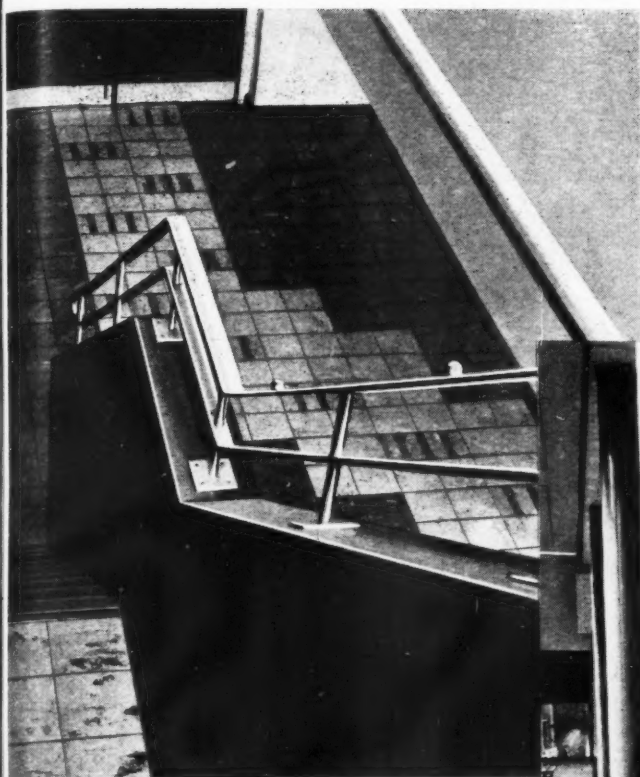
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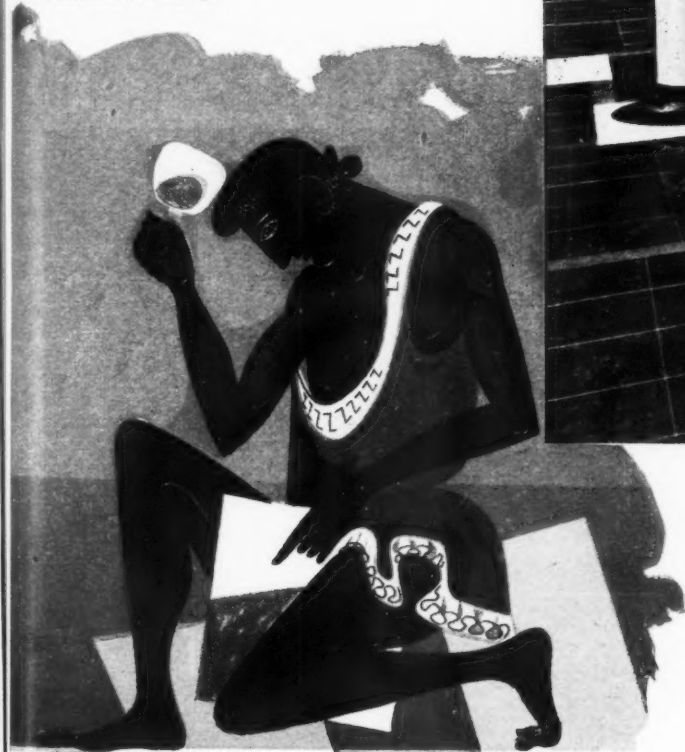
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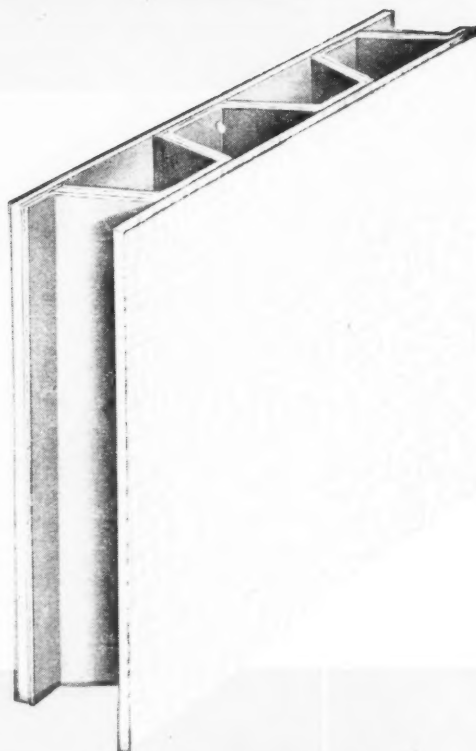
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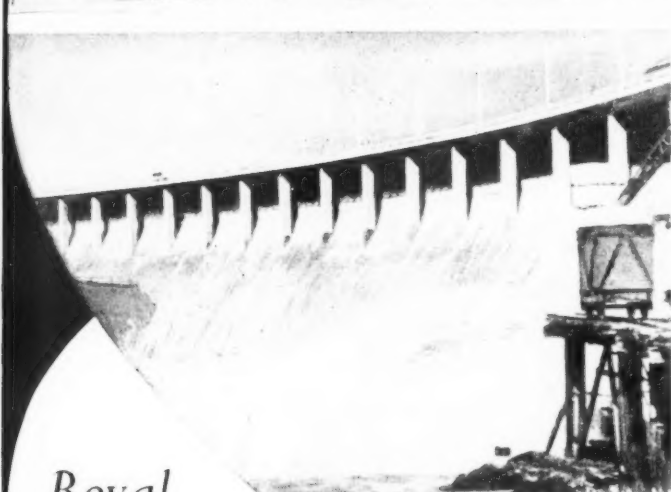
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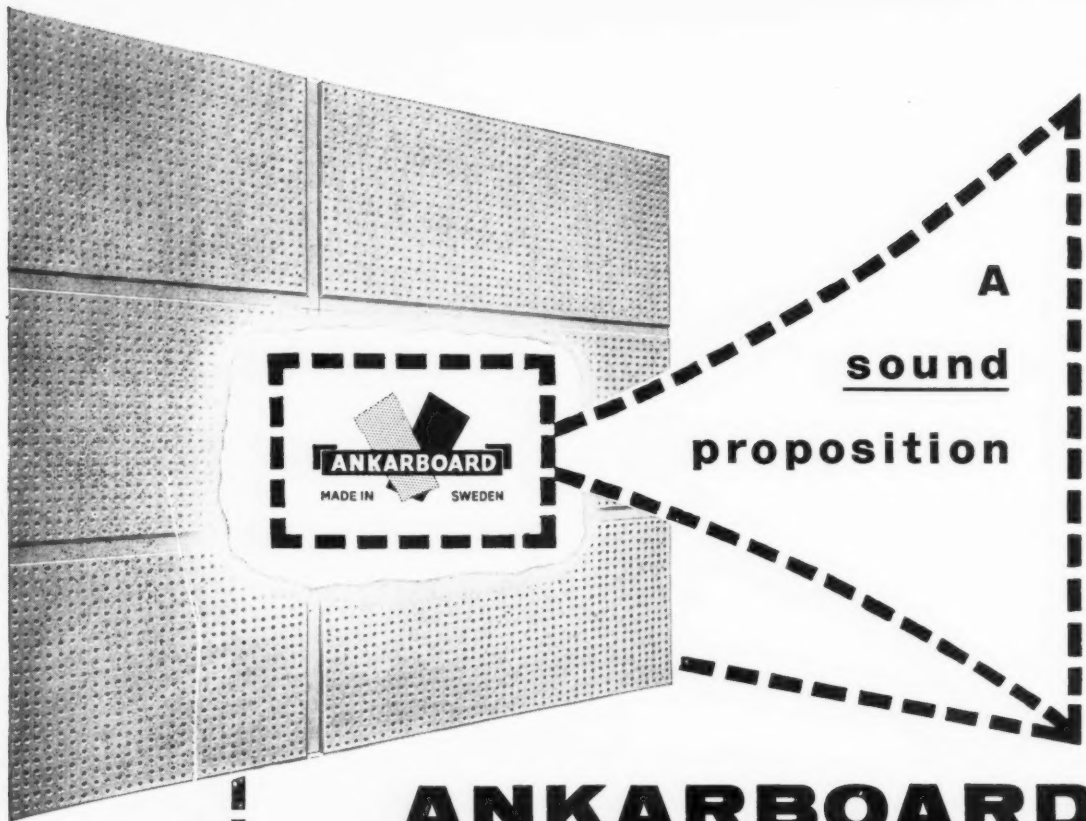
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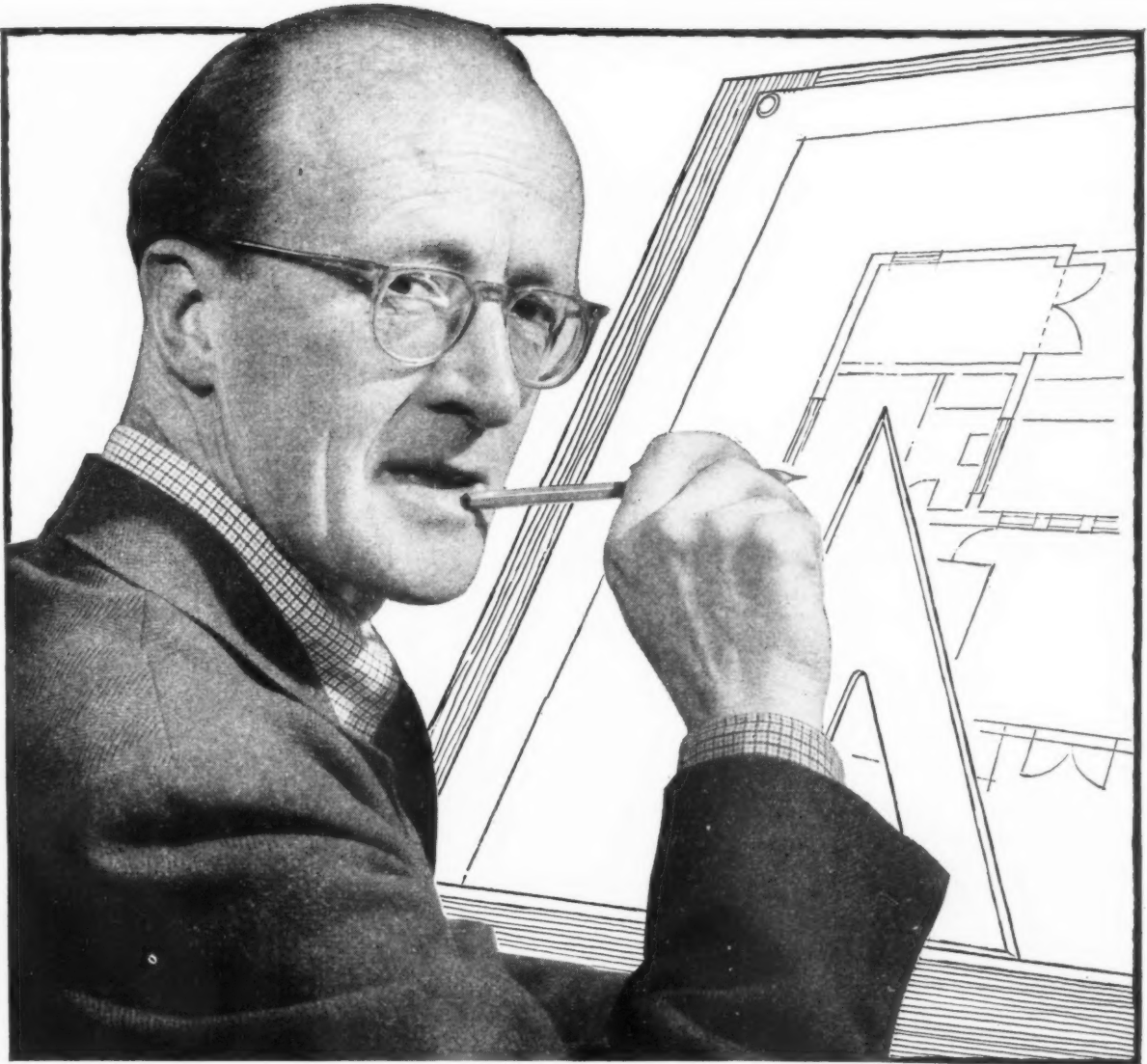
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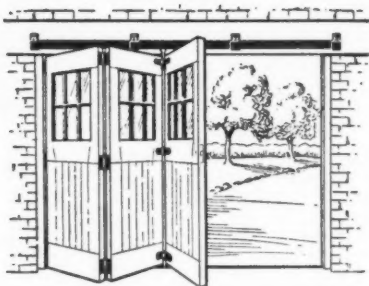
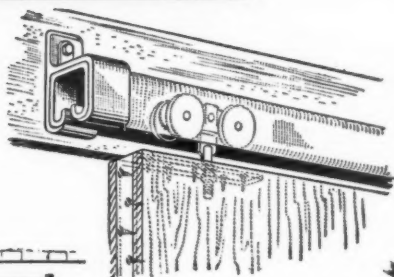
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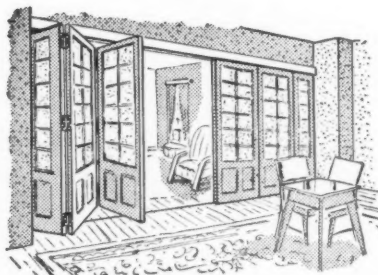
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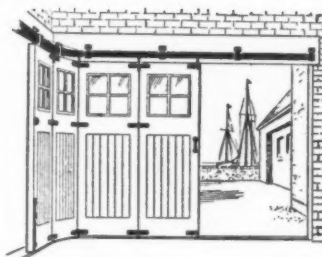
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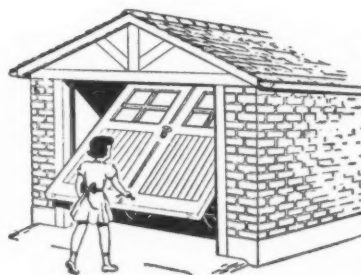
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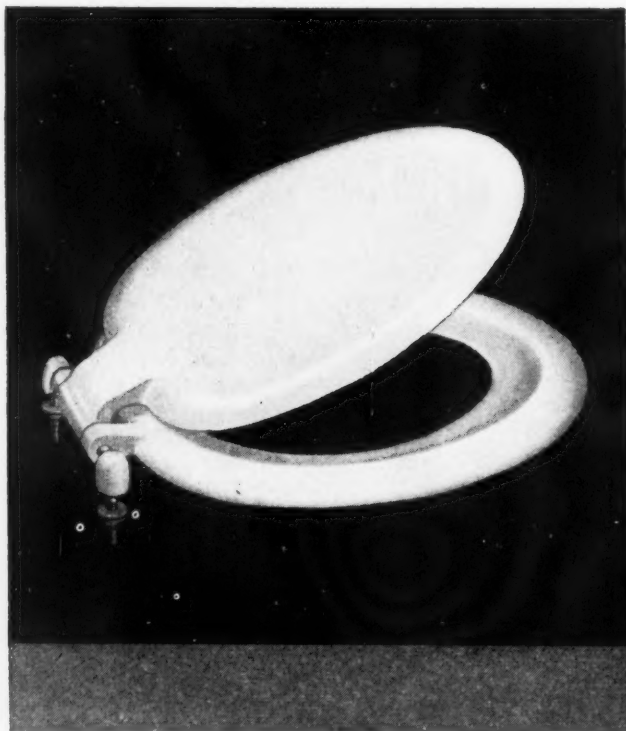
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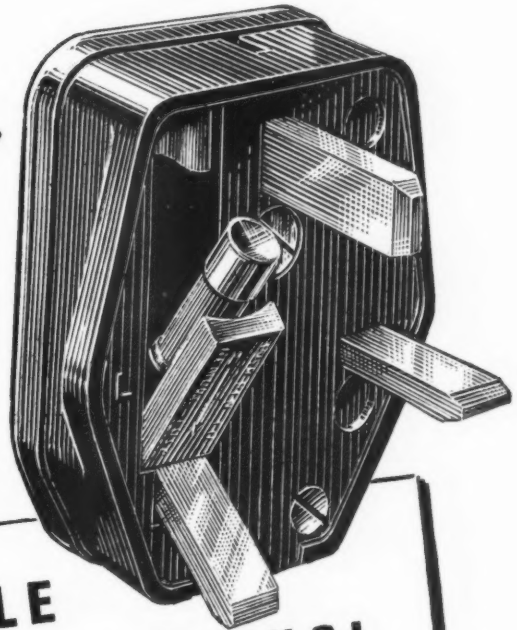
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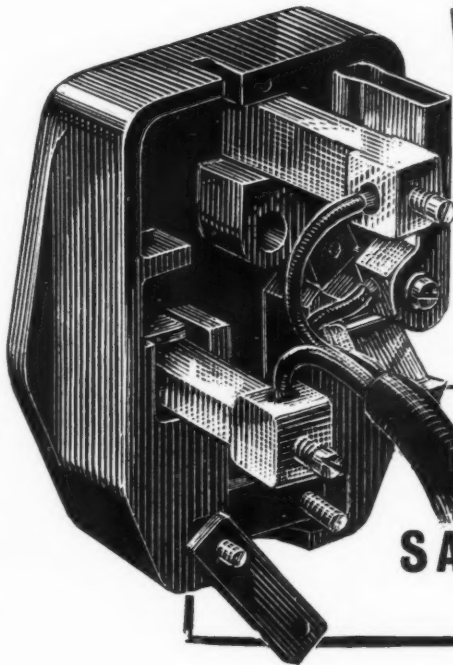
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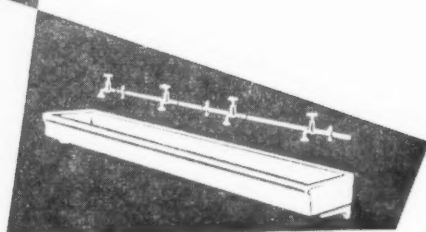
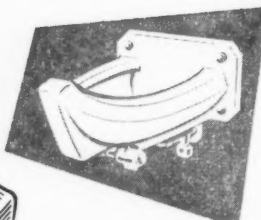
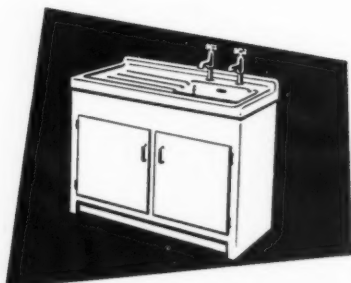
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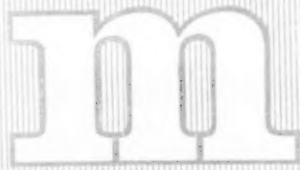
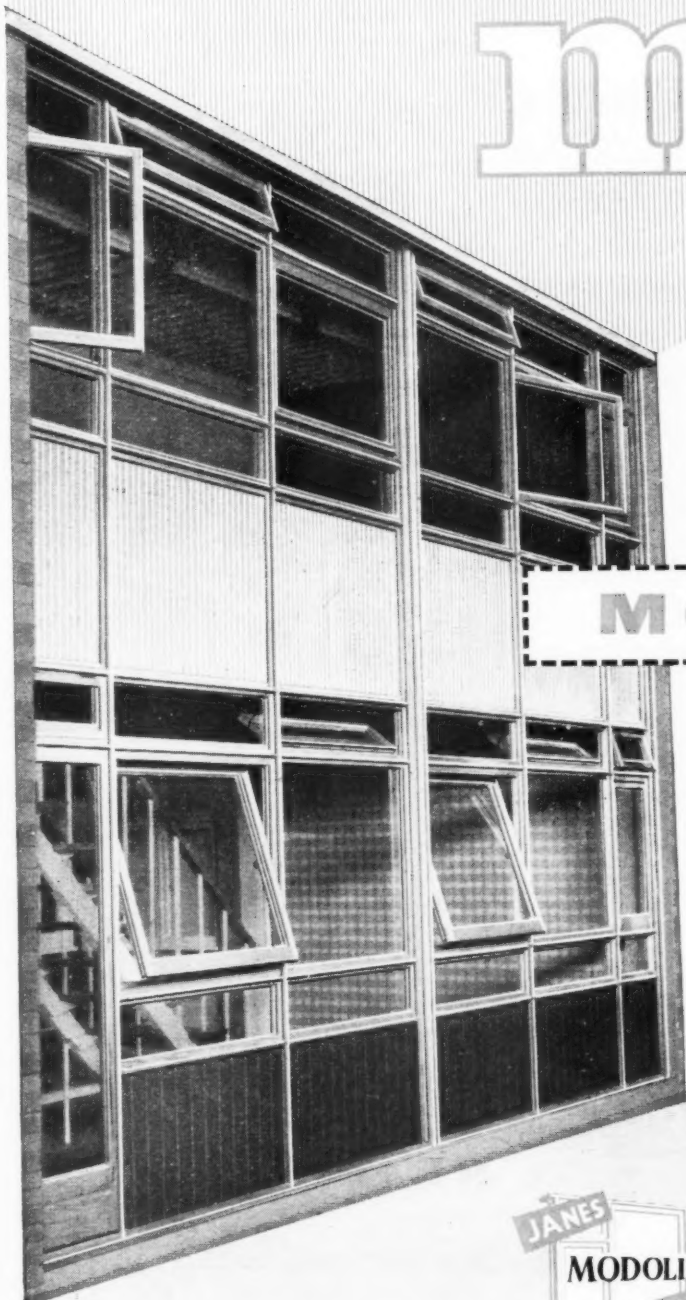


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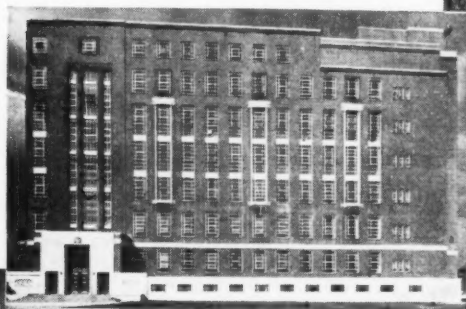
Architect : R. H. Gallannaugh, L.R.I.B.A.
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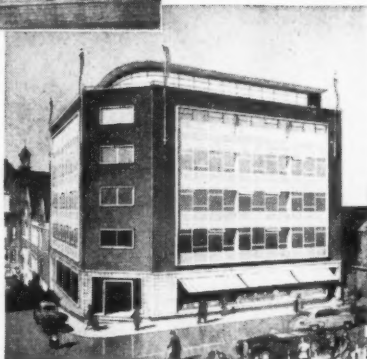
9 ALBERT EMBANKMENT · LONDON

Architect : Messrs. Grace & Farmer
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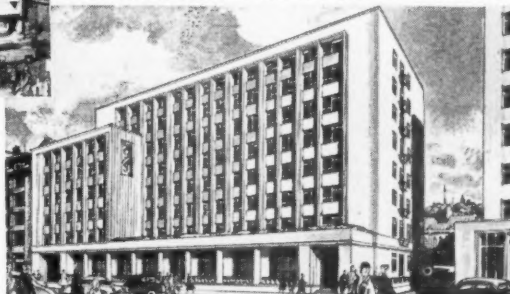
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Architect :
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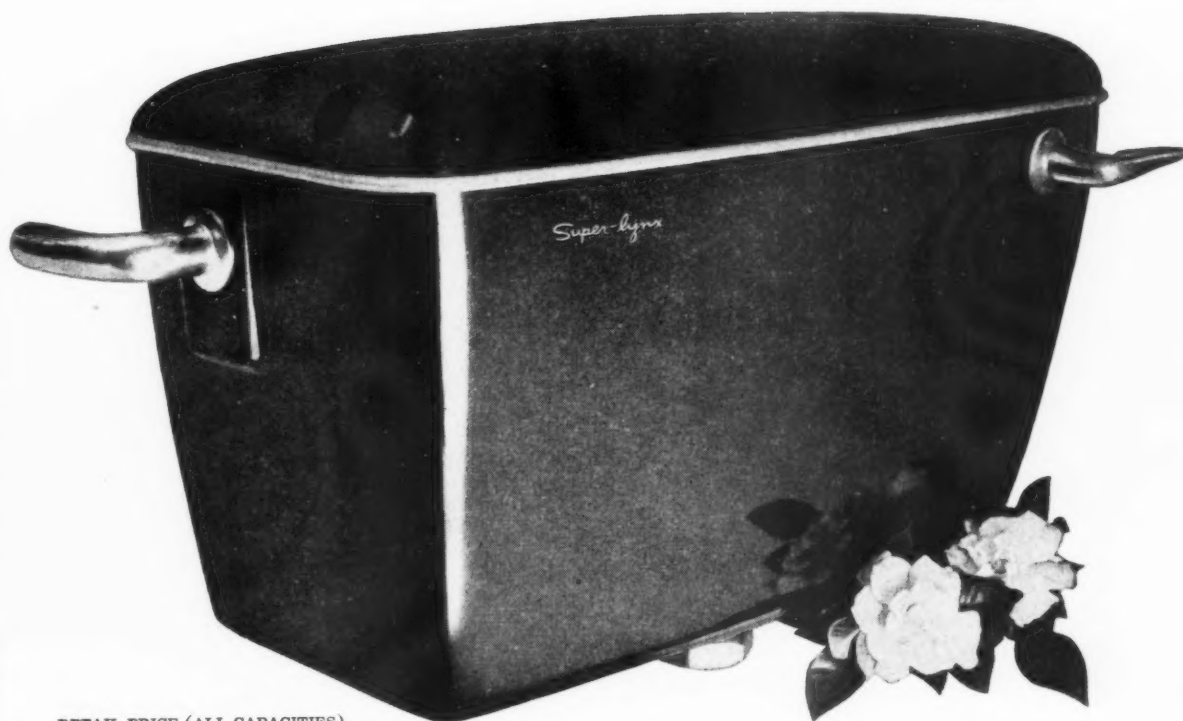
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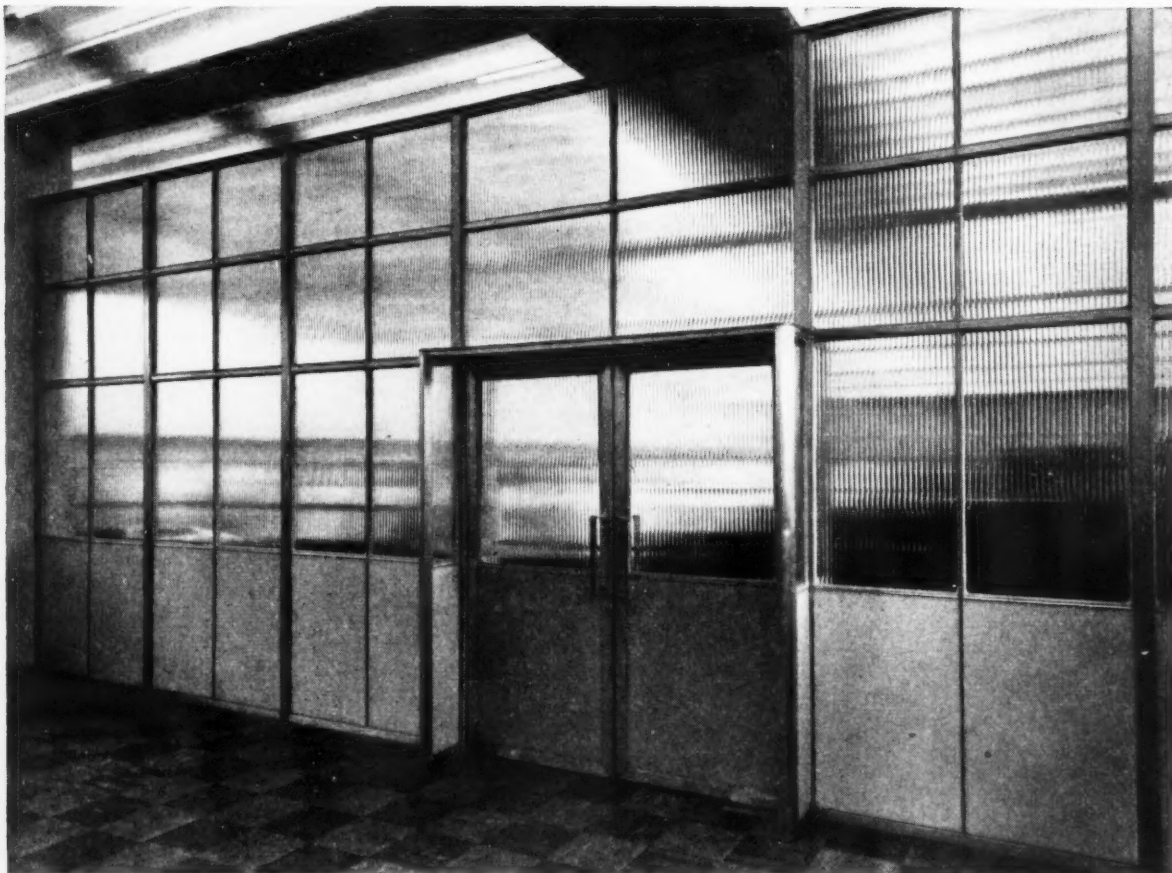
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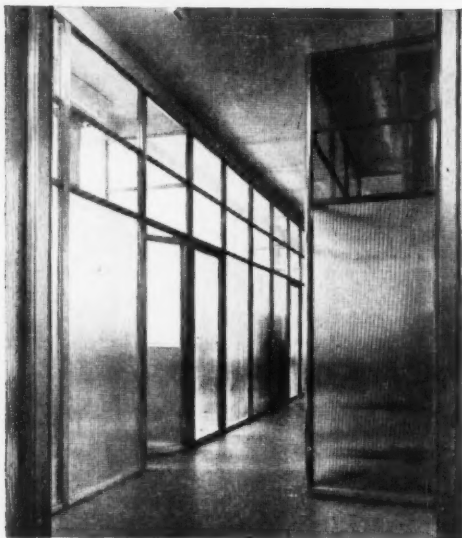
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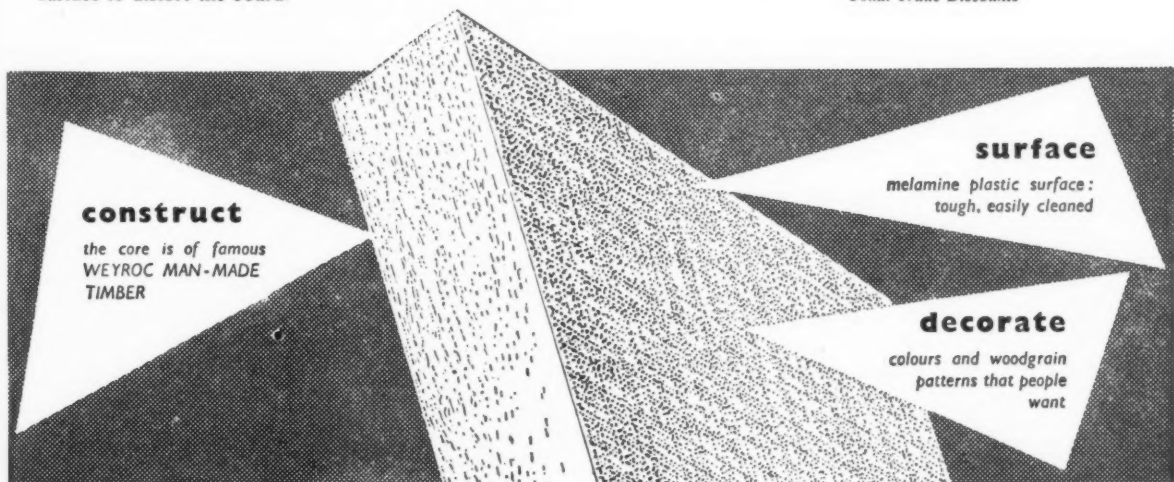
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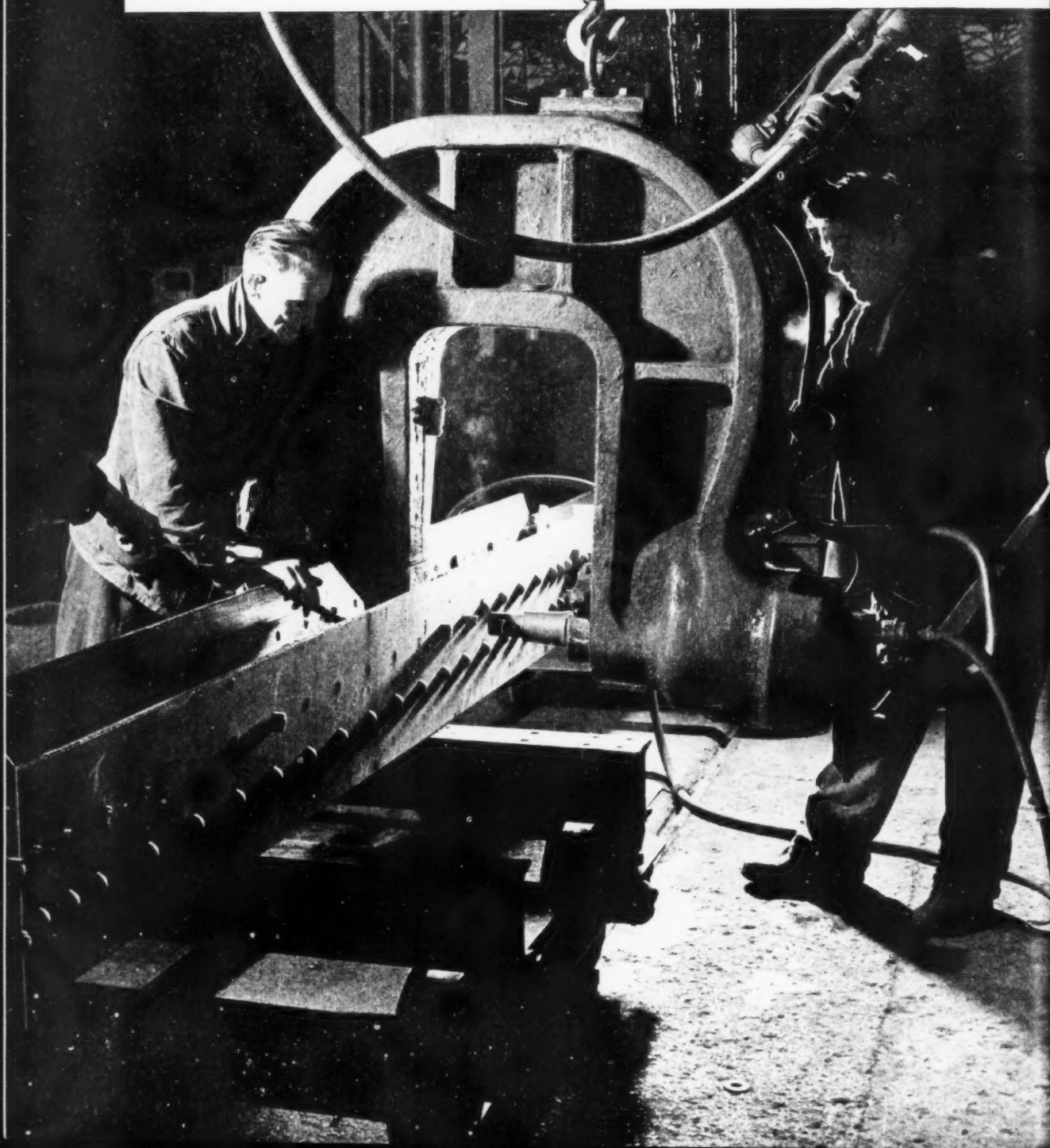
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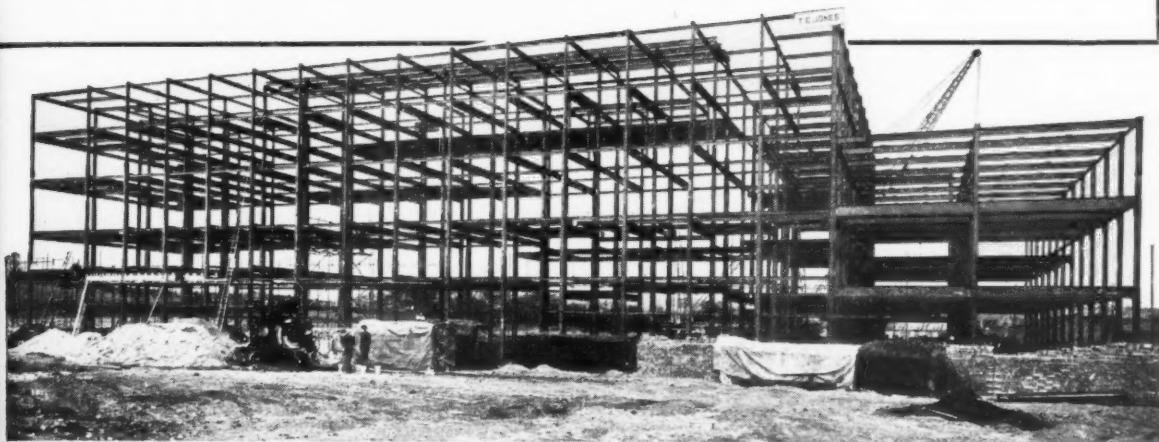
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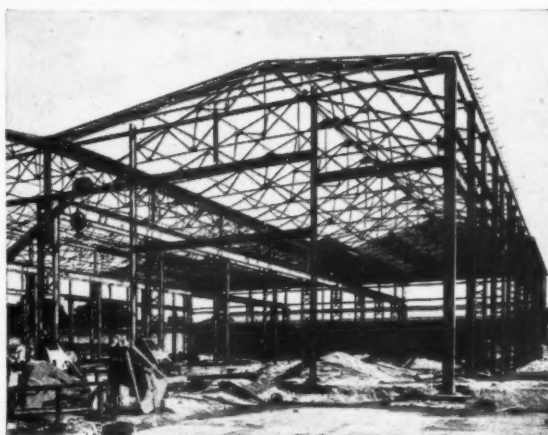
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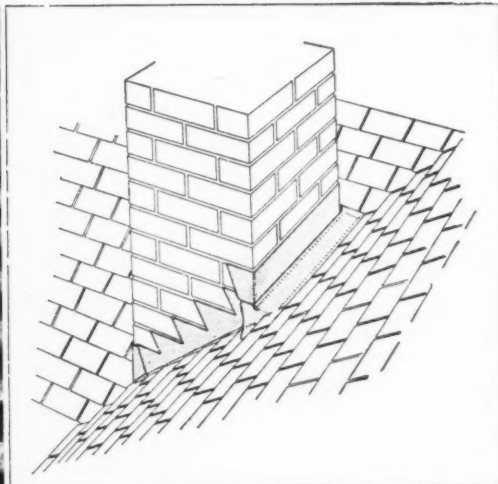
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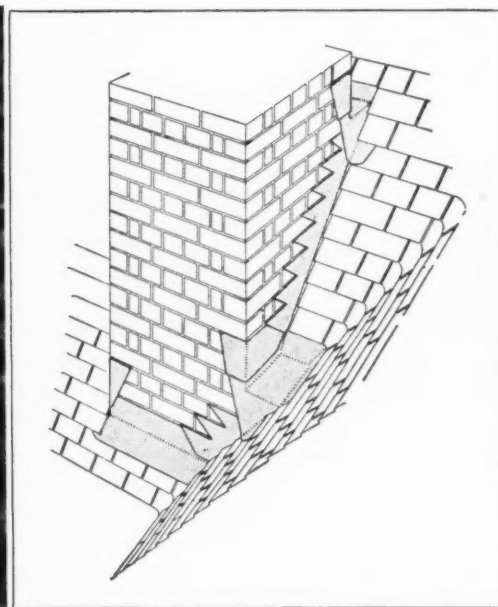
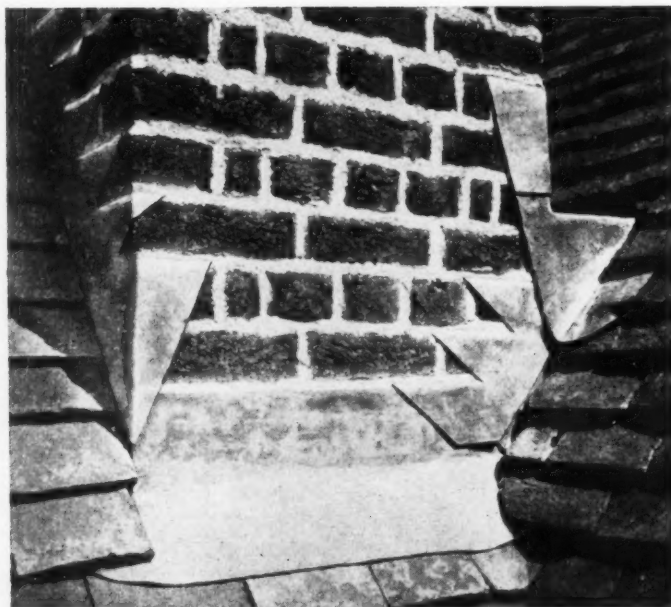


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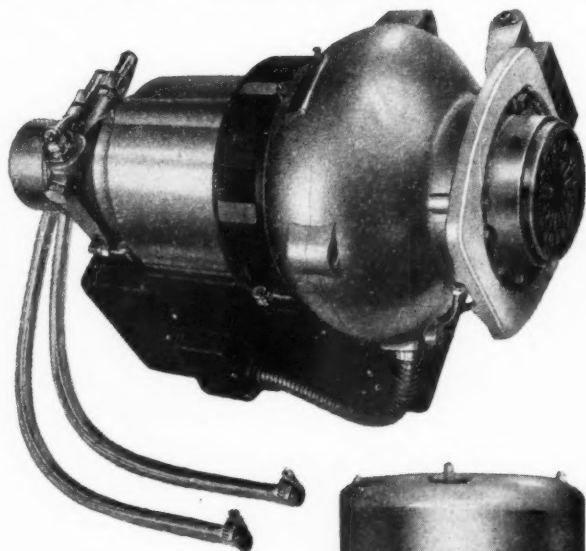
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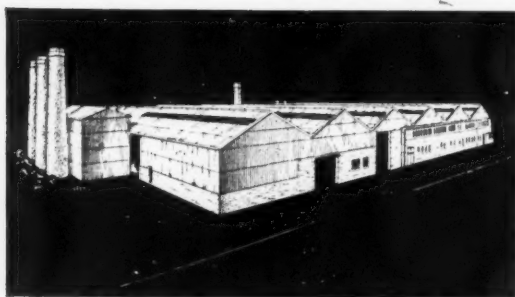
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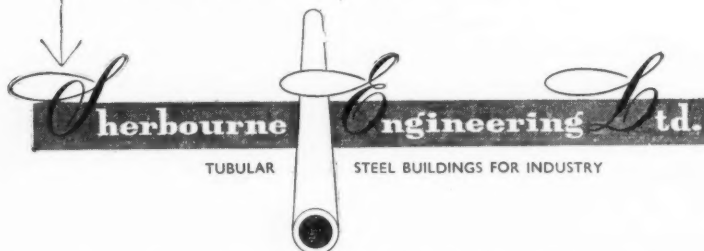
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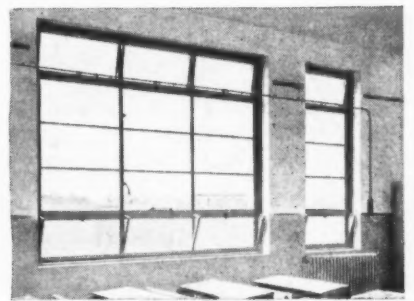
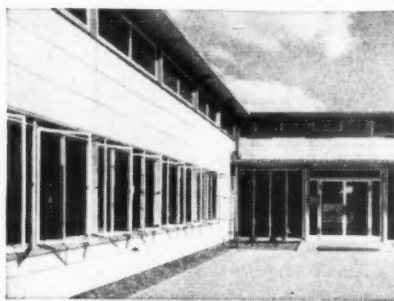
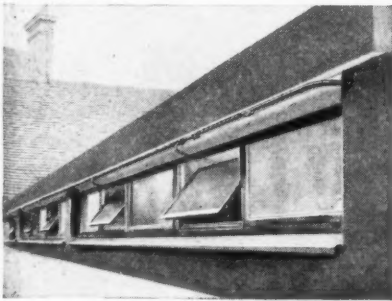
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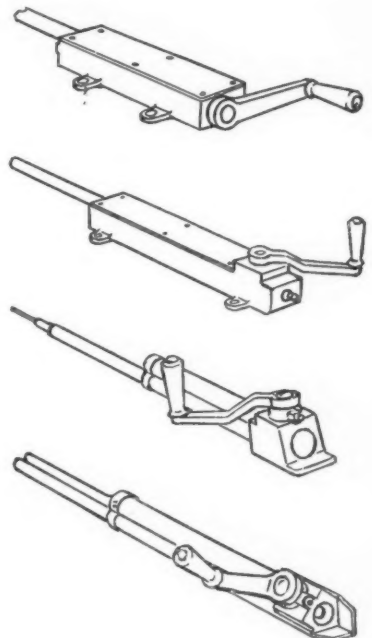
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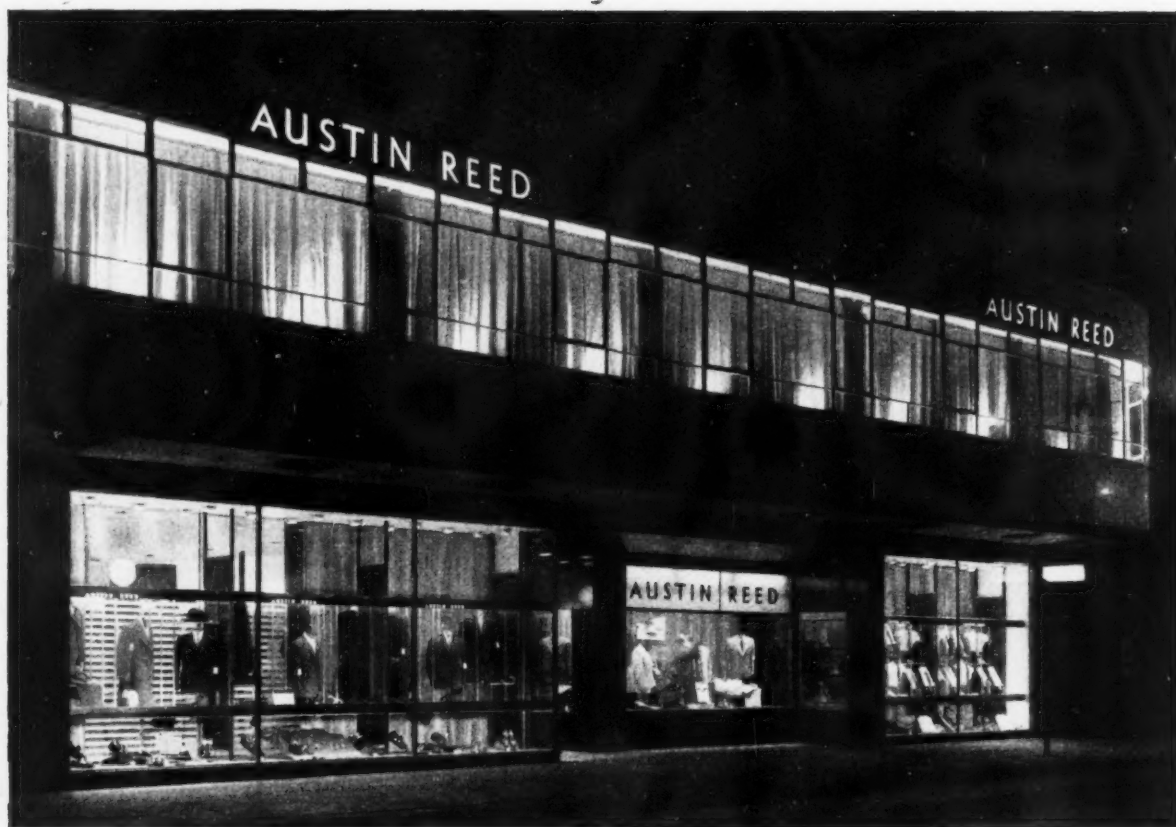
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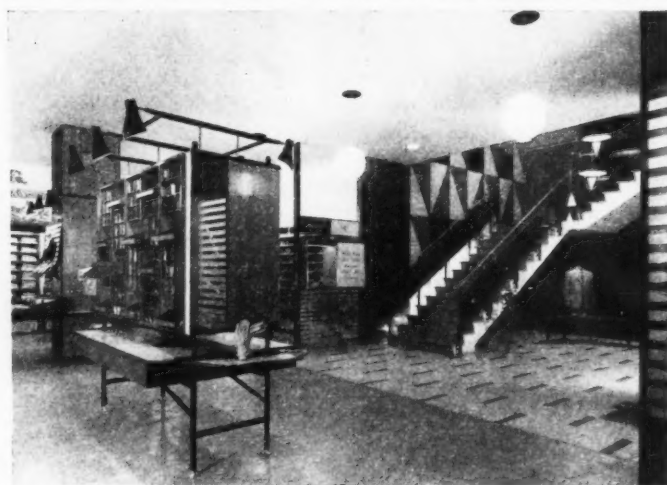




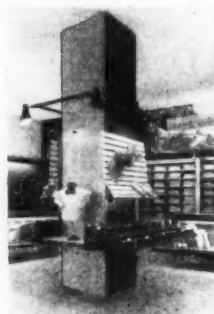
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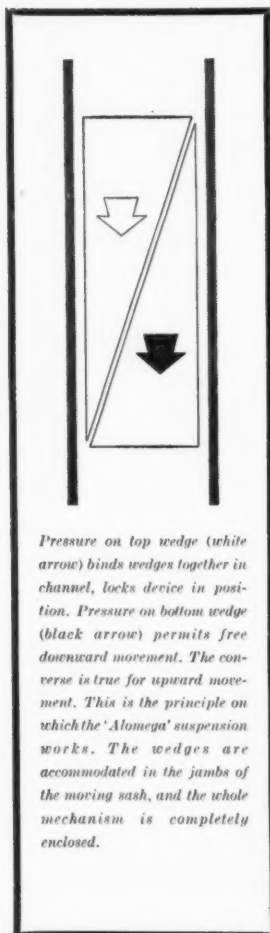
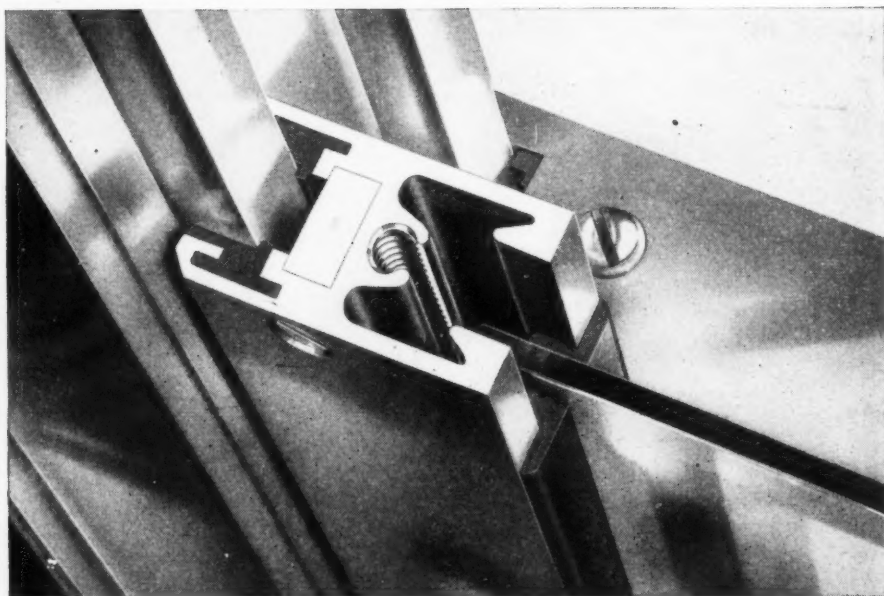
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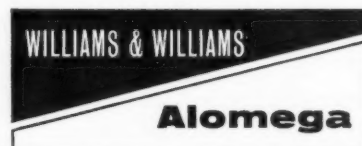
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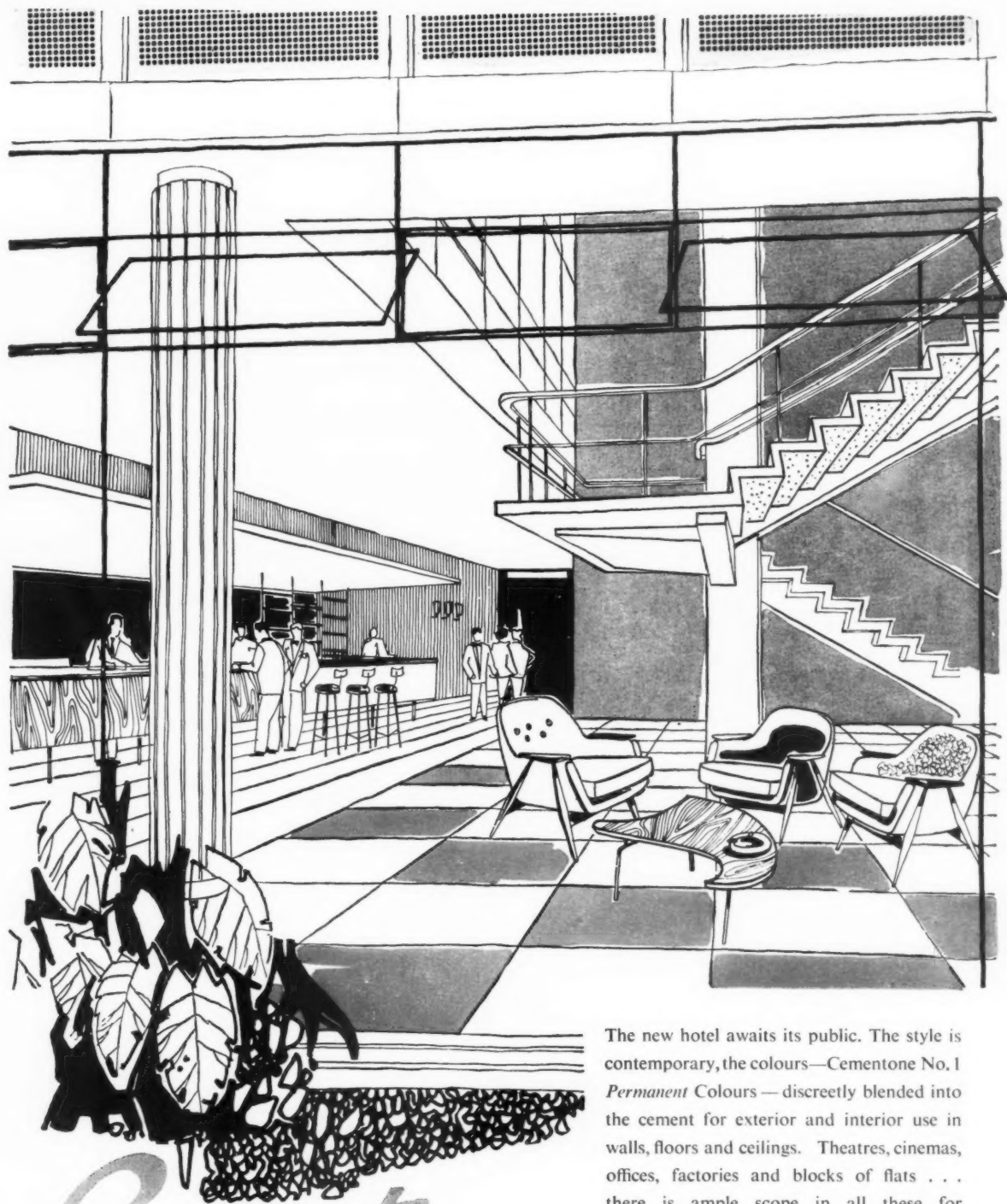
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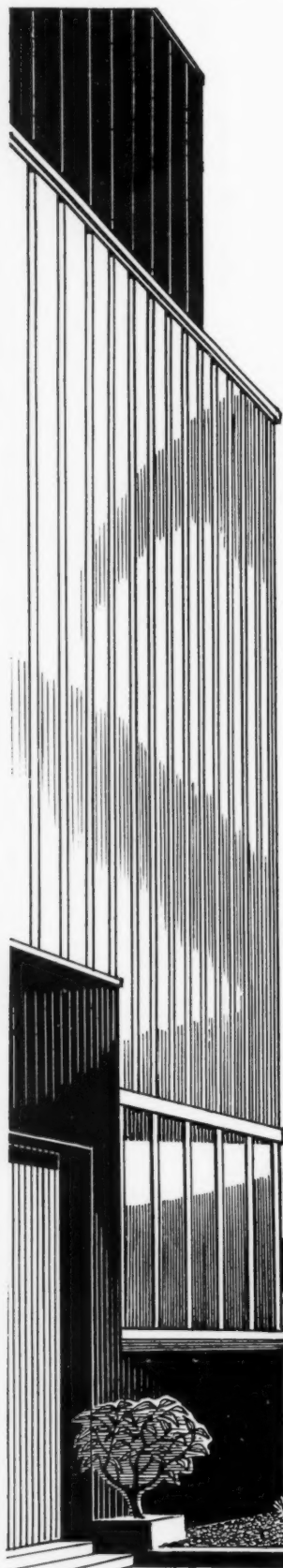
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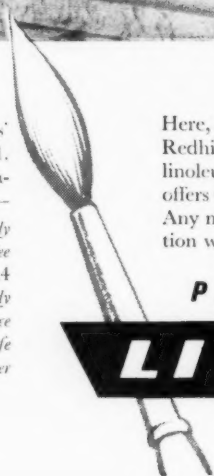
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THE ARCHITECTS' JOURNAL

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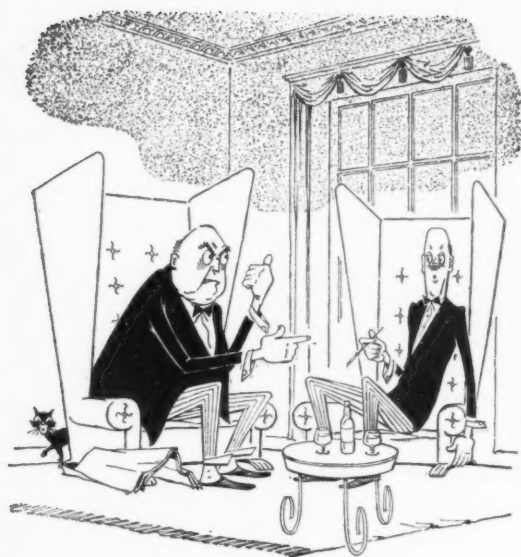
NOT QUITE ARCHITECTURE

ROYAL ACADEMY

At the Royal Academy show a perspective of the English Electric building in the Strand hangs beside a perspective of "a design for National Opera House, Sydney." The first, by Adams, Holden and Pearson, is to be built; the second, by S. W. Milburn and Partners, was only a runner-up in the recent competition. But how is the layman to know that? Isn't it time the exhibition's organisers provided proper captions for the architectural room? And couldn't they print an introduction to the catalogue, pointing out that the buildings on view are not necessarily typical of the best current architecture? Until something *is* done on these lines I shall sympathize with people like the woman who nearly panicked on Private View day. As she stood musing, in Gallery X, her offspring sidled into the adjoining architectural room, and came face to face with two university buildings—one by Spence, the other by Lanchester and Lodge. "Come back, darling," she called anxiously, and added, with more wisdom than she knew, "or you won't know where you are."

*

This cautious mother showed remarkable self-control. Not many other private viewers were able to resist the eye-catching model of the Brussels pavilion (by Howard Lobb and Partners). It made a good conversational starting-point to a tour of the room. "I like it quite," said the Young Thing, "but I wouldn't like to look at it"—she paused for the *bon mot*—"for ever." "It's a pity they can't bring it back after the exhibition," said a woman with blue hair. "Such fun they've had," said her friend, "making trees with sponges: but let's see if we can find our new roundabout." She was not the only person who went into the room on a specific quest. A visitor from Down Under was noisily peeved because New Zealand House was not on



Where is Newcastle anyway?

Far and frozen North old boy.
Up above the timber line. Savages.
Live in holes in the ground.

Seems funny . . . all this glass . . .

Can't sell it at home. No place for it.
Got to come South to civilization
to find a market. That's why it's got
to be so damn good.

Wonder what this chap Millican's like?

Never seen him. Wears skins most
likely. Paints himself with woad.
Probably where he got the idea for this
"exclusive Reed Millican* colour
process." Descended from
the border raiders no doubt.

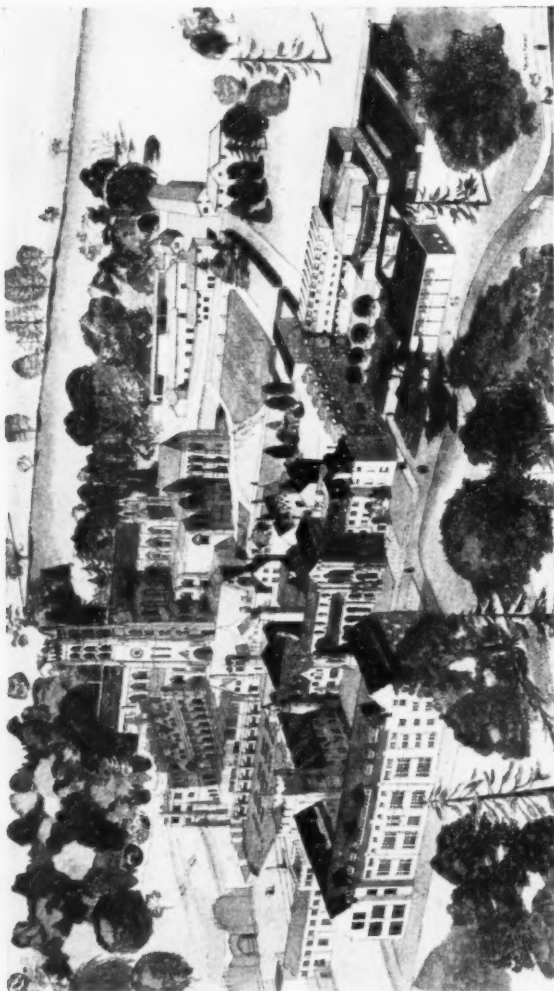
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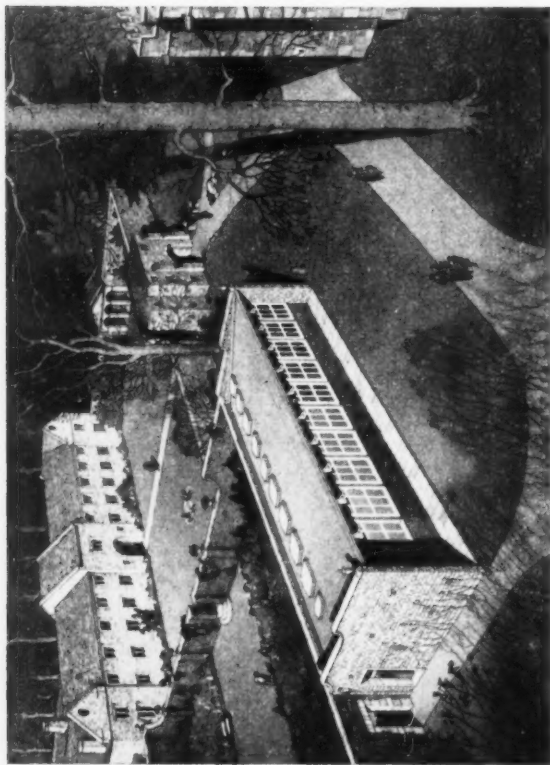
.. ARTISTRY IN



GLASS



Newton Watson

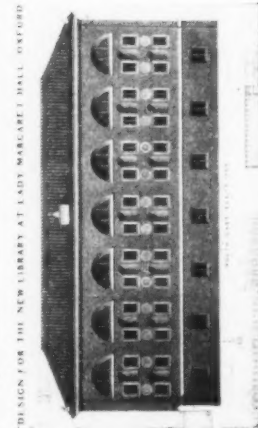
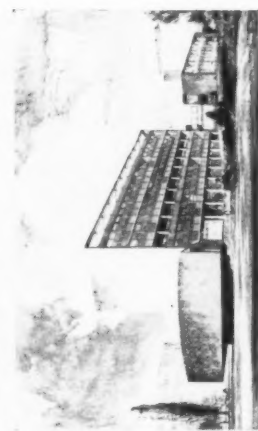


Drawn by Lawrence Wright

What Is Architecture, Daddy?

What should a church look like? Well, it should be massive and heavy and anchored firmly to the earth—as if God Himself had hurled it, like a thunderbolt, into position. (Extreme left: Roman Catholic Church, LCC Estate, Merstham, Surrey, by Justin H. Allyn.) Or, of course, it could be light, elegant and inviting—a building of its time. (Left: St. Chad, Rubery, Worcestershire, by Lavender, Twentymen and Percy.) *And what should a seat of learning look like?* Well, it should be dignified—and the only way to be that is to borrow from the past. (Bottom left: Raymond Erith's design for the new library at Lady Margaret Hall, Oxford.) Or, of course, it could spring lightly from the ground, suggesting that education is anything but dull. (Left: King's College Physics Building, Newcastle, by Basil Spence.) *And how should a traditional building be extended?* Well, of course, every effort should be made to keep in keeping, and even a clumsy detail is forgivable if it helps to conceal a too-modern window line. (Above left: rural science laboratory at Newton Park College, Bath, by Gerrard, Taylor and Partners.) Or, of course, the project could be approached with boldness, and an uninhibited modern wing could be married to the older building. (Above right: extensions to Downside School, Somerset, by Brett, Boyd and Bosanquet.) These are some of the useful answers the layman will find to his questions in the architectural room of the Royal Academy. When will there be only one answer to each question? That, dear reader, is up to you. The Academy can only hang what is submitted. And if you do not like the hangings, why not be hung yourself? We shall only get the Academy show we want if we are responsible for an embarrassing amount of work for the hanging committee to choose from.

Drawings: top left; E. J. Thring and R. Twentymen; Left; R. Erith and B. Spence;



DESIGN FOR THE NEW LIBRARY AT LADY MARGARET HALL, OXFORD

view. He got quite bitter and twisted about it, and started to take it out on a harmless bungalow, by Marmorek and Weaver. "That's just Frank Lloyd Wright stuff," he said; "we've got hundreds of 'em up the Swan River."

*

I found this rather disturbing. It confirmed my belief that some laymen regard the architectural room at the Academy as the show place of all the latest designs in the country. If a well-known project is missing, then They have been careless; if one small house is included in the show, then They must have decided it is the best small house of the year. But I must not get too serious about the dear old academy. After all, the architectural room—even this year, at its most dull—gives a lot of people the chance of having a wonderful show-off. "It's Cubism," hissed an old lady, as she stood petrified in front of Jefferiss Mathews' building for Heinz, at Harlesden. "They oughtn't to build so high—not with all those planes about," said another elderly soul. "Don't think much of that," said the Man Who Knew, as he pointed out Sheppard Fidler's Birmingham flats to his Young Woman: "It's the LCC style. So," he added, as he spotted a roof-top water tank on another drawing across the room, "is that." Brett's church tower was "adored"; St. Bride's reconstruction was "quite fun"; the MOW building in Victoria was "no more a post office than I am"; and a happy group had a hilarious time watching traffic going round the English Electric building the wrong way. And then in a quiet corner, amid far-from-eccentric buildings, a little man was sending up a pall of gloom as big as a cartoonist's dialogue balloon. "The mind's got to go on," said his companion, as they stood looking at Colin St. C. Oakes's scheme for Boots, the chemists, in Lewisham: "You've got to have progress." "Yes," said the little man, "but you haven't got to enjoy it."

*

I would have left you on that philosophical note, but something Significant happened before I came away from the Private View. All was quiet in the architectural room, apart from the hoarse breathing of a rather late blonde who was standing in front of Sir Howard Robertson's Shell building, trying to count the windows on her fingers. And then a magnificent figure appeared in the doorway, all pink and white and strangely masterful. "Roger," she cried, "there is certainly no way out for us here!" Was there more tally-ho to this than Taliesin? Or is the architectural room really a one-way street to a dead end? Roger . . .

KENNETH J. ROBINSON

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* To preserve freedom of criticism these editors, as leaders in their respective fields, remain anonymous

The Editors

CHOOSE YOUR LEADERS

IN the last few years we have published an annual feature in the JOURNAL to help voters to decide who they should choose for election to the RIBA Council. A number of candidates have already been nominated to stand for election for the 1957-8 period, and we have written to them inviting them to make a brief statement in the JOURNAL. We feel that readers would like to know which of the issues confronting the profession each of the nominees thinks to be of greatest importance.

At one time we issued questions to candidates. But this year we are doing as we did last year: we are giving them freedom to say what they like. Any candidates nominated by ordinary members who have not received a personal invitation to write to us are asked to accept an invitation now. To ensure that comments, which should be limited to about 200 words, are published in next week's issue, candidates should let us have them immediately—preferably by telephone.

BACK TO FIXED PRICE TENDERING

Fluctuations clauses have been a feature of building contracts since the early days of the war, so a new experience awaits very many architects, quantity surveyors and builders—the fixed price contract. The MOW announce that, in future, government building contracts of two years duration or less, will, regardless of size, exclude the fluctuations clauses.* Local authorities and the nationalized industries are to be invited to adopt the same policy, which includes the significant proviso—"that works shall be thoroughly planned in advance." The aims of the policy are, presumably, that the building owner has (in theory) a greater certainty of his commitment; and that the builders have a greater inducement to buy

* See page 692

shrewdly and organize efficiently. The builders will probably welcome the move because the adjustments consequent upon price and wage changes are not a profitable part of their work, although they will protest, no doubt, that it is unfair of the government to tie builders down without attempting to control fuel or materials prices. Labour is less of a problem because, with the sliding scale arrangement, increases are more predictable. Hence building tenders will show an increase to cover unknowns—probably rather more than the 2 per cent. revealed by the government's own experimental fixed price contracts of the last year. The real point of the new policy lies in the proviso that works shall be thoroughly planned in advance. Surely the presence or absence of a fluctuations clause is subsidiary to the quality of advance preparation, by architect, q.s. and builder. If the aim is to improve economy and control costs the government would have done better to reduce retention moneys and provide for the speedier settlement of accounts, to insist on selective tendering and the provision of full working drawings and an annotated bill to every tenderer. The emphasis of the policy is in the wrong place.

OPEN DOOR FOR SUBTOPIA?

The government proposes in a White Paper published last week that the larger borough and urban district councils, with a population of 60,000 or more, will be entitled as of right to exercise the powers of town planning development control, and to prepare the Town Map (or detailed plan) for their own areas. Development control, but not the preparation of the Town Map, may also be delegated by the county councils to many of the smaller borough and urban district councils. Whether these proposals will work out well or badly will depend almost entirely upon the men who operate them. There is everything to be said for breaking down the bureaucratic organization of town planning, and entrusting the local people with more control over their own affairs, in which they are likely to show far greater interest, and of which they have an intimate knowledge. But unless the councils to whom these new powers are to be entrusted employ well qualified staff the results can be nothing short of disastrous. It could mean wholesale victory for the Philistines, and open the door even wider to every kind of mean, speculative or subtopian development. These proposals will be incorporated in the local government Bill to be introduced in the autumn. It is imperative that the Bill should impose upon every local authority, as a condition of assuming these wide planning powers, the establishment of an Architect's Department responsible both for architecture and for planning. Otherwise, as the *Manchester Guardian* suggests, town planning may once again become the borough engineer's sideline. The moment is ripe for statutory authority to be given to the local authority Architect's Department, just as it is given to the Medical Officer of Health and other officers.



THE OXFORD ROAD

That's the Barges Boulevard, that was! It has served its purpose, of providing a substitute relief road that would enable a majority on the Oxford City Council unceremoniously to dump the Christ Church Meadow Road. And having served that purpose, it has been dumped in its turn by the City Council only a week after it had been adopted. The Council having taken the advice of the Town Planning Committee simply to inform Henry Brooke that it does not accept his predecessor's proposal to build the Meadow Road, has thrown the whole question of Oxford's roads back to the Minister. This JOURNAL supported the Meadow Road because it seemed the best solution to the problem: but even if the Meadow Road was not the best solution, it was very much better than no solution at all. Now that the City Council has washed its hands of the problem that it was its duty to solve, it is up to the Minister to act. If the pressure-grouping of rival interests has rendered Oxford incapable of taking the bold decisions that are needed to preserve its national treasures, then the government itself cannot escape its responsibility. To allow the present impasse to continue would be disastrous.

ANTI-CLIMAX AT ST. PAUL'S

Sir William Holford has made it very plain, in a talk to the Royal Empire

Society, that he strongly dislikes the LCC's revised proposals for the approach to the West Front by Ludgate Hill. The JOURNAL when it published these revised proposals two weeks ago, described Sir William's apparent agreement as "somewhat surprising," and it is reassuring—although confusing—to learn that he does not like them either from the standpoint of design or as a solution of the traffic problem. Apparently the only thing that has been holding up the MOHLG's approval of Sir William's design for the St. Paul's precinct has been the Ministry of Transport's objection that the approach up Ludgate Hill does not conform to the Ministry's minimum radius requirements for new grant-aided roads. In order to get the Ministry of Housing & Local Government's approval to the scheme as a whole, and enable a beginning to be made after 11 years of delays, the LCC, with Sir William's formal agreement, have accepted the Ministry of Transport's 70 ft.-wide road from Ludgate Hill to Carter Lane. In fact, however, this road cannot be built for at least 10 years and possibly for longer, as the existing buildings will not be demolished during this period. This gives time to reconsider the western approach during the quinquennial town planning review, while allowing immediate progress to be made with the rest of the scheme.

One can well understand the feeling, after so many years of delay, that almost any concession of this kind should be made to secure ministerial approval, but it is a distinctly risky gamble to pin one's hopes on the reconsideration of a very bad feature that has been so recently approved. Mr. Brooke has now announced that there is to be a public inquiry into any objections that may be made to the scheme. Is there any reason why the Minister should not approve the remainder of the design, while reserving judgment on the western approach?

COST CONTROL LECTURES

The lecture course which the JOURNAL organized with the Regent Street Polytechnic School was sold out before it began. On the first night (Tuesday of last week) over 350 people—70 of them builders, rather more than that quantity surveyors, and the rest architects—heard Michael Austin Smith



Michael Austin Smith speaking at the first of the cost control lectures organized by the JOURNAL and the Regent Street Polytechnic School. See note on this page.

give what one speaker described as an "exhilarating" talk. He outlined the changes that had overtaken architecture in the last fifty years, contrasted the highly developed management techniques of other industries with those of building, and said that the architect must not delegate his responsibility for cost control to any kind of costing specialist.

*

During the discussion several people took up the speaker's suggestion that there should be wider sharing and exchange of cost information—some patted the AJ on the head, and others asked about standardized presentation or wanted to know if clients would willingly release cost facts. One quantity surveyor proposed that members of his profession should be allowed to criticize the sketch design and one builder—believe it or not—asked whether increased cost consciousness would not be "to the detriment of architecture."

*

ASTRAGAL'S palm goes to the chairman, Sir Thomas Bennett, for his suggestion that our schools of architecture are the proper places for that "background analysis necessary to settle the principles on which the rest of us can work."

*

The editors tell me they are going to print the full texts of all the lectures and discussions after the course ends (June 18), so if you were too late to get a seat, you should apply now—

to the editors—for a copy of the full report.

BELTING GOOD ARCHITECTURE

The Factory Equipment Exhibition at Earl's Court had no particularly startling novelties, but it was encouraging to see the RIBA there again with a well-designed stand which seemed to be attracting quite a regular flow of visitors, most of whom didn't look like architects, which is just as it should be. It was quite a smart idea to have the main display going steadily past on a conveyor belt so that one could sit and watch it go by, but parts of the static display could have been improved a bit. A series of factory sections could well have had a full explanation of what daylight factor lines mean, but the models were good, and as a fair percentage of visitors can presumably be classed among the unconverted it is a good idea for the RIBA to tell them what architects can do.

A TWO-WHEELER BANQUET

Amid the traditional tedium of the speeches at the RA banquet it was good to hear Sir Mortimer Wheeler bending down from the awful eminence of the Society of Antiquaries to let the wind out of all the previous speakers and out of the Academy as well. For a man professionally pre-occupied with the old he managed to sound about fifty to a hundred years more up to date than everyone else present, and when he spoke of the Lever and UNO buildings by name, and—by implication—as good archi-

ture, his lead was confirmed. His reason for mentioning them was to contrive a feed for his namesake, the PRA, in raising the problem of sculpture fit to go on modern architecture, and the PRA took the pass with all the *élan* of a man, who didn't see the ball anyhow, was running the wrong way and thought they were playing soccer, not rugby.

ASTRAGAL is now sorry that Sir Mortimer should have proposed an exhibition devoted to sculpture and modern architecture, because apparently there is some risk of the RA taking him up on it. . . .

NEW TOWNS, MARK II

"Planners are nuts on palliness," Professor Wentworth Eldredge quoted a Harlow resident as saying when he spoke on our New Towns at the AA. But, as Professor Eldredge went on to point out, the planners have no real facts on which to base their nutty hunch. Is the concept of a neighbourhood valid? And if so what is the ideal size: 50 persons, 500 or 5,000? Wentworth Eldredge is chairman of the department of Sociology at Dartmouth College, USA, and it was refreshing to hear an outsider giving frankly his views on our New Town programme. He was able, one is thankful to report, to congratulate us on their success, both financially and as highly advanced industrial centres.

His chief criticism was of the complicated bureaucracy needed to get them built—the endless checks, counter-checks and administrative controls imposed by the Treasury and the Ministries. With a rather touching faith in the general manager of a Development Corporation (one suspects that when conducting his investigation he had not time to see anyone else), he advocated much more responsibility being given to general managers ("you can always fire them") and less power given to the corporation. One has more sympathy with his suggestion that minute Treasury control of expenditure should be removed (how much might have been gained if corporations had received a guaranteed sum—spread over, say, three years—which they could spend according to their own ideas on building priorities); but not much for his New-World hire-and-fire conviction

that only private enterprise is efficient.

The discussion which followed brought out that if, as Eldredge recommended, we should have more new towns in Great Britain, we should act fast, because the experienced manpower so painfully acquired is now starting to look for other jobs as the present new town programme starts to wind up. Some architects present criticised—as is now fashionable—the lack of urbanity in the appearance of new towns (Eldredge made no comment on their appearance) but really only proved that they couldn't have understood the plans and models when they were first published back in the mid-'forties; and an impassioned Jane Drew asked for more "imaginative feeling," "intuitive intelligence" and for the "quality of background" which really counts in town design.

THE YOUNG IDEA

People often say how useful it would be if schoolchildren were to be taught something about architecture. But they don't seem to act on it. Graham Dawbarn, however, did so recently with very interesting results; or rather he set about encouraging schoolboys to learn about architecture for themselves, which is perhaps even better than instructing them.

Dawbarn is an old boy of The King's School, Canterbury, and he offered a prize for an essay on architecture; the subject to be "How far should past styles be considered in the design of a contemporary building?" I have been allowed to look at some of the results, which show plenty of original thought. Some of the sentiments expressed are clearly the result of simply reading the right books, but there's nothing wrong with that. It's what books are for.

The winning essay, by eighteen-year-old T. Chenevix-Trench, shows not only intelligent reading but understanding of what is read. The modern architect's attitude to history (respect and inspiration, but not imitation) is put forward with real conviction. I hope his views are typical of those of the younger generation. It will be interesting to learn some years hence whether any of the authors of these essays decide to become architects.

ASTRAGAL

NEWS

MOW

Fixed-Price Tendering

Last week the Minister of Works, Hugh Molson, said that his department's experiment of inviting tenders on a fixed price basis—that is to say without the inclusion of cost variation clauses for labour and materials for selected projects of values not exceeding £100,000—had been successful. After discussion with representatives of the building and civil engineering industries, the government had decided that all government departments should invite tenders on the fixed price basis for all works, irrespective of size, provided that these works had been thoroughly planned in advance, and provided that the estimated contract period is not more than two years. Local authorities and the nationalized industries would be invited to adopt a similar policy. The government hoped, said Mr. Molson, that these steps would be a real contribution to the stabilization of costs and prices.

MOHLG

Reception of Overspill

Henry Brooke, the Minister of Housing and Local Government, was asked in the House of Commons last week if he had any proposals to encourage receiving authorities to make greater use of the facilities of the Town Development Act 1952. He replied: "I am sure that the key to this lies in helping the receiving local authorities to understand what is involved, and how the reception of overspill may be made to bring real benefit to their districts. This is being done in various ways. My officers are in contact with many potential receiving authorities; and so is Sir Humfrey Gale, who is assisting the Department in promoting overspill arrangements. Some existing authorities have established excellent co-operation with local authorities which may be able to help them; and some county councils are giving great assistance to their district councils. There is much more to be done, but I believe that during the next few years an increasing use will be made of the facilities offered."

Planning Appeals

There were 1,425 planning appeals allowed, 2,944 dismissed, and 2,166 withdrawn during 1956, said Henry Brooke last week. The number of appeals being settled each month had substantially increased, he said, and the number awaiting decision was substantially less than a year ago. Mr. Peyton said that very long delays continued in certain cases, and were causing the whole paraphernalia or planning to fall into disrepute. Mr. Brooke agreed that the position was not yet satisfactory, but in July last 344 cases were settled, and in March 501 cases: this showed we were going fast in the right direction.

HOUSING CENTRE

Developments in Birmingham

The main themes of a talk on Birmingham housing, given to the Housing Centre last week by the city architect, A. G. Shephard Fidler, were the sharp increase in density and the use of multi-storey buildings, and the reduction on costs through collaboration with the building contractors. Since the war Birmingham has built 33,600 dwellings with a population of about 100,000 people.

he said, or two new towns. Before he was appointed to take charge of the newly-formed City Architect's Department non-traditional, or "new-traditional," builders had been invited to set up organizations in the city and had made a very great contribution to housing. But estates being built were still of low densities (only 4.5 per cent. of the dwellings completed in 1952 were more than 3-storeys), designed generally by a small architectural staff under the City Surveyor. It had seemed necessary to Mr. Fidler to continue to use the new traditional building, but also to unite the design of his department with the structural knowledge of the contractors, and to use standard plans to the greatest possible extent. The use of new traditional building used his staff economically at a time when it was very difficult to get staff.

The sad fate of the St. Martin's flats, designed before the war by Grey Wornum had put people against flats. They were designed to look attractive, but they were only a small piece in a slum area, and the slums completely swallowed them up. Mr. Fidler felt strongly that the lesson of this was that once redevelopment started one had to go on with it, adding piece to piece until gradually the people in the middle could see a new thing happening. This also showed the need for as big sites as possible. In 1952 a very expensive prestige scheme for 12-storey flats was about to start; Mr. Fidler put the cost of these "prestige flats" at £4,300 for a 3-bedroom flat and £4,086 for a 2-bedroom flat, and showed a slide of a block with 6 flats on each floor which had 7 staircases and 4 lifts.

He felt it was impossible to carry out redevelopment in a large programme by the use of prestige schemes designed by a whole number of architects; to make production move there had to be a building by a big department. He felt it right to emphasize the advantages of mixed development with all types and sizes of dwellings. They started by using standard types of blocks as far as they could but found they could not get the best densities: to do that, they had to design, or to control the design themselves. High buildings were placed at strategic points, such as the edge of parks, on wide streets, or overlooking lakes.

Where a small site could be obtained in areas of low density they had built pockets of high density buildings at 120 or 130 to the acre, which gave interest to a dull area. They had done a considerable amount of collaboration with contractors and specialists on construction and costs. As the urban sites were very nearly used up they would be concentrating on redevelopment in the future. At present there were more than 100 blocks over 6 storeys in height completed or under construction. The present policy was to build 30 per cent. of all houses in tall blocks, with the balance in three-storey maisonettes, three-storey flats and bungalows. So, against 4.5 per cent. in 1952 they now had 75 per cent. of the dwellings in blocks of flats, of four or more storeys.

The future trend in the central areas would be to attempt competitive tendering on basic plans, so as to secure the benefits of the very considerable knowledge of the contractors on structure and on services to the client. They also wished to develop a variety of plans for tower blocks, flats and maisonettes, and to develop much further "mixed use blocks" in which shops, tenants rooms, etc., would be built into the scheme instead of being provided on separate sites which were often left empty.

Answering questions about costs, Mr. Fidler said the all-in cost, including site development, would now be somewhere about £2,700 to £2,800 for a two-bedroom flat. They were building flats in association with Truscon and a nominated contractor, using the plate floor system, which had created an all-time low for his department. Whether they could go on going lower he

could not say. Six-storeys were not now economic: they were building eight, eleven and up to sixteen storeys. Building costs in Birmingham were, he thought, a little bit more expensive than in London. More and more firms were studying methods of construction for tall buildings, and quite a lot of them would be suitable for flats, so there would be more competition in the future in flat building technique.

EDMONTON

Direct Labour Saves Money

The Edmonton Borough Council claims to have saved £112,000 since the war on a building programme of £2,870,000, or about 3.75 per cent. by means of its direct labour building organization. This does not include any savings on professional fees, but it estimates that its architects' and surveyors' salaries cost less than 3 per cent, although this makes no allowance for the offices and overhead expenses.

These were some of the very interesting facts given at a Press conference held in Edmonton last week by Alderman Joyce, the chairman of the Housing Committee, and by A. Wilkinson, the borough architect. The conference was intended to give some information about the direct labour organization, and also to publicise a scheme for the replanning of Edmonton's town centre which has been prepared by *Keystone*, the journal of the Association of Building Technicians.

Mr. Wilkinson referred to the tendency of large building contractors to offer a whole building to potential clients, instead of the client having to find an architect and a site and go through all the ramifications of trying to get the building built. This was illustrated to the full in the direct labour scheme which, in his opinion, benefited the production of the building in addition to any incidental commercial advantages. "It is more and more evident to me," he said, "that when you work on a job like this where you are very closely concerned with the actual building there is much less room to make mistakes. It is a wonderful object lesson for technicians. If you are almost living with the man who is finding out the mistakes in your drawings you are going to be much more careful what you do. The technique of building benefits. This has particularly come to the fore since we started two blocks of flats which need specialist techniques. The consultation with foremen, supervising foreman, structural engineers, quantity surveyors and architects, all together ironing out troubles before they begin, is a very real advantage to the building. What it really boils down to is, that the technicians must realize and accept that they are an essential part of a building team, and not separate entities who stand apart, produce a master design, and hope it will be built without undue bother. They must be a piece of the organization, and realize it themselves."

The savings effected by the direct labour organization are not savings by comparison with the next lowest tender, as the council does not invite competitive tenders. Its own estimates have, of course, to be at ruling prices to be approved by the MOHLG. The savings are based on a comparison between the final cost and the cost that would have been incurred had the contract been carried out for the estimated price by a firm of private contractors. There is generally a saving on the estimated cost, and an additional saving on extras.

The saving on professional fees is estimated, in an article in *Keystone*, at 60 per cent of the normal gross cost of professional, technical administrative and supervisory staff to both parties in a contract. This is achieved, it is said, by cutting out paper work and red tape, and by one man doing

a job that is normally done twice, once for the client and once for the contractor. Thus the clerk of works takes the place of the contractor's general foreman, the quantity surveyor takes the place of the contractor's estimator, and the architect acts as a kind of builder's agent on behalf of the council.

Alderman Joyce said that some years ago it was decided to take the building work away from the Engineer, and appoint a Chief Architect. The Chief Architect was in complete control of the whole outfit, and around him was a group of architects and quantity surveyors.

F. E. Shroobree, the general secretary of ABT, and David Gregory-Jones the editor of *Keystone*, were also present to explain their scheme for Edmonton. It emerged from some remarks by Mr. Wilkinson that the Middlesex County Council, which is the planning authority for the area, has no plan for Edmonton. The borough council is keen to get something done, but lacks the powers. The main planning problems are caused by the bisection of the shopping centre by a railway line which has been virtually closed for some time. Edmonton wants to have the line removed, but seems unable to get the British Railways to come to any decision.

NFBTE

Another Plea for Explanatory Drawings

The NFBTE have reissued the following procedure note which was first issued in July 1956:

"At the request of the Joint Consultative Committee of Architects, Quantity Surveyors and Builders, the Council of the Royal Institute of British Architects has considered a proposal that explanatory drawings should be issued with tender documents and Bills of Quantities. In agreeing to this proposal the RIBA Council stipulated that the drawings should be issued subject to the provisos,

(a) that the practice was not mandatory, (b) that the drawings were to be used solely for the purpose of explaining the nature of the scheme, i.e., they did not form part of the contract in any sense.

"The Joint Consultative Committee strongly recommend the issue of the explanatory drawings referred to and have expressed the hope that the practice will become widely established.

"Where contractors are unsuccessful in tendering and explanatory drawings have been returned to the architect for further use."

The JCC add that the Standard Method of Measurement Committee believe that—"the provision of drawings, as recommended, could lead to the simplification of the Standard Method and, in any case, would assist builders tendering to give a closer estimate of the costs of any project."

DIARY

Cost Control in Building. Course at the Regent Street Polytechnic School of Architecture, in collaboration with the A.J. Lecture 3. *The Elemental Bill of Quantities*, by Clifford Nott, A.R.I.C.S., and Ivan Tomlin, A.L.B.E. (May 14). 4. *Cost Planning I*, by G. Grenfell Baines, A.R.I.B.A., A.M.T.P.I. (May 28). 5. *Cost Planning II*, by John Wilkinson, A.R.I.B.A., and Arnold Towler, A.R.I.C.S. (June 4). 6. *Symposium*, with all speakers (June 18). All lectures start at 6.30 p.m. and will be held at the Portland Hall, Polytechnic Extension, Little Tichfield Street, W.1. Applications (enclosing 11s. registration fee) to the Registrar, The Polytechnic, 309, Regent Street, W.1.

CRITICISM

by J. M. Richards

POLICE HEADQUARTERS

in EARL'S COURT ROAD, W.8

designed by J. INNES ELLIOTT (chief architect,
architects' department, New Scotland Yard)

senior architect in charge G. B. VINT

This building (fully illustrated on pages 711-720 of this issue) serves three separate purposes, and the first criticism I have to make is that a more satisfactory—especially a more lively—piece of architecture might have resulted if these three purposes had been clearly differentiated externally. There were, however, difficulties about doing this which, in fairness to the architects, I must mention in a moment.

The three purposes are housing, offices and a police-station; for combined in the one building are a section-house (the police name for living quarters in the form of a hostel for unmarried policemen), the headquarters of No. 1 District (one of the four districts into which the Metropolitan Police area is divided) and a local police station with its attendant garage and other

The main frontage looking across Earl's Court Road.



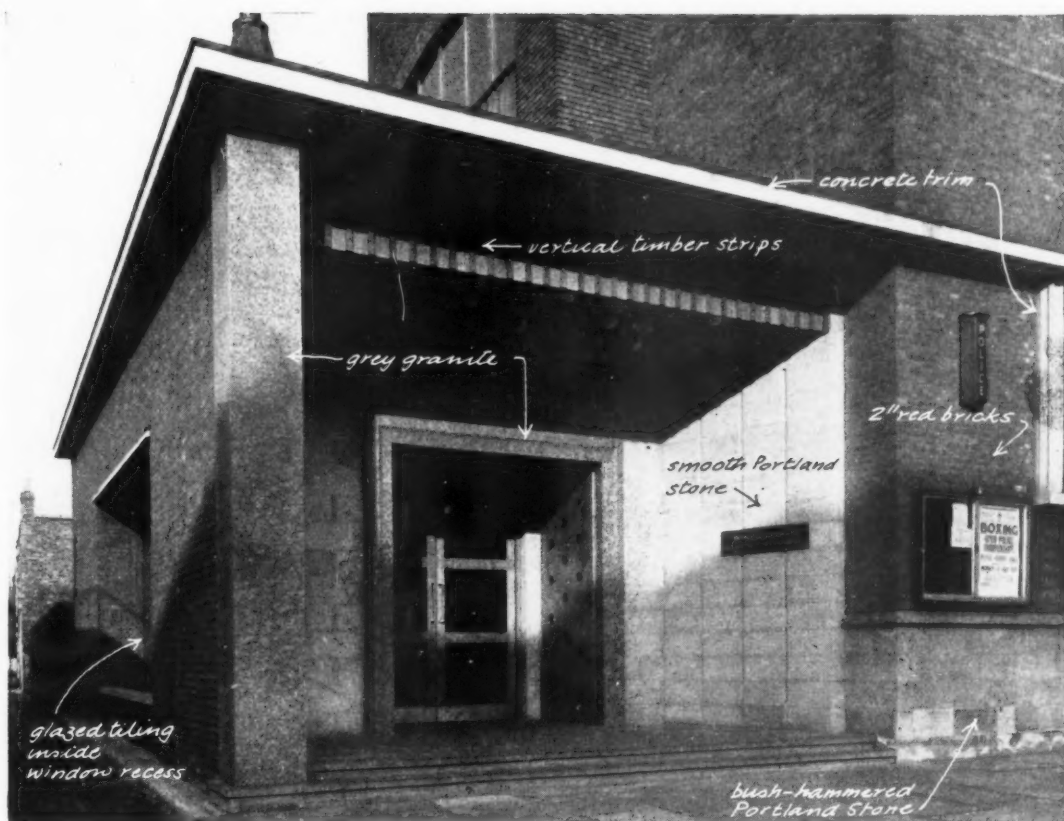
accommodation. Three buildings in one, especially when each calls for a different scale and character, are never easy to handle. In this case ingenuity in the planning has enabled the three different functions to share, as it were, the same envelope without confusing the internal circulation but at the expense of clarity of expression, and I am sure this is one reason why the building appears dull and heavy.

An example of the way the exterior not only fails to express, but altogether belies, its internal arrangement is the fenestration of the main façade, facing Earl's Court Road—picture below, left. There are five identical rows of windows, of which only the top four belong to the section-house. The bottom row, together with the long strip-window on the ground floor, lights the two-storey office suite for the District headquarters. That is, the demarcation line between the housing and the office functions of the front part of the building properly comes between the first- and the second-floor windows. The top of the ground-floor window-strip does, I understand, mark the position of a thick concrete slab provided to protect the lower floor of offices from falling debris in an emergency and give the District headquarters a nucleus of protected rooms, but if this was the reason for placing the main horizontal division at this point, something a good deal more forcible could have been made of it.

Now about the difficulties I mentioned: a police building (accommodating station and section-house only) was designed for this site in 1939, and building was interrupted by the war at a stage when the sub-structure had been built and some of the reinforced concrete frame had reached above ground level. When the building was resumed after the war, it had to be replanned to accommodate a District headquarters as well, making use nevertheless of the structure already begun. This tied the architects' hands considerably, and denied them no doubt the freedom to plan the new version of the building as they would have liked; but it surely did not make it impossible to give a clear plastic expression to the somewhat more complex internal layout.

I don't want to be too righteous about this, because often the business of expressing function visually is turned into a moral obligation when other, more strictly architectural, considerations render it undesirable; on the other hand that is, after all, how good architecture is usually achieved, and in this particular case more attention to it might, as I began by saying, have given the building the positive character it lacks. Moreover, to have drawn the distinction in the proper place between the offices occupying the two lower floors and the residential part above, would have kept down the scale of the main front and given it a better relationship to the rest of the street.

If the lower part of the building in the adjoining photograph is covered up, leaving only the part given over to the section house, a building is revealed that satisfactorily reflects its plan (four floors of identical bedrooms looking out over the street, either side of a central corridor; a staircase tower on the right; a lower block—extreme right—containing common-rooms, etc.) and one, moreover, that is consistent in



Above: detail of police-station and office entrance, described here as far too coarse and clumsy, showing also the large number of different finishing materials used. Left: the internal courtyard.

style—a building in an accepted contemporary manner with well-proportioned solids and voids. If we accept this manner—accept, that is, the principle of hiding a frame structure behind a solid-seeming brick wall—only one criticism of the upper part of the building remains to be made: I find the projecting frames round every other window, presumably added as a means of giving pattern to the façade, merely irritating. It seems to me the wrong way to use a cliché. Expose the lower part of the photograph again and the building's weakness becomes apparent. The long window does more truly suggest a frame structure, but

if it was to have this character should it not have been bolder? It appears squeezed down by the weighty brickwork above, and the attempt to give richness to the base of the building by changes of material only results in fussiness. The materials, apart from the rather agreeable two-inch brick used for general wall surfaces, are precast concrete for the window trim, bush-hammered Portland stone for the plinth, a strip of grey granite on top of the plinth (which has rather meaningless squares of the same granite set into it, at the same spacing as the upper windows), vertical timber strips beneath the segmental window at the foot of the staircase tower and above the police-station entrance (see picture above), smooth Portland stone to line this entrance and glazed tiling inside the window-recess on the extreme left of the same photograph.

Such a variety of materials needs considerable virtuosity in the handling of them—which incidentally they get in the housing schemes that have recently come out of the same office. These reach a very good standard of design and for the most part use materials sensitively. Here they are used with a consistent coarseness, and irrespective of the nature of each material and of the rôle it plays structurally. Granite, Port-

land stone and wood are given the same weight of detail, which destroys all subtlety of scale. This is particularly evident in the station entrance, which it was right to emphasize but which I find altogether too clumsy.

The foregoing are to some extent matters of taste. Returning to more fundamental matters, there is one criticism that most people would make at the first sight of this building, but which I did not begin with because I presumed it was answered by the difficulties resulting from the project's false start in 1939. This is that if the programme required one tall slab in the form of a section-house and a number of lower blocks connected with the police-station, why was not the slab placed at the back of the site, thus keeping the residential part of the building away from the noise and dirt? One must suppose it was impossible to adapt the existing foundations to such a change of plan—a change that would have reflected the conceptual changes that have occurred since 1939 when the built-up street frontage was still almost sacrosanct. The architect's confirmation of this would be useful. There need have been no difficulty about access, since the building stands on an island site. As now planned, it has four types of entrance, roughly at the four corners: the entrance to the section-house at one end of the main street frontage and to the police-station and the offices at the other. At the rear, reached from the lane that runs up each side, are service entrances and the garage entrance. I am not going to analyse this plan in detail since this is done on another page, and in any case detailed planning and room-sizes were largely determined by Home Office regulations. As I have indicated, the circulation seems to work efficiently, and to make it so can have been no easy task; for although each portion of the building is self-contained, and each has its own internal staircases, they all need to connect at certain points. The section-house and the station connect, for example, at second floor level so that residents in the former can use the canteen belonging to the latter; and also at basement level where they share uniform locker-rooms, drying-rooms, etc. On the other hand, so much trouble has been taken to plan the District headquarters as a separate two-level office suite that it is surprising to find it sharing entrance and vestibule with the police-station, instead of being given its own entrance. I can only inquire whether this is desirable, not knowing enough about police operations to declare that it is not.

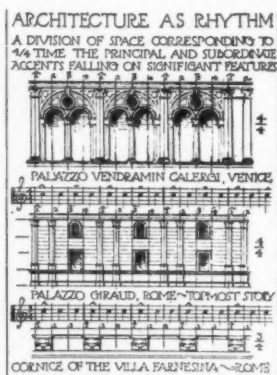
Having made a number of severe comments, I would like to end with a word of praise for the finishes inside, which are appropriately robust and although largely determined by economy are not mean, for the good daylighting throughout except in some of the corridors and, most of all, for the humane treatment of the central courtyard (picture on page 695), which might easily have been merely a depressing meeting-place of back elevations, but which someone has taken the trouble to lay out as a garden whose light-reflecting buff tiled walls, patterned paving and young trees and plants make it delightful to walk across, to sit in and to look down on from the office and canteen windows.



"I CAN'T PLAY YOU THE EIFFEL TOWER"

said Max Lock, "but

some musical compositions seem to me to be based on much the same grammar of aesthetics as is to be found in famous architectural and engineering works." Mr. Lock said this at the AA, where he was giving a combined lecture and piano recital entitled "Music and the Architect." His thesis bore no resemblance to the pretentious nonsense that is so often trotted out about the emotionally-evoked similarities between music and architecture. His arguments about structural similarities were valid, and he gave his audience an unusual, stimulating and entertaining evening. We publish here his opening remarks and a few of the illustrations which he presented with a piano and a projector.



We are, perhaps, embarking on a dangerous adventure in the attempt to relate two arts that at first appearances seem so widely separated as Music and Architecture.

Vitruvius maintained that "The architect must not only understand drawing but music"; while that well-worn saying "Architecture is frozen music" originated in Frederick Von Schelling's "Philosophy of Art" (Von Schelling was a friend of Goethe). This generalization has, I think, some validity—for is it not borne out almost every day by our own unconscious use of musical terms to express architectural ideas—such terms as "rhythm," "harmony," "discord," "movement" in design? These are not just clichés but something that an architect feels and understands.

But I fear that there can be no literal translation of architecture into music or vice versa. I cannot sit down and play you the Colosseum or the Dome of St. Paul's or the Eiffel Tower. I am, however, hoping

Mr. Lock used these pictures to show how (above left) the spacing of windows and pilasters creates rhythm which in architecture, as in music, has many variations. He showed the section through a nautilus (left) to illustrate the perfect progressive building up of a repeated form—a true crescendo in fact.

to present to you some musical compositions which seem to me to be based on much the same grammar of aesthetics as is to be found in famous architectural and engineering works.

Of course we have to realize that if music can be compared with architecture, it can also be discussed in terms of poetry, drama, choreography, or painting, for all the arts are so closely inter-related; but since architecture is perhaps the most concrete of the arts, while music is the most abstract, I shall do my best to avoid being *literal* and I shall hope that you will keep your minds open to the possibility of a multiple interpretation. Any architectural comparison that I may give will be merely suggestive and symbolic instead of "realistic," though I hope that the reality it suggests will be no less solid for being unconfined.

Before becoming more explicit I think an explanation is due as to why, when there are so many other things to talk about, I find myself discussing this fascinating but somewhat hazardous subject.

As a boy I learned the piano for ten years before deciding to be an architect—and after the age of eighteen, when my studies commenced at the Architectural Association, music lessons were dropped and were not to be renewed for another twenty years. During this time the training and practice of architecture and town planning occupied most of my energies. But, as most of you know, many, alas, are the obstacles to the realization of architectural ideas.

Interpretation of our reasonable dreams are so often tortured out of recognition by the hard lot of our circumstances—by the agencies through which we often have to work—the capricious client, the council committee, rising costs, dying craftsmanship and restrictive practices—and now there is the latest instrument of destruction—the credit squeeze! All these conspire to maul and maim the architect's inspiration. Is there no Excalibur to deal a blow to this daemon of our time?

Taking stock after about twenty years of absorbing and varied work during which much time was spent on buildings and towns but precious little on my neglected piano, I concluded that, after all, on the keyboard are to be found none of those daily frustrations that turn architects either into cynics or stoics. But perhaps, I reflected, there might be one snag that could blight all—and that was *myself* who had lacked keyboard tuition for so many years.

I therefore sought out the best teacher I could find in London and put myself in the hands of Grace McKnight-Kaufer, the representative in England of Isador Philipp, Head of Piano Work of the Paris Conservatoire. Grace McKnight, as she is known in musical circles, has guided me for the last seven years with much genius, skill and perseverance along a pathway that is a continual revelation. She has shown me that, for the architect at least, the keyboard is, as it were, merely the reverse side of the drawing board. During our studies it has become ever more clear to me that architecture and music are based on similar laws.

Long before I was privileged to know Mrs. McKnight, the work of the late E. McKnight-Kaufer, who had elevated commercial advertising to a fine art, had interested me for its vitality and clarity untrammelled by cliché and convention. In his own field he was a pioneer of a new movement. I now understand something of the influence which lay behind his early work that was engendered by this partnership of artist/musician with a developing artist/designer and painter.

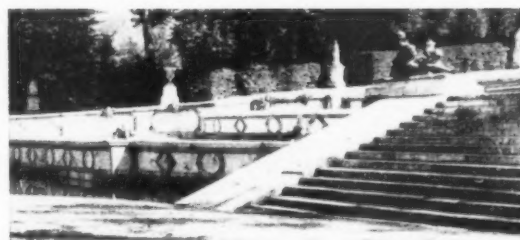
During the stimulating discipline of my newly-resumed daily hour of practice I quickly found that the mental discipline already acquired in the study of the art I knew was the key to the one I did not.



Above: In Bach's F sharp minor Toccata and the Shah Abbas Bridge, Isfahan (Max Lock pointed out), structure itself is decoration. "This long 36-arch bridge, with its regular upper arcade, is impressive in its simplicity and not in the least monotonous in its repetition. Almost exactly the same musical design is to be found in the 27 repetitions of the same phrase in the long bridge passage connecting the two fugues in the F sharp minor Toccata."

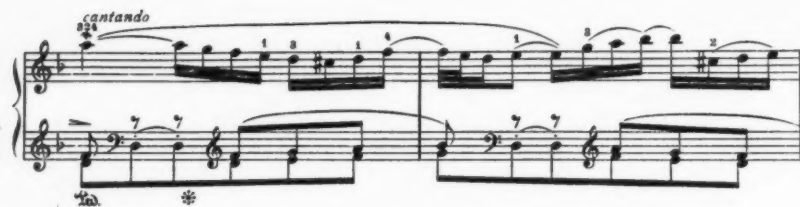
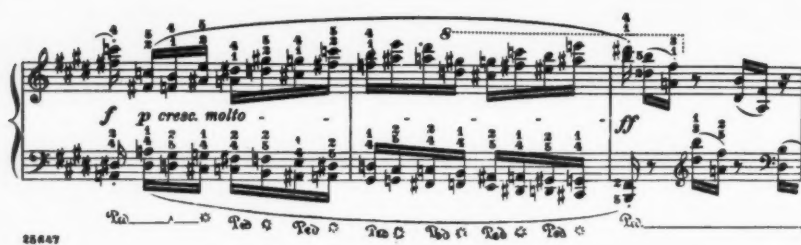


Above and left: "The architectural structure of each bar of Bach's C minor prelude," said Mr. Lock, resembles a chevron pattern advancing and receding with the regularity that this richly-sculptured temple base at Behar, India, achieves."



Left and below: terracing and steps at La Granja, Spain, and part of Beethoven's Sonata in D "Progression from one terrace to another by flights of steps occurs in musical structure where strong harmonic themes are repeated as they rise or fall against supporting scale passages—as in Bach's C minor fugue."





Top and centre left: "The bridge passage in Chopin's E major study is strangely reminiscent of the Forth Bridge. As a study this bravura bridge passage is a coldly-functional and utilitarian technical exercise but of extreme intrinsic beauty, like a well-designed steel bridge—quite different in form and structure from the solid bridge of the Bach Toccata" (see top of page 697).

Above and centre right: "here, in the Parthenon and part of the first movement of Bach's Italian Concerto, is decoration as a contrast and complement to structure. The regular grid of columns on their three stepped Stylobate contrasts with, and is held together by, the free flowing lines of the running frieze above. The music leads you along each facade and round each corner to the next until the whole structure and its heroic message is comprehended."

To start with, the common platform upon which both music and architecture are founded is that of *rhythm*. The strength of both arts rests on a regular grid. They are both modular. Try singing a well-known tune without any rhythm and you will get nothing but unrelated sounds; try tapping out the rhythm of the same tune on the

table and your neighbour will at once recognize it; this is, of course, a popular game with schoolboys in class. The rhythm is the skeleton on which the flesh of the tune is hung, the skeleton without the flesh is recognizable whereas the flesh without the skeleton is not.

The enthusiastic architects of the Modular



Above and right: Max Lock compared Chopin's F minor study—an example of three against four time—with the Doge's Palace, Venice, where a fenestration pattern of three windows over 16 gallery arches over eight portico arches elaborates the rhythm of the facade.



Society should have enrolled as their first member J. S. Bach. Bach's, and indeed all music, is founded on rhythm, on a grid, on an absolutely regular framework within which inspired movement takes place. Later, in Chopin's music, that framework was to become less rigid, but none the less poised or balanced. The spacing of columns, walls, lintels, forms the rhythm of architecture as *time* does in music. The variations of colour, light and shade, of depth and projection in a building are represented in music in various tone values. The contrasts and changes in texture which give interest to architectural form are to be found also in music as, for example, in the degrees of difference between smooth and "polished" *legato* playing, the more "rusticated" *half-staccato*, and we might say the spiked surface of the *pizzicato*. I find myself often equating the "fatness" of a note with the thickness of a column, harmony with structure and melody with silhouette and outline. Musical ideas are full of architectural enrichment; episodes within a musical theme are merely the sculptural and patterned reliefs and bas-reliefs that in buildings catch the light and cast shadows on their background and wall surface. Above all, in a work of music as in architecture, the ultimate requirement is *balance*—balance and rightness of the whole and of every detail created within the firm framework of rhythm. When rhythm fails, music and architecture become meaningless noise and painful eyesore.

Though, I repeat, we cannot make literal comparisons, yet I cannot help seeing in the piano works I know the musical counterparts of definite architectural elements, such as the column (the strong beat), the beam and the arch (the intermediary beats that span the bar), the soaring dome and the flying buttress (the arpeggio), the ramp (the chromatic scale passage), the staircase (the major and the minor scales), the solids and voids (chords and phrases with their rests). Then there are bridges (passage of diverse construction connecting two musical ideas), and we have in music even such functional necessities as "expansion joints"—the essential pauses, i.e. "breathing places," without which a musical composition can make both interpreter and listener pant for breath!

The architecture of music, too, is full of depth and vistas in perspective—in climaxes approached by the crescendo or diminishing of a repeated musical pattern. Above all there is the element of *scale*, linking together those delightful contrasts which music yields every bit as dramatically as does architecture.

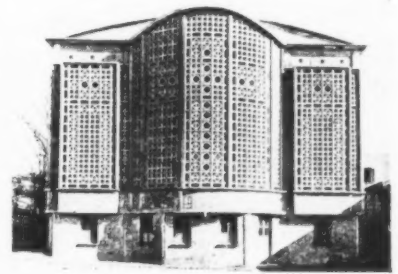
In the craftsmanship of music each note must be consistent with its neighbour as brick is to brick, unless a specially designed pattern is to be picked out. Each joint must be equal to the next according to the specific mix of its mortar. Each musical member can carry only so much weight and no more, the stones and lintels of a musical work must be laid as carefully and as knowledgeably as in architectural structure; the semiquaver, quaver, croquet and minim have their relative values, interdependencies, and one might almost say their "factors of safety" like any rolled steel joists or wooden beam. To ignore the dynamics of music, as in architecture, is to abandon balance and good proportion for the grotesque and structurally dangerous; an example of what I mean is that, in a lamely-played scale passage of uneven notes one's ear gets the same kind of jolt as does one's spine on a staircase of unequal risers.

Design, of course, must be backed up by adequate technique—and is not the technique of piano playing in fact a form of draughtsmanship in which lines must be finished straight and clean like the architect's, not disjointed and inconsequential like those diagrams he occasionally receives

from an over-anxious client. On the drawing board it takes an experienced eye and hand to make all lines consistently meet truly at an angle and not fall short on the one hand nor overlap on the other. Similarly the ability to obtain a good "legato" between a succession of notes in which there is neither ugly gap nor blurred overlap only arrives after much trained co-ordination of hand and ear. Again, for example, when drawing the part of a grill or balustrade that may happen to be silhouetted against the sky, the outline should be emphasized a little more than when it is backed by a solid wall; thus, generally speaking, solo notes when played against a background of silence need to be given an extra signifi-

may for ever be on the way to perfection yields ever fresh depth, subtlety and inspiration that must only prove an invigorating stimulus to his capacity to create in other than musical fields.

So I present to you my programme of



Above: in architecture, as in music, Max Lock pointed out, decoration and pattern are often an integral part of structure. This is Perret's reinforced concrete church at Le Raincy.



Above: "the contrast of large areas of light with expanses of shade is the main architectural and musical idea in this picture of the Pearl Mosque, Delhi, and in the Chopin nocturnes."



Above: Edward the Second's tomb at Gloucester is an excellent parallel to the fugue, "in which the subject is repeated at various levels (voices) and interwoven with minor episodes that build up the ingenious and organic structure of the complete design."



Above: "Chopin's romantic music, though not losing its architectural form . . . melts into the realm of landscape. But the architectural dramatic climax is still there, as at Fonthill."



"The diminishing tiers of the tower of St. Bride's church, London, are found in music in the 'building down' of a repeated passage—a true diminuendo."

cance, a touch of added clarity to bring out their "silhouette." Such notes are given an extra squeeze, a fatter mixture out of the tube, so to speak, especially when they lead you round the corner into another theme.

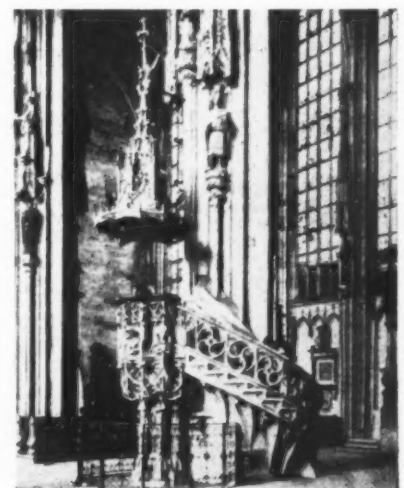
The Greeks did this when turning the angle of their Temples—the three angle-columns had to overcome the optical illusion of thinness when seen suddenly silhouetted against the brilliant sky—they were therefore given extra thickness to relate them accurately to both the advancing and receding line of columns. The long Stylo-

bate of the Parthenon was made very slightly convex to avoid the optical illusion of concavity that dead flatness gives; so, in a long repeated note-pattern a feeling of monotonous depression should be dissipated by the slightest, almost imperceptible increase in movement midway along its length.

In music, as in architecture, these elusive subtleties distinguish a good from a banal performance. It was Arthur Schnabel who once said to Grace McKnight, whom he often asked to give her private criticism after his London performance, that it took him forty years of work on a Beethoven Concerto to achieve what he felt was a satisfactory performance. It is in this process of the continuous perfecting of an interpretation, I think, that music offers her greatest gift to the architect, bent as he is on the realization of pure beauty. For him to have at his finger-tips something that

pieces illustrated by a few architectural analogies which (bearing in mind the reservations I have already made) attempt to show you how closely related the two arts really are. The playing is offered to you not by a professional musician which I am not, but simply by an architect who loves music.

Right: Gothic pulpit stair (at St. Stephen's, Vienna) with balustrade of ascending connected circles. "The circular movement of progressively rising scrolls, circles and volutes are a common musical pattern, as in the final bars of Bach's C minor prelude (below)."



News continued from page 693.

SCHOLARSHIP

Award of Tour Abroad

The Trussed Concrete Steel Co. Ltd. of Lower Marsh, S.E.1, offer a travelling scholarship of £125 to enable an Associate of the RIBA to undertake a continental tour of about three weeks' duration. The winner will be accompanied by a member of the company's technical staff awarded a similar scholarship, and they will jointly study reinforced concrete work on the continent of Europe, with particular reference to the collaboration between architect and engineer. A joint report will be prepared, the use and copyright of which will remain at the disposal of the Trussed Concrete Steel Co. Ltd.

Applicants must be under 35 on April 1, 1957.

No form of entry is required but applications should systematically cover the following particulars: (a) Age. (b) Architectural education and any distinctions. (c) Present employment and general practical experience. (d) Evidence of special interest in the use of reinforced concrete in contemporary architecture. (e) Languages spoken and previous travel abroad. (f) The names of two referees.

The selection will be made by a committee consisting of C. S. White, F.R.I.B.A., G. Grenfell Baines, A.R.I.B.A., and a director of the Trussed Concrete Steel Co. Ltd.

The committee will prepare a short list based on written applications and will interview candidates on this list.

Applications should be received by the secretary, the Trussed Concrete Steel Co. Ltd., Lower Marsh, S.E.1, by June 30.

YORK

Railway Exhibition

An exhibition, "Contemporary Railway Architecture in Britain," consisting of models, photographs and working drawings contributed by four of the six British Transport Commission regions—the Eastern, North Eastern, London Midland and Western—is now on show at the York Institute of Architectural Study, where it will remain until May 17. The exhibition, to which admission is free, has been sponsored by the Institute in collaboration with Dr. F. C. Curtis, architect to the Commission.

Speaking at the opening ceremony on April 29, T. H. Summerson, chairman of the North Eastern Area Board of the British Transport Commission, said "... the Commission is determined that every item among the enormous range of equipment which it is now ordering shall help to set a standard that will do credit to a great national service and will moreover present an example to the rest of British industry."

How far have such commendably high ideals already been realized? To judge from the present exhibits, only the Eastern Region, which clearly leads the field, can make any claim in this direction; although the Western Region, with its imaginative design for the new stations at Banbury and Plymouth, is making good leeway. But there are as yet too few completed examples of BTC architecture to make general pronouncements, for it is little more than two years since the railway modernization plan was authorized. Although there is a lot of work on the drawing boards, the amount which has reached the stage where it can appear on exhibition is relatively small.

The exhibition shows that only a proportion of BTC architecture is concerned with railway stations: offices, workshops, diesel depots, training schools and staff buildings are receiving equal consideration. Each of the regions represented preserves

a certain individuality of its own, and it is good to see that constructional use has been made of local materials where appropriate.

One of the hardest problems for the railway architect in brightening up drab stations fifty or more years old is how to achieve a successful transition between the old main structure and its new fittings. Some of the photographs in the exhibition leave one with the suspicion that there is a tendency to be contemporary on every possible occasion for the sake of being contemporary. We hope that those older stations which are the best examples of their time and still impress us by their dignity will not all be ruthlessly made fashionable.

PRICE FIXING

Evidence Wanted

Price fixing of structural steelwork and shell boilers (which includes domestic boilers) are among the first restrictive agreements selected by the Board of Trade for investigation by the Restrictive Practices Court. Anybody who may be able to give evidence from his own experience of the results of these agreements should communicate as early as possible with the solicitor to the Registrar of Restrictive Practices, Chancery House, Chancery Lane, London, W.C.2.

The members of the court include Mr. Justice Devlin and Mr. Justice Upjohn. The remaining members have still to be appointed. It is thought that the court may begin its work in the autumn, but no date has been fixed, nor is it known whether it will sit in public.

Under the Restrictive Trade Practices Act, passed last year, all agreements which affect prices, terms or conditions of sale, or quantities or descriptions of goods to be produced, supplied or acquired, had to be registered by February 28 of this year. No fewer than 1,420 of these agreements have been submitted to the Registrar of Restrictive Practices, and 1,003 have so far been placed on the register. The remainder are still being examined. The register is open to the public, and for payment of 1s. any number of agreements may be examined, so that any local authority, architect or indeed anybody else may inspect the agreements if they wish to do so. A cursory inspection of some of the agreements suggests that there has been a good deal of revision going on since it became known that agreements had to be registered and made available for public inspection. An examination of the index shows that a large number of agreements affect building materials: under the heading "building materials" there are 46 separate agreements, about half of which are the agreements of local building employers' associations. One section of the index, relating to miscellaneous manufactured articles, lists 24 items including concrete products, heating equipment, horizontal shell type boilers, plumbing fixtures and fittings, sanitary earthenware, cast-iron porcelain enamelled baths, galvanized cisterns, galvanized tanks, electric lamps, electric light fittings and lampholders. Furniture has a section to itself, and building materials can be found under such headings as base metals, or wood and cork manufactures.

Agreements which fix prices include a schedule of prices current at the date of registration, but these schedules are of temporary and limited value because, as a notice pinned to the top of each one states, "the parties are under no continuing obligation to furnish particulars of the variation of this list so as to ensure that it is up to date." This is a loophole which ought to be plugged.

Inevitably one looks at the agreements on structural steelwork to discover whether they

provide a clue to the solution of the mystery of level tendering, which has enraged so many local authorities and others. The agreement between the associations of fabricators and erectors of steelwork (the BCSA and the NSESA) comprises two schedules: the first classifies the work for pricing, and the second gives a list of maximum and minimum prices for each of the classified types subject to additions for various abnormalities. There is a procedure for the notification of all enquiries for demolition or erection received by erectors being reported to the fabricators' trade association. The British Constructional Steelwork Association has registered its constitution and its scheme for pricing structural steelwork. All enquiries have to be reported to the area secretaries, and there is a procedure to ensure that all firms which are tendering quote the prices appropriate to the same type or sub-type of steelwork. Where the fabricators themselves design the steelwork, they have to inform the area secretaries what type or sub-type is appropriate to their design, but area secretaries may not disclose their designs to other fabricators. Until the appropriate rate of the job has been established no quotation may be submitted, and all quotations must be in accordance with the provisions of the scheme. Quotations should also be accompanied by a Rise and Fall clause approved by the Association, and no quotation may be made or order accepted at a firm price unless the fact is first reported to the appropriate area secretaries for the information of the other fabricators interested in the enquiry. Where the fabricator provides quantities or prepares the design arrangements for an appropriate service charge are to be made through the appropriate area secretaries, and no private arrangements are permitted. Service charges are to be paid over to the area secretaries quarterly, and distributed among all the fabricators interested in each enquiry in proportion to the services they actually rendered.

The price schedules, which are one inch thick, are in two parts. Those for unit members in fabricated materials give fixed prices, but those for complete structures give maximum and minimum prices. The range between maximum and minimum is illustrated by these examples: Minimum prices for complete structure range from £65 10s. per ton, plus £10 2s. 6d. per ton for erection, to £76 plus £15 5s. Maximum prices for the same items are £69 10s. plus £11 10s. and £81 plus £17 5s. respectively.

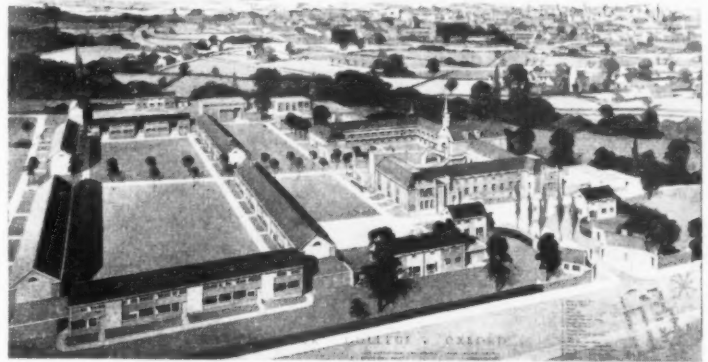
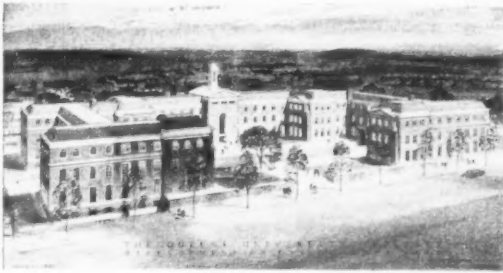
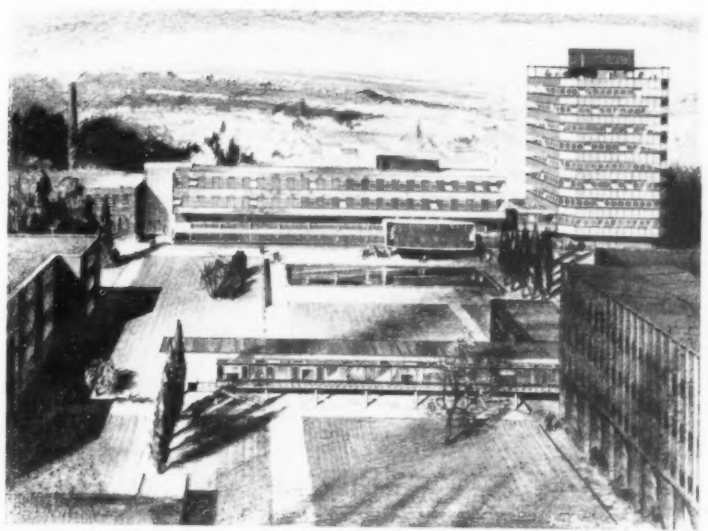
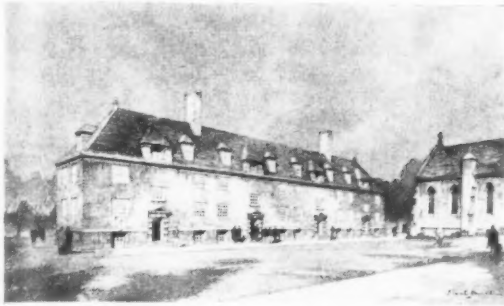
COMPETITION

Honourable Mentions

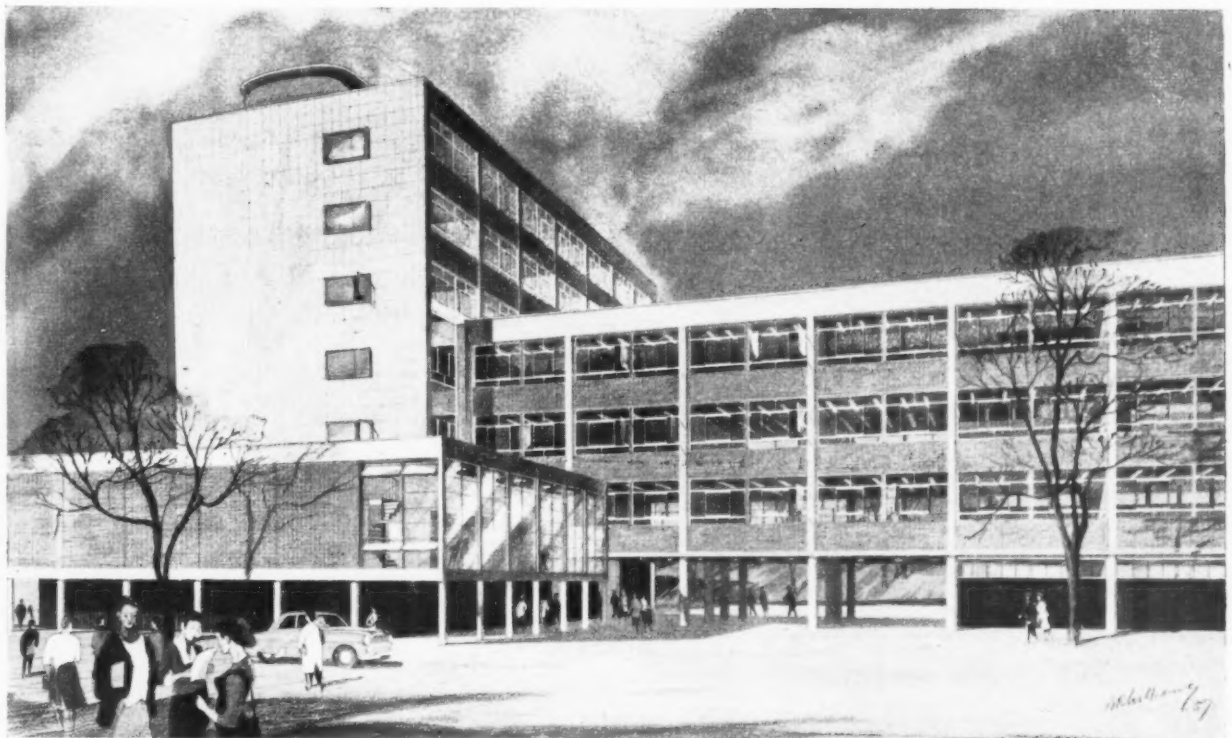
Professor R. Gardner-Medwin, the assessor in the competition for the Paisley Technical College, mentions five further schemes, in addition to the four prize-winners, as worthy of honourable mention in his full report. They are G. M. G. Doward, Glasgow; Ian Burke, Dundee; Architects' Co-Partnership, London; Mammatt and Norton, London; and D. H. Lanham, Uxbridge. The number of competitors was not, as previously reported, 500: this was the number of competitors who wrote for the conditions. Professor Gardner-Medwin observes "it is no wonder that many seem to have been discouraged after exploring the awkward and depressing site. But fortunately there were many stout hearts (135 of them) who accepted the challenge."

The decision to hold a competition was, he says, well justified by the results, and the competition was notable for the variety of its ideas. It would be difficult to comment favourably on more than half of the designs submitted but it was heartening to find several designs which, though widely differing in their planning approach, were architecturally vigorous, whatever their faults, and showed a spirited response to the challenge of the site.

AT THE ROYAL ACADEMY: BUILDINGS FOR EDUCATION



Top, Pace Building, North Bailey, University of Durham: E. Vincent Harris. Above, Elmwood Development, Queen's University, Belfast: John MacGeagh. Above right, buildings for Southampton University: Basil Spence. Right, Westminster College, Oxford (College for Methodist Education Committee): Lord Mottistone. Below, chemistry building, Birmingham University: Playne and Lacey. Drawn by Laurence Wright, F. J. Thring, Basil Spence, J. Stammers and B. R. Williams respectively.



the new technique in handrails . . . in action

L.C.C. Harold Hill Estate
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Public staircases in the
main shopping centre

ARCHITECT:
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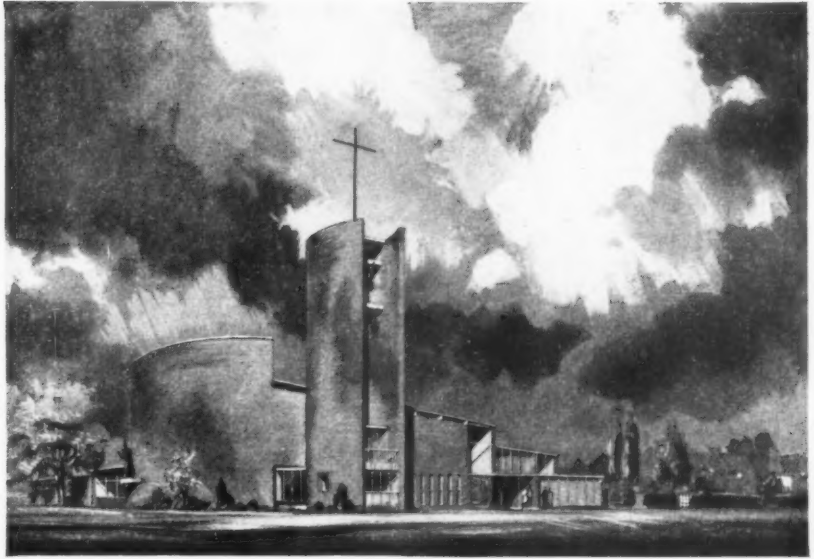
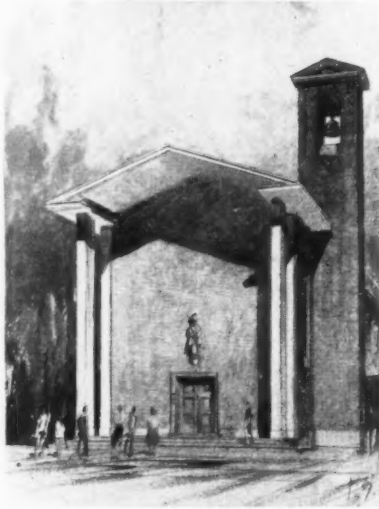
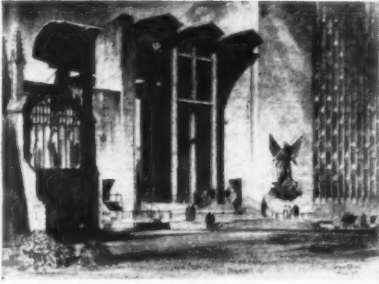
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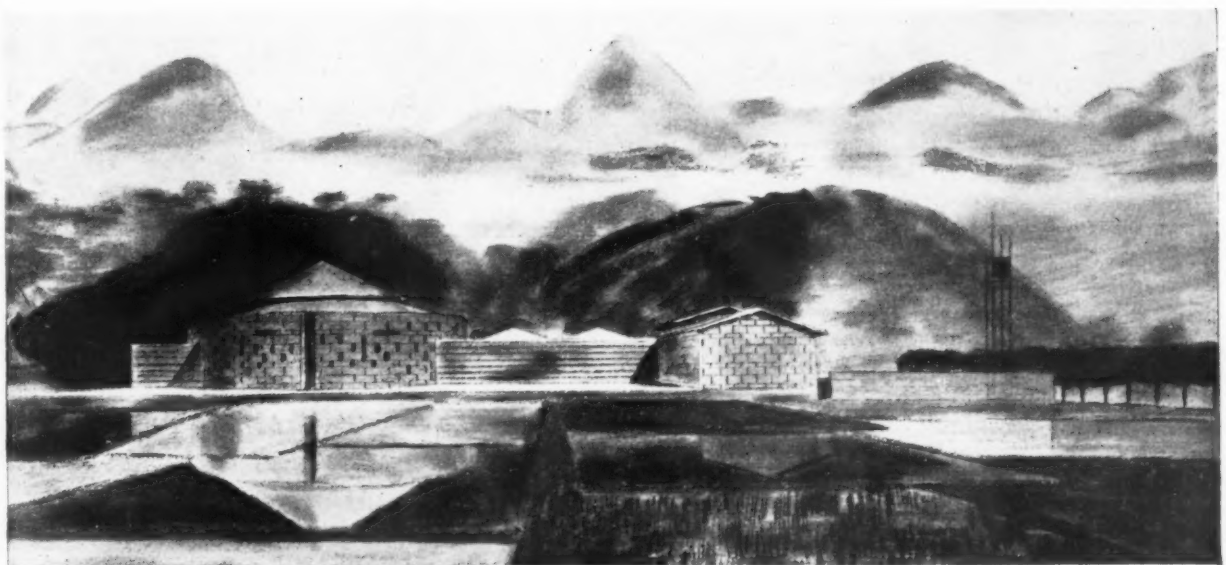
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MRL6

AT THE ROYAL ACADEMY'S EXHIBITION: CHURCHES



Top, modified porch of Coventry Cathedral. Basil Spence. Above, St. Alphege, Edmonton: Sir Edward Maufe. Top right, St. Catherine's, Sheffield: Basil Spence. Right, R.C. Church at Merstham, Surrey: J. H. Alleyn. Bottom, R.C. Church at Sandakan, Borneo: James Cubitt & Partners. Drawn by Basil Spence, J. D. M. Harvey, Basil Spence, A. F. Gill and James Cubitt respectively.



HOPE'S STEEL DOORFRAMES

now DOUBLY protected
against RUST

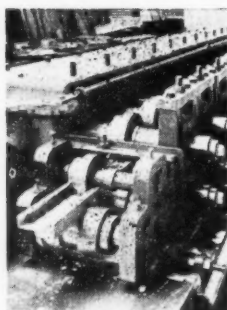
1

MADE IN ZINC-COATED STEEL SHEET



Zinc-coated steel sheet (ZINTEC) is produced by electrolytically deposited high-purity zinc on the steel sheet base, which is electrolytically degreased and pickled prior to coating.

CUTTING ZINTEC SHEET
TO DOORFRAME SIZES



Zinc-coated steel sheet is today universally recognised in industry as one of the most practical and efficient bases for under-paint protection.

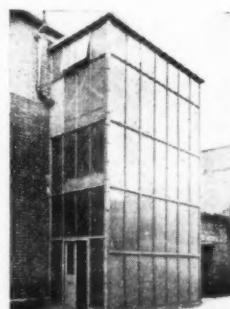
FORMING ZINTEC INTO
DOORFRAME PROFILES

2

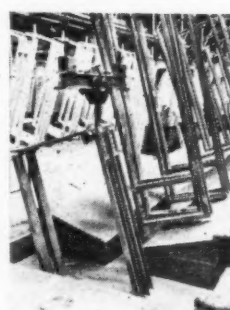
DIPPED IN CALCIUM PLUMBATE PRIMER

We have chosen calcium plumbate for its remarkable adhesion and rust-inhibiting properties.

The newly galvanized surface of this dental surgery entrance was brush painted ONE COAT of CALCIUM PLUMBATE PRIMER and LEFT FOR 3½ YEARS WITHOUT ANY DEGRADATION OF THE PAINT SURFACE.

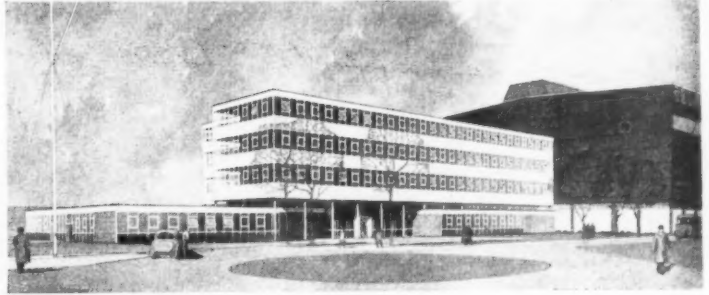
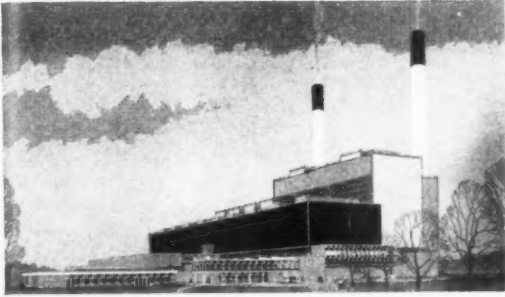


Our calcium plumbate primer (of controlled viscosity to ensure adequate and even coating thickness) is applied by dipping and is then stoved on at 250° F. to provide a hard, durable surface.

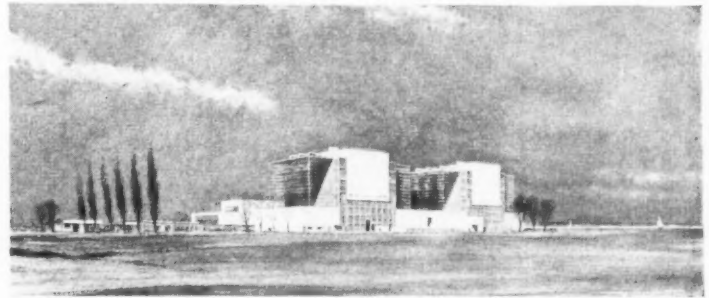
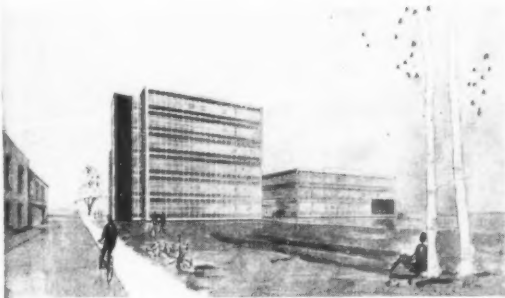


Further details on List Nos. 254 and 337 from
HENRY HOPE & SONS LTD
SMETHWICK, BIRMINGHAM AND 17 BERNERS ST., LONDON, W.1

AT THE ROYAL ACADEMY: INDUSTRIAL BUILDINGS



Above left, Belvedere generating station: Farmer and Dark. Above right, Thames Division Offices for Bowater's U.K. Pulp and Paper Mills Ltd.: Farmer and Dark. Drawn by Laurence Wright and J. D. M. Harvey respectively.



Above left, offices and laboratories for Heinz at Harlesden: E. D. Jefferiss Mathews. Above right, Nuclear Power Station, Bradwell, Essex: Maurice Bebb. Below, building for London Electricity Board: Arthur Bailey. Drawn by M. Simpson, A. H. Shearing and J. D. M. Harvey respectively.





STOP! We're going over...
to CARLITE pre-mixed plaster

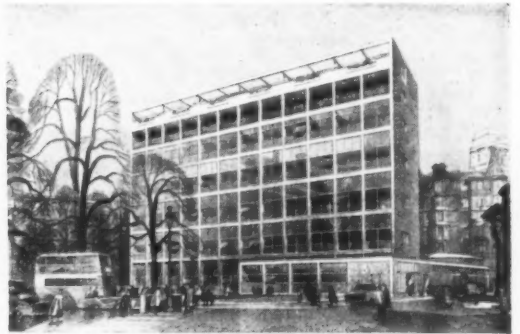
Carlite is the first really big departure from plastering tradition for five thousand sanded, site-cluttering years. Superfine gypsum and lightweight aggregate of perlite is factory-mixed for complete uniformity. It saves a lot of weight, a lot of bother and a lot of worry.

Technical details of Carlite's many practical advantages make most instructive reading. Architects, builders and anyone else concerned with plaster (and who are still unaware of Carlite's major contribution to modern building technique) should write for this information.



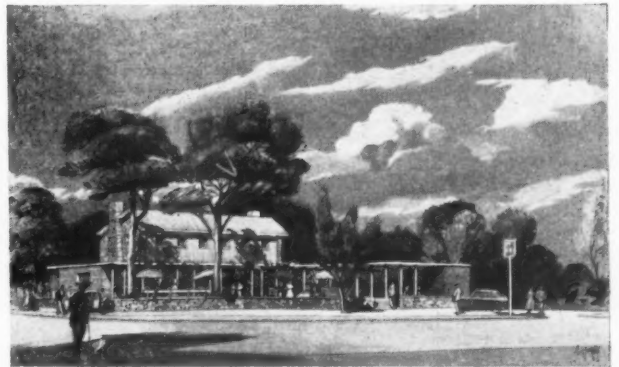
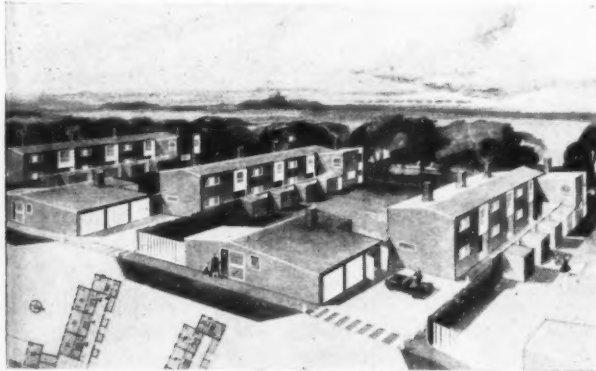
*The Gotham Company Limited, Gotham, Nottingham.
 The Carlisle Plaster & Cement Co., Cocklakes, Nr. Carlisle.
 Thomas McGhie & Sons, Ltd., Kirkby Thore, Westmorland.*

AT THE ROYAL ACADEMY: MISCELLANEOUS BUILDINGS



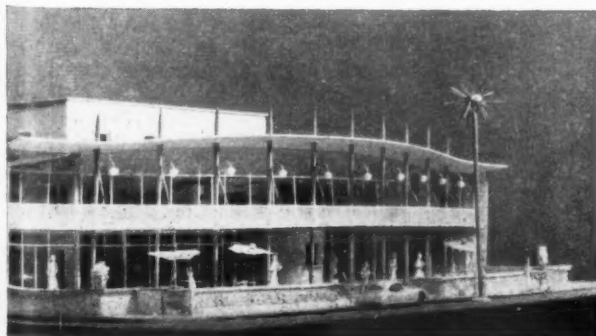
Above, offices on Albert Embankment, London: Stone, Toms & Partners.
Right top, telephone exchange, Victoria Street, London: Walter S. Frost.

Above, store extension, Wolverhampton: Lavender, Twentymen and Percy.
Drawn by J. D. M. Harvey, W. Suddaby and "A.R.T." respectively.



Above left, housing at Welwyn Garden City: David Le M. Brock (James & Bywaters). Above right, public house, Crawley New Town: E. B. Musman. Below left, proposed public house: E. B. Musman. Below right,

half model of members' stand at Lords: Louis de Soissons (Peacock, Hodges and Roberts). Drawings by David Le M. Brock and J. D. M. Harvey respectively.



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THE INDUSTRY

Brian Grant reviews a series of fittings for polythene tube, a system of prefabricated timber curtain walling, and a range of refrigerated display cabinets.

FITTINGS FOR POLYTHENE TUBE

Mange Plastics, a unit of the Tube Investments group, are now marketing a series of fittings for use with polythene tube suitable for both the heavy and light gauges of BS 1972. Many of the joints at present used for polythene were originally intended for copper, but some of the others, designed specifically for polythene, do not allow the joint to be broken, or need special tools. In the new Polytite joint the ends of the tube are belled to about $1\frac{1}{2}$ times the original diameter and compressed over a high density polythene sleeve by a nylon ring and nut. The joint is very easily assembled on site, as the ends of the tube are placed in boiling water for about 20 seconds, after which they can be easily expanded with an ordinary plumber's cone. The nylon ring and the nut, which are slipped over the ends of the tubes before they are belled, are screwed together hand tight, and then need one further complete turn with a spanner. The joint can be broken and remade any number of times, and there is no restriction in the bore of the pipe.

The initial range of fittings includes straight couplings, elbows and tees in sizes to fit $\frac{1}{4}$ -, $\frac{3}{8}$ - and 1-in. bore pipe in both normal and heavy gauges, reducers, and also adaptors for changing from normal to heavy gauge, and connectors for changing from polythene to metal. (Mange Plastics Ltd., Whittall Works, 110-114, Cheston Road, Aston, Birmingham, 6)

TIMBER CURTAIN WALLING

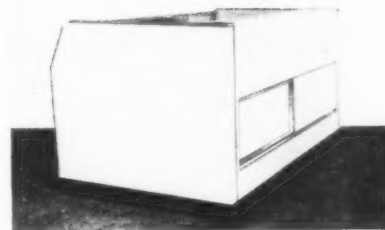
A system of prefabricated timber curtain walling has just been introduced by Newsums of Lincoln, who will be remembered as the originators of the Riley-Newsum house. The system is known as Wall-Pak, and a cost figure of about 100s. to 115s. is

suggested as the probable cost per sq. yd. of the completed wall. The main elements consist of sills, heads and mullions, and once these are in position the rest of the fixing, windows and filling panels, can be carried out from inside the building, and time studies have shown that, thanks to coding of parts and packaging them in cartons, ordinary labour can do this in about $1\frac{1}{2}$ working minutes per sq. ft. on a 5 ft. wide bay.

There are no modular restrictions of any kind, and design is entirely free. When the mullions are in place the other components line up automatically, and metal or timber windows, direct glazing and various types of infilling or cladding can be used. (H. Newsum Sons & Co. Ltd., 238, High Street, Lincoln.)

REFRIGERATED DISPLAY CABINETS

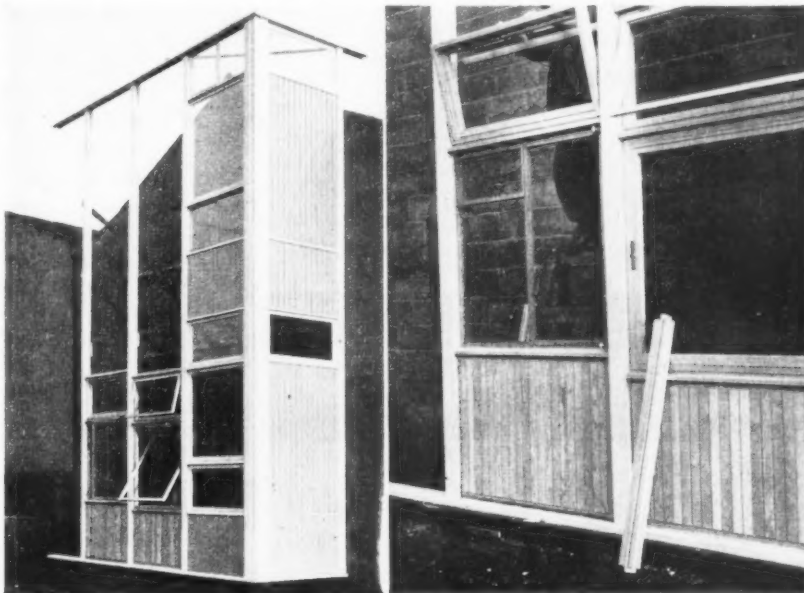
A new range of refrigerated display cabinets has recently been evolved by Messrs. Hussmann, who now have a whole range of open top and storage cabinets for the display of frozen foods of all kinds, either for long runs against walls or double-sided for use in island site displays. Storage capacities



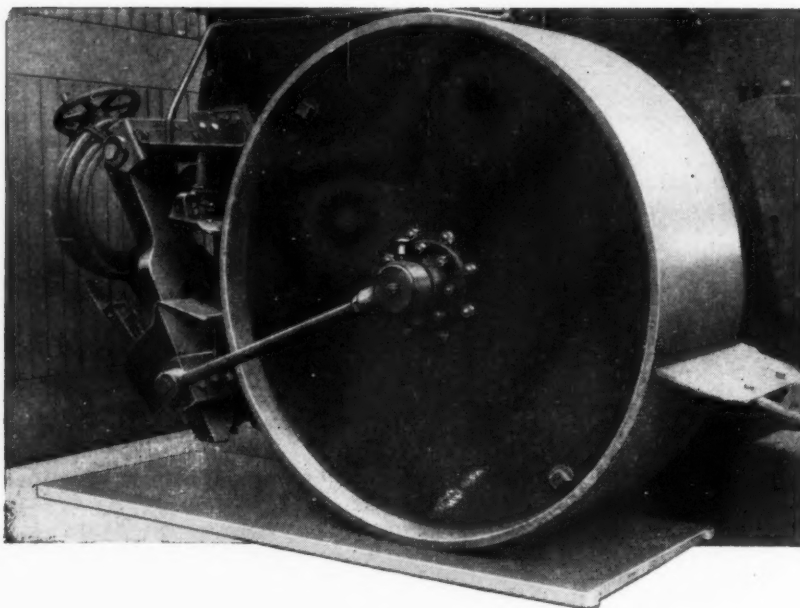
One of the new range of refrigerated display cabinets by Hussmann British Refrigeration Ltd.

vary from $15\frac{1}{2}$ to $24\frac{1}{2}$ cub. ft. and the cabinets are 5 ft. 6 in. to 9 ft. in length, and various controlled temperatures are available, from 40°F. for fruit and vegetables to 0°F., or less, for frozen foods and ice cream. Prices start at about £400 and rise to £650 or so for the large very low temperature cabinets. (Hussmann British Refrigeration Ltd., 242, Tottenham Court Road, London, W.1.)

Details of the Wall-Pak prefabricated timber curtain walling, designed by H. Newsum Sons and Co. Ltd.



SASCO door survives three-ton test

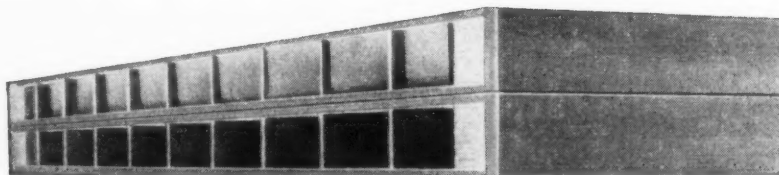


METHOD

Take one Sasco Hardboard Flush Door. Take one steam-roller—weight 9 tons 14 cwts; roller weight 3 tons 2cwts. Drive the steam-roller over the door.

OBSERVATION

Thorough examination of the surface and the core of the same door proves that no damage was sustained and that the door is in the same excellent condition as before.



Full details of the Sasco range of interior and exterior doors from:-

SOUTHERNS
LIMITED

CONCLUSION

Sasco doors are unsurpassed for strength. They will withstand conditions out of all proportion to those normally encountered, and they may be chosen with complete confidence.

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technical section

9 DESIGN: GENERAL

cost study of infil panels

This week we publish a cost study of infil panels for external walling, prepared by Johns Slater and Haward, architects, and Caston and Porritt, quantity surveyors. Their method was to design a number of panels, nominal size 6 ft. 8 in. by 10 ft. 6 in., to meet various functional criteria and to propose for each type a number of alternative materials for frame, glass, undersill panel and perimeter beam cladding. Prices for all these—based on a quantity of 200—were then calculated or obtained by quotation. The study was originally prompted by experience in designing schools, but the panels would be appropriate for other building types. This is the fourth cost study to be published; others (by Stillman & Eastwick-Field) appeared in the AJ for October 25, 1956; January 24, 1957 and April 25, 1957.

Johns Slater and Haward, architects
Caston and Porritt, quantity surveyors

The authors of this study had a programme of schools to design for which they developed types of storey height panels for external cladding. Tenders sent in for earlier designs varied considerably, revealing the difficulty of attempting to design non-traditional forms of construction within a cost target, without prior cost investigation. In addition to the schools, the architects had a number of other commissions—offices and a technical college—for which a similar type of panel might be suitable. Thus they decided to make a thorough study of most of the materials and types of construction that were appropriate to the functional requirements of these types of building.

The functional requirements were formulated, and a number of designs worked out (see page 709). All types were priced, including prices for a number of variations on each basic type. For example, for Type 1 there are alternative prices for plate glass, drawn sheet; or alternative prices for fifteen different kinds of undersill panel construction. All prices are fully scheduled on pages 709 and 710.

For school construction it was reckoned that within the MOE cost limits an elemental price per sq. ft. of

floor area of 5s. to 6s. would be the target for external cladding. This implied a price of 13s. to 14s. per sq. ft. of cladding area (overall, including column faces). With panel sizes shown on page 709, this gives £45 to £50 per panel, supplied and fixed, excluding structural frame. The architects have split this total as follows:

FRAME	£30—£35
GLASS	£4 7s. 6d.
UNDERSILL PANEL	£7 5s. 0d.
PERIMETER BEAM COVERING	£3 7s. 6d.
TOTAL	£45—£50

The schedules shown opposite are in order of increasing price, and the points at which the targets occur are marked by an asterisk.

Pricing

The prices have been compiled partly from costs worked out by the quantity surveyors, and partly from estimates obtained from sub-contractors and suppliers. They have all been adjusted to relate to labour and material rates at December, 1956. A number of points should be emphasized:

1. Most prices relate to quantities of 200 panels, supplied and fixed, in the Ipswich area.
2. Certain items are more conjectural than others, in particular those relating to builders' operations on the site, since considerable variation has been observed in the quoted costs of fixing windows, mastic pointing, etc.
3. Readers should be cautious in using these prices for guidance on their own jobs in different parts of the country.
4. Even after all this detailed study and sifting of material, reliable conclusions can only be reached after careful study of the results, and not, unfortunately, at a glance. This is because one is dealing with so many variations at one time. For example, a decision to adopt a cheap frame gives one a very wide set of possibilities for the other items, whereas starting with an expensive frame, choice of completing items will be very restricted.

Choice of panel

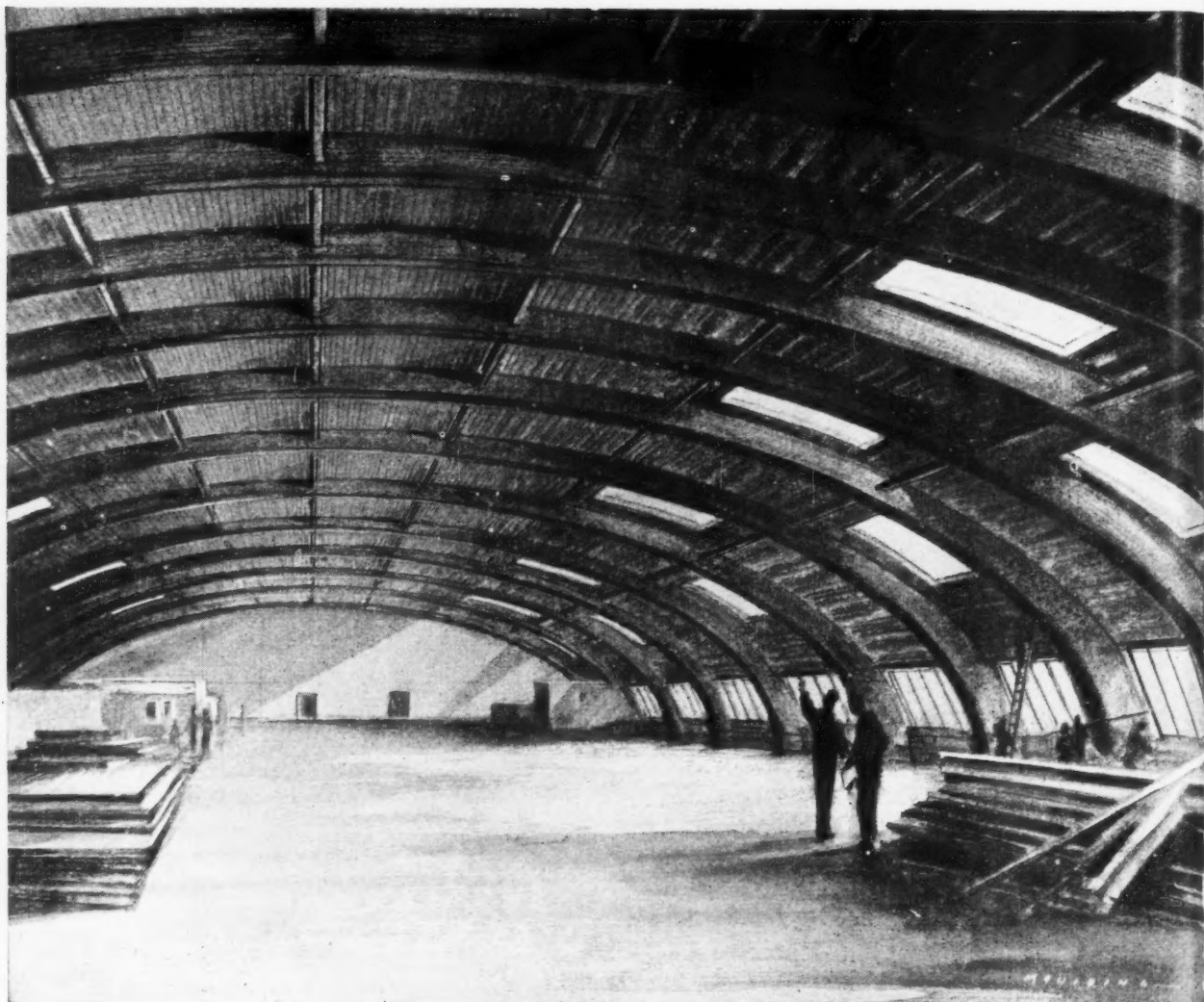
Given the functional and performance requirements for a particular case, appropriate constructions or materials can be chosen from tables of: Frame, Glass, Undersill panel and Perimeter beam covering (if any). Their prices added together, make the total cost of the panel, supplied and fixed.

The following text is taken from notes prepared by the architects for their own use of the cost study:

It would seem that one of the most important factors when considering the type of frame would be that of economy, and generally speaking the following rules for the design of windows would probably lead to the greatest saving.

1. Lightest possible weight of glass

Design size of panes to ensure that no thicker than 32-oz. glass is necessary. Note that ¼-in. polished



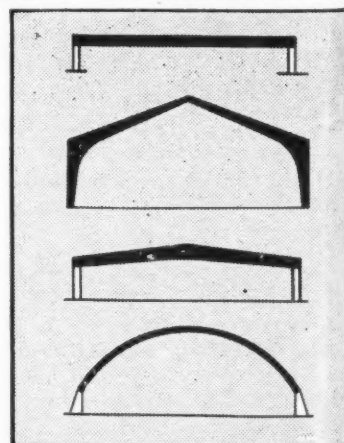
COVERAGE

WITH LAMINATED TIMBER

DISTINCTIVE. Kingston Glued Laminated Timber Arches are distinctive in appearance, structurally perfect and provide clear spans, quick erection and durability without maintenance.

SCOPE. They offer limitless scope to the architect, engineer and industrialist, combining permanence, strength and utility with an individual grace which makes them a suitable medium for both modern and traditionally designed buildings.

OUR SERVICE. The Laminated Timber Structure Division of our Company offers a specialised service in the design, manufacture and erection of glued Laminated Timber Arches, Beams and other forms of fabricated structural wood. We offer consultative assistance in the selection of the correct form of roof structure and the design of trusses, arches or beams. Please send for full details of our service.



The examples show some of the limitless structural forms which are available using this technique.



KINGSTON LAMINATED TIMBER STRUCTURES

KINGSTON ARCHITECTURAL CRAFTSMEN LTD.

MINSTER WORKS

HULL

technical section

plate glass is 7s. per sq. ft. and 32-oz. is 2s. 1d. per sq. ft.

2. Sight lines of eye level, sitting and standing

These are design factors.

3. Minimum opening area for ventilation

Opening lights are 3 to 4 times more expensive than fixed. After satisfying the requisite amount of opening lights, *i.e.* not greater than $\frac{1}{2}$ to $\frac{2}{3}$ of total area, keep remaining area fixed.

($\frac{1}{2}$ to $\frac{2}{3}$ of total area is necessary for summer use and is the critical amount, as six air changes per hour can be achieved with a much smaller amount of opening light than this.)

4. Window openings

Side-hung opening-out or top-hung have the advantage of simplifying any fixing systems of blinds, etc. The order of economy of types of opening would appear to be as follows:

- (a) Side-hung and top-hung.
- (b) Horizontal or vertical-centre-hung.
- (c) Projected.
- (d) Sliding sashes.

5. Safety rail where windows open at sill level

These would probably only be necessary on multi-storey schools of over three storeys, but some authorities require all upper floor opening windows to be so protected. Generally sill levels should be not less than 2 ft. 9 in. from floor level.

Precautions should also be taken where a breakable material is used in the undersill panel and where it would be vulnerable from the inside. Two horizontal rails could be used here between columns to prevent kicking.

6. Minimum weight of structure

Applies mainly to the cladding material in the undersill panel.

7. Weatherproofing joints

Metal windows have normal weatherproofing of joints. Timber windows are not quite so simple—throating and projections of sills is necessary to throw off water. Multi-storey buildings have additional dangers of a large vertical impervious face producing a volume of water running on the face of the lower storeys with subsequent scouring effects on the mastic joints. Particularly vulnerable is lower joint of undersill panel where panel is often fixed from inside.

8. Good appearance

This is invariably related to cost and maintenance. Painted external surfaces are satisfactory on buildings up to three storeys in height where repainting would not involve costly scaffolding. It would be advisable, however, on multi-storey buildings to consider maintenance-free materials, such as untreated hardwood or aluminium. Of the hardwoods, teak is the ideal

but is prohibitive in price for school buildings. African mahogany may possibly be used, and also a combination of hardwood external strip to a softwood main frame. Milled finish aluminium is satisfactory in appearance initially but tends to have a dull grey finish after weathering. Anodising and other aluminium finishes may be satisfactory but are as yet insufficiently tested, and at present too expensive.

9. Small quantities

For small numbers of a given type of window frame in timber, add up to 10 per cent. to the prices for quantities of 200 (where applicable). For metal windows small quantities can incur considerable price increases, particularly if special sections are required.

Undersill panel

The difficult performance characteristics are these:

- Weatherproofing.
- Corrosion resistance.
- Impact resistance.
- Weathering.
- Colour.
- Freedom from maintenance.
- Necessary fire resistance.

Cost

Very few materials satisfy all the requirements. It was considered that the provision of good insulation of the undersill panel was not a necessity as the area involved was only a small percentage of the whole window area which was in any case all glass.

It is probably better to keep the construction of the undersill panel as simple as possible, *i.e.* one single skin. When cavities and lining materials are introduced, not only does the price increase, but there are added difficulties of condensation, vapour barriers, ventilation of cavity and colour treatment of lining materials to consider. Most of the proprietary panels available on the market provide these constructions ready made up and are consequently rather too expensive.

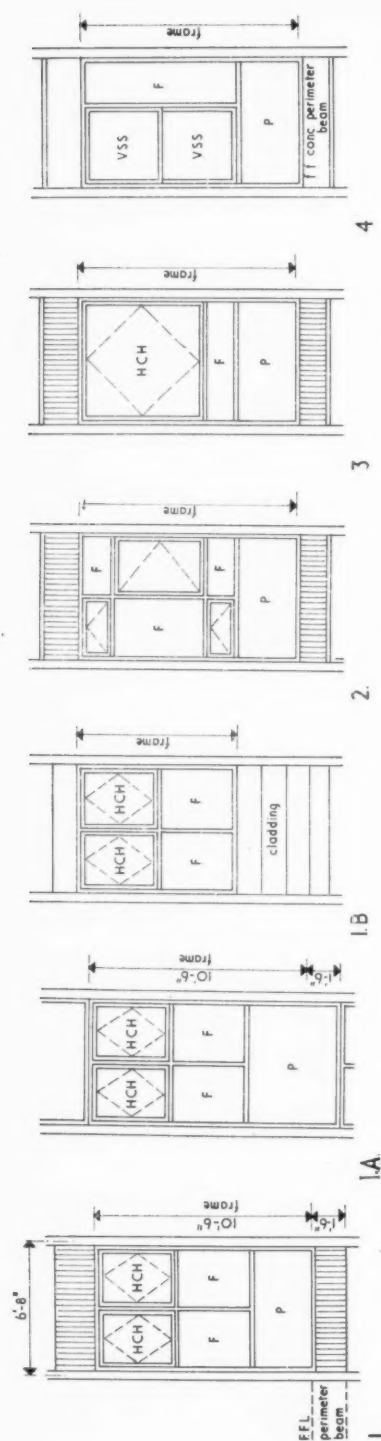
Considering materials class by class:

(a) *Glass*: a single skin of $\frac{1}{4}$ -in. Georgian wired cast glass provides a most economical panel, and providing it is used on schools of less than three storeys where no fire resistance is called for, it is satisfactory. Stove-enamelled coloured glass is another material which is satisfactory where colour is required. The wired version of this glass has been discontinued because of the heat build-up caused by the stove-enamelled colour expanding the glass differently from the wire and cracking the pane.

Glass fibre filled double glazing may be an economic possibility provided the panes are kept small.

Where a fire resistance of 1 hour is required wired cast glass can be used with a concrete or breeze wall backing. Although the manufacturers claim 1 hour fire resistance for wired glass, the MOE accept only 30 min. and therefore the difference must be made up with a form of backing. As mentioned previously,

technical section



FRAME

[illegible]

this is where complications arise with cavities, condensation, vapour barriers, etc. When using a transparent outer-skin it is important to have a large cavity of at least 6 in. ventilated, to dissipate the build-up of heat, and prevent cracking of the glass. 3-in. concrete block with coloured glass—or 3-in. breeze block with $\frac{1}{4}$ -in. wired glass should satisfy fire resistance requirements.

(b) *Metal*: the main difficulty is to assess what deterioration will take place in time due to the weather. Stove-enamelled metal panels may require fairly frequent repainting. Vitreous enamelling, however, has a very much better finish and impact resistance. Its range of colour, good appearance and fire resistance make it a feasible material to use on high buildings. The thinness of the panel means that it would require stiffening, perhaps by bonding either $\frac{1}{2}$ -in. asbestos fibreboard or $\frac{1}{4}$ -in. fibreboard to the back, and inserting the panel in a rebate with the necessary mastic bedding. The cost depends on the size of panel and it is important to ensure the minimum waste out of the standard manufactured sheets. This affects the price considerably. Other metals such as flat sheet or corrugated aluminium tend to be slightly too expensive in relation to the target figures.

(c) *Asbestos (and like materials)*: asbestos fibreboard, stove-enamelled is considered not sufficiently durable. The most satisfactory in this range appears to be asbestos sheet $\frac{1}{2}$ in. or $\frac{3}{4}$ in. coloured throughout its thickness. So far, there is little experience of the long-term weathering of this material, but it is likely to be satisfactory. It has no recognized fire grading.

(d) *Timber*: the MOE advise that no combustible material should be used externally on multi-storey buildings of four or more storeys. Timber, therefore, is confined to three-storey buildings. Western red cedar in the form of tongued and grooved boarding is an economical and pleasant material. Cedar wood shingles are also within the price range. Exterior quality plywood is a possibility, with a painted finish as an alternative, but the latter would raise the question of maintenance and weathering.

(e) *Concrete*: concrete claddings have been well tried in the past, and satisfy many of the requirements as to fire resistance, etc., but are rather expensive for school work. Alternatives, in the form of concrete blocks bedded in mortar without the use of cramps, may be a possibility.

(f) *Brick* : where fire resistance is required this is a satisfactory material. In one skin it is not sufficiently weatherproof and a cavity and inner skin would be required.

Tables of costs

GLASS	Area		
	41 sq. ft.		
	£	s	d
½-in. obscured glass—arctic. All types except 3	3	1	6
26-oz. glass—types 1—1A—1B	3	11	9
½-in. broad reeded glass—all types except 3	4	2	0

technical section

	£	s	d
32-oz. glass—types 1—1A—1B—2—4*	4	5	5
½-in. Georgian wired cast—all types	4	12	3
½-in. Georgian wired polished—all types	14	17	3
½-in. polished plate—type 3	14	17	3
2—32-oz. hermetically sealed double glazing.			
Type 1—1A—1B—2—4	18	19	3
½-in. armour plate—type 3	22	11	0
½-in. anti-sun—all types	23	1	3
2—½-in. plate hermetically sealed double glazing.			
Type 1—1A—1B—2—4	35	17	6
½-in. polished heat absorbing glass. All types	40	5	5

* Schools cost target £4 7s. 6d.

UNDERSILL PANEL (Fire Resistant)	Small panel 17 sq. ft.	Large panel 25 sq. ft.
	£ s d	£ s d
1. ½-in. Georgian wired rough cast glass bedded and pointed in mastic with small fillet around; 6-in. cavity and 3-in. breeze block inner skin plastered two coats emulsion paint, with softwood painted skirting	5 13 4	8 6 8
2. Half brick wall in facings. P.C.250s. per 1000, with cavity and ties and 3-in. breeze inner skin. Sirapite and 2 coats emulsion paint, with softwood skirting and flashing over edge beam	5 19 0	8 15 0
3. ½-in. Georgian wired rough cast glass (as 1) but with 3-in. concrete block inner skin	6 4 8	9 3 4
4. As for (2) above but P.C. for bricks 450s. per 1000*	7 1 8	10 8 4
5. Precast cladding (coffered concrete) block with exposed aggregate—standard type of fixing with clips. 3-in. breeze partition, inner skin plastered two coats Sirapite and painted two coats emulsion paint, with softwood painted skirting—	7 10 2 to 8 0 1	11 0 10 to 11 15 5
7-in. × 1½-in. hardwood or quarry tile sill (according to aggregate)		
6. Precast cladding (coffered concrete) block plain grey concrete—standard type of fixing with clips. 3-in. breeze partition, inner skin plastered two coats Sirapite and painted two coats emulsion paint, with softwood painted skirting—	7 11 7	11 2 11
7-in. × 1½-in. hardwood or quarry tile sill		
7. Vitreous enamelled panel and framing with cavity and 3-in. breeze block at back, plastered and two coats emulsion paint and softwood painted skirting	7 13 0	11 5 0
8. As (6) but patterned to simple pattern	7 15 5	11 9 2
9. As (6) but patterned and colour added to concrete mix	7 18 8	11 13 4
10. Half brick wall in Flettons rendered externally with patent special aggregate finish, with cavity and 2-in. woodwool inner lining—plastered internally with two coats emulsion paint and softwood painted skirting	8 8 7	12 7 11

* Schools cost target £7 5s. 0d.

	£ s d	£ s d
11. As (6) but reconstructed Portland stone, sand-faced finish	8 12 10	12 14 2
12. Finely rubbed reconstructed stone with backing as (6)	9 12 8	14 3 4
13. 2-in. thick Portland stone, including cramps with backing as (6)	22 6 3	32 16 3
14. Broughton Moor riven face slate including fixings in small slabs approximately 1 ft. 4 in. × 2 ft.	42 10 0	62 10 0

UNDERSILL PANEL

(Non-Fire Resistant)

Small
panel
17 sq. ftLarge
panel
25 sq. ft

	£ s d	£ s d
1. ½-in. Georgian wired cast glass bedded and pointed in mastic with small hardwood fillet around inside (no mullion)	3 0 11	4 9 7
2. ½-in. coloured stove-enamelled glass all as above	4 10 8	6 13 2
3. ⅝-in. coloured opaque glass as above	5 4 10	7 14 4
4. ½-in. external quality plywood with Zebrano veneer painted 3 oils internally with mastic bedding and small fillet	6 11 9	9 13 9
5. Cedar shingles on battens and framing with felt underlay and hardboard internally with skirting and painted 3 oils	6 17 5	10 2 1
6. 1-in. Nominal Western Red Cedar vertical boarding (t. & g.) on framing with hardboard internally painted 3 oils and skirting*	7 0 3	10 6 3
7. 2 × 32-oz. hermetically sealed double glazing with coloured membranes, bonded to ½-in. asbestos composition sheet. Fixed as above	8 4 4	12 1 8
8. ⅝-in. thick asbestos composition—in different colours, sanded both sides, bedded and pointed in mastic with fillet at back	8 1 6	11 17 6
9. ¾-in. stove enamelled asbestos composition, bedded and pointed in mastic with fillet at back (subject to weathering and impact damage)	9 5 7	13 12 11
10. Ex. 4-in. × 1-in. Sapele mahogany (t. & g.) vertical strip with underfelt on 2-in. × 2-in. timber frame. Left unoiled	11 18 0	17 10 0
11. Ex. 4-in. × 1-in. teak as above	12 19 3	19 1 3

* Schools cost target £7 5s. 0d.

PERIMETER BEAM COVERING

Structure of beam not included in cost

Area
8 sq. ft.

	£ s d
Fairface concrete perimeter beam. Bush hammered	5 4
Concrete perimeter beam painted with chlorinated rubber base paint (2 coats)	6 8
Western Red Cedar weather-boarding on battens—fixed to concrete perimeter beam	1 18 10
6-in. × 6-in. glazed tiles bedded to concrete perimeter beam	2 6 0
Western Red Cedar weather-boarding on battens—fixed to framing (included in cost)*	3 2 10

* Schools cost target £7 5s. 0d.



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POLICE HEADQUARTERS

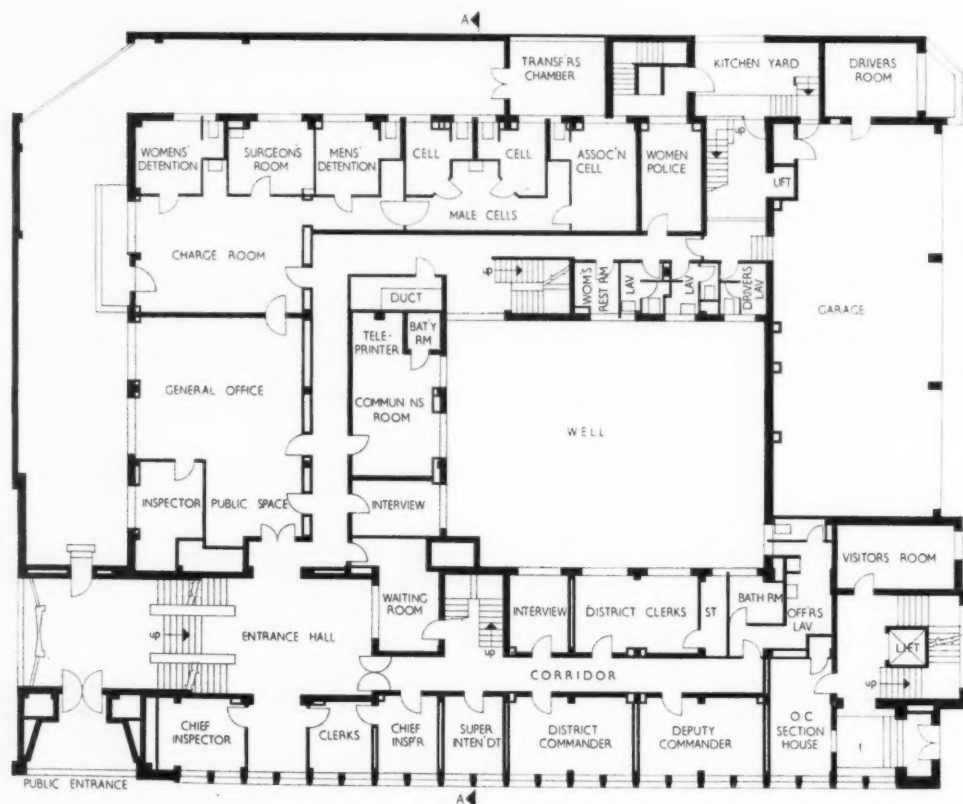
in EARL'S COURT ROAD, LONDON, W.8; designed by J. INNES ELLIOTT, chief architect and surveyor, New Scotland Yard; senior architect-in-charge G. B. VINT; executive architect E. FRANCIS JONES; consultants (structural) BRC ENGINEERING CO. LTD.; (electrical and heating) A. L. COLLIS, chief engineer, New Scotland Yard; quantity surveyors DAWSON and PRICHARD

This police building, on a restricted site in a residential area, provides accommodation for three distinct purposes. It is the headquarters of No. 1 Metropolitan Police District, a sub-divisional police station, and a hostel for single policemen. The architects had to build on a sub-structure which formed part of a pre-war design. The building is the subject of J. M. Richard's critical article on page 694.

Viewpoint 1, front elevation of the building from the Earl's Court Road.



building illustrated

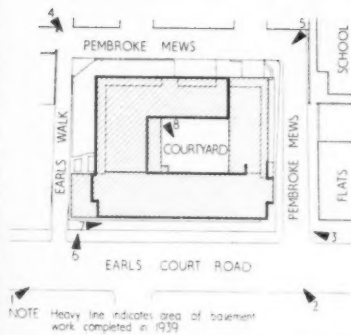


Ground floor plan

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

Viewpoint 2, the main elevation, from the north. Three sides of the building are taken up to three storeys; the fourth side, facing the Earl's Court Road, is carried up to six, the top floors being bedrooms in the hostel for single policemen. Windows to the ground and first floor offices of the District Headquarters have double glazing as sound insulation. No such protection is given to the bedrooms, many of which are in use for sleeping during the day when traffic noise is heaviest.

analysis



Site plan showing photographic viewpoints

Viewpoint 3 (above): pedestrian's eye-view from the Earl's Court Road. The doorway on the right is the entrance to the hostel. From this oblique point of view, one of the most important of any urban building, the alternation of surround to reveal for the upper floor windows is perplexing. There is, of course, no functional reason for the feature, which was presumably added to create interest. Viewpoint 4 (below): the block in the foreground is accommodation for the local police station, the ramp leading direct to the charge room. The vertical strip to the tall block provides lighting to the staircase serving the district headquarters and the police station upper floor offices. The spandrel panels are Agba boarding with teak cover strips secured to battens plugged to common brickwork. The top floor under the barrel vault is the tank room. The structure on the roof which bears little relation to the rest of the building is an air intake to the plenum ventilation system in the basement and lower ground floor.



CLIENT'S BRIEF: his stated requirements

A building to house three distinct functions: the headquarters of a Metropolitan Police district, a sub-divisional police station and a hostel for single policemen, known as a section house. The detailed span requirements of each particular function are laid down in the Home Office Memorandum on the Design and Construction of Police Stations. Certain standards of construction for civic defence requirements are also laid down.

SITE, topography, surroundings, access and planting

The site fronts onto the Earl's Court Road, a non-arterial but nevertheless busy thoroughfare linking the West Cromwell Road to Kensington High Street, and on the remaining three sides by mews, giving it all-round access. The site is almost flat with a subsoil of clay and sandy shingle with a bearing capacity of two tons per sq. ft.

PLAN: general appreciation and relation of units

As the development had to be fairly concentrated, the architect had to arrange the accommodation so as to give direct access at ground level to those functions which needed it most. The section house or hostel could be at high level, where it could be more effectively insulated from external and internal noise, and would have better views. Ground level access was essential for the garage, and for parts of the police station proper, such as enquiries, charge room, cells, and communications room, the remaining space on the ground floor being allocated to the smaller executive offices of the district headquarters. Both parts shared a common entrance hall. Ground floor accommodation is double banked about a central corridor, which necessitated a central courtyard to act as a light well. The first floor contains the remaining accommodation for the police station and district headquarters, and the section house communal rooms which were best located near the ground. The second floor provides recreation and canteen facilities for all three functions which share a common kitchen. The three upper floors on the Earl's Court Road side are occupied by the double-banked section house bedrooms, which carry on above as a simple repetitive pattern.

MAIN CONSTRUCTION: general appreciation

The reinforced concrete frame and floors are carried on the massive concrete retaining walls of the lower ground floor and basement. The "roof" of the lower ground floor is designed to carry the complete load of the building as a heap of rubble on top of it. Cladding also has to do more than the usual job of keeping the weather out and the heat in; it must be to a certain extent blast proof, implying strength in tension which is given by solid 13½-in. brickwork built in Quetta bond.

	cost per sq. ft.	s	d
preliminaries, contingencies and insurances		3	6½

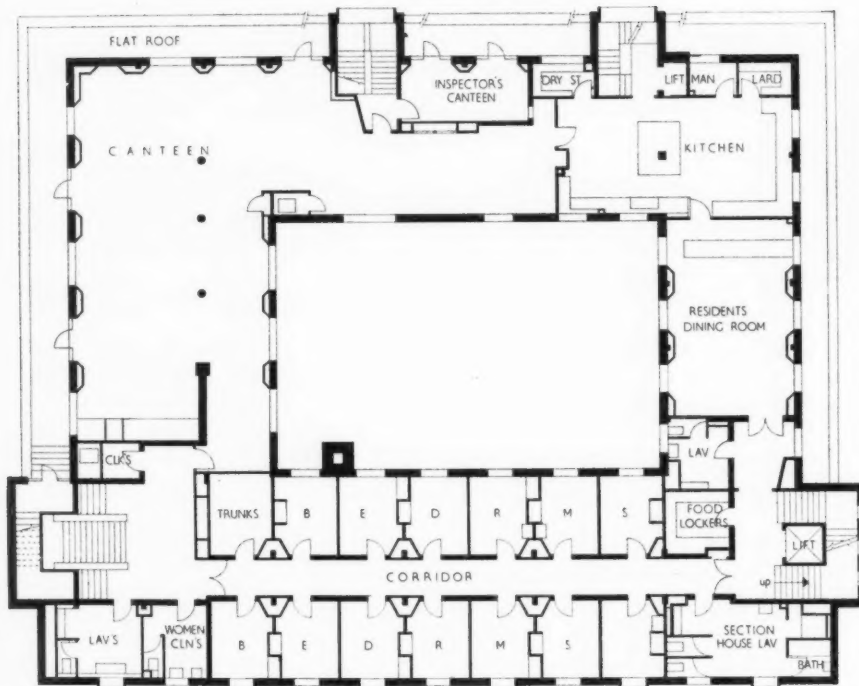
STRUCTURAL ELEMENTS

Work below ground floor level

8 10

Basement, lower ground floor: continuous r.c. slabs and walls with high alumina cement; generally 24 in. thick, thickened out at perimeter or when required to form foundations; this massive structure for strength and continuity was a Civil Defence requirement. There is no tanking to the basement, waterproofing relying upon the thickness of concrete, the mix and cement used. Some of the work below ground floor was executed under a pre-war contract. Part of this work is included in the cost analysis.

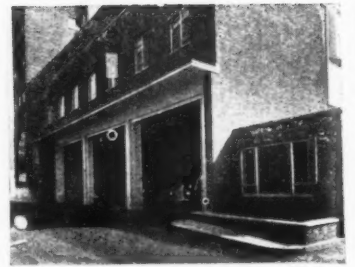
building illustrated



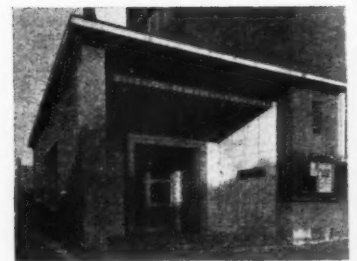
Second floor plan



First floor plan [Scale: 3/4" = 1' 0"]



Viewpoint 5: the entrance to the garage. Sliding-folding doors are in steel, painted. Bricks are a reddish brown colour, with mortar to match. The heavy white efflorescence below the copings is thought to be due to the brickwork being exposed for many weeks before the copings and damp-proof courses were added.



Viewpoint 6: main entrance from the Earl's Court Road to the district headquarters and the sub-divisional police station. Materials used throughout the elevations have been gathered together here in an attempt to create richness. The Agba and teak facings used for the canopy spandrel forms a light unsubstantial valence to the featured light fittings which are on a plastered ceiling painted blue. The main door surround and the false column on the left are of polished grey Cornish granite, while the main reveals to the entrance are dressed Portland stone. The main door itself is of natural polished oak with 1/4-in. polished plate, acid-etched with a jazz motif. The reveals to the main glazed doors are actually a second pair of strong oak-faced flush doors for use in times of civil disturbance.

analysis

s d
7 11½

External walls and facings

Generally: 2½-in. multi-coloured rough textured bricks in "Quetta" bond, because cladding when subjected to blast tends to be sucked out. Some continuity and strength in tension is given by the use of "Quetta" bond, a method of bricklaying which forms vertical cavities 4½ in. × 4½ in. at approximately 3-ft. 6-in. centres which are reinforced with m.s. bars and filled with concrete. Elevation to Earl's Court Road: natural stone facings hammer dressed Portland stone with Cornish granite insets, all secured by cramps and joggle joints.

Timber boarding: external facings above staircase windows of Agba and teak boarding on battens plugged to common brickwork.

Internal courtyard and some window surrounds: fireclay frost-proof tiles fixed on render; light colours to give good reflection. Mullion, heads and sills to ground floor windows in Earl's Court Road: artificial stone facings secured with galvanized steel slot, cast in with sliding bonding ties.

Frame

Generally: reinforced concrete (1:2:4) beam and column; beam spans vary from 26 ft. to 10 ft. Column grid varies considerably. On Earl's Court Road side (carrying the section house over) grid is 9 ft. × 10 ft. As the frame is not exposed internally in any way, it was possible to organize the structure in any direction to suit the particular requirements of the rooms, which apart from the section house bedrooms, vary greatly in size. For this reason no module or planning grid was used.

Upper floor construction

Generally: 6-in. reinforced concrete slab with mesh and distribution bars, finished to insulating screeds; for strength, continuity and the tying together of the frame. Heating panels are buried in the solid concrete slabs. Cost included in frame.

Staircases

Solid in-situ r.c. slabs, 1:2:4; hardwood handrails, m.s. 1-in. balusters. Main staircase serving the police station and divisional h.q., staircase serving section house, subsidiary stairs and five emergency stairs. Finish: travertine, marble, terrazzo and granolithic.

Roof construction

Flat roofs of in-situ slab concrete reinforced with mesh and distribution bars, finished with 2-in. cork insulation, building paper, screed to falls finished with ¾-in. asphalt or built-up felt protected with cement tiles. Section house (6-storey block): in-situ slab barrel vault, finished with built-up felt; roof covering chosen for fitness of purpose. Asphalt on flat roof, tiled felt where roof traffic will occur, and felt on barrel for workability to shape.

Windows

Ground floor windows to Earl's Court Road: metal sections, double glazing, to give insulation against air-borne sound from busy road. Elsewhere: standard "Z" type casements used to keep down cost.

Cells: precast fairface r.c. frame with glass lens panels; reason: unbreakable, good light from obscured source.

Main and section house staircases: oak framed lights, with clear varnish finish, detailed to shape of brick arch.

7 0½

1 3

2 6

1 9



Section A-A [Scale: 3/8" = 1' 0"]

Viewpoint 7: close-up of the ground floor windows to the Earl's Court Road. The surrounds to the windows are in pre-cast artificial stone, the continuous head member being flashed with asphalt. Windows are steel casements painted with a bronze finish. The plinth is hammer dressed Portland stone with a continuous sill and inset of grey polished Cornish granite. The efflorescence at low level is probably due to contact with some deleterious material in the paving slabs or below them.



analysis



analysis

Opposite page, top left: on top of the six-storey portion there is a reinforced concrete barrel vault roof which can be seen on the previous views from the Earl's Court Road. The roof houses, at either end, a motor room and a tank room. Between these spaces the vault, which has the appearance of solidity to the main elevation, is cut back to form a roof garden for the use of the section house personnel. Unfortunately, the roof garden is mared by the nearby deposits of soot from the boiler flue in the left foreground. The roof covering is built-up felt protected by pre-cast cement tiles. The barrel vault itself is covered with built-up felt layed direct on the concrete without screed. Opposite page, top right: executive offices for the district headquarters are double banked on the ground and first floors of the six-storey block. They have double-glazed windows to the Earl's Court Road to effect insulation against air-borne sound. In these rooms and elsewhere throughout the building a possible lack of funds and an urgent desire for richness of materials have been reconciled in the choice of a wallpaper printed to represent wall panelling. Floors to these offices are 1-in. muringa wood block. Opposite page, bottom: the ground floor is raised above pavement level and inside the main entrance doors this short flight of stairs leads to the foyer off which are the offices to the district headquarters and the enquiry room of the sub-divisional station. The foyer is used as a waiting space and is ornamented with a central feature consisting of a suspended fibrous plaster dome over a timber column carrying a light fitting which is protected by a circular seat. Further sterile embellishment has been added by depicting scenes of police activities acid-etched on the glass to the double doors in the background. The staircase is in-situ reinforced concrete with treads and risers of Travertine marble and plastered soffits. Highly efficient finishes are required in police stations, which, like hospitals, are used 24 hours a day.



Above: space in the lower ground floor is given over mostly to storage and cleaning purposes except for the parade room and P.T. room seen here. It has no fixed equipment and provides useful multi-purpose space for lectures, etc. Because of intermittent use this and similar areas are heated by radiators which can be manually operated when required.

External doors

Main entrance: oak framed glazed doors with external quality polish and natural finish; vision in two directions essential.

Elsewhere: solid core external quality plywood-faced flush doors, for easy maintenance.

Garage: steel sliding folding doors, painted, for ease and speed of manipulation.

Glazing

Generally: 24-oz., 26-oz., and 32-oz. clear glass.

Enquiries door: armour plate glass; and main

entrance doors: wired Georgian plate glass;

reason: vision—minimize breakages.

PARTITIONING

Internal partitions

Generally: hollow blocks 2 in., 3 in. and 4 in., with plaster finish.

Cells: reinforced concrete, 8-in. cavity wall with two 3-in. skins, tiled; reason: hygiene—easily hosed down and cleaned.

Internal doors

Bedrooms: 1½-in. solid core ply-faced flush doors and solid core oak lipping, painted, were chosen for durability.

Offices: 1½-in. solid core oak veneer ply, stained, waxed and polished; reason: appearance and maintenance. Cost includes w.c. doors.

W.c. doors

Generally: s w flush ½-in. ply-faced solid core, painted; reason: solid core for heavy wear.

Office floors: flush ½-in. ply-faced solid core with oak veneer, to match oak doors in office corridors, stained and wax polished. Cost included in internal doors.

Ironmongery to internal doors

Generally, offices and bedrooms: silver bronze lever handles, mortice locks, Perspex room number plate, signs and push handles; reason: door locks suited to master key.

FINISHINGS

Floor finishes

Section house lounge, Divisional H.Q. and commander's office: 1-in. muringa wood block, polished; reason: richness of appearance. All floor finishes laid on screeds of varying thicknesses, 35s. per sq. yd.

Library, teleprinter space and conference room: 12-in. × 12-in. × ⅝-in. tongued and grooved cork, polished; reason: quiet to impact noise; 35s. per sq. yd.

Cell block: ¾-in. green mastic asphalt, natural finish; reason: head office requirement; 50s. per sq. yd.

Lavatories: 6-in. × 6-in. leatherbrown quarry tiles; reason: hard wear to continuous washing down; 22s. 3d. per sq. yd.

Offices, corridors and canteens: vynol tile, polished; reason: hard wear, relatively cheap.

Plain 25s. per sq. yd.; patterned 31s. 3d. per sq. yd.

Offices and bedrooms: lino tile, polished; reason: relatively cheap, quiet to impact noise. Plain

23s. 6d. per sq. yd.; mottled 29s. 4d. per sq. yd.

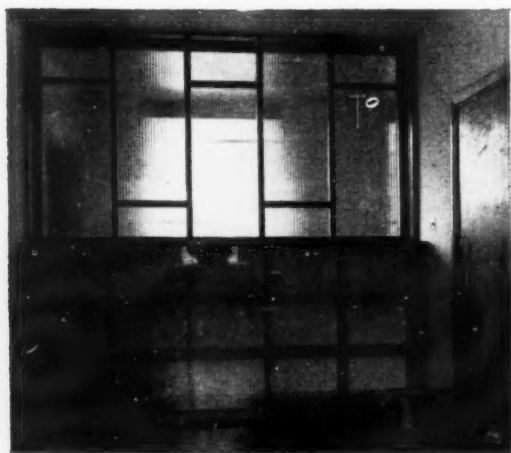
Kitchen: tessellated tile; reason: hard wear to continuous washing down.

building illustrated



The kitchen on the second floor has its own independent access from the mezz. It has one servery for the hostel dining room and another for the canteen (above left) provided for the station and headquarters staff. Heating, as throughout most of the building, is by ceiling panels which are buried in the structural concrete floor. Ceiling plaster is a special mix of lino plaster and plaster of Paris recommended by Invisible Panel Heating Association for use with ceiling heating. Decoration to walls is emulsion paint or wallpaper and distemper to ceilings, and the floor is of vinyl tile. The main staircase (above right) continues up the building with single flights to half landing and double flights to landings. Above the first floor the travertine marble finish is replaced with terrazzo. Handrail is of natural polished oak with 1-in. square m.s. supports. One of the amenities for the residents of the hostel is a small library and reading room of which the glazed screen and bookcase (below left) forms one half. (The books have yet to arrive.) Most of the hardwood joinery, veneered flush doors, etc., are out of European oak with a natural polished finish. Below right: the section house has its

own access staircase which rises about the lift well. Apart from the unfortunate junction of skirtings at the commencement of the flight the monolithic quality of the terrazzo treads, risers and skirtings and the roughly textured walls give an interesting sculptural feeling to this area. The walls are plastered and finished with a cement-paint. The inlaid floor on the landing is a plastic finish laid in-situ and is proving to be slippery when polished. A lift door is on the left. Below centre: a hostel bedroom, of which there are 67 situated on the 2nd to 6th floors. They are double banked about a central corridor which is naturally lit by way of the fanlights above the bedroom doors. Because artificial light from the corridor lights the bedrooms at night, the fanlights are being covered up. Each room has a standard allocation of furniture and is provided with a built-in wardrobe and wash-hand basin. Showers and w.c.'s are provided on every floor while a separate room is allocated to food storage, each resident having his own small larder. Walls are finished with emulsion paint, and floors are finished with linoleum.



analysis

Entrance hall and corridors: plastic laid in-situ, polished; reason: cheap and quiet. Plain 19s. per sq. yd.; mottled 19s. 9d. per sq. yd.

Wall finishes

Canteen, conference room, bedroom, corridors: ordinary lime plaster; skirtings and dados: oak and softwood finishes: distemper, gloss and lustre, wallpaper, cement paint, s.w. panelling or painted; reason: semi-hard plaster for wear, oak—appearance and maintenance and s.w. standard practice. Cells: 12-in. × 8-in. × 1-in. glazed tiles; reason: head office requirements. Kitchen and lavatories: 6-in. × 6-in. × 3/4-in. tiling with eggshell gloss for cleanliness, wear and easy cleaning.

Ceiling finishes

Suspended ceilings: special mix, lime plaster and plaster of Paris: recommended by the Invisible Panel Heating Association for use with heating panels in ceiling; distempered. Elsewhere: ordinary lime plaster, distempered. Entrance hall dome: fibrous plaster, distempered; reason: pre-cast for special shape.

Decorations

Walls and ceilings: cedar and 2 coats distemper. Walls: cedar and 2 coats matt emulsion. Woodwork: primer and 3 coats gloss oil. Staircase walls in section house: cement paint matt finish; reason: texture of finish and hardwearing qualities.

FITTINGS

Billiards room and enquiries: oak seats to billiards room, stained and wax polished natural finish. District Commander's room, etc. and library: oak wardrobes and shelves, stained and wax polished. Divisional H.Q. and section house: oak display cases stained and wax polished natural finish. Canteen counter and grill: s.w. framing, ply, paint. Cells: teak seats with polished natural finish. Entrance hall: oak seats and lamp in entrance, stained and wax polished natural finish. Bedrooms: skeleton framed ply-faced doors to bedroom and wardrobes, painted. Various cupboards, filing, etc.: skeleton framed/ply-faced doors, painted.

Kitchen equipment

Stainless steel or vitreous enamel gas-fired cooker, grills, steamer and fish fryer, glazed enamel refrigerator; standard equipment for M.P. canteens.

SERVICES**Plumbing external**

Courtyard and rear elevation: cast iron and copper welded rain-water and waste pipes, coated. (Cost includes plumbing internal and rain water disposal)

Rain-water disposal

Internal ducts: welded copper in conjunction with internal waste plumbing system discharging into combined drainage system, natural finish; reason: efficiency and low maintenance costs. Cost included in plumbing external.

Plumbing internal: waste disposal

Internal ducts: single stack system with copper welded pipe, natural finish; reason: efficiency, low maintenance costs, and no unsightly plumbing work. Cost included in plumbing external.

Hot water storage

Basement: two copper calorifiers for domestic hot water holding 350 gallons each, 130° F. maximum. 1st floor under kitchen: one small copper calorifier holding 80 gallons; reason: higher temperature calorifier for washing up purposes, 160° F. Cost included in heating installation.

Cold water storage

Tank room in roof over south end of section house: bulk storage in one cistern 12-ft. by 8-ft. by 4-ft. deep with pressed steel sectional plates, bolted. Actual capacity 1,800 gallons, nominal, 2,400.

Plumbing: sanitary fittings

W.c.'s, white glazed vitreous china, taps chromium plated brass, urinal stalls and white glazed fireclay in lavatories, surgeon's room, kitchen and cells. Stainless steel sinks under counters.

Heating installation

Generally except P.T. room and drivers' room: low temperature ceiling panels, 120° F., one air change per hour in offices, two in lavatories; reason: cleanliness, maximum floor area, minimum adverse effect on decorations, radiation via structure and not convection. P.T. room and drivers' room: radiators for occasional use.

Boiler type

Three automatic oil-fired steel boilers, maximum temperature 180° F., two at 920,000 B.Th.U.'s per hour and one at 495,000 B.Th.U.'s per hour: for low temperature ceiling heating panels with maximum temperature at 120° F. and hot water supply. Cost included in heating installation.

Water heater type to canteens

Canteen, dining room: electric water boiler; reason: minimum deterioration to decorations.

Ventilation System

Part of ground, lower ground and basement floors: twin cased centrifugal fans with air heater batteries and oil filtration plant situated in basement plenum chamber; galvanized trunking; fresh air intake situated at highest point of section house roof. Extracts on kitchen and section house roofs. Cost included in heating installation.

Drainage: type of system

Internal; combined: cast iron pipes with bolted access chambers, coated finish.

Kitchen ventilation

Aluminium frame, wired Georgian glass panels, natural finish; over island of cooking equipment; reason: easy collection of fumes, cleanliness, minimum obstruction of natural and artificial light. Cost included in heating installation.

Gas installation

Screwed barrel gas-fired kitchen equipment, painted.

Electrical installation: source and fitting type

Mains switch room: 240/415 volt, 3 phase, 4 wire a.c. supply from subway station on site. Offices 15/20 ft. candles, corridors 10/12 ft. candles, and bedrooms 11-ft. candles; reason: satisfactory intensity of light for respective uses.

Wiring and switching types

Concealed—laid in floor screeds: V.R.I. cable in steel conduit; Cost included in electrical installation.

analysis

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Power supply type

240/415 volt, 3 phase a.c., V.R.I. cables in conduit; reason: for interest (cost is for lightning conductors and their erection). lightning conductors (inc. builders work).

1

Lifts

1 5

Passenger lift in section house staircase: five persons 200 ft. per minute; in motor room on section house roof.

Goods lift in kitchen staircase: overhead lift room on kitchen roof; reason: estimated comfortable service to 6 bedrooms taking into account 24 hour duty rota.

5 1

Paved areas and external works

11

Courtyard: English cobbles, graded, and mixed granite aggregate squares.

Police station entrance: York stone. Station yard: tarmac. Boundary walls: 2-in. multi-coloured facing bricks Included in the cost per sq. ft. are also gates, planting, pavement works, brick flower boxes, paving outside section house entrance.

Contract sum £168,802

Total area 47,400 sq. ft.
total cost per sq. ft. of floor 71 3

SPECIAL ACOUSTICAL TREATMENT**Sound absorption material**

Acoustic tile ceiling and walls with cork floor in teleprinter recess to communications room.

Sound insulation

Ground and first floor offices to Earl's Court Road: double windows, with acoustic board lining between; reason: noise of traffic in Earl's Court Road. Generally: cavity wall partitions; a percentage of residents in section house are on night duty, which necessitates maximum wall insulation for those sleeping during the day.

TIME SCHEDULE

Drawings	Tender date	Contract signed
Sketch, September, 1952	October 28, 1953	February 5, 1954
Contract, April, 1953-54		

Work commenced	Work completed	Type of contract
February 15, 1954	December 7, 1956 (Section house occupied)	RIBA with B. of Q.

Comments: Various detail drawings developed during early stages of the job.

RATIOS

Area of enclosing walls	=	0.5775	
Total floor area		1	
Area of windows (incl. ext. doors)	=	0.1315	
Total floor area		1	
Area of solid wall	=	0.710	Total roof area = 0.211
Total floor area		1	Total floor area = 1

COST SUMMARY

Total ground floor area of superstructure 9,615 sq. ft.	Total floor area (excl. basement) 44,190 sq. ft.
Total floor area of basement 3,210 sq. ft.	Storey heights of basement 11.87 ft.
Basement and lower ground floor height 23.87 ft.	Tender date October 28, 1953
Tender cost of foundations and basement including lower ground floor structure	£20,280
Tender cost of superstructure	£148,522
Cost per ft. cube including basement 5s. 7½d.	

COST COMMENTS

Previous analyses have been published for Divisional Police Headquarters at Manchester (May 5, 1955) and Wellington (January 11, 1956).

The client's brief differs on each building according to Home Office requirements and the cost of each element is affected by the varying quantity factors. The main groups of elements are compared below:

	Manchester	Wellington	Earl's Court
Tender date	April, 1951	October, 1953	October, 1953
Foundations	13s. (includes basement in poor subsoil)	10s. 1d. (includes basement below water table)	8s. 10d. (part cost only—see analysis)
Structure	24s. 7d. (part steel frame) (part load-bearing brick) (precast concrete suspended floors and roofs) (walls strengthened for civil defence requirements)	30s. 9d. (part reinforced concrete frame) (part load-bearing brick) (in-situ suspended floors and roofs) —	26s. 7½d. (reinforced concrete frame) — (in-situ suspended floors and roofs) (walls and ground floor strengthened for civil defence requirements)
Finishings	5s. 9½d. (general wall finish is painted plasterboard) (ceilings included with costs of structure)	9s. 7d. —	9s. 9d. —
Furniture, fittings and equipment	1s. 1d.	2s. 9d. (includes bar fittings)	2s. 0½d.
Services and special equipment	13s. 0d.	13s. 1d.	19s. 1½d. (includes lifts for 7-storey section house)

One item which the Earl's Court analysis throws into sharp relief is heating, which amounts to 10s. 6d. out of a gross total of 71s. 3d. It cannot yet be assessed whether the cost of installing the oil-fired, ceiling-panel heating system is offset by the running and maintenance costs.

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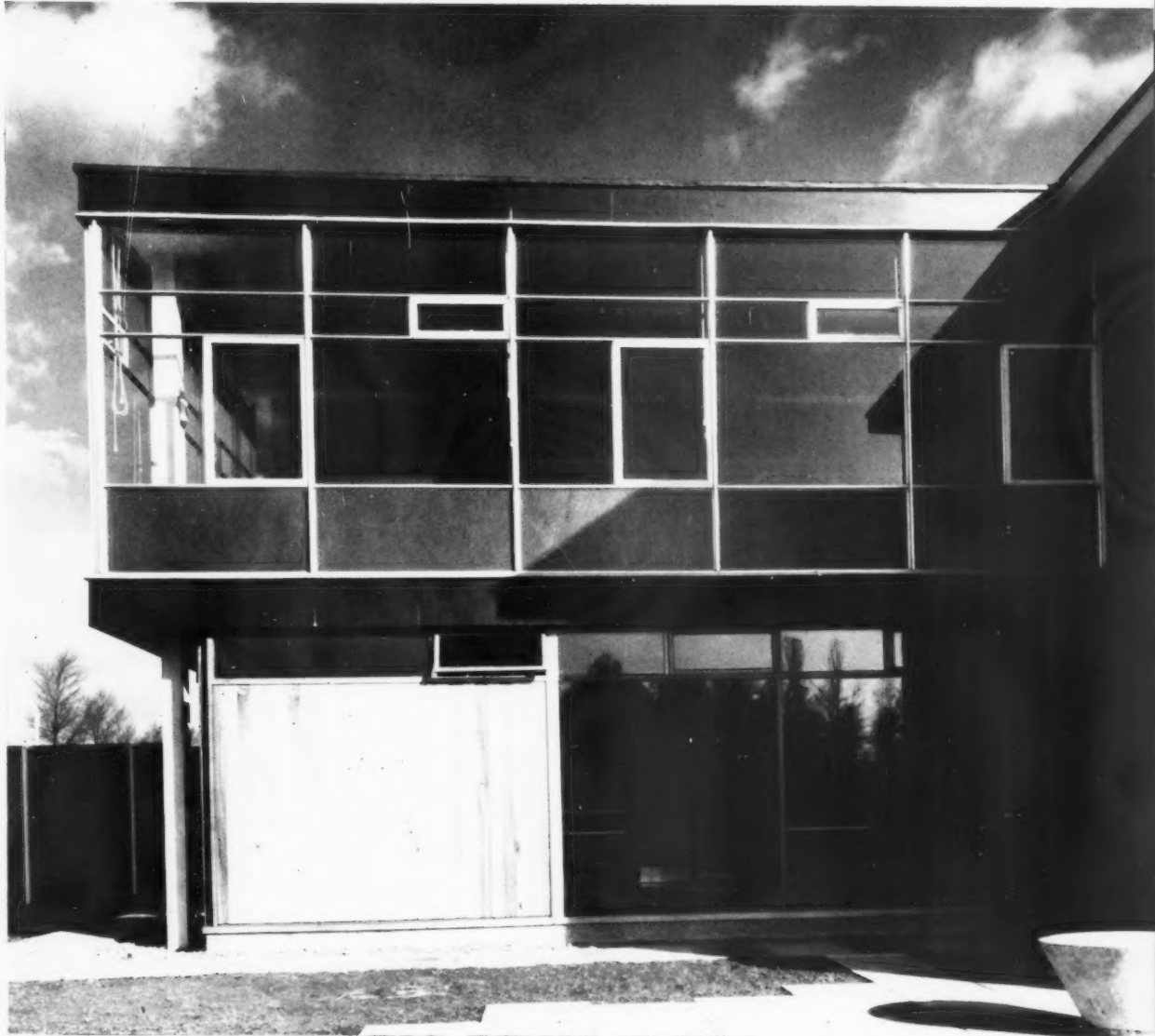
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GLAZED WALL: OFFICES AT CARDIFF

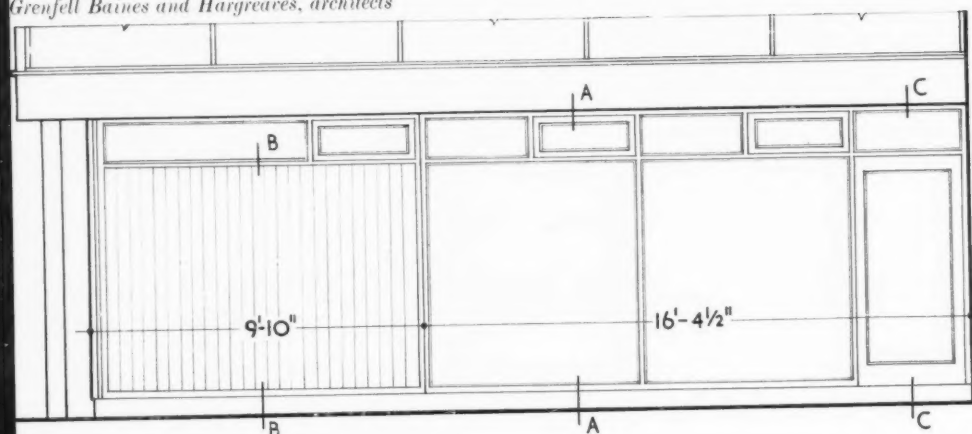
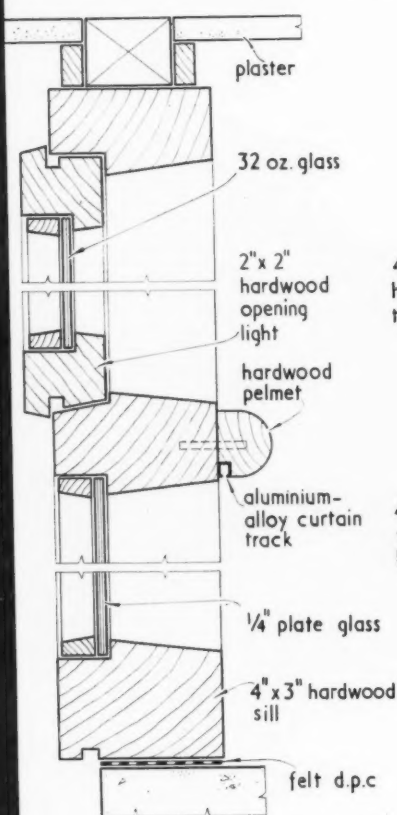
Grenfell Baines and Hargreaves, architects

The framing and vertical boarding is Meranti finished with alkyd varnish; the plywood which backs the solid partition is faced with mahogany veneer. One interesting detail (which is not visible on the photograph) is the pelmet-cum-curtain track which is fixed behind the transom above the two large lights. This (as can be seen from the drawing) consists of a moulded and rebated hardwood member (which is only 1½ in. by 1½ in.) secured with hardwood dowels to each mullion into the rebate of which is fixed an aluminium extrusion to receive the nylon runners.

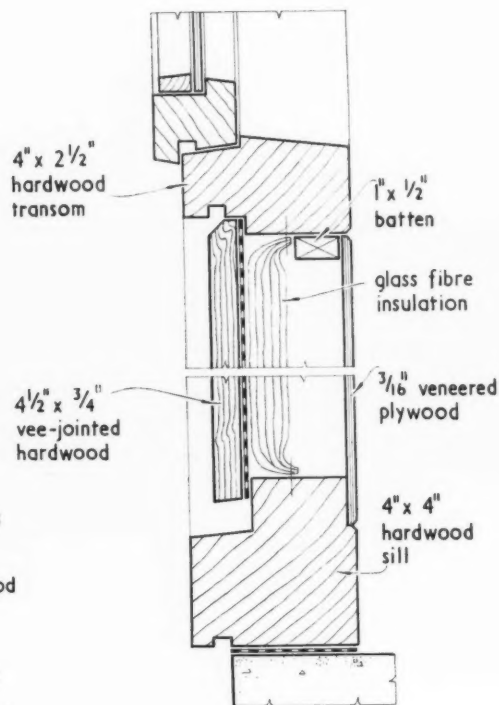
working detail

GLAZED WALL: OFFICES AT CARDIFF

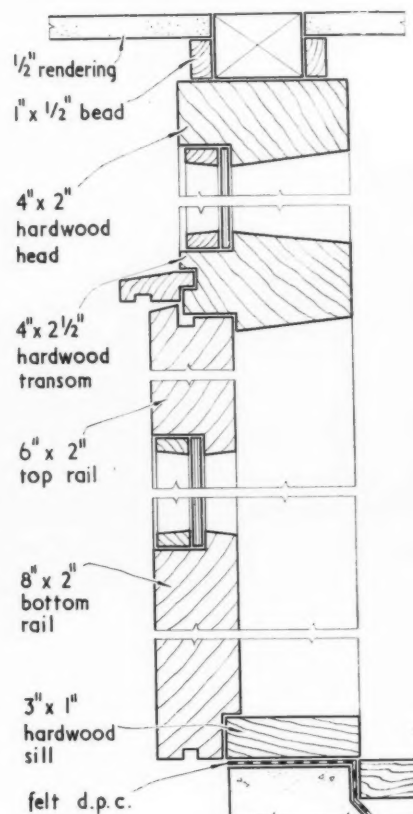
Grenfell Baines and Hargreaves, architects

ELEVATION OF WALL. scale $\frac{3}{16}'' = 1'-0''$ 

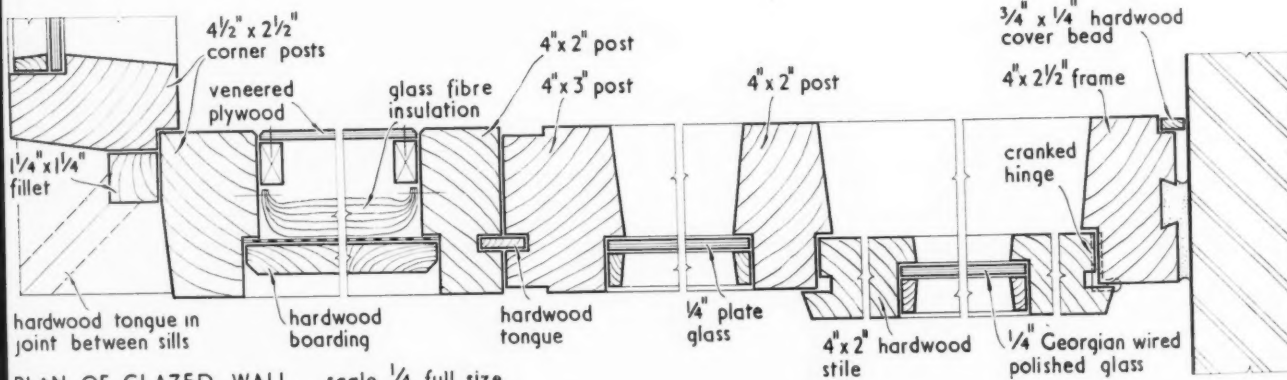
SECTION A - A.



SECTION B - B.



SECTION C - C.

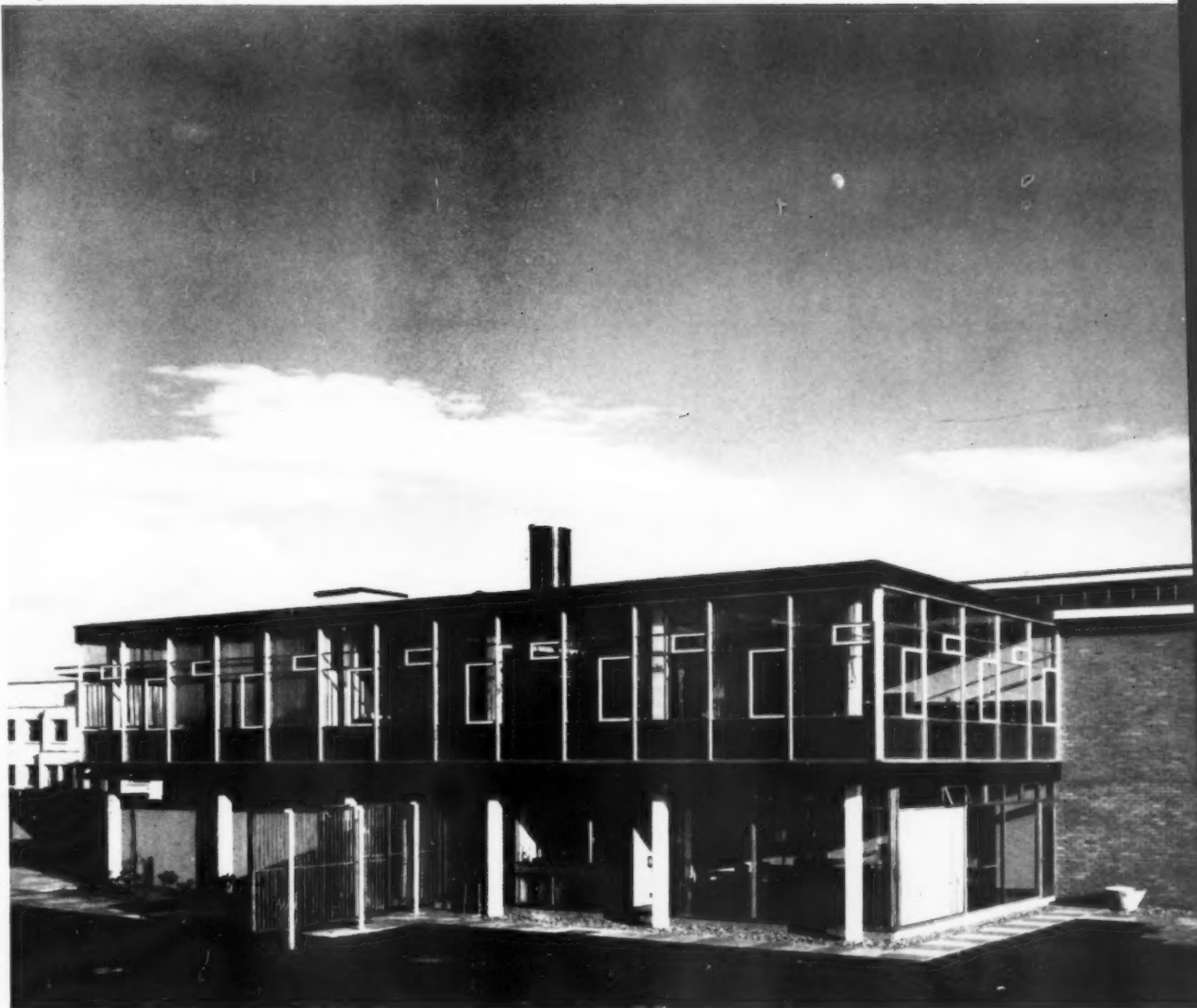
PLAN OF GLAZED WALL. scale $\frac{1}{4}$ full size

working detail

WALLS AND PARTITIONS: 46

GLAZED WALL: OFFICES AT CARDIFF

Grenfell Baines and Hargreaves, architects



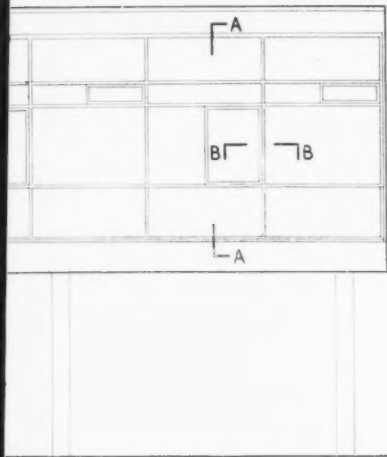
This is a good example of a good cliché in present-day English industrial architecture: namely the use of single-storeyed curtain walling with slate fascias to lighten the effect of a reinforced concrete structure. In this particular proprietary brand of walling a mill finish aluminium framework is bolted to a system of 3½ in. by ¾ in. galvanised steel mullions. Behind the glazed "leg guard" is a combined asbestos and rockwool back-up panel which gives the prescribed one-hour fire resistance.

working detail

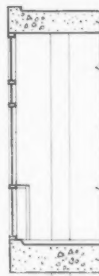
WALLS AND PARTITIONS: 46

GLAZED WALL: OFFICES AT CARDIFF

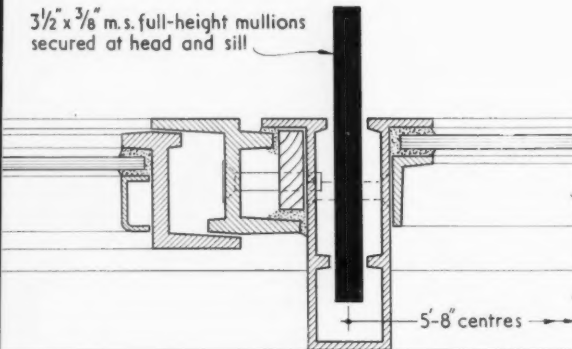
Grenfell Baines and Hargreaves, architects



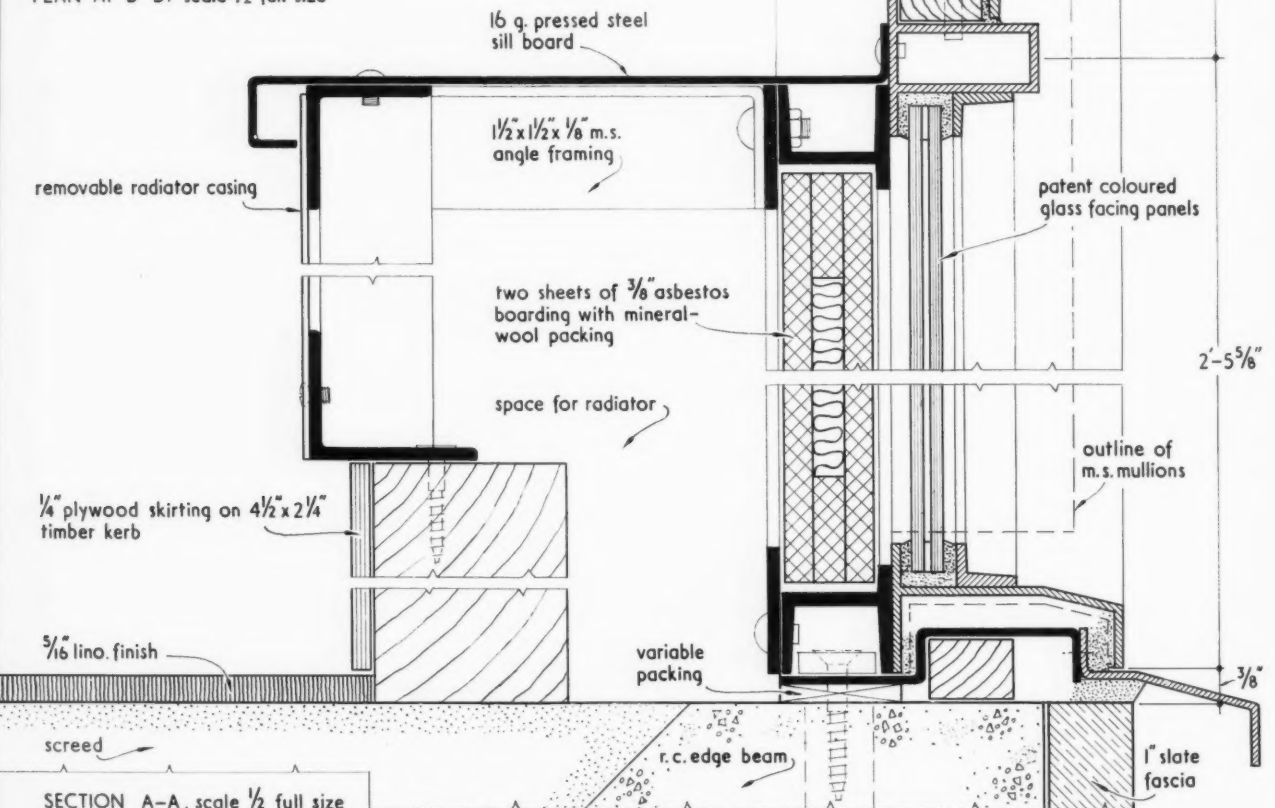
ELEVATION. scale $\frac{1}{8}'' = 1'-0''$



SECTION.



PLAN AT B-B. scale $\frac{1}{2}$ full size



SECTION A-A. scale $\frac{1}{2}$ full size



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THE BROUGHTON MOOR GREEN SLATE QUARRIES LTD.

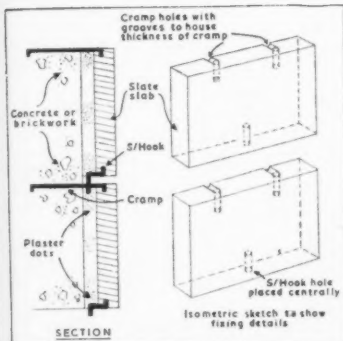
CONISTON, THE LAKE DISTRICT, LANCASHIRE

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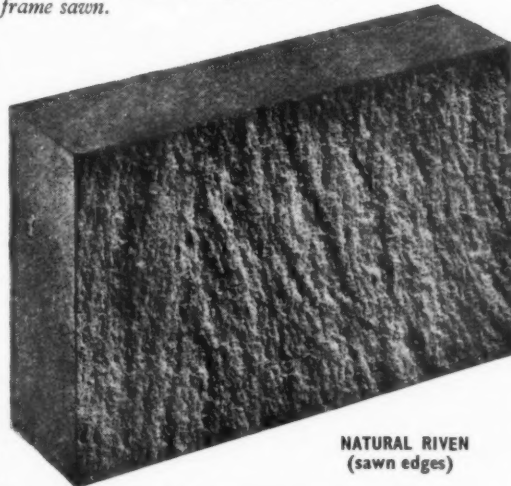
SLATE SLABS

Broughton Moor Olive Green Slate Slabs

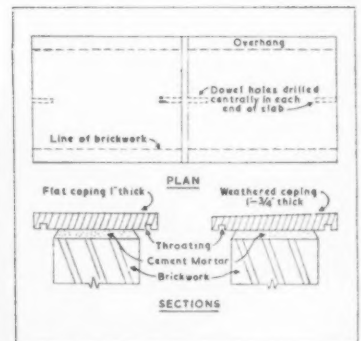
The illustration shows the beautiful texture, character and colour of this material. Other finishes include: Fine rubbed, sanded, rough diamond, frame sawn.



FACING WITH BROUGHTON MOOR SLATE



NATURAL RIVEN
(sawn edges)



COPING WITH BROUGHTON MOOR SLATE

The Broughton Moor quarries are situated in the Lake District mountains, and from them is obtained the beautiful Olive Green and Light Sea Green Slate famous for its colour, texture and great durability.

THE SLABS, after being wire sawn and blasted from the quarry face, are sawn to size and given the appropriate finish. They are readily available up to 5' 0" x 2' 0" in the Light Sea Green colour with a frame sawn, sanded or finely rubbed finish, and in thickness from 1" up.

NATURALLY RIVEN (i.e. naturally split) slabs can be supplied both in the Olive Green and in the Light Sea Green colours. In the Olive Green colour slabs can be supplied up to sizes 24" x 15" and in thickness from 3/4" up. Light Sea Green slate slabs with a naturally riven finish can be supplied in sizes up to, say, 18" x 9". Small sized slabs can be supplied with a naturally riven finish approximately 1/2" thick in both the Light Sea Green and the Olive Green colour.

ALL WORK is normally executed from Architects' prepared drawings, combined with Contractors' site details, and templates if required. A high degree of accuracy, combined with a first class standard of craftsmanship, is guaranteed.

A TYPICAL SPECIFICATION. "The facing slabs to be of Broughton Moor Olive Green Slate, obtained from the Broughton Moor Green Slate Quarries Ltd., Coniston, Lancs, all 1" thick and with natural riven finish to top face, and sawn edges, to sizes as shown on detailed drawings, and having two holes drilled for cramps, and one hole for 'S' hook per slab."

HOLING of slabs can be done at the quarry for cramps, dowels or 'S' hooks, with grooves cut from the hole to the back of the slab to house the thickness of the metal.

SPECIAL MOULDINGS, cuttings, weatherings, or lettering will be quoted for on request. This material is ideal for work in low relief.

THE WEIGHT of Broughton Moor Olive Green Slate can be based on 150 ft. sup. of 1" thick material being equivalent to 1 ton.

A KEY PLAN is supplied by the quarries whenever necessary to facilitate fixing, with corresponding marks on each slab. With slabs having sawn edges, fine joints can be obtained.

DELIVERY of this material can be given promptly to all parts of the country, by road direct to site in company's transport, or to nearest station by rail carriage paid. Technical pamphlets illustrating the following uses are available on request:

Flooring	Pamphlet 1
Facings	" 2
Coping	" 3
Cills	" 4
Riven Face Slabs	" 5

A REPRESENTATIVE is available to discuss all supply and fixing problems.

Further particulars, delivered prices, samples, etc., from :—

Producers and Quarry Owners

THE BROUGHTON MOOR GREEN SLATE QUARRIES LTD., CONISTON, LANCs

Coniston 225/6

PAMMASTIC too... is changing the face of Britain

*...it's the
PLASTIC EMULSION PAINT
that's especially suitable
for exterior use*

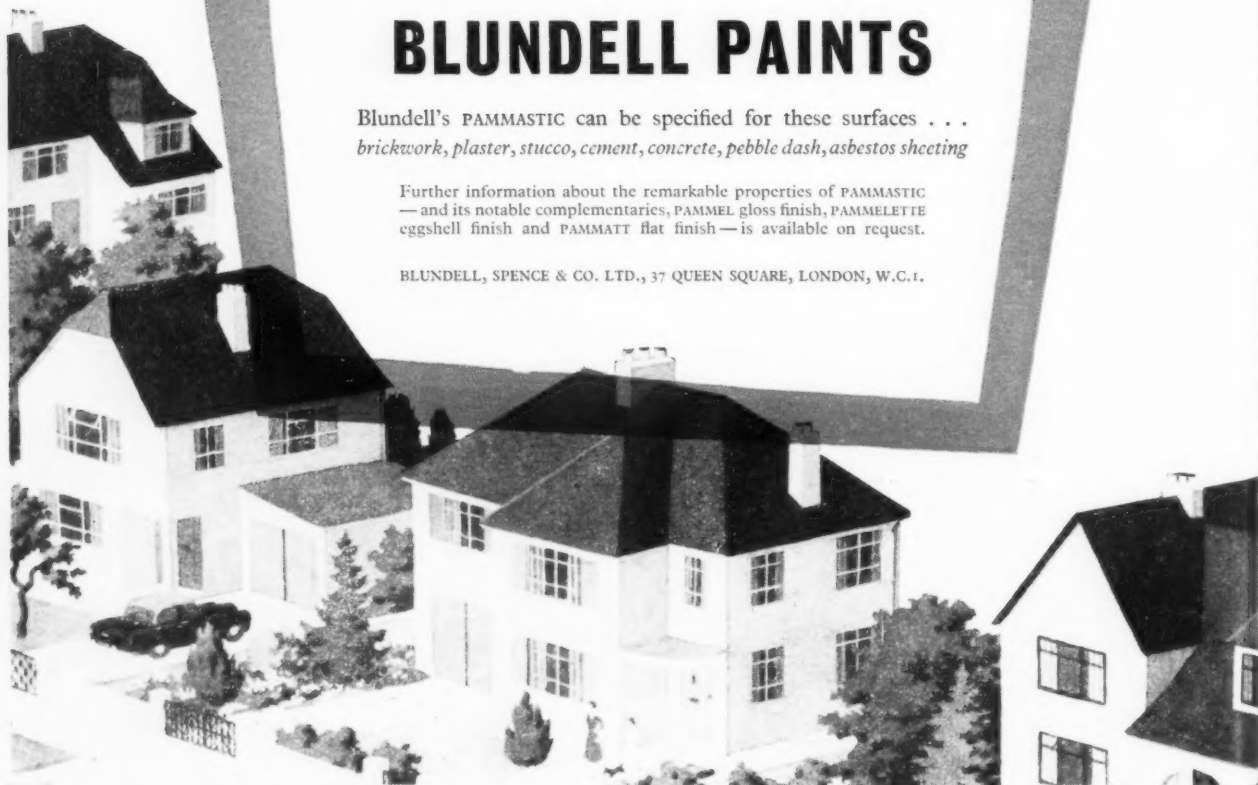
PAMMASTIC provides the means of realizing—economically—a whole new wealth of exterior effects . . . with colours ranging from delicate pastel to deep positive shades, *all* intermixable. Years of rigorous all-weather testing in Britain and the tropics prove the exceptional durability of PAMMASTIC. It does not age with exposure as traditional outside paints and distempers do, and is distinguished for its greater adhesion, very low dirt retention, and fastness to light. PAMMASTIC withstands the effects of salt-laden and industrially-polluted atmospheres—and will neither flake nor rub off. *It costs less per year of service than any other large area paint.*

BLUNDELL PAINTS

Blundell's PAMMASTIC can be specified for these surfaces . . .
brickwork, plaster, stucco, cement, concrete, pebble dash, asbestos sheeting

Further information about the remarkable properties of PAMMASTIC—and its notable complementaries, PAMMEL gloss finish, PAMMELETTE eggshell finish and PAMMATT flat finish—is available on request.

BLUNDELL, SPENCE & CO. LTD., 37 QUEEN SQUARE, LONDON, W.C.1.



OFFICES AND SHOWROOM IN LONDON, W.C.2



Construction will begin shortly on a new office building in the West End, designed by Basil Spence and Partners for Thorn Electrical Industries. The space under the main block will be open to the street, with the exception of a lift foyer and escape stairs, and this new open space in the centre of London will be carefully landscaped and open to the public; a display showroom faces Upper St. Martin's Lane (parallel to Charing Cross Road) and a mezzanine showroom is slung under the tower, which will be 180 ft. high. The first floor will be for lectures and conferences and the eleven office floors above have a nett area of 55,000 sq. ft. A garage in the basement will hold 38 cars in addition to a parking area at ground level. R.c. spandrel beams, faced in mosaic, span 25 ft. between external columns and support a prestressed floor slab. The end wall shown in the perspective will be clad in Derbydene marble and the metal sculpture is by Geoffrey Clarke. Engineers, Ove Arup and Partners; quantity surveyor, L. Dight.

Dry construction demountable office partitions in new building in Finsbury Square, E.C.2.

Architects:
Lewis Solomon, Son & Joseph

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within
walls...**

. . . and ceilings too



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Telephone: GLAdstone 6633

Contractors

Metropolitan Police Headquarters, No. 1 District, Sub-Divisional Station and Section House, Earl's Court Road, London, W.8, for the Receiver for the Metropolitan Police District. (Pages 711-720). Architect: J. Innes Elliott, B.A.R.C., A.R.I.B.A., chief architect and surveyor, New Scotland Yard. Senior architect-in-charge: G. B. Vint, A.R.I.B.A. Executive architect: E. Francis Jones, B.A.R.C., A.R.I.B.A., DIP.C.D., A.M.T.P.I. Consultants, structural: B.R.C. Engineering Co. Ltd. Electrical and heating: A. L. Collis, O.B.E., chief engineer, New Scotland Yard. Quantity surveyors: Davson & Pritchard. Clerk of works: T. W. Hood. General contractors: A. Roberts & Co. Ltd. Sub-contractors—Asphalt, special roofings, roofing felt, waterproofing material: Perma-nite Ltd. Bricks: Sydney A. Hunter Ltd. Tiles: Parkinsons & Co. Ltd. Partitions: Refractulation Ltd. Glass, patent glazing: Aygee Ltd. Wood block flooring: Viger Bros. Ltd. Artificial stone: Ferro-Concrete Ltd. Structural steel: Helical Bass & Engineering Co. Ltd. Panel heating, boilers, ventilation, casements: Richard Crittalls & Co. Ltd. Stoves: Radiation Group Sales. Electric wiring: Pinching & Walton. Electric light fixtures: Merchant Adventurers Ltd. Plaster: Jeffries & Grant Ltd. and C. E. Pinn. Decorative plaster: C. E. Pinn. Joinery: G. Keetch & Sons Ltd. Stonework: Kendells Stone Ltd. Textiles: M. J. Roffe. Garden furniture, shrubs and trees: H. L. Holdrup & Sons. Cork flooring: George Stephenson. York stone: Samuel Bysouth & Sons Ltd. Terrazzo: St. James Tile Co. Folding gates: Potterpax Ltd. Stone: Anselm Odling & Sons Ltd. and Walton Gooddy (Construction) Ltd. Patent flooring: Marbolith Flooring Co. Ltd. Electric light fixtures: Hume Atkins & Co. Ltd., Nettle Accessories Ltd., Ekco Ensign Ltd., and Merchant Adventurers Ltd. Plumbing:

Lakers. Door furniture, window furniture, signs: G. & A. All Goods. Casements: Henry Hope & Sons Ltd. Folding gates: Potterpax Ltd. Roller shutters: Rely A. Bell Burglar & Fire Alarm Co. Ltd. Sanitary fittings: Ashley Brandon (Kensington) Ltd. Stonework: Kendells Stone Ltd. and Ferro-Concrete Ltd. Marble: Marble Products. Wallpaper, paint: Dicols Decorators. Flag staff: A. J. Brett & Co. Ltd. Lifts: Keighley Lifts Ltd. and G. K. Jensen & Co. Ltd. Suspended ceiling: Campbell Denis Ltd.

Announcements

PROFESSIONAL

Roy D. Lyons, A.R.I.B.A., A.A.DIPL., has been appointed architect in charge of the Schools Building Unit for St. Kitts-Nevis-Anguilla. His address is Schools Building Unit, Basseterre, St. Kitts, B.W.I., where he would be pleased to receive trade catalogues, etc.

S. P. Jordan, A.R.I.B.A., M.S.I.A., DIP.T.P., of 11, King's Road, Sloane Square, S.W.3, has taken B. W. Drury, A.R.I.B.A., into partnership. The name of the firm has been changed to S. P. Jordan and Partners.

J. Douglass Mathews & Partners (E. D. Jefferiss Mathews, O.B.E., F.R.I.B.A., A.R.I.C.S., Oswald D. Pearce, F.R.I.B.A., A. G. Nisbet, B.A., F.R.I.B.A., and Duncan Pearce, A.R.I.B.A., A.A.DIPL.) have taken into partnership their associate partner Michael Ryan, A.R.I.B.A., A.A.DIPL.

Lt.-Col. Alex. Cullen, O.B.E., F.R.I.B.A., F.R.I.C.S., M.T.P.I., announces that he has commenced private practice as an architect and planning consultant at 5, Castle Street, Inverness, in association with Messrs. Rowand Anderson, Kininmonth & Paul, of 107, High Street, Forres, and 16, Rutland Square, Edinburgh.

L. W. Carpenter, A.R.I.B.A., A.A.DIPL., announces that he has commenced private practice at The Rylands, Lydney Lane, Bream, Glos (telephone: Whitecroft 249), where he will be pleased to receive trade literature, etc.

TRADE

John Laing & Son (Holdings) Ltd. and Holloway Brothers (London) Ltd. jointly announce that agreement has been reached in principle to the acquisition by Laings of a substantial interest in the Holloway Company and to its future operation in association with the Laing Group. This agreement will enable Holloways to take advantage of the Research, Development, Plant and other service facilities of the Laing Group.

Concrete Ltd. announce that their Scottish organization has been formed into a separate company: Concrete (Scotland) Ltd.

Eastwoods Ltd. announce that John Paisley, M.I.MECH.E., M.I.PROD.E., and E. W. Yetton, A.C.I.S., have been appointed joint managing directors.

Corrections

In the AJ for April 11, on page 528, under the photograph of the foyer of Mullard House, it was stated that it was designed by Rapier Design Ltd. (Eric Sharvell and Michael Green). This should have been attributed to Robert Sharp and Son and the work was executed by Russell Brothers Ltd. The lighting installation was designed by Phillips Advisory Lighting Service. Rapier Design Ltd. were responsible for the internal fittings of the showroom only.

In the AJ for April 18 on page 594 the first announcement should have read: Adamson, Gray and Adamson, L/F/F.R.I.B.A.

Maximum Illumination without Glare

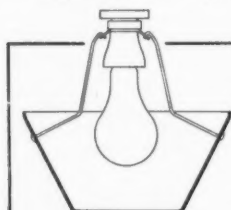
with Percon The modern scientific light fitting

Designed to meet Ministry of Education Building Regulations... specified by Ministry of Education Architects and Builders. ★

Especially designed for use in schools, hospitals, administration buildings, etc., Percon Conical light fittings provide maximum illumination on working surfaces simply, inexpensively — and without glare. Three factors prevent risk of dazzle or eyestrain:

1. The naked bulb is effectively screened from all normal angles of vision by the truncated cone (45° cut-off).
2. The average surface brightness of the shade is less than 1,000 foot lamberts.
3. The reflected upward light prevents harsh contrasts.

Percon Conical fittings are available in three sizes: Major, Standard and Minor. They can be used with all standard lamp and batten holders. The Perspex body is easy to clean, easy to fit and almost unbreakable.



Authorities. Progressive price reductions on quantities over 200.

MINOR for 100 Watt pearl lamps. Price 16/10d. plus P.T. 5/1d.
STANDARD for 100/150 Watt pearl lamps. Price 18/6d. plus P.T. 5/7d.
MAJOR for 150/200 Watt pearl lamps. Price 28/4d. plus P.T. 8/6d.

Prices quoted are for supply to Public



Percon fittings are designed to enable the Ministry of Education Building Regulations to be met and have been specified by the Development Group of the Architects and Buildings Branch of the Ministry of Education.



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MARRIOTTS

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are proud to have been associated with
the following distinguished and significant
projects during the past year

CORBY GRAMMAR SCHOOL

The £110,000 project of completely encasing the bare concrete frame was completed in 28 weeks, and the school was opened by Mr. D. F. Vosper, T.D., M.P. the then Parliamentary Secretary to the Ministry of Education on the 9th March, 1956.

Northamptonshire County Architect: A. N. Harris Esq., F.R.I.B.A.

BROMHAM HOSPITAL *Extensions*

Two extensions costing £60,000 were officially opened by Mr. R. Turton, M.C., M.P. the then Minister of Health on the 8th March 1956.

Regional Architect: C. D. Andrews Esq., F.R.I.B.A.

CORBY POLICE HEADQUARTERS

The new £60,000 Corby Police Headquarters was officially opened on the 4th June, 1956 by Earl Lloyd-George of Dwyfor who was then Mr. Gwilym Lloyd-George, M.P. Home Secretary.

Northamptonshire County Architect: A. N. Harris Esq., F.R.I.B.A.

STEWARTBY TRUST HOUSES

Opened by Beatrice Lady Stewart last May, the twenty-four homes for old people, together with a community centre, at Stewartby is a project in which Marriotts have taken an especial pride.

Architect: Professor Sir Albert Richardson, R.A.

BECTIVE SCHOOL *Northampton*

Constructed in 11 months, this £70,000 project was opened by Alderman F. Tollit, Chairman of the School Governors on the 30th April, 1956.

Northampton Borough Architect: Brian Bunch Esq., A.R.I.B.A., A.M.T.P.I.

EASTFIELD SCHOOL *Northampton*

This £50,000 Infants' School was completed in 9 months to be opened by Alderman Arthur L. Chown, Chairman of the Northampton Education Committee on the 9th May, 1956—nine days after the previous project.

Northampton Borough Architect: Brian Bunch Esq., A.R.I.B.A., A.M.T.P.I.

NORTHAMPTON HOSPITAL *Out-Patients' Department*

The foundation stone for this £320,000 project was laid by H.M. The Queen Mother on the 25th October, 1956.

Architects: Sir John Brown, A. E. Henson & Partners.

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Architects: The Air Ministry Architects Department

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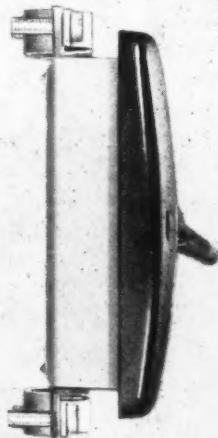
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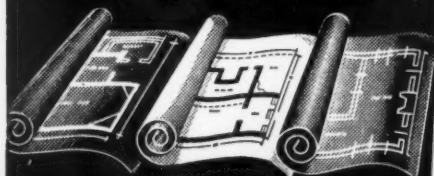
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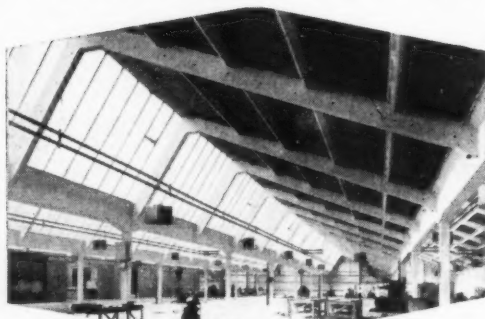
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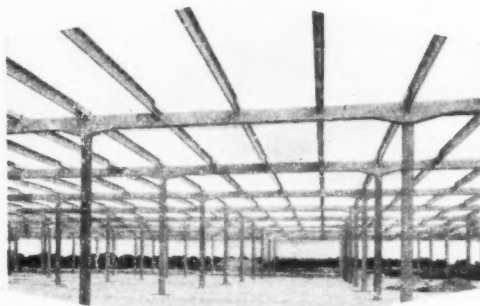
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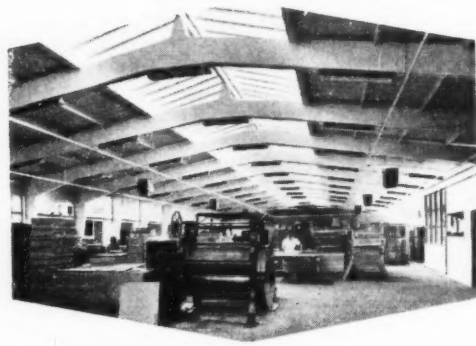
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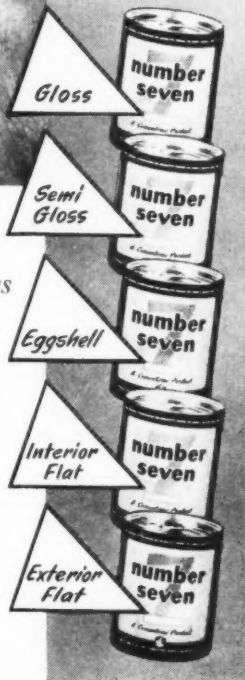
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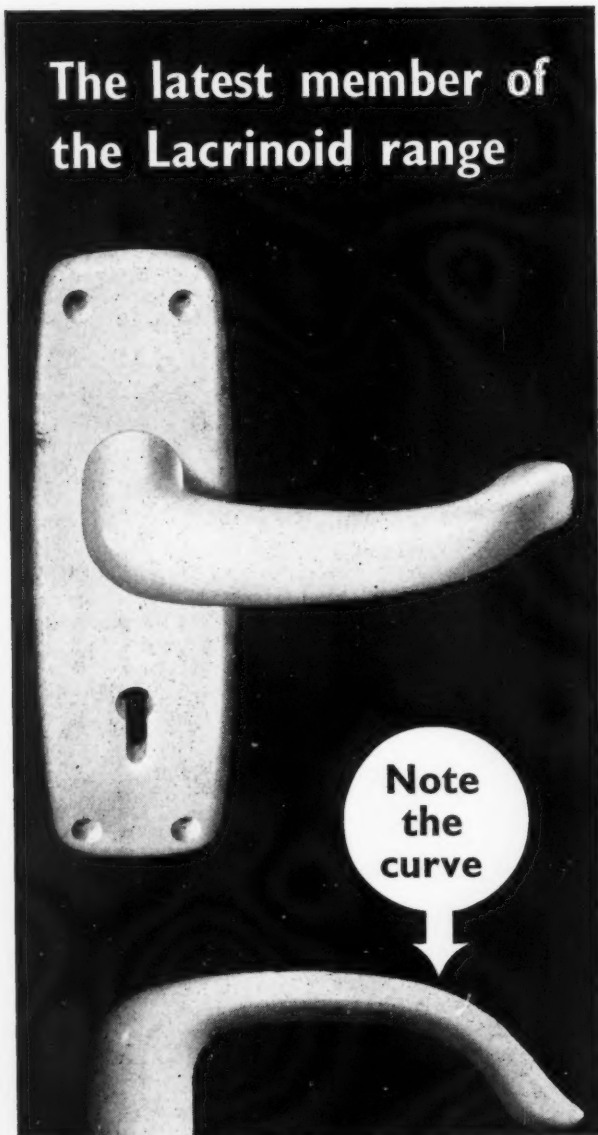
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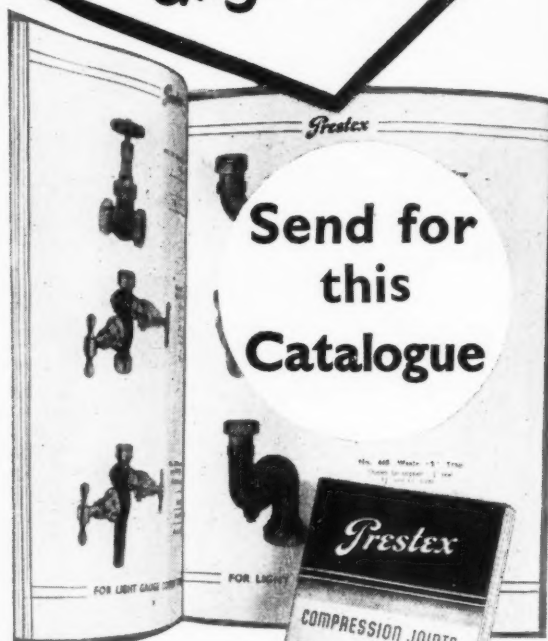
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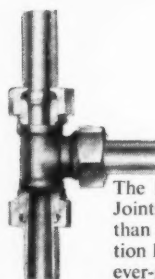
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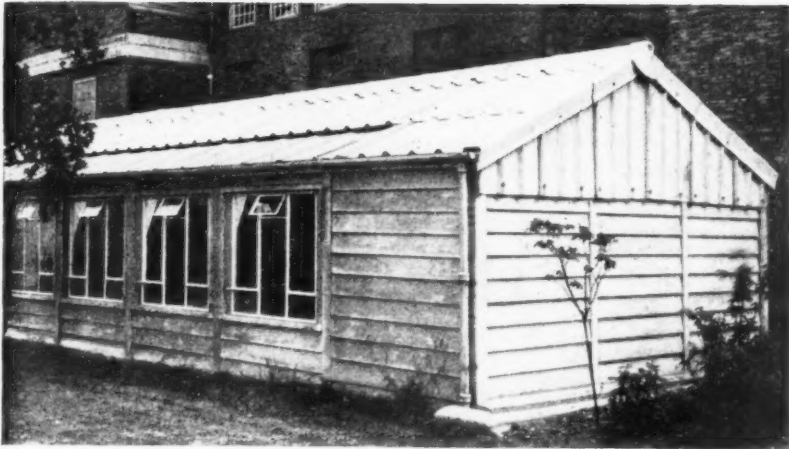
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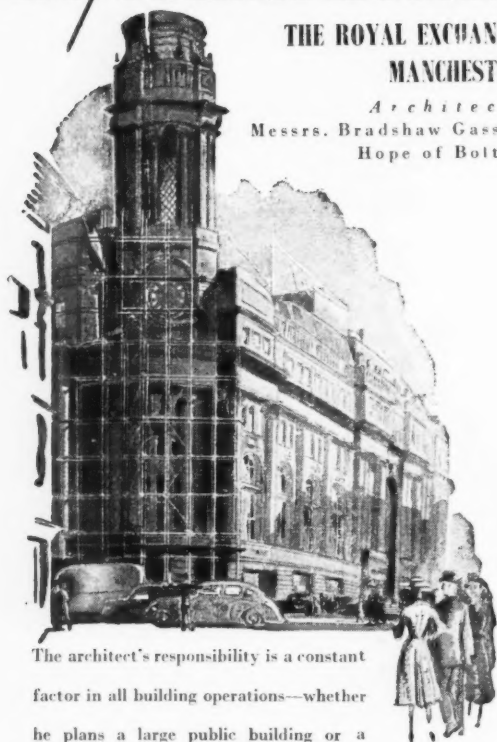
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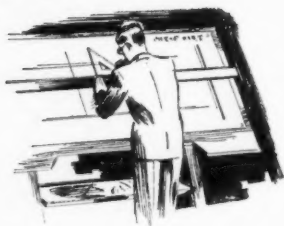
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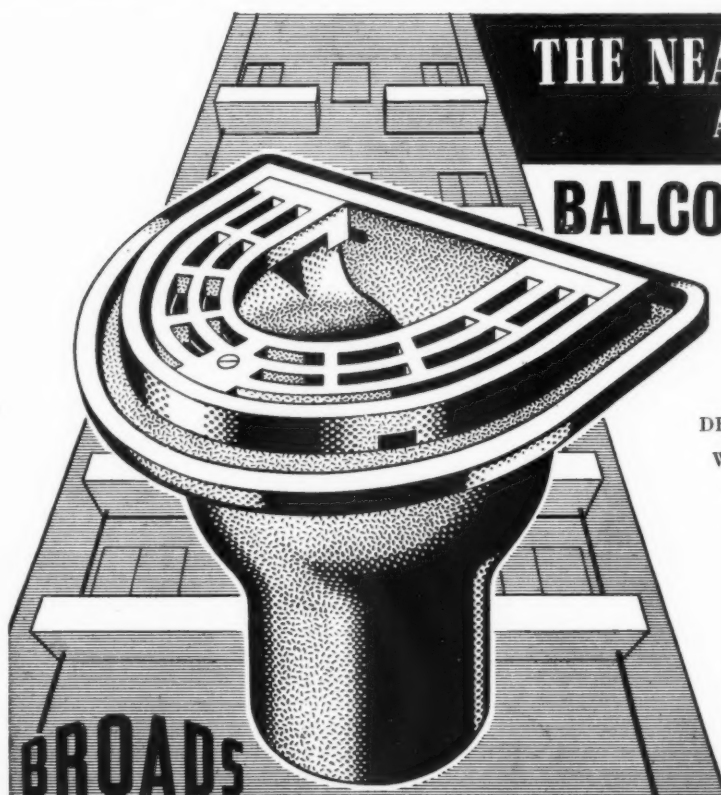
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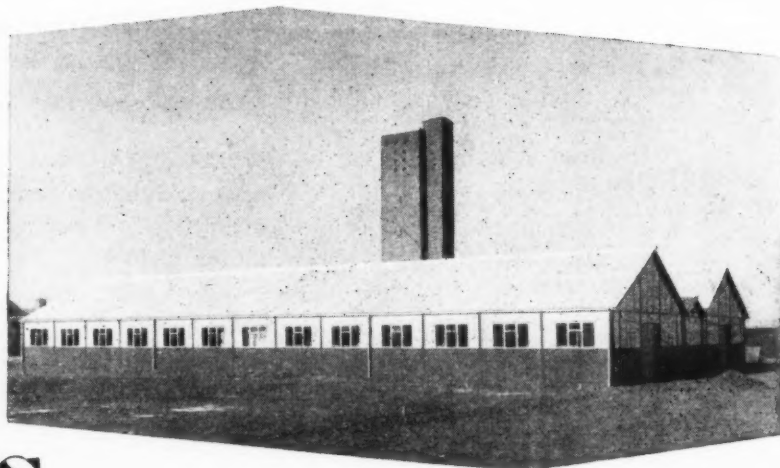
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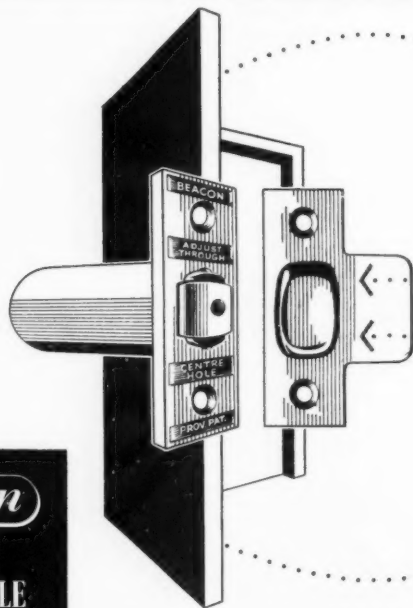
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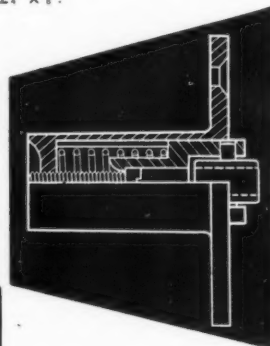
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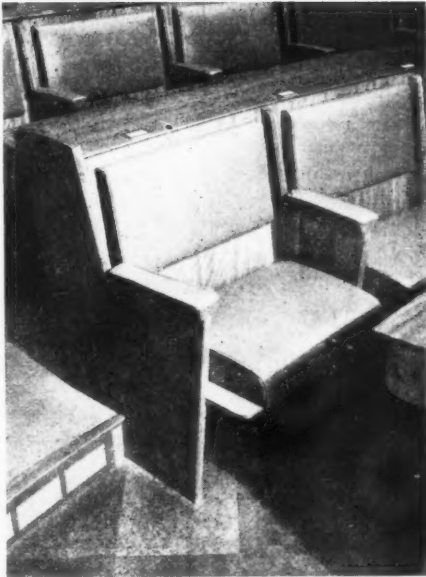


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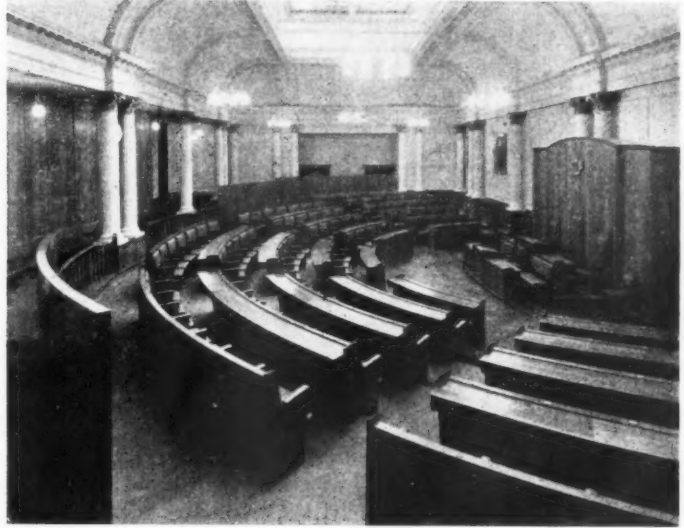


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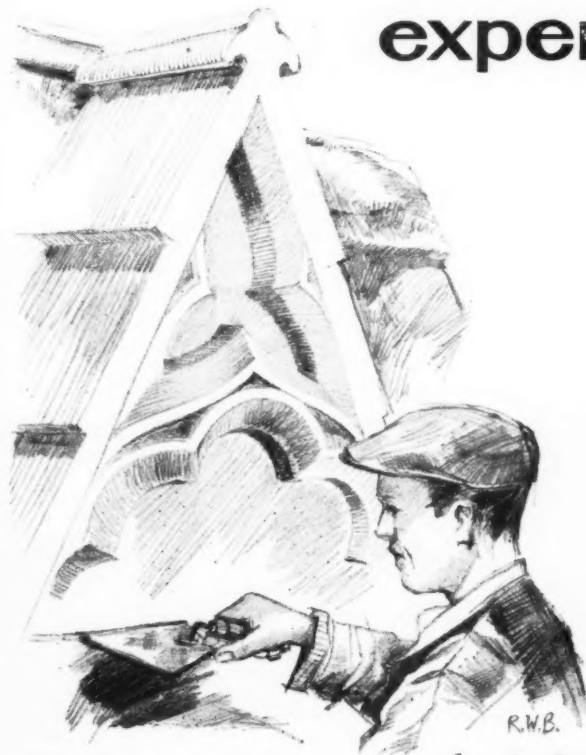


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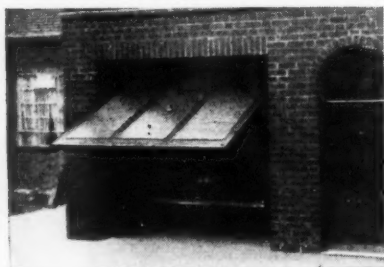
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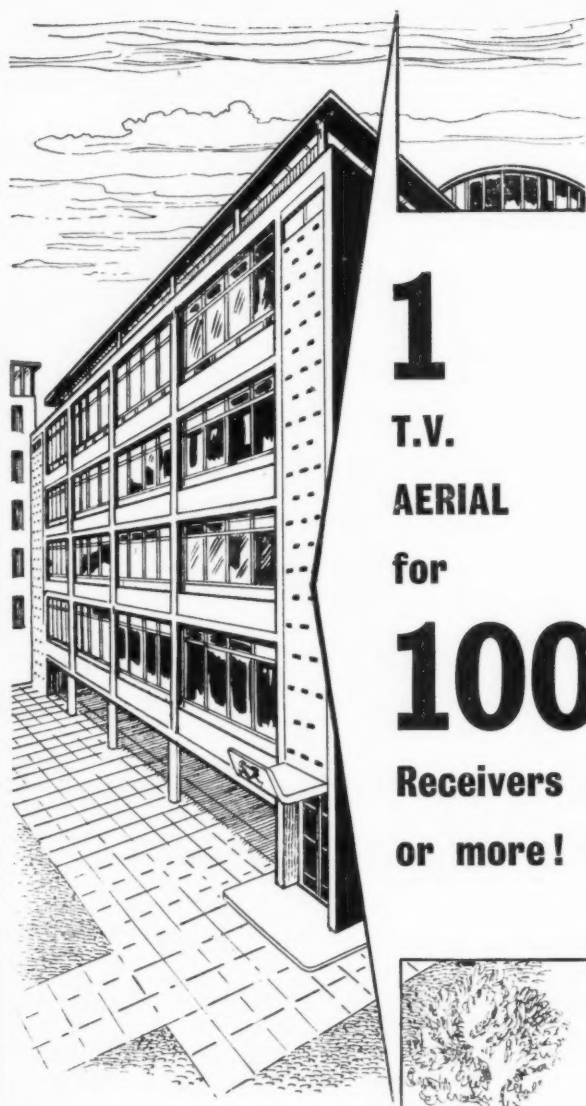
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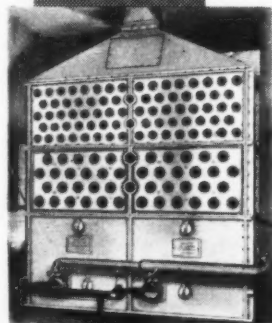
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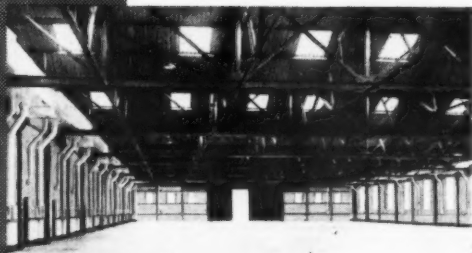
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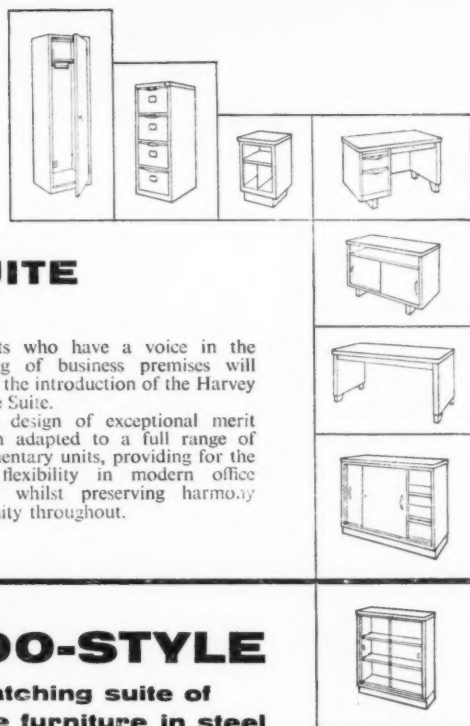
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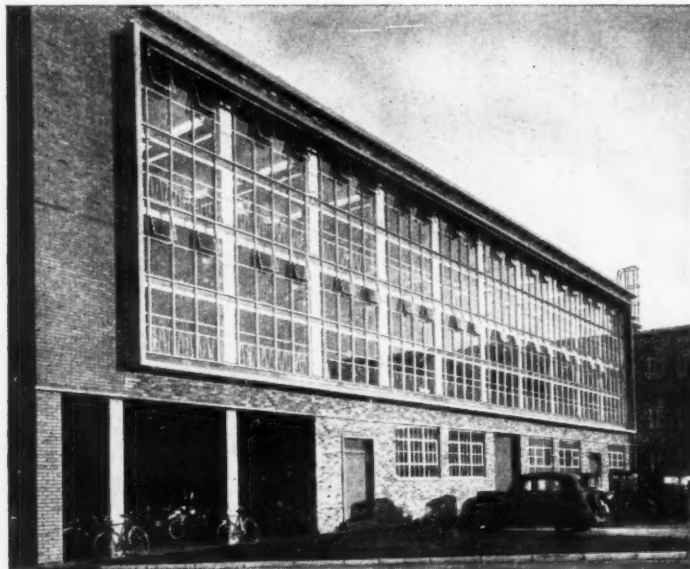


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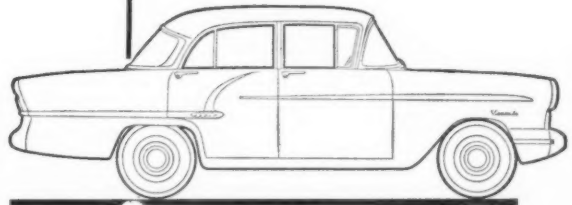
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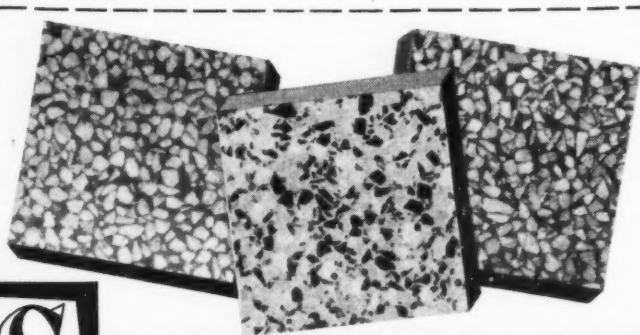
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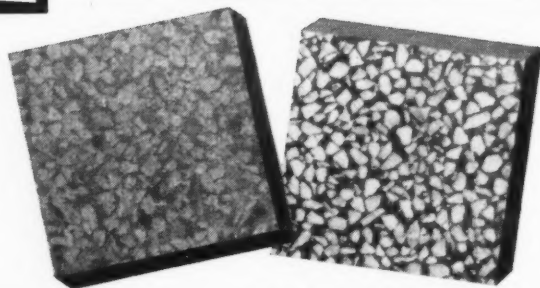


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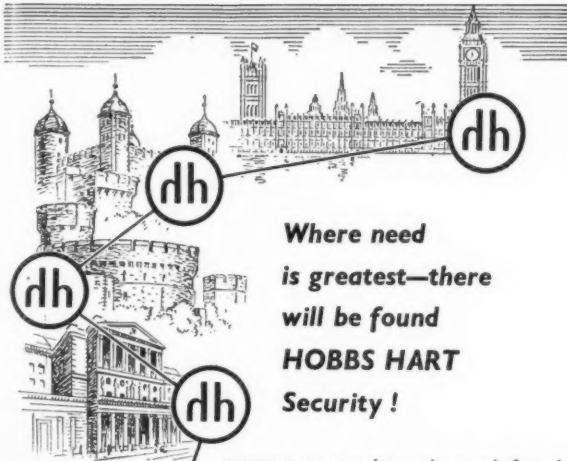
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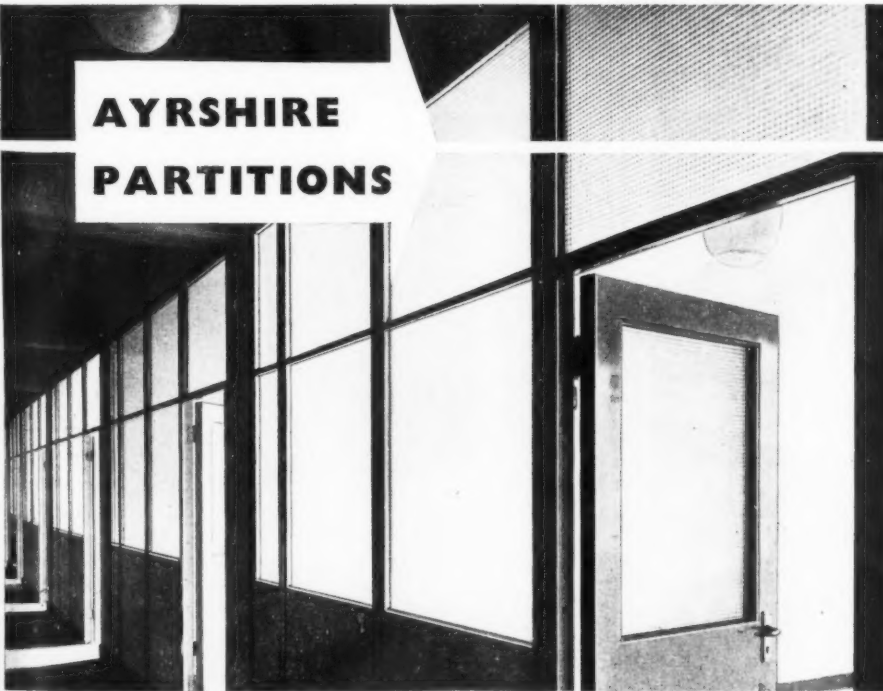
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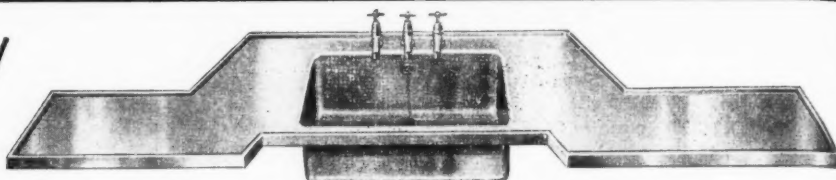
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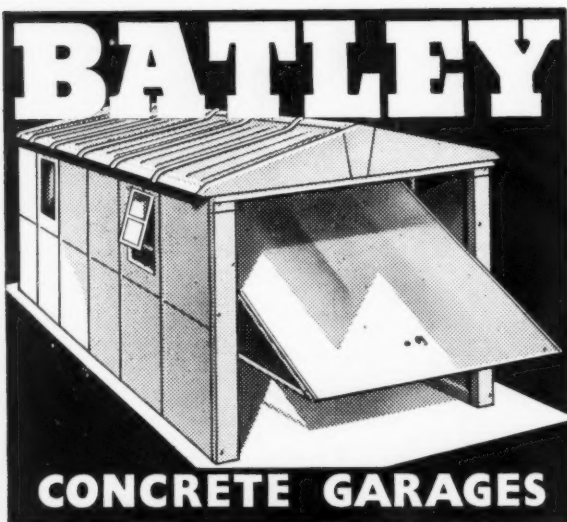
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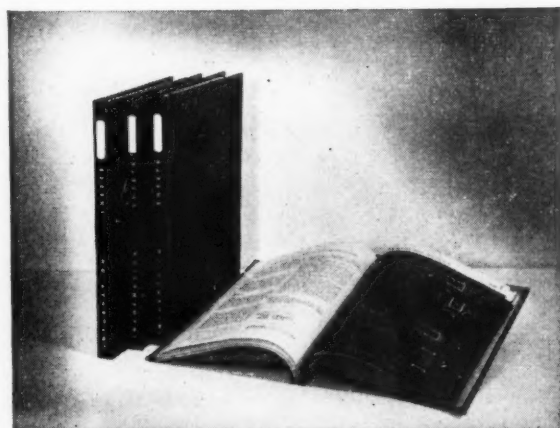
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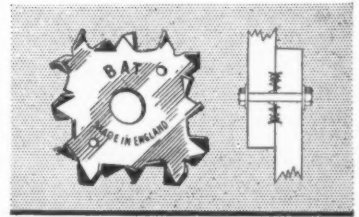
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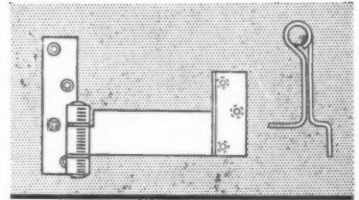
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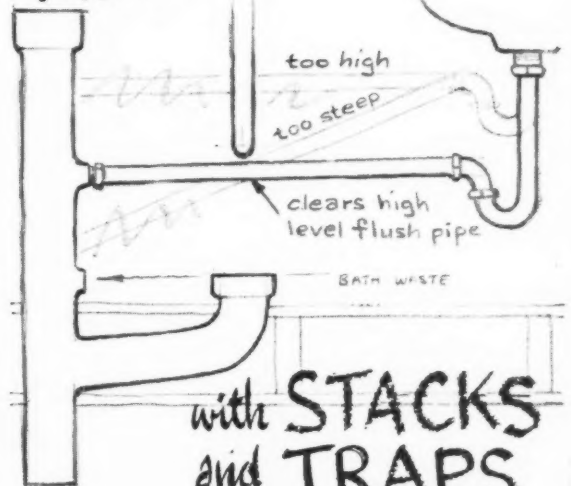
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AMERICA

A *personnage* assembled from scraps of American advertisements and spitting ticker-tape on the cover of the May ARCHITECTURAL REVIEW will announce the theme of a special issue on **Machine Made America**, compiled, explained and assessed by the REVIEW's executive editor, Ian



The Seagram Building, New York.

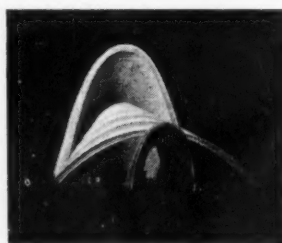
McCallum, whose previous foray into the American scene caused raised eyebrows and raised voices when its results appeared in print as a special issue of the REVIEW under the title *Man Made America*, this new survey, based on a study of architecture rather than the wider scene of land- and townscape, will scrutinise the aesthetics and the technics of the curtain wall as an example of what happens to one of the cherished dreams of the Modern Movement when it finally becomes commercially practicable, and becomes part of the available *syntax* of architecture. After this it will survey the diverse, original stimulating and experimental work of individuals and individualists from Coast to Coast, a body of work that is the *genetrix* of architectonic ideas without which the industrial contribution may prove sterile and short-lived.

Machine Made America will conclude by attempting to fit both



Subtopian Mess at Colnbrook.

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



Concrete shell church by J. Johansen.

industrialist and individualist into the *matrix* of the wider scene of world architectural development in this century and of American culture in the age of mass-production.

COUNTER ATTACK GROTESQUE OLIVETTI

Ian Nairn, of *Outrage* fame, will contribute a first essay on the aims and objectives of the newly-formed **Counter-Attack Bureau**, to the June issue of the ARCHITECTURAL REVIEW, and make proposals for positive anti-Outrage policies for the threatened suburban village-centres of Ewell, Colnbrook and Huyton. Two widely diverse Italian subjects to be discussed in the same issue will be the grotesque statuary and architecture of the Orsini garden at **Bomarzo**, con-



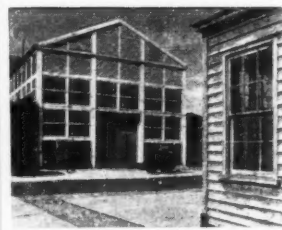
Golden Lane, by Chamberlin, Powell and Bon.

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

EARLY INDUSTRIAL

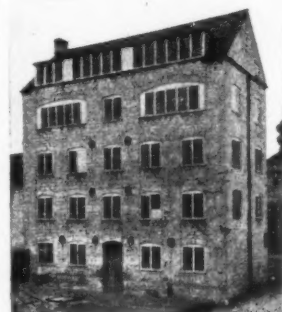
Mills, docks and harbours, warehouses, fences and gates, railways and canals—all bear witness to the theme of July's special issue of the REVIEW, *The Functional Tradition*, compiled and edited by J. M. Richards. In our present need to consolidate the results of the technical revolution that has

overwhelmed architecture in this century, we need the discipline of an unconscious vernacular, a simple way of doing things simply, and we have no better guide for this than the monuments of the functional tradition that dot the country from end to end, even in the most remote and rural areas. The tradition is not limited to any material—with its wooden water-mills, its brick warehouses, its iron framed naval



Sheerness Naval Dockyard: cast iron frame extension, 1858

boatsheds, its stonework by canal and railway—it had the adaptability we admire in the great masters of today, fitting together material, function and form, but into an unselfconscious unity. Most architects know of the great tradition's existence, have seen one or two textbook examples illustrated, have discovered one or two favourites of their own, but in *The Functional Tradition* they will find for the first time a systematic analysis of the nature and value of the tradition, supported by the results of an extended photographic campaign by Eric de Maré, which has rescued many unknown and forgotten buildings from undeserved obscurity, and also set on record for the first time the little known architecture of the warehouses, rope walks and other buildings in the dockyards of the Royal Navy.



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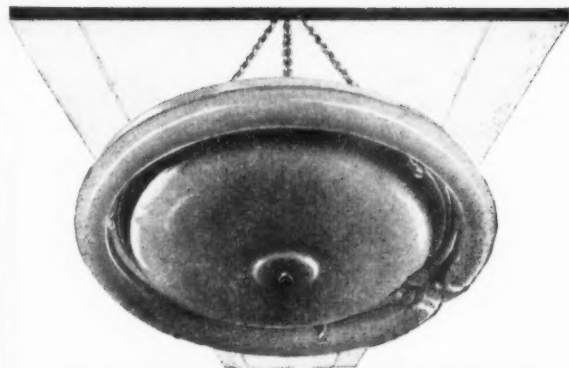
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Municipal Offices, 34, High Street, Scunthorpe, 16th April, 1957. 6111

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(b) DRAUGHTSMAN (£543-£625), in County Planning Department.

Candidates for (a) must be corporate members of the Town Planning Institute and should hold in addition, a recognised qualification in architecture, engineering or surveying, and must have had extensive practical experience in preparation of development plans particularly town maps preferably including comprehensive re-development areas.

Candidates for (b) should be neat and expeditious Draughtsmen with experience in preparation of maps and plans, preferably in a Local Government office.

Further particulars and application forms from Clerk of County Council, Caernarvon. Closing date May 20. 6063

BOROUGH OF ROMFORD

Applications are invited for the following appointments in the Borough Engineer and Surveyor's Department:-

(a) SENIOR ASSISTANT ARCHITECT, Grade A.P.T. V (£314 17s. 6d. to £994 5s.).

(b) TECHNICAL ASSISTANT, Grade A.P.T. III (£656 to £784 2s. 6d.).

The commencing salary in each case will be fixed according to qualifications and experience. Housing accommodation for (a) above available if necessary.

Particulars and Conditions of the appointments may be obtained on application to the Town Clerk, Town Hall, Romford, to whom completed applications must be sent not later than 18th May, 1957. 6161

COUNTY BOROUGH OF DERRY BOROUGH ARCHITECT'S DEPARTMENT

(1) JUNIOR/ASSISTANT ARCHITECTS.

(a) A.P.T. Grade III (£656-£784 per annum).

(b) A.P.T. Grade II (£609-£691 per annum).

(c) A.P.T. Grade I (£543-£625 per annum).

(d) Higher General Division (£184-£512 per annum).

(2) SENIOR QUANTITY SURVEYOR, A.P.T. Grade IV/V (£727-£994 per annum).

Commencing salary according to qualifications and experience.

Permanent superannuable appointments, subject to one month's notice and to medical examination.

National Conditions of Service.

Applicants must state for which post they are applying.

Application forms obtainable from and to be returned to the Borough Architect, The Council House, Corporation Street, Derby, not later than Monday, 20th May, 1957.

G. H. EMLYN JONES, Town Clerk.

26th April, 1957. 6130

CHESTERFIELD RURAL DISTRICT COUNCIL ENGINEER AND SURVEYOR'S DEPT.

Applications are invited for the following appointments, which will provide excellent experience in a district with a population of 93,000, and rapidly developing residentially and industrially. The Council have a programme of Works of Sewerage and Sewage Disposal estimated at £1,000,000, and a housing programme of some 5,000 houses.

The Council will provide housing accommodation in suitable cases.

(1) ASSISTANT ENGINEERS, Salary A.P.T. Grades II and IV, according to qualification (£609 17s. 6d.-£907 2s. 6d.).

(2) ARTICLED PUPIL, Salary Higher General Division (£184 10s.-£512 10s.).

(3) ASSISTANT QUANTITY SURVEYORS, Salary A.P.T. Grade I-Special (£543 5s.-£861).

Write before the 18th May, 1957, to J. B. Wikeley, M.B.E., M.I.C.E., M.I.Mun.E., Barrister-at-Law, Rural Council House, Saltergate, Chesterfield, for Form of Application and further particulars.

H. O. HAWKINS, Clerk of the Council.

Rural Council House, Saltergate, Chesterfield. 6128

COUNTY BOROUGH OF DEWSBURY BOROUGH ARCHITECT AND BUILDINGS SURVEYOR'S DEPARTMENT

Applications are invited for the following appointments in the above Department:-

(a) TWO ASSISTANT ARCHITECTS (one for Education Section and one for Housing and General Section), A.P.T. Grade IV (£727 15s.-£907 2s. 6d. p.a.) and

(b) ONE QUANTITY SURVEYING ASSISTANT, A.P.T. Grade II (£609 17s. 6d.-£691 17s. 6d. p.a.).

The commencing salaries will be fixed within the scope of the grades stated, according to qualifications and experience. Applicants for appointments (a) should be Registered Architects, with good architectural experience and a knowledge of local government procedure. Housing accommodation may be made available if required.

The appointments will be subject to one month's notice on either side and to the provisions of the Local Government Superannuation Acts. The successful applicants will be required to pass a medical examination.

Applications, stating age, education, qualifications, full particulars of training and experience, together with copies of two recent testimonials, should be sent to the undersigned not later than Wednesday, 22nd May, 1957, in envelopes endorsed with the name of the particular appointment applied for.

A. NORMAN JAMES, Town Clerk.

Town Hall, Dewsbury. 6144

SOMERSET COUNTY COUNCIL COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments on the established staff of the department, viz.:-

(a) ONE ASSISTANT ARCHITECT, Grade IV (£727 15s.-£907 2s. 6d.).

(b) THREE ASSISTANT ARCHITECTS, Special Scale (£707 5s.-£861).

Applicants must be Associate Members of the R.I.B.A. Previous local government experience is not important but design ability is essential.

The successful applicants may be required to take charge of work from sketch plan stage to completion on the ground, working within teams consisting of four or five architects.

The appointments are subject to the Local Government Superannuation Acts, 1937 to 1953, the National Scheme of Conditions of Service, a satisfactory medical examination, and termination by one month's notice on either side.

Applications, stating age, present salary, present and previous appointments, details of training and experience, together with one recent testimonial, and the names and addresses of two referees, should be submitted to the undersigned not later than 20th May, 1957.

R. O. HARRIS, F.R.I.B.A., County Architect.

Park Street, Taunton. 6147

CITY OF SHEFFIELD CITY ENGINEER AND SURVEYOR'S DEPARTMENT SENIOR PLANNING ASSISTANT, GRADE A.P.T. V

Applications are invited for the position of Senior Planning Assistant, Grade A.P.T. V (£314 17s. 6d.-£994 5s.), on the staff of the City Engineer and Surveyor and Town Planning Officer (H. Foster, M.I.C.E., M.I.Mun.E.).

Qualifications: A.M.T.P.I., A.R.I.B.A., or A.R.I.C.S.

If housing accommodation is required a flat will be made available.

Superannuable post, N.J.C. conditions of service, medical examination.

Applications, stating age, education and training, qualifications, experience, present and past appointments (with dates and salaries), and quoting the names of two referees, should be submitted to the undersigned by the 27th May, 1957.

JOHN HEYS, Town Clerk.

Town Hall, Sheffield, 1. 6164

EASTERN ELECTRICITY BOARD

Applications are invited for the following appointments. The successful candidates will be required to contribute to a superannuation scheme and may be required to undergo a medical examination.

NORTHMET SUB-AREA HEADQUARTERS, London, N.14

ARCHITECTURAL ASSISTANT (Ref. 688).

42/57.R.

Candidates should have had experience in the preparation of plans for building and civil engineering work for sub-stations, service centres, workshops, offices, and should be capable of carrying out site surveys and supervising staff. Salary: N.J.B. Schedule D, Grade 5 (£700-£800), plus London allowance.

ENGINEERING DRAUGHTSMAN (Ref. 689).

43/57.R.

Candidates should have had a good technical training and experience in the preparation of plans and detailed drawings of Building and Civil Engineering works, including sub-stations, service centres, workshops, offices, etc.

Salary: N.J.B. Schedule D, Grade 6 (£560-£680), plus London allowance.

Apply by letter for both appointments, within 10 days, to C. C. Hill, B.Sc.(Eng.), M.I.E.E., M.I.Mech.E., Manager, Northmet Sub-Area, Eastern Electricity Board, Northmet House, Southgate, London, N.14. 6145

COUNTY COUNCIL OF ESSEX

Required on the established staff:-

- (a) **ASSISTANT ARCHITECTS**, in Special Grade, salaries not exceeding £861.
(b) **ARCHITECTURAL ASSISTANTS**, Grade II, salaries not exceeding £591 17s. 6d.

Candidates for appointment (a) must have passed Parts I and II of R.I.B.A. Final.

Commencing salary in each case according to qualifications and experience.

The appointments offer opportunities for design and supervision on a variety of buildings—colleges, libraries, day and boarding schools, police and fire stations and health buildings—and successful candidates will have much responsibility within the group system.

Application forms from H. Connolly, C.B.E., F.R.I.B.A., County Architect, County Hall, Chelmsford (state post for which form is required), to be returned with copies of three testimonials by 23rd May, 1957.

Canvassing disqualifies. 6146

CITY OF SHEFFIELD**CITY ARCHITECT'S DEPARTMENT
APPOINTMENT OF SENIOR ASSISTANT ARCHITECT**

Grade A.P.T. V. Salary £814 17s. 6d. to £994 5s. Applications are invited from appropriately qualified persons for this appointment on the staff of the City Architect, Mr. J. L. Womersley, F.R.I.B.A., M.T.P.I.

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

Applications, stating age, educational training, qualifications, and experience, present and past appointments (with dates and salaries), together with the names of two referees, should reach me by the 20th May, 1957.

JOHN HEYS,

Town Clerk.

Town Hall, Sheffield, 1. 6165

COUNTY BOROUGH OF BURNLEY

Applications are invited for the following appointments in the Borough Engineer and Surveyor's Department:-

- (a) **PRINCIPAL ARCHITECTURAL ASSISTANT**, Grade V (£814 17s. 6d.—£994 5s.).
(b) **SENIOR ARCHITECTURAL ASSISTANT**, Grade IV (£727 15s.—£907 2s. 6d.).
(c) **PLANNING ASSISTANT**, Special Grade (£707 5s.—£861).

Applicants for appointment (a) must be Corporate Members of the R.I.B.A., and must have had considerable experience in all types of Municipal work.

Applicants for appointments (b) and (c) should hold appropriate qualifications, and in respect of appointment (c) preference will be given to applicants having had experience in development control.

HOUSING ACCOMMODATION WILL BE MADE AVAILABLE IF REQUIRED.

Forms of application can be obtained from the Borough Engineer, 22/24, Nicholas Street, Burnley, to whom applications should be returned not later than Saturday, 25th May, 1957.

C. V. THORNLEY,

6178

BOROUGH OF WEMBLEY**APPOINTMENT OF SENIOR ASSISTANT ARCHITECT**

Applications are invited from suitably qualified persons for the above established appointment. Commencing salary according to qualifications and experience: A.P.T. V/VI (£844 17s. 6d. to £1,137 p.a. inclusive). Applicants must have had considerable experience in the design and construction of houses, flats and municipal buildings. Applications, disclosing any relationship to a member or senior officer of the Council, giving the names and addresses of three referees, quoting reference "A" must reach the Borough Engineer and Surveyor, Town Hall, Wembley, by the 25th May, 1957. Canvassing disqualifies. Housing accommodation not provided. 6181

COUNTY BOROUGH OF WOLVERHAMPTON**ARCHITECTURAL ASSISTANTS**

Required in Borough Engineer's Department as follows:-

- (a) **SENIOR ASSISTANT ARCHITECT**, A.P.T. Grade V (£815-£995). Candidates should be A.R.I.B.A., with at least 3 years' experience since qualifying.
(b) **ASSISTANT ARCHITECT**, A.P.T. Grade I to Special Grade (£530-£861).

Candidates should have passed the R.I.B.A. Intermediate Examination and have had suitable office experience.

Appointments subject to N.J.C. Conditions, Superannuation and Medical Examination. Housing accommodation at an economic rent may be made available, if required, for one of the above.

Applications, stating post sought, education, qualifications, experience, past and present appointments, naming two referees, to the Borough Engineer, Town Hall, Wolverhampton, in an envelope suitably endorsed, by 24th May, 1957. 6190

CITY OF BRADFORD**SENIOR TOWN PLANNING ASSISTANT**

Applications are invited for the appointment of Senior Town Planning Assistant (Post No. 8) in the City Engineer and Surveyor's Department, at a salary in accordance with Grade A.P.T. IV/V (£727 15s.—£994 5s.). Commencing salary to be determined according to qualifications and experience.

The successful candidate will be required in connection with the layout of large Corporation Housing Estates and in connection with schemes of development as the result of slum clearance. Experience in the design and siting of multi-storey flats is desirable. Applicants should be A.M.T.P.I. and/or A.R.I.B.A., A.M.I.Mun.E., or A.M.I.C.E.

All applicants should have completed their National Service. No housing accommodation can be provided by the Corporation.

Applications on forms to be obtained from the City Engineer and Surveyor, Town Hall, Bradford, 1 (quoting post number), together with three testimonials, must be received by the undersigned by 31st May, 1957.

W. H. LEATHEM,

Town Clerk.

Town Hall, Bradford, 1. 6192

BOROUGH OF BARKING**QUANTITY SURVEYING ASSISTANTS**

Applications are invited for the following appointments:-

- (a) On Grade A.P.T. II (£609 17s. 6d. by £20 10s. to £691 17s. 6d. per annum).
(b) One Grade A.P.T. I (£543 5s. by £20 10s. to £625 5s. per annum).
Both salaries plus London weighting (£10-£30 per annum, according to age).

Applications, on forms obtainable from the Borough Architect, Town Hall, Barking, should reach the undersigned not later than 9 a.m., 24th May, 1957.

E. R. FARR,

Town Clerk.

Town Hall, Barking, Essex. 6193

COUNTY BOROUGH OF ROTHERHAM**CHIEF ASSISTANT ARCHITECT**

Applications are invited for the appointment of Chief Assistant Architect at a salary in accordance with A.P.T. Grade V/VI (£814 17s. 6d.—£1,107 0s. 0d. per annum, the commencing salary to be within this grade according to qualifications and experience.

Applicants to be Associate Members of the R.I.B.A. and having good architectural experience. Housing accommodation can be provided if necessary.

Applications to be endorsed "Chief Assistant Architect," stating age, qualifications and details of experience, together with the names of two referees, should be received by me not later than Thursday, 23rd May, 1957.

Canvassing will disqualify.

JOHN S. WALL,

Town Clerk.

Municipal Offices,

Rotherham,

2nd May, 1957. 6196

DUNDEE COLLEGE OF ART

Principal: H. ADAM CRAWFORD, R.S.A.,

D.A.(Glas.)

SCHOOL OF ARCHITECTURE

The Governors of the Dundee Institute of Art and Technology invite applications from professional Architects for the position of **HEAD OF THE SCHOOL OF ARCHITECTURE** within the College.

The School conducts a Five Years' Diploma Course, and is recognised for exemption from the Intermediate and Final Examinations of the Royal Institute of British Architects. The Head of the School will be expected to organise instruction throughout the school, and take some lectures and studio instruction. Permission to engage in private practice is normally granted to members of the College staff.

The salary scale—£1,455 × annual increments to £1,710—is at present under review.

Applications should be made on the prescribed form, copies of which, with full particulars, may be obtained from the undersigned, not later than three weeks after the insertion of this advertisement.

F. RAYMOND WILKINSON,

Clerk and Treasurer.

Bell Street, Dundee.

29th April, 1957. 6167

HERTFORDSHIRE COUNTY PLANNING**DEPARTMENT****(a) DESIGN AND NEW TOWNS SECTION (HEADQUARTERS):**

PLANNING ARCHITECT, Special/V (£707-£994). Experience in Architectural Design and preferably some Planning training. Successful applicant will be required to prepare, under supervision, schemes and designs in relation to planning applications. Qualifications: A.R.I.B.A., and preferably A.M.T.P.I.

(b) EAST DIVISIONAL OFFICE, HERTFORD:

PLANNING ASSISTANT. Salary £609-£861 (A.P.T. II Special). Primary function will be Development Control. Final Town Planning Institute Examination standard required for promotion to Special Grade.

Forms of Application from County Planning Officer, County Hall, Hertford. Closing date: 20th May, 1957. 6159

BRACKNELL DEVELOPMENT CORPORATION

Applications are invited for the post of **JUNIOR ARCHITECTURAL DRAUGHTSMAN** in the Department of the Chief Architect. Commencing salary to be in accordance with age and experience up to a maximum of £513 per annum.

Superannuation scheme. Medical examination. Housing available in due course. Apply by 27th May, giving age, education and qualifications, experience and appointments held (with dates and salaries), and two referees, to General Manager (J.A.D.), Bracknell Development Corporation, Farley Hall, Bracknell, Berks. 6179

EAST SUSSEX COUNTY COUNCIL**COUNTY ARCHITECT'S DEPARTMENT**

Applications are invited for two appointments as **ASSISTANT ARCHITECTS** on the permanent staff. Salary Grade A.P.T. V (£814-£994 per annum), commencing within the grade according to ability and experience. Candidates must be Registered Architects.

Applications, stating age, qualifications and experience, and giving the names of two persons to whom reference may be made, to be sent not later than 24th May, 1957, to the County Architect, County Hall, Lewes. 6180

CITY OF LANCASTER

Applications are invited for the following appointments in the Architects' Division of the City Engineer's Department:-

- (a) **SENIOR ASSISTANT ARCHITECT**. Salary A.P.T. Grade IV (£727 to £907 per annum). Applicants must be Registered Architects, and preference will be given to Associates of the R.I.B.A.

- (b) **QUANTITY SURVEYING ASSISTANT**. Salary A.P.T. Grade III (£656 to £748 per annum). Preference will be given to applicants with a qualification in Quantity Surveying.

Housing accommodation will be offered in suitable cases.

Applications, with names of two persons to whom reference may be made, to be sent to Mr. L. Lyons, B.Sc., A.M.I.C.E., City Engineer, Town Hall, Lancaster, not later than Monday, 20th May, 1957.

J. D. WADDELL,

Town Clerk.

Town Hall, Lancaster.

26th April, 1957. 6163

NORTHUMBERLAND COUNTY PLANNING**DEPARTMENT**

ASSISTANT to Area Planning Officer required, on Special Scale (£707 to £861). Salary according to qualifications and experience. Application forms from the County Planning Officer, County Hall, Newcastle upon Tyne, 1, to be submitted by 20th May, 1957. 6171

LANCASHIRE COUNTY COUNCIL**PLANNING ASSISTANT (LANDSCAPE)**

A.P.T. Grade IV (£727 15s.—£907 2s. 6d.), required at Preston. Candidates should be qualified landscape architects.

Duties include the preparation of landscape schemes in connection with development and land reclamation, and other landscape work involved in the control of development throughout the county.

Applications, giving age, qualifications, present appointment, experience, etc., and two referees, to the County Planning Officer, East Cliff County Offices, Preston, by 22nd May, 1957. 6168

CITY OF BIRMINGHAM PUBLIC WORKS**DEPARTMENT****REDEVELOPMENT SECTION**

- (a) **SENIOR PLANNING ASSISTANT**. Salary grade A.P.T. VI (£902-£1,107 per annum).

- (b) **PLANNING ASSISTANT**. Salary Grade A.P.T. V (£814 17s. 6d.—£994 5s. per annum).

Candidates must have the appropriate professional qualifications.

Summary of duties:-

Post (a): Preparation of surveys and layout plans of future Redevelopment Areas.

Post (b): Preparation of detailed considerations in layout plans.

Experience in perspective presentations will be an advantage.

The appointments are permanent, superannuable, and subject to a medical examination.

Applications, stating qualifications, age, and experience and naming two referees, should reach the undersigned by 1st June, 1957.

Canvassing disqualifies.

HERBERT J. MANZONI,

City Engineer and Surveyor.

Civic Centre, Birmingham, 1. 6200

COUNTY BOROUGH OF GATESHEAD
Applications are invited from qualified and experienced persons for the following appointments, which are subject to N.J.C. conditions:—
SENIOR ASSISTANT ARCHITECTS, A.P.T. VI (£902—£1,107).

Applicants must be Registered Architects, and should be Corporate Members of the Royal Institute of British Architects. They should have had good experience in the design and construction of Public Buildings, Schools and/or Municipal Housing Schemes.

ASSISTANT ARCHITECTS, A.P.T. IV-V (£727 15s.—£994 5s.).

Applicants must be Registered Architects and should be Corporate Members of the Royal Institute of British Architects. Previous experience with a Local Authority would be an advantage.

SENIOR PLANNING ASSISTANT, A.P.T. VI (£902—£1,107), who must be qualified by examination in Town Planning, and preference will be given where a recognised qualification in Civil Engineering or Architecture is also held.

Applicants must have had considerable responsible experience covering preparation of Development Plans, and have a thorough knowledge of current relevant legislation.

PLANNING ASSISTANTS, A.P.T. Special Scale (£707 5s.—£861).

Applicants must have not less than 3 years' experience on Development Plan surveys and Development Control, and at least have passed the Intermediate Examination of the Town Planning Institute.

All above posts pensionable, subject to medical examination and one month's notice on either side.

FAVOURABLE CONSIDERATION WILL BE GIVEN TO THE PROVISION OF HOUSING ACCOMMODATION IN CERTAIN CASES, ON A RENTAL BASIS.

Applications, on forms obtainable from the Borough Surveyor, Swinburne Street, Gateshead, 8, must be returned to him not later than Saturday, 1st June, 1957.

C. D. JACKSON,

Town Clerk.

Town Hall, Gateshead, 8,
May, 1957.

6199

LANCASHIRE COUNTY COUNCIL.
SENIOR ASSISTANT ARCHITECT, within the scale £814 17s. 6d.—£994 5s., to work in a Group on Education projects. Experience of Local Government work not essential.

Application forms, obtainable from the County Architect, P.O. Box 26, County Hall, Preston, to be returned by Monday, 27th May, 1957, quoting Ref. A/J.

6127

COVENTRY CORPORATION
ARCHITECTS Special Grade (£707—£861). Additional local award £26 on salary up to £795 in approved circumstances. Loan for removal expenses if required. Application forms, etc., from City Architect and Planning Officer, Bull Yard, Coventry, returnable by 19th May. 6148

HERTFORDSHIRE COUNTY COUNCIL.
County Architect's Department. **ASSISTANT ARCHITECT** (Special Class, £707 5s.—£861). Local Government experience not essential. Applications, with names of two referees, to County Architect, County Hall, Hertford, Herts., by 28th May, 1957. 6201

COUNTY BOROUGH OF SOUTHPORT
ASSISTANT ARCHITECT—A.P.T. IV
Applications are invited for the above appointment in the Borough Architect and Town Planning Officer's Department. Candidates should have had experience in School Design and Construction and must have passed the Final examination of the R.I.B.A. Flat may be made available to suitable applicant.

Application forms may be obtained from the Borough Architect and Town Planning Officer, 99/105, Lord Street.

Closing date for the receipt of application forms is Saturday, 25th May, 1957.

R. EDGAR PERRINS,

Town Clerk.

6126

Architectural Appointments Vacant

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

ASSISTANT ARCHITECTS AND SHOP-FITTING DRAFTSMEN. Co-operative Wholesale Society, Ltd., invite applications for the following appointments: (1) Assistant Architects capable of preparing working drawings from preliminary details. (2) Shopfitting Draftsmen with experience in Shop Equipment and modernisation of interiors.

The posts are pensionable, subject to medical examination. Five-day week in operation. Applications, giving age, details of experience and salary required to W. J. Reed, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 99, Leman Street, London, E.1. 4977

ARCHITECTURAL DRAFTSMAN required for leading firm of Consulting Civil Engineers, Westminster. Five-day week, bonus and pension schemes. Phone Mr. Simmons, ABBEY 1122 for appointment. 6017

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

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

ARCHITECT with varied practice requires capable **ASSISTANT**. Good draughtsman with knowledge of construction.—Reply, with details of age, experience and salary expected, to A. W. J. Mullins, L.R.I.B.A., 78, Thorofare, Woodbridge, Suffolk. 5939

TREHEARNE & NORMAN, PRESTON & PARTNERS have vacancies for **SENIOR and JUNIOR ASSISTANTS**. Salaries according to experience and qualifications.—Apply 83, Kingsway, W.C.2 (HOL. 4071). 5908

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

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

SENIOR ASSISTANT required, capable of taking full responsibility of contracts, dealing with Client and Contractor. Must belong to Modern School of Design.

SENIOR ARCHITECT with Town Planning qualifications of experience required to take charge of interesting project.

State experience age and salary required to John H. D. Madin, Dip.Arch.Birm, A.R.I.B.A., 83/85 Hagley Road, Edgbaston, Birmingham. 5977

WHY not have an interesting position in Croydon? Plenty of variety for an experienced **ARCHITECTURAL ASSISTANT** in a private practice. No Saturdays. State full particulars and salary required. Box 5987.

CROYDON Architects require experienced **ASSISTANT**, also **JUNIOR**. Five-day week, holiday this year. Write giving full particulars of experience and salary required. Box 5986.

QUALIFIED ASSISTANT required by established practice in the West Riding of Yorkshire. Capable of handling property development schemes for multiple stores in the North of England. Experience of commercial work and a contemporary outlook essential. Permanency and excellent opportunity for the right man.—Apply Taylor, Bown & Miller, 8, Victoria Avenue, Harrogate, giving age, experience, and salary required. 6076

ASSISTANT required for small office; modern work.—Write or 'phone N. H. Godsmark, 37A, Tubwell Row, Darlington. Tel. D.4932. 6079

TWO ARCHITECTURAL ASSISTANTS required, one Senior as group leader, and Junior of Intermediate A.R.I.B.A. or A.R.I.C.S. standard, to be engaged on varied and interesting projects throughout Southern England. Superannuation scheme in operation. Salaries by arrangement, according to age and experience.—Apply Cotton, Ballard & Blow, 5, Baker Street, W.1. Welbeck 3364/7. 6080

SENIOR ARCHITECTURAL ASSISTANTS wanted in office, with variety of work on hand, including Office Blocks, Schools, Domestic, Civic and Ecclesiastical Buildings. Holiday given this year.—Apply to Box 6043.

ASSISTANT CHIEF DRAFTSMAN required.—Please write, giving full particulars of qualifications, experience, age, and salary required, to Claude-General Neon Lights, Ltd., Wembley Hill Estate, Wembley. 6037

REQUIRED. — ASSISTANTS, Intermediate standard, with office experience. Varied work: Banks, Factories, Churches. 'Phone London Wall 3826. 6036

SENIOR ASSISTANT urgently required in busy West End office. The appointment offered is a responsible one which requires experience, ability, and a thorough knowledge in commercial design and construction. Please state qualifications and salary required. Holidays by arrangement.—Box 6045.

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

ARCHITECTURAL ASSISTANT required in private practice in Cotswold rural area. Exceptionally varied work, capable of surveys, working drawings, details, specifications. Car comm. Accommodation available. Practical experience more important than qualifications. State full particulars of experience, salary required, status.—Box 6056.

RUDDLE & WILKINSON, F./L.A.R.I.B.A., have vacancies for

(a) **SENIOR ARCHITECTURAL ASSISTANT.** Must have good office experience.

(b) **QUANTITY SURVEYING ASSISTANT**, of pre-Final standard.

UNFURNISHED FLATS AVAILABLE immediately for both appointments.

Apply: Long Causeway Chambers, Peterborough. 'Phone 5248. 6029

CITY Architect requires **SENIOR ASSISTANT**, capable of complete control substantial industrial and commercial projects. Salary £900—£1,000.—Box 6031.

ARCHITECTURAL ASSISTANTS required by large firm of Building and Civil Engineering Contractors for permanent appointments in Architects' Department at Head Office, London.

Applicants must be experienced in Private Housing Development, and have a sound practical knowledge of construction.

5-day week, with salaries according to experience and ability.

Applicants should write in the first instance, giving brief particulars, to Box No. 820, c/o Charles Barker & Sons, Ltd., Gateway House, London, E.C.4. 6050

GEORGE WIMPEY & CO., LTD.

The Architects' Department seek experienced Senior and Intermediate **ARCHITECTURAL STAFF**, with ability to apply their knowledge to new construction techniques covering Multi-Storey Flats, Houses, Offices and Industrial Buildings for contracts in the U.K. and overseas.

Appointments on a permanent basis, with a 5-day week, at Head Office, Hammersmith.

Salaries according to qualifications and experience, and, subject to satisfactory service, there is a Pension Scheme available.

Written applications, giving full particulars, to E. V. Collins, A.R.I.B.A., Chief Architect, 27, Hammersmith Grove, London, W.6. 6059

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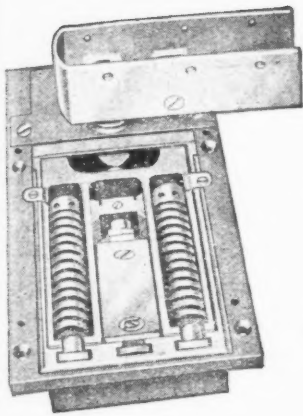
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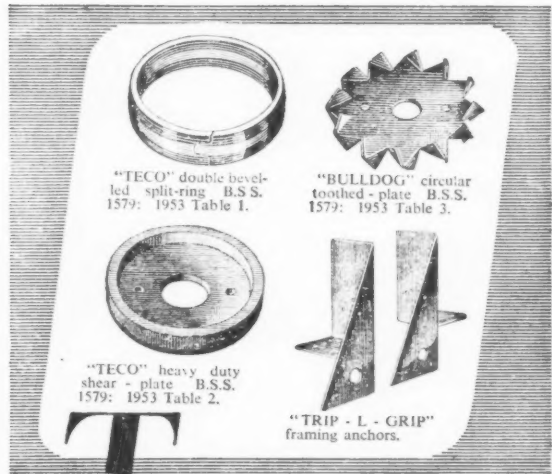
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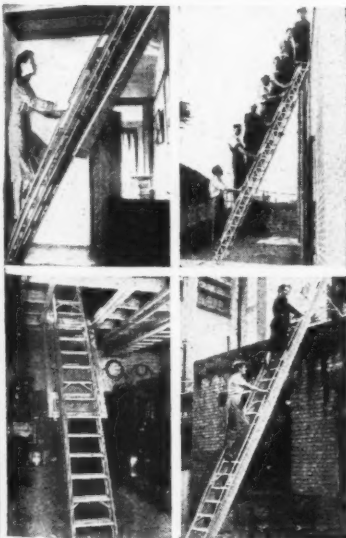
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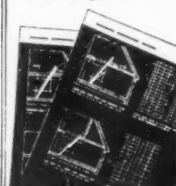
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