

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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Wanted and Vacant

No. 3437]

[Vol. 133

THE ARCHITECTURAL PRESS

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Registered as a Newspaper

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

ILA	Institute of Landscape Architects. 1, Park Crescent, W.1.	Museum 3473
I of Arb	Institute of Arbitrators. Hastings House, 10, Norfolk Street, W.C.2.	Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197
IQS	Institute of Quantity Surveyors. 98, Gloucester Place, W.1.	Welbeck 1859
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3.	Avenue 6851
IRA	Institute of Registered Architects. 68, Gloucester Place, W.1.	Hunter 1945
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Sloane 7128
JFRO	Joint Fire Research Organisation (DSIR & Fire Offices' Committee). Fire Research Station, Boreham Wood, Herts.	Elstree 1341/1797
LDA	Lead Development Association. 18, Adam Street, W.C.2.	Whitehall 4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	Museum 3891
MAFF	Ministry of Agriculture, Fisheries and Food. Whitehall Place, S.W.1.	Trafalgar 7711
MOE	Ministry of Education. Curzon Street House, W.1.	Hyde Park 7070
MOH	Ministry of Health. 23, Savile Row, W.1.	Regent 8411
MOHLG	Ministry of Housing and Local Government. Whitehall, S.W.1.	Whitehall 4300
MOLNS	Ministry of Labour and National Service, 8, St. James's Square, S.W.1.	Whitehall 6200
MOS	Ministry of Supply. Shell-Mex House, W.C.2.	Gerrard 6933
MOT	Ministry of Transport, Berkeley Square House, W.1.	Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1.	Reliance 7611
NAMMC	Natural Asphalte Mine Owners and Manufacturers Council. 14, Howick Place, Victoria Street, S.W.1.	Victoria 1600 & 6477
NAS	National Association of Shopfitters. 2, Caxton Street, S.W.1.	Abbey 4813
NBR	National Buildings Record. 31, Chester Terrace, N.W.1.	Welbeck 0619
NCBMP	National Council of Building Material Producers. 10, Storey's Gate, S.W.1.	A. Abbey 5111
NEFMAI	National Employers Federation of the Mastic Asphalt Industry. 21, John Adam Street, Adelphi, W.C.2.	Trafalgar 3927
NFBTE	National Federation of Building Trades Employers. 82 New Cavendish Street, W.1.	Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives. Federal House, Cedars Road, Clapham, S.W.4.	Macaulay 4459
NFHS	National Federation of Housing Societies. 12, Suffolk St., S.W.1.	Whitehall 1631
NHBRC	National House Builders Registration Council. 58, Portland Place, W.1.	Langham 0064/5
NPL	National Physical Laboratory. Head Office, Teddington.	Teddington Lock 3222
NRDB	Natural Rubber Development Board. Market Buildings, Mark Lane, E.C.3.	Mansion House 9383
NSAS	National Smoke Abatement Society. Palace Chambers, Bridge Street, S.W.1.	Trafalgar 6838
NT	National Trust. 42, Queen Anne's Gate, S.W.1.	Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1.	Abbey 4504
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh. Fountainbridge 7631	
RIB	Rural Industries Bureau. 35, Camp Road, S.W.19.	Wimbledon 5101
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Langham 5533
RICS	Royal Institution of Chartered Surveyors. 12, Great George Street, S.W.1. Whitehall 5322/9245	
RFAC	Royal Fine Art Commission. 5, Old Palace Yard, S.W.1.	Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1.	Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Trafalgar 2366
RSH	Royal Society of Health. 90, Buckingham Palace Road, S.W.1.	Sloane 5134
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1.	Victoria 2186
SE	Society of Engineers. Abbey House, Victoria Street, S.W.1.	Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, E.C.3. Mansion House 3921	
SIA	Society of Industrial Artists. 7, Woburn Square, W.C.1.	Langham 1984/5
SIA	Structural Insulation Association. 32, Queen Anne Street, W.1.	Langham 7616
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen.	
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2.	Temple Bar 5006
TDA	Timber Development Association. 21, College Hill, E.C.4.	City 4771
TPI	Town Planning Institute. 18, Ashley Place, S.W.1.	Victoria 8815
TTF	Timber Trades Federation. 75, Cannon Street, E.C.4.	City 5040
WDC	War Damage Commission. 6, Carlton House Terrace, S.W.1.	Whitehall 4341
ZDA	Zinc Development Association. 34, Berkeley Square, W.1.	Grosvenor 6636



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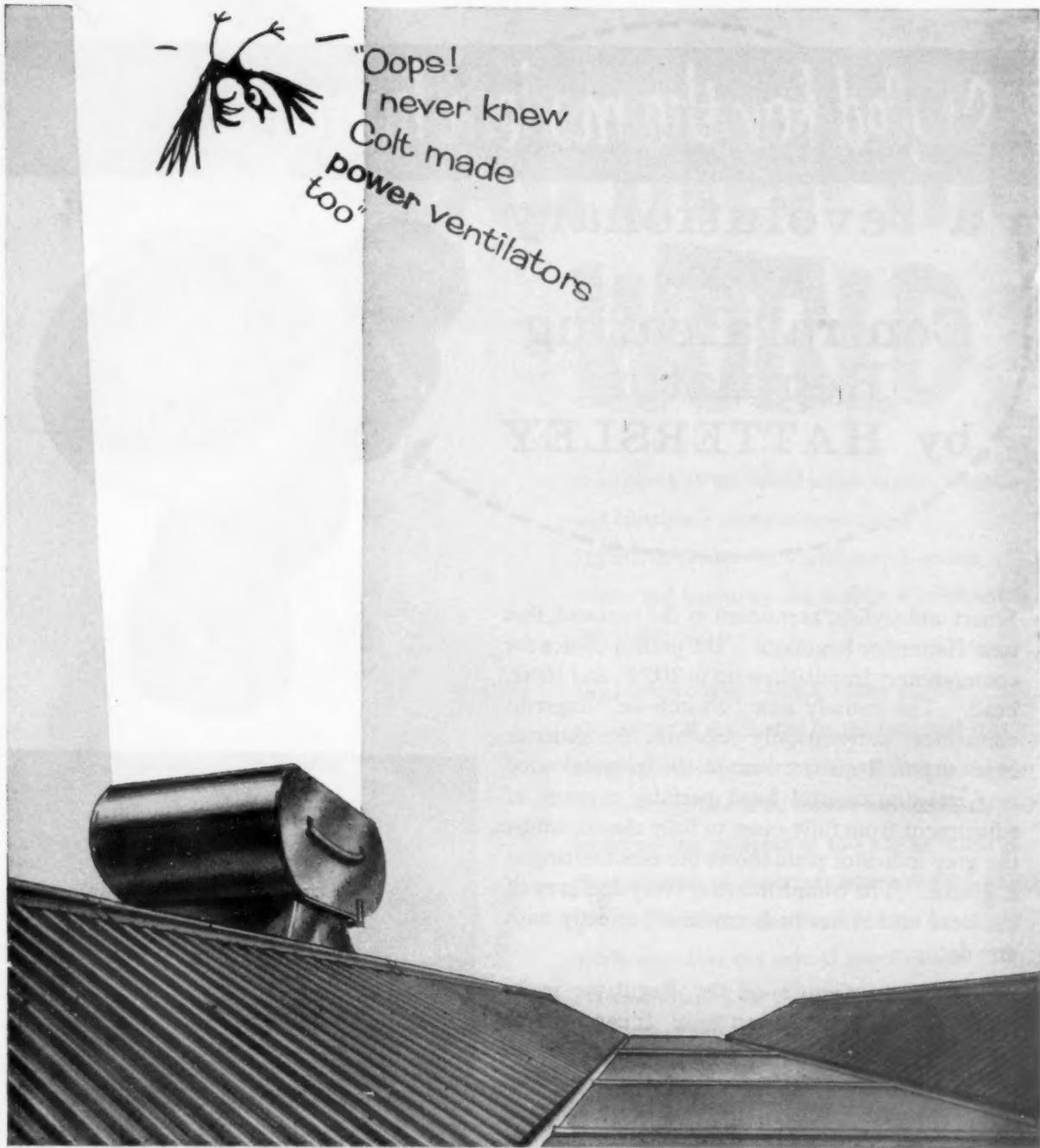
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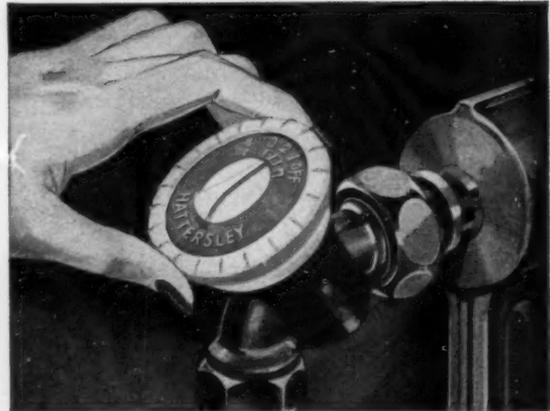
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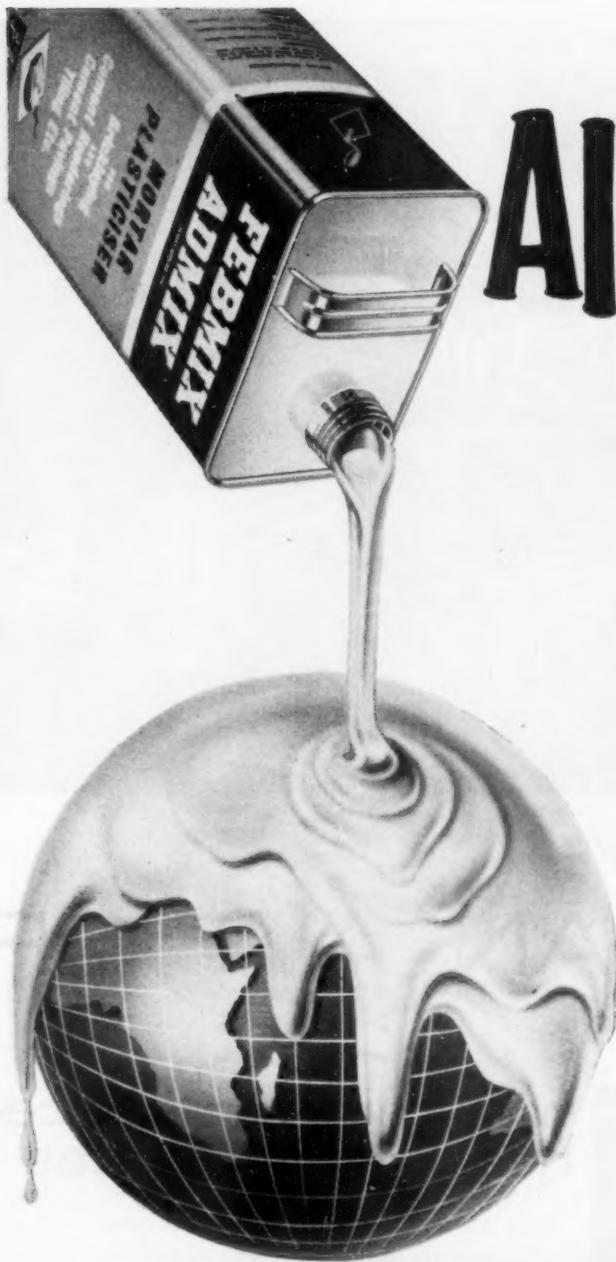
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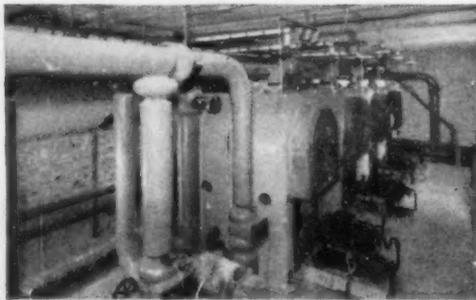
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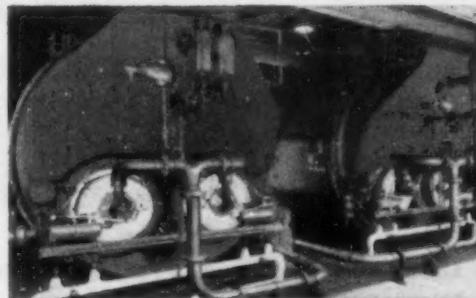
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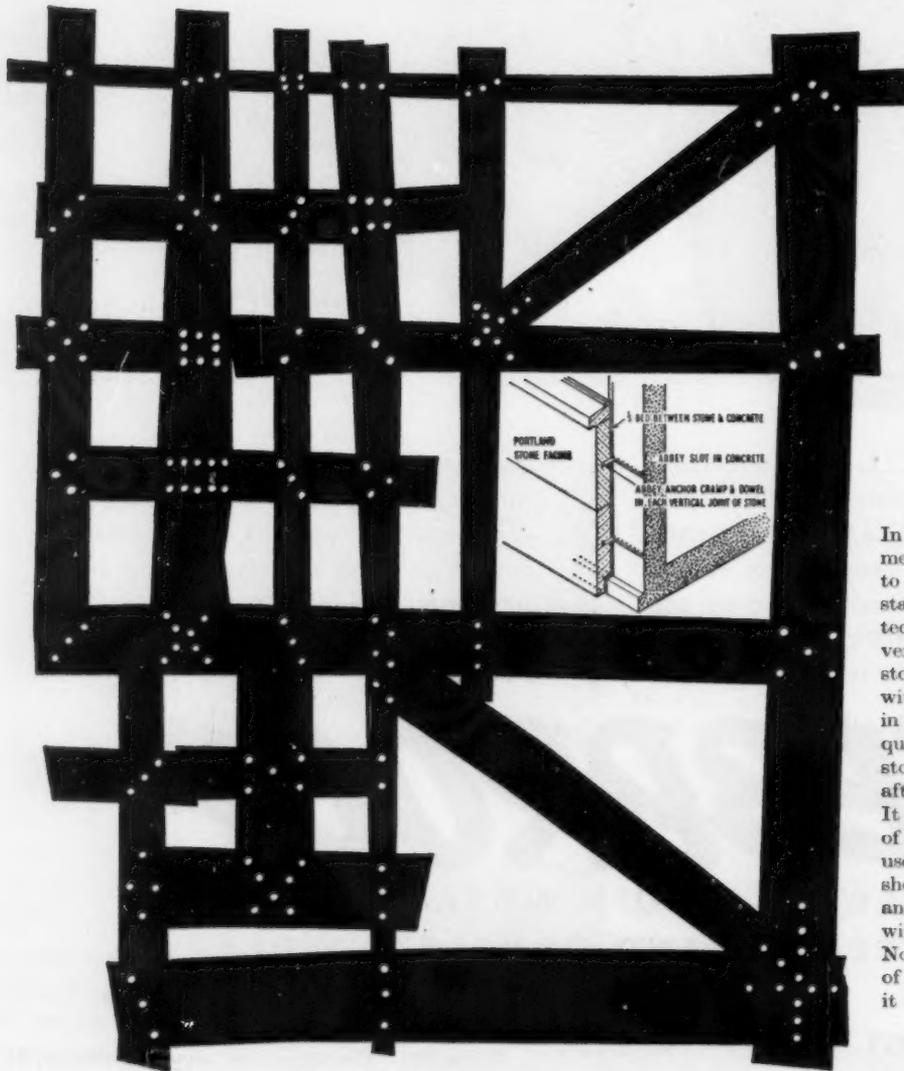


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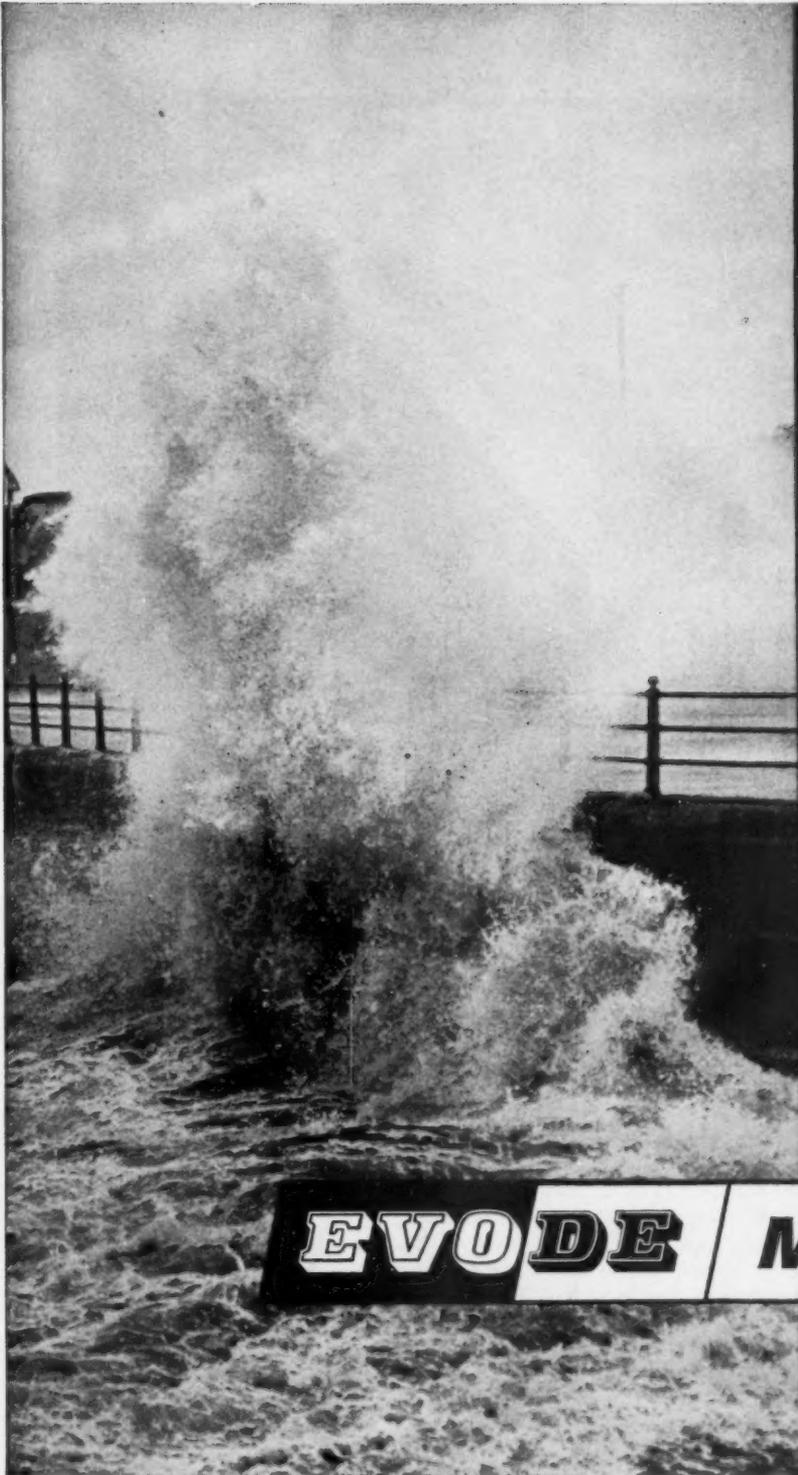
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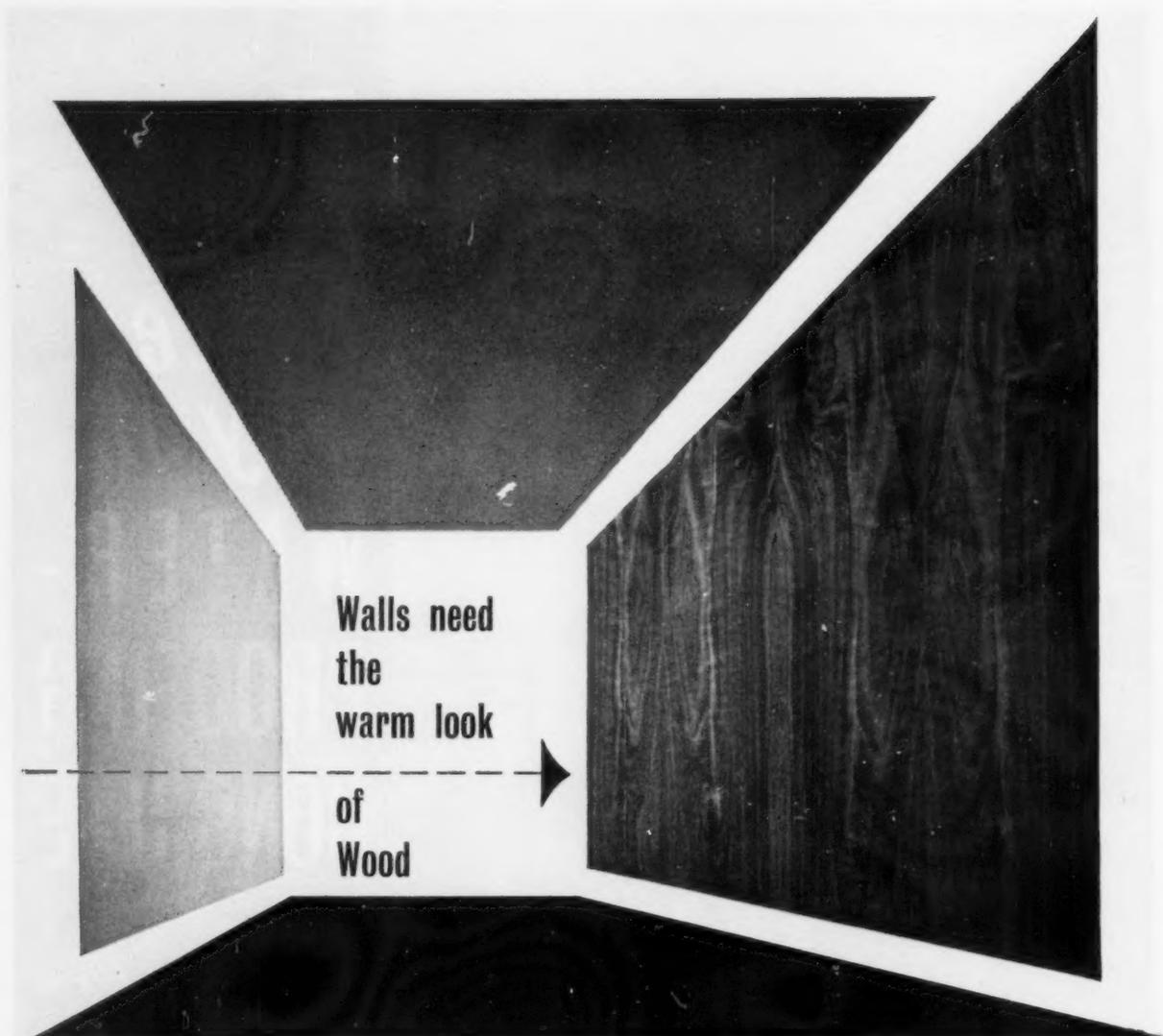
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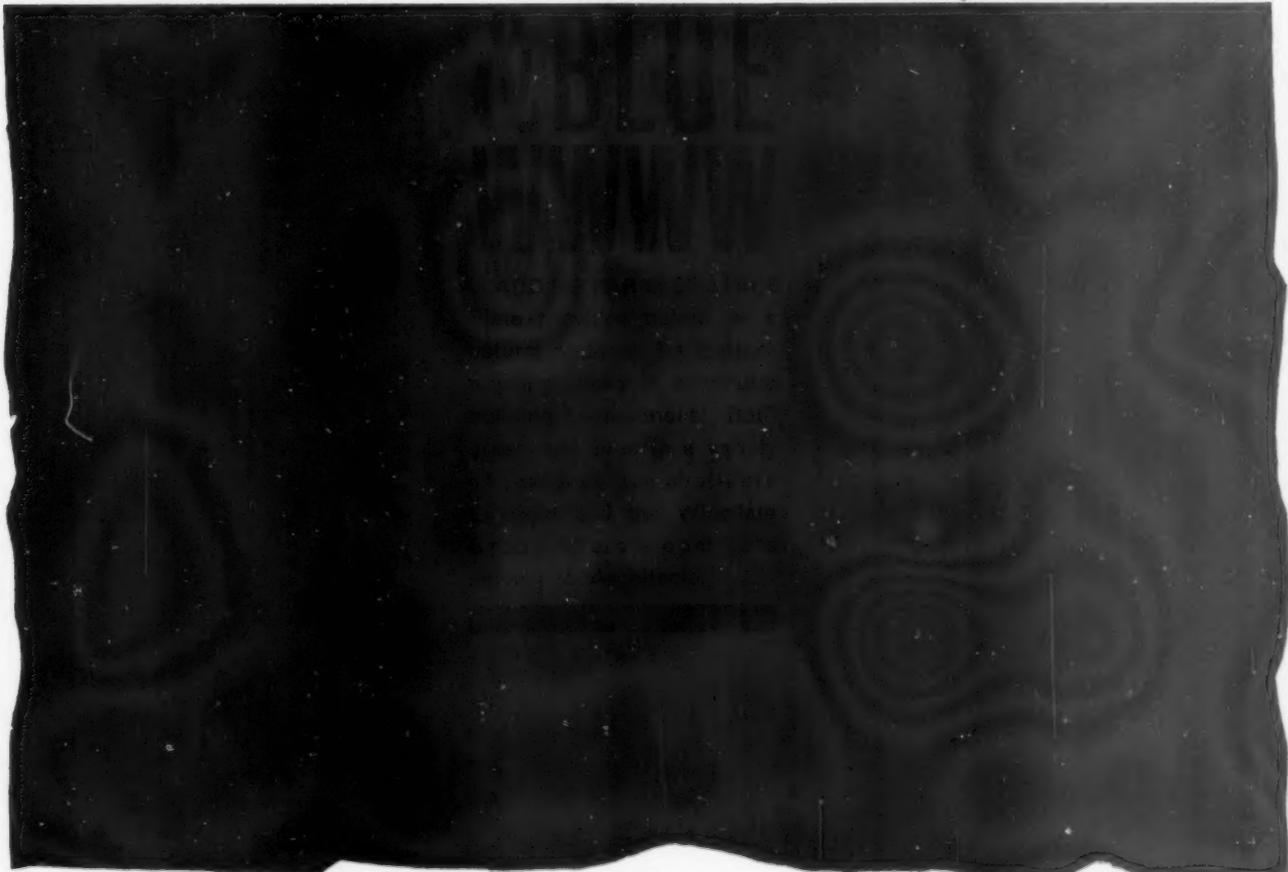


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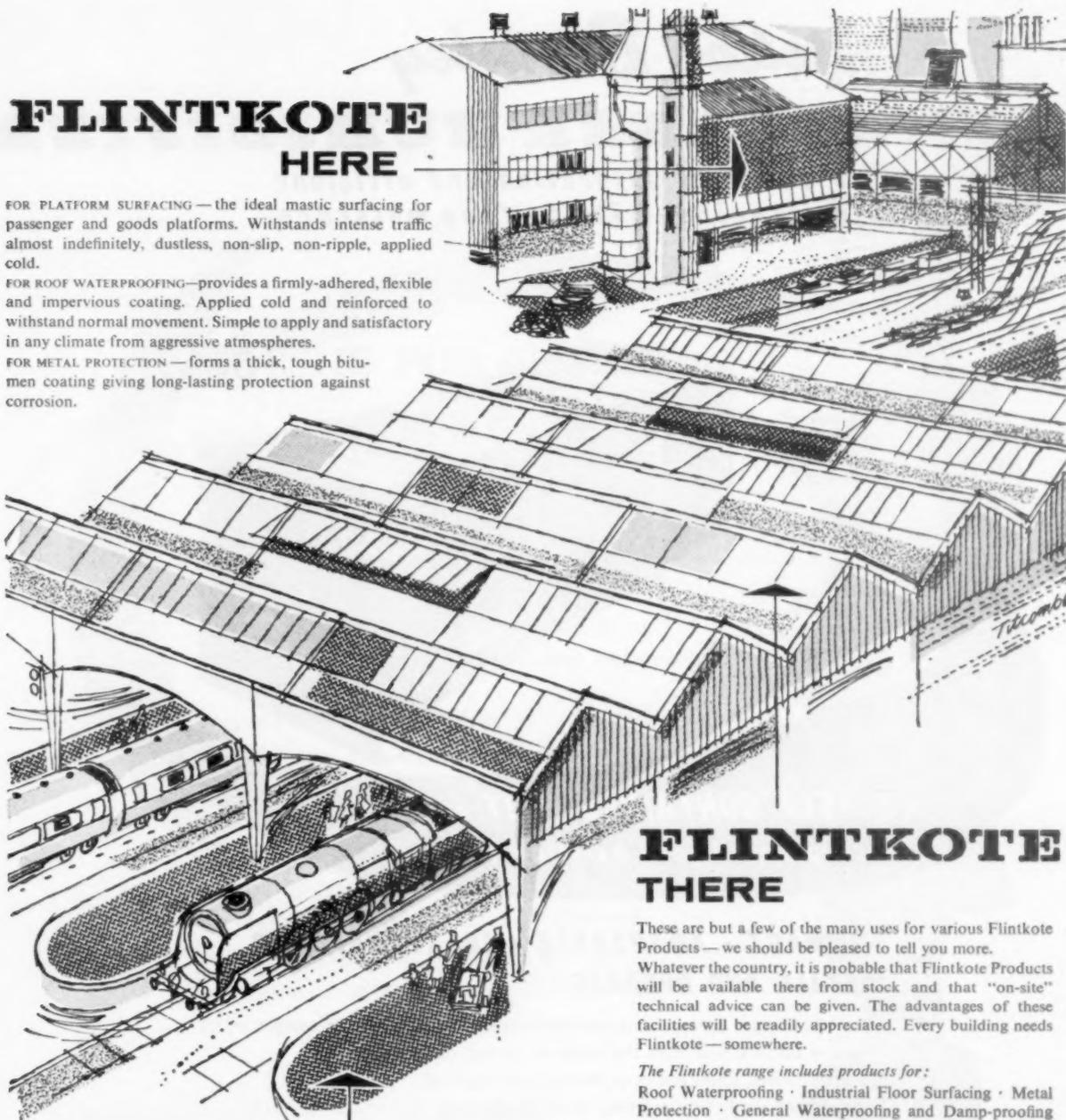
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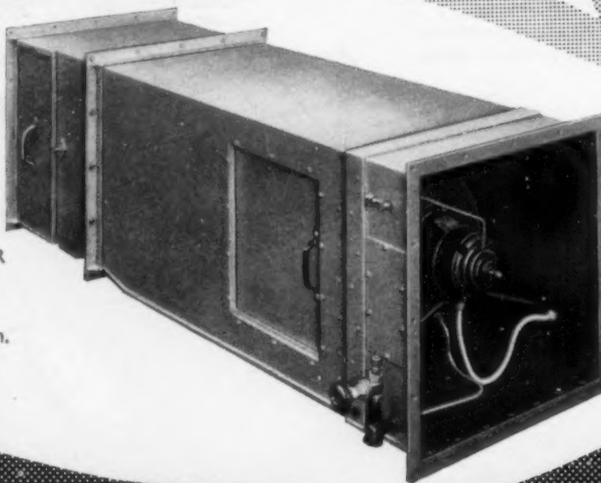
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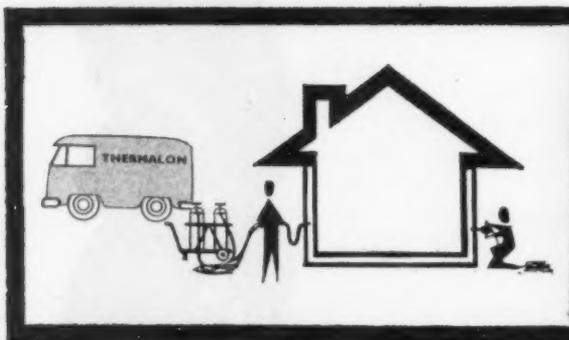
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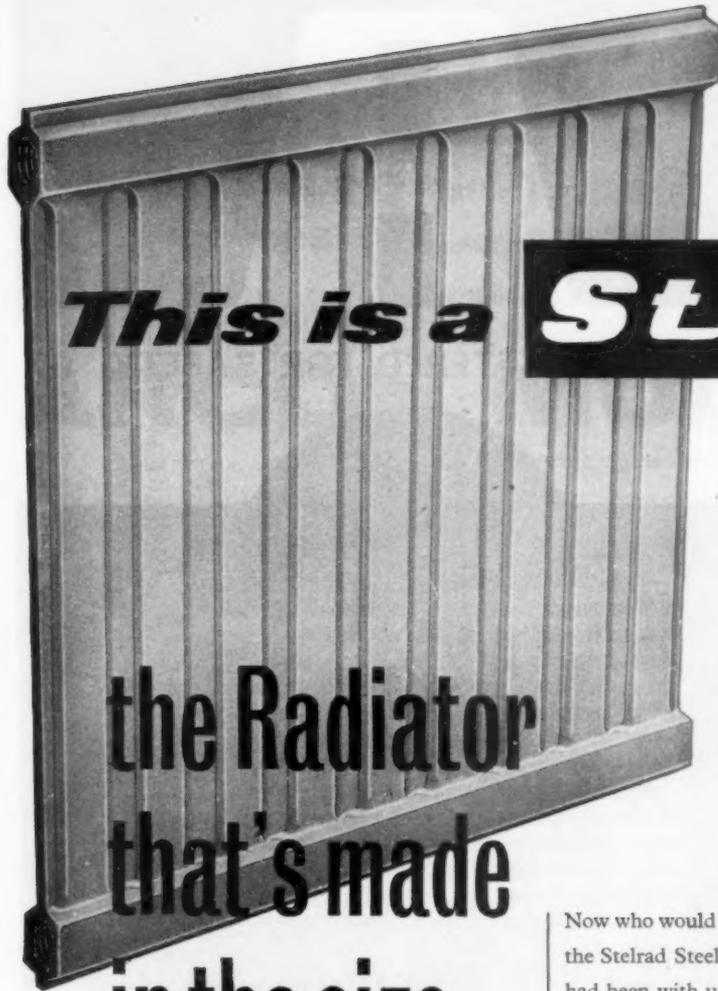
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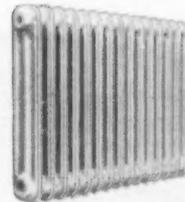
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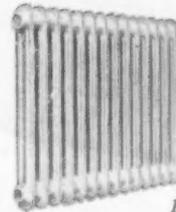
Double Wall



Angle-Wall



3-Column

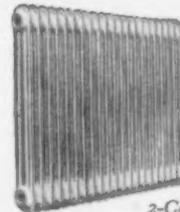


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2-Column



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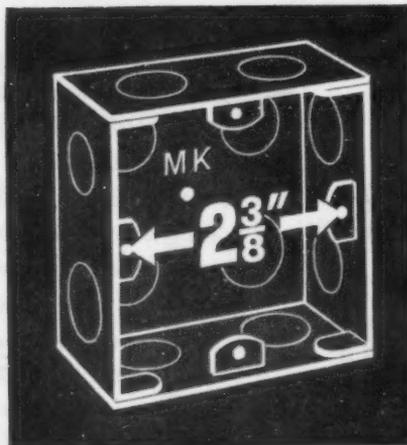
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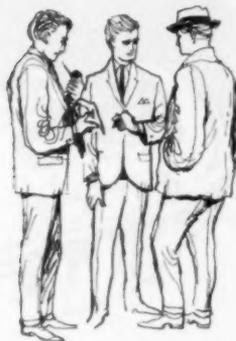
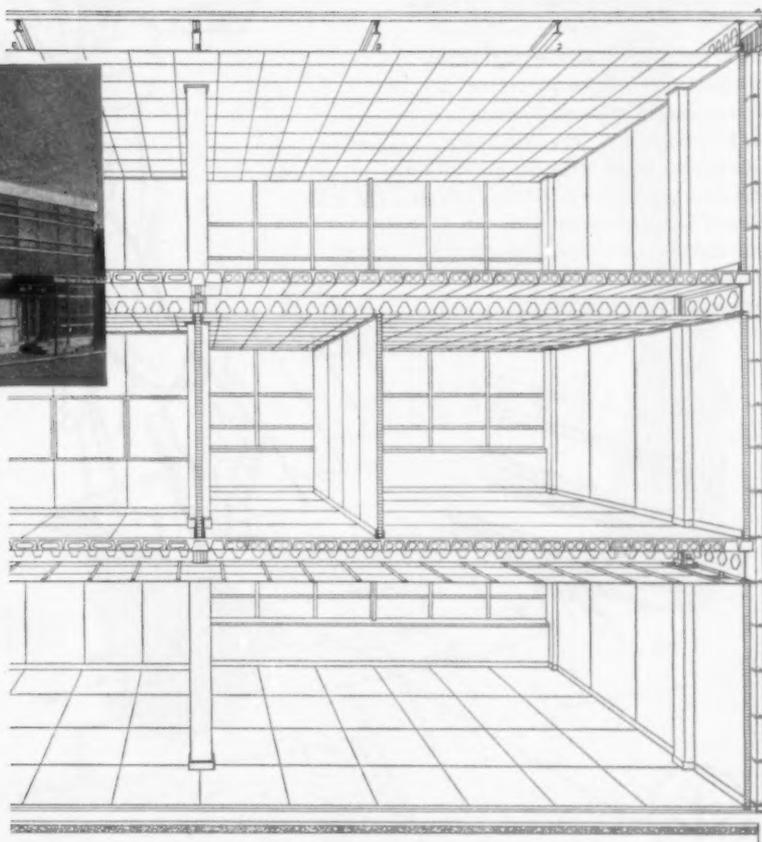
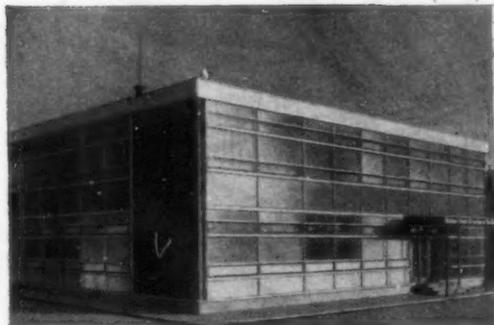
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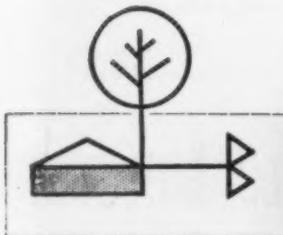
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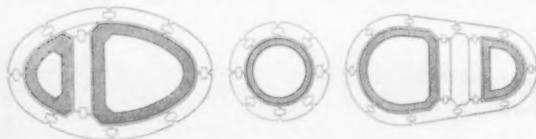
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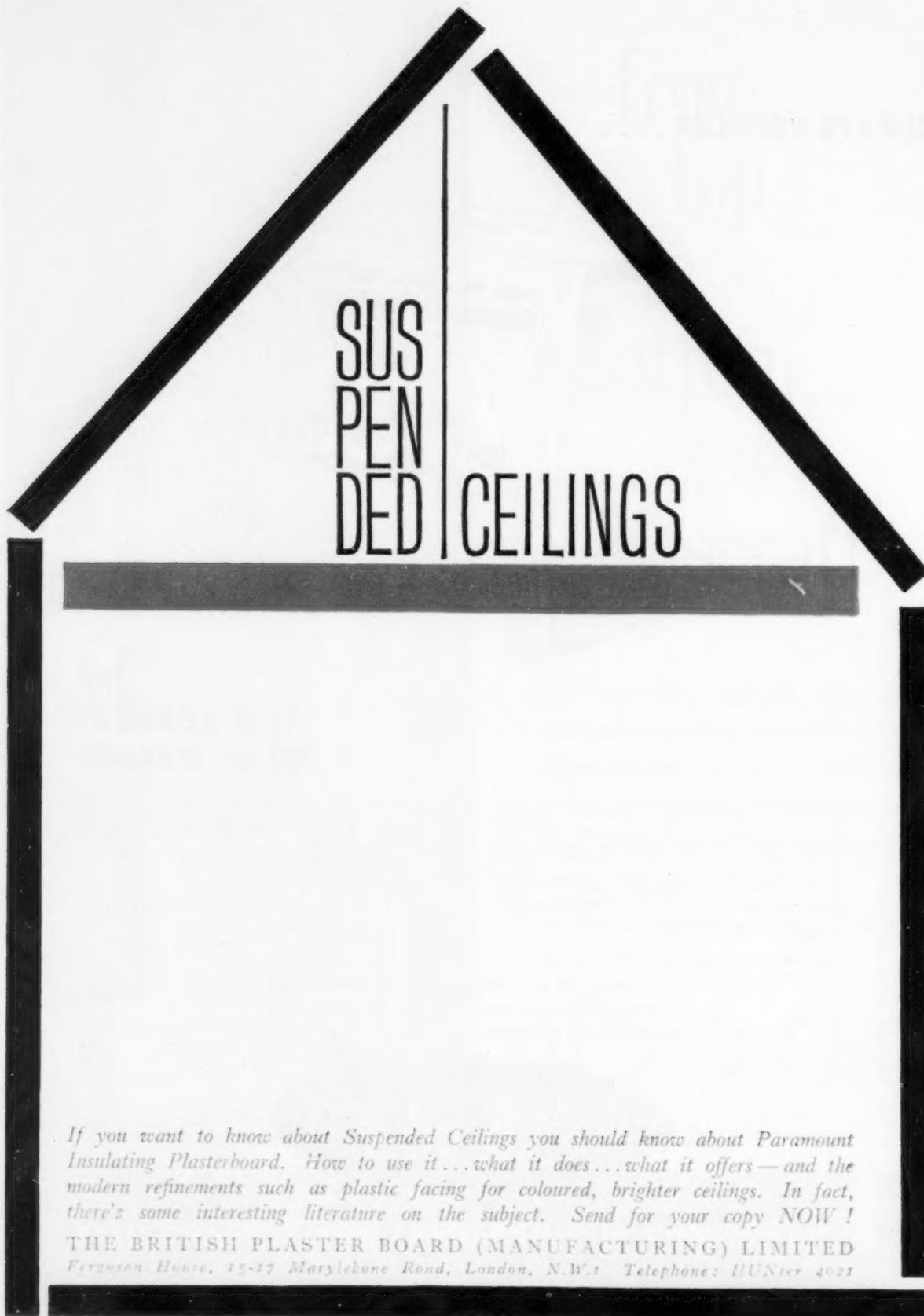
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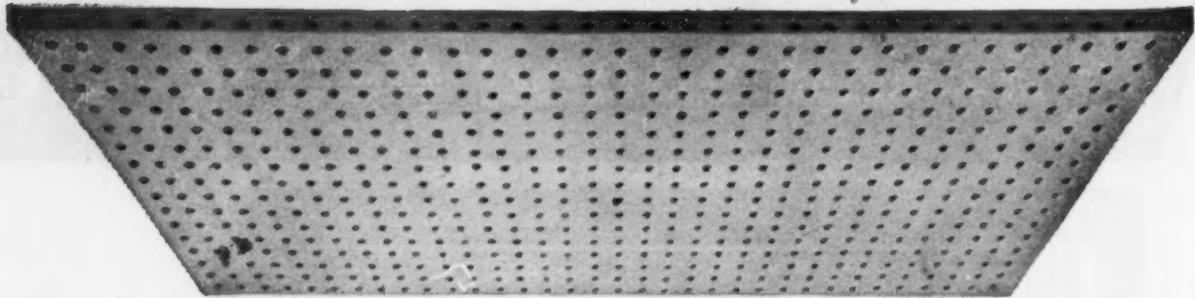


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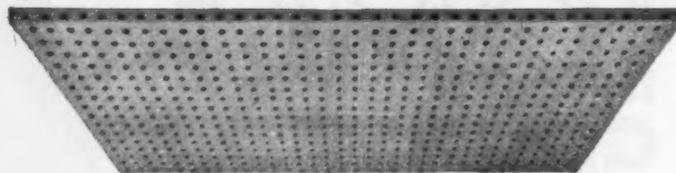
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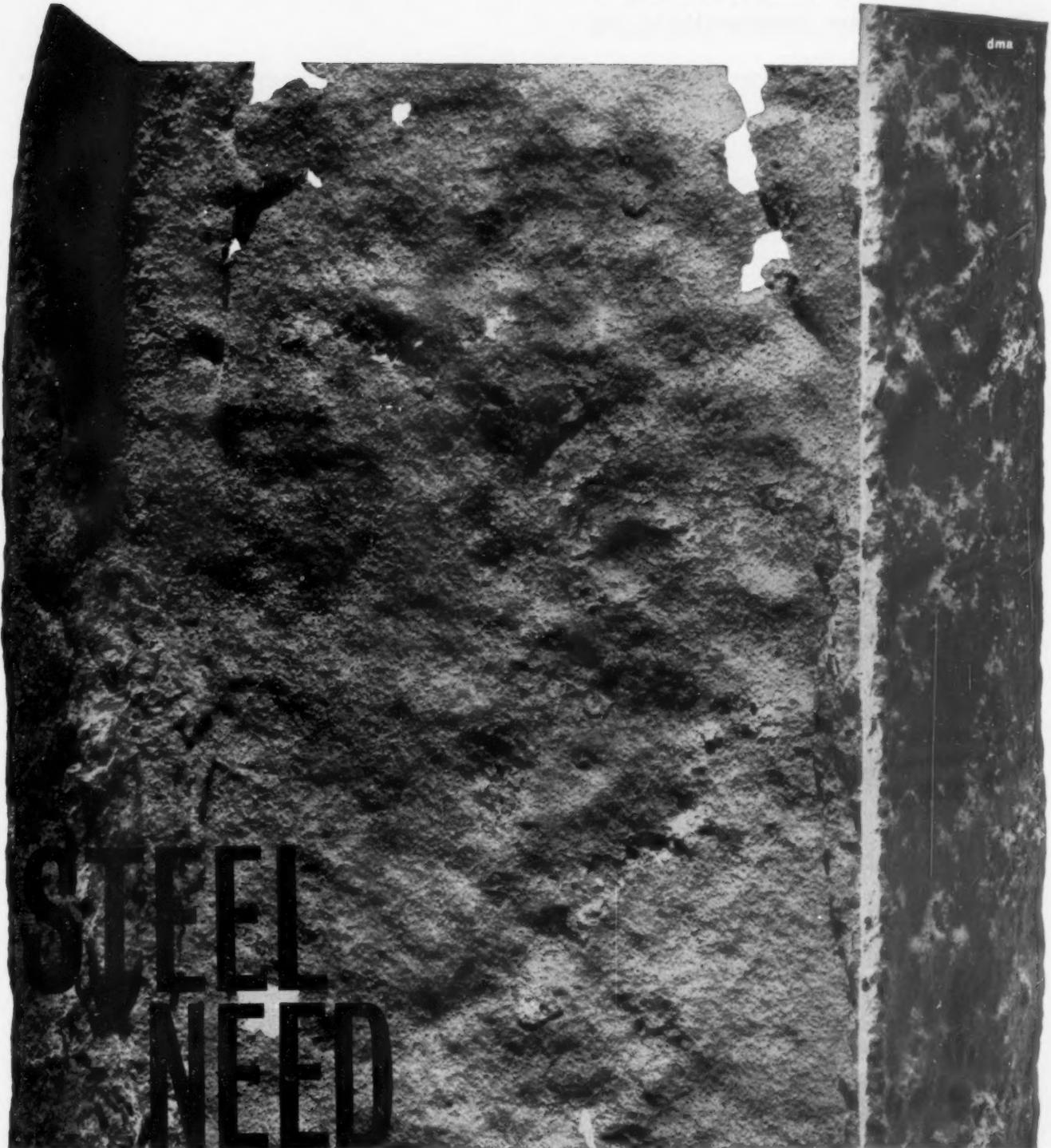
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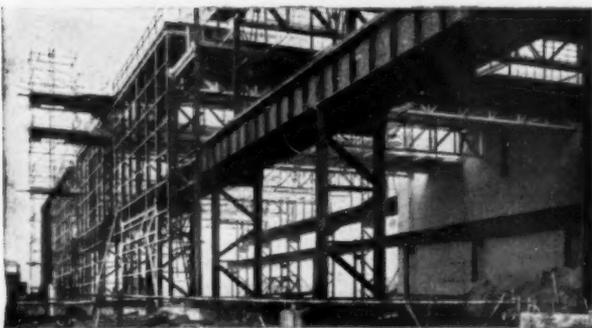
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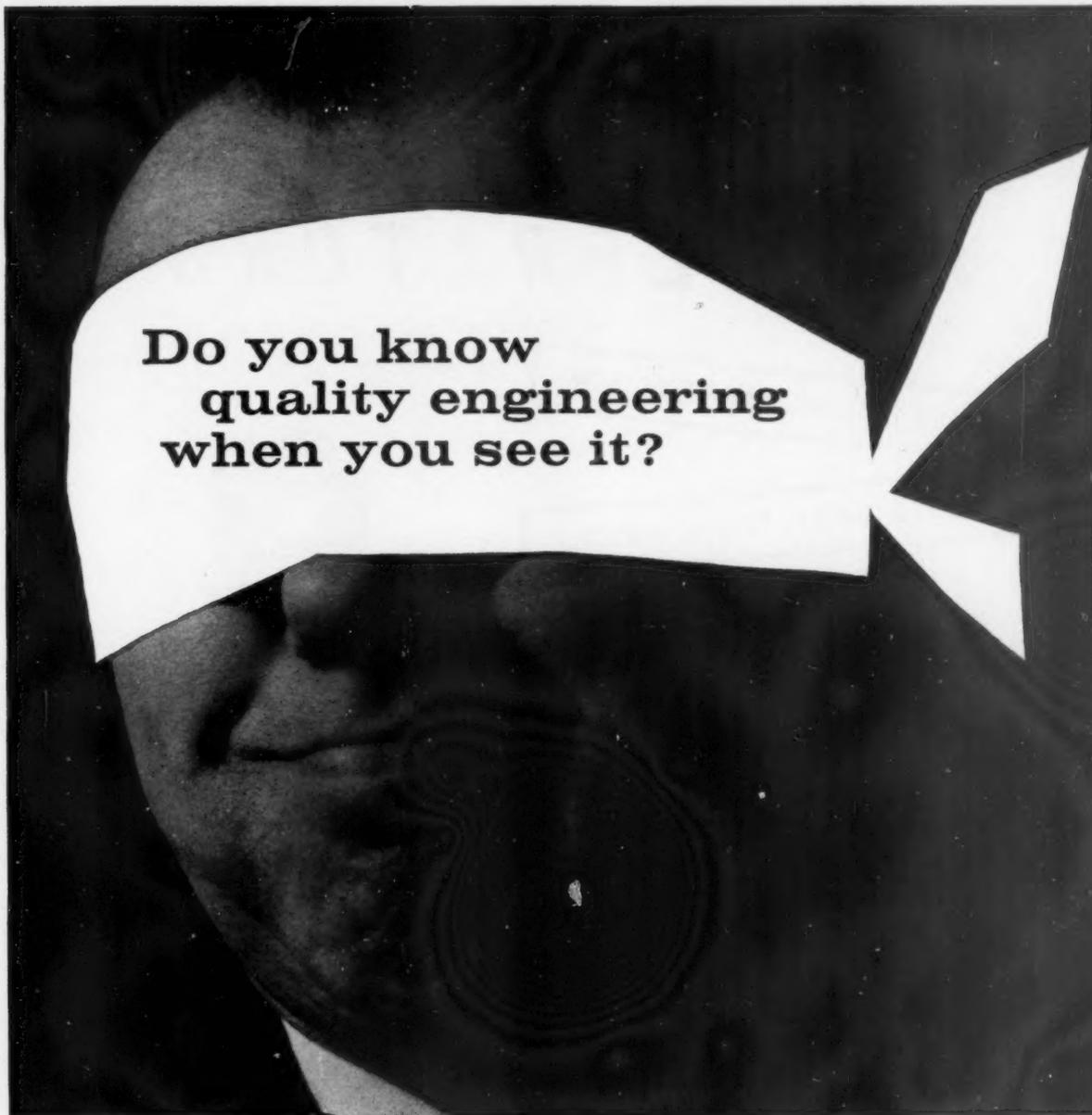
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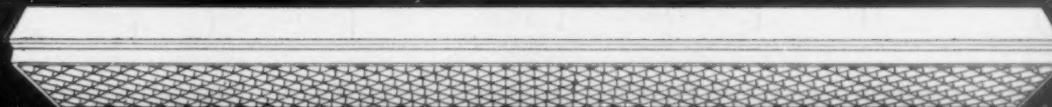
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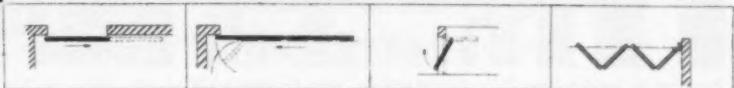
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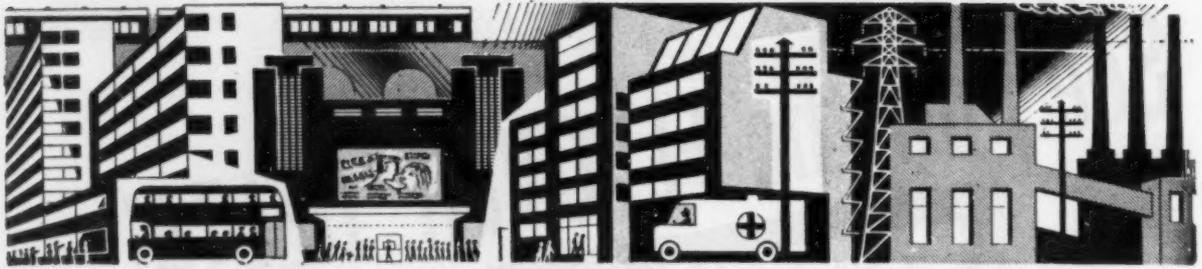


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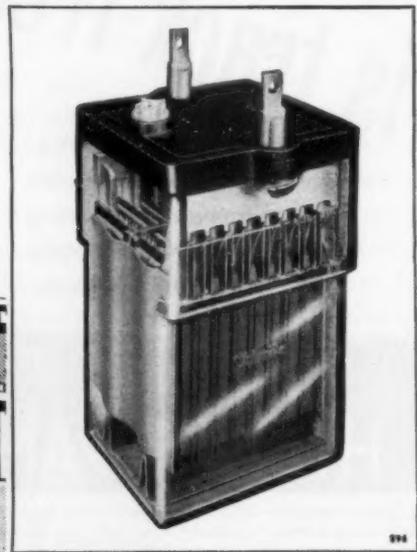
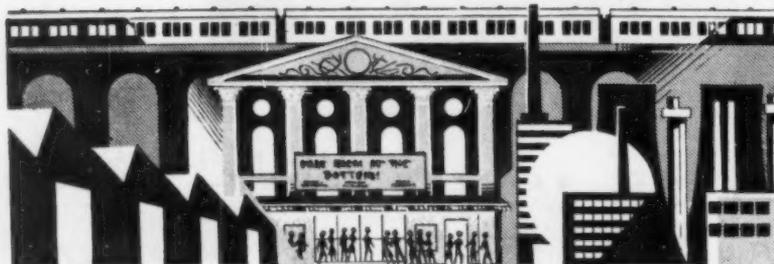
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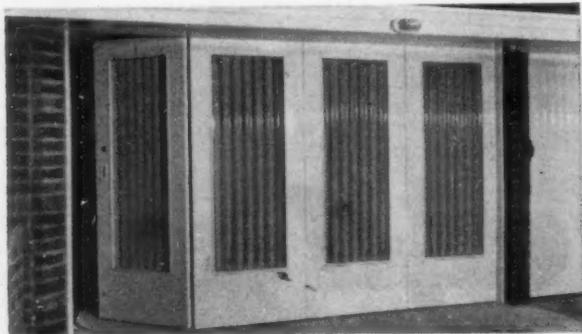
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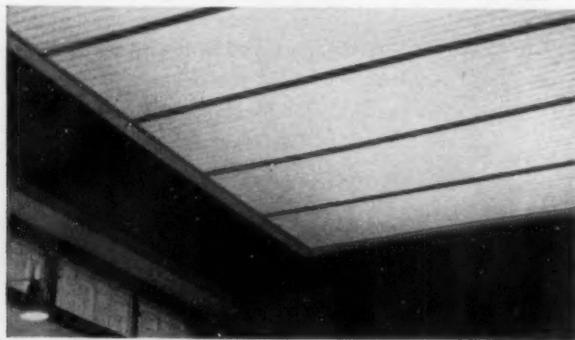


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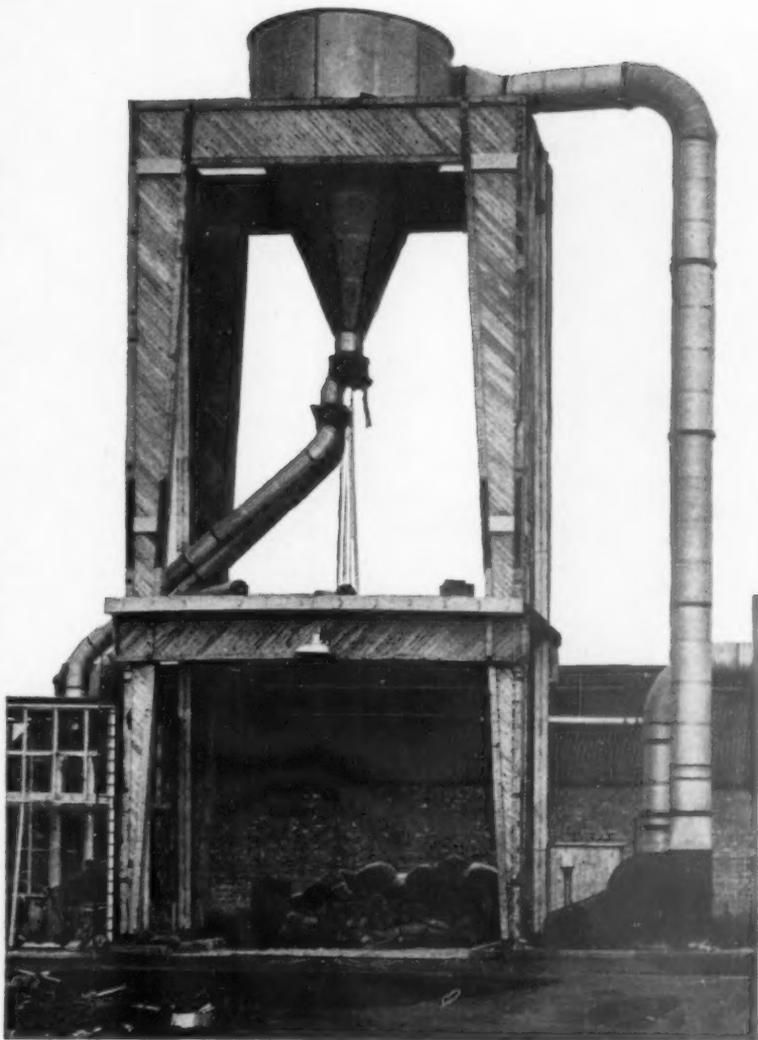


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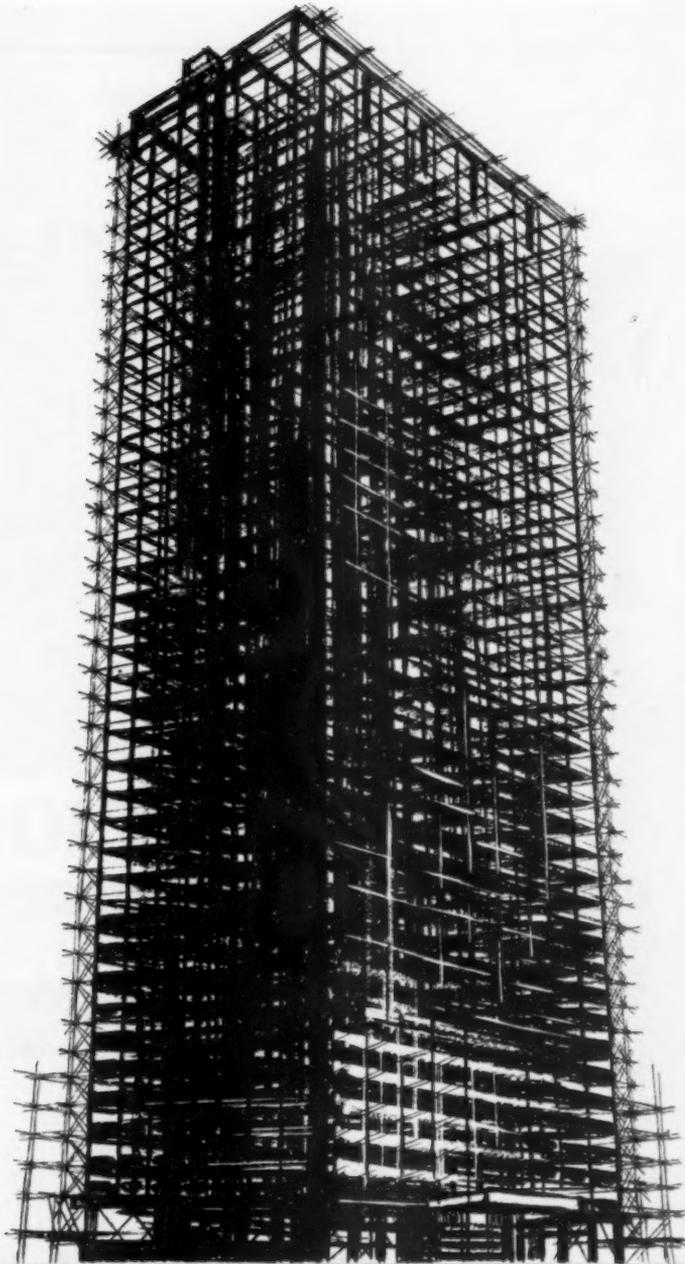
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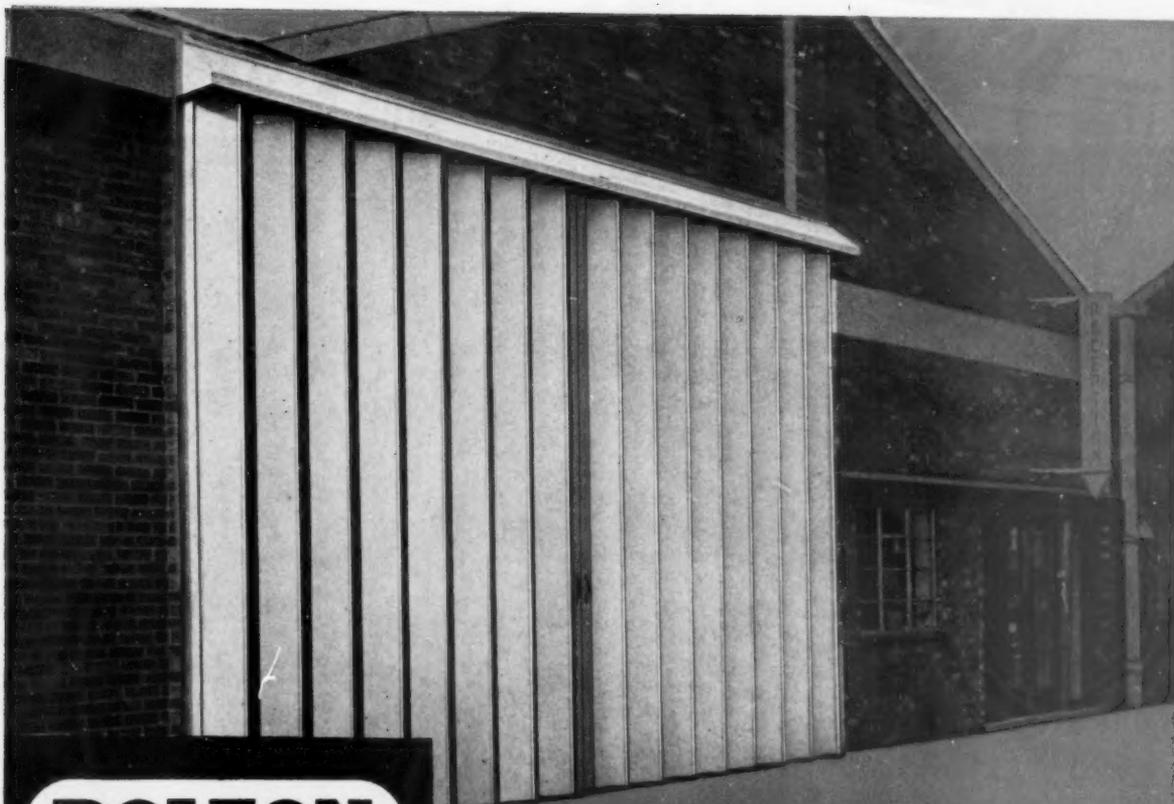
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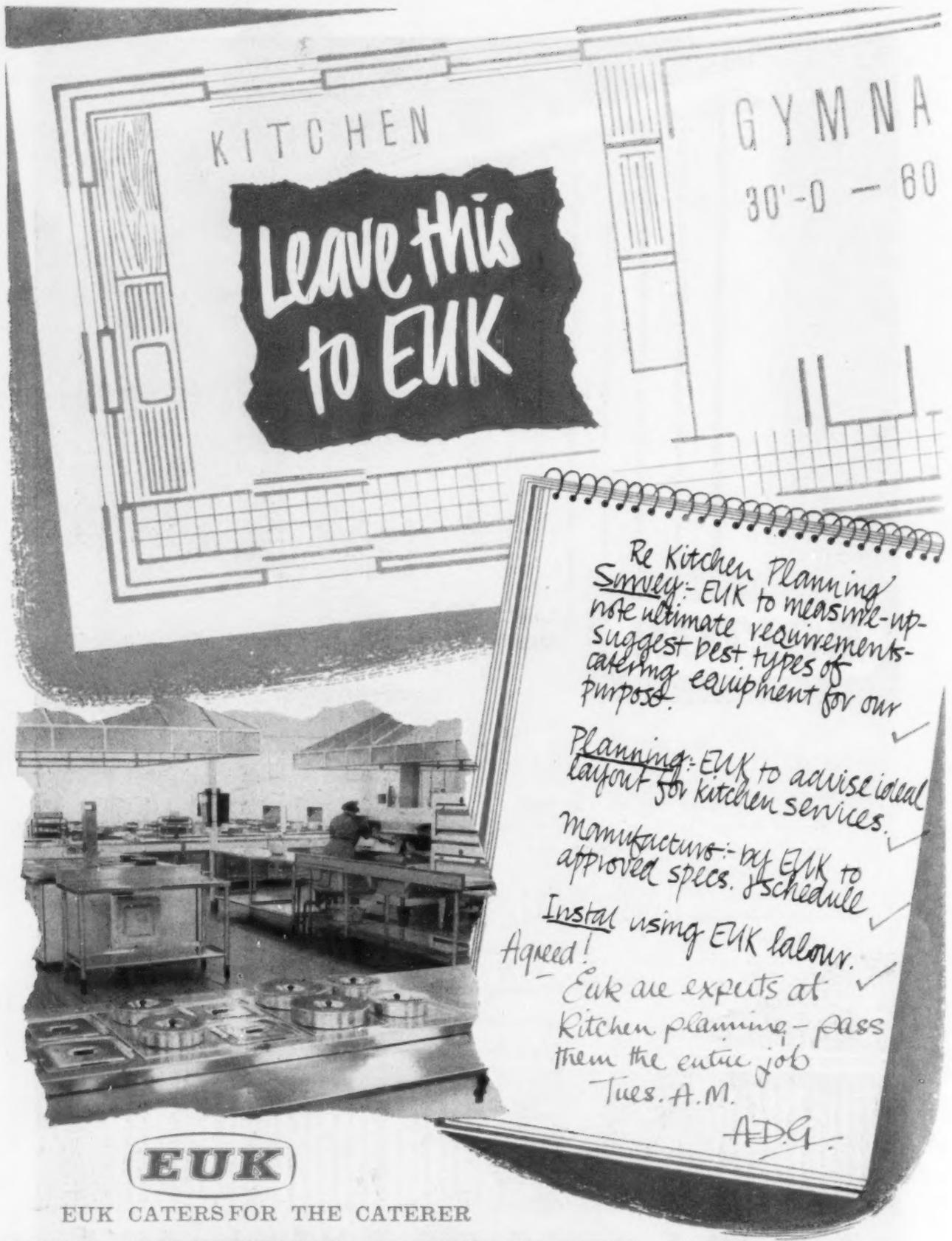
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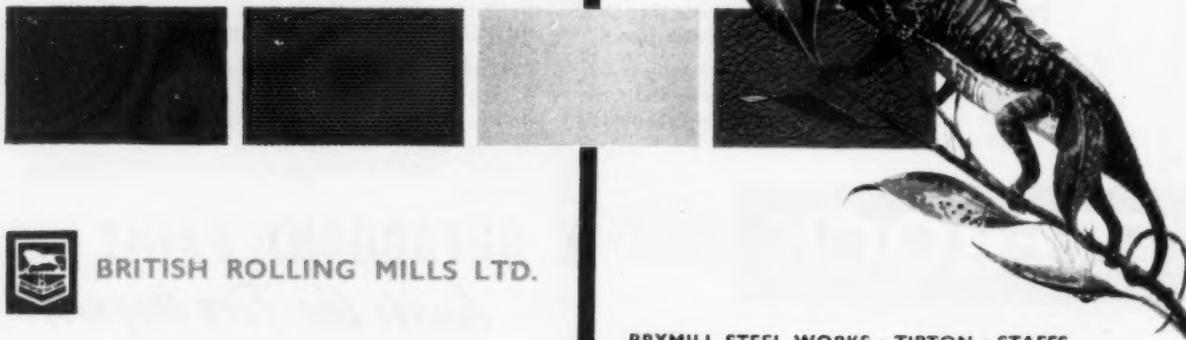
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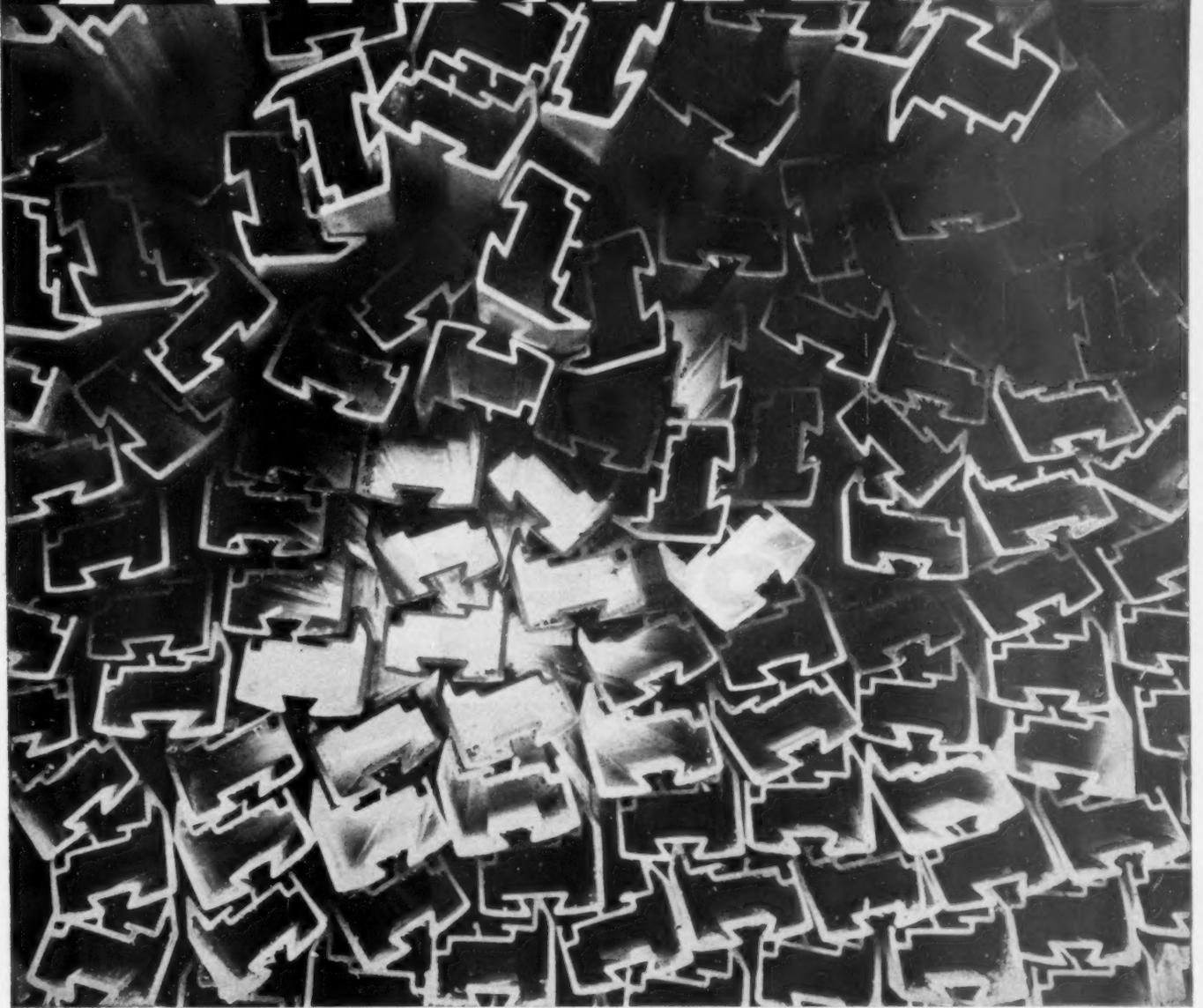


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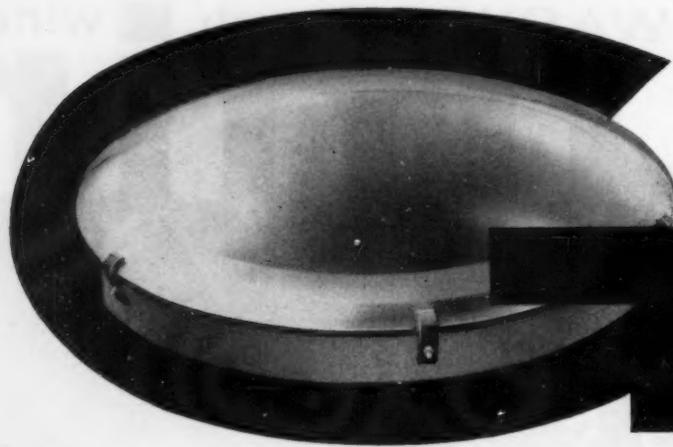


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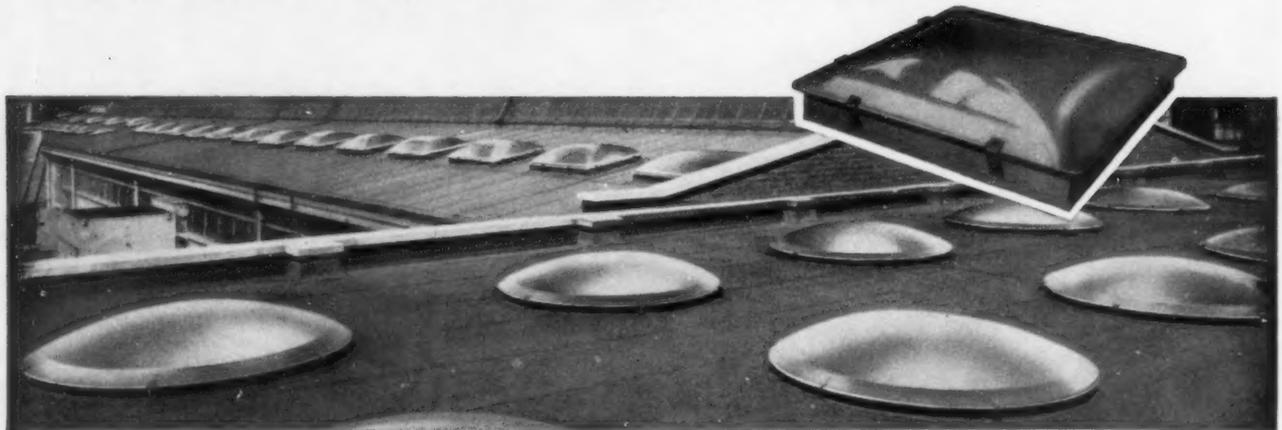
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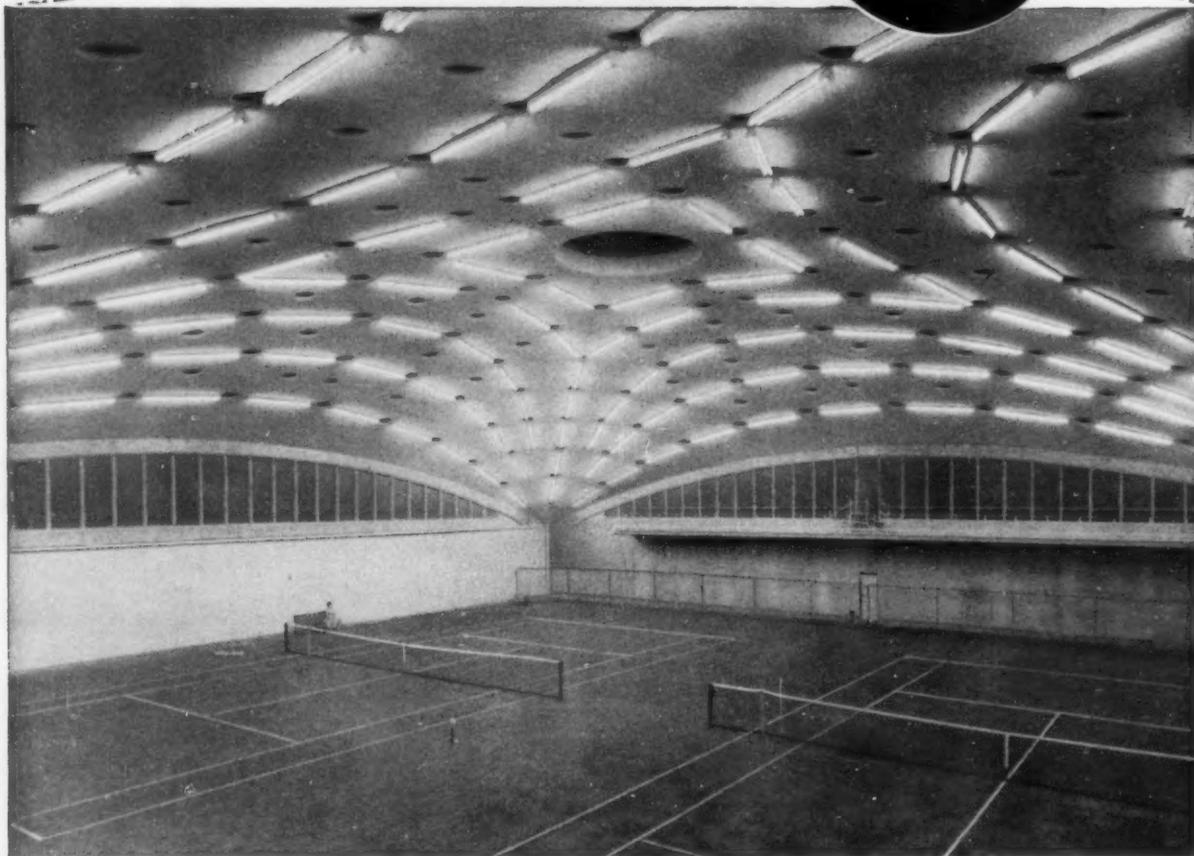
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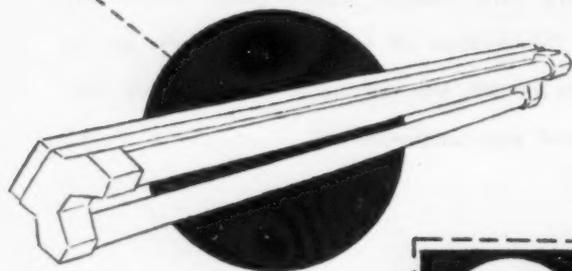
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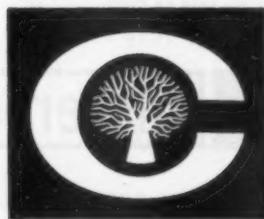
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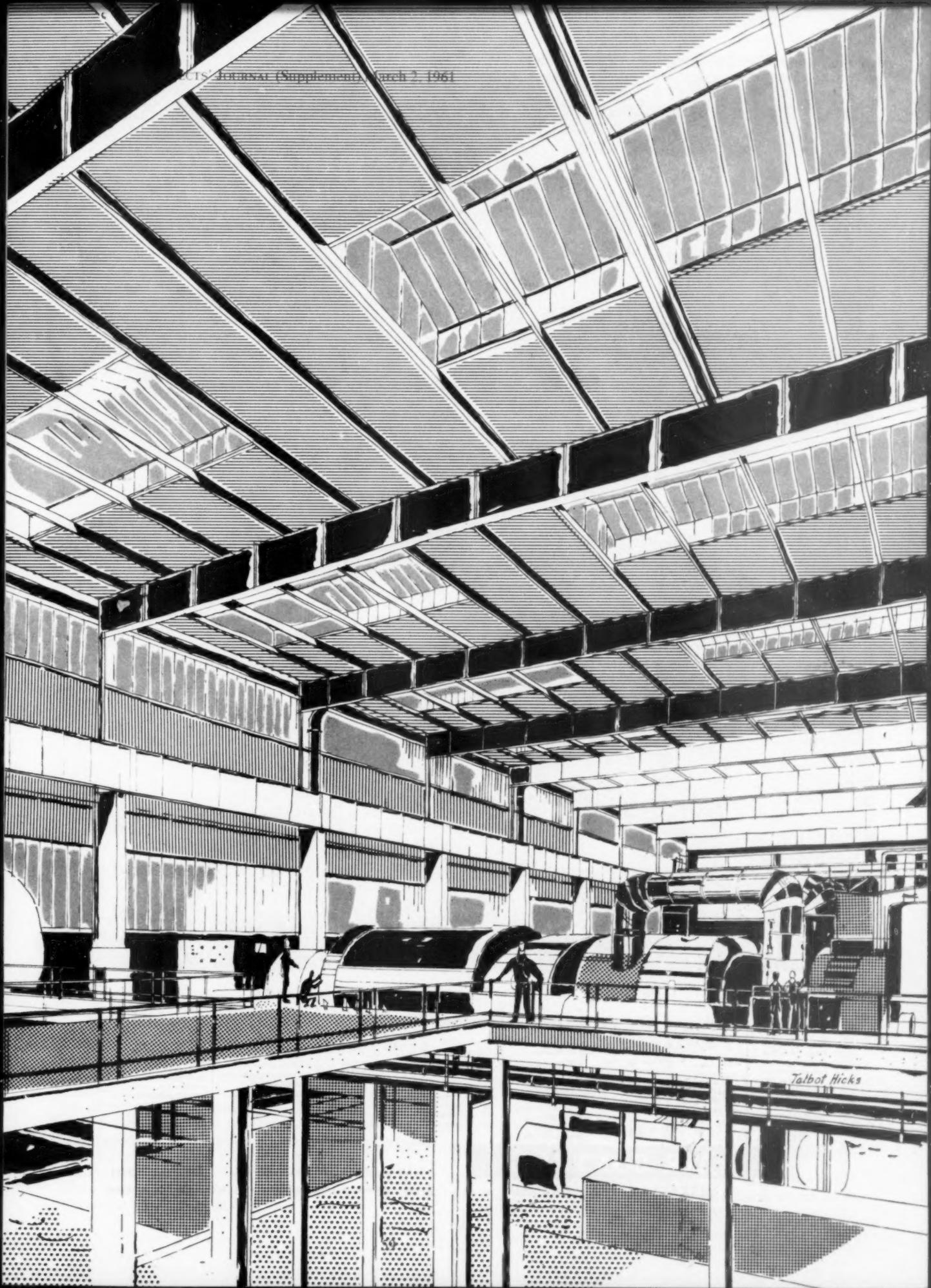
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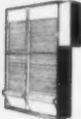
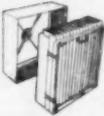
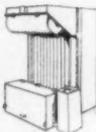
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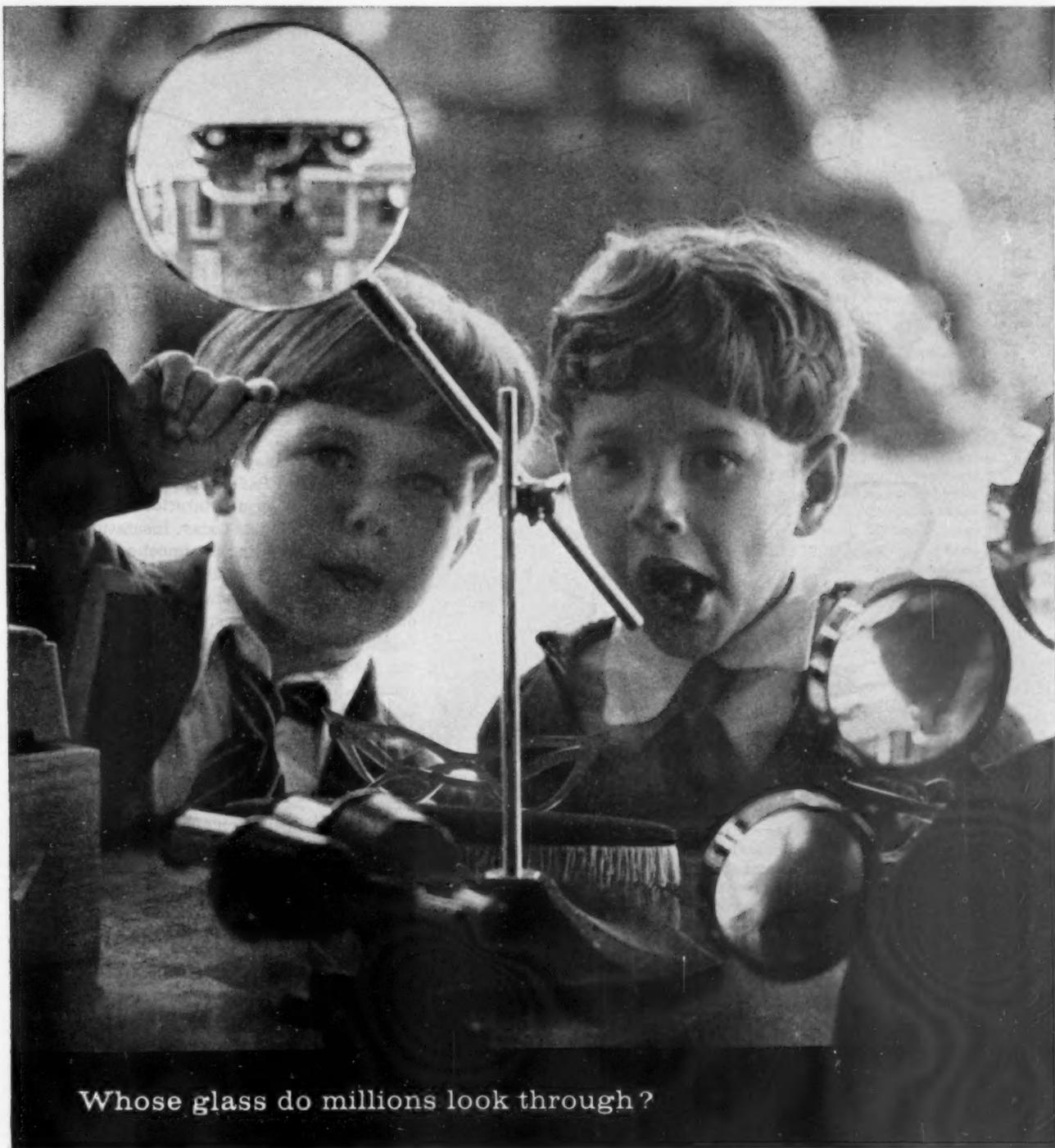
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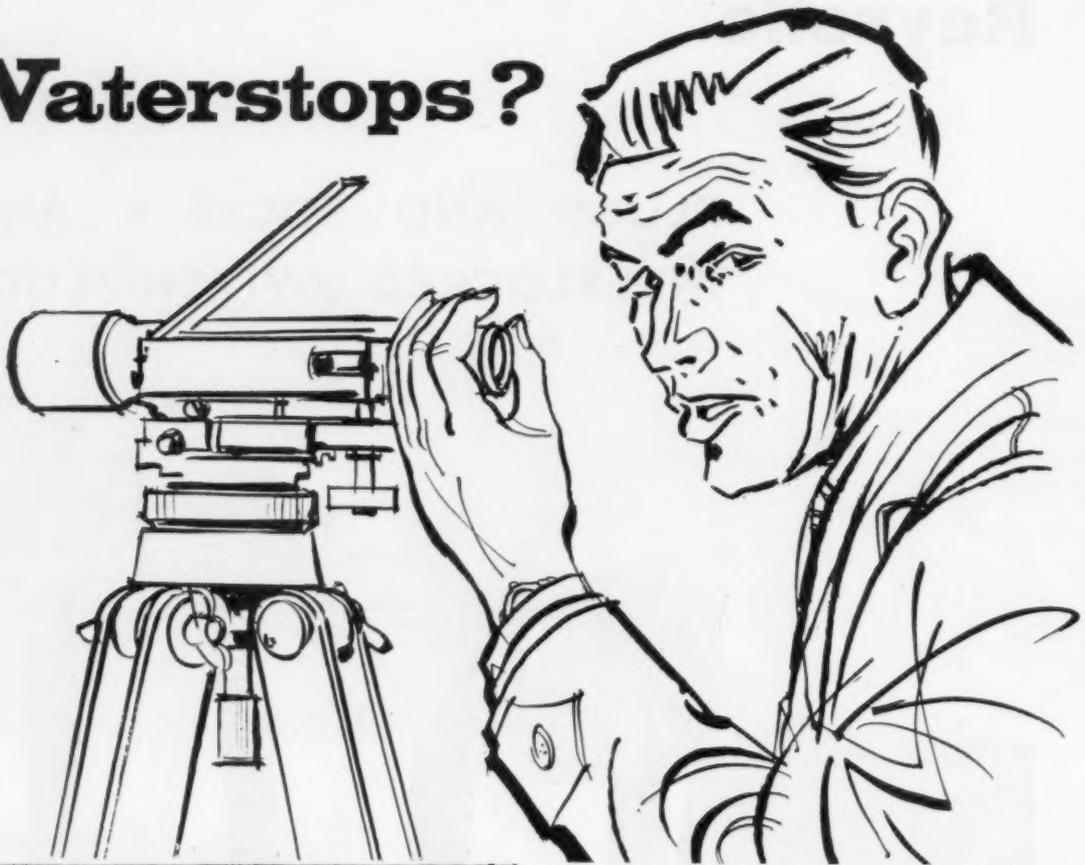


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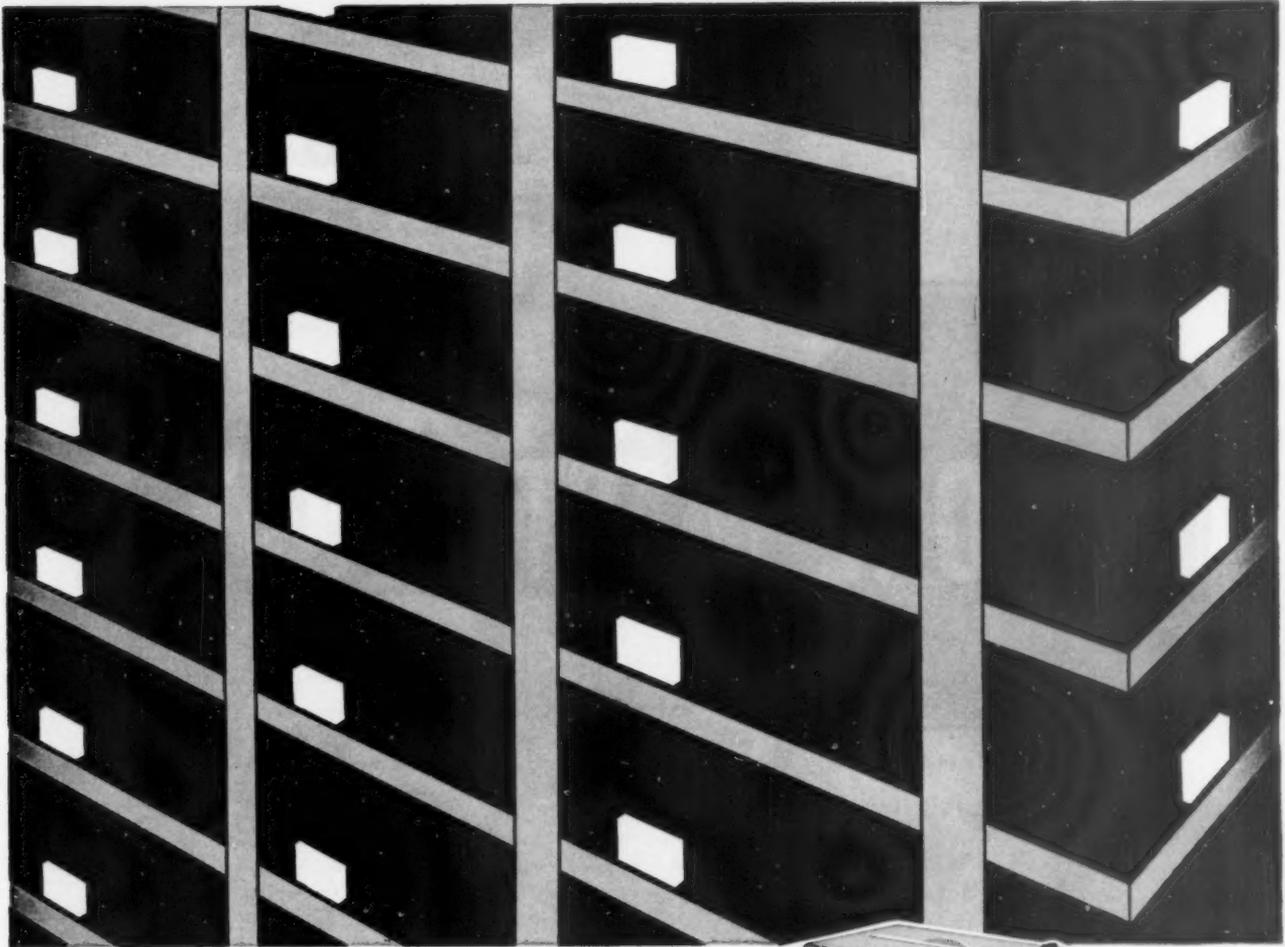
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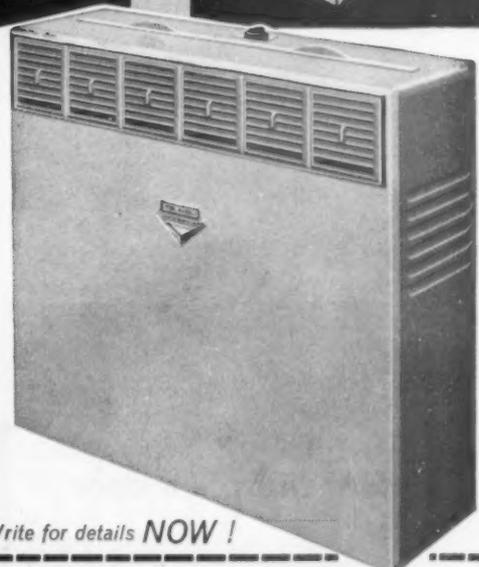
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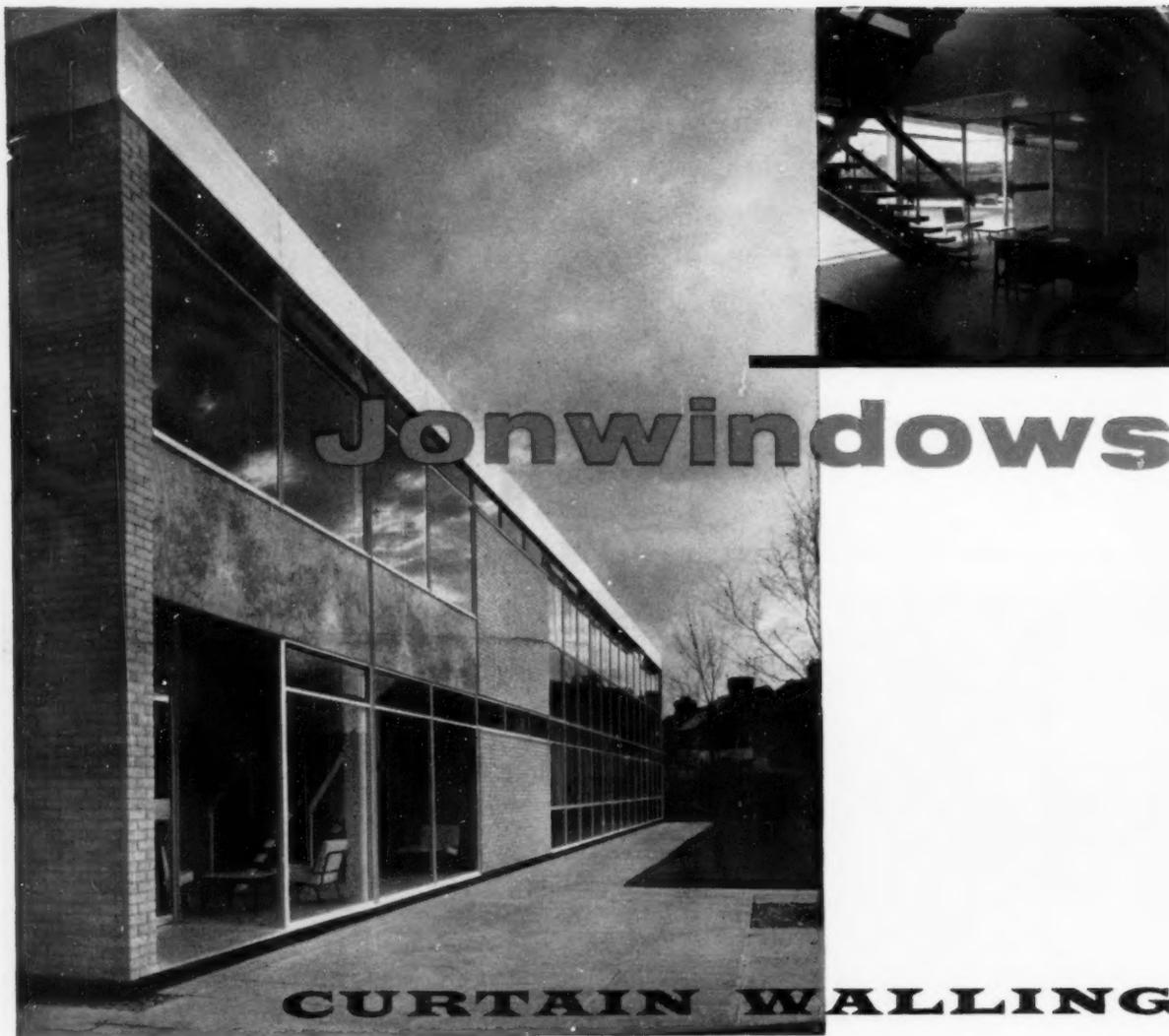
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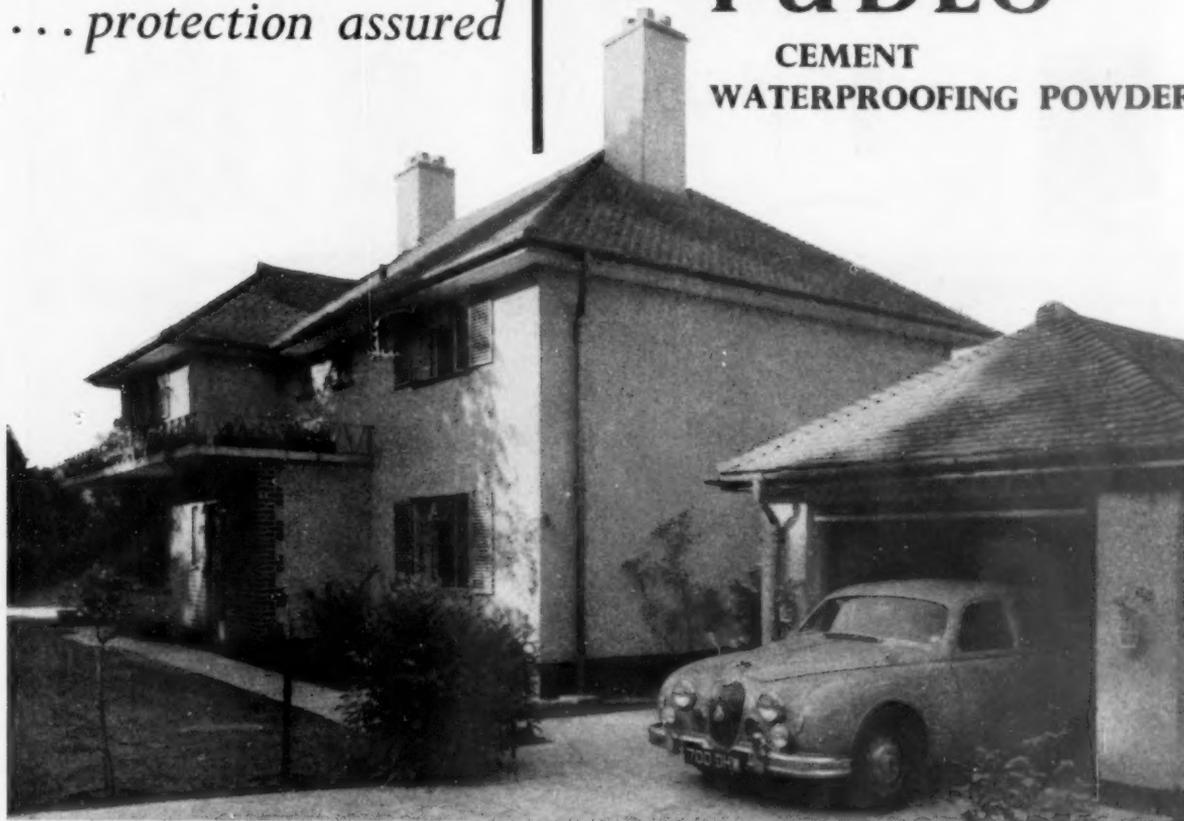
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W.T. 16

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Vitreous china sanitary ware installed in Shannon Free Airport 'Standard' Kingston wash basins specified

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639

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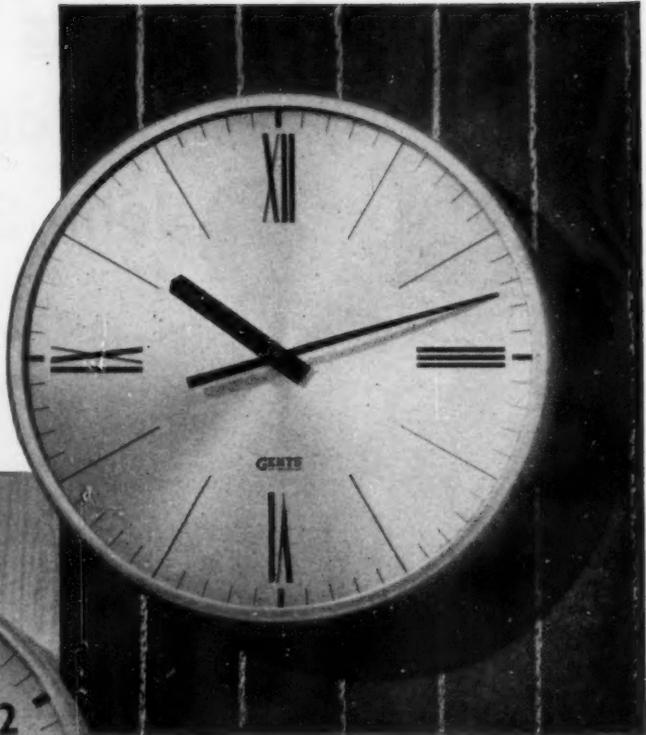


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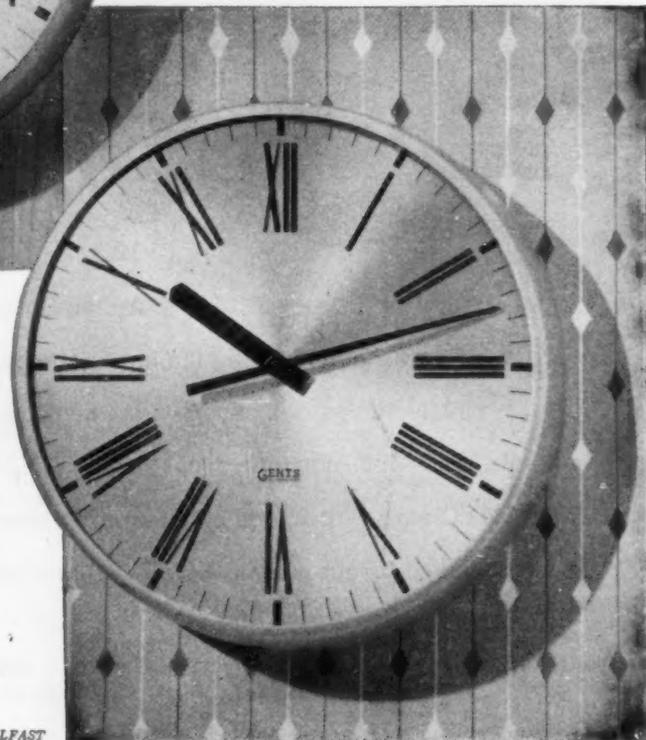
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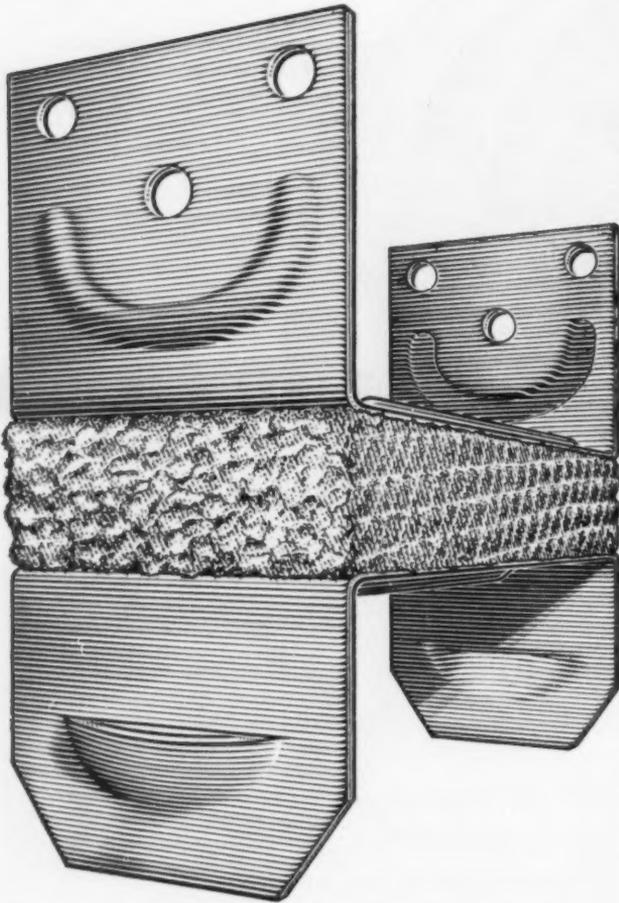
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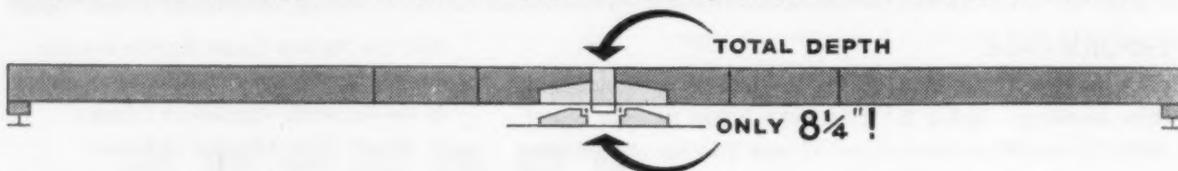
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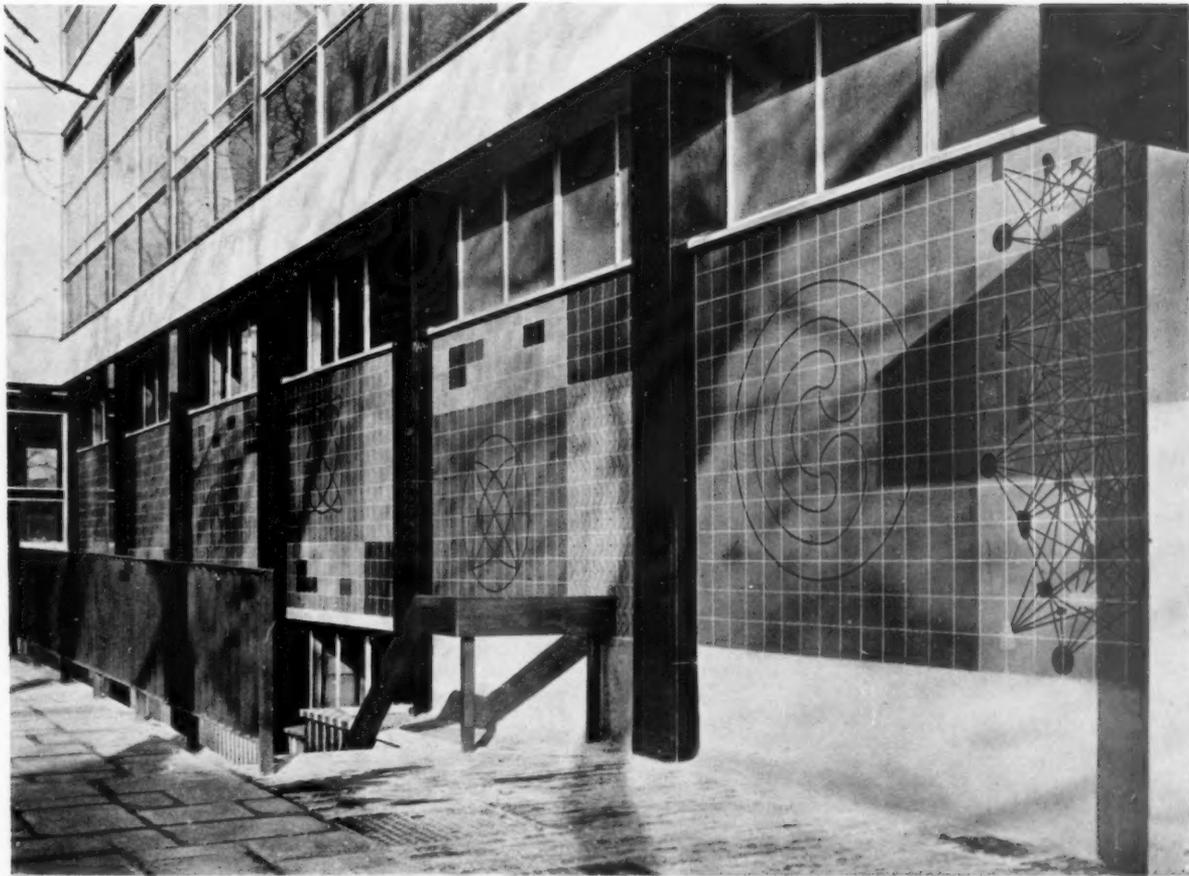
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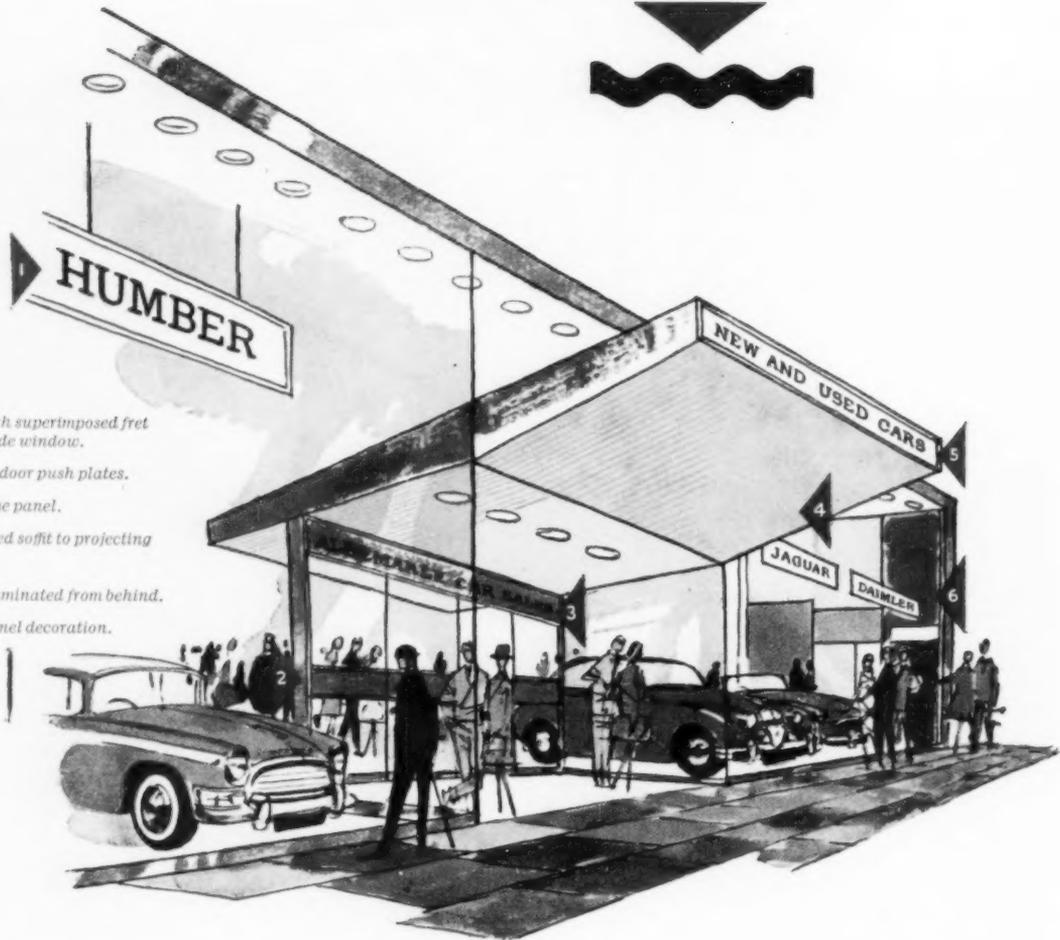
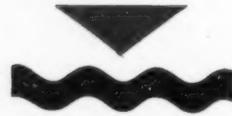
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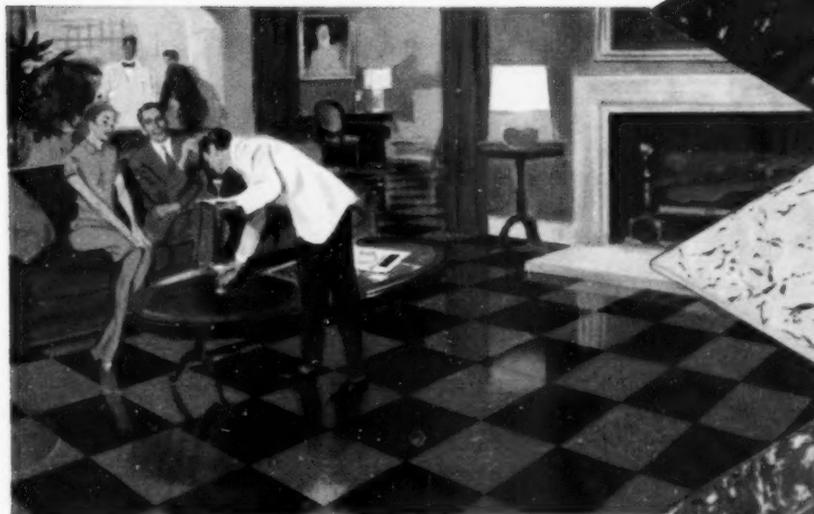


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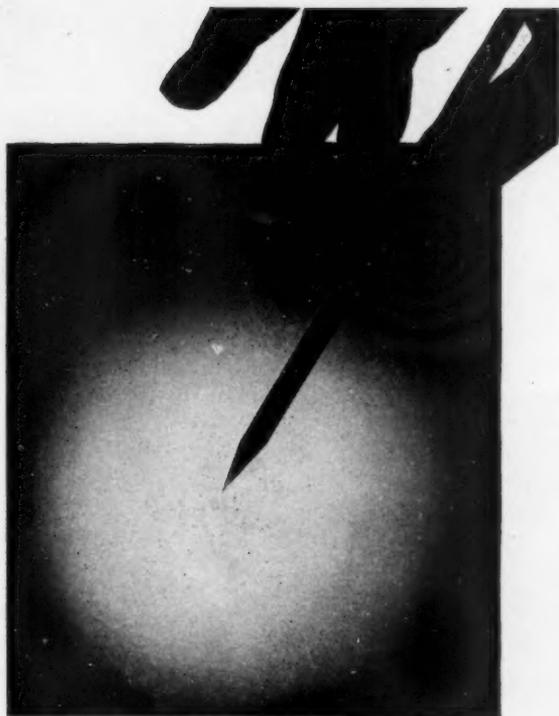
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NOT QUITE ARCHITECTURE

*... and NOW, a letter
from Canberra*

Australians speak of their capital city rather as if it were an ailing child that has recently and a little to everyone's surprise, suddenly begun to put on weight and even run about with the other children. Of course it will never be quite like the others for it was a Caesarean birth of a child destined for a career in the diplomatic service.

It was born out of the determination of both Sydney and Melbourne never to concede capital status to each other and this lack of a real organic motive is confirmed by its troubled history and manifest in its architectural character. The first move, in 1912, set off on the right lines. An architectural competition was declared, but almost at once encountered the difficulty that no member of the RIBA or its overseas chapters could take part because the assessors were laymen, or I should say, politicians. Nevertheless a good winning entry came in from a pupil of FLW—Burley Griffin, but this proved to be only a momentary respite, for his imaginative scheme came to grief on the committee tables of a Commission appointed to examine ways and means. Instead of doing what they were supposed to do, the Commission cannibalised Griffin's and some of the other entries. This event was (and still is) very characteristically Australian and similar well intentioned political ill chance continued to dog the slow and spasmodic development of the capital right up until the last war. Then Holford was called in, a National Capital Development Commission was set up, with real powers.

I arrived early in the morning—and by train, which is not the most impressive means of entry, for there is a single track, one platform and, so far as I could see a total of two station staff, neither of whom knew



Modernising the Pub

The remodelling of this public house in Brendon Street, W.1 (off the Edgware Road) by J. M. Austin-Smith & Partners, is a convincing demonstration that Victorian eclecticism is not the only way of tackling this difficult problem. The success of the scheme results very largely from a skilful integration of the various new elements introduced, and the immaculate detailing of a limited vocabulary of materials (see page 325).

when the bus left for the city. At a cross-roads a sleek automobile flashed by. "Bob's car," said my driver (he meant the Prime Minister).

The snippets of village green tucked here and there in the layout aided the illusion that I was the guest of some emigrant cousin of Hampstead Garden Suburb. Except that Griffin's plan was in fact very largely drawn with compasses. Repeated bends, which also rise and fall, defeat even the keenest sense of direction.

It is a city of country lanes; one delightful corner after another with deciduous trees, magnolias, frangipanis, jacarandas and desirable residences by the score. Gardens in this brilliant climate of luminous shadows are heady and magnificent, rising to their height in the Embassy area. The embassies themselves, set in plots of ground just like the bungalows but bigger, are an interesting study: American—Queen Anne colonial, but laid on rather thick; Israeli—non-committal contemporary; Belgian—if you can imagine it—contemporary Flemish; German—goose step modern. The Japanese looks promising, but has yet to receive its cladding.

Other high spots of the tour were: a little Gothic revival Church of England church that appeared to have been squashed into the ground. It turned out that this was due to its being built from the stones of a Sydney cemetery railway station.

Next a great sepulchre of a war memorial which stops a main axis and contains a gruesome museum of sectional shells, first war tanks and full size dummies of Anzacs, British subalterns and Turkish n.c.o.'s. The tour was completed by a visit to the Houses of Parliament whose impassively commercial classic façade belied a tortured interior. (Green upholstery for the Representatives and red for the Senators.)

The only really astonishing sight is an immense prestressed bridge being built over perfectly dry land, awaiting the lake that one day will fill the centre of the city. By this time I was longing to halve the widths of all the open spaces and double the height of all the buildings. Two things were clear: (i) The Canberra planners are terrified of heights and dedicated to golden memories of the English village and (ii) the child has not really put on weight, it has simply grown trees—the vulnerable saplings that show in early photographs have only recently succeeded in enclosing space. The nearest thing to a real street that I saw—and I did not see the whole city—was at Civic, and not nearly enough. People praise Griffin's plan because its heavily diluted density does allow for the motor car (one per 3.8 persons in Canberra) but it makes nonsense of any future renaissance of real sociability, when the television, washing machine, and mixmaster, have joined the "white Australia" policy as discarded social ideals.

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

The Editors

BRAINS IN BEDFORD SQUARE

A FEW years ago the restive younger generation of the architectural profession realised that there were inertia and complacency in 66 Portland Place and some changes were organised. As a result the RIBA today hums with activity. This revolutionary movement had no connection with, or influence from or upon, that one-time centre for such things: the Architectural Association. For years now the AA, both school and Association has been standing still. The retirement of two of its officers, secretary H. J. W. Alexander and Principal Michael Patrick, now at last allows the Council to introduce a change. As announced on page 312 they have created the new post of Director of the AA (Holder: Edward Carter of RIBA Library fame) whose duties are: "to control all activities so as to bring the curriculum of the school and the activities of the Association as closely as possible together." Under him will be a new secretary, George Wiltshire (formerly the assistant secretary) and a new head of the school, William Allen, now head of the Architects Division of BRS. The AA Council has shown considerable wisdom in its choice for these appointments. The AA needs vastly greater resources, and to be more soundly established. Edward Carter certainly has the knowledge and personal contacts to help here. In his task of relating the almost unrelatable, that is, linking membership and school he will be ably assisted by William Allen (with whom he has a close intellectual affinity). Allen has been intensely concerned with research, and this lifelong desire for knowledge should be an important factor in finding means of bridging the chasm that now exists between graduate and undergraduate.

However, the main responsibility for the future of the AA still rests with the Council. Deprived of representation on the RIBA Council it has no obvious external outlet for its energies. It will without doubt be tempted to exercise close control over the school and the association. Whatever excuse it may have had in the past it has no excuse for doing so now. Having given its highly competent new officers their orders it should stop interfering and allow them to get on with the job. If after two or three years the new officers have not achieved any great measure of success it should consider

replacing them. Because of its continual changes in membership (another matter for change) the AA Council has found it difficult to pursue a ruthless enough policy.

What then should the power-hungry Council members of the AA do? Rather than worry about details of catering and comfort they might well give some of their time to working, in the studios as well as in committee, on some of the many problems of architectural education and practice.



WINE AND COAL

Good luck this week to the last-ditch defenders of two nearly-lost causes—the Wine Street area of Bristol and the Coal Exchange in Lower Thames Street, London.

The Bristol defenders (Bristol Architects Forum, the Civic Society, the Bristol and Somerset Society of Architects and the Design and Industries Association) started the week with a well-attended public meeting and a petition to the Corporation. The petition—signed by ninety per cent. of the people who were asked for help (a lot of them prominent citizens)—asks that building work in the Wine Street area, due to begin in five weeks, shall be held up until a comprehensive plan has been prepared. And if the corporation wants a comprehensive plan it has been offered help by Sir William Holford on behalf of the RIBA.

The Coal Exchange defenders are members of the Victorian Society, and they have organised a meeting to be held tomorrow (March 3) at 3 p.m. at the Society of Antiquaries, Burlington House, Piccadilly. People invited include members of the City Corporation, the LCC and government departments concerned, as well as representatives of interested societies—including some who might find an immediate use for the building. John Betjeman says that “Sir Mortimer Wheeler has kindly assented to act as our firm and fair chairman”—which is better, presumably, than merely agreeing to take the chair.

At the meeting it is hoped to convince people that the Coal Exchange should be saved by permitting the widening of Lower Thames Street to remove some of the back of D. Laing's yellow-brick Custom House. Because the first is listed as grade three and the second as grade two Sir Keith Joseph, Parliamentary Secretary to the Housing Ministry, automatically assumed in the House the other day that the Exchange must be the one to go.

QUERRY AND PARTNERS?

I suppose everyone knows by now that the hero of Graham Greene's *A Burnt Out Case*, a Mr. Querry, is a world famous Belgian architect with worn-out genius, a client-hatred and a distaste for his job so strong that he prefers to wash lepers' bandages in a Catholic-run colony in the Congo rather than design a new hospital to be built there by patients and priests. Even when he has given in and designed the building, and is attending its opening with a twisted smile, I still feel querulous about Querry. It is not so difficult to believe in *painters* who run out of inspiration and either disappear on private means or repeat themselves until they drop; but architecture is such a mixture of art, science and business that the burnt-out feeling

seems less convincing. Did Querry leave behind a large office full of partners, bright young men and working drawings: and if so, how are they doing without his inspiration?

ARCHITECT ON PROBATION

Last week Independent Television gave us, in “Probation Officer,” an architect who was an even frailer victim of circumstance. This young man—the wistful ideal of so many in our profession—had just won a competition (inspired by his young, attractive and still-working wife) and while trying to work at home committed an assault on his noisy neighbours' maddening children. Apart from giving us an embarrassing glimpse of a drawing board, the actor and producer created a fairly accurate image of an architect: a bit weak on law, perhaps, but suitably fussy about his new house interior (though surely there would be no clatter of curtain rings but just a hiss of plastic when the curtains were pulled?) and struggling manfully with his brain-child which presumably needed few working drawings. (No two-tiers on I.T.V.).

You'll be glad to know that although the architect gets put on probation, all ends well as the Noise Prevention League helps to bring the noise-mongers before the court.

SUNDAY ARCHITECT

“Conceptions of architecture are free to anyone, but techniques need training,” said Victor Pasmore, the painter and Sunday architect, speaking at the Architectural Association last week. In talking about his work as “chairman” of the architect team (principally P. G. Daniel and F. G. Dixon) which designed Peterlee's newest housing area (illustrated last week) he went out of his way to be provocative and to make wild statements which his audience might have resented if it wasn't clear that architects alone were making an inadequate contribution to Peterlee. Messrs. Daniel, Dixon and Gazzard (the newly appointed Corporation architect) also spoke and gave a fair picture of the venture, though more slides of plans and details would have helped.

Cleeve Barr, chief architect of the Ministry of Housing, proposed the vote



Bunning's Coal Exchange in Lower Thames Street, left, and the back of the Custom House opposite, right. One must be sacrificed to road widening. See "Wine and Coal".

of thanks, criticised some of the details, praised the planning (the patio, he said, made a perfect whippet pen, and the open space a coursing area) and suggested, when the problem of bye-laws was raised, that the AA should carry out a survey of the widely-differing interpretations by two typical local authorities.

*

Several New Town managers in the audience faulted the Peterlee scheme, but only on probable costs of maintenance. Dame Evelyn Sharp, Permanent Secretary of the Ministry of Housing, looked singularly (and rightly) unimpressed by the papers read and the subsequent discussion. There was plenty of participation, chat and pictures, but not nearly enough facts. It was hardly a professional occasion.

RAIL SPECULATIONS

Speculation about the future of railway architecture will have to remain speculative for some months it appears. Those who have been justifiably concerned about the effects of the Stedford Report and any legislation that may stem from it may take some comfort from the fact that it may be two

years or so before any of its recommendations become law, though there is less comfort in the thought that those two years may be largely occupied by arbitrary ministerial interventions of the sort by which "Motor-Mad" Maudling held up London-Crewe electrification for six months and thereby probably wasted as much public money as he was supposed to be saving by "inquiring into" it.

*

The main points at issue seem to be now (a) that steps should be taken, in and out of Parliament, to ensure that architects are up-graded in the new regional set-ups, and no longer subject to their Regional Engineers, as is their present frustrating situation. (Much as one admires what some Regional architects have done, all could do better if they were more strongly placed) and (b) that when the Transport Commission, as such, disappears, the work and experience of Dr. Curtis's office does not disappear with it—the risk is that with the present de-centralising mania, even the limited central authority that he has built up, may be demolished as a matter of "principle."

TOO SMALL A SPAN

At last the LCC has made its position clear about new buildings in the Blackheath area. When I wrote here two weeks ago about what looked like an LCC ban on Span Developments I had been shown a letter, sent by the Council's clerk to the Ministry of Housing, referring to planning applications by Eric Lyons and saying that "further developments of this type might have a serious effect on the character of the area and should be opposed." I took this to mean what it said, but Mr. Fiske, the chairman of the LCC Town Planning Committee, has now written to the JOURNAL (February 23) saying there is no "discrimination of any kind against Mr. Lyons as an architect." He speaks benevolently of the large Span schemes at Blackheath but says that "numerous small scattered developments . . . might do irreparable damage to some of the fine groups of historically interesting buildings with which Blackheath is richly endowed, without making any positive contribution to the town planning of the area." He says, in fact, the same sort of thing in a different way; but it does begin to make sense.

ASTRAGAL

LETTERS

K. W. Grieb, A.R.I.B.A.

J. Innes Elliott, B. Arch., A.R.I.B.A.

*H. L. Waterman, B.Eng., A.M.I.C.E.,
M.I.Struct.E., M.Cons.E.*

Alec Flinders, A.R.I.B.A.

"On the Second Rung"

M. S. H. Wheeler, G. M. Austin,

B. Feldster

G. H. Wigglesworth, A.R.I.B.A.

Casbah Housing

SIR: Your account of Cleeve Barr's talk on patio housing (January 26) suggests that most of the points on this type of development were covered. I wonder if the all-important question of access and servicing was discussed? In high density schemes, roads must be kept to a minimum, but just as the cost of the houses should not be compared to traditional houses but to the flats, etc., they replace, so the approach to the front door along pedestrian ways should be compared to the equivalent distance up flights of stairs and along access balconies. This, in the case of maisonettes, can commonly be 160 ft., without taking into consideration the exertion of going upstairs. As for delivery of household commodities, think of the ingenuity with which retailers have solved self-service shopping; similar, wheeled carriers would soon be adopted. Competition for trade is so great that that side of things would look after itself. Obviously more people are served more

Police housing in Blackheath—see "Wind of Change on the Heath"



quickly in high than low densities. Think of the distance the milkman and the postman go in suburbia, up and down the garden path to each house (mind you close the gate).

Refuse collection can be a problem, but there are means of solving this. One London borough has agreed to the use of a two-tier trolley for picking up individual bins, a dozen at a time, and there are many other possibilities.

If the usual access for fire-fighting vehicles is required, the fire brigades will surely be acting against their own interests in preventing the use of houses which, if reasonably constructed, must be much safer from the escape point of view, and the spread of fire, than taller blocks. Has anyone considered the use of horizontal dry fire mains in extreme cases?

In high buildings we accept vertical fire mains, along with the complexity and high running costs of the rest of the services, lifts, booster pumps, and ventilation fans, because they are now so commonplace. They were all developed years ago, for office buildings perhaps?

To some people "going home" means being hoisted home in a box on the end of a rope passing over a pulley. No method of servicing horizontally could be so absurd or as fanciful as this—nor so costly. How long will tax payers fork out subsidies on all those tall blocks when word gets round that they don't have to?

Before high density housing can be carried out to any extent in this country, there must be a headlong attack on prejudice and the interpretation of the bye-laws. Slums are often the result of bad building, poor sanitation and the low living standards of the inhabitants (rents are cheap), not necessarily the type of housing.

For some reason, some constructional requirements are not so demanding for flats and maisonettes. A lot of money could be saved by avoiding the use of the term "house" or "dwelling" in favour of say "Casbah Complex"—Allah forbid!

K. W. GRIEB

London, N.W.7

Wind of Change on the Heath

SIR: The two photographs which you published in *ASTRAGAL* (AJ, February 16) are excellent examples of the extremes of photographic skill and it has therefore occurred to me that you might like to add to your collection a more informative photograph of the building at 7-8, St. German's Place, Blackheath.

I feel sure that you, together with your more discerning readers, will appreciate that the temporary housing creates its own effect on the character of Blackheath and that the association of the police flats with the prefabs illustrated is quite irrelevant and misleading.

J. INNES ELLIOTT

Chief Architect and Surveyor,
New Scotland Yard, London, S.W.1.

The editors reply: We learn that the prefabs in ASTRAGAL'S photograph have already been removed and regret that an out-of-date picture, produced in good faith, should have appeared, to reinforce a somewhat partial statement on the Blackheath Inquiry.

Load-bearing

SIR: On page 115 of your issue for January 19, there is a short description of an 11-storey block of flats proposed by the Buckinghamshire County Council using calculated load-bearing brickwork.

The maximum stress quoted on internal walls would not appear to justify the use of only a 4,000 lb. per sq. in. brick.

I would also question the estimate of cost of 55s. per sq. ft. in comparison with the figure quoted of 75s. for a framed block, as the total cost of a frame for a similar structure (including floor slabs and foundations) should not exceed 20s. per sq. ft., and a large proportion of this cost is common to both schemes. When one considers the extra-over cost of the load-bearing walls the overall saving is small.

I would have thought that a system employing load-bearing concrete walls would be more economical and show a substantial saving in overall plan area.

H. L. WATERMAN

London, S.W.1

Fred Pooley, Buckinghamshire County Architect, replies: With regard to the first point Mr. Waterman makes in his letter about the maximum stress on the internal walls of the proposed 11-storey flats, it will be remembered that in his paper to the Institution of Structural Engineers in February, 1952, Dr. Thomas suggested that from actual results obtained from testing brickwork the unit stress of 4,000 lb. per sq. in. brick in 1:1½:3 mortar can properly be taken as 300 lb. per sq. in. The reduction factor given in the B.S.S. C.P. 111 (1948) for a 9-in. wall 8 ft. high restrained at top and bottom is 0.70; the permissible compressive stress is therefore 210 lb. per

sq. in. which is suitable. As a matter of interest, the Warnham brick, which it is proposed to use, has a unit strength of 5,000 lb. per sq. in.

So far as the cost of the structure is concerned, the prices which are quoted are based on an offer from a contractor on an approximate Bill of Quantities and enquiries from any architect who has worked on this type of problem will show that 75s. per ft. sup. for a traditional framed building is not an unreasonable figure.

Two Tiers

SIR: Coming on top of the two-tier profession controversy, the article on the Pupilage System occasions me to reflect and be thankful for family circumstances providential for my having the finest training an architect could have.

Having decided that I wanted to spend my working life designing buildings I searched for an opening in an architect's office and was in due course pleased to embark upon my chosen career as a junior, commuting some 20 miles to the City, working a 5½-day week for 25s. "being useful" by fetching coffee, buns, cigarettes, newspapers and prints, making tea and washing up for a staff of 15 and checking builders' daywork sheets for more hours than were spent on a drawing board.

On the credit side was the opportunity to trace drawings, with the thrill, at 16, of seeing all my work issued to the site, surveys with the great men, chaining and levelling, then out on my own measuring up live buildings. Next came being trusted with working drawings, structural calculations and the design of the real thing. With time came salary increases, while I always had the freedom to leave at any time, had I elected to do so.

Like others in a similar situation, to get the best of both worlds I attended a school of architecture three evenings of the week, which coupled with "testimonies" at weekends doubled the working week.

Then, after five long years, the intermediate exams and after two years of National Service, followed by more evening study, thesis, approved portfolio and protracted final examinations—the real ones, in the trying conditions of Portland Place—I became a "legalised" architect, finally let loose to design buildings all on his own!

By this time I had done the usual round of offices, large and small, working on all aspects of the job, but never with the intention of being a technician, or whatever term is coined to describe this second tier, which to my way of thinking does not exist, except in so far as there are, to me, just architects and those on the way to becoming architects.

In part-time teaching, two mornings a week, I am attempting to implant a sense of professional capability and responsibility into some 30 souls, erstwhile shielded from the cruel world of practical experience and down-to-earth building reality.

Now at 31 and glad of my hard apprenticeship of working at pressure, invaluable in coping with the demands of a small prac-

tice, I am looking for an assistant. What am I looking for? Not an ex-full-time student of 22 at high salary wanting to get enough time in an office to sit his professional practice; not an Inter. chap, wanting a break from day school to get some money; not a "technician" who will just make the drains work and keep my buildings out of the ground, nor an articulated pupil of affluent parentage but perhaps doubtful suitability, to be tied to my tee square for three years' bondage.

No, I am looking for a lad of 16 with just the will to become a real designer of buildings, to follow in the master's footsteps, given every encouragement, facility for part-time study and day release classes, and an up-to-date starting salary.

Let there be variety of training by all means, and let us not close the shop to the hard-working office boys who will one day be the salt of our profession.

ALEC FLINDERS

Tonbridge, Kent

SIR: It is nowadays a truism that one is not a thinking member of the profession if one does not hold a very strong view indeed on the fashionable topic of the sub-architect. Yet nowhere—whether in conference reports, editorials, or correspondence—does any sufficient appreciation seem to have been put forward of the situation as it exists.

There must, indeed, be many like myself who, having become partly qualified (by the theoretical standards of the Old Lady of Portland Place), and having at that stage in their careers taken on wife, house, family, etc., are nevertheless regarded by our employers as the equals of others of their (willing) slaves who are among the vast majority of qualified architects working as assistants.

The reason for this is, of course, quite simply that the princes of the profession (who are forced to delegate their responsibility for millions of pounds' worth of work) are happy and confident in doing so to any man of the right calibre—whether or not he has been fortunate enough to convince the RIBA and ARCUK of his calibre. The suitable man is trusted because of his obvious capabilities and judgment, irrespective of whether he is GCE (failed) or ARIBA (Dist. TP).

We therefore already have a "two-tier" profession, whether we like it or not: there is the (much-appreciated) upper stratum of qualified architects who *are* architects within the meaning of the Registration Acts, that is to say that they are in practice as architects; and there is the stratum of the sub-architects, some "registered" as architects but *not* architects within the meaning of the Acts, some unqualified but doing the same job for the same (and in many cases more) money.

This situation raises the whole question of what *is* an architect: the registration set-up debars anyone from practising as an architect unless he is entered in the Book of Books, from which we may infer that an

architect is defined as one in practice as such. The system of architectural education, on the other hand, is wholly geared to the conception of an architect as one who has the opportunity and minimum skill to scrape through a series of unrealistic examinations, and the resources thereafter to pay his subs. Hence we are faced in practice with the majority of registered architects not really being architects at all; or alternatively we may say that, of those doing an architect's job in life, at least 50 per cent are not legally able to do so and their employers are risking an interview with the Disciplinary Committee.

It may, of course, be said: "If this is so, there are evening schools, and grants for day school attendance; why don't you go and get qualified?" To which I would answer: "Have you tried doing evening classes with a wife and kids to look after; can you tell me of a grant that will feed all these mouths and pay the rates and the mortgage?"

One may add to this too that there is *no advantage* in becoming qualified in the present situation, unless you value the privilege of status and the right to pay heavy subscriptions, *except* to seek the added status of a partnership or to open a practice.

"ON THE SECOND RUNG"

Stations in Train

SIR: We note in ASTRAGAL'S worthy "notes and topics" that reference was made on February 2 to the "little prefab stations in the Midlands." We should like to point out that this prefabrication system and these stations were designed in the Architects Office of the Chief Civil Engineer of British Railways, London Midland Region, and not in the Architects Office of the British Transport Commission.

The forming of an independent architectural design approach takes place within the individual region of British Railways and this leads to a healthy growth of ideas and to diversity of character.

M. S. H. WHEELER
G. M. AUSTIN
B. FELDSTER

London, N.W.1

Norfolk Office Block

SIR: In your issue of January 12, in a review of the factory office block in Norfolk by Fry-Drew and Partners, occurs the following passage: "At first sight the building is very characteristic of the work done by the architects in the thirties. It would be wrong, however, to dismiss it because of this as a facile or ill-considered piece of design." It would certainly be utterly wrong. What in fact does this sentence mean? To this reader it seems to imply that the person who wrote it thinks that architecture is a series of changing fashions. I hope this was not his intention.

G. H. WIGGLESWORTH

London, N.1

The editors reply: No, the very reverse.

NEWS

AA

New Appointments

The new Head of the School of Architecture at the AA, in succession to Michael Patrick, is to be William Allen, B. Arch. (Manitoba), A.R.I.B.A.; and a new post of Director of the AA has been created by the Council, and is to be filled by Edward J. Carter, M.A., A.R.I.B.A., A.A. Dipl.

The Council announced last week that Mr. H. J. W. Alexander, who has been on the staff of the AA for 48 years, and Secretary since 1937, is to retire in June, and that since they had to consider the appointment not only of a new Principal but also a new Secretary, it had been decided to rearrange the administration of the Association and the School so as to increase the closeness of the link between them, which has always been a feature of this institution.

It has therefore appointed E. J. Carter as Director of the Association, with control of all activities, so as to bring the curriculum of the School and the activities of the Association together as closely as possible, and has promoted George Wiltshire, well known to members as Assistant Secretary, to the post of Secretary of the Association.

The Council pays a warm tribute to H. J. W. Alexander, to whom the whole membership of the AA owes a considerable debt of gratitude, and says that immediate steps are to be taken to "give members an opportunity to show their appreciation in an appropriate manner."

William Allen was born in Winnipeg in 1914, of Yorkshire and Scottish forbears who went to America early in the seventeenth century and took part in founding Yale University. His father was Professor of Physics at the University of Manitoba.

He was educated at Manitoba, where there is a flourishing School of Architecture, and where he became absorbed in stage activities and found himself hot in University politics as President of the Dramatic Society. He came to England in 1936, and his connection with the AA began within an hour of his arrival in London, where Alexander helped him to get established. A year later, disappointed at the lack of post-graduate facilities for architects in Britain, he turned, at Hope Bagenal's suggestion, to BRS as an alternative, and became responsible under Robert Fitzmaurice for acoustical work there, having been introduced to this subject by his father during his university life.

At BRS his chief interests have been the psycho-physical fields of light, heat and sound as they relate to architecture, and the problems of philosophy and contemporary building design, as presented by the age of science. He was deputy head of the Architectural Physics Division for some years after the war, working on the design of the Festival Hall with Matthew and Martin as an acoustical adviser. He formed a separate Architect's Division at BRS in 1953.

One of the people he met at the AA almost



William Allen, new Head of the AA School, left, and E. J. Carter, the AA's first Director, right

as soon as Alexander was E. J. Carter, and together they got the RIBA seriously interested in the problems of science and architecture. This led eventually to the establishment of the Technical Section of the RIBA. Mr. Allen has served on the Council of the RIBA for seven years.

Edward Carter—known as Bobby Carter to extraordinarily large numbers of people—was himself a student at the AA School from 1923 to 1929, after reading History at Cambridge. On leaving the AA he became assistant to Maxwell Fry for a short time before being appointed Librarian to the RIBA in 1930. He remained there until 1946, when he became head of the Libraries Division of the newly formed Unesco in Paris, where he worked till 1957. Then he joined the firm of Gordon Fraser, where he initiated a programme of publishing admirable postcards of British architecture.

While he was at the AA, Bobby Carter was largely responsible for the transfer of the library from Conduit Street to Portland Place, and the consequent reorganisation, in the course of which he built up the library as a centre for architectural studies, and strengthened its technological and scientific side, as a result of which the library greatly increased its value and prestige, and became a focal point of the RIBA's international relations, particularly with foreign architects.

MOHLG

Housing Design Competition

The closing date for submitting entries for this year's good housing design awards has been postponed to March 31, in response to requests to allow more time for the submission of entries. Entry forms and details are still available from the Secretary, Awards for Good Design Competition 1961, MOHLG, or from the Welsh Office, MOHLG, Cathays Park, Cardiff.

LIVERPOOL

University Teachers Meet

Members of the staffs of every University Department of Architecture spent the week-end of February 18 at Liverpool, at an informal get-together, to discuss the future of architectural education and post-graduate studies in the universities. The meeting reached no conclusions, but was said to have been so useful that it has been agreed to make it an annual event in future.

HOUSING CENTRE

New Towns within Cities

Two Regent Street Polytechnic students illustrated a talk of Walter Bor's on "New Towns within Cities" which he gave to SPUR at the Housing Centre on February 21, with a really brilliant joint presentation of their scheme for the comprehensive redevelopment of Woolwich. While Arnold Linden spoke, Richard Hookway drew, so that words and diagrams developed together in a carefully synchronised mutual explanation.

Walter Bor gave a succinct recapitulation of the arguments for internal decentralisation, and his students illustrated them convincingly with proposals that were imaginative and sympathetic; two long curving slabs, moderate in height, were planned across the contours of Woolwich's fascinating topography. These Bath-like terraces defined the central area, where the existing lie of the land had been exploited to allow a succession of pedestrian decks to serve the shopping and municipal areas during their gradual descent to the river front.

It sounds wildly romantic but appeared to be well-rooted in reality—all the more "solid" property in Powis Street, for instance, being maintained. The scheme derived its individuality from careful preliminary study of one of the most individual

places in London, so that Woolwich would still be very recognisably Woolwich after the surgery was complete. A substantial contribution could be made to the housing of central London's overspill, new work-places could be provided on their doorsteps for the commuters of Eltham, and South-East London could be given a badly needed new heart.

Linden and Hookway estimated that the whole 100 acres could be bought up and redeveloped for £32 million: there were those present who thought that, say, £40 million would be a closer approximation. But there was no one who denied that public opinion, given persistence, could eventually be won round to support concentrated expenditure on this scale. In the "natural" process of piecemeal renewal our money and our national resources in manpower and materials are gradually frittered away: how much better, by the exercise of vision and some necessary toughness, to ensure that plan and resources were co-ordinated to achieve such a splendid and worthwhile result.

In opening the meeting, Walter Bor pointed out that two-fifths of the population of Great Britain lives in seven great conurbations. The pattern of densities of our conurbations is invariably an enormous pyramid, the peak of which is in the congested centre, while densities fall steadily as we move away from the central areas and are very low and wasteful over large suburban areas. There are historic reasons for this, but a determined policy and judicious planning could rectify it. The selection of the new town centres should be based on an analysis of the whole conurbation.

Other equally important considerations for the correct selection of New Towns within Cities he said, were:

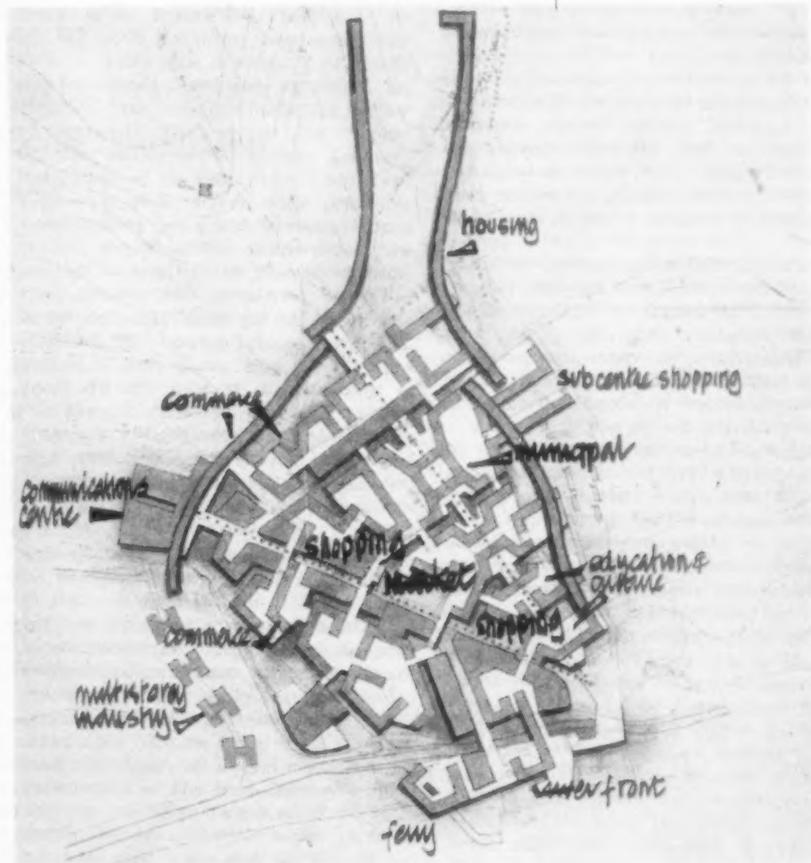
1. Good public transport facilities.
2. The distances between the proposed new centres and the central area must not be too small. The new centres must be well clear of the central area.
3. New Town Centres should be built up, in the first instance, in areas which are under-developed and often declining.
4. Areas should be investigated where residential densities have been increased since the war by large-scale new housing, often poorly served with local employment opportunities, shopping facilities etc. (e.g., Putney/Roehampton).
5. The new centres should be located within areas which are at present badly in need of a centre which would provide employment, shopping and entertainments.

If this policy were consistently applied throughout the conurbations, we would eventually have urban regions consisting of a series of large towns with their own centres and sharing a revitalised and decongested central area, instead of an amorphous, urban mass with inconvenient, over-built central areas, said Mr. Bor.

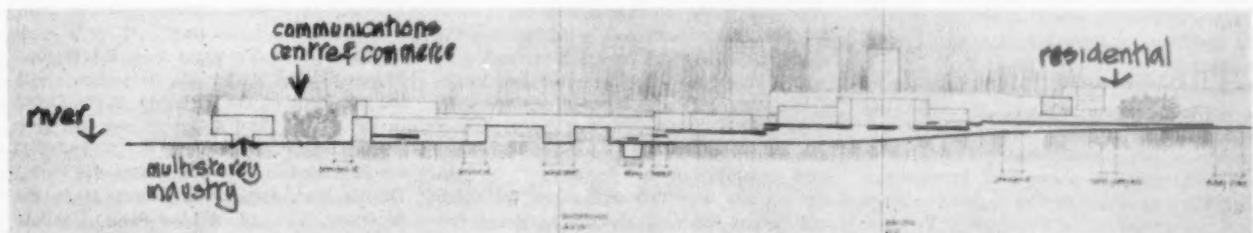
One of the most important ideas thrown up by architects and planners during the last few years is the conviction that the twin problems of sprawl and central area congestion in our big cities can be solved by a policy in which "internal decentralisation, New Towns within Cities," plays a major role. The idea, however, is absolutely use-

less unless it is pressed home with sufficient persistence, imagination and passion to alter the climate of public opinion to such a degree that governments and local authorities are moved to action.

The "Boston Manor" scheme was a tentative first step towards popularising this idea of comprehensive suburban redevelopment. But that was over two years ago and the pressure must be kept up if we really want anything to be done. This SPUR meeting was an indication of the sort of thing that architects and planners should be doing all over the conurbations—preferably with the non-professional audiences to whom their ideas must ultimately be sold.



Above, sketch plan of Richard Hookway and Arnold Linden's comprehensive development plan for Woolwich, and below, in section, showing how the land slopes to the river.



TPI

US Urban Renewal and Us

"The Americans, to whom planning is almost a dirty word, are rallying to the renewal of their cities with a sense of urgency." In a long and well-reasoned paper to the TPI on February 1, Dr. Nathaniel Litchfield tried to explain this apparent contradiction.

While American planning legislation and planning controls remained weak and less well developed than ours, Dr. Litchfield thought that the US have edged beyond us in their approach to urban renewal. A big federal housing programme was launched through the 1949 Housing Act and urban renewal has been tacked onto the housing machine, rather than onto planning, as with us. The need to broaden the approach to comprehensive renewal was urged by an important committee in 1953.

The US urban renewal machine has neatly sidestepped the planning machine, and this, Dr. Litchfield thought, in the American context, beneficial for both planning and urban renewal: "In many places urban renewal is a tail wagging a timorous planning dog by dangling dollars in front of its nose."

At federal level urban renewal is the responsibility of the Urban Renewal Administration, a constituent of the Housing and Home Finance Agency. This gives loans and grants for urban renewal projects to a large variety of public local agencies. While the commissioners are normally unpaid they have a salaried director and staff.

A renewal agency, as a rule, combines its own, specific powers with those departments of the municipality which have other powers contributing towards urban renewal, in order to achieve comprehensive city-wide renewal according to a plan. Amongst these are powers to acquire and clear land and buildings (similar to our own CDA powers) but the renewal agency does not itself build; powers of acquisition for spot clearance of buildings, closing of streets and improving local environment, and powers to compel property owners to bring their properties up to modern standards without having to purchase these properties. (Oddly enough, the Americans are much tougher with property owners and owner-occupiers than we are—at least with the small ones.) Finally, deterioration of existing development is controlled under zoning ordinances which can also be used to put a "life" on buildings with no compensation liability.

All these public agencies enlist, wherever possible, the participation of private enterprise, which seems anxious to join in urban renewal, mainly because it can get hold of large central area sites it could not provide by itself and presumably because it's good business.

Renewal planning, Dr. Litchfield claimed, is becoming integrated with the older city planning and a more comprehensive approach is being established, culminating in city-wide renewal plans and programmes which are provided for by legislation since 1959 under the name Community Renewal Programmes.

One of the most fascinating features of the US scene is the active citizen participation which plays a major part in controlling and shaping local government policy: this includes collaboration in preparing and carrying out schemes, often with their own highly qualified staff. In every major city there is a Downtown Association and there are national groups such as ACTION (American Council to Improve our Neighbourhoods) which back urban renewal wherever they can. So much for the "grass roots." Then there is the participation of a select group of top people, like bankers and industrialists who make up the "brass roots." For instance, Sears Roebuck, the national department store, have their own Urban Renewal Division, while the owner of a private utility company commissioned Victor Gruen's Fort Worth project.

Dr. Litchfield's well-argued paper would have been more persuasive if he had not chosen to illustrate it with slides, some of which gave the game away. The hit-and-miss method of "slum clearance" and "rehabilitation" was inadvertently illustrated by charming 2-storey timber houses (with all mod. con.) which were to be demolished as slums, while another slide showed by contrast rows of dreary and gaunt terraces with inconvenient ceiling heights and so close to the next parallel row at the rear as to be practically back-to-back; these were scheduled for rehabilitation! Some of the urban renewal layouts and buildings were of such poor quality and so lacking in imagination as to leave one wondering whether this kind of urban renewal was worth while at all: true, the new was much bigger than the old but was it that much better? (One of the few notable exceptions was the Lafayette Park housing scheme in Detroit by Mies van der Rohe.)

A particularly telling slide showed "prairie planning" as often practised by urban renewal agencies: tens or even hundreds of acres of buildings are bulldozed and the flattened sites, frequently in the middle of towns, are left for many years undeveloped before a solitary block of flats is put up. Finally, there was Dr. Litchfield's accompanying remark which stuck in one's mind; "at best 20 per cent of the people who lived in these renewal areas will be reaccommodated while the remaining 80 per cent are in theory offered alternative accommodation but in practice have more often than not to fend for themselves as best they can by crowding into the surrounding area." No wonder that these renewal schemes are highly unpopular with a great many people in the US, including such authorities as Katherine Bauer.

Desmond Heap, who opened the discussion, had been to the US recently and did not think there was much in the US scene he would like to see here, and proceeded from there to demolish Dr. Litchfield's arguments with wit and candour. Mr. Heap said the "leitmotiv" of the American was the "doctrine of ad-hoc-ery" coupled with an addiction to "projectitis"; he also did not see why two authorities (planning and urban renewal) should be doing the job of one, i.e., of planning, and he cast

some doubts on the democratic nature of some of the US methods. Mr. Heap concluded his attack by saying that there was not much wrong with our planning machinery which in any case was much more perfected than the American one; all we needed was financial aid to carry out urban renewal. The Government grants which were removed from the war-damaged areas should be re-allocated and extended for urban renewal.

Percy Marshall, also recently back from the US, didn't think either that there was much we could learn from the Americans in urban renewal. He was suspicious of separating urban renewal from local government and he thought the prairie planning methods were particularly insensitive and destructive of urban values. But he welcomed citizen participation and wished we could have more of it.

Leslie Lane was impressed with the powers of local authorities to oblige private owners to comply with certain standards without having to resort to purchasing their properties. To his question as to what was being done for the middle-class population to bring them back to live in city centres Dr. Litchfield replied that by writing down the land costs, flats in these urban renewal schemes were within reach of middle-class families and were mostly occupied by them. Some of the speakers who followed took the Desmond Heap line—there isn't much in it for us, while others liked certain aspects such as the sense of urgency. But on balance, the supporters of Dr. Litchfield's main argument that the US can teach us a few things about urban renewal were decisively outnumbered by those who did not think so. Even so, Dr. Litchfield assembled in a masterly fashion all the relevant facts about US urban renewal and helped us by implication to clarify our minds about our own urban renewal problems.

W. G. B.

Annual Conference at Llandudno

The Town Planning Institute will hold its 35th Annual Conference at Llandudno this year, from May 31 to June 2.

The opening paper, "Planning at the Crossroads," will be given by Lewis B. Keeble, Director of Studies, Department of Town Planning, University College, London; other papers include "Housing the Motor Car," by J. L. Womersley, Sheffield City Architect, "The Design of Shopping Centres," by J. Seymour Harris, and a "President's Forum" to discuss current planning questions, with a "brains trust" of Sir William Holford, J. D. Trustram Eve, Sir Herbert Manzoni and Arthur S. Hamilton, with the president of the TPI, Mr. R. Nicholas, in the chair. And delegates can join in a "Study Tour" to explore the "Landscaping Problems in Snowdonia National Park." Details and application forms from the Secretary, TPI, 18, Ashley Place, London, S.W.1.

IUA

London Congress

Her Royal Highness the Princess Margaret has agreed to open the Sixth Congress of the International Union of Architects in London on July 3.

ROSPA

Accident Prevention Course

The Royal Society for the Prevention of Accidents is following up the successful specialised training course held last November with a second course at the Civil Defence Staff College, Sunningdale, from April 23 to 28, as part of the effort to get safety officers appointed by all contractors who employ more than 50 workers, whether all are engaged on the same site or not.

In announcing the course, ROSPA points out that in the last 10 years the number of accidents has risen from 15,576 to 18,285 a year, and the figures for 1960 are expected to be worse. Details of the course are available from the Training Officer, Industrial Safety Division, RoSPA, 75, Victoria Street, London, S.W.1.

E.F.A.

D.P.C. Symposium

Taking up an idea started last year the Electrical Floor Warming Association held a symposium on February 8 at which representatives of several manufacturers of damp-proof membranes, acting as a "brains trust," answered questions put to them by members of the E.F.A. and others who formed the audience.

The sum total of useful information emerging during the evening was disappointingly small. This appeared to result, not so much from unwillingness on the part of d.p.c. manufacturers to give information as from the fact that the effect of questions being asked more or less at random makes it extremely difficult to follow up and consolidate information given in the answer to the previous question. The opportunity for an exchange of views also tends to be lost as members of the "brains trust" have their work cut out to keep up with the volley of questions thrown at them during the evening. On this occasion it was not until towards the end that they had the chance to question their questioners. E.F.A. members were asked what temperatures could be expected within a floor. A few years ago the confident answer was 110-115 degrees F. Now it seems that many have second thoughts and are prepared to quote much higher figures. One difficulty appears to be that floor warming manufacturers do not make it clear what figure they are giving. Is it an average? Is it an absolute maximum? Is it taken when the system has been on for some time?

D.p.c. manufacturers gave, in turn, their ideas on the desirable position of the d.p.c. One manufacturer gave 2 in. below top of screed as the best place. Most manufacturers, however, considered it desirable to have

some sort of separating barrier between floor warming cables and d.p.c. A 1-in. thickness of screed was suggested. On the other hand if a thermal insulation is to be used (manufacturers of d.p.c.'s do not claim great thermal insulating qualities for their products) and allowing for the 2½-in.-thick screed needed to embed most floor warming systems, the d.p.c. would be considerably lower than 2 in. It was suggested by one manufacturer that it is undesirable to use a d.p.c. below ground level unless it is sandwiched between two layers of concrete. In the case of a basement which is tanked this condition, of course, is met. Questioned on the effect of heat on d.p.c.'s one manufacturer pointed out that there was evidence of a certain amount of what was called migration of the plasticiser from p.v.c. cables to the bitumen d.p.c., but after much discussion it seemed to be agreed that this did not present a serious problem.

CONCRETE GROUP

Fourth International Congress

The Prestressed Concrete Development Group has announced that the Fourth International Congress of the Federation Internationale de la Precontrainte will be held in Rome and Naples from May 27 to June 2, 1962. An Italian organising committee has been set up to make the detailed preparations.

The following subjects have been chosen for discussion, and the names of the general reporter on each are given in brackets:

Results of research, with special reference to durability and fatigue (Prof. S. S. Davydov, USSR).

Site considerations (problems and difficulties): remedies and solutions (Prof. B. Vandepitte, Belgium).

Economics of prestressed concrete in relation to regulations, safety, partial prestressing, lightweight concrete, etc. (Dr. H. Bay, Germany).

Progress in precast factory manufacture and standardisation (Ben C. Gerwick Jr, USA). Outstanding structures in prestressed concrete construction:

(a) bridges, viaducts and elevated roads (Prof. R. Morandi, Italy).

(b) buildings and other structures (Dr. Chr. Ostenfeld, Denmark).

All the papers will be printed in advance in one of the six Congress languages (English, French, German, Italian, Russian or Spanish), with a summary in all six languages.

Details of the Congress programme, costs, etc., are available from P. Gooding, secretary, Prestressed Concrete Development Group, Terminal House, Grosvenor Gardens, London, S.W.1.

NATIONAL PARKS

Review of Ten Years' Work

In their Eleventh Annual Report the National Parks Commission say they had

hoped that their tenth anniversary might have been marked by the introduction of a Government Bill giving effect to the amendments to the National Parks Act which the Commission and the Park Planning Authorities have recommended to the Minister.

As in the case of control of advertising, the Minister, it seems, is still relying on voluntary co-operation rather than legislation to protect the countryside. The Commission had asked that large scale afforestation schemes in National Parks should be brought under planning control: instead the MOHLG invited the Commission to discussions with the Ministry of Agriculture, the Forestry Commission, the Timber Growers' organisation and the Country Landowners' Association, to work out a scheme of voluntary control, which has resulted in the latter organisations agreeing to "advise their members to consult Park Planning Authorities on all proposals for the afforestation of any land in National Parks which has not hitherto been planted." The Commission has agreed to give this effort at self-control a trial.

During 1960 the Minister has confirmed designation orders for "areas of outstanding natural beauty" in the Malvern Hills, Cornwall, and north and south Devon, amounting to nearly 600 square miles.

The Commission had been expected to put before the MOHLG their plans for designating the Sussex Downs—at present in a state of growing spoliation—but apparently have been so swamped with representations from people and organisations anxious to extend the boundaries of the designated area, that their proposals will not be ready to go to the Ministry before April.

While proposing to designate the Downs themselves, the Commission had apparently excluded the valleys of the Ouse and the Adur from consideration, and it is only because of considerable pressure from organisations such as the Society of Sussex Downsmen that the recommended area is likely now to take in the valleys between as well as the heights.

DIARY*Ministry of Works Winter Lectures:*

International Carpet, Linoleum and Floor Coverings Trade Fair, Earls Court.

Closes MARCH 3

Corrosion of Metals in Buildings, by R. D. J. Tarleton, of BRS College of Further Education, Nun's Corner, Grimsby, 7.15.

MARCH 7

Nervi Buildings for the 1960 Olympics, by Paulo Sica, at the AA, 6.15. No tickets required.

MARCH 8

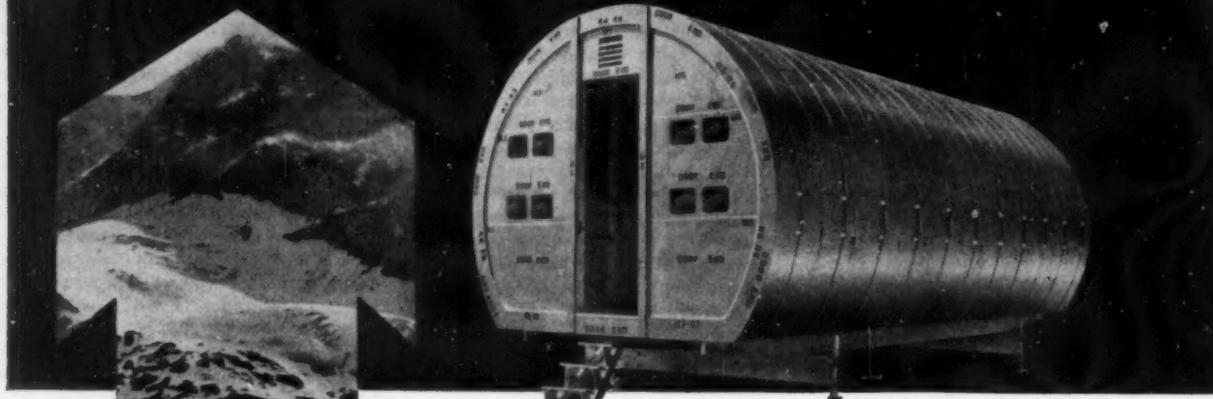
Model Methods, with particular reference to three recent applications in the field of steel, composite and concrete construction, by Prof. S. R. Sparkes and H. C. Chapman at the Institution of Structural Engineers, 6 p.m.

MARCH 9

Building in North America, W. Tompkins, with film. Institute of Builders, 6.30.

MARCH 16

20,000 feet up...



Photograph of the hut by courtesy of the Timber Development Association.

but they slept warm thanks to Marleycel

The organisers of Sir Edmund Hillary's recent Himalayan expedition left nothing to chance.

A portable plywood hut was designed to house the members of the expedition at 20,000 feet. To insulate it against cold even as low as -30°C . they chose Marleycel Expanded Polystyrene, giving it an insulation value six times greater than that of a brick-built house.

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THE INDUSTRY

This week Brian Grant describes gymnasium floor finishes, double glazed units, fire retarding paint, sill tiles and an electrical accessory catalogue

Floor Sealers

Two new floor sealers from Johnsons are Gym Finish and Improved Traffic-Cote. Gym Finish is the first product to be made especially for gymnasium floors. It is a complete finish, penetrating and sealing the floor to make it impervious to damp and stains, while at the same time providing a hard surface with good slip retardant properties which needs only sweeping and occasional damp mopping.

Improved Traffic-Cote is a heavy duty oleo resinous penetrating seal designed for use either as a preliminary to normal wax polishing, or as a complete floor finish if a second coat is used. It makes the floor impervious to oil, alcohol, water and other stains and routine maintenance is reduced. Both finishes are recommended for use with all hard or soft woods, cork, wood composition, concrete or terrazzo. Coverage is about 500 sq. ft. per gallon, and the floor is ready for use within six hours. (S. C. Johnson & Son, Ltd., West Drayton, Middlesex.)

Glazing for Insulation

Thermovitrine double- and multi-glazed units, originally developed in Belgium, are now being produced in this country. The air space between the glasses is dehydrated and the spacing is kept uniform by using aluminium tubing right round the perimeter, after which a special mastic is applied. This mastic is claimed to be impervious to attack

by water or oils, and in Belgium the panels are usually set in linseed oil putty. All units are guaranteed for five years and are made with an air space of $\frac{1}{4}$ or $\frac{1}{2}$ in. and with 24 or 32 oz. sheet, or plate glass. (North Western Lead Co., Ltd., Junction Street, Hyde, Cheshire.)

Fire Retardant Paint

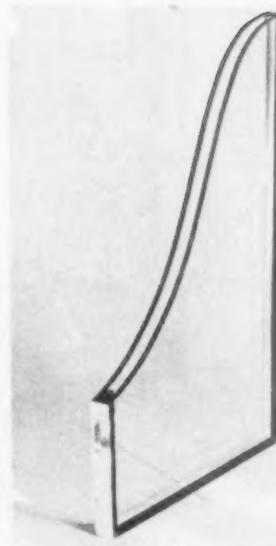
Albisaf Type I paint has been tested at the Fire Research Station, and two coats on softwood panels had an effective flame spread on 7.3 in., thus putting it in BS 476, Class 1, surfaces with very low flame spread. The paint is made in white and also in six pastel shades, and can be applied by brush or spray, two coats giving the required coverage of 25 sq. yd. to the gallon. The heat of a fire causes the paint film to swell up into a honeycomb texture blister, somewhat like ordinary paint under a blowlamp, but more so. The honeycomb layer has a considerable degree of thermal insulation, and provides an effective barrier against the spread of flame on combustible surfaces, and also reduces the likelihood of rapid distortion of metalwork. The paint in itself provides a complete decorative finish, but if colours other than those available are required it can be overpainted with not more than two coats of other colours. (Hadfields (Merton) Ltd., Mitcham, Surrey.)

Quarry Sill Tile

A leaflet from Allied Brick & Tile illustrates the range of Windmill quarry sill tiles, which are made in seven sizes with lengths from 4 to 12 inches, and in a standard width of 6 inches with a thickness of $\frac{3}{8}$ in. The standard range is made in several colours and in four new textured patterns. Most of the drawings in the leaflet show the tile used for bridging various common types of cavity wall and junctions with steel or wood casements. (Allied Brick & Tile Works Ltd., 6-7, Queen Street, London, E.C.A.)

Electrical Accessories

A new list from Wandsworth lists all the more usual types of switches, sockets and boxes, and also includes a number of more special types which were previously des-

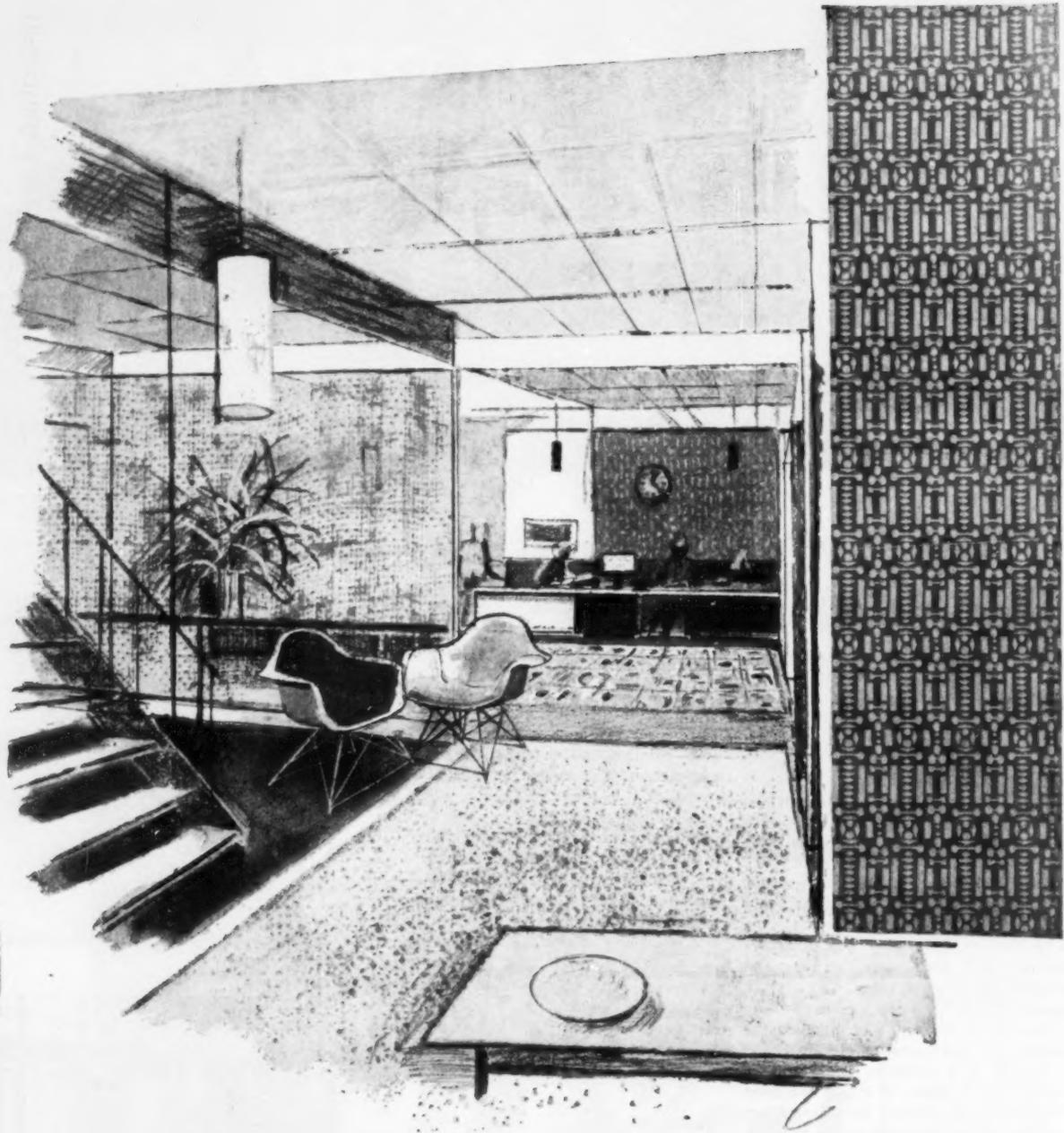


Thermovitrine double-glazed unit

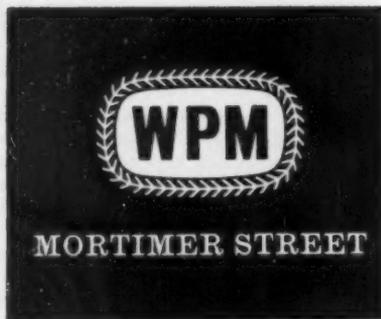
A gymnasium floor sealed with the new Johnson's Gym Finish



cribed in separate leaflets. They include low voltage terminal blocks for school laboratories, bench sockets, switches and sockets with Yale type locks, mercury switches and sockets with protecting shields so that they can be hosed down in operating theatres, sockets with non-standard pin arrangements, in fact almost all the sort of equipment one needs seldom but urgently, and which are generally omitted from standard catalogues. (Wandsworth Electrical Manufacturing Co., Ltd., Albert Drive, Sheerwater, Woking, Surrey.)



Drawing by Eric Thomas



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INFORMATION CENTRE

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

however, the first publication in one volume in a form suitable for laymen. The authors are all eminent bacteriologists who in the first section of their book have endeavoured to survey the prevalence and method of transmission of many different infections within our hospitals.

The respite afforded by the advent of penicillin (a drug which few organisms seemed capable of withstanding), was shortlived, for certain bacterial strains began to develop a resistance to even this antibiotic. The staphylococcus aureus (of which the authors have made a special study) is foremost among these. It is a penicillinase-producing, and therefore penicillin-resistant, variety to which nearly one-third of the section headed "Epidemiology of Hospital Infection" has been devoted.

Whilst the text is clear, concise and dispassionate, the authors are careful not to express firm conclusions unless "the evidence seems to fully justify them." This conservative attitude is quite understandable for, although staphylococcal infection is extremely common and sometimes fatal, present knowledge is still limited. Exactly how the germ transmits itself from one area to another is uncertain, and the most efficient method of controlling its spread has yet to be determined. (Since this book went to the press a penicillinase-resistant penicillin has been introduced, but it is still too early to judge what effect it will have upon the epidemiological scene.)

Written by bacteriologists and therefore likely to be more readily appreciated by those with a knowledge of, or interest in, medicine, this book nevertheless provides fascinating reading for the layman.

It is divided into two halves. The first, dealing with the "Epidemiology of hospital infection," has been outlined above. The second part headed "Control of hospital infection" thoroughly explores the practical aspects in the control of cross-infection. Here are found the recommendations for preventing the spread of infection together with chapters on sterilisation and disinfection, and each is accompanied by relevant photographs and a comprehensive list of references. It is an authoritative work which will become indispensable to every hospital architect, for today the problem of cross-infection is one which occupies not only all who are responsible for the care of patients, but also the design team who create the environment in which they are nursed. At this early planning stage, the relationship of one department to another, the construction of the building, its ventilation, its detailing with regard to cleaning, the distribution of patients, and their isolation facilities, are but a few factors that must be considered when designing a relatively germ-free environment. The authors estimate that, on the average, surgical wound sepsis detains a patient in hospital about a week longer than is necessary. It is, therefore, imperative that all who are responsible for the present and future hospital building programmes should be made fully aware of the inherent infection risks to be found within a hospital. Architects and planners can do no better than to read this most excellent book.

11.44 materials: general

BRICKS

Calcium Silicate Bricks. Booklet free on application from the Sandlime Brick Manufacturers Association, 73/78, High Holborn, London, W.C.1, January, 1961.

The properties of this type of brick are fairly fully described with relevant references to B.S.187 but with additional information on aspects not referred to in the B.S. The latter part of the brochure deals with the use of the bricks and has notes on design for loadbearing. Mortar mixes are described and tabulated. The need for proper care in storage and the use of construction joints are two points worth noting.

Illustrations are given of the special shapes of brick which are standard items.

Nothing new in this, but a useful collection of facts on this particular material. A number of buildings are illustrated by photographs, too general to be of any value and two pages of coloured illustrations are so horrible and obviously colour-wrong that they would be better omitted.

22.99 sound insulation and acoustics

TEST DATA

Sound Absorbing Materials, by E. J. Evans and E. N. Bazley, National Physical Laboratory, HMSO. Price 3s.

The main section of this booklet consists of tables of the absorption coefficients of over 300 materials measured at the National Physical Laboratory. The information contained in these tables covers a far wider range than that to be found in most textbooks on acoustics and is thus very valuable to anyone attempting acoustic design. Two warnings must be given to designers. The first is that the method of mounting a material in a building will influence the absorption coefficients to some extent. This is covered by a generally adequate description of the mounting method used for the test sample and by a discussion on the principles of sound absorption at the beginning of the booklet. The other is that many of the materials tested are proprietary types described by the maker's name and perhaps a few basic details. Some of the tests go back as far as 1932, and it would be optimistic to imagine either that all of these materials are currently available or, if they are, that they are now identical in every way with the samples measured by the N.P.L. It is recommended that manufacturers should be asked to give a categorical statement that the material which will be supplied now is definitely "as tested" and not some variant.

The last table of results includes "a collection of outdoor materials." Although these materials are not used in buildings, the results appear to be of general interest and have a bearing on practical questions. For example, a sound absorbing ground surface may be a useful factor in promoting quiet conditions in surrounded courtyards.

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8.66 surveying and specification

FLOOD DAMAGED BUILDINGS

Notes on the Repair and Renovation of Flood-Damaged Buildings. Building Research Station and The Forest Products Research Laboratory. Typescript January, 1961.

This is mainly a reminder about the fairly obvious problems which arise but is useful in emphasising the need for thoroughness of treatment, especially in the case of dampness below floors when an apparent drying of the visible surface of a floor could rather easily encourage too optimistic an outlook. The degree of penetration of mud under floors, for example, might not always be considered. Notes are given about brick, stone, timber, plaster and some other materials. Timber rot may not become visible for some considerable time and inspections up to a year after drying out are advised. The chief points emphasised, however, are the need for speedy and very thorough drying out. Subject to this, the amount of repair needed and method of doing it should not be difficult to judge. The note finishes with some observations about the effect of flooding on builders' materials stored in the yard or on building sites.

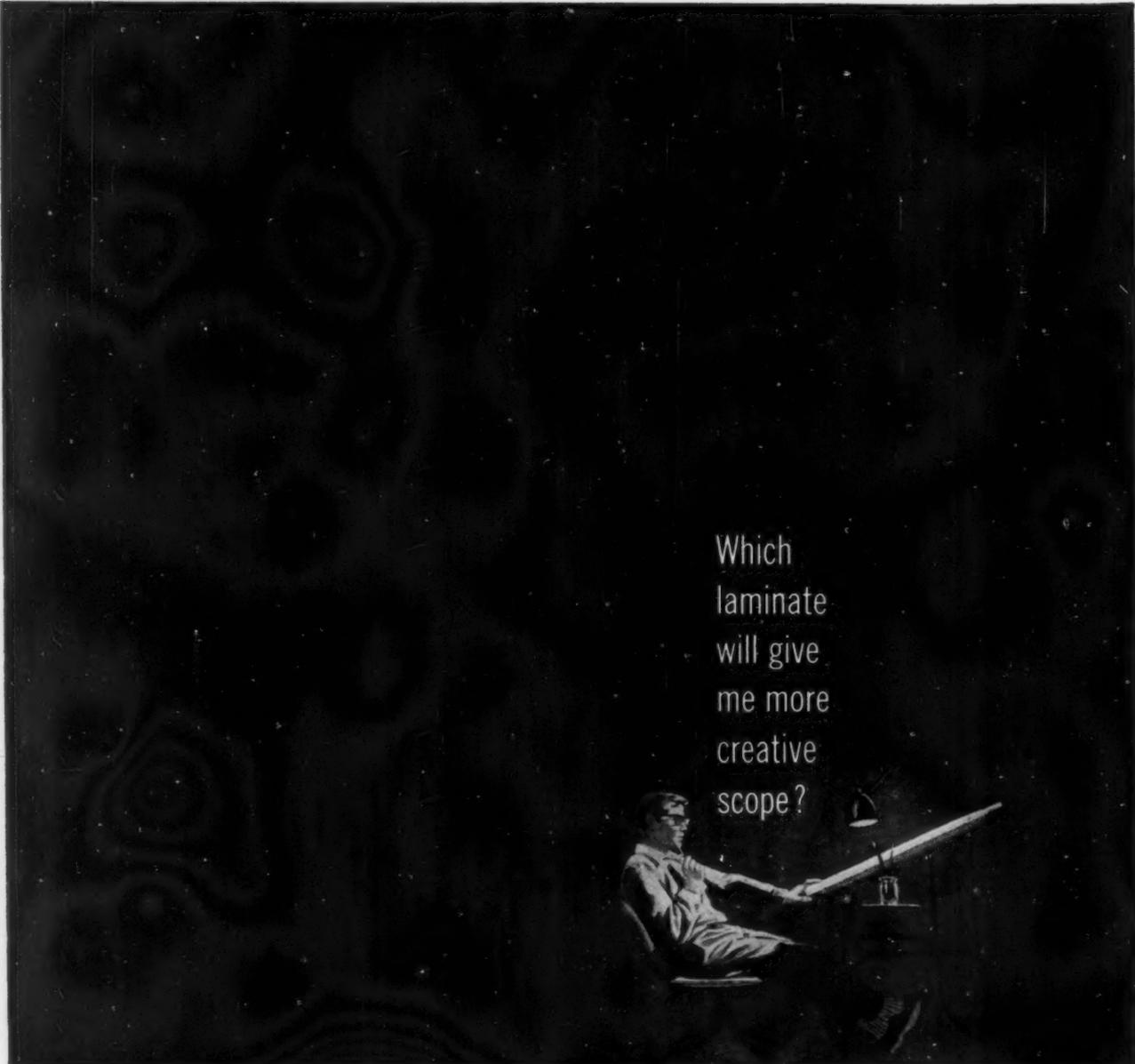
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10.205 design: building types

CROSS INFECTION IN HOSPITALS

Hospital Infection—Causes and Prevention. By R. E. O. Williams, R. Blowers, L. P. Garrod, R. A. Shooter. Published by Lloyd-Luke (Medical Books) Ltd., 1960. Price 35s. In recent years much research both in Britain and the USA has been undertaken and several reports published, dealing with the different aspects of bacterial cross-infection in hospitals. This book by doctors Williams, Blowers, Garrod, and Shooter is,



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technical section

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8. SURVEYING AND SPECIFICATION cost prediction—a guide to design decisions

In this article P. A. Stone, an economist on the staff of the Building Research Station, describes a method of cost prediction which will take account not only of first cost but also of all the contingent costs which arise in the course of a builder's life. The technique he proposes is a rationalisation of the way architects and building owners have attempted always. If, as he points out, it seems difficult and hazardous, this is only because the assumptions implicit in any design decision are often unrecognised and we have not yet assembled the evidence needed to make it easy and sure.

The design of a building determines not only the initial costs of construction but also its running costs, and can influence to some extent the costs of the operations carried on in the building during its life. Good value for money means that all these costs must be considered.

The problems of taking design decisions are in many ways like those of determining the best way of arranging personal expenditure. We often find it difficult to weigh initial and long term costs. A new car is more expensive initially but will last longer, be more reliable and cheaper to run than a second-hand car; it may seem preferable to hire a radio or cooker and go for a holiday, rather than to purchase outright and stay at home.

The building owner has similar problems of weighing up the advantages and disadvantages of additional capital expenditure on his buildings as against on other things. In order to see the effect of alternative choices he must look at initial costs and running costs on a common basis. There are two ways of arriving at a simple cost figure:

1. Costs may be converted to their annual equivalents; that is, the initial and periodic costs are amortised over the life of the building; or
2. Costs may be converted to their equivalent capital sums at the time the building is constructed, that is, the running costs are discounted to their present value.

These methods are alternative ways of presenting the

same information. The first gives a figure that will mean more to the user of a building, and the second gives one that is of more significance to an investor. In this paper the first method is used to express all costs as equal annual payments over a period of years. These "costs in use" include in addition to the first costs, the costs of maintenance, heating, lighting and other service costs.

The application of the "costs in use" technique involves making a number of predictions, and the designer will find that many of the factors singled out for attention seem almost completely unpredictable. Nevertheless, this method can take him in the right direction by reducing the degree of uncertainty. Any design decision involves many predictions, some conscious but many unconscious. The designer already lives with uncertainty, hunch and guesswork. The merit of the technique suggested here is that it formalises the prediction process. By making as many as possible of his predictions explicit, the technique enables him to sort them out and to attach greatest weight to the best substantiated assumptions. On a longer view, awareness of where important knowledge is lacking helps him select information and experience where it is most needed, and to demand the kind of data that will be most valuable in improving his predictive power.

Some of these general ideas may seem rather unfamiliar; a few practical examples will help relate them to common experience.

Example 1

There are a number of possible types of materials which can be used for rainwater goods; three typical ones are asbestos cement, cast iron and vitreous enamelware. Asbestos cement does not need painting for protection, cast iron needs regular painting, vitreous enamelware should remain sound without treatment for a long period unless damaged by impact. Suppose as an example that the asbestos cement product costs £50 a unit and needs replacing every 30 years, that the cast iron product costs £60, will last the expected life of the building, but needs repainting every five years at the cost of £13; and that the vitreous enamelware costs £75, will last the life of the building, and will need no further attention.

The equivalent annual costs of these three materials are given in Table 1. The way to calculate the annual equivalents will be described later.

These predictions of future costs are, of course, subject to errors, but provided the errors of prediction are less than 10 per cent, the asbestos cement would appear to be the cheapest, although, even if a decorative finish is not necessary, vitreous enamel may still be preferred in view of the improved appearance obtained for a small increment of cost. If the life of the asbestos cement product were only 20 years, however, its costs

technical section

would be about equal to those of the vitreous enamel product. Where a decorative surface is necessary vitreous enamel would appear to be preferable under normal conditions on grounds of cost although in an exposed position subject to impact damage, painted cast iron would be preferable.

Example 2

In other cases the decision may lie between design features which provide different standards of service to the users of the building. The choice between different ways of dealing with refuse handling in high blocks of flats is a typical example. The annual "costs in use" of the main alternatives are summarised in Table 2. These figures provide a general assessment of the relative costs of the four systems to the community and are not related to the particular conditions of an actual development for which the costs might differ. It will be seen that, broadly, dustbins on their own cost about 1s. per week, a system of ducts with dustbins something under 1s. 6d. a week, and water-borne refuse disposal over 3s. a week. Against these costs must be set some assessment of the value the users of the buildings are likely to put on the extra amenities provided by the more expensive alternatives. Tenants might feel that it was worth spending an extra sixpence a week to avoid carrying refuse downstairs to outside bins, particularly if they had ashes to dispose of. The time and effort saved by the water-borne method as compared with the ducts and bins method is small and the considerable extra cost of the former has to be set against differences in convenience and cleanliness. While such assessments are perhaps difficult, the problem of decision is simplified once the scale of cost is determined within reasonable limits.

Example 3

As a final example, the prediction technique will be applied to a choice between two different designs of a part of a particular building, in this case the roof of a factory. Both roofs have the same clearance height and spans, but the change from a flat to a pitched roof

affects the frame and the type of roofing, and the use of a pitched roof introduces gable ends. These design changes affect the costs of maintenance and heating, as well as the costs of construction. Later it is proposed to examine the effect of variations in costs in this example on the interpretation of the data, and for this reason the designs and conditions of use assumed have been chosen so as to bring the two costs into equality.

In predicting the "costs in use" (Table 3) the work required by each design was first analysed into its elements: where an element has the same cost for each design it has been eliminated from the cost comparison. Bills of quantities were then prepared for the elements affected by the designs and these were priced on a uniform basis. The expected programme of maintenance was predicted and priced. Estimates of heat lost were made and the price of replacing this estimated.

In order to make the above estimates it is, of course, necessary to predict the costs of carrying out various types of building work at the present time and in the future, and to predict the lives of buildings, the durability of materials, rates of interest, levels of taxation and so on. Consideration must now be given to these problems and to the method of calculating the annual equivalents of sums payable at various dates in the future.

THE PROBLEMS OF PREDICTION

Inevitably prediction is hazardous, but it is implicit in every decision since today's decisions inevitably imply predictions of the future. To limit the uncertainty of predictions we must understand their nature and ensure that we base them on the best evidence available. The main factors to be considered are:

- Interest rates.
- Life of buildings.
- Life of materials and components, and the costs of maintenance, renewals and cleaning.
- Current and future levels of prices for labour, materials and fuel.
- Taxation and insurance.

Table 1, the comparative predicted "costs in use" of rainwater goods

Basic Data	Asbestos Cement		Cast Iron	Vitreous Enamel
	Unpainted £50 30 years	Painted £50 30 years £15 5 years	£60 60 years £13 5 years	£75 60 years
Initial cost				
Assumed life				
Repainting cost				
Repainting cycle				
Annual Equivalents				
Initial cost	£3.3	£3.3	£3.2	£4.0
Repainting cost		£3.5	£3.0	
Total:	£3.3	£6.8	£6.2	£4.0

Table 2, estimated annual "costs in use" per dwelling of handling household refuse

Item	Individual dustbins	Collective dustbins	Ducts and collective dustbins	Water-borne refuse disposal
Annual cost of permanent part	—	7s.	25s.	100s.
Annual cost for replaceable part	8s.	10s.	9s.	unknown
Maintenance and service charge	—	6s.	6s.	6s.
Collection cost	30s.	20s.	20s.	5s.
Disposal cost	10s.	10s.	10s.	
Total annual cost:	48s.	53s.	70s.	170s.

Table 3, estimated annual "costs in use" of two roof structures for a 20,000 sq. ft. factory*†

Type of cost	Element	Design 1	Design 2
		Flat roof. Unglazed. Light steel trusses. Asbestos cement decking. Plasterboard and glass-wool insulation. Felt finish on fibreboard with mineral chippings	Equal pitch. Unglazed. Light steel trusses. Asbestos cement sheets. Plasterboard and glass-wool insulation
		£	£
Initial costs	Columns and beams	121	141
	Roof trusses and connections	121	125
	Roof covering, including purlins and R.W. goods	236	182
	3 layer felt cover to roof laid on fibreboard and finished with mineral chips	136	—
	Roof insulation	63	175
	Painting to cols. and beams	6	8
	Painting to roof trusses	13	14
	Painting to plasterboard	16	18
Brickwork to gable ends (painted internally)	—	10	
Periodic maintenance cost	Repaint cols. and beams every 7 years	10	15
	Repaint roof trusses etc. every 7 years	24	27
	Replace asbestos cement sheets and R.W. goods every 30 years	2	33
	Replace felt roof every 30 years	32	—
	Repair and repaint plasterboard every 5 years	70	76
Repair and repaint brickwork every 5 years	—	3	
Annual cost	Annual repairs to asbestos sheeting	—	10
	Annual repairs to felt roof	14	—
	Cost of replacing heat lost through the fabric† at 1s. 6d. a therm for a heating season of 5,500 hours with an average temperature difference of 10° F.	182	209
TOTAL COST		£1,046	£1,046

* Elements which have the same cost in each design have been omitted, e.g. foundations (assuming normal conditions) and lighting-installation and running costs. It has been assumed that the building will have a life of 60 years and that the rate of interest will be 5 per cent.

† The rate of air change per person is assumed to be constant.

a. Interest rates

The introduction of the effect of interest into cost predictions both allows for the inevitable costs of borrowing money, or of not investing money elsewhere, and at the same time provides a means of "discounting" the future. This has the effect of telescoping periods of time in the future compared with those in the present.

Building owners must either borrow money to finance the building or sacrifice an alternative use for their own money. The rate of interest which is implied is, therefore, either the market rate for money borrowed on the security of the building, or the average return which the building owners can get for money invested in their own business. This rate of interest should be used in conjunction with either the anticipated actual life of the building, or the life over which the future can be reasonably foreseen with an allowance for the residual value. The rate of interest used is of importance since it affects the decision taken. The lower the rate of interest, the more it will appear worthwhile to spend money now in order to reduce future costs. Where rates of interest are high it is more worthwhile to reduce first costs in relation to running costs.

The actual rate of interest to be used for cost prediction purposes will depend on such factors as the average internal return and the credit-worthiness of the building owner, as well as on the predictions of the long term movement of the rates of interest.

b. The life of buildings

The cost predictions for the various components under consideration must be made within the pattern set by the predicted life of the building itself. The period taken should be realistic, and will normally be the period over which the building is expected to earn an

income, for it is during this period that the costs will be recovered, rather than the period for which it is required by the first owner. Buildings are considered to have a substantial life of something of the order of 40 to 80 years. Their possible physical life is often much greater, but frequently they are demolished before the end of this period in order to make way for a more profitable use of the site, or because it is found cheaper to clear and rebuild rather than to adapt the building to a change in requirements. The period over which the building is financed is, of course, quite irrelevant as a basis of cost prediction.

The annual equivalent of the first cost of a building is not very sensitive to changes in the period of life unless the period considered is a short one. Thus errors of five or ten years in the predicted life will not make very much difference to the predicted annual costs when the life is 50 to 60 years, but serious errors in prediction, and hence in design decision, can arise if the life of the building is taken as substantially shorter than conditions warrant (Table 4). Conservatism in this sense increases the error in predicting the "costs in use" and hence increases the probability of reaching wrong decisions.

One of the most common reasons for predicting lives on a very conservative basis is in order to make some allowance for obsolescence. To do this by shortening a predicted life is a crude and misleading method. Obsolescence in buildings often leads to conversion rather than to demolition. The latter solution is usually adopted only on expensive sites where the value of land is high compared with that of the building, or where a large increase in site value can be secured by redevelopment. These conditions are not usually important in the case of most buildings. Conversion is merely a special type of future

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cost within the life of the building. If its incidence is known it should be considered in the cost prediction; if it is unknown, then it ceases to be a factor in the initial "costs in use" prediction but will, of course, be considered in predicting the "costs in use" at the time of decision to convert or rebuild.

c. The life and maintenance costs of materials and components

If choice were limited to traditional materials and building components used in a traditional way, it would be sufficient for predicting their "costs in use" if figures were available giving their probable maintenance costs over their life. Under these circumstances it would not matter if it were impossible to separate out the costs of renewals, periodic and annual maintenance, and repairs. Such data are rare, however, and often the choice is between traditional and new materials and components for which there are no adequate cost data.

Theoretically, the lives of materials and components should be determined on the basis of observed probabilities of failure, but again, such data are rarely available and often it is necessary to predict the life on the basis of a knowledge of the age of early failures. Such information is often incomplete since it does not record the successes or the numbers at risk, and hence suggests a higher rate of failure than really occurs.

A workable convention for building up the costs from the component parts is to attribute the life of the main element of the installation to the installation itself, and treat renewals of minor parts as maintenance. In the absence of such data the only course is to try to visualise what is necessary to keep the installation in good working order, and to cost on this basis. For convenience, repairs and maintenance can be divided into renewals, that is the replacement of particular components at stated intervals of time, and maintenance, including cleaning, which is general work, a certain fixed amount of which is assumed to be necessary each year. Small alterations in the time pattern are not usually of importance. Painting and decorations are usually carried out according to a cycle and can be treated in a similar manner to renewals. The estimates of maintenance costs will, of course, be somewhat uncertain, and the degree of uncertainty must be considered when interpreting the results. The best procedure is to work with an estimate of the likely range of costs as well as with the expected average.

Where one of the alternatives to be compared consists

of a material for which there is no historical information on its performance, estimates can only be made by analogy with other materials of a similar nature. The determination of average lives is difficult, but the errors of prediction may not be important, particularly when the true lives of the materials being compared are considerable. The best procedure would appear to be to prepare a tabulated list of the estimated lives of as many materials and components as possible, this list being kept up to date both as regards additional materials and as regards the estimated lives as new knowledge comes to hand. The use of such a tabulated list would ensure that, in effect, each item will be compared with other relevant items. It is, of course, important to avoid conscious bias either by consistently underestimating, or overestimating the expected life.

d. The current and future level of prices for labour, materials and fuel

In costing any particular item of work, whether the initial installation or its renewal, the programme of work must be set out and costed. It is, of course, difficult to predict exactly what prices will be charged, even for work to be undertaken in the immediate future, and the likely range in the prices must be considered. In the case of renewal work, allowance must be made for stripping out the old components and for making good after replacement. Thus the cost of renewal may be much greater than the cost of initial installation. Finishes and even basic structure may be damaged in removing old components and fitting new ones. Allowances must also be made for possible losses of rent and production, and for the different conditions under which renewal work is carried out as compared with initial construction, such as the difference in scale of the contract and in the available assistance.

Prices of materials and labour vary both from one job to another and from one district to another, so that a design decision which is the best at one time and in one area may not be the most satisfactory in other circumstances. Both building materials and fuels are affected in this way, coal and electricity, for instance, being cheapest in the Midlands where oil is relatively expensive compared with elsewhere.

The long run tendency for prices to rise does not need to be considered in so far as the elements of cost retain the same relationship to one another. However, there is a tendency for the real costs of manufactured goods to fall relatively to labour costs, so that because renewals and maintenance have a higher labour content than initial construction, they are likely to be more expensive relative to initial costs in the future

Table 4, effect of errors in predicting the life of buildings

Assumed life = x years	Annual equivalent* per £100 of first cost for assumed life	Percentage error when life taken as x	
		When actual life = 40 years	When actual life = 60 years
20	8.02	+38	+52
30	6.51	+12	+23
40	5.83	0	+10
50	5.48	-6	+4
60	5.28	-9	0
70	5.17	-11	-2
80	5.10	-13	-3

* Rate of interest 5 per cent.

than they are today. Special consideration must also be given to materials that tend to have a highly individual price pattern, often unrelated to general price trends.

e. Taxation and insurance

From the point of view of the individual or the firm, the incidence of taxation can have quite a large effect on design economics. For instance, with an industrial building, some tax relief can be obtained on the initial cost, partly from depreciation allowances and partly from investment and initial allowances. Amounts spent on maintenance and repairs, heating and lighting, and other running expenses, count, of course, as business expenses and are deductible from profits. Clearly, the exact incidence of taxation varies with the circumstances of the taxpayer. Current regulations and levels of taxation tend to favour alternatives with low construction costs and high running costs, since a typical industrial concern might obtain around £45 tax relief for each £100 spent on running costs and around £25 for each £100 spent as initial costs. If the building is financed by a separate company and rented, the rent counts as a business expense. Tax relief can also be obtained on the interest paid for borrowed money. On the other hand, public authorities and charitable bodies do not pay income tax, and for such bodies, as for the community, it is the actual costs of work which must be considered. The design and layout of buildings can also have some effect on rating valuation and on the premiums payable for fire insurance.

EQUATING OF CURRENT AND FUTURE COSTS

The method of equating current and future costs can now be explained by means of an example showing how some of the figures given in Example 3 for Design 1 (Table 3) were calculated. For example, the initial costs of the columns and beams were estimated to be £2,286. The sums payable annually over given periods, assuming 5 per cent interest, which are equivalent to a single payment of £1 at the beginning of the period are given in Table 5, Column C. For a period of 60 years this is shown as £0.0528. The annual equivalent over 60 years of an initial cost of £2,286 is therefore—

$$£2,286 \times 0.0528 = £120.7 \text{ say } £121$$

The cost of repairing and repainting the plasterboard every five years has been estimated at £393. This work is assumed to be carried out at the end of the first five years, and subsequently every five years until five years before the end of the expected life of the building. If this is taken as 60 years, there will be eleven occasions upon which this work is carried out. The first step to finding the equivalent annual costs of these payments is to find their discounted value at the commencement of the period of cost prediction. Since the first occasion is assumed to occur five years after commencement of the period of cost prediction, the sum must be discounted for five years; the factor for discounting is obtained from Column A, Table 5, as 0.784. The second payment is assumed to occur 10 years after commencement and its discounted factor is 0.614; the discounting factor for the third payment is

0.481 and so on, the discounting factor for the final payment being 0.068. Thus the discounted values of the costs of repairing and repainting the plasterboard are:

$$£393(0.784) + £393(0.614) + £393(0.481) + \dots + £393(0.068) = £1,325.$$

This value can now be treated in the same way as the initial cost; the annual equivalent is therefore found by multiplying the product by 0.0528 which gives a figure of £70.*

The interpretation of the estimates

The "costs in use" comparisons are concerned with three types of factors, factors of design detail, of conditions of use, and of prediction. Clearly, the purpose of the technique is to examine differing design solutions; but even within these, varying assumptions made about the detail of the design can have an effect on the cost comparison. In Example 3, in which two designs for a factory roof were compared, one with a pitched and one with a flat roof, the costs of the roofs would change if glazing were introduced, or the dimensions or materials changed. It might be found, for instance, that the roof shape with the lower costs changed with the type of material. Again, changes in the conditions in which the building is to be used will also tend to alter the costs, and the decision indicated by the figures might not be the same if, for instance, the exposure or heat load were different. Finally the cost estimates are influenced by the predictions made for such factors as rates of interest, the durability of the materials, the costs of maintenance, the future relative prices, taxation, and the expected life of the building.

The conditions under which a building is intended to be used will normally be known by the designer but it is of interest to consider how the results might be changed by changes in the conditions assumed. In the case of the two roof designs the estimated difference between them in the heating costs for providing full heating for one shift is, on the assumptions made, shown to be only £27 (Table 3), and is increased by only 30 per cent if the factory works on a three shift basis. Because of the similarity in heating costs, the comparison is not sensitive to variations in the price per therm of heat. On the other hand, if the amount of process heat were sufficient to heat the building even with an unlined roof, the elimination of the pitched roof's previous cost disadvantage in requiring a greater input of heat, together with the omission of the insulation, would result in the pitched roof being about £150 cheaper in total annual costs than the flat roof. This result is achieved because a change in design becomes possible; while the cost of insulation for the pitched roof is greater than for the flat roof, the cost for the covering for the pitched roof is substantially less than for the flat roof. The dominant use and design features will vary from case

* When the expected life of the building is a multiple of the period of renewal a simple method can be used. For instance, in the above case an annual payment over the whole period of $£393 \times 0.231$ (Table 5, Column C) is equivalent to payments of £393 every five years from the beginning of the period to five years from its end. The first payment does not arise in calculating the costs of periodic renewal since no renewal is needed until the end of the first period. The deduction for the annual equivalent of the first payment is $£393 \times 0.0528$ (Table 5, Column C). Therefore the annual equivalent cost of repairing and repainting the plasterboard is: $(£393 \times 0.231) - 393(£ \times 0.0528) = £70$ as above.

technical section

to case.

The first source of prediction errors to be considered is that which results from under- or over-estimating the life of the building itself. However, even large changes in the expected life will normally make little difference to the comparison unless the proportions of the equivalent annual costs for construction to total "costs in use" differ greatly. A more important source of prediction errors is likely to be found in predicting the durabilities of materials and components. The best solution to this problem is to work with an upper and lower limit of durability, and to consider the effect of both limits. If the choice rests on the relative costs alone no doubt will arise if a new material is either less expensive than alternatives when its minimum life is taken, or more expensive when its maximum life is taken. The real difficulty arises when the life at which the alternatives balance in cost lies between the predicted upper and lower limits of durability. The decision to use a particular material then becomes a speculative investment based on the belief that a certain life will be obtained. For example, an alternative component costing £150 would only be preferable to a standard component costing £100 and lasting 10 years, if the alternative lasted 18 years, assuming interest at 5 per cent. If the only information on the alternative was that it would last between 10 and 20 years, the justification of a decision to select it would rest on the faith that its life would be at least 18 years. In the case of the roof example the relative costs of the asbestos cement products are so small that under- or over-estimating their lives by as much as 10 years makes practically no difference to

the cost comparison. Of course, if the true life of a material is 30 years the use of a conservative estimate of 20 years will result in a larger proportional error than if the life had been over-estimated by 10 years. The effect of errors in predicting the costs of renewing materials and components is similar to the effect of errors in predicting durability. For the roof example, if the relative prices of renewing the asbestos cement products and the felt each changed by as much as 50 per cent but in opposite directions, the cost difference between the two designs would be increased to 3 per cent.

Taxation and the rate of interest only affect the relative economy of the designs if their proportions of initial and running costs are markedly different. In the case of the roof designs the running costs account for about half the "costs in use" in both cases and so an allowance for taxation or change in interest rates makes little difference to the cost comparison.

While in the case of the roof example the prediction errors have proved to be of little importance, this will not always be so. Prediction errors are likely to be of importance where the relations between first and running costs are very different as between the designs compared. Where the decision is likely to be affected by the assumptions accepted as to the lives and future prices, it is necessary to examine the predicted levels critically and to decide which assumptions are most likely to prove correct.

Acknowledgement: This paper forms part of the programme of research of the Building Research Station and appears by permission of the Director of Building Research.

TABLE 5. present value of future single and annual payments and the annual equivalents of single payments assuming a 5 per cent rate of interest

Number of years	A		
	Present value of £1 payable at the end of the period shown (1)	Present value of annual payments of £1 payable at the end of each year for the period shown (2)	Sum payable annually over the period shown, equivalent to a single payment of £1 payable at the beginning of the period (3)
	£	£	£
1	0.952	0.95	1.0500
2	0.907	1.86	0.5378
3	0.864	2.72	0.3672
4	0.823	3.55	0.2820
5	0.784	4.33	0.2310
6	0.746	5.08	0.1970
7	0.711	5.79	0.1728
8	0.677	6.46	0.1547
9	0.645	7.11	0.1407
10	0.614	7.72	0.1295
11	0.585	8.31	0.1204
12	0.557	8.86	0.1128
13	0.530	9.39	0.1065
14	0.505	9.90	0.1010
15	0.481	10.38	0.0963
16	0.458	10.84	0.0923
17	0.436	11.27	0.0887
18	0.416	11.69	0.0855
19	0.396	12.09	0.0827
20	0.377	12.46	0.0802
25	0.295	14.09	0.0710
30	0.231	15.37	0.0651
35	0.181	16.37	0.0611
40	0.142	17.16	0.0583
45	0.111	17.77	0.0563
50	0.087	18.26	0.0548
55	0.068	18.63	0.0537
60	0.054	18.93	0.0528
70	0.033	19.34	0.0517
80	0.020	19.60	0.0510
90	0.012	19.75	0.0506
100	0.008	19.85	0.0504

(1) £0.008 invested to-day = £1 in 100 years' time.

(2) £19.85 invested to-day would provide for an annual payment of £1 for 100 years.

(3) £1 invested would provide for annual payments of £0.0504 for the following 100 years.

Pub Renovation

Brendon Street, London, W.1

by J. Austin-Smith and Partners

Partner in charge, Geoffrey Salmon, assisted by Christopher Keen

The modern architect approaches the problem of renovating a pub at his peril. Clearly, he must not perpetrate an American-style cocktail lounge, with its dark secluded corners and slick sophistication; or a Japanese tea room, with insistent demand for visual appreciation and quiet. At the same time, he can't fall back on harness ornaments, pewter measures, and diamond window panes. If people tend to like old pubs better than new ones, they tend also to like Georgian houses better than contemporary ones, and for the same reason. On the whole, the old ones are better designed.

J. Austin Smith and Partners have renovated the Wargrave Arms, Brendon Street, just off the Edgware Road. For the most part, it is well designed and yet still feels and looks like a pub. By the simple means of cleverly handled colouring and some new lettering, the old tatty exterior has become neat, clean, and almost elegant. The existing fascia and piers are now black, with orange marble edging left unchanged, while the brick panels underneath the windows are painted white which ties in with the bold white lettering mounted on the fascia above.

Inside, there are three architectural features handsome in themselves and particularly suitable for a pub; a dropped wood ceiling, the back wall of the bar, and the lighting used throughout. The ceiling is neatly made of open 6-in. by 1-in. wood slats at about 1 ft. centres, left in a natural finish and running the length and width of the two bars, stopping short of the window to return up to the existing ceiling. This creates a fascia inside the pub visible from the street, on which is set a colourful abstract pattern lighted by means of drop lamps hung from the old ceiling above. The reduced height that results gives the pub a warm and informal look.

The back wall of the bar is painted black with an attractive arrangement of glass shelves, mirrors, dark wood, and indirect lighting. Against this, the glasses and bottles are tidy and decorative. Lastly, the lighting of the bar is adequate and not glaring. The bar lights are fastened to the same brass poles, carried up to the ceiling, that support the bar rail. Fitting nicely into this arrangement are some bar stools which have the same diameter of tubing, topped with contoured wooden seats.

One or two items of the interior are puzzling. It is



strange that the same hand which designed the ceiling, the bar storage wall and the lighting, could also have handled the floor finishes. In particular the linoleum pattern seems too large and noisy for this interior. The architects, however, believe that such strong patterning on the floor is justified for several reasons. One of the most important, which has conditioned the design of the whole interior, has been the attempt to achieve what they call a sense of super-realism, or a slightly "larger than life" impression, especially agreeable after four or five pints of beer. Smaller patterning would in any case, they contend, become lost in a *mêlée* of feet when the pub was crowded. They also feel that strong contrasts in the treatment of the floor are valuable in countering the effects of such things as cigarette ends and stiletto heels.

Another lapse is the design of the partition between the public and saloon bars, which looks as if it were put in as an afterthought. This again the architects defend as being a simple division which might be placed anywhere along the length of the bar, with elements to link the two sides, such as the continuation of the lighting and the use of glass panels. This they regard as a traditional feature of the democracy of the pub, the casual way in which partitions have been slung across a common space centred on the bar.

But whatever you may think of these two features, there is no doubt that everything at eye level, the level that counts during opening hours, has been handled with distinction, setting the key for the whole interior.



The public bar after the renovations

The saloon bar showing the vertical brass poles which support the bar rail and the bar lighting. The brewery's standard tables and chairs (not chosen by the architects) are the one element out of key





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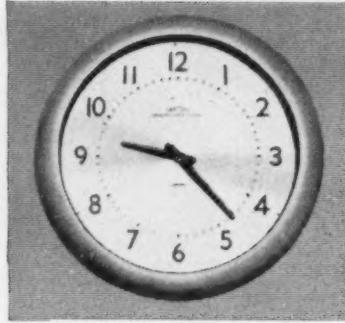
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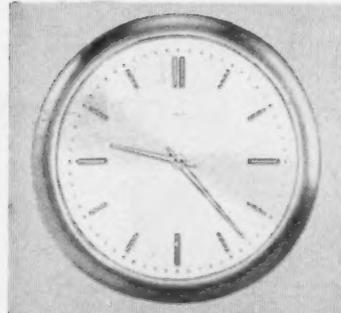
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**HIDE PLACE
DEVELOPMENT**

5

(98)
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The fifth of a series of progress reports. The other instalments appeared on June 23, August 18, October 20, 1960, and January 5, 1961

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Hide Place seen from across Vincent Square



progress report

SERVICES (2)

Lifts

Lifts are frequently an arguing point in designing flats; questions arise as to their size and speed, their number in relation to the number of persons in the dwellings and so on. At least at Hide Place there was no question of keeping the number of storeys within the limit at which lifts are not thought necessary at all (under 5 storeys), or within which only 1 lift is required (up to 7 storeys).

There have been a number of devices such as stopping lifts at every other floor; combining large with small lifts, and so on, all designed to reduce the considerable expense incurred in their installation. At Hide Place, however, it was felt that the service given should be of a high standard and that it should be unnecessary to require the tenants, many of whom may be elderly, to walk up or down from the floor on which any lift lands them: so the only concession made to such devices was the exclusion of the club room and laundry floor which has to be approached up one flight of stairs from the floor below. This was not thought to be a sufficient hardship to warrant the additional overrun for the lift motors which would be required if the lifts were taken to roof level, and in any case the Town Planning authorities had objection to lift motor rooms projecting substantially above the roof line.

It was the original intention to have three 8 person lifts of the normal 100 ft. per minute housing type, for the 160 flats, of which one was on the opposite side of the landing to the other two. (The customary requirement has been 1 lift for 15 to 50 flats.) Discussions with lift manufacturers, however, led to the conclusion that two lifts would be adequate if they were of higher speed, e.g. 200 ft. per minute and "interconnected" (the car nearest to the calling point answers the call), but that they should then be side by side and obviously of the same size. It was also agreed that it would be desirable to operate the lifts on the "collective system" without attendant (all calls are registered and, for example, having answered the highest call the car then picks up all down calls in its descent).

There is, of course, little or no experience as yet of lifts in municipally owned blocks of flats of the height of Hide Place and therefore no well-established rule to work to; but the decision made appeared to overcome the problems which arise from breakdowns when lifts serve every other floor; they would avoid walking by elderly people and they would reduce the waiting time. As a further contribution to providing a really good service, however, even

higher speed lifts were pressed for, and it was finally agreed that they should have a speed of 300 ft. per minute, thus further reducing waiting time. Any increase over 200 ft. per minute necessitates "variable voltage" equipment which adds to the cost, but is said also to give a longer life and greater smoothness in operation. It also necessitates the use of direct current motors, with generators to produce this current, the motors being provided with worm gear reduction. Above speeds of about 350 ft. per minute gearless motors are employed, which are much bigger motors coupled directly without gears as the name implies.

With the equipment proposed for installation at Hide Place it was found possible to increase the capacity of the cars from 8 persons to 10 persons, providing car platforms 5 ft. 1 in. wide by 5 ft. 5 in. deep. (In this country it has not been considered necessary to provide lifts big enough for stretchers, in contrast with certain continental practice, where very deep, narrow lifts are standard). One of the lifts is fitted with firemen's control which when operated returns the car to the ground floor for the sole use of the fireman.

The maintenance of the lifts is to be undertaken by the suppliers under contract, and the cost of the maintenance was ascertained at the time of tendering. The greater part of the guides and other items of equipment has been fixed and it has been found possible for the work to proceed with the erection of the structure so as to save time.

The absolute cost of the individual lifts is relatively high, but the cost of the installation is not exceptional in relation to the cost of the whole scheme (3s. 6½d. per sq. ft. or 6.3 per cent of the superstructure, including builder's work). The effectiveness or otherwise of the proposed solution to the problem will be known only after use by the tenants. As far as the finishes are concerned, the walls of the cars are of ribbed aluminium which appears to withstand best the scratching and writing of slogans. The skirtings are of plastic-coated steel designed to avoid erosion of the aluminium when in contact with urine; this is apparently a requirement in municipal flats. In order to discourage misuse of the lifts the lighting in the cars at Hide Place is of a higher intensity (two 40 watt fluorescents) than is customary.

Heating and hot water

Since 1945 it had been the practice of Westminster City Council as landlords to provide a complete heating service (space heating and a constant supply of hot tap water) from a central source, and to spread the capital and running costs amongst tenants of a substantial number of properties (both residential

and commercial), thereby ensuring that the charges are within the means of all tenants.

At Hide Place it was not practicable to connect to a district heating scheme and there seemed to be advantages in departing from a conventional low pressure hot water system and substituting thermostatically controlled electric space heating and local water heaters. After much discussion, and the calculation of capital and running costs, a system of off peak electric floor heating was selected, using embedded plastic-covered cables. The water heating too was to be by electric immersion heaters in well-lagged cylinders, simulating the proprietary electric storage water heaters on the market (see diagram). It is intended that the off-peak current will be taken between 7.00 p.m. and 7.00 a.m. with a midday boost of three hours between 11.0 a.m. and 4.30 p.m.

Arguments continue as to the actual cost of off-peak electric floor heating. But there is now a good deal of evidence to show, on the one hand, that some form of supplementary heating is required for short periods in very cold weather, and on the other, that if the control of the heating (and water heating) is in the hands of the tenant, the overall cost is comparable with, if not even less than, the conventional charge for central heating and hot water. There is no evidence as far as we know that this is because the tenant suffers a cold flat or is unreasonably restrictive in the use of hot water.

However, beyond these factors, there can be no doubt that in the particular circumstances at Hide Place there were enormous aesthetic and practical advantages in being able to dispense with a boiler house and fuel storage. The standard of space heating which was required was laid down as being "with an outside temperature of 30° F.:- Living rooms 65°, 1 to 1½ air changes. Halls 65°, 1 to 1½ air changes. Kitchen and bathroom 55°, 1 to 1½ air changes.

Bedrooms (other than bed-sitting-rooms) unheated."

(Linen cupboards either contain the hot water cylinder or an airing cupboard heater controlled by a switch outside the cupboard with an indicator light.)

In order that there should always be some heat in the flats, thus reducing the risk of condensation, the thermostats have a minimum reading of 45° F., and the circuit is so arranged that the tenant cannot switch off the heating without also switching off all the electrical services in the flat. This, combined with the need to accommodate a time switch (for the off-peak periods) and a credit meter, both of which should be accessible to the Board without entry to the flat, and a con-

progress report

sumer's control unit (with provision also for a prepayment meter) accessible to the tenant from inside the flat, led to the circuit (see diagram) which is housed in the metal cases illustrated in the photographs.

Each flat has two heating circuits, one serving the living room and the other the bathroom, hall and kitchen: and each circuit is controlled by a thermostat calibrated numerically (but not in degrees), as shown in the drawing. The living room thermostats have all been positioned at a height of 5 ft. 6 in. vertically over socket outlets. The purpose of relating them in this way to the outlets is to free as much of the wall surface as possible for cupboards and other furniture which the tenant may wish to install and to present an orderly appearance.

Since the scheme was first designed it has been modified by the inclusion of a "thermo time" regulator and the substitution of one central time switch operating contactors in each flat instead of individual time switches.

The thermo time regulator prevents waste of electricity by reducing the duration of the charge during the middle part of the night. It has an external temperature control to prevent undercharging during cold weather. It acts in conjunction with a central time switch which saves each tenant the hire charge for an individual time switch in each flat.

Electrical installation

The electrical installation is in two parts, one maintained by the City Council, the other by the London Electricity Board. The clients requested that the former be run in mineral insulated metal clad cable, but the L.E.B. insisted on conduit for the part maintained by them: this extends as far as the individual dwellings and main circulation area circuits.

There are five main cables installed by the L.E.B., each serving four floors of flats. The risers for the circulation area lighting, the lifts, the float switch control for the pumps, the laundry installation and the clubroom are installed by the electrical subcontractors. The cables run in glazed earthenware ducts, from the transformer chamber and switchroom in the out-building to below the refuse chamber, where they turn up with a 3 ft. 0 in. radius bend and rise to the switchroom in the first floor duct chute area. From here they rise vertically through the building in a 3 ft. 0 in. by 9 in. duct, each stopping off in turn after serving four floors of flats. A box is installed at every second floor, and from this a lateral cable goes to a box with a floor trap in the main circulation area and there is split into eight to serve the individual flats on that floor.

It was originally intended that the lighting cables should run below the expanded polystyrene directly on the structural screed and that the power cables should lie on top of this thermal insulation, thus separating acoustically the cables of one flat from the vertically adjacent flat. However, the need to protect the easily damaged m.i.m.c. cable outweighed the slight acoustic advantage of this system, and led to the running of all the horizontal cables below the expanded polystyrene (see diagram).

The power supply consists of a ring main serving shuttered socket outlets disposed as follows:—

Living Rooms	3
Bedrooms	2
Kitchens	2

In addition each kitchen has a cooker control unit with a 13 amp. switched socket outlet with a pilotlight. The socket outlets generally have been kept 1 ft. 6 in. from the floor to minimise the amount of bending required of the older tenants.

The switching of the general circulation areas is controlled by time switches programmed as follows:

Entrance Hall:

Four fittings dusk to dawn

Four fittings dusk to 2.00 a.m.

Main Circulation Areas: 24 hrs. lighting (Floors 1-20)

Stairs and Landings: Dusk to 2.00 a.m.

External Roof Terrace: Dusk to 2.00 a.m.

In general the main circulation areas are to be lit by miniature fluorescent fittings which contain only two 6 watt tubes (9 in. long) and therefore consume very little electricity. The ground floor Lift Hall is to be lit by 24 fittings each with three 5 ft. 80 watt fluorescent tubes which are expected to light the terraces under the building through the glazed screens.

Each flat is provided with a front door bell operated through a transformer by mains electricity.

Lightning conductor installation

Although the proposed new code of practice on the protection of structures against lightning will allow internal down conductors under certain conditions, the installation at Hide Place was designed to fulfil the requirements of C.P.326.101 (1948) which is at present in force. For a building of this ground area and perimeter the code requires three down conductors. These were positioned approximately equidistant round the building, two being on the west elevation and one on the east elevation. In order to render them as inconspicuous as possible the copper tapes are sheathed in p.v.c. of a colour near to that of the cladding slabs and the holdfasts are dipped in p.v.c. To refine the appearance, the clips are being specially produced without the manufac-

turer's name on them and with counter-sunk screw fastenings.

Down conductors should run vertically. This meant that it was necessary to run them on the line of the outside columns. At the bottom of each conductor it is necessary to have a test clamp, and brick pits with removable concrete covers to match the paving have been provided, in order to avoid disfiguring the bases of the three columns. From these pits the conductors will be led about 15 ft. from the base of the building and then earthed. Four terminals are being provided on the laundry/tankroom block at the top of the building. The conductors are led from these across the clubroom roof and the precast beams steadying the parapet wall to the perimeter of the building. No tapes will be needed round the parapet of the terrace since it is considered satisfactory to connect the system to the rails provided for the maintenance trolley. Since no part of the system is permitted to provide an upward path for the lightning discharge, holes have been formed through the precast concrete panels at the level of the top of the parapet. The concrete facing slabs, down the face of which a conductor passes, have fixing holes for the holdfasts formed in them at approximately 4 ft. 6 in. centres.

Note. Under the new code of practice it is proposed that internal down conductors will be permitted, subject to the following conditions:—

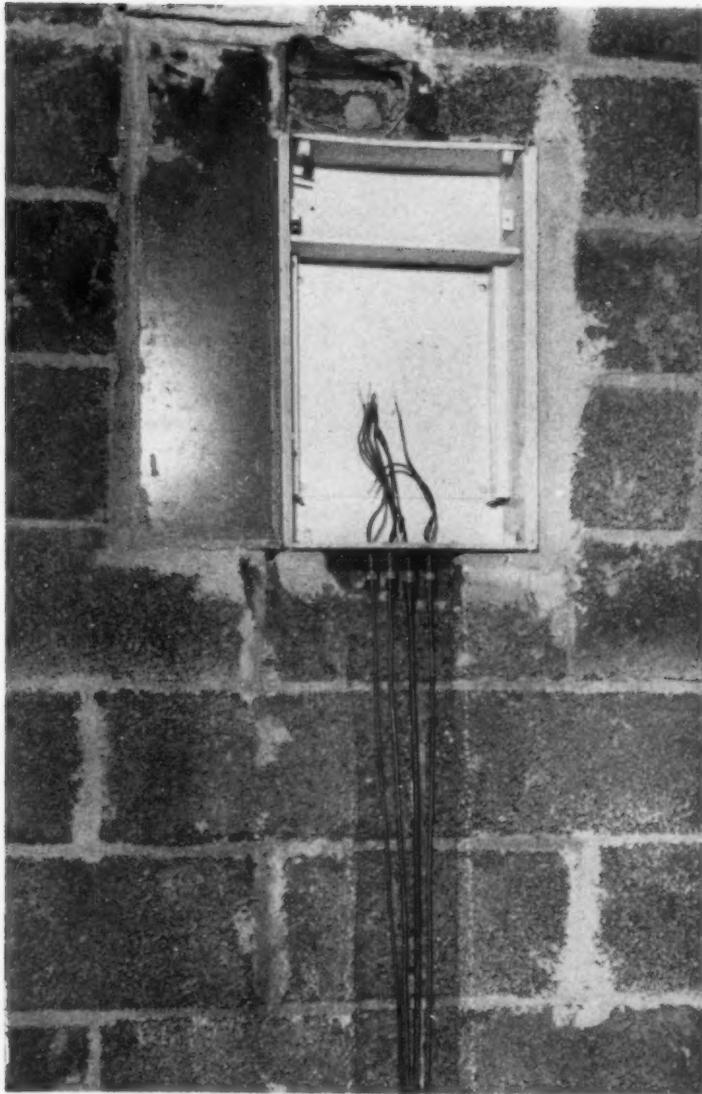
- the conductors are so placed that no one can touch them.
- they must be well clear of any gas or electrical services.
- no vertical metal is allowed to be nearer than 6 in. from the conductor where x is the maintained resistance of the earth connection in inches. Any continuous earthed metal part (e.g. a soil stack) which is near to the conductor should be bonded to it.
- there should be an air space about the down conductor.

Gas installation

Gas is provided as an alternative to electricity in the kitchens. Eight two-inch branches from a 4 in. main rise through the building and each kitchen is provided with three outlets for a cooker, refrigerator and washing machine. The carcassing of dwellings for gas is being installed by the Board for a standard charge.

Relay wireless

A commercial organisation has been permitted to install a radio and television relay system in the building at their own expense. The cables are brought through the ground beam raft in a 2 in. diameter asbestos duct which then rises, by way of an easy bend, to the first floor where there is a 6 in. \times 6 in. \times 3 in. junction box in one of the



Outside Meter Unit seen from the general circulation area, above. This box contains apparatus which must be accessible to the Electricity Board (see diagram)

Consumer Control Unit for one flat, left. This box contains the fuses and switchgear for the flat and the prepayment meter, should one be required (see diagram). The floor warming fuses will be sealed, and the general services will be controlled by the same triple switch as the floor warming. Thus the only way in which the floor heating may be turned off is by means of the 30 amp. D.P. switch which is under the control of the caretaker and situated in the Outside Meter Unit, or by switching off the entire electricity supply. Note the large chase necessary to make the connection. Floor heating cables in position, below. The jigs are removed as the screed is laid. The polythene over the windows affords weather protection before glazing



progress report



The state of the building on February 8, 1961. The intermediate beams halfway down the top frames are to form viewing slots through the storey height wall of the roof terrace. The general proportions of the finished building can now be assessed.

vertical ducts provided for other services.

From here the installation splits into eight parts which are taken in 1 in. steel conduits in the first floor screed to positions from which risers may serve all the flats on the lower ten floors and six of the flats on each of the upper ten floors. Two of the cables cross the roof and descend to serve the remaining two flats on each of the upper ten storeys.

These cables are mainly in broom or similar cupboards. In each flat there is a 4 in. x 4 in. x 3 in. junction box for connection should the tenant of the flat require this service.

Telephone installation

The telephone cable is brought by the GPO to a concrete manhole, built by the General Contractor at the edge of the ground floor terrace. From this position a 2 in. diameter asbestos cement conduit is provided through the foundation raft to a 1 ft. 0 in. radius bend below the rear wall of the refuse chamber. From this point the cable ascends vertically through the building in the refuse chute area in a 2 in. diameter galvanised steel conduit. At each floor at least 1 ft. 6 in. run of wall has been provided to take the telephone equipment.

At each floor level 1 in. diameter steel conduit is laid in the screed in the general circulation area to each of the flats and terminates with a cap in a suitable position within the flat (mainly at low level in the entrance halls).

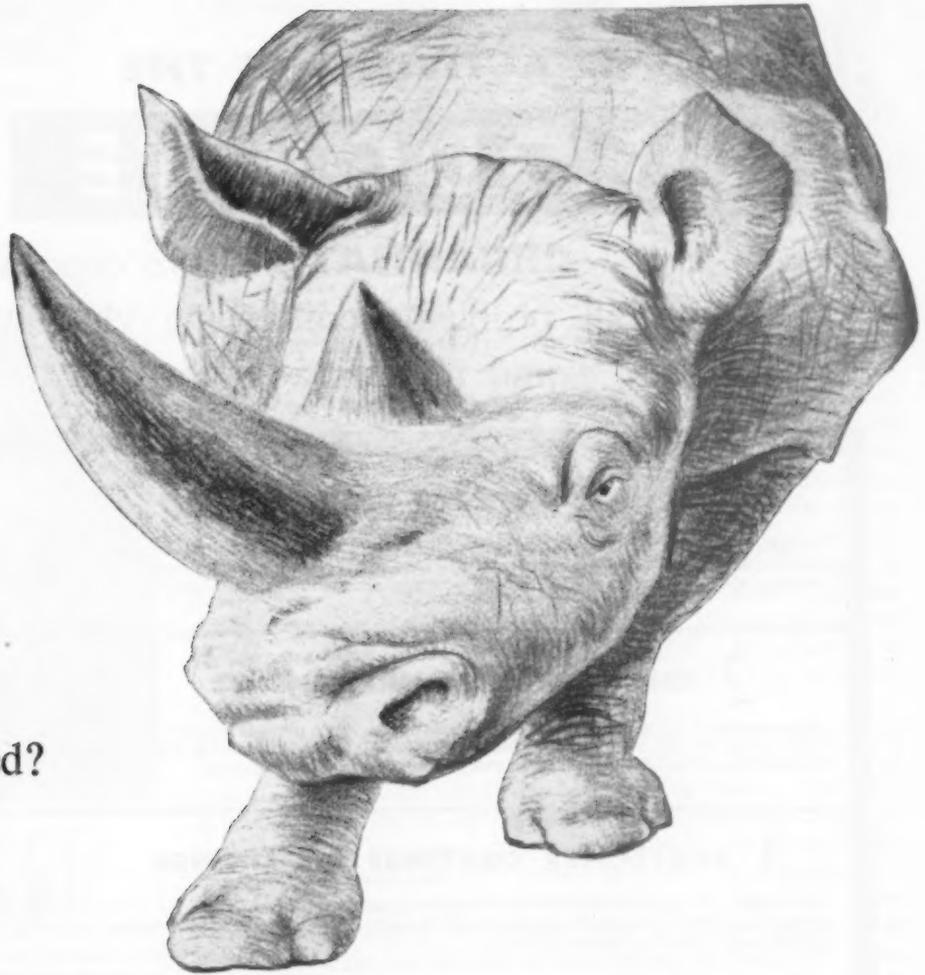
Refuse disposal

In the last report the arrangements for rubbish disposal were referred to, but no comment was made on the number of containers in relation to the number of flats. There are, in fact, eight containers for 160 flats served by four chutes. This provides fewer bins than the normal recommendation of 1 container to 10 flats, but it was thought to be reasonable since many of the flats would be occupied by single persons, so that the use of the chutes would presumably be correspondingly less. Also there would be no ash from solid fuel.

It may be of interest to others concerned with the design of flats to record some figures on the amount of refuse to be disposed of. The figures were obtained as a result of tests conducted by the Director of Public Cleansing (Westminster City Council) in centrally heated flats, and are as follows:—

- 24 1-room flats, total refuse 1½ cu. yds. = 2 cwt. per week.
- 58 2-room flats, total refuse 6½ cu. yds. = 9½ cwt. per week.
- 24 4-room flats, total refuse 4½ cu. yds. = 5½ cwt. per week.

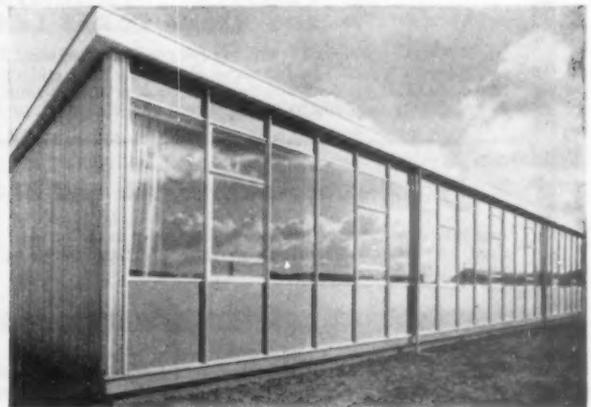
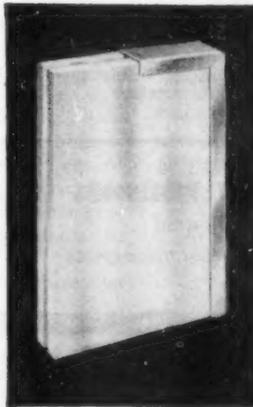
Bearing in mind that typical containers (Paladin) have a capacity of 1½ cu. yds. and that collections are usually made two or three times per week, these figures give a useful guide to the number of containers that may be required.



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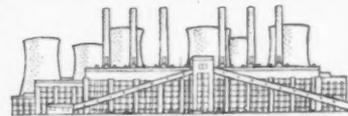
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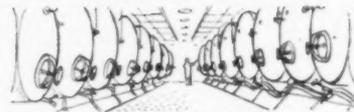
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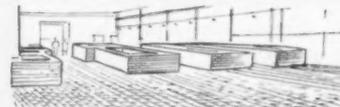
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The BASA Editor
The Building Centre
Store Street
London WC1

Monthly supplement

BASA



HILARY CHAMBERS
an appreciation

One is often tempted to wonder how a small group of students grows in less than four years into an organisation the size of BASA; why the pattern of growth and present reputation of the Association are so different from those of similar student bodies; and, perhaps most of all, how long it can last.

There are, perhaps, two real reasons. Firstly, BASA has from its very inception adhered to definite and *well-defined* aims, and to a carefully-worked-out programme. It aims to weld isolated student groups into a self-conscious whole, and, by tapping the resources so revealed, to ensure for them an education fitting for the life and work to which they aspire. While these aims remain, so will BASA.

But burning ideals and good intentions are not enough. *Someone* must set the programme and *someone* must see that it is followed. The second great strength of BASA has lain in its choice of leaders, and in their ability in turn to draw out the best in others, to delegate authority, and, not least in importance, to seek out their successors; it is interesting that few officers of BASA have been holding executive posts at the time of their election.

Two names stand out above all others: those of Jeremy Mackay-Lewis and Hilary Chambers. Prime movers in the original small group at Liverpool, they became in turn second and third presidents of BASA, following Charles

R.I.B.A.S.?

The RIBA's praiseworthy efforts to think seriously about its own functions in relation to professional activity continue. Sooner or later the Institute's relationship with BASA will have to be examined as well. Some indication of the changing attitude of the RIBA towards us was given by Sir William Holford, P.R.I.B.A., at the prizegiving do on January 24 (the Prizes and Studentships system itself will be discussed in next BASA Supplement). Sir William is with us. Diplomatic as ever, he paid tribute to the stimulating influence of student organisations—the founding of the AA, of architectural magazines, lively student societies, and of course of BASA. Although the enthusiasm of some architectural students has been too much for some schools to cope with (one student society was accused by the tutor of organising a rival syllabus to that of the school!) it is really very encouraging that enthusiasm and initiative are *in* at the Institute.

The President's comments on educational policy tended towards James Gowan's view that a school course should be "damn theoretical," and that organisational gen could only be learned in practice. This loose distinction leads him to the conclusion that "co-operation" between students and the profession is necessary. Just what form this is to take remains to be enunciated. But a realistic framework for a close relationship between schools and the profession might be provided if more schools became centres for research, upon which the profession will increasingly depend as deep-down-functionalism progresses. While the problem that architects should be solving, and students learning how to solve in the future, remains "improving environments," the profession as a whole is having to fight to maintain its functional status.

If the RIBA feels that by helping BASA it is furthering the aims of both organisations—then fine. It is obvious that the RIBA should recruit as much active participation from young members (Students or Associates) as possible—but the fear that any move towards the closer relationship of RIBA and BASA as an organisation will mean some curtailment of BASA's independence may remain, at least until further discussion between the professional and student organisations.

Gastier of Leicester.

Mackay-Lewis by his own personal qualities gave BASA the appearance of maturity before it had actually reached that stage; few chairmen could have salvaged so much from the unwieldy Cambridge Conference ("The Architect's Place in Society"), which illustrated only too plainly the chaos within the profession, but also produced the type-programme which has proved so successful in subsequent conferences.

Under Hilary Chambers the Association actually attained maturity, and the part played by his own clear-sighted vision

and organisational ability cannot be over-emphasised. It was his determination to set a specific starting-point and a definite programme—right or wrong—that gave BASA researches the clear direction which has led through contradictions and cross-considerations to an educational and architectural policy in advance of general thought in this country. The Association owes to his discernment, energy, and powers of concentration a debt which it can only repay by achieving the ideals which he has done so much to formulate.

C.R.M.

This is the first of a series of articles on various schools of architecture in which members of schools, both staff and students, are asked to explain the aims of their course, and the methods by which they hope to achieve these aims. The explanations will be allowed to speak for themselves but it would be impossible for BASA not to make some comment. The first school is the Northern Polytechnic—the largest, numerically, in England. We invited Mr. C. G. Bath, the head of the department, to contribute a Foreword, and students from each year describe their work.

NORTHERN POLYTECHNIC SCHOOL

Foreword

Six hundred students are in training at the School of Architecture of the Northern Polytechnic in North London. Courses are available in the Day School, Part-time Day and Evening School, and the Evening School: these courses enable a student to select the course best suited to his needs. The curriculum is common to each section and all courses have been recognised for exemption from the R.I.B.A. Intermediate and Final Examinations. The Northern Polytechnic Diploma is awarded on the satisfactory completion of the school course and the subsequent passing of the Professional Practice Examination and is accepted by the Architects Registration Council of the United Kingdom as a qualification for registration.

An asset in a school of this size is the availability of a wide range of attainment and personality in the staff and the fertile atmosphere of the competitive spirit among the students.

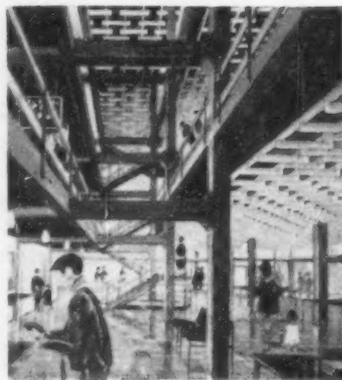
The curriculum is of necessity coupled to a time schedule and consists of a carefully related variety of programmes so that the student may delineate, develop himself and devise. Each new programme, varying in scope and emphasis, is developed from an underlying pattern which is considered to give the widest range of design experience, so that on the successful completion of the course the student will be able with confidence, to make his own contribution to good building.

The tradition of the school since its foundation has been to ensure that not only does a student become aware of his special responsibility to ensure visual pleasure and satisfactory function, but that he is equally responsible for its technological perfection.

C. G. BATH, F.R.I.B.A., A.M.T.P.I.,
Hon.F.I.B.D.
Head of Department.

First Year Course

Whatever the subject the prime requirement of its initial study is to provide the student with a sound basic knowledge to which the results of more advanced investigations can logically be added. Thus, in the first year, programmes are devised to develop design sense and creative ability while at the same time introducing the various techniques of architectural draughtsmanship, programmes generally stipulating the medium to be used in the presentation of the design solution. A full day per week is spent in the Art Studios and work there augments the draughtsmanship introduced in the



A fourth year interior design for a library

Design Studios, and also develops the individual's sense for colour.

Early in the year basic design principles are investigated in the abstract, and proficiency in pen and ink technique is gained; the convention of orthographic projection is introduced coupled with the survey of a building element (a doorway, window or balcony). This two-dimensional expression of three-dimensional form is fully appreciated. The necessity for an architect to think and design in three dimensions is constantly emphasised during the course and a series of weekend sketches are specifically designed to develop this ability. The first is introduced in the first term and consists of an abstract construction in model form using screens of various materials, colours and textures. In the second term an abstract sculpture is designed (to scale) by the individual students and is placed in a courtyard together with one selected tree, paving and grass. The final sketch in this series is an exhibition stand to present to the public a new material (of specified properties)—this design is assessed on structural exploitation of the material, fulfilment of functional requirements and "design appeal."

Throughout the design programmes the student is made aware of constructional limitations. Early in the year the properties and characteristics of a material (stiff paper) are investigated and simple solid geometry studied. From these findings an abstract structure is designed.

Liaison with the Craft Dept. of the college is encouraged and appreciation of actual constructional methods is used in solving the realistic problems set. The first programme of the second

term is the design of a furniture fitment such as is to be used as a partition wall, containing bookshelves, cupboards, drawers, display space with lighting panel and a door. The reality of the scheme is enhanced by the allied weekend sketch in which the designer produces a perspective of the fitment and prepares a colour scheme for the room in which it is to be used, together with actual samples of the materials specified. This programme in the current session—a studio fitment to house equipment, drawings and models—is being treated as a "line project." A prototype of a selection design will be built in the Craft Dept. and subject to a satisfactory trial period all studios will be equipped with them.

In the second half of the second term the major "live project" of the year is commenced and is treated in a very realistic way—surveying of the actual site is undertaken, the client is met and produces a brief, the functional requirements are analysed and finally a design is produced by each student; a scheme is selected by the client and a group of students prepare the working drawings. Eventually the building is erected and used on the site. See AJ/BASA Sup., Feb. 2, '61.

The final term is used for the design of a single-cell building. Students are issued with one of three programmes (e.g. an airport waiting room, an hotel solarium, or a memorial). Students are asked to select their own actual site and to survey it during the Easter vacation. The scheme is taken through a sketch stage, constructional draft, final design stage—at which presentation drawings and a perspective are drawn up—and finally working drawings are produced. This year working drawings of the comparable scheme have been dropped and another design subject of more complexity will be tackled.

Throughout the year there runs a series of sketch designs at the rate of one per term. Last year these were based on a children's zoo, groups of students working out a site layout in model form, individuals designing individual animal houses. Programmes for a café and an entrance—with kiosk—were issued in the second and third terms.

During the course all programmes are made as realistic as possible—clients are found (e.g.: Head of Dept. of Zoology for the zoo project), real sites are used and construction is closely geared to studio work. Lectures are of necessity very basic and stimulate

awareness of first principles and practical limitations (building science and construction), the social and legal requirements of architecture (local government), and an appreciation of general history, as well as that of architecture.

Students are encouraged to think for themselves; references may be given at the beginning of a new programme but it is left to the students to investigate and augment them: sketch books are encouraged and periodically collected for criticism: efforts are made to stimulate awareness of and interest in current developments in architecture and its philosophy: one hour per week is set aside for personal expression and general discussion in a variety of fields. It is hoped that these sessions will have the effect of overcoming self-consciousness in the individual while widening his general knowledge and giving him confidence in verbal expression.

M. HAMMETT.

Second Year

On entering the second year the student has to start thinking seriously about design and function. A single storey house was chosen because the student has intimate contact with domestic design and he knows through experience, the convenient shapes of rooms, the sizes of their contents and the circulation likely to occur. A research booklet depicting examples of houses already designed, and a brief study of aspect and prospect is prepared.

The student is requested to produce a first and second statement and a final "finished" drawing. The schemes are marked and "critted" and the student then knows by the remarks oral and written the faults of his design. At this stage a one day structural analysis is prepared. The student then amends his scheme and develops it, this is checked and the second statement prepared. This is really a rough final and thought should be given to sheet layout, the scheme is finally passed and the student prepares his final drawings which in this exercise were fully rendered.

The student having completed the design from the aesthetic point of view is required to produce $\frac{1}{8}$ in. scale working drawings, $\frac{1}{2}$ in. details and full size details. Rough drafts of these drawings are prepared with constant help from textbooks, and handed in for checking with the tutors, the $\frac{1}{2}$ in. and full size details are then amended and finally handed in. The $\frac{1}{8}$ in. drawings are amended, traced and printed and handed in. In this way the student is introduced to near office practice.

During the first term Art is done one day a week. The Victoria and Albert Museum is visited and the student reproduces a textile in body and water colour—this colour study is continued in the last term.

The next studio exercise is a two storey house, this being chosen for similar reasons to the first and to enable the student to carry on logically in domestic design. This exercise is a design project and excepting a structural analysis no constructional drawings are done. First and second statements are again prepared and checked but the final drawing is an exercise in quick presentation.

By this time the student should feel he is coming to grips with architecture and should be able to arrive at a good solution to a problem fairly quickly. To increase this facility twelve hour sketches are introduced during this term in which the student is required to design and present a scheme in the stated time. The student is encouraged to experiment with techniques.

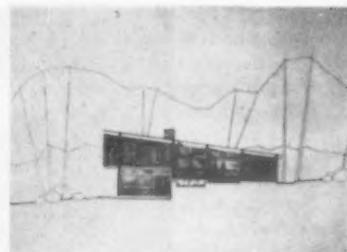
Following on, the student is introduced to multi-cellular planning in the form of a three storey office block and is now confronted with a new problem, i.e. vertical circulation. A lecture is given before the project starts to get the student conversant with staircase design and byelaw requirements.

Running in conjunction with studio work, lectures are given on Construction, Materials, Structures, History and Theory. Many students consider history and theory as being divorced from studio work but I believe this is because the student is not so aware that he is using them. Every time he looks at a building he subconsciously uses his knowledge to assess whether it is good or bad, and why, in the same way it is helping his own sense of design.

The last term is taken up with the major project, town study and precinct planning. The student is first required to make a study of a selected town and is given a site on which the precinct study is based.

The town selected this year is Epping and groups of students make detailed studies of various aspects of town planning. We are then split into groups of three and one student given a library to design, one a community centre and the third a restaurant. These three buildings, while being designed individually by the student, are designed in conjunction with one another so as to retain a similar character and also to facilitate thoughts on the planning of the precinct of which these buildings form the major part. The buildings are large enough to require thoughts on structure. Research is done by the students and existing buildings visited. Each student presents his own building and each group produces an axonometric view of the planned precinct. The three best schemes were chosen and models made of each.

During the last term art recommences. Each student having at this stage completed his reproduction of the tapestry. He is now required to use the tapestry colours in the execution of a modern textile in the same medium. Having done this the student then



A third year two-storey house project. In future it will be undertaken by second year

produces an interior decoration scheme for the living area of his single storey house utilising the same colours.

HOWARD G. KIRBY.

Third Year

The first project involves a large-volume building problem, which is made as realistic as possible—a site within easy reach of the Poly. being chosen. Wherever possible experts on the project type are invited to lecture (Stephen Joseph and Peter Jay on the theatre-in-the-round, for instance).

Working drawings and perspectives or models are prepared in the spring term. The last few weeks of autumn term are occupied with a 2-storey house project, which provides a further exercise in domestic design. Constructional design exercises and 12-hour sketches take up one day a week in the first term. This enables the student to experience problems of planning, form, and expression of a project during one day, which helps to promote the facility to make quick decisions.

During Christmas vacation suitable sites are found by students for their Intermediate Design thesis projects—subjects are chosen in consultation with design staff. Preliminary studies on the site of basic problems involved are made and a series of lectures in the autumn term upon the general approach to design problems forms a basis for study.

Design solutions are prepared in the end of the spring term and finalised in the summer term.

Summer Term

A quarter of school time is spent in lectures—Building Construction, Hygiene, Materials, Theory of Structure. Students are encouraged to apply the principles learnt in lectures to design projects—and problems are discussed with the lecturer concerned.

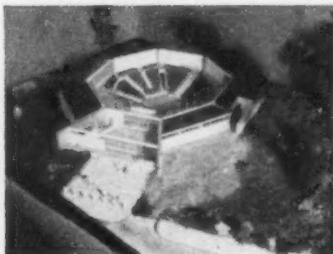
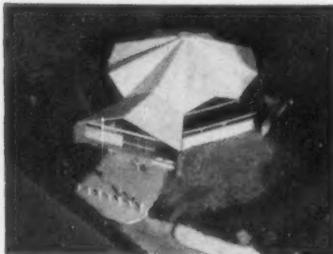
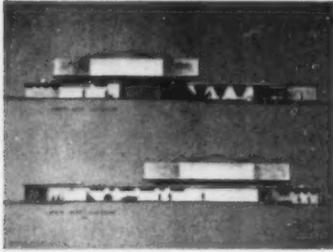
Landscaping lectures are held during the spring term, and there are also architectural history lectures once a week dealing with the 19th and 20th centuries.

Criticism and discussion on completed designs form an important part of the year's work. Architects from outside the school are sometimes invited to give criticisms (Peter Moro reviewed and critted the theatre in the round schemes).

A. N. MORROW.



Models and an elevation of the theatre-in-the-round project by third year students



Fourth Year

The fourth year carries the student—after having successfully acquired in three years the fundamentals of design, yet confused as to what is really architecture—from the simpler to the more complex requirements of buildings. The student must give conscious thought to the limitations imposed by constructional bye-laws, e.g. fire hazard restriction to height in built up areas, etc., and eventually realises that architecture is not the skilful presentation of drawings, nor even the product of the architect alone, but the harmonious interdependence of architect, engineer, builder, district surveyor, planning authorities and client with the architect as designer and co-ordinator.

Fourth year is the year when the student consciously or intuitively begins to form definite views on architecture, views which will naturally be determined by the student as a person and his sense of "true human values," and upon these his architecture must take root and find expression. It is the year of transition and the whole curriculum of the year is geared to this effect.

There are two design schemes in the winter term in the instance under consideration—a multi-storey office block and a conference hall, the design of the office block coming first. The student having a fair knowledge of horizontal circulation in open sites is plunged into the design of multi-storey offices on a very restricted site in a built up area. This is the first full problem on vertical circulation.

In this case it was felt by many that a visit to a recent, well-designed office block and actual discussion of the problems with the architect, for instance, would have proved an invaluable addition to research notes and have brought the problem nearer to reality.

Lectures did not always tie up with studio work, but generally seemed to follow the design problem; this may have its merit in encouraging students to find data for themselves but it limited the time available for further research. The conference hall was a most exciting scheme; semi-formal in character and with a varied range of accommodation, it acted as a foil to the office block. This scheme brought us to the end of the winter term.

The summer term is taken up with an interior investigation in colour for a period of three weeks, the finished work being entered for the "Walpamur Prize." This was followed by a further design involving more complex planning of circulation problems, as well as architectural character in relationship to functional and psychological requirements. For instance, the last subject for this design was a crematorium, the full impact of which was not generally appreciated until after the design stage. Moreover, levels were given only as contours to a small scale—students tended to adapt levels to suit their

scheme instead of vice versa.

A scheme generally embodying restaurant and kitchen planning follows after examination week and brings the term to a close.

A number of students joined us at the beginning of the year to take the final course. This stimulated the year and led to the realisation that our "crits" were perhaps not achieving as much as they might have done.

Students were not encouraged to explain their drawings during "crits," and thereby lost an opportunity not only of gaining experience in presenting ideas in public in a reasonable manner, but also of learning how other students had approached a particular problem. Certain misunderstanding of intention also arose during "crits" for this reason.

Drawings are invariably considered in order of assessment, that is from "mention" to "fail"; this finality understandably restricts critical questions from students, and more benefit would perhaps be gained if the official assessment were placed on drawings after criticisms.

J. d'A. THORNLEY
HARRIS MITCHELL

Fifth Year

Some ex-full time students of the Northern Polytechnic school met recently to discuss their architectural training in the perspective of subsequent experience. The following is an attempt to give coherent, if brief, form to the many ideas expressed.

The substance of architectural education is the provision of technical knowledge, the development of administrative ability, and the cultivation of the student's own capacity to handle all this varied material in design. The former are the data; the latter their application. All are means; actual building the only end.

Technical knowledge consists of building techniques and servicing, economics, sociology and ergonomics. It was considered that a fairly broad grasp of structural technique and services had been obtained, but generally with too much emphasis on "fact cramming," and with too little on their implications. The trees often concealed the wood. A greater amount of shop and site experience would much have increased the value of the instruction given. The vital discipline of economy was much under-stressed, and too frequently ignored altogether during studio programmes. This could be compensated for only by constant emphasis from the first year onwards. A cost-breakdown of techniques and materials before design stage would be of infinitely greater value than a rough cube estimate made afterwards.

Sociology and ergonomics—admittedly rather specialist sciences, though none the less vital—were generally much ignored. An outline appreciation of

these subjects, at least, is essential, for any development beyond the elementary stages.

The developing of administrative ability and contractual technique in the student is largely catered for during the year prior to the Professional Practice Examination. Experience of site and office conditions and methods of procedure, however, would be of value before this stage. Vacational work may in part compensate this lack of experience; but it must be remembered that five years of "nothing but architecture" can hold dangers paralleled in Somerset Maugham's short story, "Episode"!

These aspects of architectural education did not cause great dissension in the discussion: the difficulties of presenting a vast amount of diverse information are readily appreciated. However, whether the examination system itself is viable—in its placing of greater emphasis on the assimilation of facts, than on knowing where and how to find them—needs closer analysis.

The majority of the group's discussion centred on the method of the cultivation of the student's ability to handle these facts in application. In this, the etymological meaning of "education" ("Educare"—to draw out) was supported. Accepting that students are congenitally wilful, the group were convinced that the ability to design can only develop through sympathy, and vigorous and enthusiastic discussion. It cannot be imposed upon a student. The complexities of this problem are legion, and embrace student-staff relationships, and the need to assess the whole function of studio work.

To the student, ways and means are paramount. For him the significance of the design he produces lies in what he has learnt in its development; great emphasis on the success of the end product is unreal. *A mistake from which he has learnt is of far more value than a success from which he has not.* For this reason, it was agreed, adjudication would be more significant if the student were a verbal participant. On the lines of the architect-client discussions which he will encounter in practice, this participation would assure him that the disciplines and methods he had followed (possibly obscured by simply immature ability) could be more readily appreciated and their validity more sympathetically and accurately assessed.

The student's ability to work in a team—the usual office condition—needs fostering in the early stages of his schooling. However, unless strengthened by a common approach within the group, teamwork is likely to be a severe frustration. A group which has formed by its own volition, will, with encouragement, prove far more successful than one selected alphabetically.

Aesthetic theory, being the most subjective of architectural considerations,

is generally the most heatedly argued. The student's distrust of most accepted aesthetic convention is notorious, and yet not unhealthy. An independent and considered aesthetic, however misguided, is surely at school stage of greater value than any conventional dictum accepted without thought. Given time, the wildest views become moderated—or popularly accepted. Above all, sympathetic enthusiasm, vigour and the sense of reality in work are vital. With these, anomalies and difficulties are easily overcome: without them, nothing can succeed.

ROBERT GOODYEAR.

Conclusions

First impressions are not always borne out by prolonged observations, but they often contain more than a grain of truth, and when they are as strong as those left by two short visits to the Northern Polytechnic one is reluctant to dismiss them out of hand. There can hardly, for instance, be any doubt about the enthusiasm and conviction of the first year tutors, and still less of the enormous potentialities of a college containing facilities for virtually any type of training from art to physics and architecture metaphorically, at least, 'under one roof.' Yet there is just as strong an impression that the initial enthusiasm is not carried throughout the school, and that integration between the various "faculties" goes little deeper than occasional use of each other's workshops and studios. One can only sympathise with a college forced to work to such a tight time schedule, and whose facilities are buried amid such a bewildering rabbit-warren of corridors and staircases; but to the casual visitor it was incredible that a major school of architecture should allow itself to exist amid a green cream colour scheme as drearily institutional as that used almost without exception in the studios and corridors—which are individually no better and no worse than the general run of things.

The depressingly institutional nature of the building seems to have left a mark on the school itself, with a resulting formality and lack of drive which could not fail to detract from the many good features. The first-year curriculum, crammed with productive and often imaginative methods of introducing basic techniques of architectural thought and practice, has the full confidence of the students, and could well act as a model to schools which spend these formative months in painful drudgery and interminable lectures; in view of the good beginning the formality in both design and presentation in the later years is all the more disappointing.

This formality seems to spread to the staff-student relationship and the general conduct of instruction. Students have genuine complaints about the ineffectiveness of mass "crits" and the

misunderstandings which inevitably arise from working on drawings models alone, but they seem to have taken little positive action to put things right; again, the reported reluctance of the varied and experienced staff to reveal their undoubted differences of opinion in public will hardly take in perceptive students, even at the "tender" age of 18; nor is the constant, if benevolent, surveillance of studio work by a supervisor (complete with lab desk and raised dais) likely to develop the independence of self-reliance which any university-grade education should give.

Even so a commendable number of the usual pitfalls have been avoided: architectural history, integrated closely in lively lectures with general history, is not the formalistic drudgery it can so easily become; models are used extensively, and sometimes exclusively, and it is almost impossible to hoodwink the staff by sheer "bull"; the approach to the difficult problem of three-dimensional thought begins logically in first year with simple solid geometry of "paper sculptures"; work on live projects in craft and building workshops gives students the feel of actual building, and their colour sense at least is sharpened by hours in the art-studios. But on the debit side the lack of written exercises showed only too clearly in an inability to express coherent thoughts concisely on paper; this problem could perhaps be partly solved and the high percentage of time spent on potted lectures—up to 30 per cent in some cases—simultaneously reduced if students were encouraged to rely more on their own ability to extract the relevant information from the well-stocked library.

Moreover, the dubious value of "competitions" as an educational principle—with its inevitable encouragement of eccentricity of superficial exhibitionism—becomes even more dubious when balanced by so obvious a lack of co-operation of community spirit. There is, for instance, little or no intermingling between the various "years," though heaven knows they are close enough! The Students' Club seems to achieve little more than self-perpetuation; and the integration between the full-time and part-time classes is nebulous to say the least, though this is by no means wholly the fault of the school of architecture.

The potentialities of this school are enormous; one can only wish that the enthusiasm shown in some quarters would spread even so far as a new colour scheme; this at least would show a revival of the spirit and drive which at the moment seem so lacking, and which are so essential if the great physical and organisational difficulties of the school are to be overcome. We wish the new Head, Mr. Bath, all success in a difficult task.

C.R.M.
M.C.

LETTERS

SIR: Dreaming of the white city, that place of mythology described with such relish in CIAM's early sagas. Encouraged by the monthly illustrateds, I travelled south to Casablanca, the name is at least suggestive, to see for myself. The timing was propitious, lining the boulevards in preparation for Nasser's visit with Arabs in their indigenous duffle coats.

As degeneration becomes an ascendant phenomenon of increasing industrialisation, Morocco and osculant regions seem to enjoy dependent, yet interestingly regional, rises and fallings in material and moral cargo. Let our young epicureans decamp for the enjoyment of these subtle flavours of decay, invigorated here and there by the dictates of nationalism, and distinguished by the slowly subsiding colonial shelf.

Precipitated one evening into the airport, I readily appreciated the paradox. Those stallions of law and order, the polizia, standing in the customs, were dressed typically in the pseudo fascist manner: boots and belts, guns and prominent peaked caps, but exuding the enervating smell of cheap toilet water, their expressionless faces rendered anonymous and sleek by dark glasses. To extend the analogy, I once saw one horribly disturbed, in the rush to Nasser, losing his glasses, cap and wig! Thus the architecture. In common with the people, the heroic motive is despoiled by lack of discipline and vigour. Casablanca has no precedent; seemingly white and appetising it rises *prima facie* tall and uncompromised. In the later work it is evident that all the "rules" of the modern movement are known; the de Stijl vocabulary is apparent but with a beat. Certain buildings have a "sex appeal"; their rich tenants casting the odour of opulence about them: swimming pools on the fourteenth floor, restaurants and bars, casinos and night clubs, but in general they are scarred by exotic and sensual motifs, drab coarse construction, displaying the very best sort of bad taste the French colonials are consistently capable of.

Farther afield in the large environs the white villas of the thirties are *nouveau* and dull, punctuated by the more recent "new vogue" structures which vie with one another to have the most complex shapes and construction so that they might display the most functionalism in solving them.

On the other hand, the modern "Arabic" buildings—i.e. contemporary traditional—are very pleasing. These are limited to restaurants and village mud huts, the modest proportions and quiet texture foil the erotic vegetation—banana, orange, cactus, palm.

The restaurant, like the palace, has an exterior appearance that is deceptive, like any other mud hut, but the interior is immensely rich, colourful to the

extreme; the courtyards paved in ceramic tiles, perhaps blue and white; the ceilings carved into extraordinary geometric patterns and painted in vivid enamel; arches of traditional and subtle shape, fretted with fantastic skill; walls of mosaic and floors of glazed tiles; brass arabesques, velvet green cushions, ornate cutlery, carpets, and in all achieving an atmosphere of light simplicity. Next door perhaps, under the neons, alternating from French to Arabic, and cantilevering over the sea, a European restaurant will appear by bad chance over-indulged and self-conscious.

The really interesting buildings lie beyond the "white belt" and are consequently brown of the earth. Mud dwellings, temporary and nomadic, rising and falling with the seasons. Clustered, parasitic and struggling upwards, allowing the odd channel of light to crevice between them. These are the streets and the markets woven and laced into shape over the years and providing the most exciting townscape imaginable, using standard stone and mud and a fairly consistent right angle. Other buildings for the Arabs are scattered in groups; immaculate blocks in white plaster, immensely rectilinear standing starkly in the brown treeless earth. It is difficult to estimate the Arab reaction to their environment, and it is therefore difficult again to estimate the success of the buildings. Some of the natives live in appalling conditions but they appear impassive to their surroundings, having as it were, metabolisms like cold-blooded, creatures, infinitely adaptable, but I did notice one thing missing, and that was the lack of adequate donkey parking facilities on the new estates.

ROGER POLLARD

SIR: As the Belfast school of architecture has not yet been considered worthy of recognition by the RIBA its standards are such that it is incapable of producing good architects. This no doubt will inevitably be reflected in future buildings of the province.

I feel very strongly about this problem, and often wonder if the RIBA are going to continue to evade the issue and let students of architecture drift through this school as they have done in the past. Is either the Ulster Society of Architects or BASA going to attempt to solve this very urgent problem?

It must be made clear that even the recognised schools leave much to be desired and require a radical revision of their whole educational system.

I should also like to point out that in this apparently unknown case of Northern Ireland the school in question not only fails in its objective but also fails to justify its existence. Would it not be better if it were non-existent and those who are at present being subsidised to attend it by their local authorities were given equal financial

aid to attend a recognised English school? If this were so, it is more than likely that the majority of the students at present training in Belfast could take a recognised course of education, qualify as architects, and eventually return to Northern Ireland to practise. To close a school, I admit, would be accepting defeat on the part of the authorities concerned, but would it not be better to do so than to continue as a school which deprives all students who enter the right of an architectural education to which they are entitled and could otherwise be receiving elsewhere.

Perhaps another question which merits consideration is that of the post-graduate. Other than the three-year full-time intermediate course there are absolutely no facilities for either (i) town planning, (ii) landscape architecture, or (iii) post-graduate research. This no doubt lengthens the return of those students whose desire is to study these subjects, and also discourages the more superior graduate from taking up a post in the country because of inadequate facilities for further study.

As I inferred in my last letter and can only reiterate that for those unfortunate students who cannot finance themselves during the early years of their training the question of attending an English school does not arise. Potential architectural talent exists and varies in Northern Ireland as it does elsewhere in Britain, but is it going to continue to be suffocated and prevented from development all because of the stagnant atmosphere in this school and the present environment of the student, who cannot possibly become an architect under such circumstances?

If the product of an architectural education be architecture the present system of architectural education in Northern Ireland requires complete abolition and a new one established based on contemporary requirements.

Yours, etc.,

Hull EDWIN JOHNSTON

DIARY

Liverpool School of Architecture

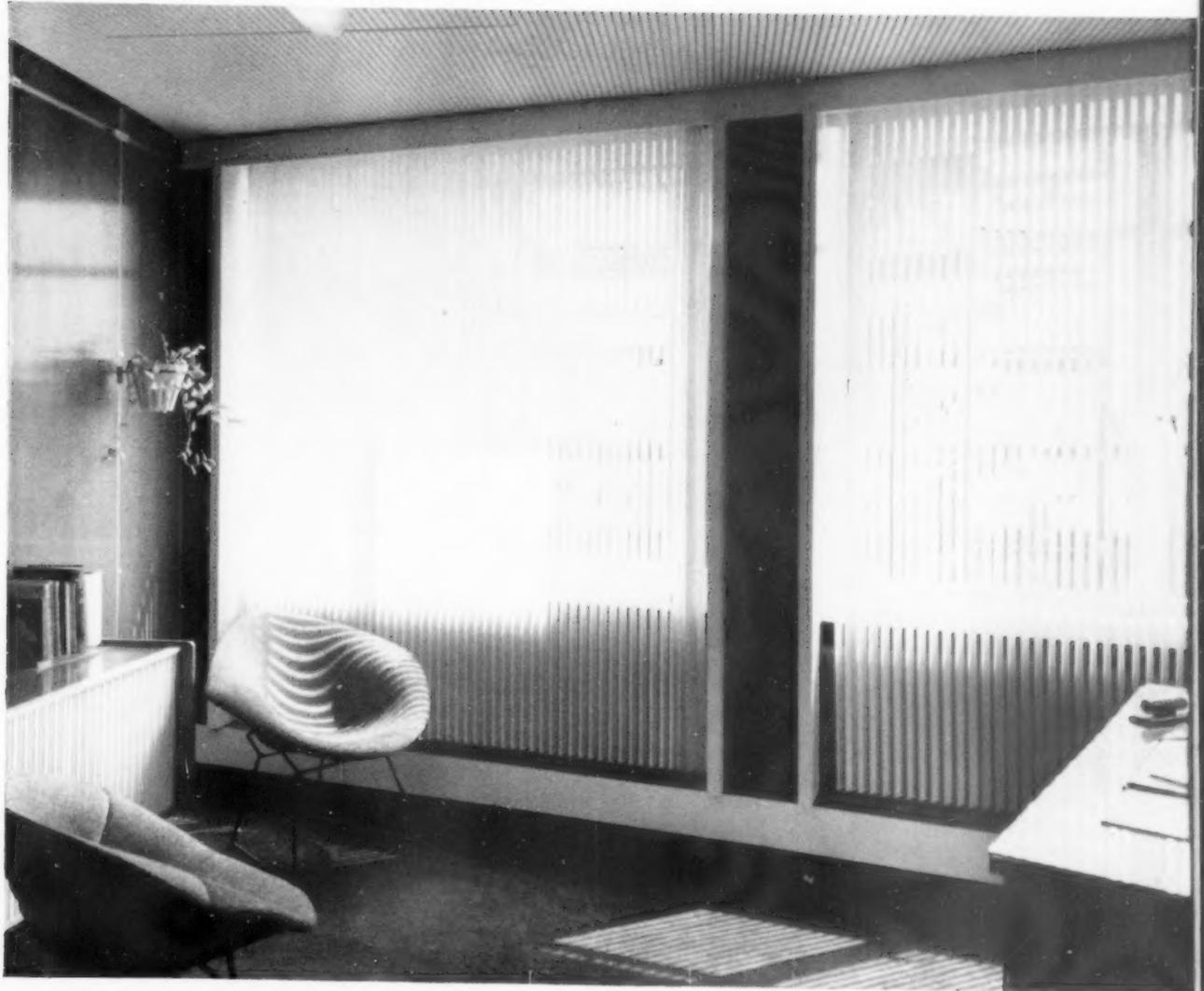
- March 10 *Romantic Functionalism, or How to Make the Client Suffer*, by Prof. J. Page of Sheffield University
- March 17 *Fantasy or Richness*, by Stefan Buzas
- March 18 Society Dance

AA

- March 8 *Nervi Buildings for the 1960 Olympics*, Paulo Sica. 6.15
- March 15 *The Work of the Services Consultant and his Association with the Architect*, by Thomas Smith (of Stoenon, Varming and Mulcahy). 6.15 Admission by ticket only
- March 22 *Holiday in Greece*, by Lesslie Watson. 6.15

working detail

WINDOW: OFFICES IN LONDON, E.C.4

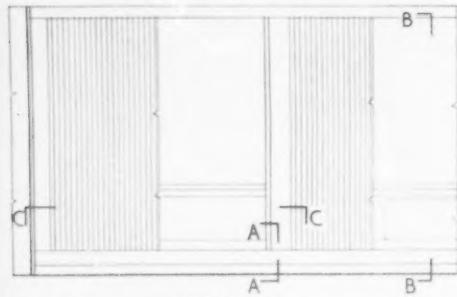
J. M. Austin-Smith and Partners, architects

Although this detail does not include the window as such, it is an interesting example of the handling of a number of items associated with a window opening in a modern building. Note, in particular, the association of pelmet and skirting board as top and bottom members of a frame which encloses the vertical blind, and the careful masking of the under-sill radiator.

working detail

WINDOW: OFFICES IN LONDON, E.C.4

J. M. Austin-Smith and Partners, architects



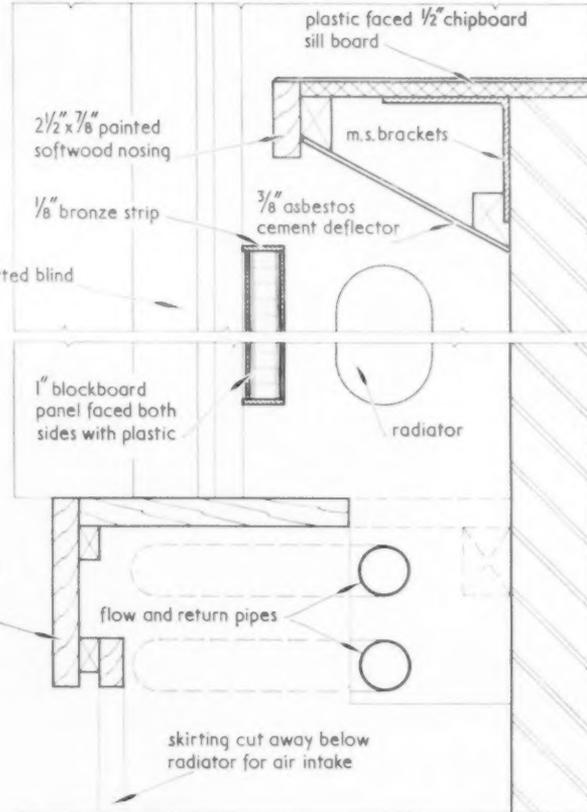
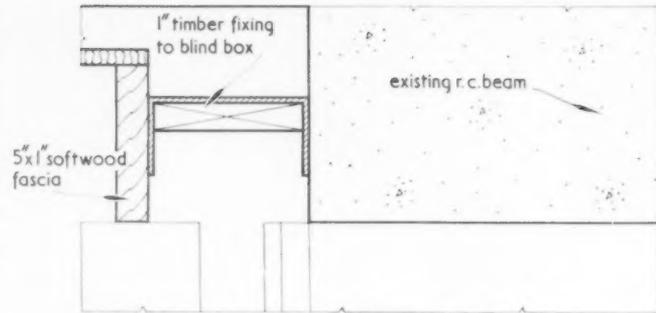
ELEVATION. scale $\frac{3}{16}'' = 1' - 0''$



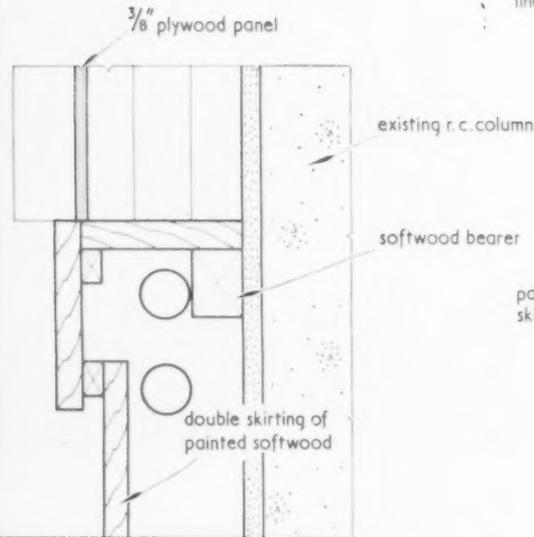
PLAN. scale $\frac{3}{16}'' = 1' - 0''$



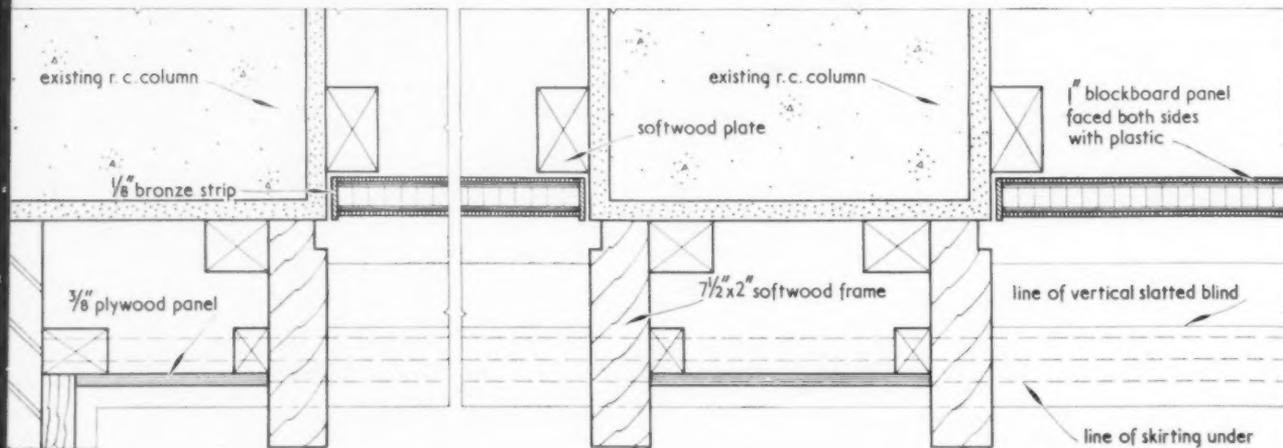
SECTION.



SECTION B-B. scale $\frac{3}{16}$ full size



SECTION A-A. scale $\frac{3}{16}$ full size



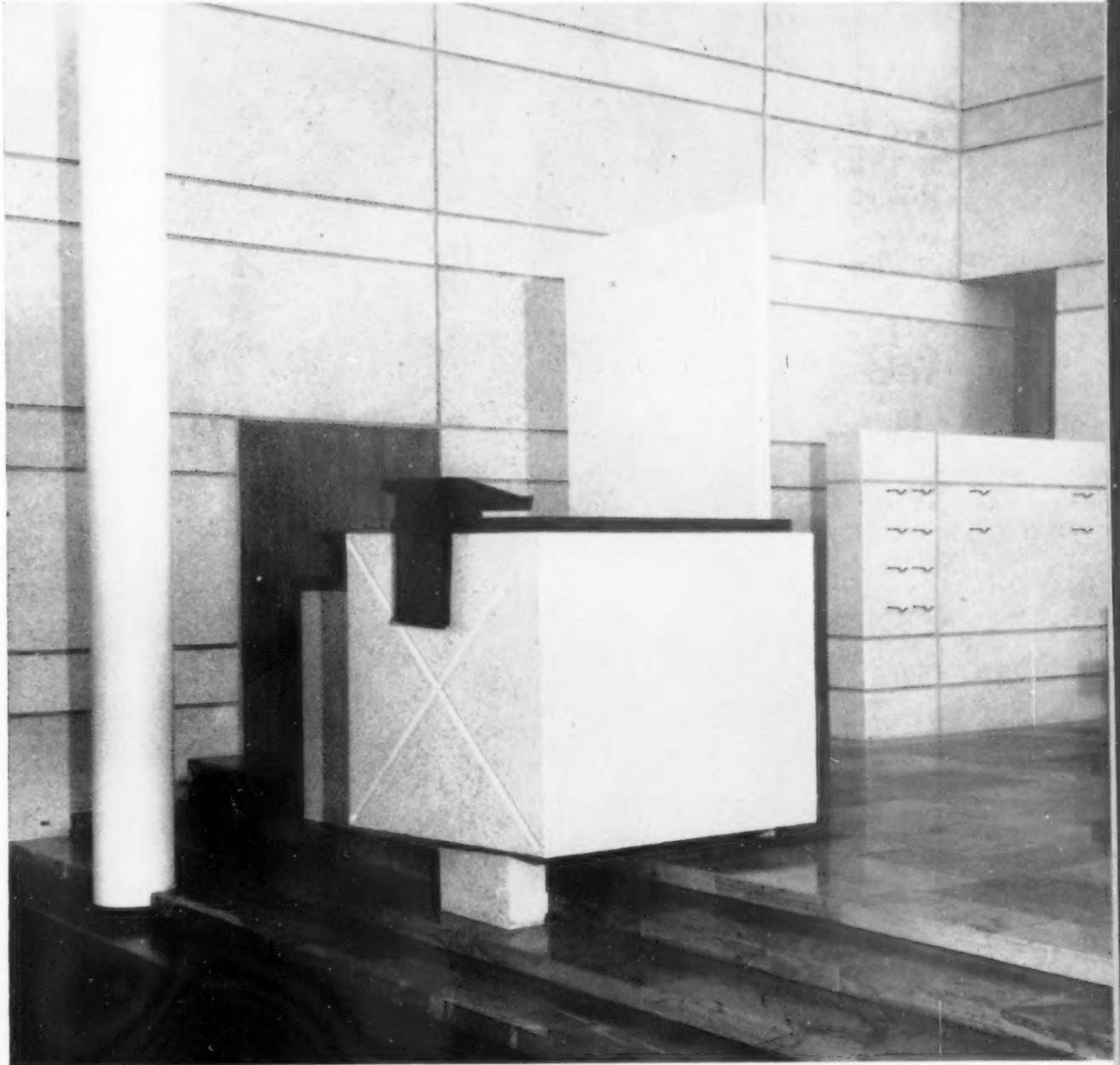
PLAN AT C-C. scale $\frac{3}{16}$ full size

working detail

FURNITURE AND FITTINGS: 104

PULPIT: CHURCH IN LAUTTASAARI, FINLAND

Keijo Petäjä, architect (material supplied by H. S. Sami)

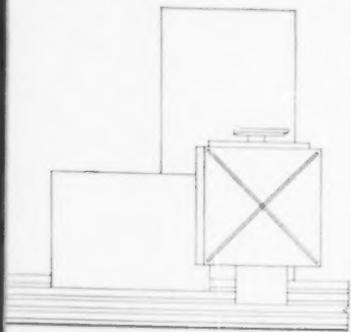


This pulpit is composed of a small number of cast stone units. Note the adjustable lectern held within the thickness of the teak rail, the vertical sounding board and the casting of the electrical wiring within the stone units.

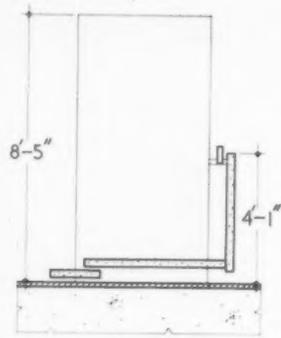
working detail

PULPIT: CHURCH IN LAUTTASAARI, FINLAND

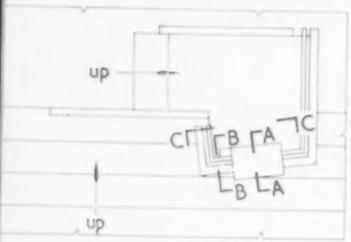
Keijo Petäjä, architect (material supplied by H. S. Sami)



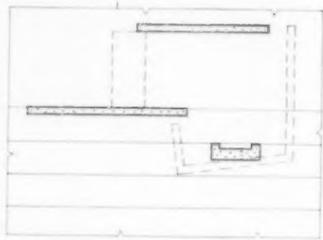
FRONT ELEVATION. scale 3/16"=1'-0"



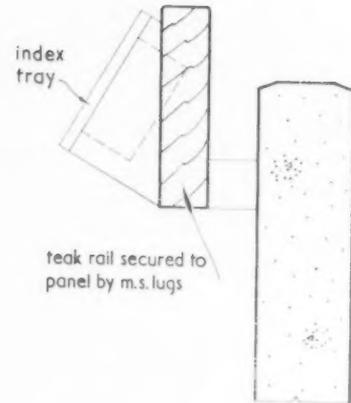
SECTION.



PLAN. scale 3/16"=1'-0"

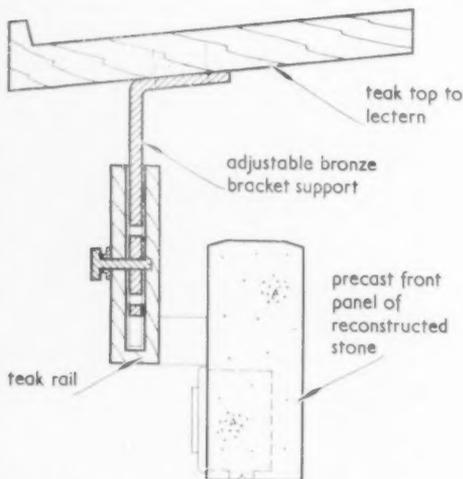


FOUNDATION PLAN.

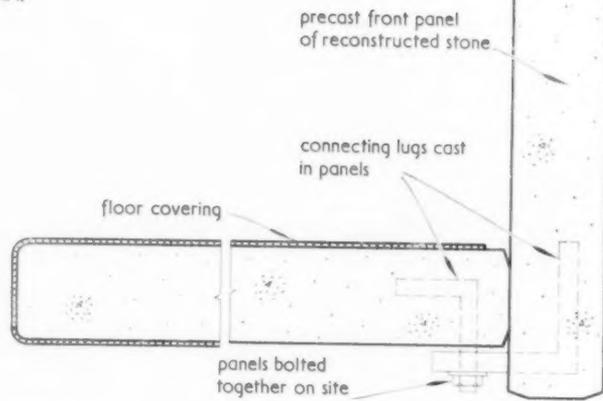


index tray

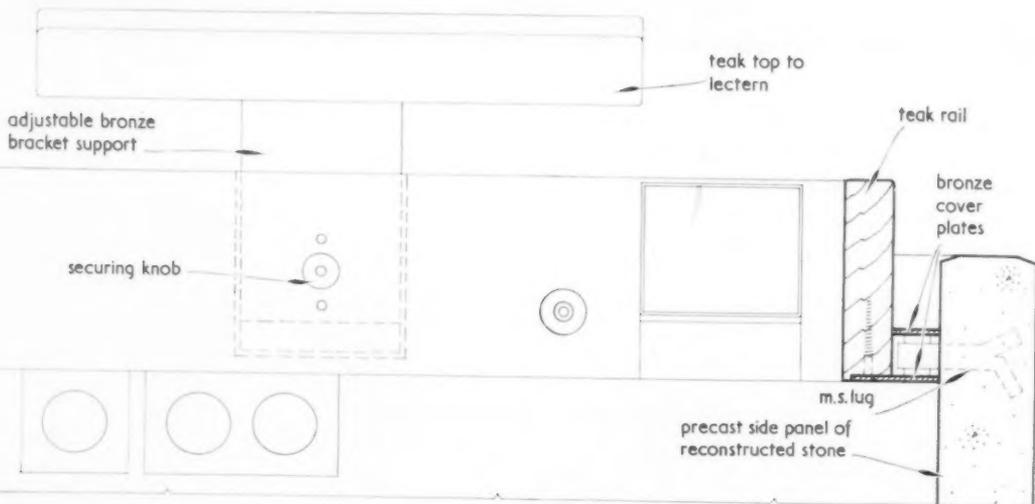
teak rail secured to panel by m.s. lugs



SECTION A-A.

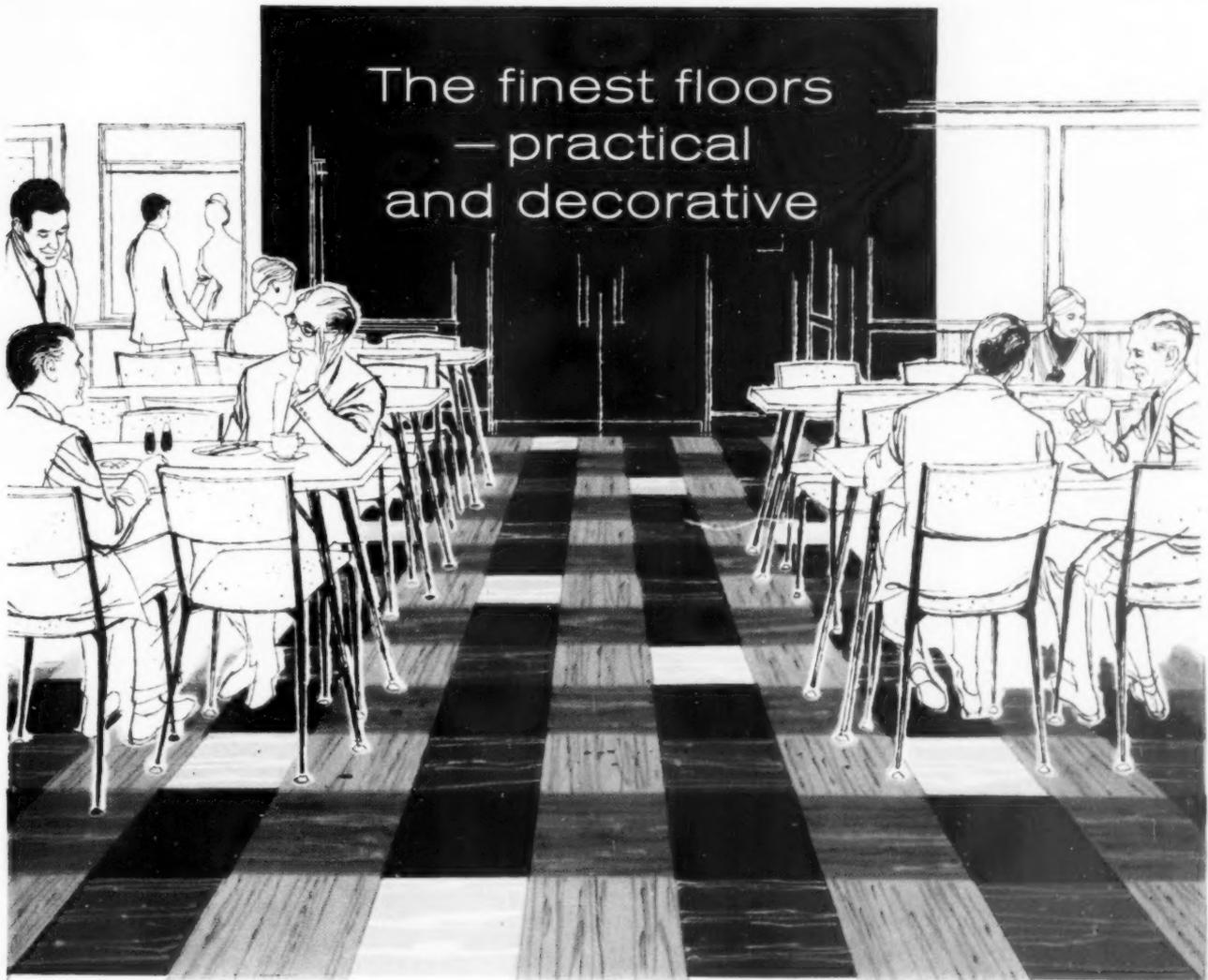


SECTION B-B. scale 3/16 full size

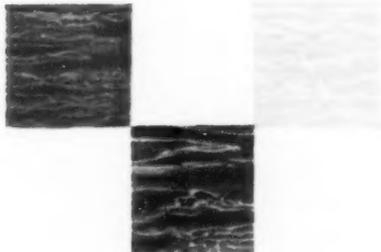


SECTION C-C. scale 3/16 full size

note: figured dimensions in feet and inches are approximate



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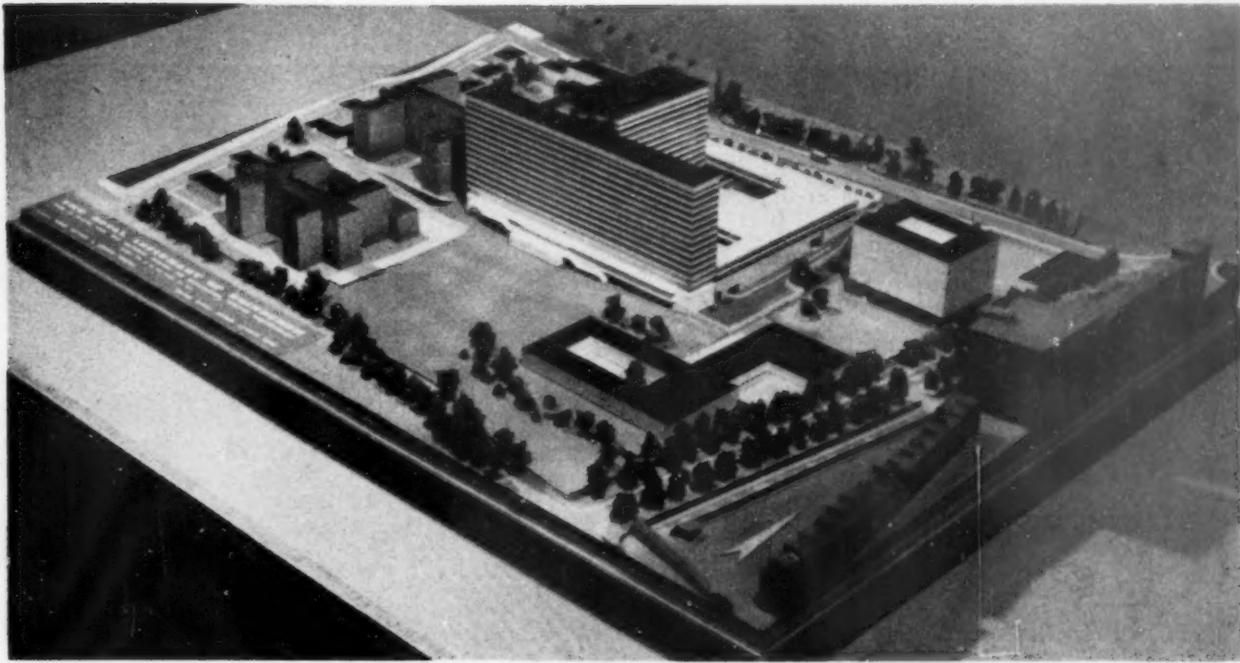
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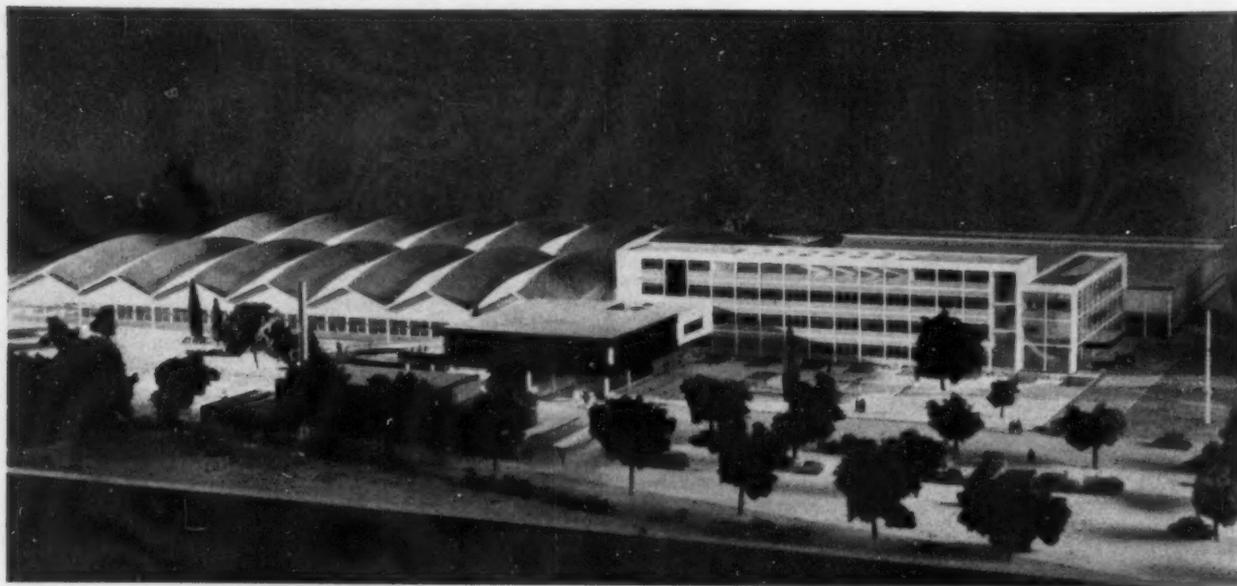
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and folded roof, and a smaller block for typesetting and composing. It will provide a total of 210,000 sq. ft. at a cost of about £1 million. The entire process areas will be air-conditioned and artificially lit to the exclusion of daylight, except for a peripheral view strip. This has been deliberately done to provide constant working conditions. The levels chosen for the permanent artificial lighting range from 30 to 36 lumens per sq. ft., which is somewhat lower than that tentatively suggested by BRS for this type of situation.



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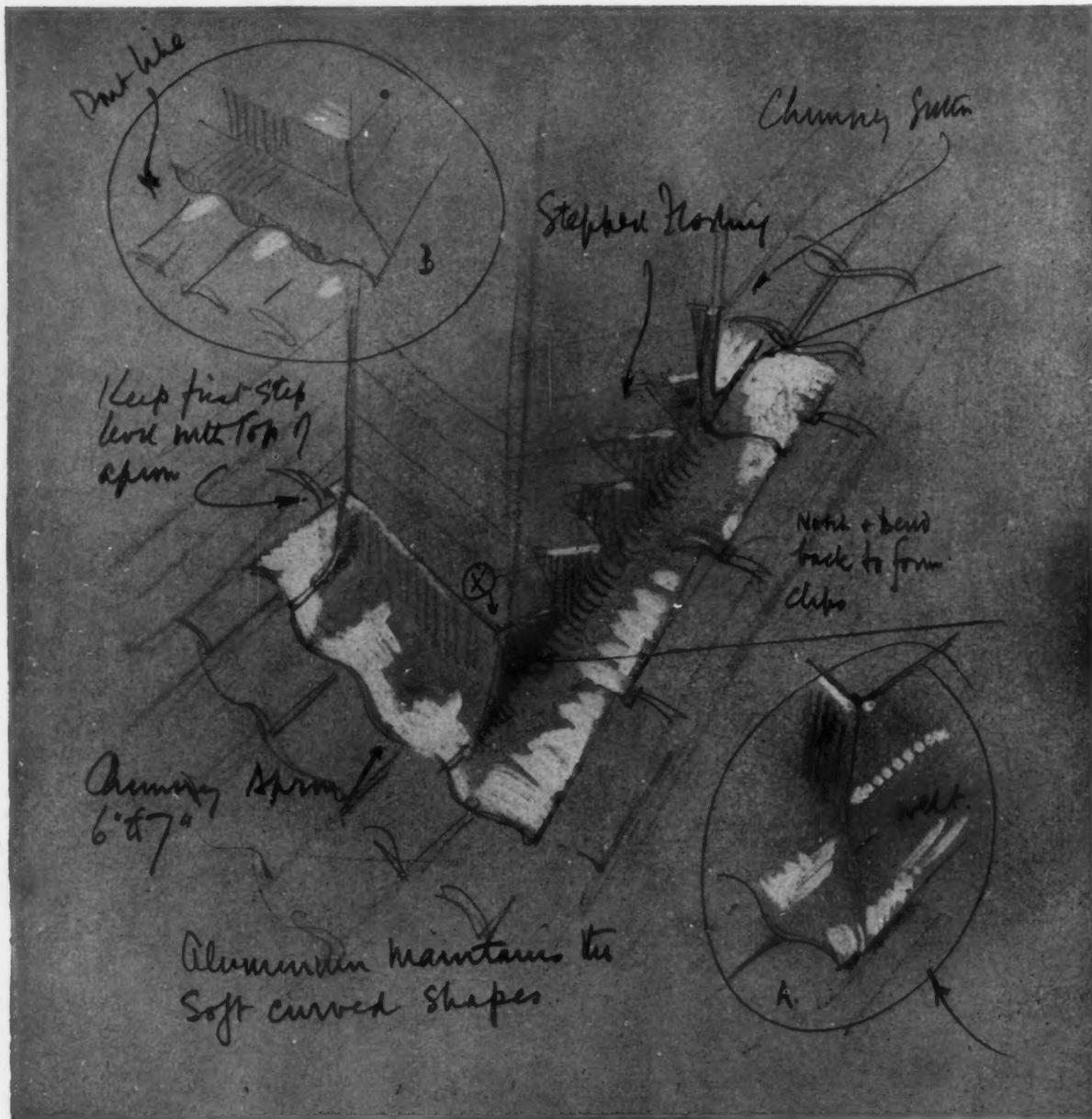
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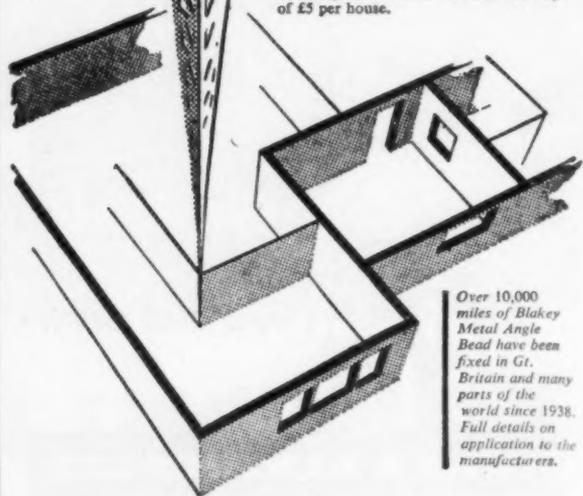
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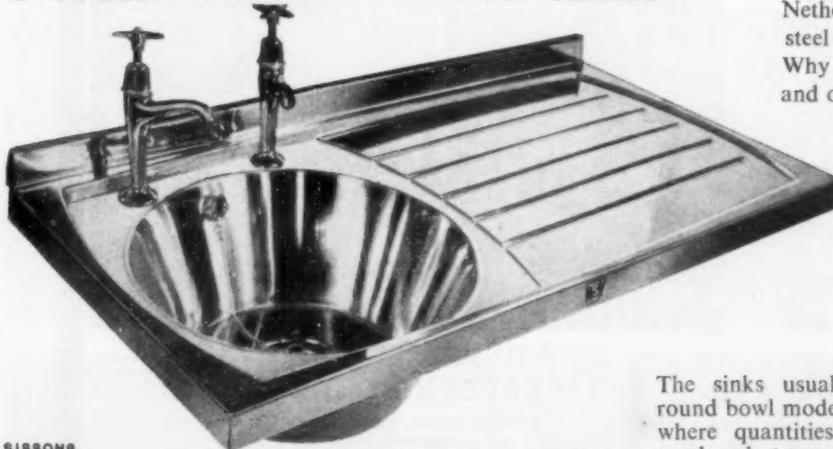
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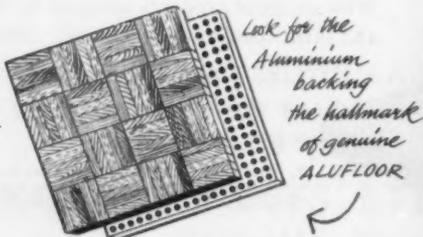
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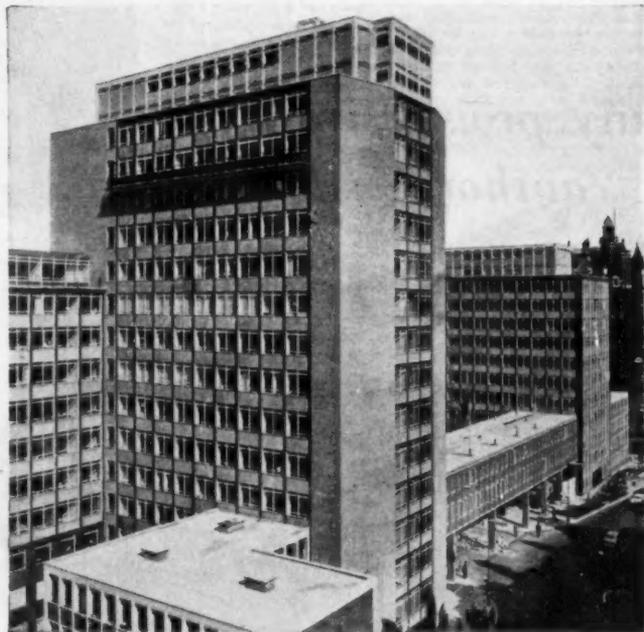


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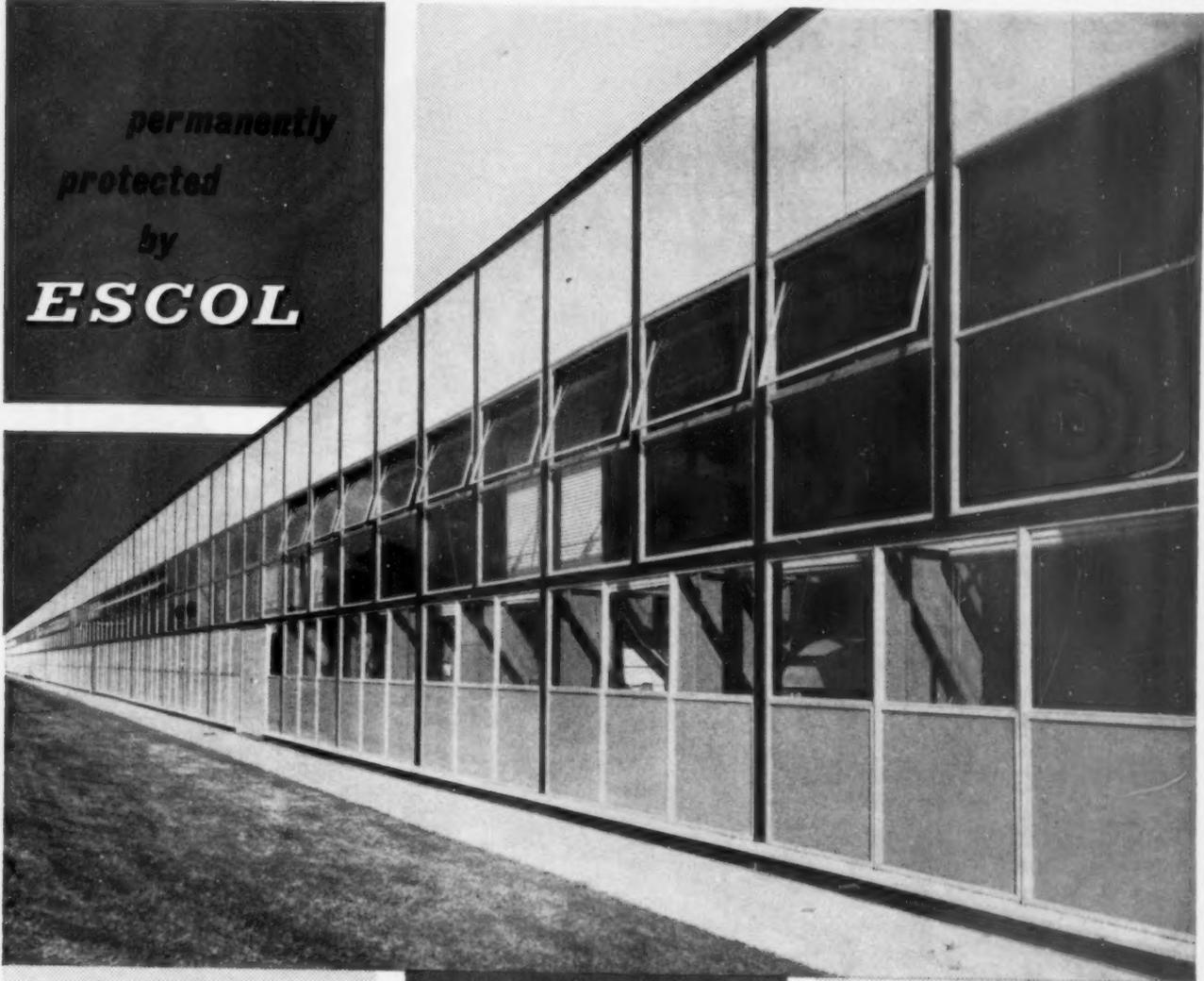
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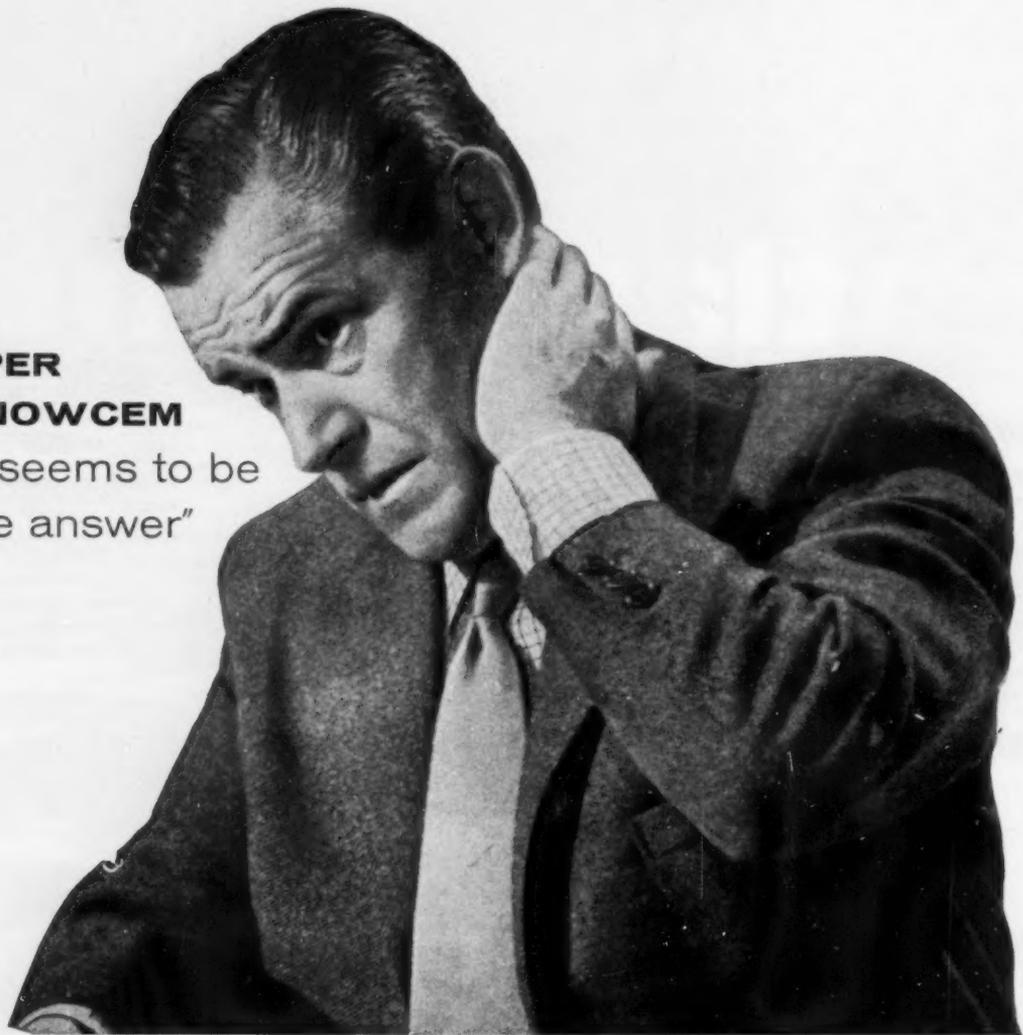
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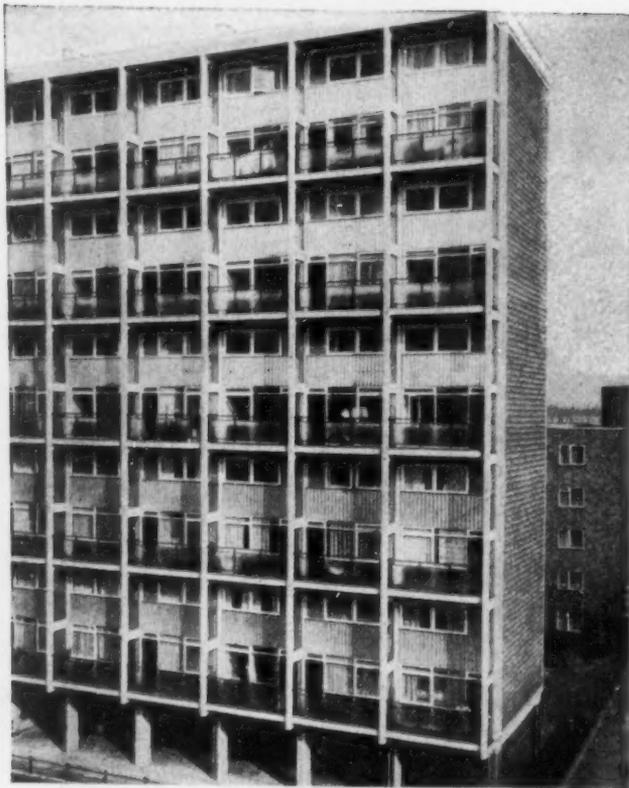


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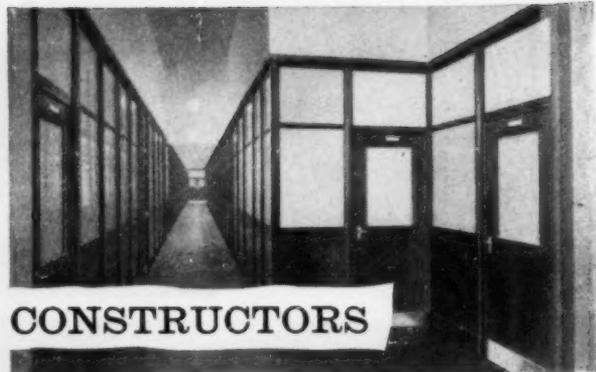
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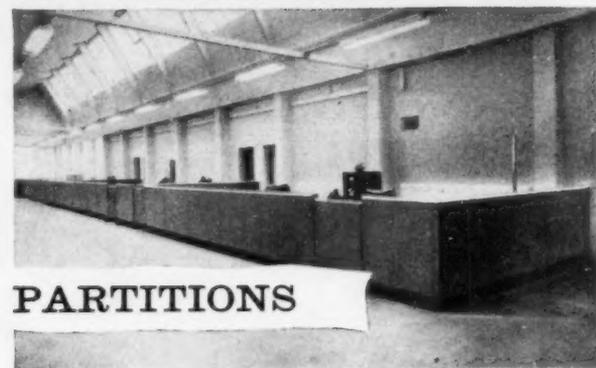
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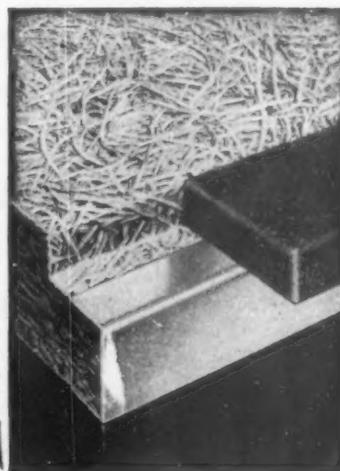
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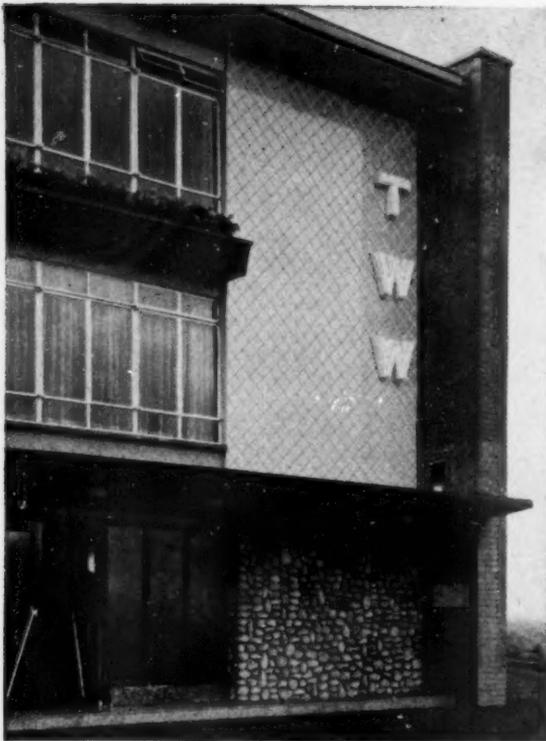
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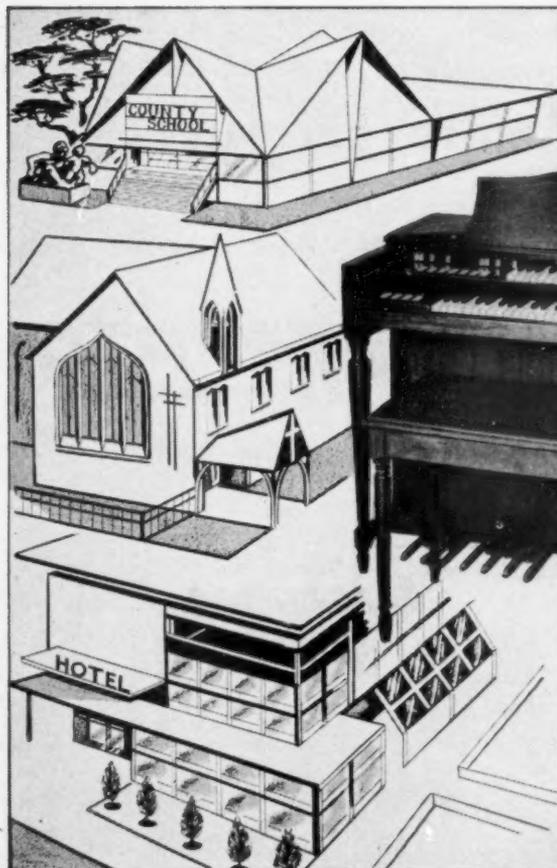
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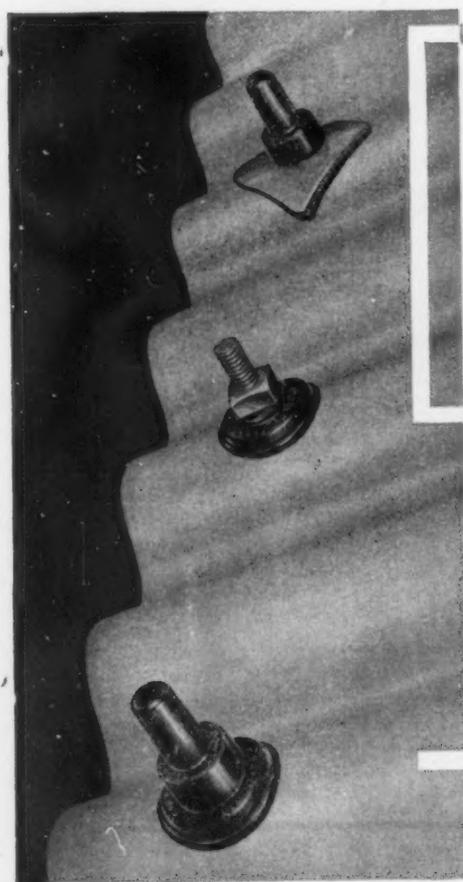
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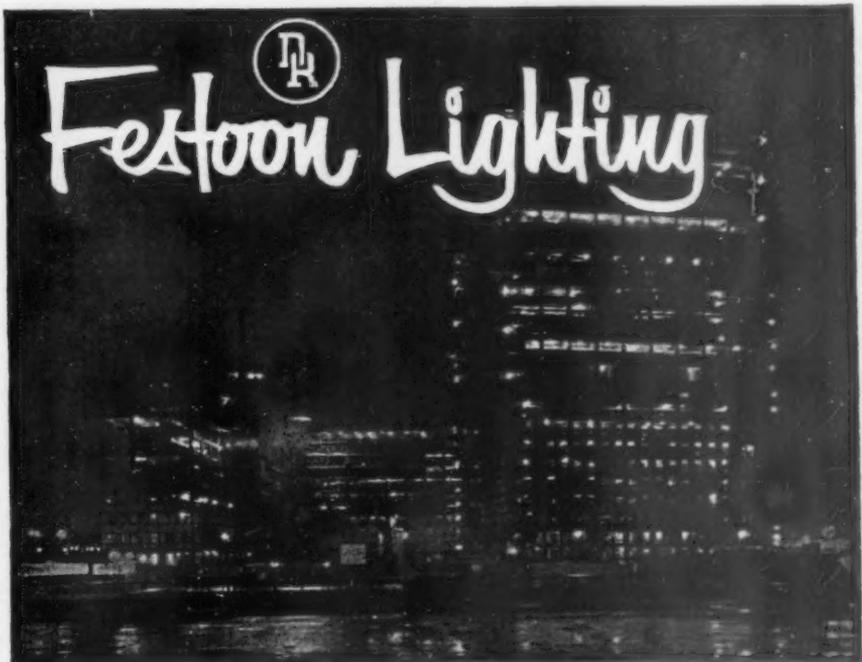
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"A fine old chimney . . . a fine old gale . . ."

His eyebrows rose.

"Or take saucers," I said.

They rose higher.

"Well, that may be too specific," I admitted. Let's make it artificial satellites. You see, a policy might cover you against damage by aircraft, or articles dropped therefrom—"

He said he should hope so.

"—but aircraft are not the only thing in the sky these days. It would be bad luck to get a couple of gables knocked off by a nose-cap from a long-forgotten sputnik . . ."

Just a minute, he said, sitting up. Was I telling him that he could insure against such contingencies?

"Could and should," I told him. "They are what the Legal and General describe as 'other aerial devices'—and a very liberal-minded description, if you ask me."

He wanted to know why liberal-minded.

"Because if and when Science recognizes the Saucer, I reckon that must be covered too. Not to mention articles dropped therefrom."

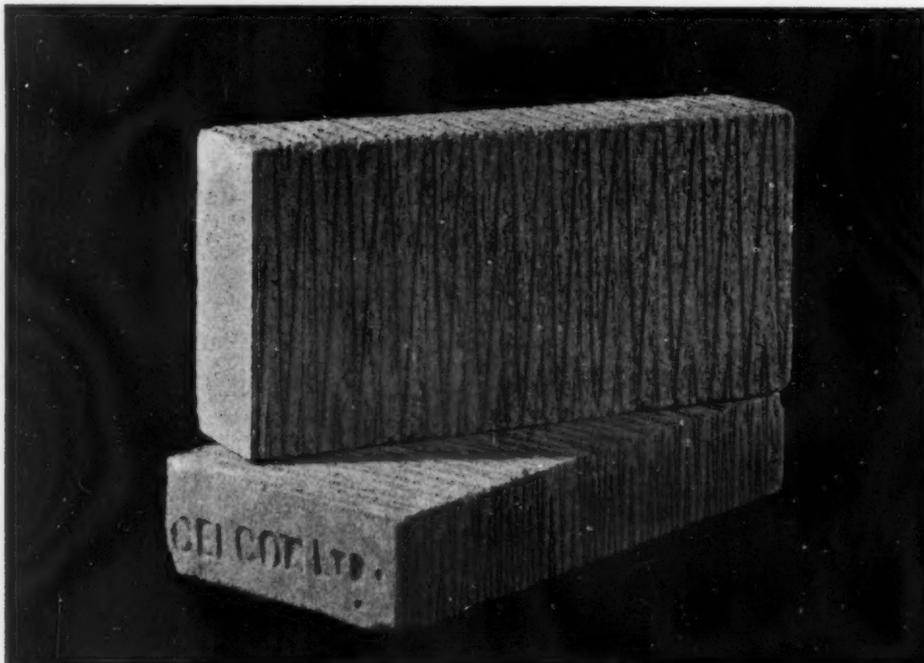
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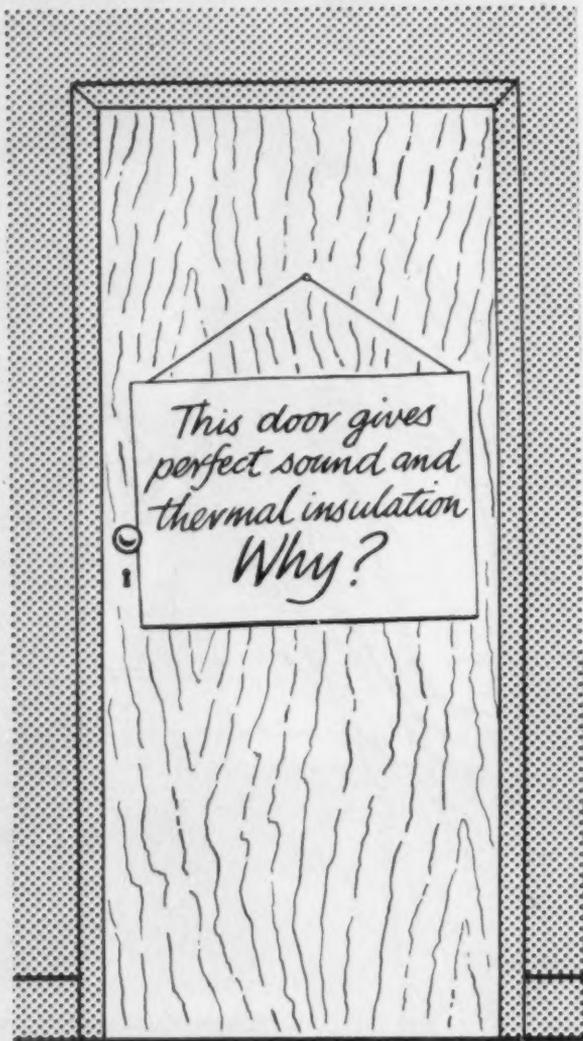
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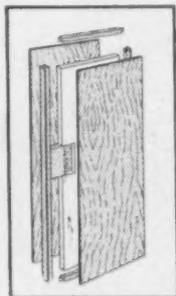
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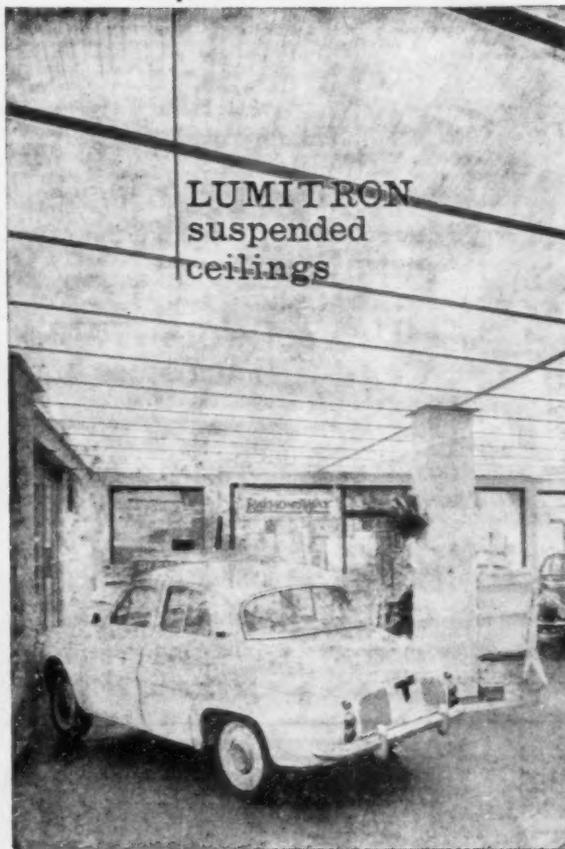
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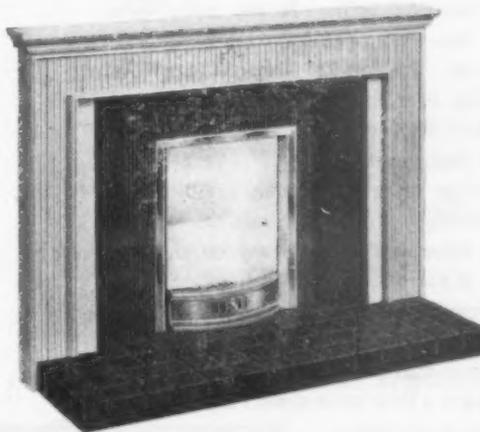
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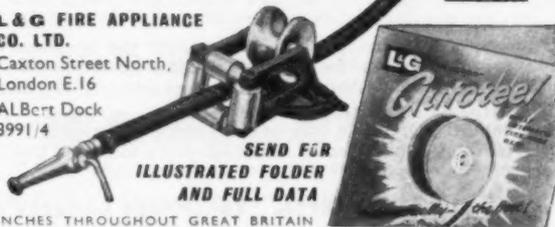
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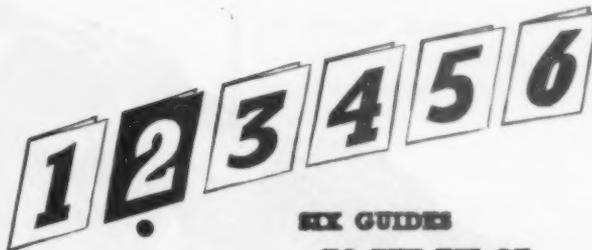


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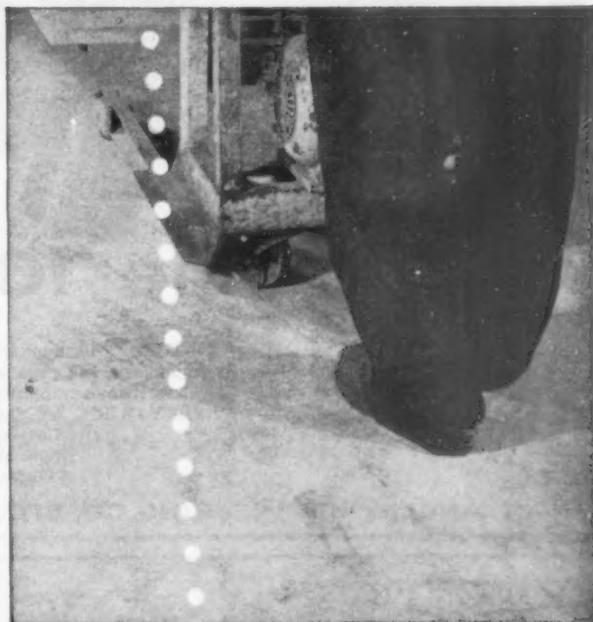
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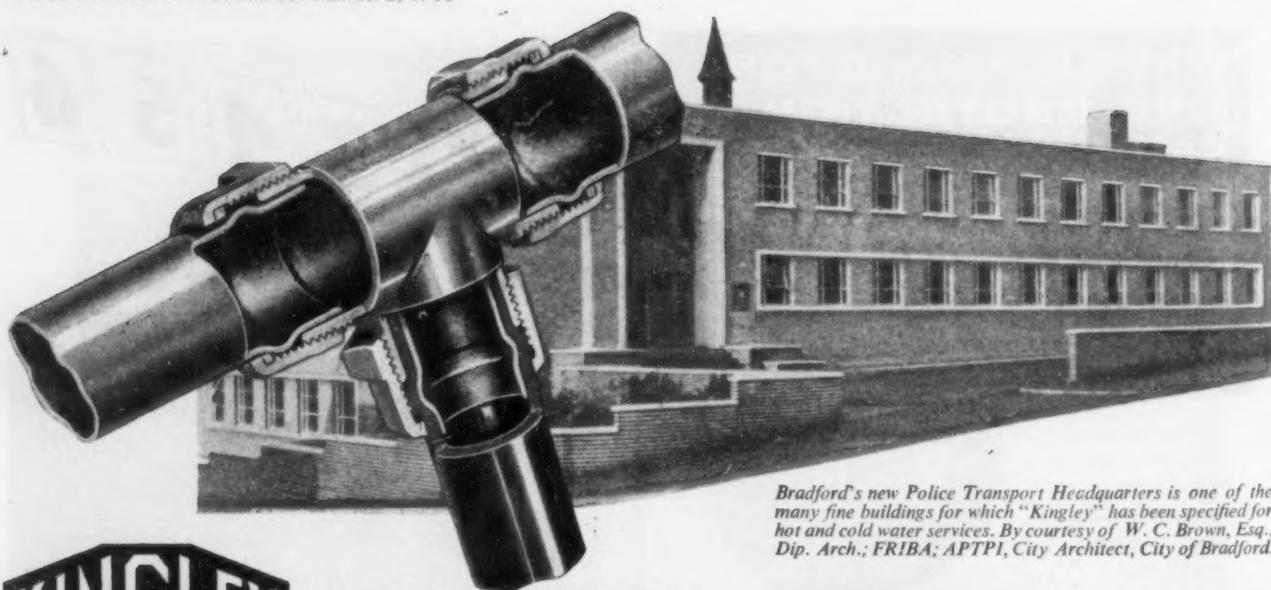


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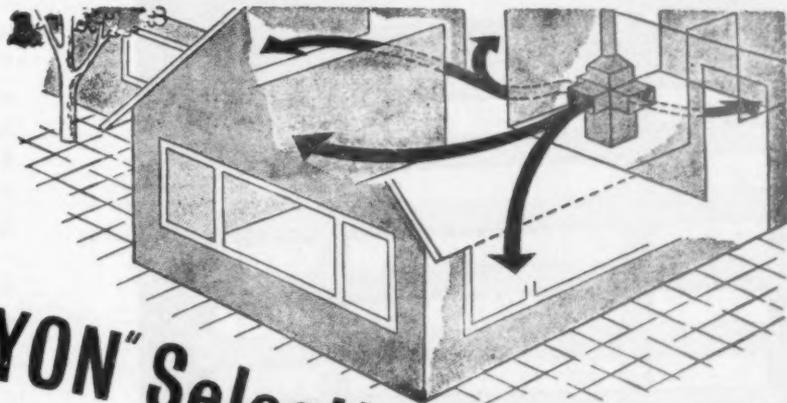
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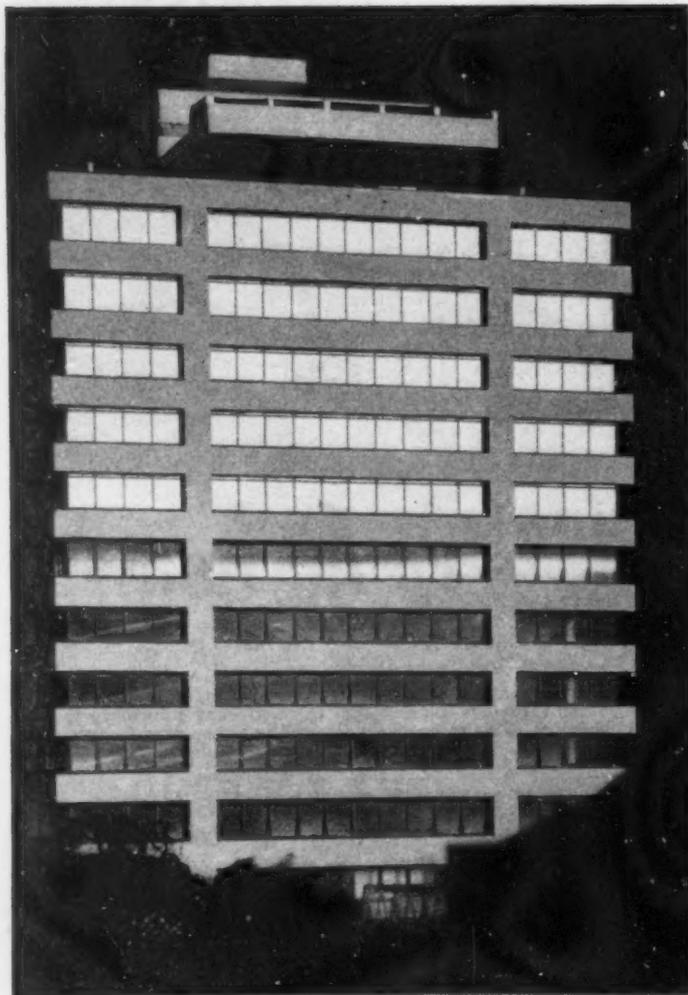
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Advertisements should be addressed to the advertisements Manager, "The Architects' Journal," 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, and should reach there by first post Friday morning for inclusion in the following Thursday's paper.

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

AIR-MAIL SERVICE available on request. In response to requests from a number of Overseas subscribers for air-mail delivery of Public and Official Appointment details and Other Appointments Vacant, we have been pleased to arrange that cuttings of all such classified advertisements appearing in the A.J., shall be despatched by air-mail on Wednesday of each week (one day prior to A.J. publication date). The cost of this special service to Overseas subscribers will be 5s. for four weeks (1s. 3d. for each additional week) and prepayment should be sent by subscribers wishing to take advantage of this service. The charge we are making represents only the actual cost of the postage involved.

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Applications, stating age, appointments held and experience, with names of two referees, to The City Engineer, Guildhall, E.C.2. 5847

BOROUGH OF BASINGSTOKE

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Details giving qualifications, age, training, experience, etc., with names and addresses of two referees, to be sent to the Borough Architect, Eric Almond, Dipl.Arch., A.R.I.B.A., Municipal Buildings, Basingstoke, Hants., by first post on Tuesday, 14th March, 1961. 6010

Applications, stating age, appointments held and experience, with names of two referees, to The City Engineer, Guildhall, E.C.2. 5847

METROPOLITAN BOROUGH OF WOOLWICH

SENIOR ASSISTANT ARCHITECT

Applications are invited for the above permanent appointment in the Borough Engineer's Department. Salary within Grade A.P.T. V (£1,310-£1,480) plus London weighting. Superannuation scheme.

Candidates must have passed the final examination of the R.I.B.A.

The Council has an extensive and interesting programme of works.

Applications, stating experience, qualifications and age, and giving names of two referees to Town Clerk, Woolwich, S.E.18, by 14th March 1961. 5990

LANCASHIRE COUNTY COUNCIL

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Application forms and details of appointment obtainable from the County Architect, P.O. Box 26, County Hall, Preston, returnable by 17th of March, 1961. 6004

SURREY COUNTY COUNCIL

Applications are invited for the following appointments:-

GRADE IV. (£1,140-£1,310 p.a. plus £45 p.a. London Allowance).

Approved removal expenses will be paid to successful candidates in this Grade.

ARCHITECTS. Must be A.R.I.B.A. and have had experience in preparation of drawings and specifications, and be capable of assuming responsibility for medium to large scale contracts.

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Candidates will be appointed at the appropriate point within the scale according to age and ability. Full details, present salary and three copy testimonials, preferably one from present employer, to County Architect, County Hall, Kingston, as soon as possible. 6022

CITY OF CARDIFF

CITY ARCHITECT'S DEPARTMENT

CHIEF ASSISTANT ARCHITECT (HOUSING) A.P.T. GRADE V

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Applications stating age, qualifications and details of experience, together with the names of two persons to whom reference can be made, should be delivered to me not later than the 13th March, 1961.

S. TAPPER-JONES,
Town Clerk.

City Hall,
Cardiff,
February, 1961. 6017

EAST SUSSEX COUNTY COUNCIL

COUNTY PLANNING OFFICE

Applications are invited for the following permanent appointments on the Headquarters Staff at Lewes for duties in connection with surveys for and the preparation of, Town Maps:-

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Further particulars and application forms from County Planning Officer, County Hall, Lewes, Sussex, to whom applications should be sent not later than the 13th March, 1961. 5978

Applications are invited for the following post in the Quantity Surveyors section:-

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A.P.T. Grade I, salary range £645-£815. Applicants should have passed the R.I.C.S. Intermediate examination (Quantities) or be up to that standard. Duties embrace Housing, Town Centre and Industrial buildings. Superannuation schemes, medical examination. Housing available. Apply by 13th March, 1961, stating age, education and qualifications, experience and appointments held (with dates and salaries), and names of two referees, to General Manager (Q.S.), Bracknell Development Corporation, Farley Hall, Bracknell, Berks. 5977

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BOROUGH OF MAIDENHEAD

BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT

ARCHITECTURAL ASSISTANT

Applications are invited for the appointment of an Architectural Assistant on Grade A.P.T. III/IV, of the National Scales (£960-£1,310), commencing salary according to qualifications and experience. Preference will be given to applicants holding a recognised qualification.

Housing accommodation is provided and contributions made towards removal expenses in approved cases. The Council is operating a five-day week.

The appointment will be subject to the National Scheme of Conditions of Service, the Local Government Superannuation Acts, the satisfactory passing of a medical examination and termination by one month's notice on either side.

Applications stating age, qualifications, experience, and accompanied by the names of two referees, must be sent to C. T. Read, M.B.E., M.I.C.E., F.R.I.C.S., M.I.Mun.E., 14, Craufurd Rise, Maidenhead, as soon as possible but not later than Thursday, 9th March, 1961.

Canvassing will be a disqualification and candidates must disclose whether to their knowledge they are related to any member or senior official of the Council.

STANLEY PLATT,
Town Clerk.

Guildhall,
MAIDENHEAD,
February, 1961. 5976

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SENIOR ASSISTANT QUANTITY SURVEYORS. Salary scale £1,030-£1,960 per annum. Qualification: Corporate Membership R.I.C.S. Superannuable. Five-day week. Apply (quoting Arch. 33) stating qualifications, age, experience, present position and salary and names of two referees to Secretary, Birmingham Regional Hospital Board, 30, Augustus Road, Birmingham, 15, by 20th March, 1961. 6131

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

(a) CHIEF PLANNING ASSISTANT, Salary in accordance with A.P.T. Grade V (£1,310-£1,480 per annum, plus London "weighting").

(b) SENIOR PLANNING ASSISTANT, Salary in accordance with A.P.T. Grades II-III (£815-£1,140 per annum plus London "weighting").

(c) PLANNING ASSISTANT, Salary in accordance with A.P.T. Grade I (£645-£815 per annum, plus London "weighting").

Applicants for (a) must be Members or Associate Members of Town Planning Institute and it will be an advantage if they hold additional qualifications. Applicants must have good experience in general planning matters, development control and public inquiry work. A car allowance of £130 p.a. will be paid at the pleasure of the Council if the successful applicant provides a motor car for regular use in carrying out his duties.

Applicants for (b) and (c) should have passed the Intermediate examination of the Town Planning Institute or other equivalent and have had experience in a town planning department of a local authority. Commencing salary to be in accordance with qualifications and experience.

The Council is unable to assist the successful candidates with housing accommodation.

Applications are to be submitted by 20th March, 1961, on forms to be obtained from and returned to the Borough Engineer and Surveyor, 25, Lampton Road, Hounslow.

D. MATHIESON,
Town Clerk

Town Hall,
Hounslow,
Middlesex. 6122

MINISTRY OF WORKS SUPPLIES DIVISION, LONDON requires an ASSISTANT DESIGN OFFICER for a wide variety of work including domestic and office furniture and equipment. Ability to produce original designs, integrated schemes, and to prepare coloured perspective sketches for furniture and interiors is essential.

Applicants must hold M.S.I.A., Des. R.C.A. N.D.D. or equivalent. Some previous experience is essential. Salary range £1,185-£1,448 p.a. Successful applicant will be engaged for a period of 3-5 years.

Applications, stating age and experience, to Controller of Supplies, Ministry of Works, Southbridge House, Southwark Bridge Road, S.E.1. 6129

Applications are invited from appropriately qualified persons for the above appointments within A.P.T. Grades II/IV (£815-£1,310), commencing salary according to experience and qualifications. The posts are superannuable and housing accommodation will be provided if required.

Applications giving age, details of training, qualifications and experience, with the names and addresses of two referees, to be sent to the Surveyor, Town Hall, Shipley, Yorkshire, by Saturday, 11th March, 1961.

ERNEST PRARR,
Clerk and Solicitor. 6175

Applications are invited from appropriately qualified persons for the above appointments within A.P.T. Grades II/IV (£815-£1,310), commencing salary according to experience and qualifications. The posts are superannuable and housing accommodation will be provided if required.

Applications giving age, details of training, qualifications and experience, with the names and addresses of two referees, to be sent to the Surveyor, Town Hall, Shipley, Yorkshire, by Saturday, 11th March, 1961.

ERNEST PRARR,
Clerk and Solicitor. 6175

Applications are invited from appropriately qualified persons for the above appointments within A.P.T. Grades II/IV (£815-£1,310), commencing salary according to experience and qualifications. The posts are superannuable and housing accommodation will be provided if required.

Applications giving age, details of training, qualifications and experience, with the names and addresses of two referees, to be sent to the Surveyor, Town Hall, Shipley, Yorkshire, by Saturday, 11th March, 1961.

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Clerk and Solicitor. 6175

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ERNEST PRARR,
Clerk and Solicitor. 6175

LIVERPOOL REGIONAL HOSPITAL BOARD

require

ARCHITECTS

SENIOR ASSISTANT ARCHITECTS	..	£1,300-1,600
ASSISTANT ARCHITECTS	£905-1,310
ARCHITECTURAL ASSISTANTS	..	£625- 900
ARCHITECTURAL DRAUGHTSMEN	..	£475- 685

and

SURVEYORS

SENIOR ASST. QUANTITY SURVEYOR	£1,300-1,600
ASSISTANT QUANTITY SURVEYOR	£905-1,310
ASSISTANT BUILDING SURVEYORS	£905-1,310
BUILDING SURVEYING ASSISTANTS	£625- 900

to assist the Regional Architect, T. Noel Mitchell, B.Arch., F.R.I.B.A., to carry out the expanding Hospital Building Programme. Interesting new building is projected including new General and Specialised Hospitals and the complete replanning of a large number of older Hospitals covering a wide variety of building types.

All posts are superannuable and mileage allowances will be paid to approved car users. Applications to reach me within ten days stating post applied for, age, education, qualifications, experience, present and previous posts and names and addresses of three referees (two technical).

VINCENT COLLINGE,
Secretary to the Board

55, Castle Street,
Liverpool, 2

BASILDON DEVELOPMENT CORPORATION

ARCHITECTS

The Chief Architect/Planner requires Architects for the following appointments.

SENIOR ARCHITECT to lead a Section
Salary between £1,715 and £1,975

GROUP LEADERS
Salaries between £1,305 and £1,670

ARCHITECTS
Salaries between £935 and £1,310

LANDSCAPE ARCHITECTS
Salaries between £815 and £1,190

The Town is less than half-way to its ultimate development as the largest New Town, and Architects of outstanding ability are needed to effect comprehensive development of the Town Centre, the Second Industrial Area, and major housing development and redevelopment

Please apply with full details to:—

*The General Manager,
Gifford House,
Basildon, Essex.*

Liverpool Regional Hospital Board

**ASSISTANT
REGIONAL ARCHITECT**

Salary £1,825 x £75(2) x £100(2)—£2,175

Graduate of a recognised School of Architecture preferred. High status in design essential. Will be expected to provide executive design leadership under the Regional Architect in a Department having an establishment of four Principal Assistants—each responsible for a section of work which includes major projects—these being assisted by a number of Senior and Assistant Architects.

The post is superannuable; car mileage and subsistence allowances payable. The Department is in pleasant modern offices in a central position in the city.

Applications to reach me within ten days, stating age, education, qualifications, experience, present and previous posts and names and addresses of three referees (two technical).

VINCENT COLLINGE,
Secretary to the Board.
55, Castle Street,
Liverpool, 2.

LANCHESTER COLLEGE OF TECHNOLOGY, COVENTRY
(Principal: A. J. RICHMOND, B.Sc. (ENG.), Ph.D., M.I.MECH.E.)

Applications invited for post of **LECTURER IN BUILDING** in Department of Civil Engineering and Building. Candidates should be Associates of Institute of Builders or professional Associates of Royal Institute of Chartered Surveyors, and be competent to teach Quantity Surveying to Building students as well as general Building subjects in advanced courses. The Department offers mainly courses of an advanced standard, i.e. H.N.C., H.N.D. and professional courses. Appropriate industrial experience necessary; previous teaching experience an advantage but not essential. Duties to commence as soon as possible.

Salary—£1,370 × £35 (4) and £40 (1)—£1,550 p.a. In certain circumstances the successful candidate may be paid commencing salary above minimum of scale.

Further particulars and application forms from The Registrar, Lanchester College of Technology, Priory Street, Coventry, to whom completed forms should be returned by 25th April.

W. L. CHINN,
Director of Education. 6133

STAFFORDSHIRE COUNTY COUNCIL, COUNTY ARCHITECT'S DEPARTMENT VACANCIES

ASSISTANT ARCHITECTS:

£1,310—£1,480,
£1,140—£1,310,
£960—£1,140.

ARCHITECTURAL ASSISTANTS: £815—£960.
ARCHITECTURAL DRAUGHTSMEN: Salary according to experience.

ASSISTANT QUANTITY SURVEYORS:

£1,140—£1,310,
£960—£1,140,
£815—£960.

The Council may be able to assist with housing accommodation in cases of need, and also has a scheme for loans to employees wishing to purchase their own houses.

Good working conditions, assistance with removal expenses, lodging allowances, etc.

Forms of application from P. Woodcock, F.R.I.B.A., County Architect, Green Hall, Lichfield Road, Stafford.

Closing date—15th March, 1961.

T. H. EVANS,
Clerk of the County Council. 6120

BOROUGH OF TAUNTON ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments in the Borough Architect's Department.

ASSISTANT ARCHITECTS, Grade A.P.T. III-IV (£960—£1,140—£1,310 p.a.)

The Council have an interesting programme of estate development and re-development schemes including flatbed accommodation, groups of shops, old persons' accommodation, market offices and other ancillary buildings.

The posts are superannuable, subject to medical examination and to National Conditions of Service. Salary placing according to qualifications and experience. Applications, stating age, present position and salary, qualifications, experience and names of two referees, to be sent to C. Bacon, Esq., F.R.I.B.A., Borough Architect, Flook House, Station Road, Taunton, within 14 days of the appearance of this advertisement.

Housing accommodation will be made available to suitable applicants if required.

R. A. HORNE,
Town Clerk. 6134

CITY OF MANCHESTER

SENIOR ASSISTANT PLANNING OFFICER required in the City Surveyor & Engineer's Department at a salary within J.N.C. Scale 'B' (£1,420/£1,570).

Candidates must be appropriately qualified by examination and must have had considerable experience in the Planning and Development work of a local authority.

This appointment offers practical experience on large scale projects. Housing accommodation and removal expenses.

Applications stating age, education, qualifications and experience with the names of three referees to the Town Clerk, Town Hall, Manchester, 2, not later than 27th March, 1961.

HARLOW DEVELOPMENT CORPORATION
Architect-Planner—Frederick Gibberd, C.B.E., F.R.I.B.A., M.T.P.I.
Executive Architect—Victor Hamnett, B.Sc., A.R.I.B.A., Dip. T.P., A.R.I.C.S., A.M.T.P.I.
Architectural Vacancies

Applications are invited for the following posts:

- (a) 1 SENIOR ARCHITECT Grade IX—Salary £1,715—£1,975.
- (b) 1 ARCHITECT Grade VIII—Salary £1,565—£1,825.
- (c) 1 ARCHITECT Grade V—Salary £1,310—£1,480.
- (d) 1 ASSISTANT ARCHITECT Grade IV—Salary £1,140—£1,310.
- (e) 1 ASSISTANT ARCHITECT Grade III—Salary £960—£1,140.
- (f) 1 ARCHITECTURAL ASSISTANT Grade II—Salary £815—£960.

Post (a) requires ability to direct and control a small group of Architects engaged upon Industrial work, including factories, laboratories, warehouses, office buildings, etc. Candidates should be experienced in Architect/Client relationships and able to take instructions and present schemes.

Candidates for post (b) should be experienced in industrial projects and will be required to have had considerable experience including design and construction.

Candidates for post (c) should have ability to work on building projects from their inception to completion on smaller scale industrial work and/or commercial buildings. An all-round general architectural experience preferable.

Candidates for post (d) should be able to organize the preparation of working drawings. Experience of the running of building contracts an advantage.

Candidates for posts (e) and (f) should be experienced in the preparation of working drawings and details.

Housing will be made available to rent in appropriate cases.

Applications giving full details of training, qualifications and experience, together with names of two referees, to the General Manager, Terlings, Harlow, Essex, within ten days. 6174

CITY OF WINCHESTER

Applications are invited for JUNIOR ARCHITECTURAL ASSISTANTS in the City Engineer's Department (C. C. Steptoe, ARIBA, Chief Assistant Architect) within Grades I—II (£645—£960) according to qualifications and experience. The appointments are subject to the terms and conditions laid down by the Southern Provincial Council and to the Local Government Superannuation Act.

Applications stating age, qualifications and experience, together with the names of two referees, addressed to the City Engineer, Guildhall, Winchester, should reach him not later than MONDAY, 13th March, 1961.

The Council will assist in the provision of HOUSING ACCOMMODATION in suitable cases.

R. H. McCALL,
Town Clerk. 6181

NORFOLK COUNTY COUNCIL—PLANNING DEPARTMENT APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited from young men for appointment to the above post within the salary scale £645—£960 p.a. (according to experience and qualifications).

The post, in the design team of the Department, offers scope and opportunity of work of an extremely varied and interesting nature and prospects of promotion. A qualification in architecture would be an advantage, but partially qualified persons will be considered and every encouragement, both financial and otherwise, will be given to any such person appointed towards the attainment of a full qualification.

The National Scheme of Conditions of Service for Local Authorities Professional and Technical Services apply.

Applications (no forms) giving full particulars of education, qualifications and experience, together with the names of two referees, to be submitted to the undersigned (from whom further details may be obtained if desired) by 18th March, 1961.

R. I. MAXWELL,
County Planning Officer.

County Planning Department,
41/43, Thorne Road,
Norwich Norfolk. 6169

WESSEX REGIONAL HOSPITAL BOARD

There are vacancies for the following posts in the Architect's Department to deal with the Board's expanding hospital building programme:

(a) **PRINCIPAL ASSISTANT ARCHITECT, Grade II** (£1,665 × £50 (1) × £75 (2) × £85 (2)—£2,035).

(b) **SENIOR ASSISTANT ARCHITECT** (£1,300 × £60 (5)—£1,600).

(c) **ASSISTANT ARCHITECTS** (£905 × £35 (1) × £45 (2) × £50 (2)—£1,310).

Applicants must be Registered Architects. The work offers excellent opportunity for gaining experience in the whole field of hospital architecture and covers all stages from sketch plans to the supervision of construction. The proposed expansion of the Board's building programme ranges from major adaptation schemes to comprehensive new hospital projects, and includes all types of medical ancillary departments and domestic buildings.

(d) **BUILDING OR QUANTITY SURVEYING ASSISTANT** (£625 × £30 (3) × £35 (1)—£900).

Applicants must have passed the Intermediate Examination of the R.I.C.S. or an examination giving exemption therefrom.

Please apply to the Secretary, Highcroft, Romsey Road, Winchester, for application form which should be returned by 17th March. 6145

CITY OF SHEFFIELD CITY ENGINEER AND SURVEYOR'S DEPARTMENT

Applications are invited from suitably qualified persons for the following appointments on the staff of the City Engineer and Surveyor and Town Planning Officer:—

HIGHWAYS
(a) **DIVISIONAL ENGINEER—Grade B/C** (£1,480—£1,825 p.a.).

The person appointed to this post will be responsible for the Eastern Division of the City and should have good experience in the control and execution of large direct labour works embracing the maintenance and construction of highways and sewers.

(b) **SENIOR ASSISTANT (Bridges)—Grade A.P.T. V** (£1,310—£1,480 p.a.).

(c) **SENIOR ENGINEERING ASSISTANTS—Grade A.P.T. IV** (£1,140—£1,310 p.a.).

TRAFFIC ENGINEERING
(a) **GRADUATE ASSISTANT—Grade A.P.T. II** (£815—£960 p.a.).

(b) **RECORDS AND STATISTICS ASSISTANT—Grade A.P.T. III** (£960—£1,140 p.a.).

Candidates for post (b) should be experienced statisticians or be keenly interested in statistical work in the traffic engineering field.

The commencing salary for each of the above posts will be in accordance with experience and qualifications.

Consideration will be given if required to assistance with housing accommodation and removal expenses in suitable cases.

Superannuable posts, 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 24th March next.

JOHN HEYS,
Town Clerk. 6152

BOROUGH OF MANSFIELD

APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT A.P.T. IV (£1,140—£1,310)

Applications are invited for the above permanent appointment in the Borough Engineer and Surveyor's Department.

Applicants must be Associate Members of the Royal Institute of British Architects and must have had some years' practical experience.

A house on service tenancy may be rented if required; it is also the Corporation's wish that the person appointed shall live within the Borough.

Applications stating age, marital state, training, past and present appointments with salary, and experience, together with the names of three referees, should be sent to the Borough Engineer and Surveyor, Carr Bank, Mansfield, Notts., to arrive not later than Friday, 10th March, 1961.

A. C. SHEPHERD,
Town Clerk. 6089

Carr Bank,
Mansfield,
Notts. 6089

The new aids to
Roof Construction

FULLY GUARANTEED

Patent No. 764973



ARCHITECTS' JOURNAL
INFORMATION SHEET AND
FULLY ILLUSTRATED
BROCHURE AND PRICE LIST
FROM

PARAMOUNT ASPHALTE
(LIMITED)

149 KENNINGTON PARK ROAD,
LONDON, S.E.11.

Tel.: RELiance 2373-2191

ARCHITECTS
required by LONDON TRANSPORT for the following posts:—

ASSISTANT ARCHITECTS: Salary range £1,140 p.a.—£1,320 p.a. Applicants must be fully qualified and capable of supervising staff. (Reference 129/A/1.)

ARCHITECTURAL ASSISTANTS: Salary ranges £1,060 p.a.—£1,140 p.a. £940 p.a.—£1,020 p.a.

Applicants should be qualified to R.I.B.A. Intermediate standard with previous office experience. (Reference 129/B/1.)

Free travel; five-day week; medical examination; contributory superannuation after probation.

Applications quoting reference number of post applied for and stating age, qualifications and full details of experience, to Staff and Welfare Officer, London Transport, 55, Broadway, S.W.1. 6091

HAMMERSMITH BOROUGH COUNCIL
ARCHITECTURAL ASSISTANTS—A.P.T. III (£960/£1,140 p.a.) plus London weighting. Applicants should have passed the Intermediate Examination of the R.I.B.A. or the equivalent at a recognised School of Architecture. Application form, returnable by 14th March, 1961, from Town Clerk, Town Hall, W.6. 6102

MIDDLESEX COUNTY COUNCIL
ARCHITECTS' DEPT.
ASSISTANT ARCHITECTS, A.P.T. V (£1,355—£1,525) and **A.P.T. III/IV** (£1,005—£1,355) required. Established. Commencing salaries according to qualifications and experience. Department is divided into groups and there are good opportunities for architects with special design ability. Prescribed conditions. Application forms from County Architect (s.a.e.), 1, Queen Anne's Gate Buildings, Dartmouth Street, S.W.1, returnable by 13th March. (Quote P615 A.J.) 6103

KIRKBY URBAN DISTRICT COUNCIL
CHIEF ARCHITECTURAL ASSISTANT
Applications are invited for this appointment in the Engineer and Surveyor's Department. The post offers scope for wide experience and is the senior post in the architectural section of the department. Final R.I.B.A. or equivalent qualification required.

Salary—A.P.T. Grade V—commencing at £1,365 per annum. Five-day week. Assistance with housing and removal expenses considered. Casual user car allowance.

Applications, setting out full details of age, experience, qualifications, past and present appointments, salary, etc., and the names of two referees, to me not later than 13th March. Canvassing disqualifies. Relationship to be disclosed.

W. BYRON, Clerk of the Council

Kirkby Hall, Hall Lane, Kirkby. 6110

MANCHESTER REGIONAL HOSPITAL BOARD
Applications are invited for the following appointments in the Architectural Department:—
General Architectural Section

(a) **SENIOR ASSISTANT ARCHITECT**, £1,300—£1,600 p.a.

(b) **ARCHITECTURAL ASSISTANT**, £625—£900 p.a.

(c) **ARCHITECTURAL DRAUGHTSMAN**, £475—£685 p.a.

Lands and Buildings Section

(d) **ASSISTANT SURVEYOR**, £905—£1,310 p.a.

(e) **SURVEYING ASSISTANT**, £625—£900 p.a.

(f) **ARCHITECTURAL DRAUGHTSMAN**, £475—£685 p.a.

Candidates for posts (a) and (d) should possess full professional qualifications and for posts (b) and (e), intermediate qualifications. Draughtsmen should have had at least three years' drawing office experience. All posts superannuable. Application forms and particulars of appointments available from the Secretary, Manchester Regional Hospital Board, Cheetwood Road, Manchester 8, to whom they should be returned by 27th March, 1961. 6165

COUNTY BOROUGH OF BURNLEY

Applications are invited for the appointment of **ASSISTANT ARCHITECT** in the Borough Engineer & Surveyor's Department at a salary in accordance with A.P.T. Grade III/IV (£960—£1,310 per annum), commencing salary to be fixed in accordance with qualification and experience.

Five-day week. Housing accommodation will be provided if required.

Form of application etc., may be obtained from the Borough Engineer, 22/24, Nicholas Street, Burnley, to whom applications must be returned not later than Friday, 17th March, 1961.

C. V. THORNLEY, Town Clerk. 6167

MINISTRY OF HOUSING AND LOCAL GOVERNMENT; HOUSING AND PLANNING INSPECTORS. At least 23 pensionable posts for men and women: (a) **SENIOR INSPECTORS;** (b) **INSPECTORS.** Age at least 45 for (a) or 35 for (b) on 1.5.61. Candidates must either be Registered Architects or Corporate Members of an appropriate professional Institution. Practical experience in housing design and development or town and country planning an advantage. Duties include conducting public local inquiries under Housing and Town and Country Planning Acts; considerable travelling. Men's starting salary (London): (a) £1,840; (b) £1,325 (age 35-37) to £1,480 (at 40 or over). Exceptionally higher starting salary may be recommended. Scale maxima: (a) £2,120; (b) £1,780. Salaries under review. Promotion prospects. Write Civil Service Commission, Burlington Gardens, London, W.1, for application form, quoting 5217/61. Closing date 23rd March, 1961. 6067

THE ROYAL COLLEGE, NAIROBI
Applications are invited for **SENIOR LECTURESHIP IN QUANTITY SURVEYING.** Salary scale: £1,950 × £75—£2,475 p.a., entry point determined by qualifications and experience. Responsibility allowance £100 p.a. for headship of department. F.S.S.U. Child allowance £50 p.a. per child (max. £150 p.a.). Passages for appointee and family (up to four adult passengers) on appointment, termination and leave (once every two years). Rent according to quarters provided £60—£114 p.a. Detailed applications (eight copies) naming three referees by 27th March, 1961, to Secretary, Inter-University Council for Higher Education Overseas, 29, Woburn Square, London, W.C.1, from whom further particulars may be obtained. 6047

HAMPSHIRE COUNTY COUNCIL
ASSISTANT ARCHITECT, A.P.T. II (£815—£960) required for pensionable post in County Architect's Department. Candidates should have passed the Intermediate Examination of the R.I.B.A. Separation allowance and assistance with removal expenses in approved cases. Five-day week.

Application forms, returnable by 3rd March, from the Clerk of the County Council, The Castle, Winchester. 6055

NORTH RIDING COUNTY COUNCIL

Applications are invited for the following posts in the Architect's Department.
1. **ASSISTANT ARCHITECTS, Grade A.P.T. III/IV.** Salary £960—£1,310, must be A.R.I.B.A. with at least three years' experience since passing the Examination.
2. **ASSISTANT ARCHITECTS, Grade A.P.T. II/III.** Salary £815—£1,140, must have passed the Intermediate Examination of the R.I.B.A. Could be appointed on Grade A.P.T. III if Final Examination of R.I.B.A. has been passed.

3. **ARCHITECTURAL ASSISTANT, Grade A.P.T. I.** Salary £645—£915, Intermediate R.I.B.A. or equivalent at one of the recognised schools of Architecture.

Conditions of Service and application forms from R. Alport Williams, M.B.E., B.Arch., F.R.I.B.A., County Architect, County Hall, Northallerton, Yorkshire, and applications to be returned to R. A. Wotherspoon, Clerk of the County Council, at the same address, by 10 a.m., 24th March, 1961. 6068

TYRONE COUNTY EDUCATION COMMITTEE

Applications are invited by Tyrone County Education Committee for an appointment in the Department of their Chief Architect, P. M. Bone, Dip.Arch., A.R.I.B.A.

Applicants should be capable of a high standard of contemporary design and may be required to take charge of the design, working drawings and supervision of contracts. Possession of a car is desirable and appropriate travelling expenses will be paid. Removal expenses may be granted to married applicants.

The salary scale, at present under review, is as follows:—

For Registered ARCHITECTS, £805 to £1,260; alternatively for ARCHITECTURAL ASSISTANTS with suitable experience, £585 to £905.

Placing on the scales will be according to qualifications and experience.

Applications on forms from Chief Education Officer, Education Offices, Omagh, should be lodged with him by 21st March, 1961. 6046

HUNTINGDONSHIRE COUNTY ARCHITECTS' DEPARTMENT SENIOR ARCHITECTS' ASSISTANTS

GRADE A.P.T. IV (£1,140—£1,310)

Applications are invited from Chartered Quantity Surveyors for the above appointments which are additional to the existing staff. Candidates must be experienced in the preparation of bills of quantities, valuation of works in progress and settlement of final accounts.

Further details and application forms may be obtained from the County Architect, County Buildings, Huntingdon. Completed application forms should be returned to the undersigned by Monday, 13th March, 1961.

A. C. AYLWARD, Clerk of the County Council. 6061

BOROUGH OF ENFIELD
BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT

(Non-County Borough in the County of Middlesex. Population 109,700. Area 12,400 acres)

Applications are invited, from suitably qualified persons, for the post of **ARCHITECTURAL ASSISTANT—GRADE A.P.T. III** (£960—£1,140 per annum, plus appropriate London weighting). The commencing salary will be fixed at a point within the scale commensurate with qualifications and experience.

The successful applicant will be engaged, *inter alia*, on the preparation of three-dimensional schemes for the redevelopment of the Town Centre as a pedestrian shopping precinct, the design of multi-storey point blocks of flats, and the redevelopment of clearance areas.

Housing accommodation may be made available in appropriate cases. The Council is also prepared to consider 100 per cent. advance, to the successful candidate, for house purchase within the Borough.

Saturday mornings are normally free from duty.

Application forms, obtainable from H. D. Peake, M.Sc. (Eng.), Borough Engineer & Surveyor, 7, Little Park Gardens, Enfield, Middx., must be delivered to the undersigned as soon as possible.

CYRIL E. C. R. PLATTEN, Town Clerk. 6064

Public Offices, Gentleman's Row, Enfield, Middx.

HAMPSHIRE COUNTY COUNCIL
CHIEF QUANTITY SURVEYOR, Scale D/E (£1,710—£2,120) to take charge of new and existing staff of an expanding Section in the office of the County Architect (H. Benson Ansell, A.R.I.B.A.). Candidates must be A.R.I.C.S. and have had a wide experience of all branches of quantity surveying, including cost analysis and control, and be first rate administrators. Separation allowance and assistance with removal expenses in approved cases.

Application forms, returnable by 14th March, from the Clerk of the County Council, The Castle, Winchester. 6179

Contracts are safe with **Benbow** shop and barfitters
OF TORQUAY
Head Office Petitor Road Torquay
Telephone 89234/5

RADNOR COUNTY COUNCIL
(This is an English speaking County)

ARCHITECTURAL ASSISTANTS
2 A.P.T. III (£960—£1140)

A lodging allowance, proportion of approved removal expenses and rail fare home every three weeks for a limited period will be paid to married men appointed to the above two posts.

ASSISTANT BUILDING INSPECTOR
1 A.P.T. II (£815—£960)

CLERK OF WORKS
For new primary school £20 per week for approximately 12 months.

Further details from: **J. A. McRobbie, A.R.I.B.A.**,
County Architect,
County Hall,
Llandrindod Wells,
Radnor.

FINE FARE LIMITED

BRITAIN'S LEADING SUPERMARKETS

The Works Division of the largest operators of Supermarkets in the United Kingdom offer permanent and pensionable appointments in their Planning Department for:

(a) A FIRST CLASS ARCHITECTURAL ASSISTANT

and (b) A SHOP-FITTING DRAUGHTSMAN to work on a large retail expansion programme of supermarkets and ancillary buildings and modernisation of existing properties. Excellent opportunities of advancement in a rapidly expanding organisation. Highest salaries will be offered to suitable applicant. Good working conditions. Opportunities for paid overtime work. Staff Canteen. Five-day week. Assistance with housing and travelling by arrangement.

Apply in first instance to:

B. R. Archer, A.R.I.B.A., A.A.Dip.,
Head of Works Division,
2 Mundells,
Welwyn Garden City,
Hertfordshire.

YOUNG ARCHITECTS

Richard Costain (Construction) Ltd., are building in many parts of Britain. If you are a young architect with progressive ideas you are invited to join us.

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An Assistant Architect (your official position) gets a thorough grounding in every aspect of design and supervision.

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★ You would assist in the design of projects allocated to your Group.

★ You would confer and team-up with construction colleagues—estimators, engineers, planning staff and contracts managers—at all stages. Our architects find that this adds considerable interest to their work.

★ Visits to sites during construction are considered an essential part of your work.

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**Salaries start from
£900 to £1300**

**according to
experience and
qualifications**

For further details write direct to the Chief Architect, telling him all about yourself: **H. STANLEY SMITH, A.R.I.B.A.**
RICHARD COSTAIN LTD., 111 WESTMINSTER BRIDGE ROAD, LONDON, S.E.1

**CITY OF LIVERPOOL
ARCHITECTURAL AND HOUSING
DEPARTMENT**

Applications are invited for the appointment of (a) CHIEF ASSISTANTS, (b) SENIOR ASSISTANTS, (c) ASSISTANTS (ARCHITECTURAL) in the General Architectural, Housing and Redevelopment Sections.
Salaries:—(a) £1,425 to £1,670 p.a. (Scale "B").
(b) £1,310 to £1,565 p.a. (Scale "A").
(c) £1,310 to £1,480 p.a. (Grade A.P.T. V).

Applicants should be Associates of the R.I.B.A. or hold equivalent qualifications and should indicate in their application the grading of the appointment for which they wish to apply. All give wide opportunities for personal initiative. Application forms, returnable by 24th March, 1961, from the City Architect and Director of Housing, Blackburn Chambers, Dale Street, Liverpool, 2.

The appointments are superannuable and subject to the Standing Orders of the City Council. Canvassing disqualifies.

THOMAS ALKER,
Town Clerk
6069

(J.6672.)

**CITY OF BIRMINGHAM: PARKS
DEPARTMENT**

APPOINTMENT OF TECHNICAL OFFICER
Applications are invited for the above appointment from persons holding a qualification in Surveying, Architecture or Engineering. The post is graded in accordance with A.P.T. Division Grade V (£1,310—£1,480 per annum).

The appointment will be subject to the provisions of the National Scheme of Conditions of Service as adopted by the City Council and varied from time to time, the Local Government Superannuation Acts, 1937-53, and will be terminable by one month's notice. The successful candidate will be required to pass a medical examination.

The person appointed will be required to assist and deputise for, when necessary, the Officer-in-Charge of the Sites and Buildings Section of the Department in connection with all appropriate professional and technical matters arising out of the supervision of all sites under the control of the Parks Committee and the maintenance of ancillary buildings connected therewith. Experience in landscaping will be taken into consideration.

A knowledge of Local Government procedure and organisation is an advantage.

Applications, together with the names of two referees, should be addressed to the General Manager, Parks Department, Civic Centre, Birmingham, 1, to reach him not later than 12 noon on Monday, 20th March, 1961. 6148

SHEFFIELD REGIONAL HOSPITAL BOARD
Applications are invited for the following posts in the Architectural Division of the Board's Headquarters:—

ASSISTANT ARCHITECTS—Candidates must be Registered Architects and have passed the requisite examinations. Salary scale £905—£1,310 per annum. Commencing salary according to age and practical experience.

ARCHITECTURAL ASSISTANT—Applicants must have passed Intermediate Examination of Royal Institute of British Architects. Salary scale £625—£900, commencing salary according to age and experience.

DRAUGHTSMEN for general drawing office duties, including tracing. Candidates (male or female) must have had suitable training, including three years' practical experience in architectural and surveying drawing. Salary scale £475—£685 per annum, commencing salary according to age and experience.

Forms of application and further details obtainable from The Secretary, Sheffield Regional Hospital Board, Old Fulwood Road, Sheffield, 10. Closing date for receipt of completed applications 11th March, 1961. 6144

MIDDLESBROUGH EDUCATION COMMITTEE

CHIEF ASSISTANT ARCHITECT
Applications are invited from qualified Architects for the above appointment in the Education Architect's Office of the Education Dept. Salary scale Grade B (£1,425—£1,670). Candidates should be widely experienced in educational building work, able to control staff and to deputise for the Education Architect. Housing accommodation will be considered for married applicants if required.

Application forms and further details from the Director of Education, Education Offices, Woodlands Road, Middlesbrough. Closing date 13th March. 6072

AIR MINISTRY require SENIOR WORKERS UP in Quantities Division in London. Must be fully experienced and competent to Work Up entire Bills of Quantities. Candidates must hold O.N.C. or C. & G. (Quantities) or equivalent technical qualifications. Financial assistance and time off given for recognised courses of study. Promotion and pension prospects. Five-day week with 18 days paid leave a year initially. Salaries on annual incremental basis ranging from £975 (age 30 or over) to £1,115. Commencing salary according to qualifications and experience. Applicants, who must be natural born British subjects, should write stating age, qualifications and experience to Manager (PE 519), Ministry of Labour, Professional & Executive Register, Atlantic House, Farringdon Street, London, E.C.4. No original testimonial should be sent. 5499

BOROUGH OF JARROW

Applications are invited for the appointment of an ASSISTANT ARCHITECT, Salary Grade A.P.T. III (£960—£1,140).

Details and application forms obtainable from the Borough Engineer, Town Hall, Jarrow, Co. Durham.

Completed applications should be returned to me by Friday, 10th March, 1961.

(Signed) M. L. ROTHFIELD,
Town Clerk.
6180

AIR MINISTRY require QUANTITY SURVEYING ASSISTANTS Grade III at R.A.F. and Ministry of Aviation stations throughout the United Kingdom. The work includes abstracting and billing, site measurement and preparation of estimates. Candidates must hold ONC (Building or Builders Quantities) or equiv. and have had good experience under Quantity Surveyor or Building Contractor. Knowledge of W.D. Schedule an advantage.

Commencing salary, which is dependent upon age, quals, and exp., ranges from £776 (age 25) to £961 max. in Grade III. There are pension prospects and also opportunities of advancement to numerous posts in the higher grades, vacancies which as a rule are filled by promotion of existing staff, viz.:

Technical Grade II:	£961—£1098	125 posts
Technical Grade I:	£1098—£1348	42 posts
Technical Grade B:	£1348—£1552	6 posts
Technical Grade A:	£1439—£1697	6 posts

Overseas tours for which special allowances ranging at present up to £1,800 p.a. are payable in addition to a higher salary. Financial assistance and time off allowed for recognised courses of study leading to higher quals. Five-day week with 18 days paid leave a year initially.

Applicants who must be natural born British subjects should write stating age, quals, and exp. to Manager (PE2), Ministry of Labour, Professional & Executive Register, Atlantic House, Farringdon Street, London, E.C.4. Candidates selected will be interviewed in Air Ministry, London, and certain expenses reimbursed. Only applicants selected for interview will be advised. 5349

IRELAND

Vacancies for ASSISTANT ARCHITECTS in the Civil Service (at least seven). Maximum salary (Man) £1,235; commencing salary up to £1,110. Maximum age limit: 40 years with extensions. Application forms, etc., from Secretary, Civil Service Commission, 45, Upper O'Connell Street, Dublin, 1. Latest time for receiving completed application forms: 5 p.m. on 21st March, 1961. 6094

ASSISTANT ARCHITECT

required in the Birmingham Branch Office of National firm.

Salary £1,200 - £1,300 per annum according to age and experience.

Applicants must be A.R.I.B.A. with experience in controlling contracts through all stages and must be capable of supervising staff.

5-day week. 3 weeks holiday. Car allowance.

Replies to Box 6088, stating details as to experience and age, quoting 'AAB.2280'.

CAERNARVONSHIRE

Applications are invited for the following appointments:-

ASSISTANT ARCHITECT

APT.V - £1,310/£1,480.

ASSISTANT ARCHITECT

APT.III/IV - £960/£1,310.

ARCHITECTURAL ASSISTANTS

APT.II - £815/£960.

Further particulars and application forms from

Clerk of the County Council, County Offices, Caernarvon.

Closing date, 25th March, 1961

**MIDDLESEX COUNTY COUNCIL
ARCHITECTS' DEPT.**

OFFICER-IN-CHARGE OF TECHNICAL INFORMATION LIBRARY (A.P.T. IV, £1,385-£1,355) required. Should have had previous experience in this type of work or should be Architects who would be interested in organizing Technical Information Service for large architects' department. Established. Prescribed conditions. Application forms (s.a.e.) from County Architect, 1, Queen Anne's Gate Buildings, Dartmouth Street, S.W.1, returnable by 13th March. (Quote F 613 A.J.) 6070

**AYCLIFFE DEVELOPMENT CORPORATION
(New Town of Newton Aycliffe)
SENIOR ASSISTANT ARCHITECT**

Applications are invited for an appointment of Senior Assistant Architect at a salary in accordance with Grades A.P.T. IV or V of the Whitley Council for New Towns Staff Scales of Salaries, i.e. £1,140-£1,310 p.a. or £1,310-£1,480 p.a. The commencing salary and grade will be fixed according to the qualifications and experience of the successful applicant.

Applicants should be associates of the Royal Institute of British Architects. The principal work for the successful applicant will be in connection with the development of the town centre of the new town.

Appointment subject to N.J.C. Conditions, superannuation, medical examination and to one month's notice, in writing, on either side.

Housing accommodation available, if required. Applications stating age, qualifications and experience together with the names of two referees to be sent to the undersigned.

A. V. WILLIAMS,
General Manager.

Churchill House,
Newton Aycliffe,
Nr. Darlington. 5864

**CITY OF ST. JOHN'S
NEWFOUNDLAND-CANADA**

Applications are invited for the following appointment:-

PLANNING ASSISTANT, at a salary of not less than \$5,000 per annum, depending on experience and qualifications.

Duties will include survey and analysis for completion of a Development Plan, re-zoning and implementation of development control. The appointment offers scope for independent and responsible work for a Metropolitan Area of 100 sq. miles and a population of 80,000.

Applicants must have considerable practical experience, preferably in a local Government Office and should possess professional qualifications. Appointment will be on a contract for two years in the first instance with a view to a permanent appointment for the selected officer. Successful applicant will be expected to commence duties in May or June.

Please reply to the undersigned with details of age, experience, present salary and qualifications together with copies of recent testimonials before 31st March, 1961.

TUDOR JOHN,
City Planning Officer.

City Hall,
St. John's,
Newfoundland. 5496

BOROUGH OF HESTON AND ISLEWORTH

Applications are invited for the appointment of a **DRAUGHTSMAN/TRAINEE** in the Architect's Section of the Borough Engineer and Surveyor's Department. Commencing salary will be in accordance with examination qualifications, ability and experience, but will not be less than £480 per annum at age 23. Maximum £560 or £730 per annum according to examination qualifications.

Applicants should have a good school record and be interested in architectural drawing.

The Council is unable to assist with housing accommodation.

Applications are to be submitted by 20th March, 1961, on forms to be obtained from and returned to Borough Engineer and Surveyor, 88, Lampton Road, Hounslow.

D. MATHIESON,
Town Clerk.

Town Hall,
Hounslow,
Middlesex. 6093

**CUMBERLAND COUNTY COUNCIL
COUNTY ARCHITECTS' DEPARTMENT**

Applications are invited for the following appointments to the Architectural Staff. Appointments will be made within the scales shown according to ability and experience. Post pensionable. Subject to medical examination.

(a) **ASSISTANT COUNTY ARCHITECT: J.N.C. Scale A.** £1,435-£1,565. Must be a qualified and experienced architect capable of taking charge of a group of assistants employed on major projects.

(b) **SENIOR ASSISTANT ARCHITECTS: A.P.T. Grade 5.** £1,310-£1,480. Must be A.R.I.B.A. with experience of handling large contracts.

(c) **ASSISTANT ARCHITECTS: A.P.T. Grade 4.** £1,140-£1,310. Must be A.R.I.B.A. preferably with Schools' experience.

Further particulars and forms of application may be obtained from the County Architect, 15, Portland Square, Carlisle, to whom applications should be returned not later than 22nd March, 1961.

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

The Courts,
Carlisle. 6142
February, 1961.

**BURGH OF MOTHERWELL AND WISHAW
ARCHITECTURAL AND HOUSING
DEPARTMENT**

Applications invited from suitably qualified persons for the following superannuated appointments:-

SENIOR ARCHITECTURAL ASSISTANTS—A.R.I.B.A. qualification—salaries up to £1,200 per annum.

ARCHITECTURAL ASSISTANTS—Intermediate standard A.R.I.B.A. or approaching this stage—salaries up to £725 per annum.

The Department has many projects in hand including design of multi-storey blocks and an extensive re-development programme, which will give full scope for imaginative design and planning. A five-day week is in operation. Full particulars giving details of age, experience and qualifications should be sent to the Director of Housing, Motherwell House, Motherwell, within 14 days from the date of appearance of this advertisement.

ALEXANDER McINTOSH,
Town Clerk.

Town Hall,
Motherwell,
21st February, 1961. 6140

**COUNTY BOROUGH OF PRESTON
APPOINTMENT OF ARCHITECTURAL
ASSISTANTS**

Applications are invited from suitably qualified persons for the following appointments:-

(a) **ARCHITECTURAL ASSISTANTS—A.P.T. IV** (£1,140-£1,310).

(b) **ARCHITECTURAL ASSISTANTS—A.P.T. III/IV** (£960-£1,310).

(c) **ARCHITECTURAL ASSISTANTS—A.P.T. II** (£815-£960).

(d) **ARCHITECTURAL ASSISTANTS—A.P.T. I** (£645-£815).

Applications, stating age, qualifications, present position and salary, previous positions and full details of experience, together with the names and addresses of two referees, and stating clearly which appointment (a, b, c or d) is being applied for, to be received by me not later than Friday, 17th March, 1961.

W. E. E. LOCKLEY,
Town Clerk.

Municipal Building,
Preston. 6071

CITY AND COUNTY OF NEWCASTLE UPON TYNE

CITY ARCHITECTS' DEPARTMENT

A unique opportunity exists in this office for competent Architects to take part in one of the most ambitious programmes of varied building works in the country, and vacancies in the establishment occur for ARCHITECTS who will be considered on their ability in design, experience and architectural outlook, in the following grades:-

J.N.C. "C": £1,560-£1,825 per annum.

J.N.C. "B": £1,410-£1,670 per annum.

A.P.T. V: £1,310-£1,480 per annum.

A.P.T. IV: £1,140-£1,310 per annum.

A.P.T. III: £960-£1,140 per annum.

A.P.T. II: £815-£960 per annum.

A.P.T. I: £645-£815 per annum.

The Department is engaged upon a wide and varied programme of major redevelopment schemes embracing multi-storey flats, shopping precincts and associated community buildings, one of which schemes is the Scotswood Road Redevelopment Area to rehouse approximately 5,000 people, and which is expected to cost in the region of £12 million.

Planning work has now commenced on the new Education Precinct in the central area, comprising Colleges of Further Education, Art and Industrial Design, Drama, Commerce and Multi-storey Hostels, which will be the largest development of its kind in the country.

Further projects include: Airport Terminal; Abattoir and Fatstock Market; Vegetable Markets, Central Library; and Divisional Police Headquarters, etc., and a varied programme of normal housing development of a stimulating character.

The department is also engaged on the New Town Hall, where an exceptional opportunity is presented for working on a building of some £3 million in value, and being executed in materials of the highest quality.

Architects wishing to take part in one of Britain's most stimulating programmes should apply immediately for further details and forms of application to George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle upon Tyne, 1, indicating the grade for which they wish to apply.

JOHN ATKINSON,
Town Clerk.

Town Hall,
Newcastle upon Tyne, 1.
20th February, 1961. 6084

BOROUGH OF LEYTON

Applications invited for appointments of **ASSISTANT ARCHITECTS**, Salary within Grade A.P.T. III £960/£1,140 per annum plus London Weighting. Housing accommodation will be provided. Five-day week. National Joint Council Conditions of Service.

A large and varied programme of capital works in hand or projected offers good opportunities of gaining experience.

Apply with details to Borough Engineer, Town Hall, Leyton, E.10, not later than 16th March, 1961.

D. J. OSBORNE,
Town Clerk.

Town Hall,
Leyton, E.10. 6137

HAMPSHIRE COUNTY COUNCIL

Applications are invited for the following new pensionable posts in the office of the County Architect (H. Benson Ansell, A.R.I.B.A.). Canteen facilities. Five-day week. Separation allowance and assistance with removal expenses in approved cases.

ASSISTANT QUANTITY SURVEYOR, A.P.T. V (£1,310-£1,480). Candidates must have passed the final examination of the R.I.C.S. and have had considerable experience of all branches of quantity surveying.

ASSISTANT QUANTITY SURVEYOR, A.P.T. III/IV (£960-£1,310). Preference given to candidates who possess the final certificate of the R.I.C.S. or I.Q.S., and have had some years' experience in a Quantity Surveyor's office.

QUANTITY SURVEYING ASSISTANT, A.P.T. II/III (£815-£1,140). Candidates should possess the Intermediate certificate of the R.I.C.S. or be otherwise qualified, coupled with experience of abstracting and billing and taking off small jobs.

WORKER-UP, Clerical Division II/III (£710-£915). Candidates must have had some experience in a Quantity Surveyor's office and preference will be given to those studying for an appropriate qualification.

Application forms, returnable by 13th March, from the Clerk of the County Council, The Castle, Winchester. 6158

**CITY OF SHEFFIELD
APPOINTMENT OF PRINCIPAL ASSISTANT
ARCHITECT (CIVIC CENTRE)**

Scale "C" - £1,560-£1,825

Applications are invited from young men for encouragement, both financial and otherwise, will be permanent staff of the City Architect, Mr. J. L. Womersley.

The City Council have recently designated a spacious and attractive site, including the present Town Hall and Public Library, as a Civic Centre. The new buildings which are required will ultimately include a large extension to the Town Hall, new Law Courts, Police Headquarters and an Arts Centre. Following the preparation of a comprehensive scheme for the whole centre, the successful candidate's first task will be to design and execute the new Town Hall Extension which is urgently required.

Commencing salary within the above grade according to qualifications and experience.

Applications stating age, education and training, qualifications, present and past appointments (with dates and salaries), experience and the names of two persons to whom reference may be made, should reach me not later than the 20th March, 1961.

JOHN HEYS,
Town Clerk. 6147

BOROUGH OF POOLE

Applications are invited for the following appointments in the Borough Architect's Department:-

(a) **SENIOR ASSISTANT ARCHITECT, Grade A.P.T. IV** (£1,140-£1,310)

(b) **ASSISTANT ARCHITECT, Grade A.P.T. III** (£960-£1,140).

(c) **ARCHITECTURAL ASSISTANT, Grade A.P.T. II** (£815-£960).

Applicants for Post (a) must be fully qualified and a high standard of design ability is required. In all cases the successful applicant will be engaged on a variety of projects which include a new Civic Centre and a programme of redevelopment including multi-storey flats.

Application forms from the Borough Architect, Municipal Buildings, Poole, Dorset, to be returned to me by Saturday, 18th March, 1961.

J. G. HILLIER,
Town Clerk. 6136

WARWICKSHIRE COUNTY COUNCIL

Applications are invited for the following appointments:-

(a) **DEPUTY GROUP ARCHITECT—Grade "A"** (£1,450-£1,565).

The post is one of responsibility requiring a high degree of initiative and design ability in all forms of construction. The person appointed will have to deputise for the Group Architect and must be a member of the R.I.B.A.

(b) **SENIOR ASSISTANT ARCHITECTS—A.P.T. V** (£1,310-£1,480).

Applicants should be members of the R.I.B.A. and be competent designers with a good knowledge of modern methods of construction. The persons appointed will be responsible for carrying out individual projects from sketch plan stage to completion.

(c) **DEPUTY GROUP QUANTITY SURVEYOR—A.P.T. V** (£1,310-£1,480).

Applicants should be chartered quantity surveyors capable of dealing with all types of building work. The group teams are responsible for all stages from the preparation of the estimates to the settlement of the final account.

The commencing salary can be within the grades according to ability and experience. Five-day week worked. The Council have schemes for the payment of removal expenses and a lodging allowance to married officers. Application forms and full conditions applicable to the appointments can be obtained from ERIC DAVIES, F.R.I.B.A., A.M.T.P.I., County Architect, Shire Hall, Warwick.

L. EDGAR STEPHENS,
Clerk of the Council.

Shire Hall,
Warwick,
February, 1961. 6158

**COUNTY BOROUGH OF IPSWICH
BOROUGH ENGINEER & SURVEYOR'S
DEPARTMENT**
**APPOINTMENT OF ARCHITECTURAL
ASSISTANT—Grades A.P.T. III-IV (£960—£1,310)**
Applications are invited for the above super-annuated post at a commencing salary to be fixed in accordance with qualifications and experience.

Applicants should preferably have had Local Government experience and should be a registered architect.

Applications stating age, experience, etc., together with names of two referees must be received by the Borough Engineer & Surveyor, 19 Tower Street, Ipswich, by Monday, 20th March, 1961. Canvassing will disqualify.

J. C. NELSON,
Town Clerk.
6135

**WARWICKSHIRE COUNTY COUNCIL
COUNTY PLANNING DEPARTMENT**
Applications are invited for the following appointments:—

- (1) TWO PLANNING ASSISTANTS—Grade A.P.T. V.
- (2) THREE PLANNING ASSISTANTS—Grade A.P.T. IV.

For one of the Grade V posts, experience in the problems of overspill and relocation of industry would be an advantage. For the other post, experience in Development Control is essential as the successful candidate will be mainly engaged on appeal work.

For the Grade IV posts, applicants must have extensive experience of Development Plan work and will be engaged on the Plan review.

Applicants for all posts must be professionally qualified. All planning work is carried out at Headquarters in Warwick.

The commencing salary in each case will be according to experience and qualifications.

The posts are subject to the provisions of the Local Government Superannuation Act and to a medical examination.

Consideration will be given to the granting of financial assistance towards removal expenses.

Applications together with the names and addresses of two referees should be sent to J. J. BROOKS, County Planning Officer, Northgate, Warwick, not later than Saturday, 18th March, 1961.

L. EDGAR STEPHENS,
Clerk of the Council.

Shire Hall,
Warwick. 6139

**HAMPSTEAD BOROUGH COUNCIL
ARCHITECTS** are wanted to form a New Group in the Housing Architect's Department of Hampstead Borough Council.

The Housing Architect's Office is in a house in Haverstock Hill, close to tube, buses and the Heath. The office has recently been reorganised on a group basis and currently has £1½ million of work in hand including high blocks of flats and a multi-storey garage. A new group on the permanent staff is to be set up to handle a larger redevelopment area of housing and civic building, with members of the group also having individual responsibility for other smaller schemes.

The future projects present problems in urban design on both large and small scales that require a fresh approach by imaginative and able minds. Architects who are interested are invited to telephone C. E. Jacob, A.R.I.B.A. (Hampstead 7171 Extension 205) for fuller details of the opportunities.

The Council is prepared to consider advances for house purchase up to 100 per cent. of valuation in suitable cases.

The Group Leader will be appointed within A.P.T. Grade V (maximum £1,525) and the Assistants within A.P.T. Grade IV (maximum £1,355) (including London weighting).

Applications including the names of two referees to the Town Clerk (A.J.), Town Hall, Hampstead, N.W.3, by 10th March, 1961. 5919

**CITY AND COUNTY OF BRISTOL
EDUCATION COMMITTEE
BRISTOL TECHNICAL COLLEGE
DEPARTMENT OF BUILDING**

The Governors invite applications for two posts as Grade B ASSISTANTS in the General Building Section.

- (a) Building Construction and Technology.
- (b) Building and Craft Science.

Applicants will be expected to teach principally in O.N.D. and O.N.C. courses, but may be expected to assist in advanced work.

Barnham Technical Scale salary—£700 × £27 10s. and £37 10s. to £1,150, with graduate and training allowances where applicable.

Application forms and particulars from the Registrar, Bristol Technical College, Ashley Down, Bristol, 7. Please quote Ref: BTC 61/2. 6141

BOROUGH OF OLDBURY
Applications are invited for the following appointment on the staff of the Borough Surveyor's Department.

**ARCHITECTURAL ASSISTANT,
Salary Grade A.P.T.III (£960—£1,140).**

Candidates should be well trained and experienced in the design and preparation of schemes and supervising contracts in connection with general housing including multi-storey flats, public buildings, school buildings, and minor improvements and maintenance works.

The appointment will be superannuable subject to the National Conditions of Service and to the selected candidate passing a medical examination.

Applications giving particulars of age, qualifications, experience, and the names of two referees, should be delivered to the undersigned not later than the 10th March, 1961.

KENNETH PEARCE,
Town Clerk.

Municipal Buildings,
Oldbury. 6038

TECHNICAL ASSISTANT (ESTATE) required in Surveying Department of London office. Applicants must be members of a recognised professional institute and have experience of management of a large number of scattered properties of all types, but mainly industrial. Sound knowledge of property law, leases, dilapidations, valuations for purchase and rent, rating and office administration is required, with ability to initiate action in such matters and to handle them with limited supervision. Salary range £1,225—£1,340. Applications giving age, experience and qualifications to Divisional Manager (SV.109), British Road Services Limited, 238 City Road, London, E.C.1. 5907

**SALOP COUNTY ARCHITECT'S DEPARTMENT
SENIOR ARCHITECT** required. Salary up to maximum of A.P.T. IV (£1,310 p.a.). N.F.C. Conditions. Five-day week. A disturbance allowance or weekly separation allowance will be paid to a married man taking up an appointment. Conditions of service and application forms obtainable from Ralph Crowe, A.A.Dipl., A.R.I.B.A., A.M.T.P.I., County Architect, Column House, London Road, Shrewsbury. Closing date 11th March, 1961. 5995

**CITY OF ST. ALBANS
CITY ENGINEER AND SURVEYOR'S
DEPARTMENT**

**APPOINTMENT OF TOWN PLANNING
ASSISTANT, GRADE A.P.T. V (£1,310—£1,480)**

Applications are invited for the above permanent superannuated post. Candidates must be corporate members of the Town Planning Institute. Considerable experience of development control is essential—experience in preparing Town Maps will be an advantage. Housing accommodation available. Applications, with the names of two referees should be submitted to me by not later than 10th March, 1961.

B. V. ENTWISTLE,
Town Clerk.

38, St. Peter's Street,
St. Albans. 5973

**CITY OF NOTTINGHAM
APPOINTMENT OF CITY ARCHITECT**

The Corporation invites applications from suitably qualified persons for the post of City Architect. The person appointed will be responsible for the Corporation's Architectural and Building work.

The salary for this post will be £3,760 rising by three annual increments of £125 to £4,135 per annum, and the person appointed will be required to contribute to the Corporation's Superannuation Scheme and to pass a medical examination.

Applications accompanied by the names of three persons to whom reference can be made must be delivered to me not later than the last post on Wednesday, the 29th March, 1961, in an envelope endorsed "City Architect."

T. J. OWEN,
Town Clerk.

The Guildhall,
Nottingham. 5979

**NOTTINGHAMSHIRE COUNTY COUNCIL
APPOINTMENT OF ASSISTANT ARCHITECTS
AND ARCHITECTURAL ASSISTANTS**

A.P.T. GRADES III/IV and IV/V
Applications are invited from:—

- (a) Architects
- (b) Students who have passed the Final examination of the R.I.B.A. or the Diploma Examination of a recognised school

to work on the County Council's Major Building Programmes. Consideration will be given to Students who expect to complete their Courses in July next.

The Programmes are handled by four groups of approximately eight Architects per group, under a Group Leader. All the Architects in the group carry out in turn the design, organisation and supervision of projects as Job Architects through all stages of the job from sketch plan to completion. As part of carrying out the County Council's building programme, the office has a policy of continuous development in planning and construction, in which all Architects take part from time to time.

The salary of the A.P.T. III/IV scale ranges from £960 to £1,310 p.a. and that of A.P.T. IV/V scale from £1,140 to £1,480 p.a. The commencing salary to be offered in each case will be in accordance with ability and experience. Starting dates by agreement.

Forms of application may be obtained from the County Architect, County Hall, West Bridgford, Nottingham, to whom they should be returned as soon as possible.

A. R. DAVIS,
Clerk of the County Council. 5929

**ASSISTANT REGIONAL ARCHITECT
SALARY £1,775 to £2,075 p.a.**

The design of Hospitals is now a complex problem embracing many of the principles of Town Planning and, apart from research, calls for clear thinking, a sense of aesthetic environment and logical planning.

An Assistant Regional Architect is required in Oxford to produce development plans for several of the major hospital groups in the Board's area. Previous hospital experience is not necessary. Further particulars may be obtained from W. J. Jobson, E.R.D., F.R.I.B.A., Regional Architect.

Applications to be received not later than 13th March, 1961, by the Secretary, Oxford Regional Hospital Board, 43, Banbury Road, Oxford. 5972

**LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT**

ARCHITECT PLANNERS required for new Group dealing with redevelopment projects in Central London. Great opportunity for able, creative and enthusiastic architect/planners to work on schemes for such areas as Soho, Covent Garden and areas associated with Piccadilly Circus.

Salaries up to £1,500 subject to experience and quality.

Application form and particulars obtainable from Hubert Bennett, F.R.I.B.A. (EK/A/424/2), Architect to the Council, the County Hall, S.E.1. 5906

recommended for students: two books by SIR HOWARD ROBERTSON A.R.A., PP.R.I.B.A., S.A.D.G.

**The Principles
of
Architectural
Composition**

Size 8½ × 5½ ins.
180 pages, over
160 line drawings
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This book fills a very real gap in the literature on the theory of architectural design and has been adopted as a standard textbook in many of the leading architectural schools. Architectural composition is an extremely difficult subject to write about; but in his text and in his numerous drawings Sir Howard (who used to lecture on design when he was the Principal of the Architectural Association School of Architecture) has succeeded in explaining his points with the utmost clarity.

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This new edition of the companion volume to *Principles of Architectural Composition* has been very largely re-written, entirely reset and newly illustrated. It is a penetrating and constructive analysis of the design problems now confronting architects and students. The author combines theory and practical experience in a lively and stimulating discussion of contemporary problems of planning, structure, materials, lighting and decoration and shows successful architectural design, good building, to be the outcome of logical method supported by certain acknowledged principles.

The Architectural Press 9-13 Queen Anne's Gate Westminster S.W.1.

CITY OF WORCESTER
APPOINTMENT OF ARCHITECTURAL STAFF
 Applications are invited to fill new appointments in the Architectural Section of the City Engineer & Surveyor's Department.

SENIOR ASSISTANT ARCHITECT—A.P.T.
 Grade IV (Salary £1,140—£1,310).
 Applicants must hold the A.R.I.B.A. qualification.

TWO ARCHITECTURAL ASSISTANTS—A.P.T.
 Grade I (Salary £645—£815).
 The appointments are supernannable and subject to medical examination.

Housing accommodation will be offered, if necessary, and the Corporation are prepared to make a contribution towards removal expenses.
 Casual Users' Car Allowances will be applicable.
 Applications stating age, present and previous appointments and experience, together with the names of two referees, are to be sent to the City Engineer & Surveyor, 22, Bridge Street, Worcester, by 6th March, 1961.

BETRAM WEBSTER,
 Town Clerk.

Guildhall, Worcester. 5963

FAREHAM URBAN DISTRICT COUNCIL
 The Council invite applications from qualified Architects for the post of CHIEF ARCHITECTURAL ASSISTANT.

Salary A.P.T. IV (£1,140 × £55—£1,310). Essential Car User. Superannuation. Medical examination. National Conditions of Service. Housing accommodation considered.
 Apply for further details from the Engineer and Surveyor, Westbury Manor, Fareham, Hants.
 Applications, including names and addresses of three referees, returnable to me by 11th March, 1961.

B. W. RANDS,
 Clerk to the Council.

"Merton", 5, Grove Road, Fareham, Hants. 5934

Architectural Appointments Vacant

3s. per line; minimum 12s. Box Number, including forwarding replies, 2s. extra.

BLACKPOOL Pleasure Beach: **ARCHITECTURAL ASSISTANT** required to work at Blackpool under general direction of Howard V. Lobb & Partners, London. Minimum two years' office experience. Salary about £800 depending on experience. Interesting design and practical experience, with long-term appointment. 5199

ASSISTANT required, at least Intermediate standard, to start early summer. L. H. Bond & R. W. Read, 44, Castlegate, Grantham, Lincs. 5130

RONALD WARD AND PARTNERS invite applications from **ARCHITECTS, Senior and Junior.** Long-term prospects. Scope for initiative and responsibility in interesting commercial, industrial and civic projects in British Isles, West Africa and Australia. Salaries commensurate with ability. Non-contributory Pension and Life Insurance schemes. Five-day week. Pleasant offices. Apply 29, Chesham Place, Belgrave Square, London, S.W.1. Tel.: BELGRAVIA 3561. 2960

ROBERT MATTHEW & JOHNSON-MARSHALL have vacancies in their London office for Architects at all levels of experience for a variety of interesting jobs. Apply to Robert Matthew & Johnson-Marshall, 24, Park Square East, N.W.1. 5491

ARCHITECT'S JUNIOR ASSISTANT required. A good draughtsman detailer, Intermediate standard. Please write, stating age, experience and salary, to: R. Jelinek-Karl, P.R.I.B.A., 6, Buckingham Street, W.C.2. 5714

£950-£1,500. **ARCHITECTURAL ASSISTANTS** with imagination and designing ability required to assist with large and important new developments in the central London Area. Telephone or write: Trehearne & Norman, Preston & Partners, 83, Kingsway, W.C.2. HOLBORN 4071. 4934

EXPERIENCED and confident **ARCHITECTS** required to fill positions of responsibility in a growing and varied practice with industrial and commercial work throughout the southern half of the country. Applicants must have initiative as well as architectural ability to carry through contracts up to £100,000, working directly with Principals but with minimum supervision. Apply in writing to Thomas Mitchell & Partners, 20, Bedford Square, London, W.C.1. 5413

TWO SENIOR ASSISTANTS required. Salary in accordance with experience. Please apply to F. G. Frizell, A.R.I.B.A., 80, Portland Place, W.1. LANGHAM 1732. 4943

ASSISTANT required for small Office with interesting and varied work. Salary £1,000/£1,200.
 Green, Lloyd & Son, 5, Pickering Place, St. James's Street, S.W.1. Telephone Whitehall 8926. 5706

£850-£1,600. **ARCHITECTURAL ASSISTANTS** required. Long term prospects. Non-contributory pension and life assurance schemes. Five-day week. Telephone or write: Ronald Ward & Partners, 29, Chesham Place, Belgrave Square, S.W.1. BELGRAVIA 3561. 6106

WOLVERHAMPTON. Norman & Dawbarn require an **ASSISTANT** in their Midlands Office. This position could afford useful experience of small and medium size jobs in a young but expanding office, with possibility of later transfer to London Office or overseas if desired. Minimum of two years' office experience required if qualified, four years if Intermediate. Excellent working conditions, five-day week, three weeks' annual leave, lunch vouchers. Write or telephone 7, Portland Place, London, W.1 (LANGHAM 8011), or Heanton House, Salop Street, Wolverhampton (Wolverhampton 27387). 5628

PLAYNE & LACEY require experienced and enthusiastic **SENIOR ARCHITECTURAL ASSISTANT** for work on University project. Salary range £1,200 to £1,500. Write 19, Queen Anne's Gate, Westminster, S.W.1, or ring WHI 2552 for interview. 5617

ARCHITECTURAL ASSISTANTS required with practical experience. Varied practice including contemporary work. Salary £700—£1,100 (plus L.V.s), according to qualifications and experience. Please write, giving full particulars, to Sir Giles Scott, Son & Partner, 9, Gray's Inn Square, W.C.1. 5601

LIVERPOOL
 £900—£1,200

Starting range. Reviewed annually or more frequently if willingness and ability shown. Five-day week. Interview and removal expenses paid and assistance in solving any accommodation problem. Write full particulars to G. de C. Fraser, Son and Gearty, 27, Dale Street, Liverpool, 2. 5660

INTERMEDIATE and **FINAL ASSISTANTS** required immediately, salary range £800 to £1,200. Experienced in planning of Flats and Commercial properties essential. Box 5713.

ARCHITECTURAL ASSISTANTS required in busy Bloomsbury office with varied practice. Good salary and prospects for suitable applicants. Five-day week. Write giving particulars of age, qualifications, experience, etc., to Box 918, c/o 7, Coptic Street, W.C.1. 5647

ARCHITECTURAL ASSISTANT required for small busy practice in W.C.1 area. Good all round experience required. Surveys, sketch plans, working drawings, details, etc. Salary £700 to £800. Tel. CHA 7611. 5655

OPPORTUNITY for Intermediate or newly-qualified **ASSISTANT** with initiative and all-round ability, to join youthful expanding practice in Croydon. Apply to Donald Rowswell & Partners, 11/11a, George Street, Croydon, or telephone CROYDON 4080. 5723

NORTH LONDON—ASSISTANTS required about R.I.B.A. Intermediate standard. Wide variety of interesting work. Five-day week. Facilities for part-time day study. Apply C. E. Owen Ward, L.R.I.B.A., Midland Bank Chambers, Palmers Green, London, N.13. PAL. 1186/7. 5788

ARCHITECTS with extensive general practice (Churches, Hospitals, Schools, Flats, Commercial and Industrial) require experienced **ASSISTANTS**, post-inter level or recently qualified. Ivor Day & O'Brien, 9, Clare Street, Bristol, 1. 5772

S. T. WALKER AND PARTNERS, 9 Frederick Road, Edgbaston, Birmingham 15. Telephone No. Edgbaston 5066-7-8. There are vacancies in this office for **JUNIOR** and **INTERMEDIATE ASSISTANTS**. Those interested should write to, or telephone, Graham Winteringham, Dipl. Arch., A.R.I.B.A. 5775

INTERMEDIATE standard **ASSISTANTS** required to work with qualified seniors on a number of interesting jobs in and out of London. Good draughtsmanship, sensitive detailing and some experience are sought and will be paid for. Write stating age and experience to David Stern and Partners, 24 Gloucester Place, London, W.1. 5885

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EXPERIENCED ARCHITECTURAL ASSISTANT required for old established practice. Please apply with full particulars and salary required. Jackson & Jackson, Chartered Architects, 33 North Street, Ashford, Kent. 5873

QUALIFIED ASSISTANT required at once. Salary according to ability and experience. Leonard Gavins-Taylor, A.R.I.B.A., Central House, Finsbury Square, E.C.2. MONARCH 1742. 5790

SENIOR ASSISTANT required for City office. Attractive salary according to ability. Apply Box 5791.

£1,000-£1,500. Experienced **ASSISTANT** urgently required. Qualified or Final standard. Particulars to Box 5792.

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PROGRESSIVE opportunities for **ARCHITECT'S ASSISTANTS** are offered by Westminster Bank. Commencing salary £850 to £1,500 with good prospects. Modern London drawing office, favourable house mortgage rates, luncheon club, sports club and other social activities, pensions scheme, fare for interview refunded. Write, stating age, experience and salary required to: The Architect, Westminster Bank Limited, Post Office Court, 10, Lombard Street, E.C.3. 5708

OPPORTUNITY FOR FRUSTRATED INTERMEDIATE ASSISTANT WITH INITIATIVE AND IMAGINATION, UNABLE TO FIND POST OFFERING FREEDOM IN DESIGN OR CHANCE TO TAKE CHARGE IN PROJECTS. WRITE OR PHONE: NICHOLSON AND RUSHTON, 2, NEW SQUARE, LINCOLN'S INN, W.C.2. HOLBORN 2095. 5619

OLD ESTABLISHED London Architects require **ASSISTANTS** capable of carrying out substantial commercial or school projects with some supervision. Telephone Mr. Shail, Mayfair 2549, for appointment, or write Box 5615.

JUNIOR ARCHITECTURAL ASSISTANTS required. Salary range £750—£1,250 p.a. depending upon experience. Write with fullest details of experience. Box 5602.

WE are about to commence planning unusually interesting projects in which a qualified **FIRST ASSISTANT** and a **SECOND ASSISTANT** are invited to join us in our new spacious offices. We are close to central transport facilities and within easy reach of London.

Appointments to be made so that planning can begin soon after Easter.
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ARCHITECTS

IND COOPE LIMITED, National Brewers, require **SENIOR ASSISTANT ARCHITECTS** at the Company's Head Office at Burton-on-Trent, within the salary range: £1,150—£1,500.

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WILLIAM HOLFORD & PARTNERS require a **SENIOR ASSISTANT ARCHITECT** in their 14, Harley Street office. Salary according to experience, bonus, non-contributory pension scheme and L/Vs. Telephone: MUS 0583. 6156

PETER BAREFOOT requires **ASSISTANTS** of Intermediate/Final standard, initially for work on projects for Haverhill, and Urban housing schemes. Apply 22, Thoro'fare, Ipswich. 6160

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ARCHITECTURAL ASSISTANTS required. A recently qualified, Intermediate or equivalent standard. Excellent salaries offered, Pension and Life Assurance Schemes in operation. Five-day week. Please write giving full particulars of experience to Sandon & Harding, A.A.R.I.B.A., 14, Lower Brook Street, Ipswich. 6104

SENIOR ASSISTANTS required for work on a large Hospital programme, excellent opportunities for the right men, salary £1,000—£1,400. Luncheon Vouchers and five-day week. Write giving full particulars to W. H. Watkins, Gray and Partners, 57, Catherine Place, S.W.1. 5633

ARCHITECTURAL ASSISTANT, female, required for central office with varied practice. Five-day week. Salary £850. Write Box 6111.

ASSISTANT ARCHITECT required (male) for busy West End office. Salary £1,000. Write Box 6112.

URGENT. Staff Architect in West End willing to pay up to £1,200 p.a. for newly qualified **ARCHITECT** to run medium sized Contracts. Some practical knowledge essential. Five-day week. Holidays to be arranged. Please reply to Box 6113.

STAFF ARCHITECT in West End willing to pay up to £1,500 p.a. for **ASSISTANT** approaching Finals standard but with practical working knowledge to help in running medium sized Contracts. Five-day week. Holidays to be arranged. Please reply to Box 6114.

SOUTHAMPTON.—ASSISTANT of Intermediate standard required for interesting contracts in the Southern Counties. Apply with details of any previous office experience and required salary to E. M. Galloway & Partners, F.A.R.I.B.A., 10, Portland Street, Southampton. 4865

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E. R. COLLISTER & ASSOCIATES require in their Chelmsford office ARCHITECTURAL ASSISTANTS of Intermediate to Final standard. London rates of pay. Applications should be addressed to St. Mary's Lodge, Cottage Place, Chelmsford. 5793

ASSISTANTS of Intermediate standard required in busy provincial office. Contemporary outlook welcomed. Opportunity given to handle contracts from inception to completion. Facilities given for study at London Schools one day per week, if required—fare and fees paid. Salary £750—£900 according to ability. Hare & Pert, A.A.R.I.B.A., 29, Elm Street, Ipswich. 5794

ARCHITECTURAL ASSISTANTS. Intermediate to Final standard, required by firm of south-west of England Architects. Salary range £600—£850. Apply giving full particulars of age and experience to Box 5901.

FIRST CLASS ASSISTANTS, any age, qualified or unqualified, required for Architects' various offices in Caribbean; work mainly resort houses and hotels. Two-year contract, passages, leave, etc. Salary as agreed. Reply: J. C. Walker, Robertson Ward Associates, Sandy Lane, St. James, Barbados, W. Indies. 5900

BIRMINGHAM

LEONARD J. MULTON & PARTNERS require QUALIFIED ARCHITECTS and ASSISTANTS. Five-day week—Private Pension Scheme. Salary up to £1,500 per annum, according to qualifications and experience. Work includes Multi-Storey Flats, Hospital Work and Centre City Development. If you require a progressive position please write to 6, Greenfield Crescent, Edgbaston, or telephone EDGhaston 4188. 5912

£1,000 TO £1,500. Qualified ASSISTANTS required for design and supervision of varied contracts in small London Office. Design ability and good draughtsmanship essential. Elsworth Sykes and Partners, 5, Maddox Street, W.1. (HYDe Park 3128/9.) 5917

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ENTHUSIASTIC ARCHITECTURAL ASSISTANTS required for interesting development on offices, laboratories and process rooms. Ability to work on own initiative and have enquiring mind an advantage. Write stating full details. Salary range £700—£1,000. Reply: P. W. Scott, A.R.I.B.A., 50, Eastbourne Terrace, Paddington, London, W.2. 5923

KINGSTON-UPON-THAMES SENIOR and JUNIOR ASSISTANTS required, male or female, for interesting and varied work. Salary range up to £1,150 per annum offered to suitable applicants. Pleasant and congenial office conditions. Five-day week. Applications in writing with essential particulars will be treated in confidence. Donaldson & Co., Architects, 75, London Road, Kingston-upon-Thames. 5925

ARCHITECTURAL ASSISTANT (Intermediate) required in private practice near Chipping Norton, Oxon. Office experience essential, capable of surveys, working drawings, specifications. Car driver an advantage. State experience, status, salary. Accommodation available. Box 5933.

ASSISTANT required in Brewery Architects & Surveyors Dept. for work in connection with industrial and administrative buildings. ARCHITECTURAL ASSISTANT—Salary range £900/£1,150.

Five-day week, pension scheme, luncheon allowance and annual bonus at present in operation. Applicants—age not to exceed 45—to apply in writing, stating past and present appointments and experience, to S. Hutchings, A.R.I.B.A., Brewery Architect & Surveyor, Watney Combe Reid & Co. Ltd., The Brewery, Mortlake, S.W.14. 5926

**W. S. HATTRELL & PARTNERS
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urgently require ASSISTANTS: SENIORS commencing £1,000—£1,250 JUNIORS commencing £750—£850 to take part in a varied programme of work including Schools, Office Blocks, Pubs, Flats and Central Redevelopment Schemes. Write of telephone 1, Queen's Road, Coventry. (Coventry 26446.)

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COLWYN BAY.—Lingard & Associates require ARCHITECTS. Commencing salaries around £1,000. School trained with a few years' office experience, completely contemporary work. 90, Conway Road, Colwyn Bay. 6000

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BASIL SPENCE & PARTNERS require qualified and experienced ARCHITECTS to fill positions of responsibility on a major building programme. Write to 1, Fitzroy Square, W.1. stating experience and salary required. 9824

NORTH & PARTNERS, Chartered Architects, Maidenhead, seek Two New ASSISTANTS:—

- (1) Partner's Personal Assistant for general Architectural and administrative duties.
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ASSISTANT ARCHITECTS required for staffing a new office opening in Southampton for work on interesting projects including University, War Department and Ecclesiastical programmes. Juniors also required. Apply stating age, qualifications, experience and salary required to Robert Potter, F.R.I.B.A., and Richard Hare, B.Arch., A.R.I.B.A., De Vaux House, Salisbury. 3167

£1,000/£2,000 p.a. will be paid to experienced competent ARCHITECTS by a private practice in the City of London. The work will be primarily on the drawing board on new and interesting projects of magnitude. A high standard of design and detailing ability is required. Please apply in writing to Box 9360.

HOWARD V. LOBB & PARTNERS require ASSISTANT ARCHITECTS. Salaries would be between £750 and £1,250 per year. Please write to 20, Gower Street, London, W.C.1. 3649

SENIOR ASSISTANTS required immediately. Salary by arrangement. Theo. H. Birks, 38, Portland Place, London, W.1. LAN 7236. 1466

BOOTH, LEDEBOER AND PINCKHEARD require ASSISTANTS in the salary range £750—£1,250. Apply 17-20, Mason's Yard, Duke Street, St. James's, S.W.1. Tel.: TRAFalgar 1866. 3119

INTERMEDIATE to Final ASSISTANTS required immediately. Salary according to ability and experience. Theo. H. Birks, 38, Portland Place, London, W.1. LAN. 7236. 9739

C. H. ELSOM & PARTNERS need experienced ARCHITECTS for a wide range of public and commercial projects. VICTORIA 4304, 10, Lower Grosvenor Place, W.1.

SENIOR ASSISTANT ARCHITECTS required immediately for a wide variety of interesting work. Applicants should be experienced in all aspects of modern building design and construction. Attractive remuneration to right men capable of working on own initiative under ideal conditions for self expression. Preference given to men over 45 years of age although all applications will be considered on merit irrespective of age. Applications should be made in writing to Kenneth F. Masson, Esq., A.R.I.B.A., Chief Architect, S.C.W.S. Ltd., Architectural Division, 76, Morrison Street, Glasgow, G.5. 4152

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INTERMEDIATE to FINAL STANDARD.

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ARCHITECTURAL ASSISTANTS required for interesting work, including schools and hospitals, in Croydon office. Commencing salaries offered: £900—£1,150 for Associates, £500—£850 for students, according to age and experience. Five-day week and annual bonus. Write to George Lowe & Partner, 79, George Street, Croydon. 5197

ASSISTANTS who have recently qualified are required in busy provincial office. Contemporary outlook welcomed. Salary in accordance with experience, plus bonus scheme. Hare & Pert, A.A.R.I.B.A., 29, Elm Street, Ipswich. 5821

ARCHITECTURAL ASSISTANT required for medium size office in pleasant surroundings for varied work, housing, churches, community buildings, etc. Pension Scheme, canteen facilities, car allowance, housing accommodation available. Salary range £850 to £1,000, according to experience. Apply S. J. Clewer, F.R.I.B.A., Bournville Village Trust, Oak Tree Lane, Birmingham 30. 5827

SMALL PROGRESSIVE AND CONTEMPORARY LONDON OFFICE REQUIRES ASSISTANTS. GOOD OPPORTUNITY FOR PEOPLE WISHING TO GAIN EXPERIENCE IN ALL ASPECTS OF A VARIED PRACTICE. Box 5823.

£1,000-£1,200 P.A. ARCHITECTURAL ASSISTANTS required for the Architect's Office of a large industrial organisation specialising in food production. Intermediate standard with minimum of five years' experience in industrial work. Knowledge of London Buildings Acts essential. 5-day week; Pension Scheme; meal facilities. Sports Club. Apply in writing to Box 6024.

MANCHESTER—Required: ASSISTANTS with progressive outlook for work on a wide range of interesting projects, including schools, houses and flats, churches, youth centres, industrial and hospital work. Pension scheme; bonus scheme; salary up to £1,200 per annum according to experience and ability. Apply in writing to: Taylor, Young & Partners, 195, Oxford Road, Manchester, 13. 5966

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VACANCIES exist in large provincial practice with offices in Peterborough and Spalding for the following:

- (1) **ARCHITECTURAL ASSISTANT**, Male or Female, qualified, with few years' office experience. Able to work on own initiative and take responsibility. Salary up to £1,150 to suitable applicant.
- (2) **ARCHITECTURAL ASSISTANT**, Male or Female, qualified, having recently left college, office experience not essential. Salary up to £900.
- (3) **JUNIOR ASSISTANTS**, Intermediate/Final standard with 5/3 years' office experience. Salary up to £800.

The work is of a varied and interesting nature, pension scheme in operation. Assistance will be given with accommodation in appropriate cases. Apply in writing with full details to:—
Ruddle & Wilkinson, F/L/A.R.I.B.A., Long Causeway Chambers, Peterborough. 6029

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WITH some office experience, initiative and ability. Varied work. Apply Romney House, Tuffon Street, S.W.1. Tel.: ABBey 6311. 6027

SENIOR ARCHITECT required for executive position to take charge of architectural department of expanding building company in Bristol area. Work consists mainly of new factories, flats and housing projects. Must be fully qualified and have high standards of design. Good salary and prospects. Box 6033.

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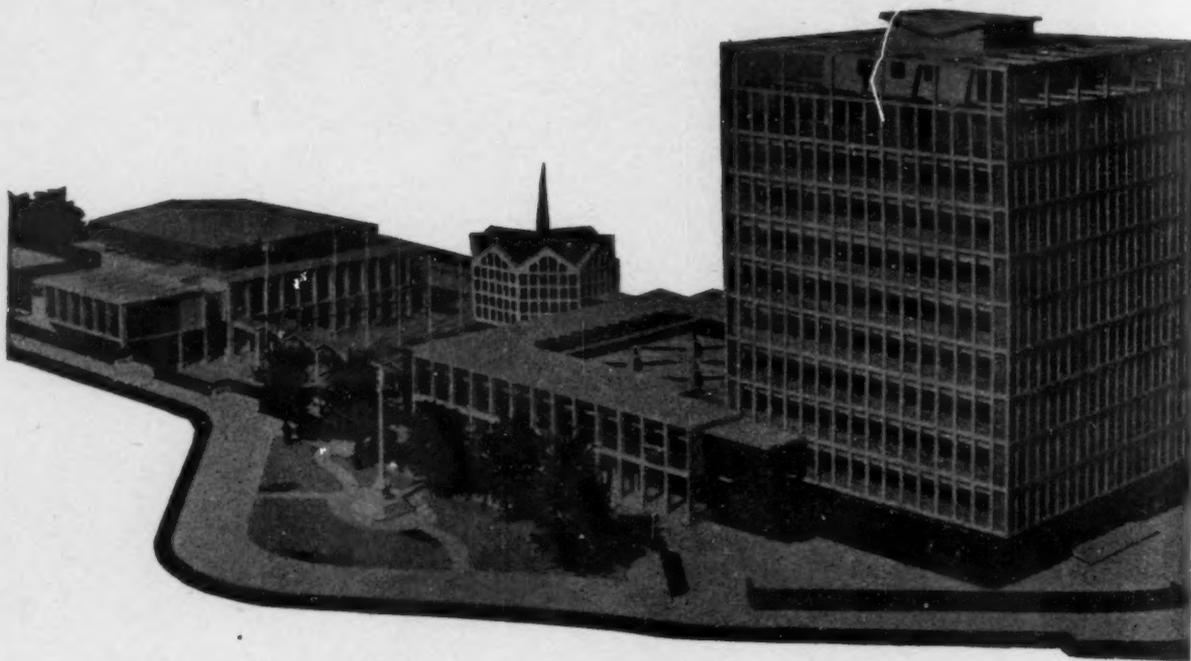
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