

Building Exhibition, December 3, 1959 No 3372, Vol 130 Price 1s

COLT

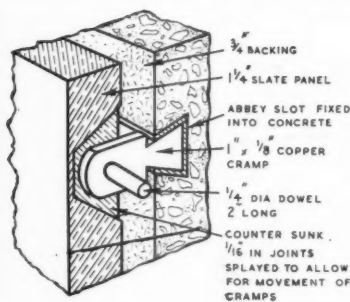
FOR VENTILATION

Broughton Moor Light Sea Green Slate

lends added distinction to SHELL'S
new headquarters at South Bank, London

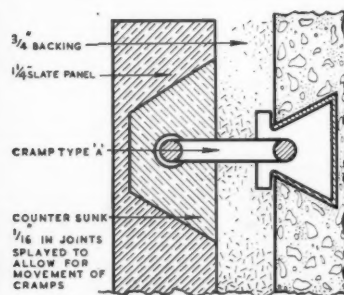


It was to be no ordinary building, and no ordinary facing slate would do. That is why Messrs. Easton and Robertson chose Broughton Moor Light Sea Green Slate (frame sawn and finely rubbed). They know it to be the ideal slate for both internal and external facing. They know too that centuries hence it will be still sound and beautiful. Architects can specify Broughton Moor stone in three shades and a variety of delightful finishes. There is nothing quite like Broughton Moor for facings, pavings, steps, cills, pilasters, fireplaces and indeed, most architectural purposes.



TYPICAL CRAMP

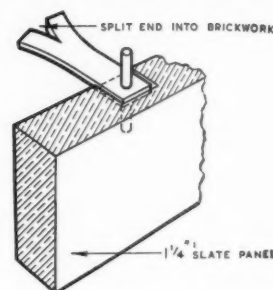
A 1 in. by $\frac{1}{8}$ in. copper cramp is (a) dowelled into a $\frac{1}{8}$ in. splayed counter sunk in a panel of Broughton Moor slate, and (b) set into an Abbey slot in the concrete.



CRAMP TYPE A



Splayed counter sunk and swivel type cramp make ample allowance for movement.



CRAMP TYPE B CRAMP AND PIN

One end of 4 in. long cramp is split for setting into brickwork. The other is drilled to receive 2 in. long pin.

Broughton Moor

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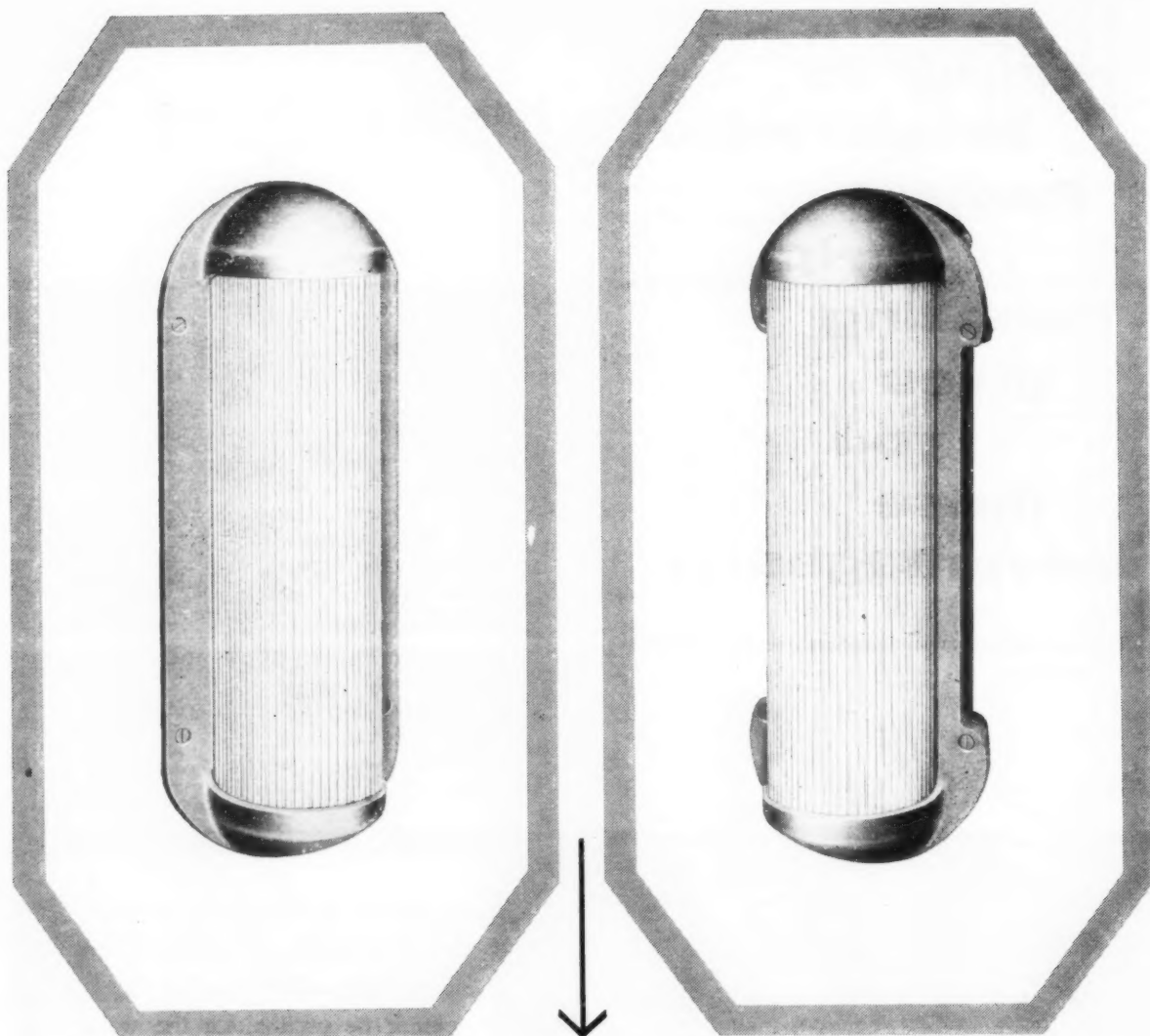
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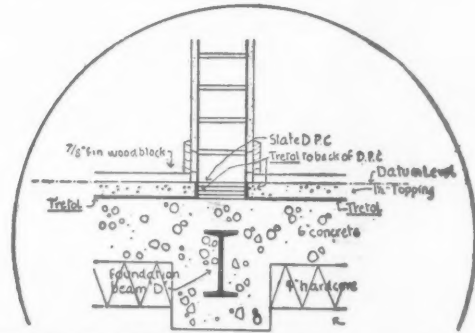
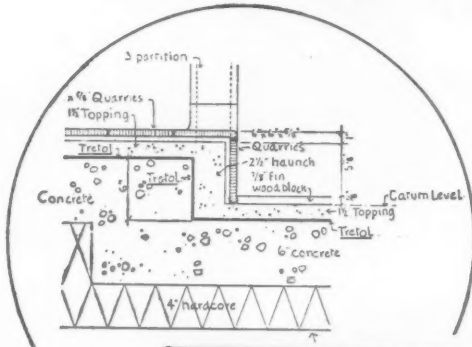


W39158

TRETOL SPECIFICATION SHEET

For your files

BITUMEN MEMBRANES IN SOLID CONCRETE FLOORS



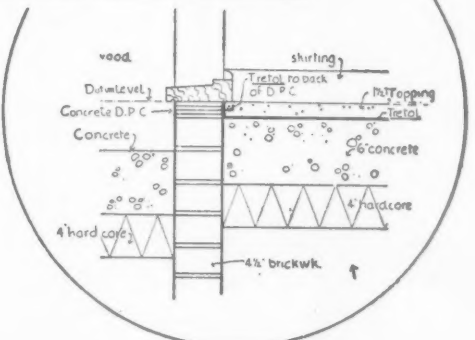
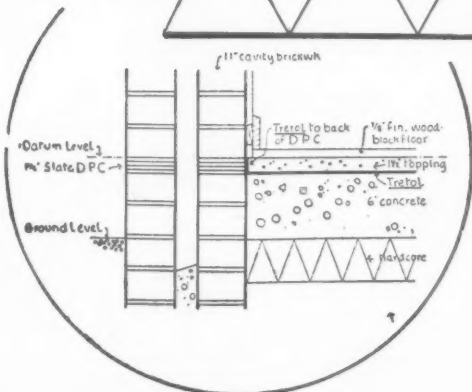
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← LINOLEUM

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4" HARDCORE →



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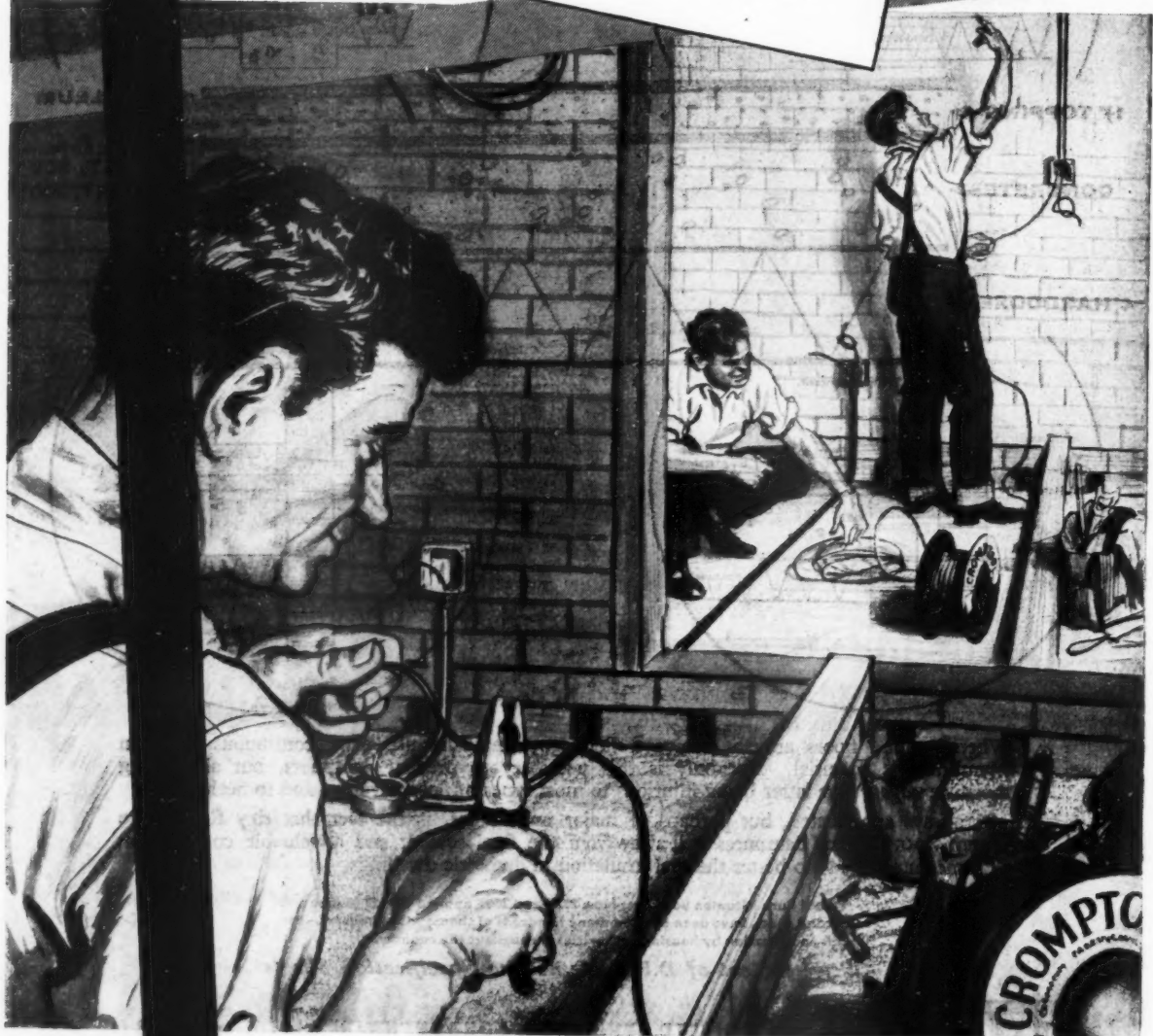
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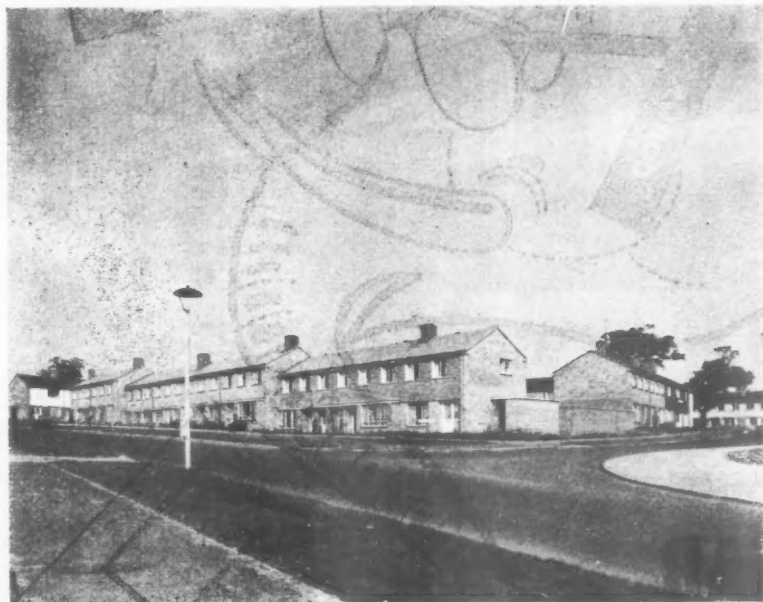


The illustration depicts three electricians in a brick building. In the foreground, a man is shown in profile, focused on his work, using a pair of pliers to strip or cut a wire. In the background, two other men are working on a wall; one is standing and reaching up, while the other is kneeling and working on a lower section. A spool of Crompton cable is visible in the top right corner, and another spool is in the bottom right corner. The overall scene is a detailed black and white illustration of electrical work.



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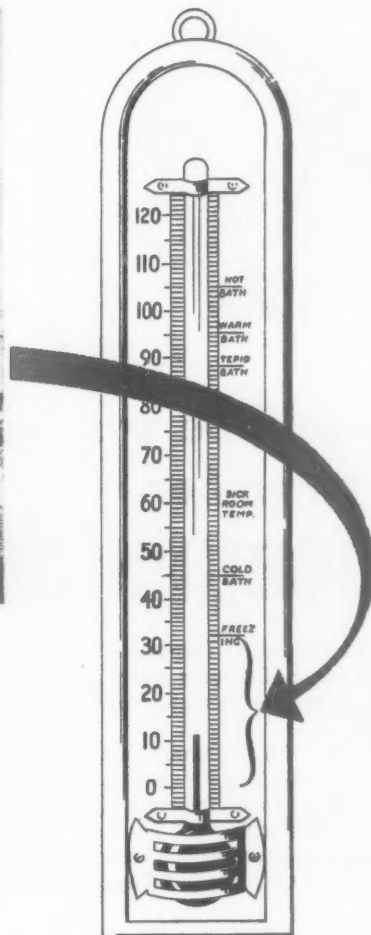
Houses at Bishops Rise, Hatfield Development Corporation, Hatfield, Herts.

Architects: W.K. Crabtree, F.R.I.B.A.

8 Robert Adam Street, Portman Square, London, W.1

Contractors: Rodger Malcolm Ltd., Wembley.

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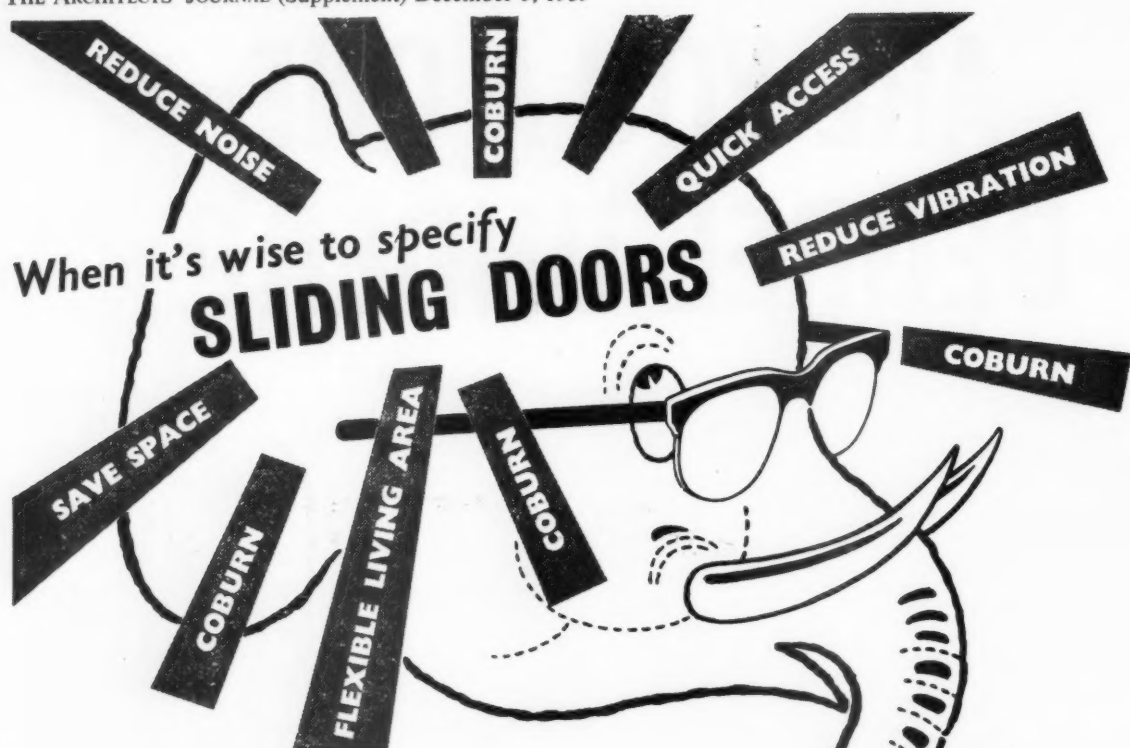
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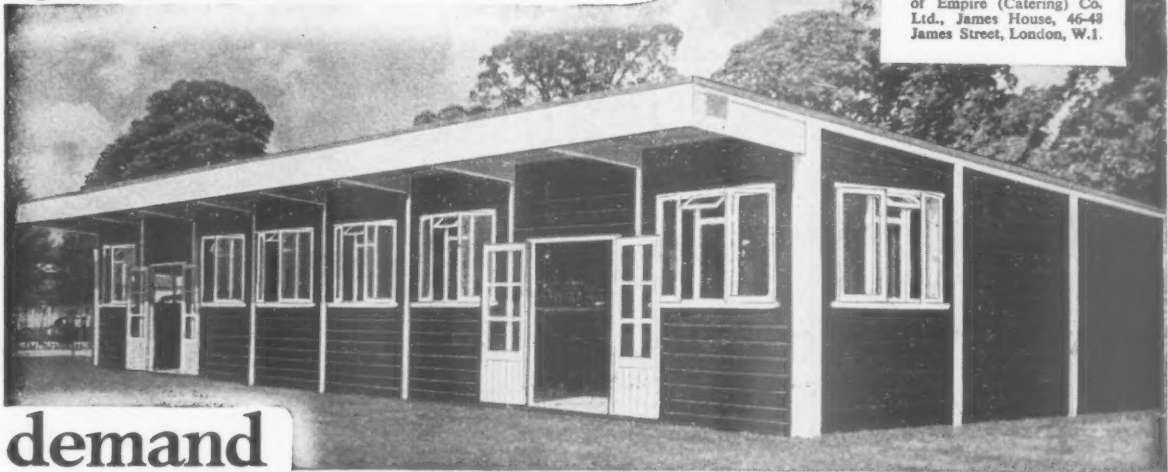
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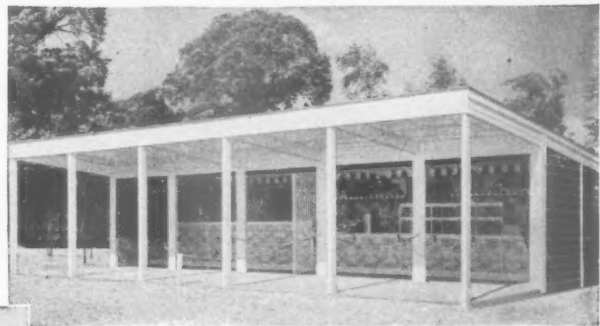
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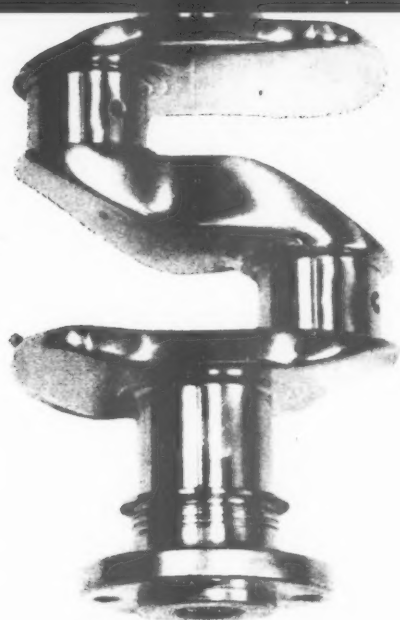
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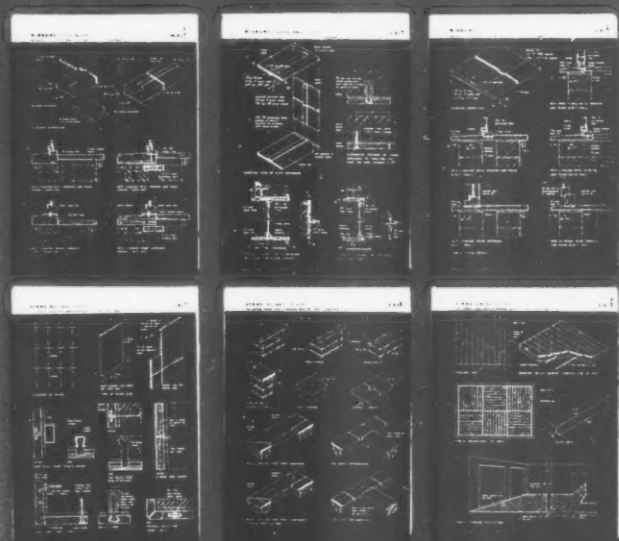


The modern architect demands a crispness of finish which reflects the precision of mechanical forms. Architecture itself is becoming increasingly 'machine made', yet natural materials are still indispensable and designers appreciate their capacity to withstand wear and weather gracefully.



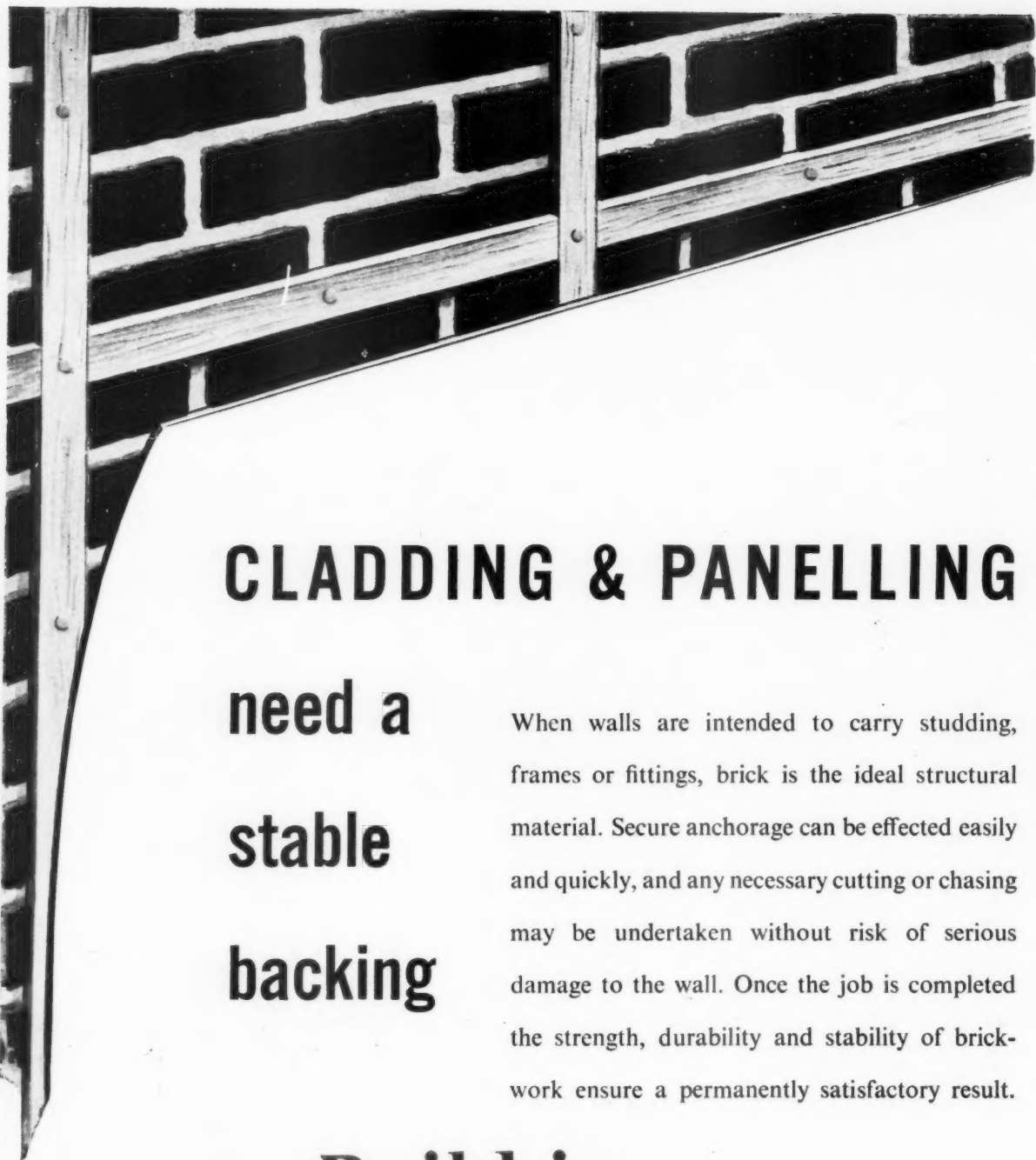
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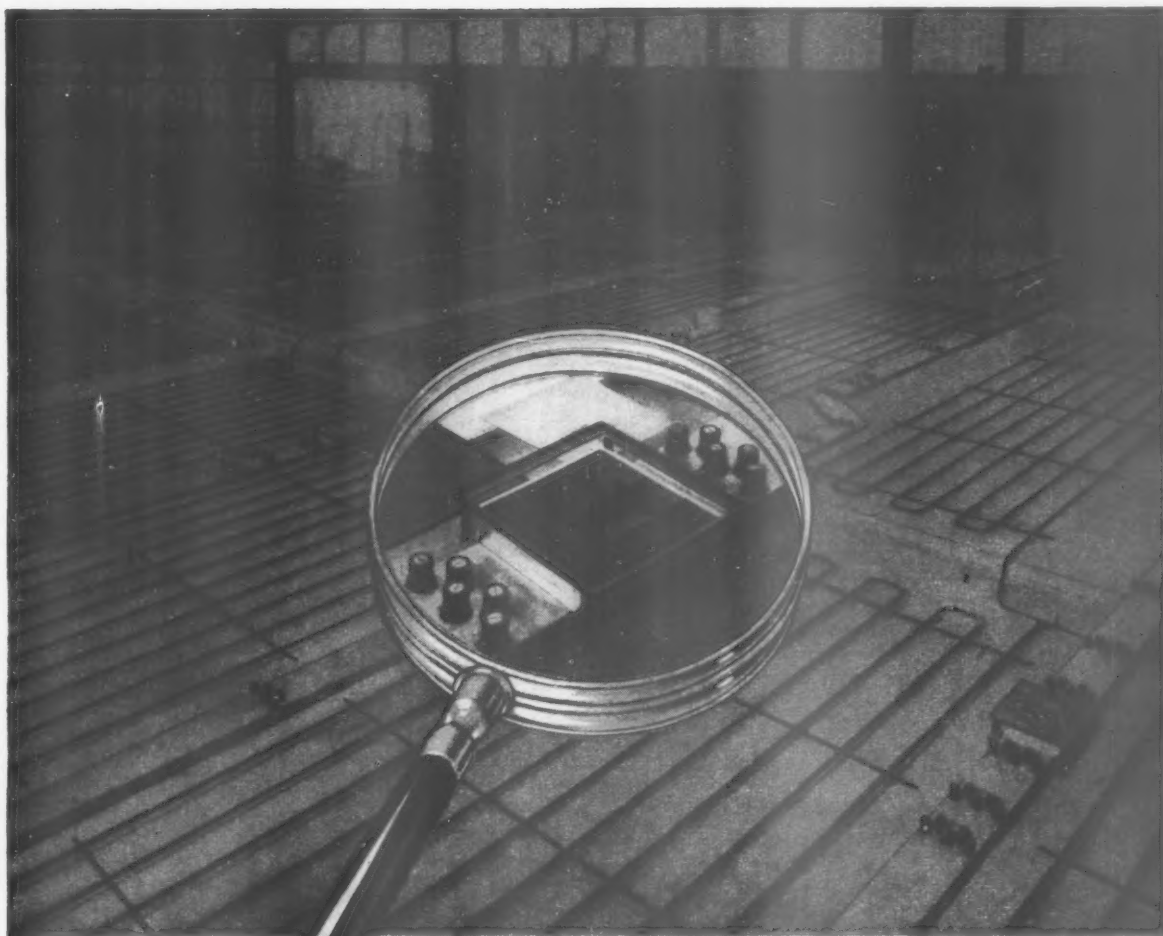
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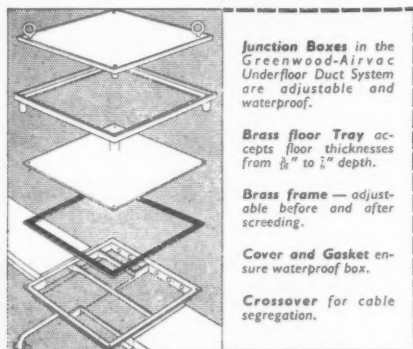
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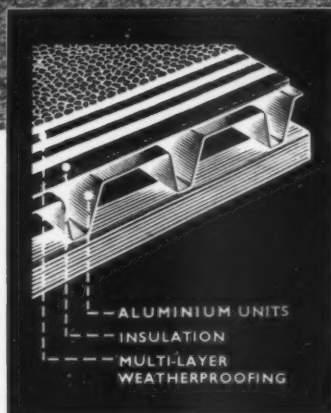
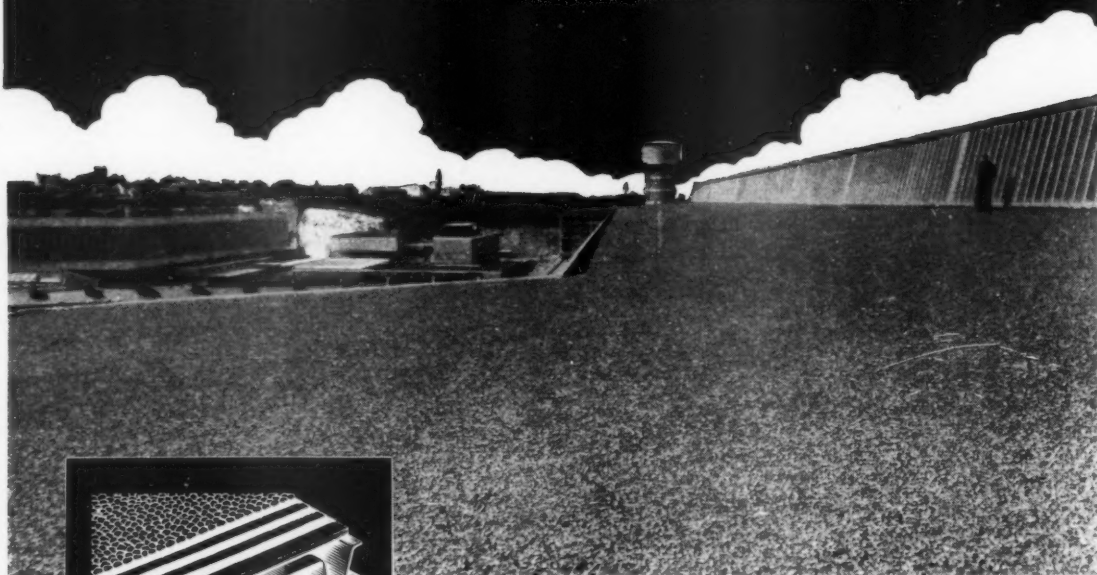
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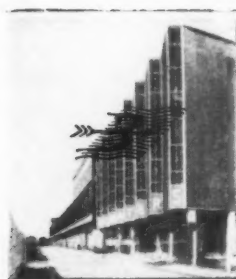
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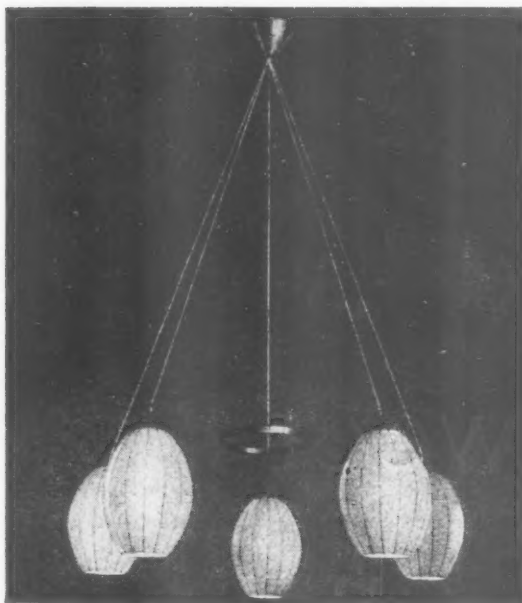
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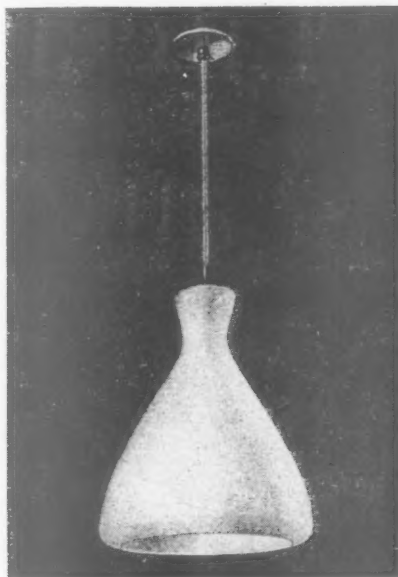
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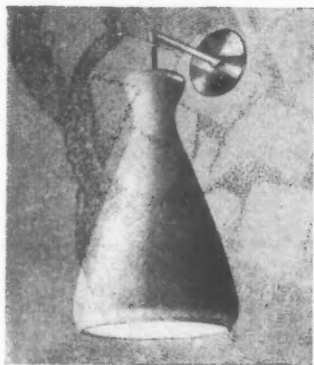


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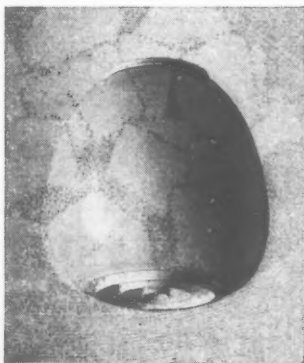
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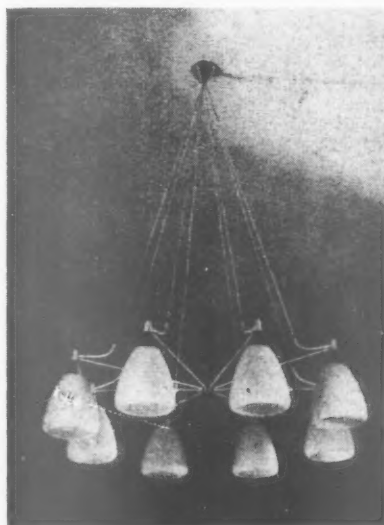
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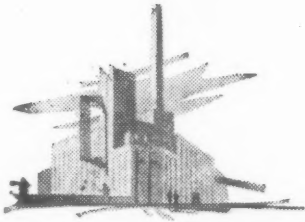
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AP 111

Tate and Lyle are sweet on Coal





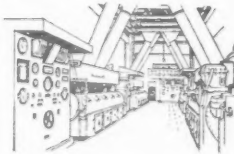
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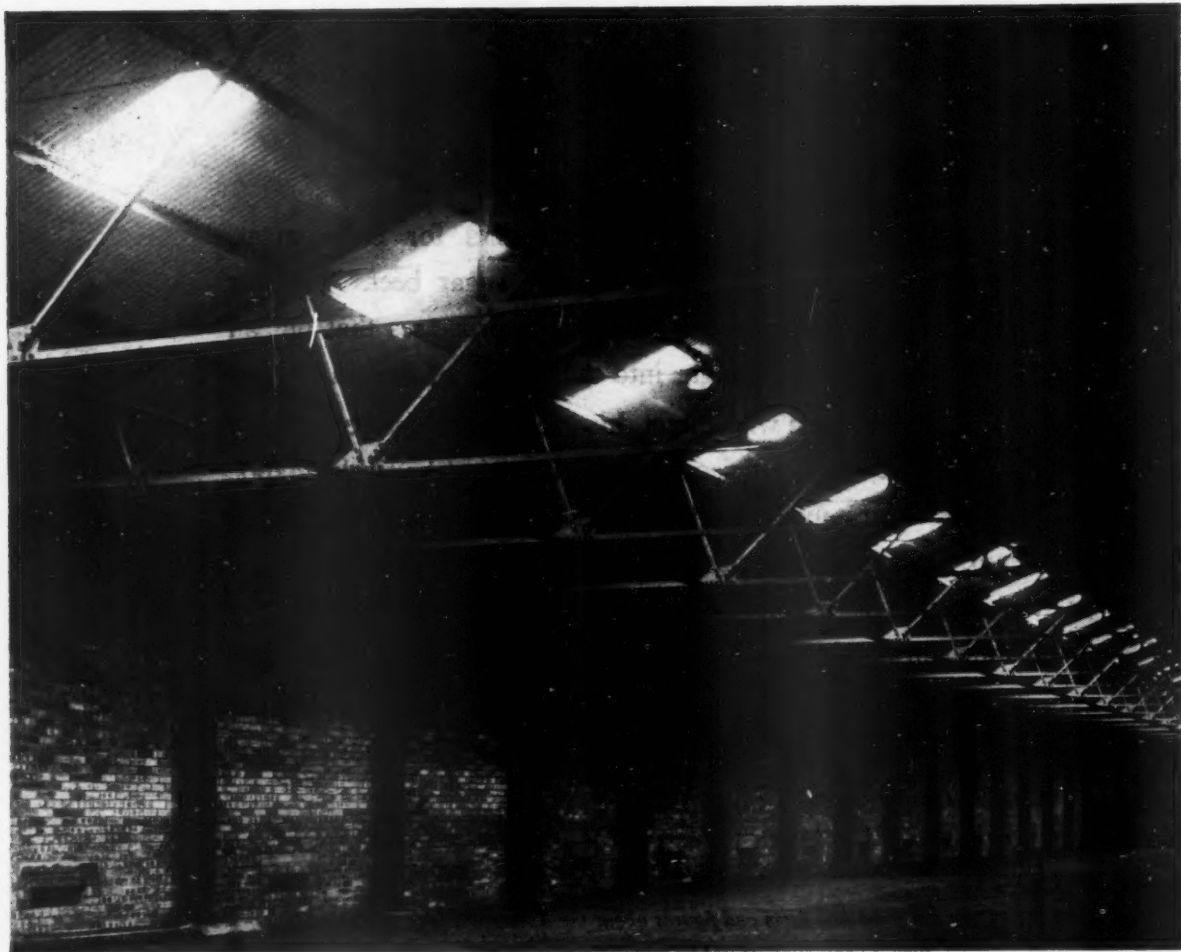
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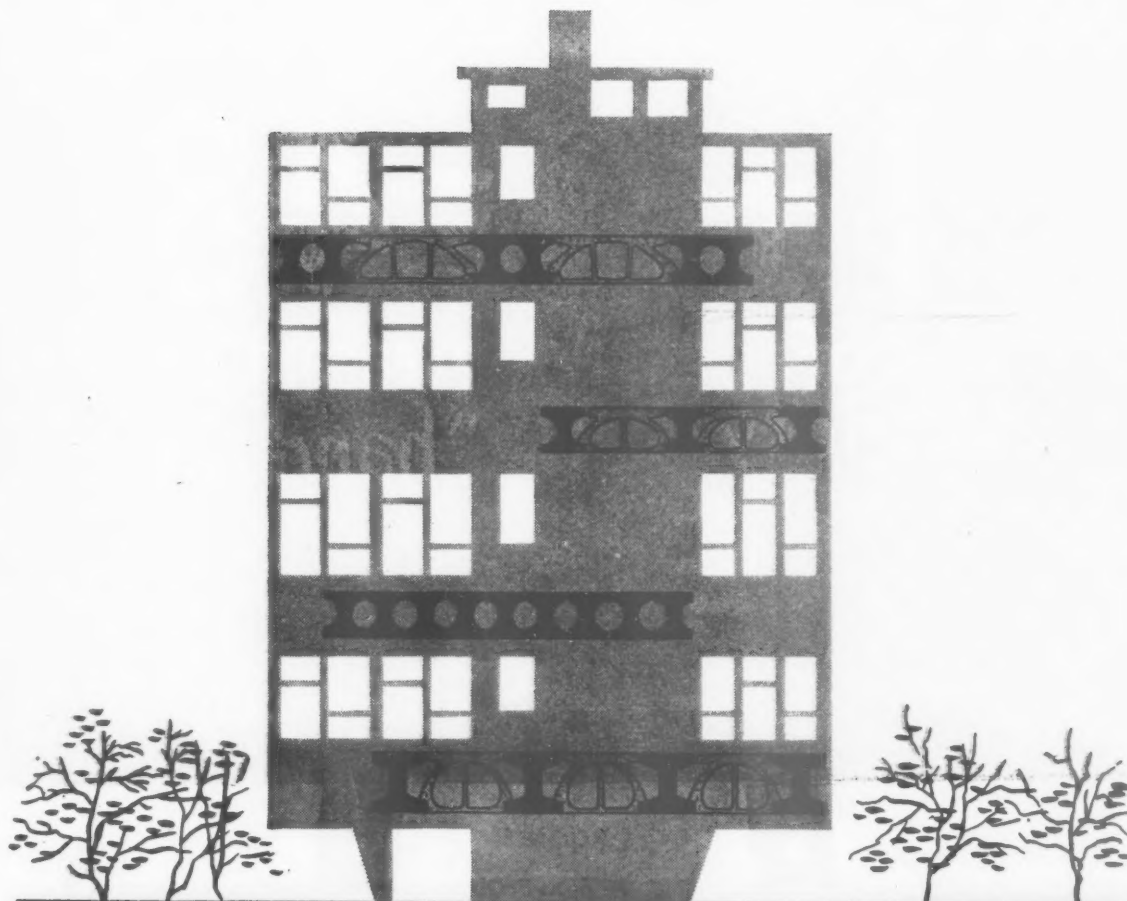
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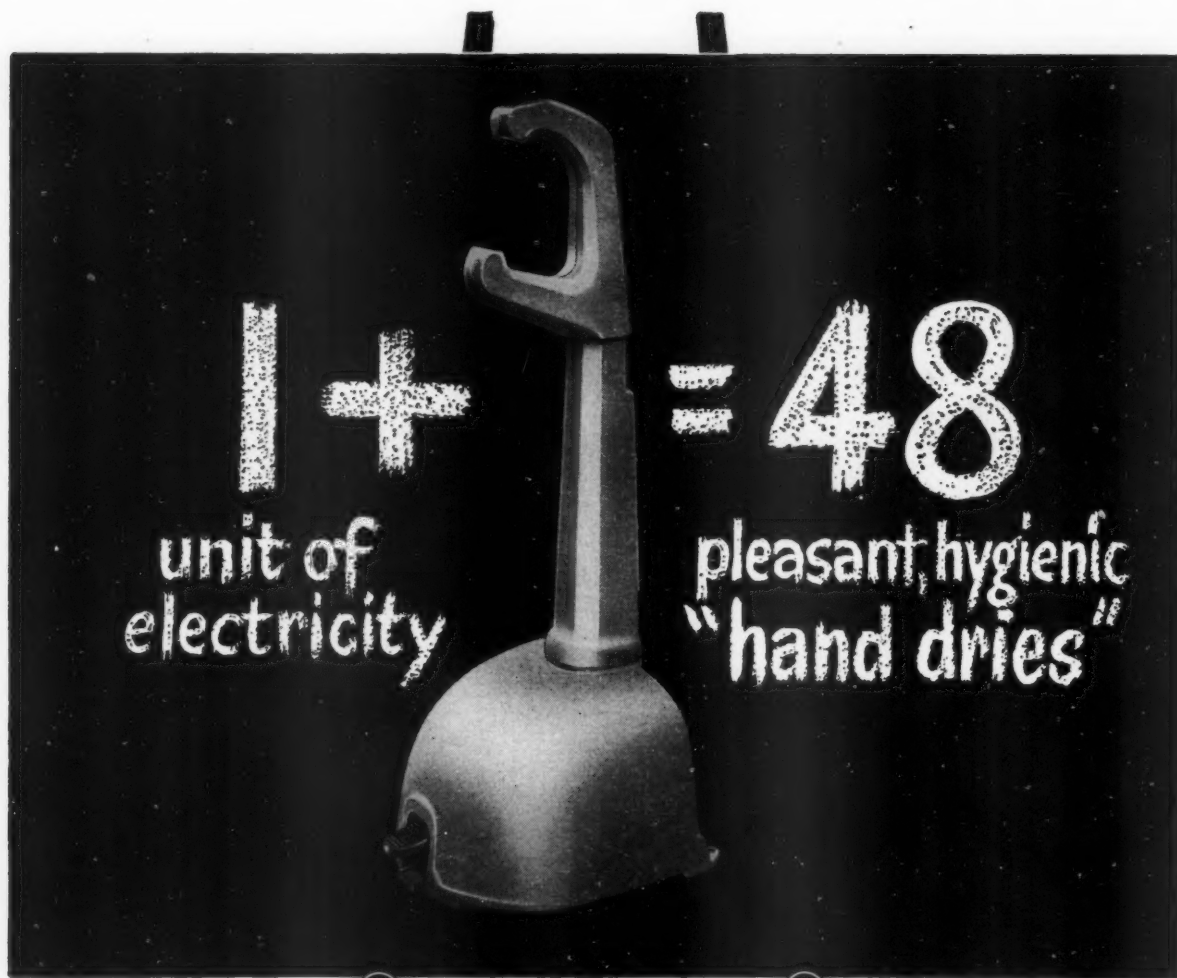
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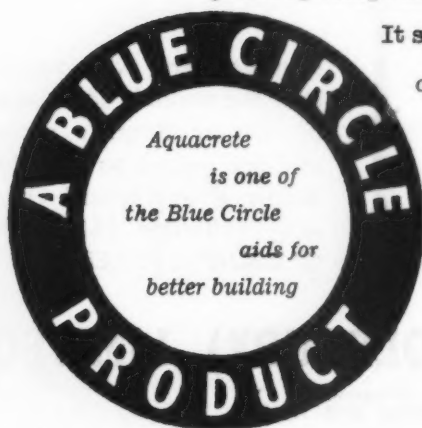
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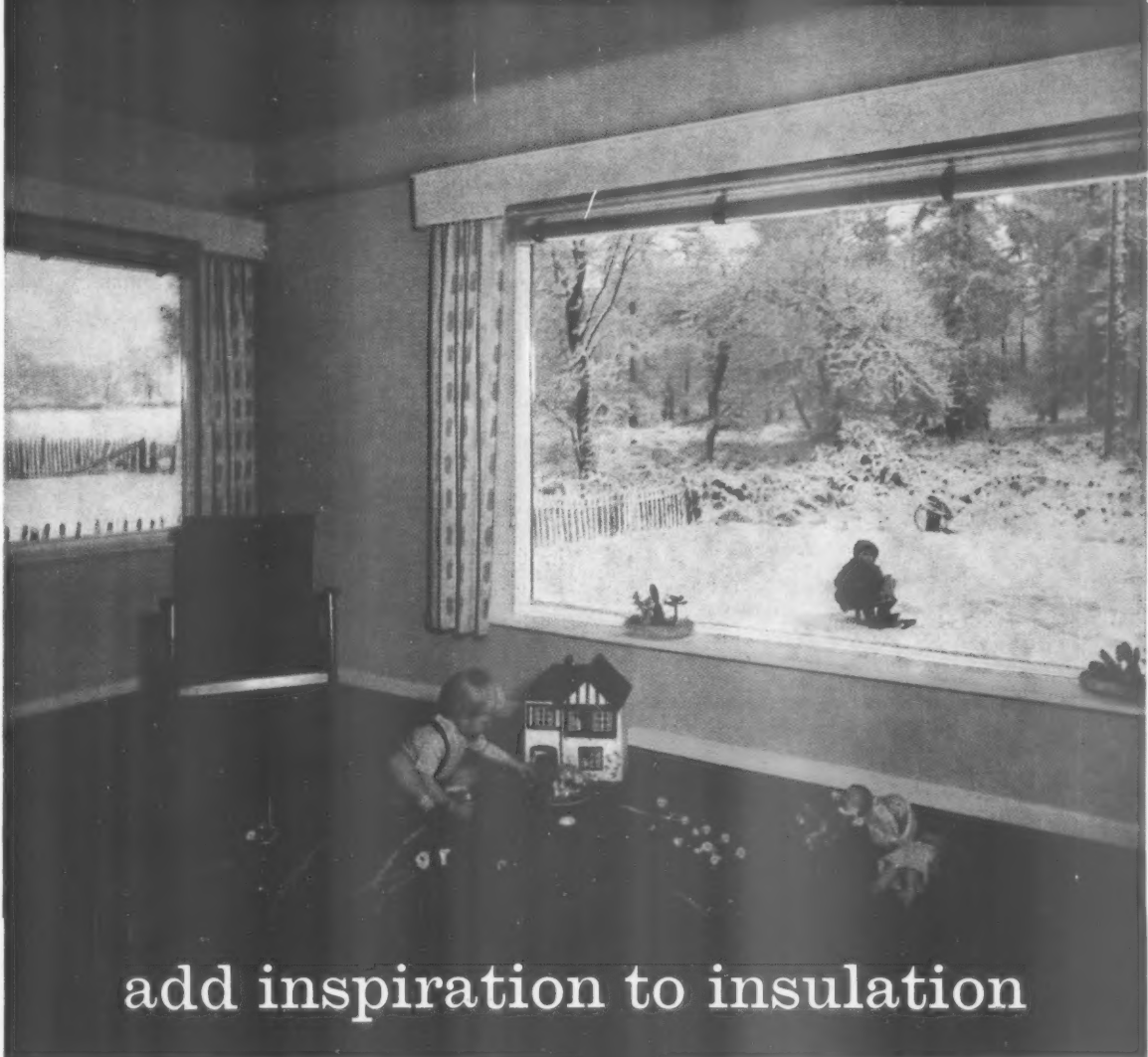


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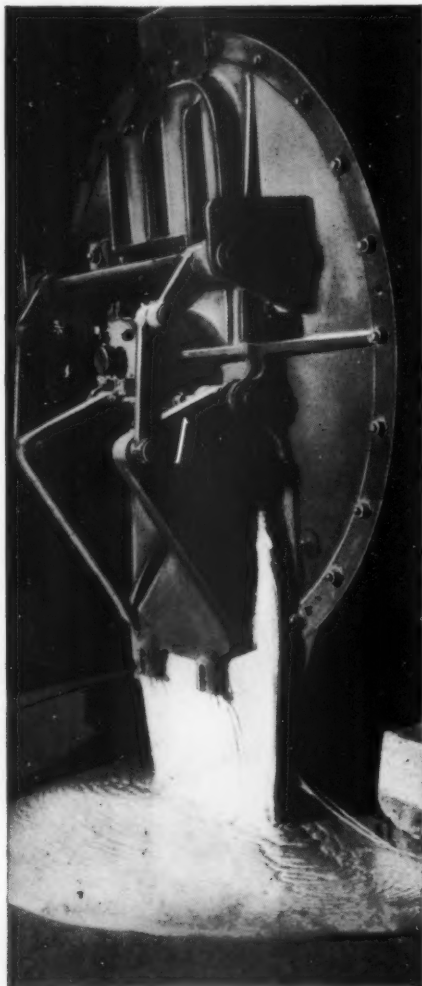
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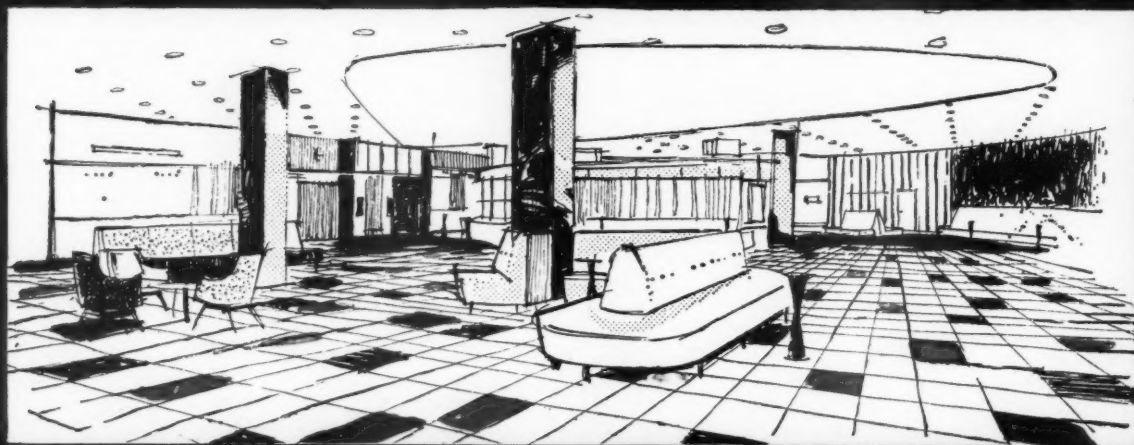


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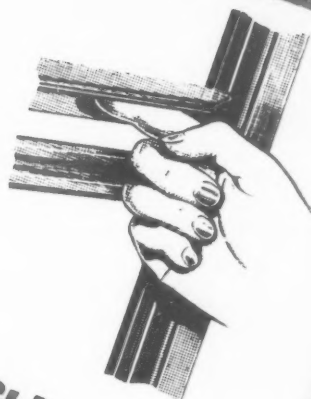
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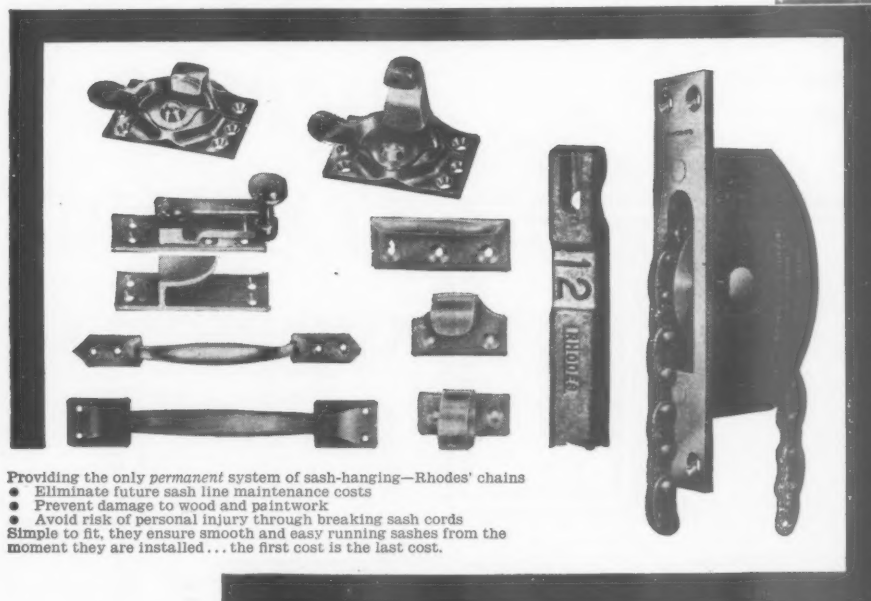


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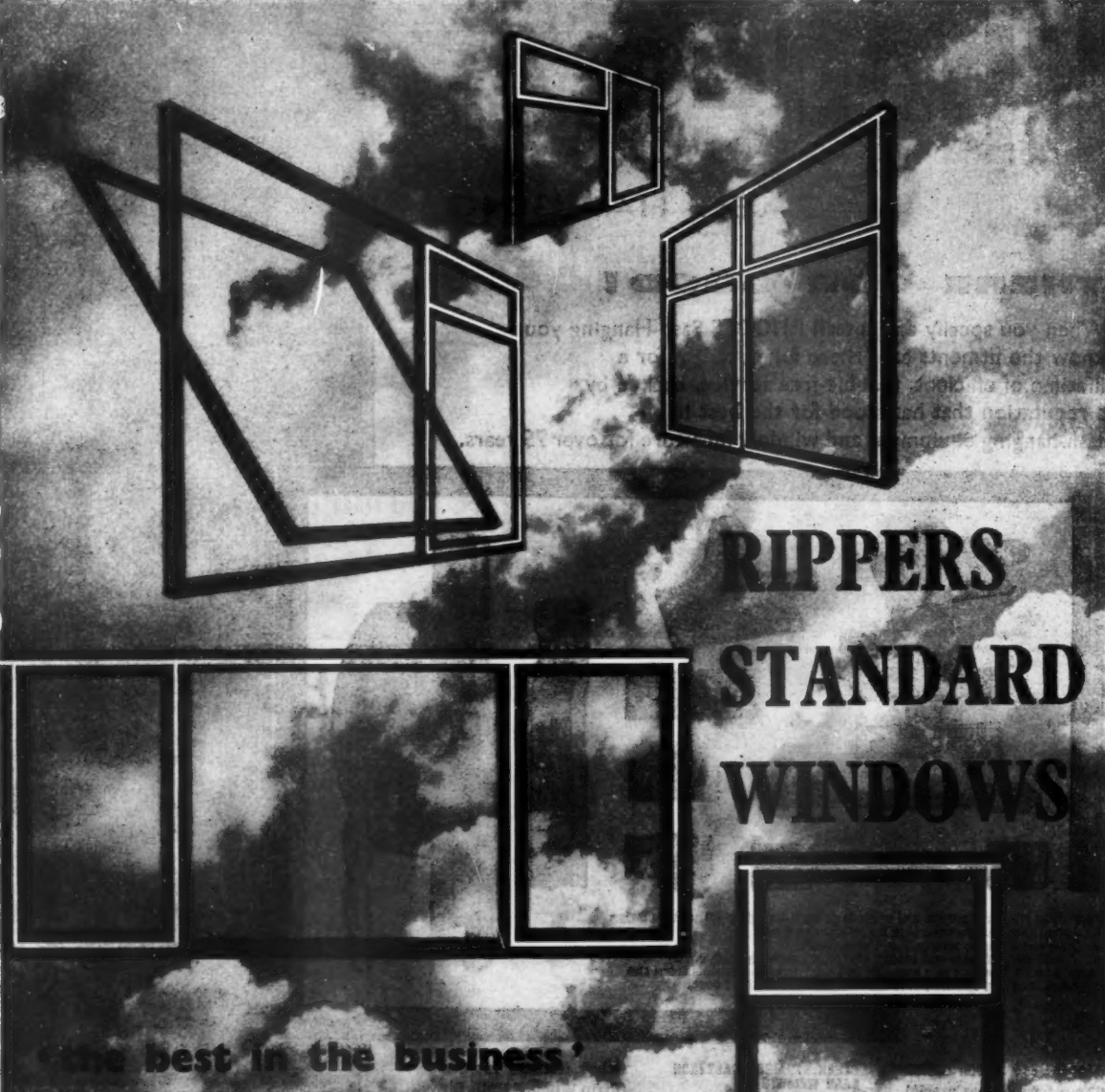
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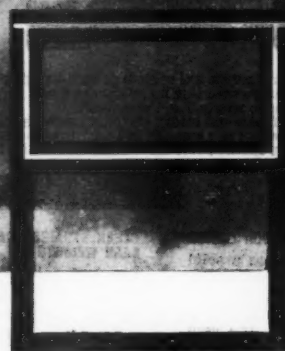
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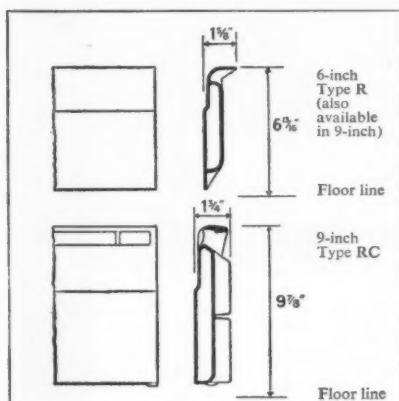
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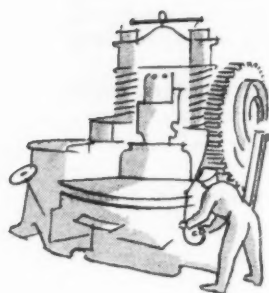
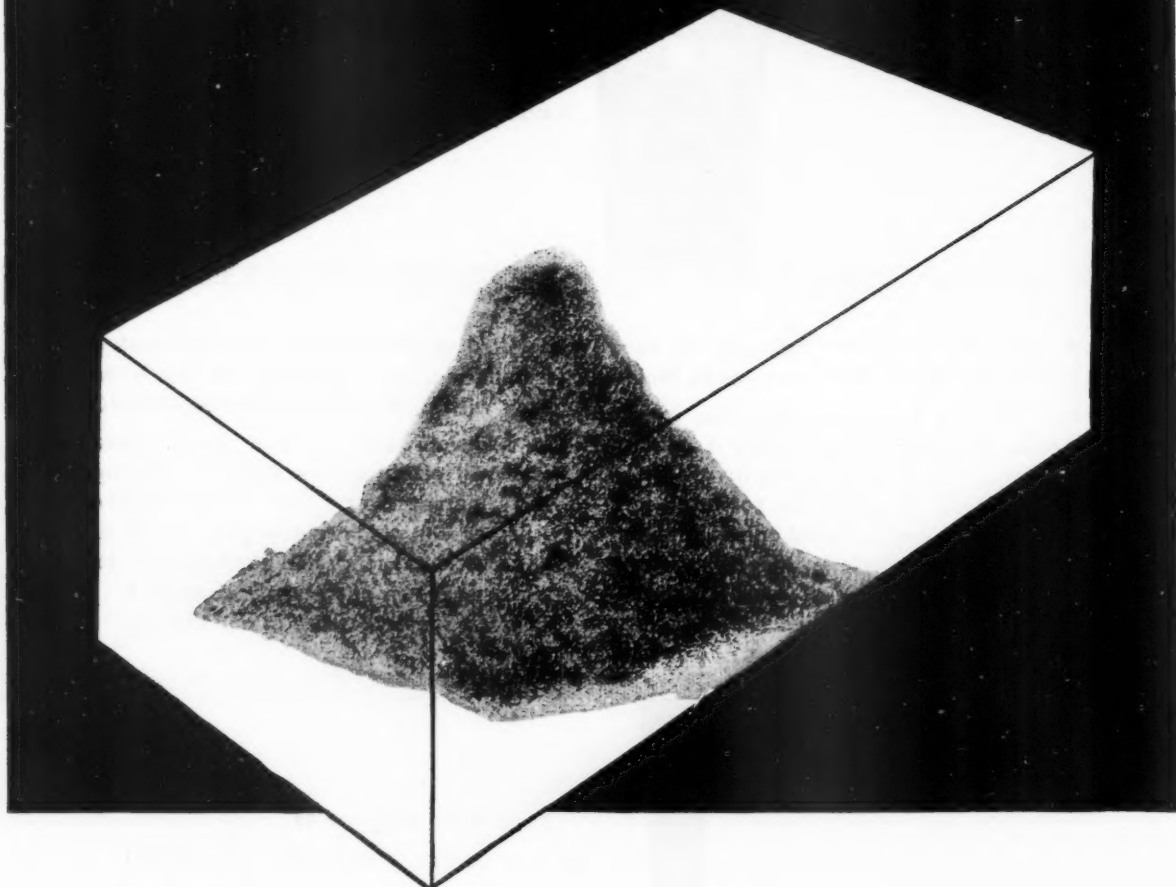
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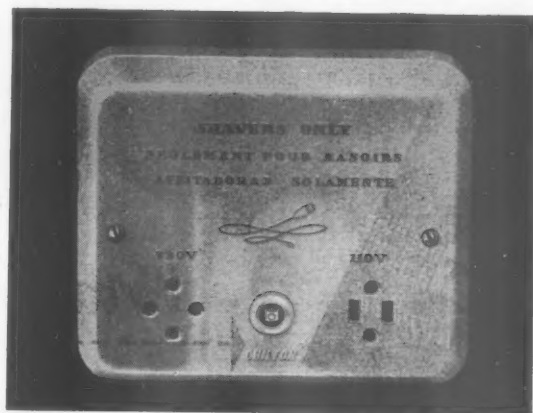
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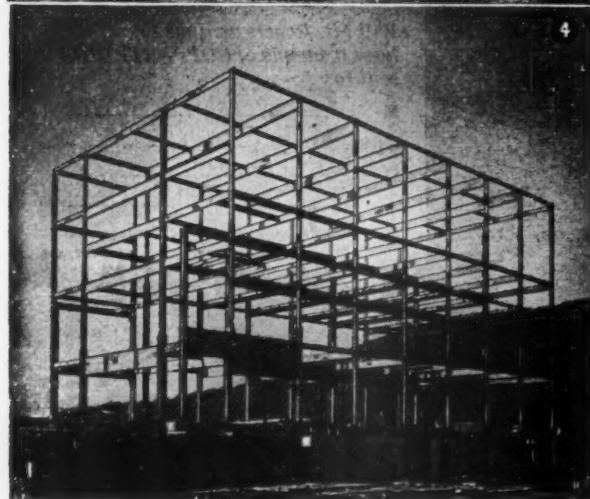
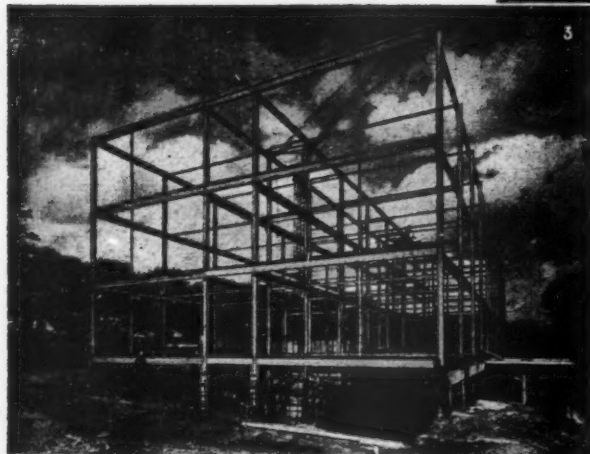
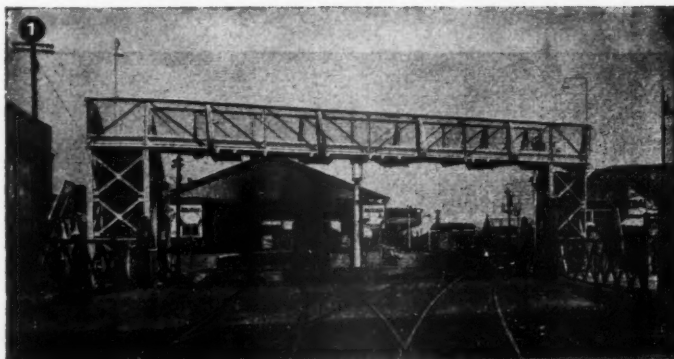
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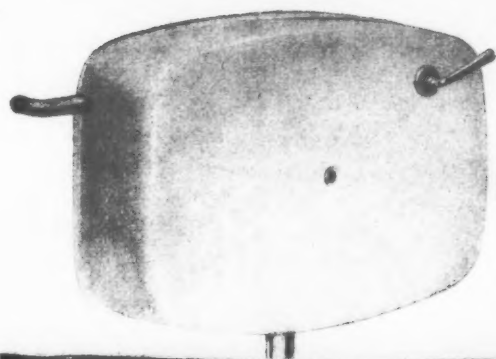
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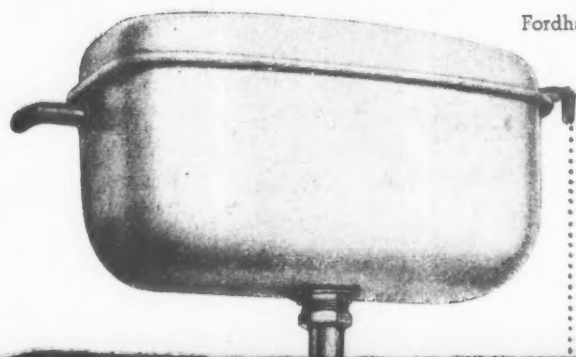
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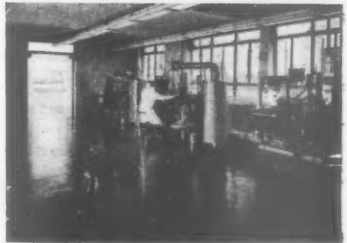
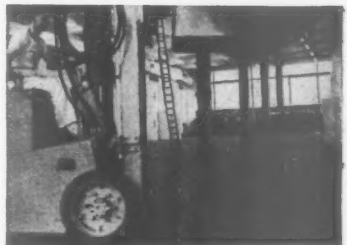
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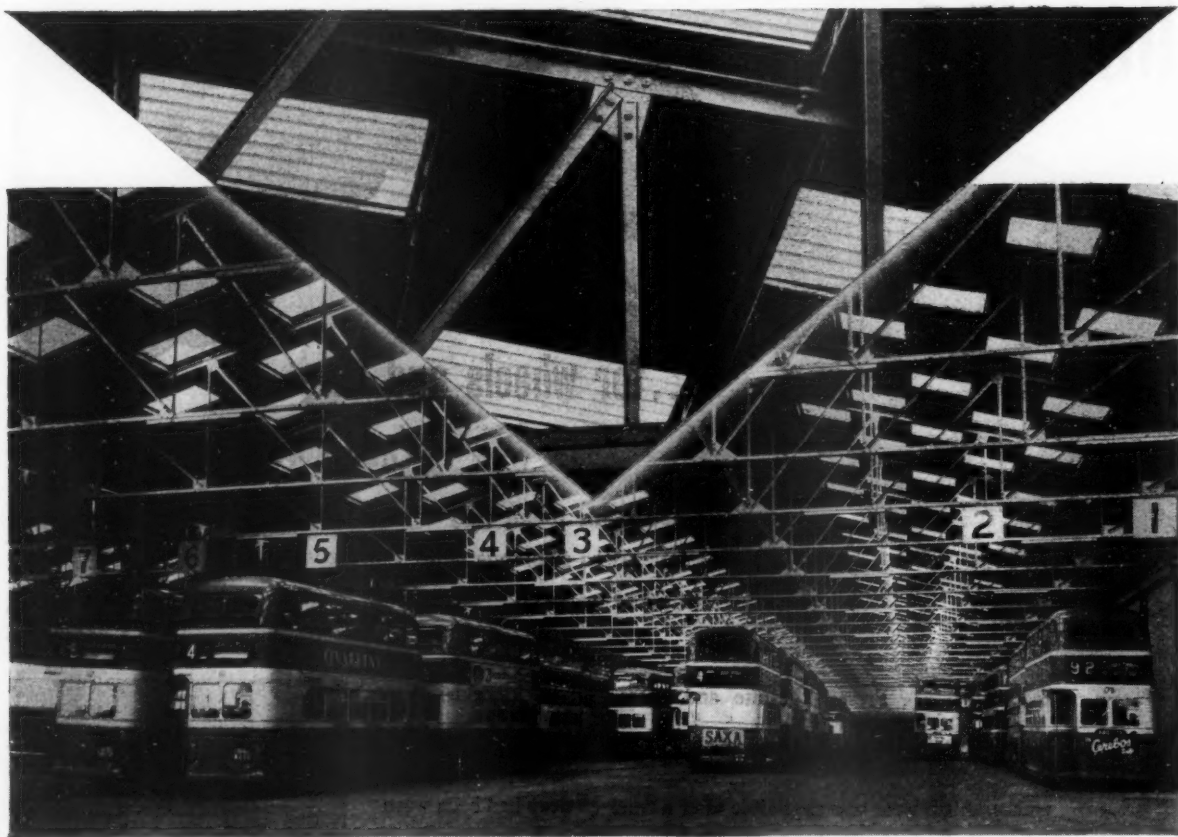
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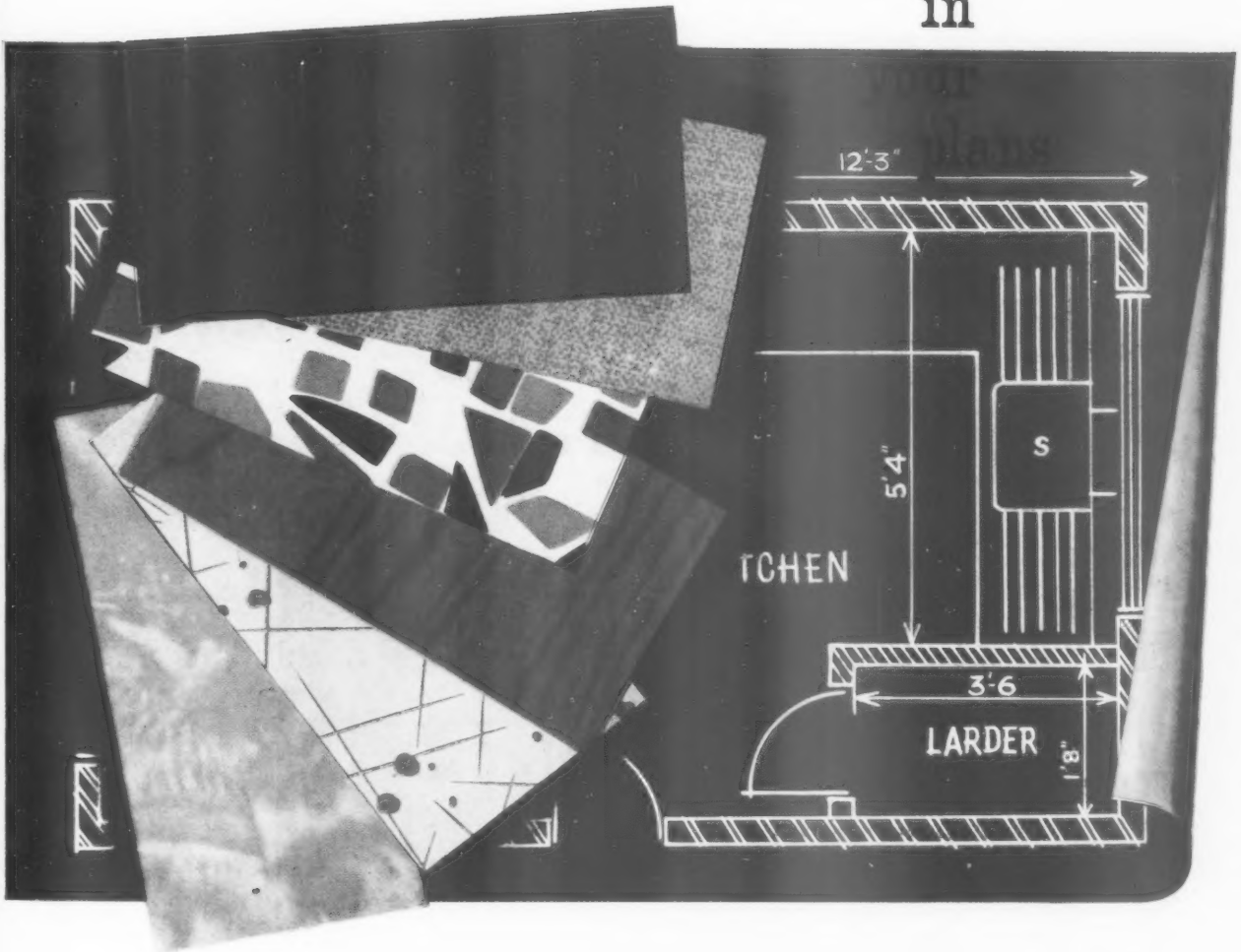
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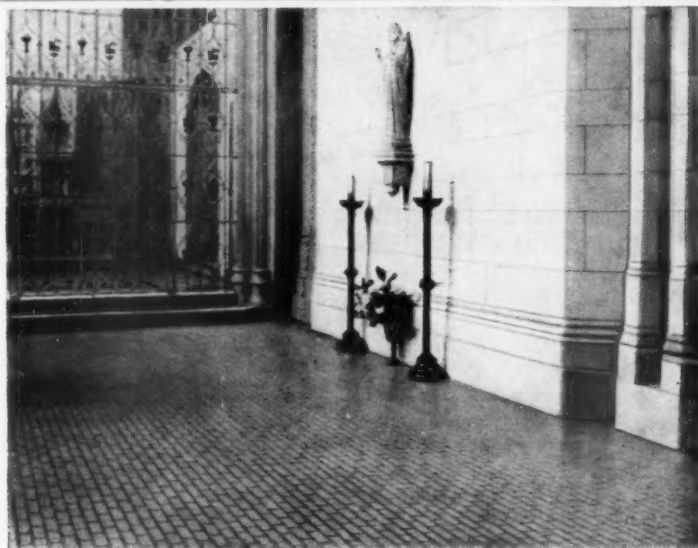
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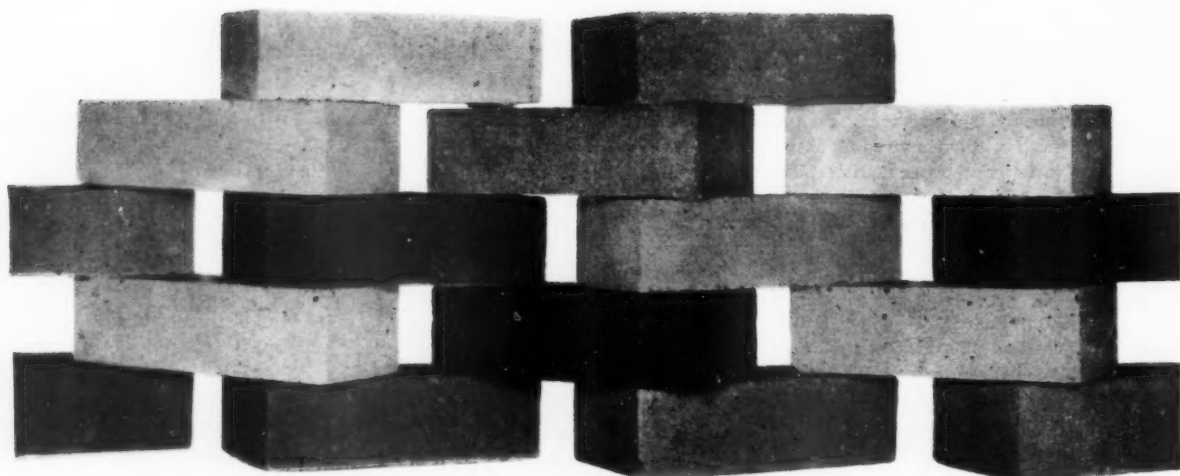
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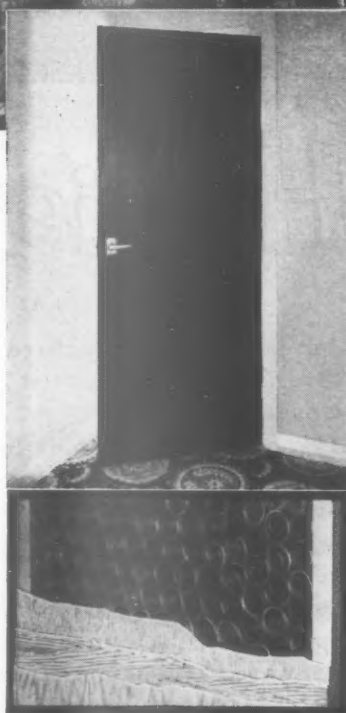


(Photograph of Branford Estate, Coseley, Staffs; by courtesy of K. E. Millard & Co. Ltd.)

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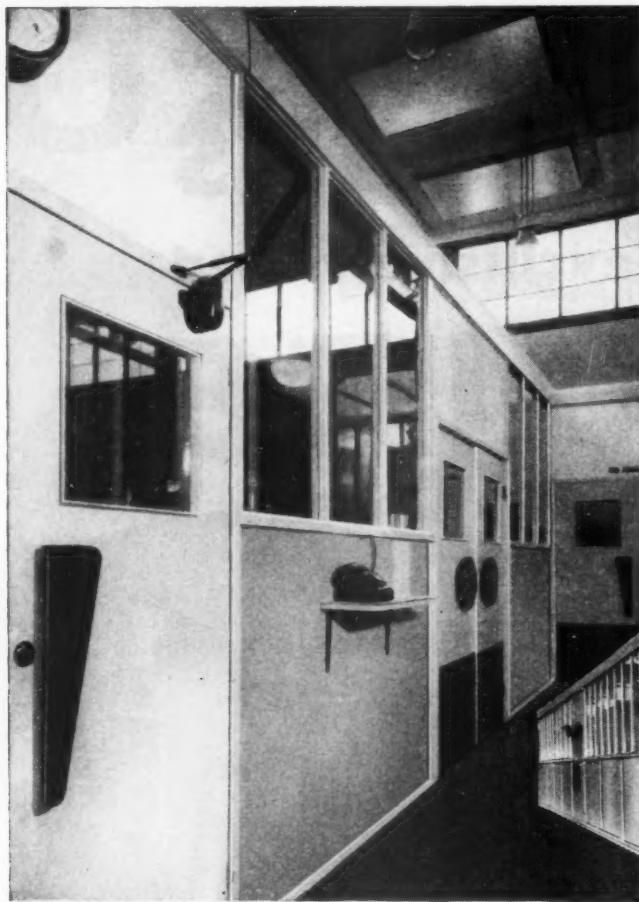
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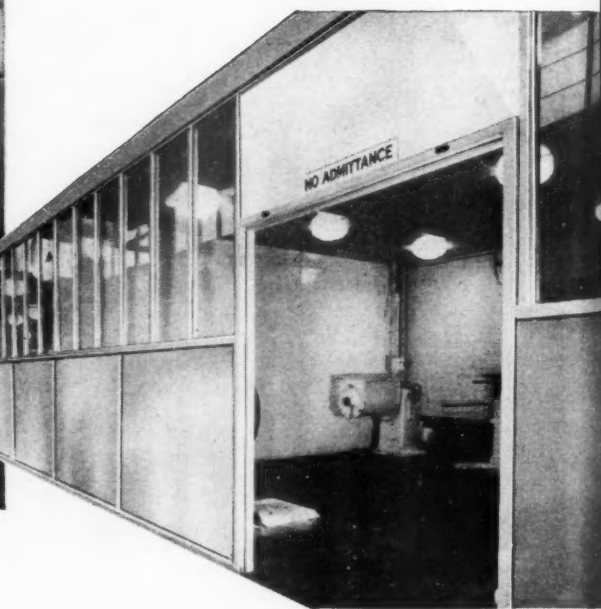
By courtesy of The Distillers Company (Biochemicals) Ltd.

Blue Arabesque Hornitex corridor panelling with Ivory panels above.



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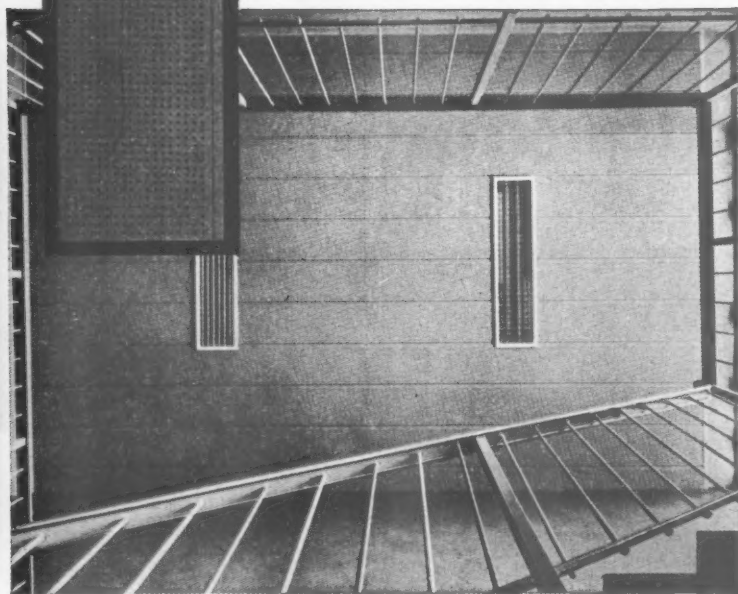
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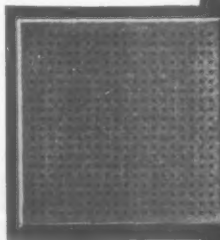
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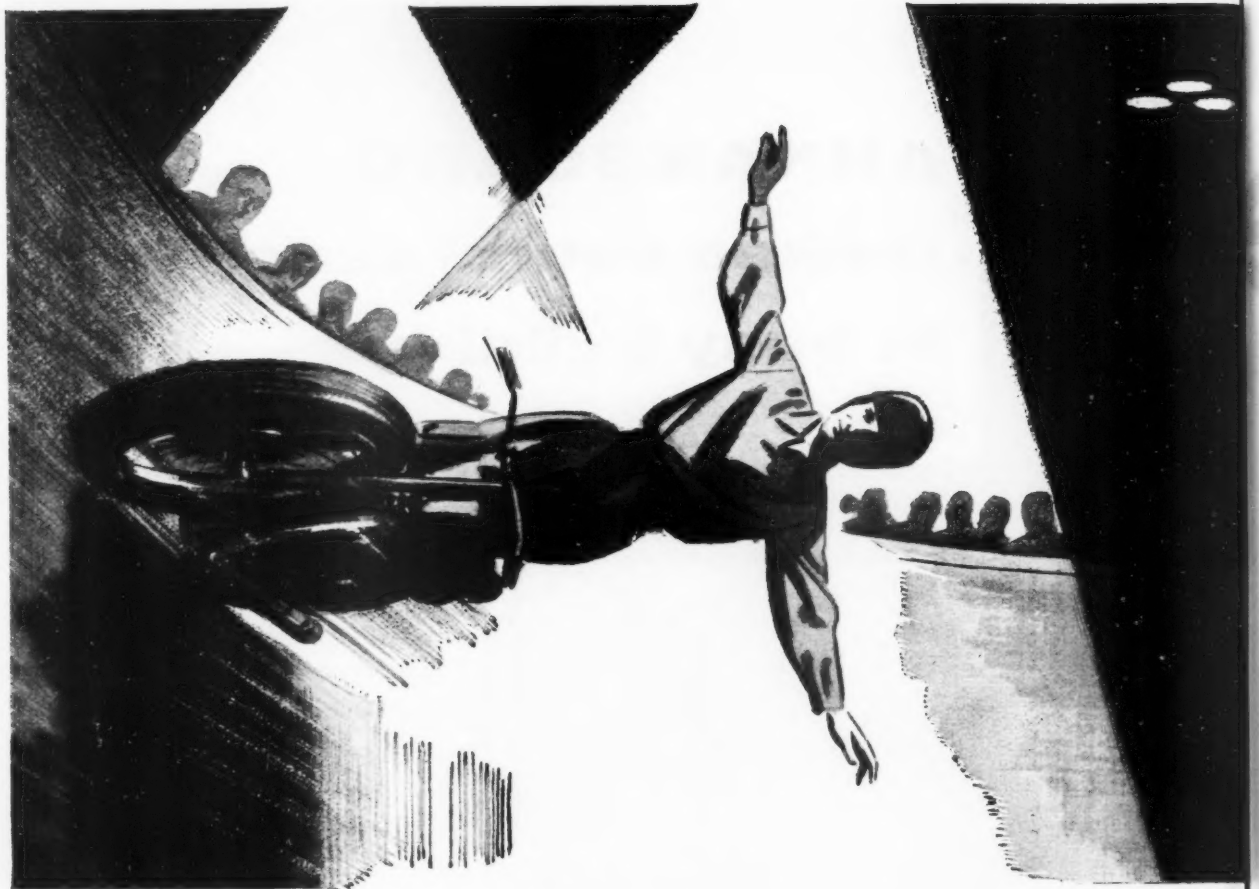


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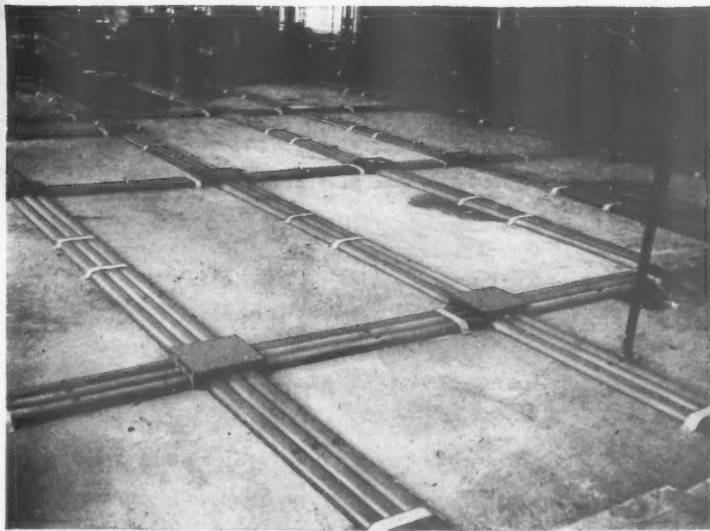
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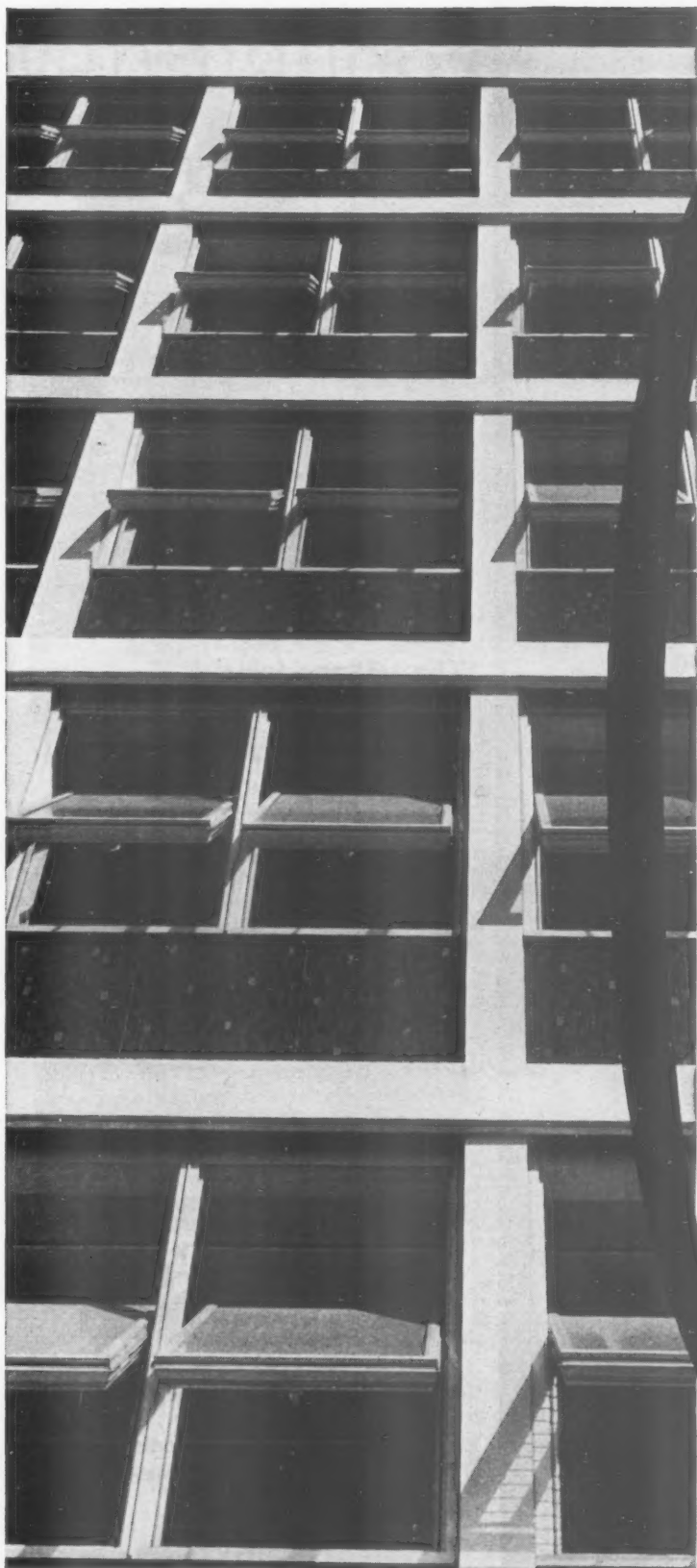


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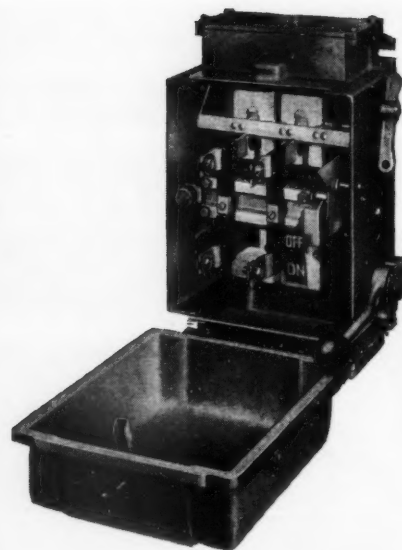
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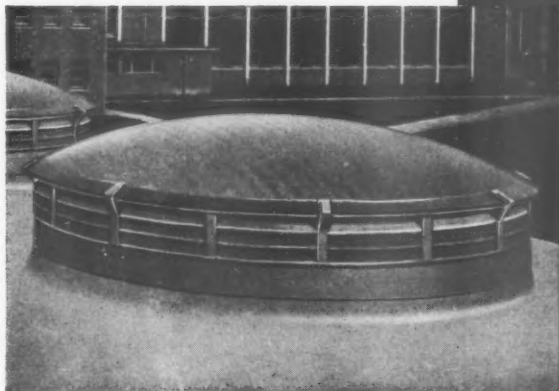
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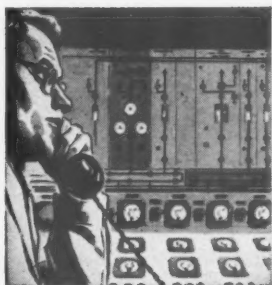
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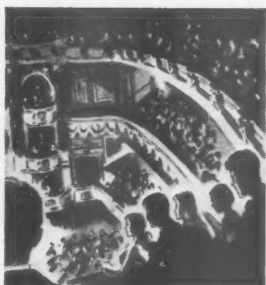
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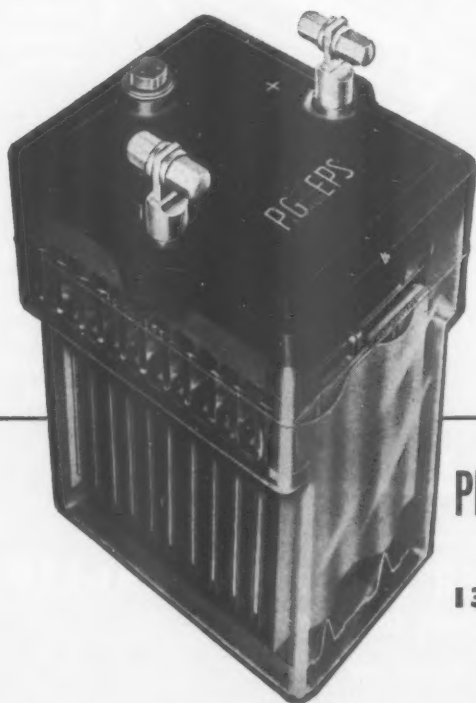
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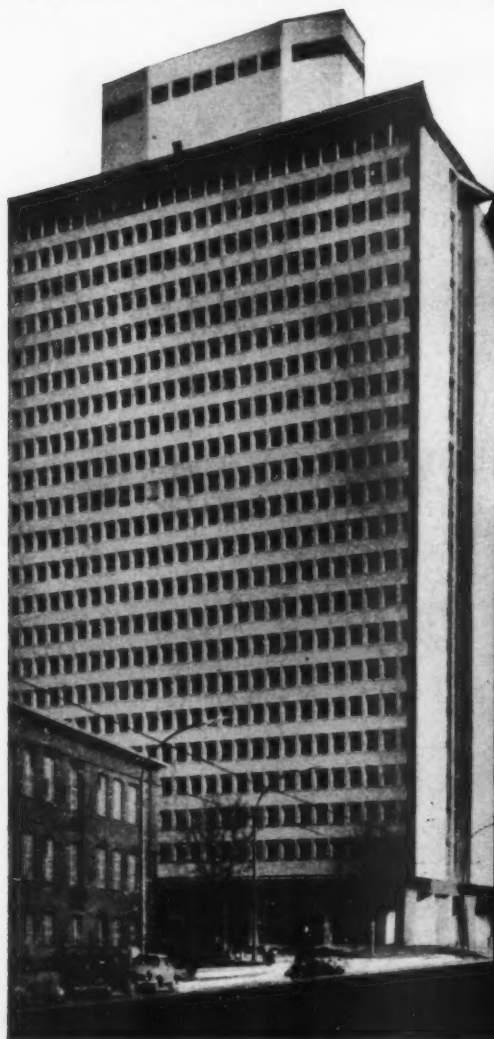
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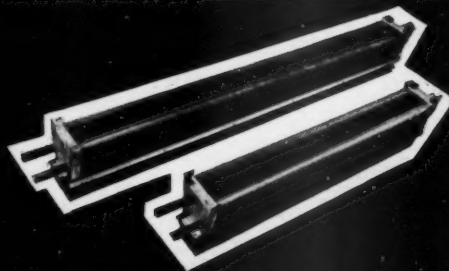
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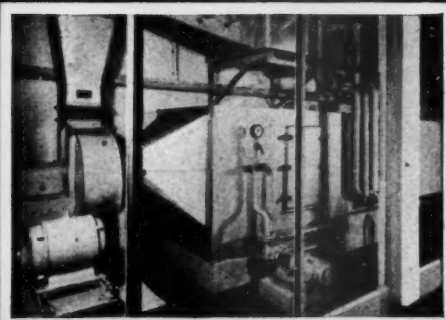
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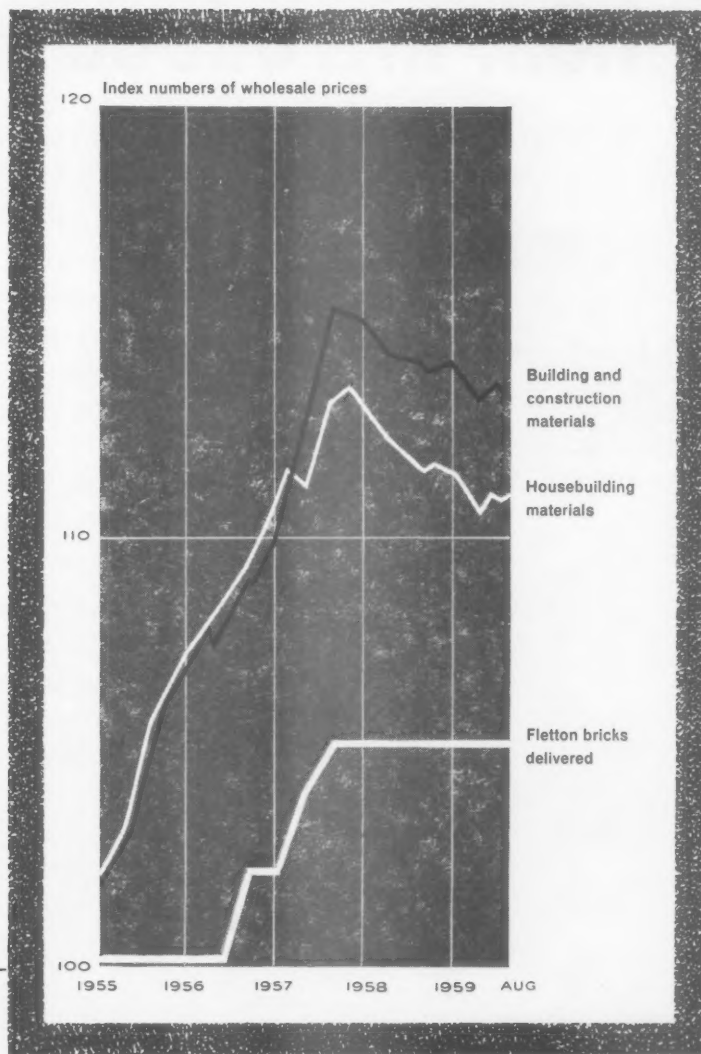
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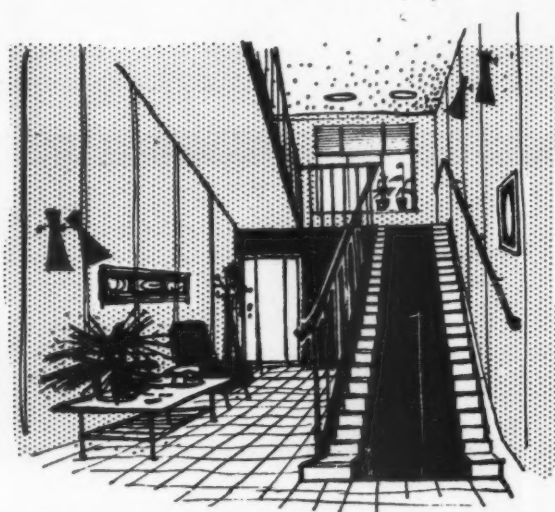
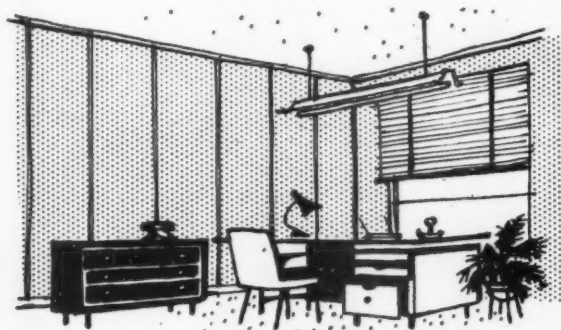
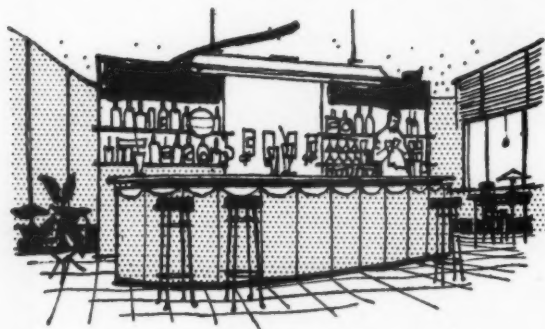
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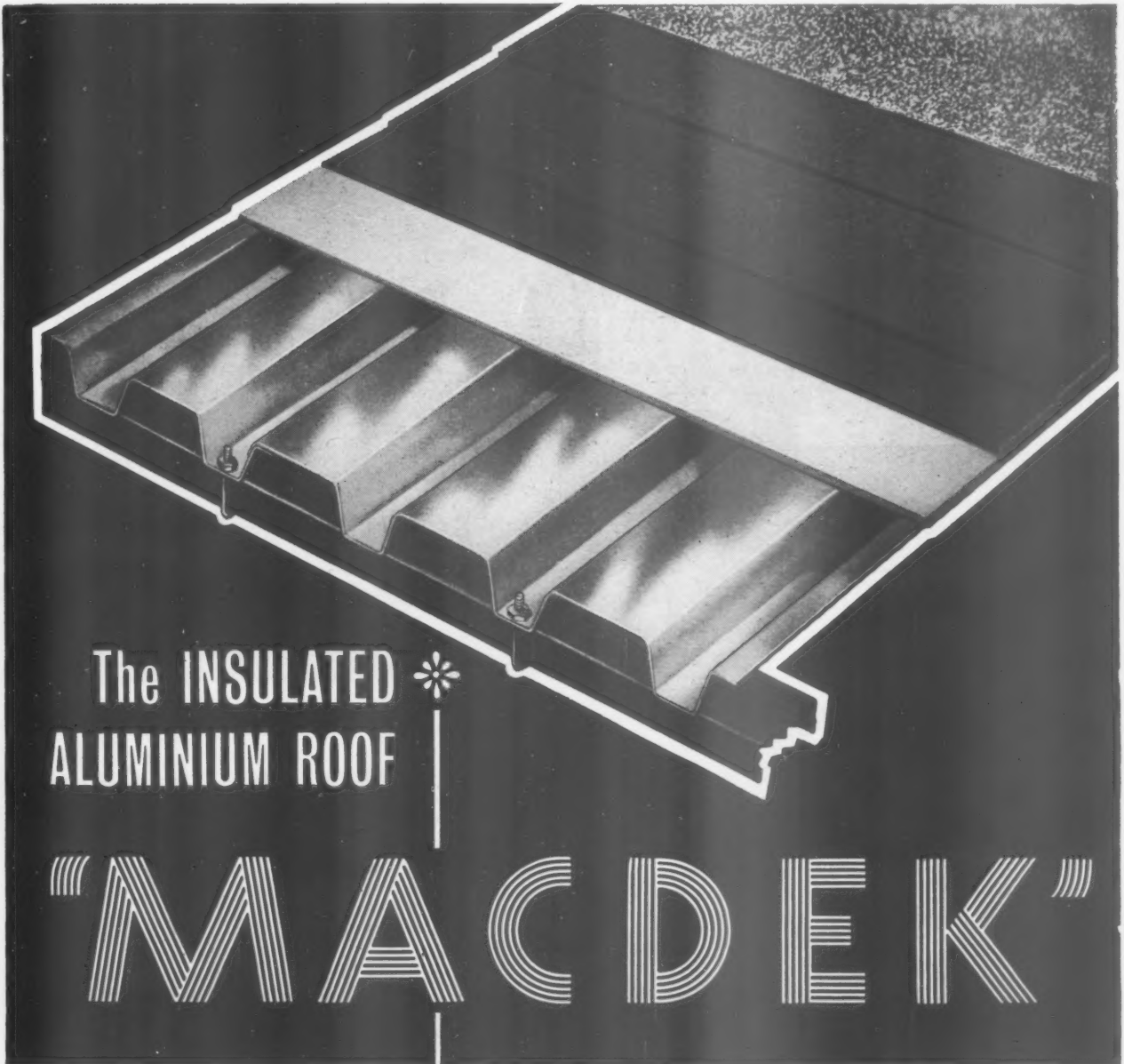
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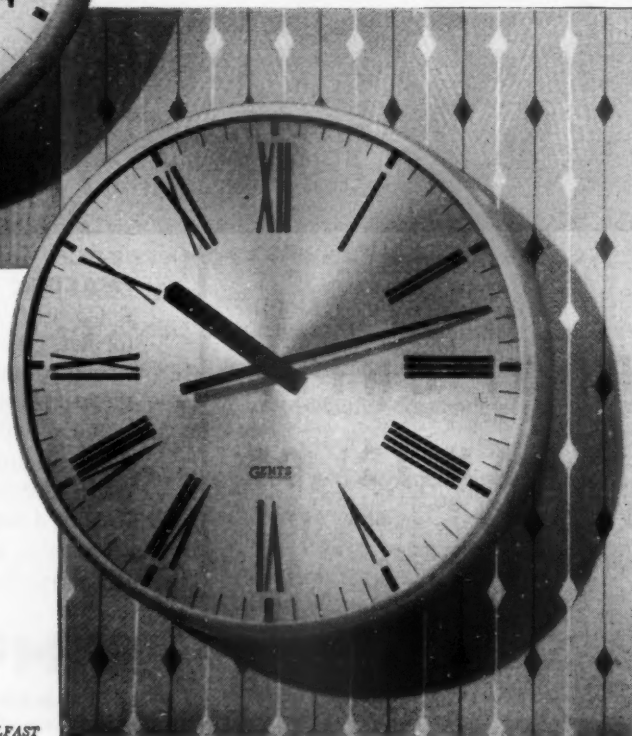
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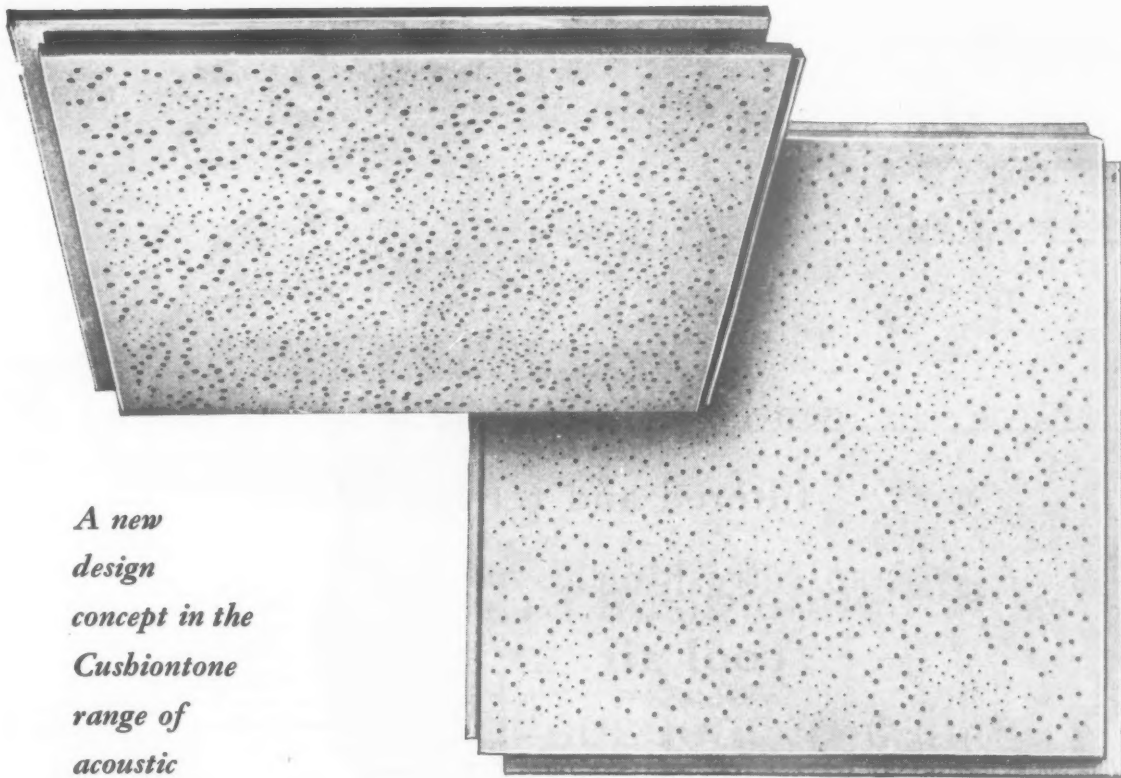
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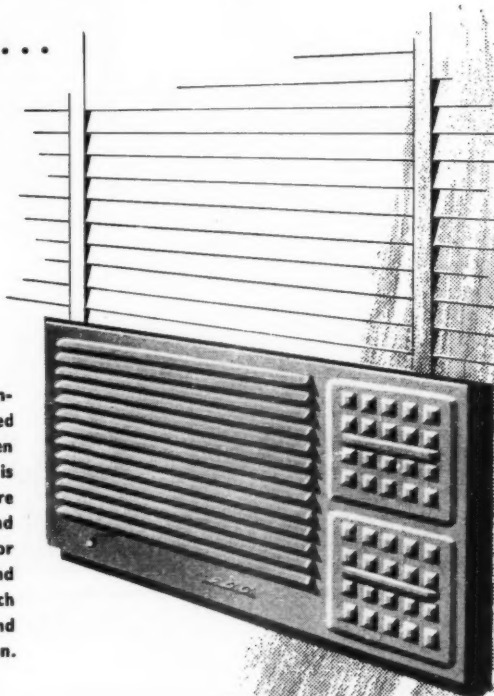
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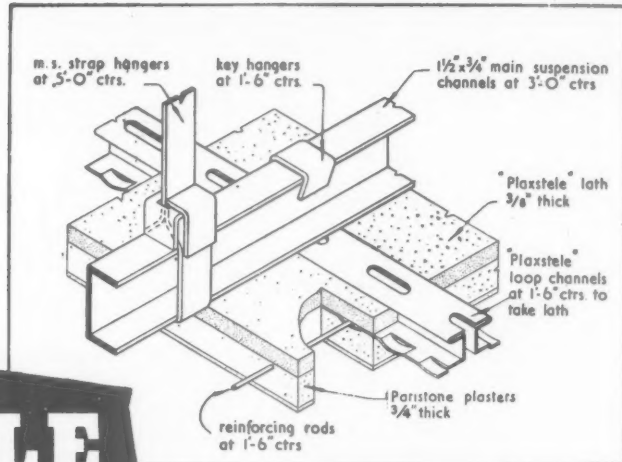


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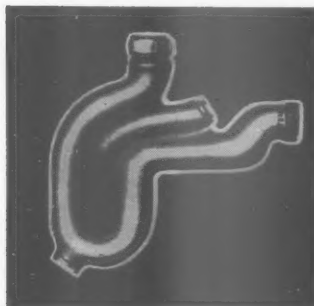
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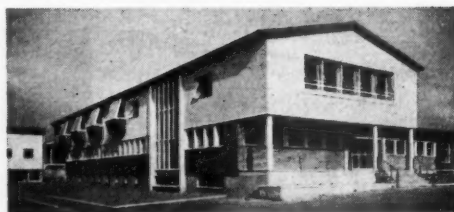


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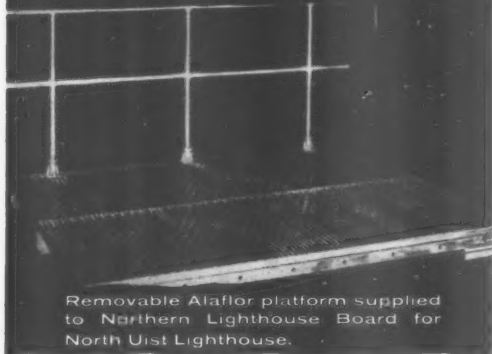
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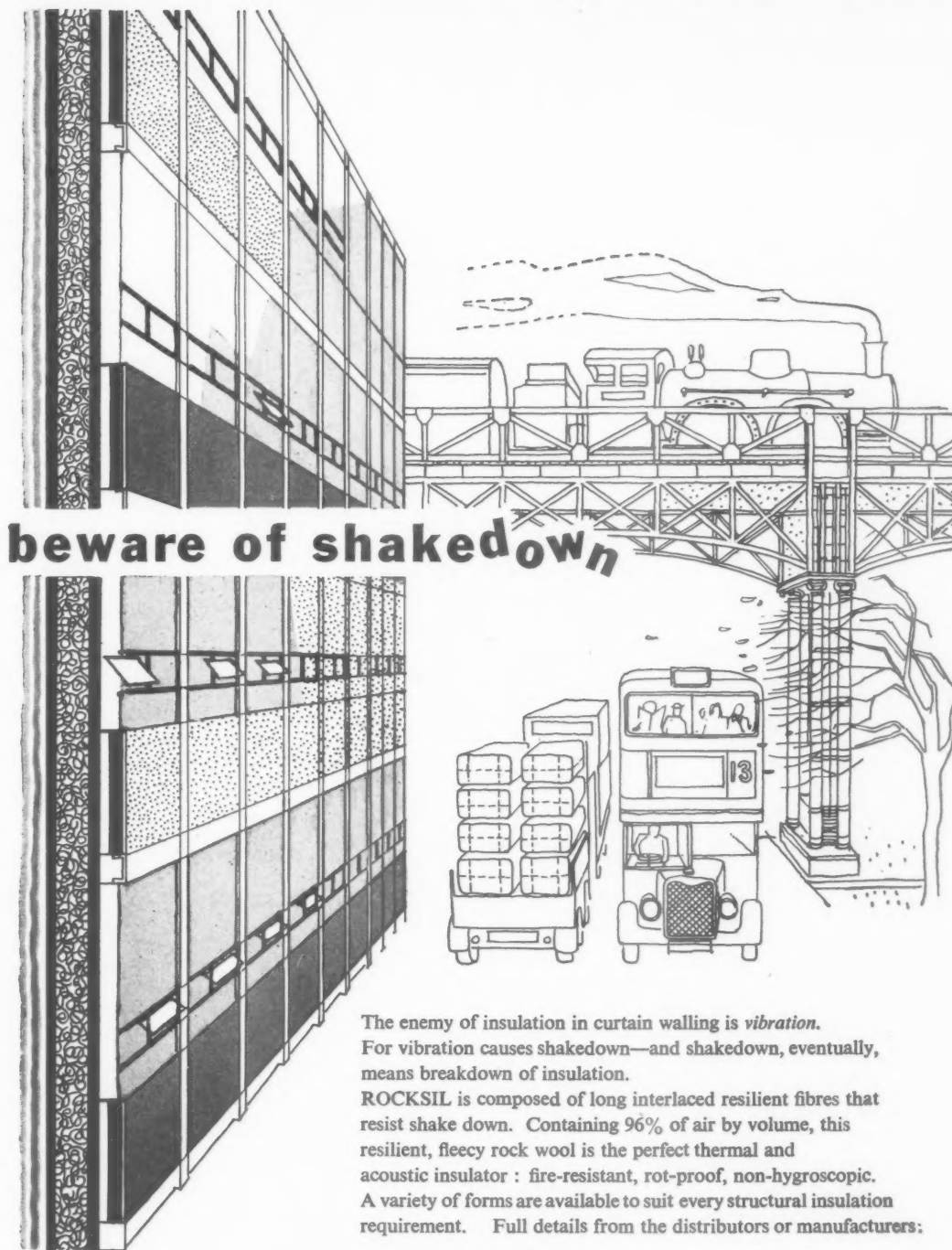
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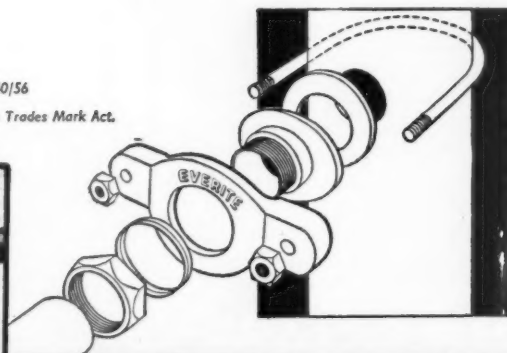
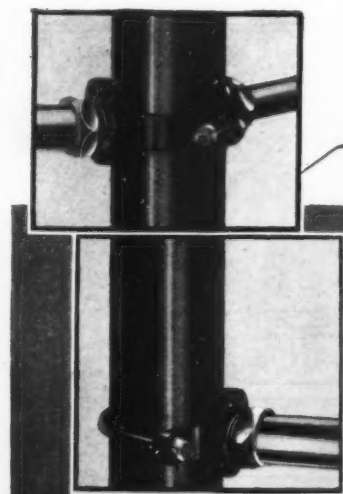
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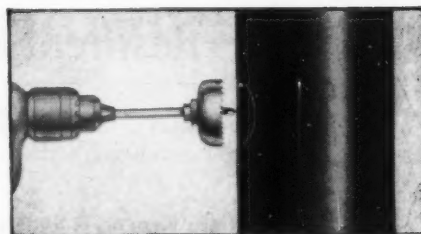
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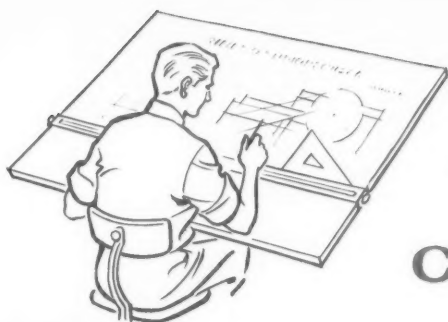
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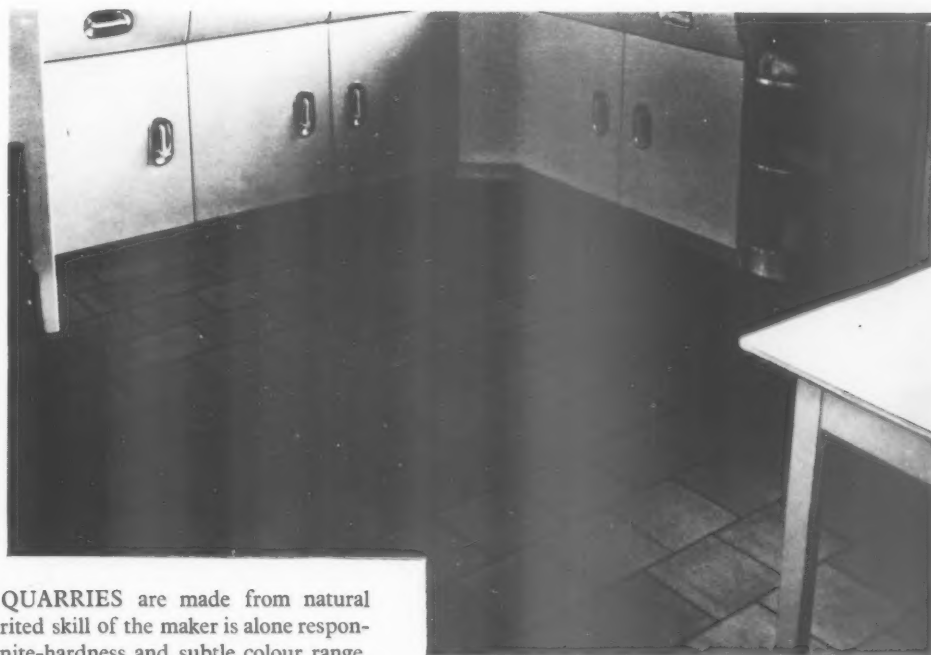
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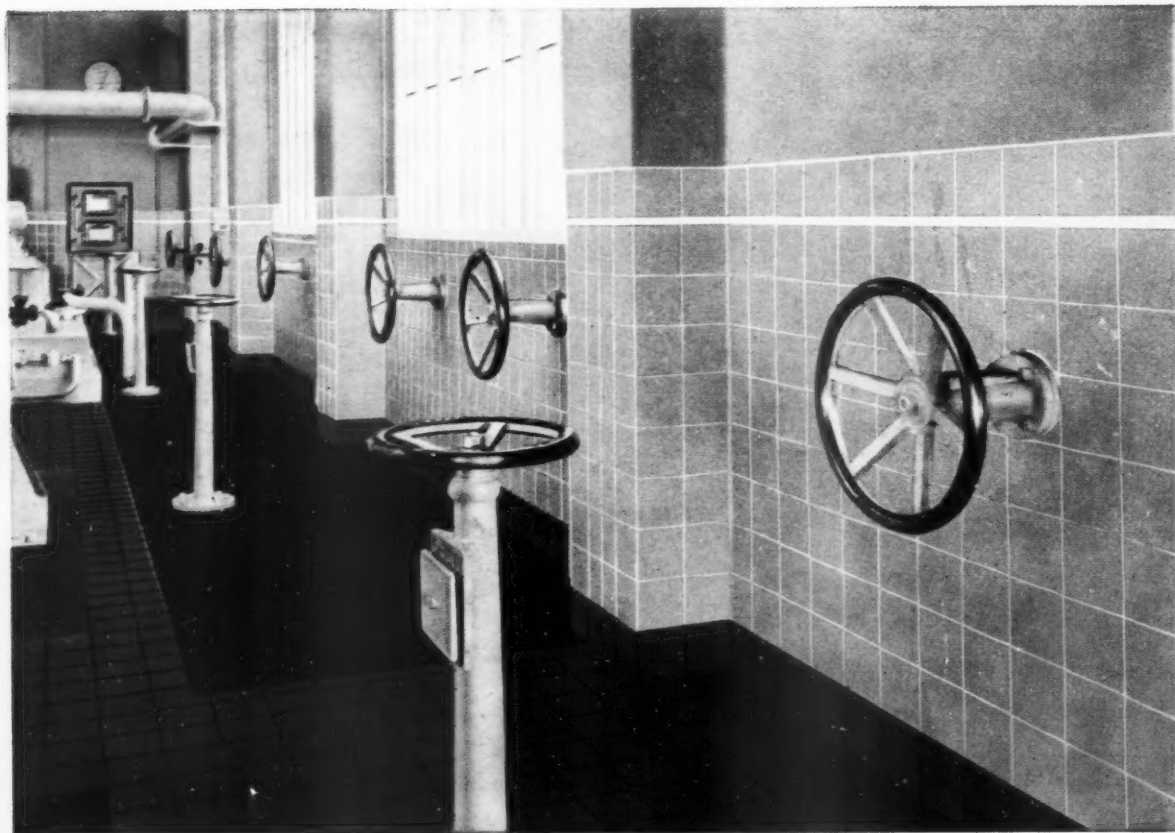
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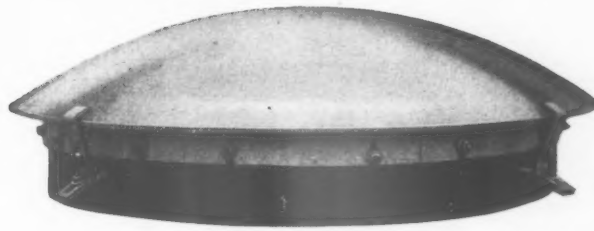
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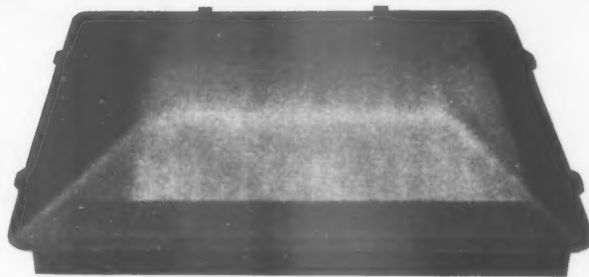
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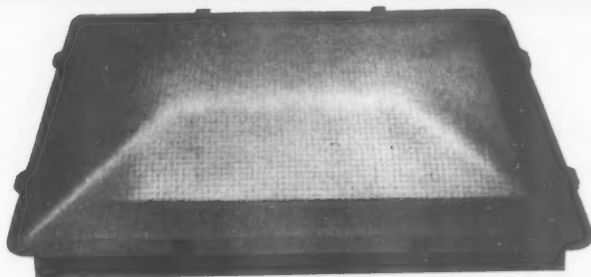
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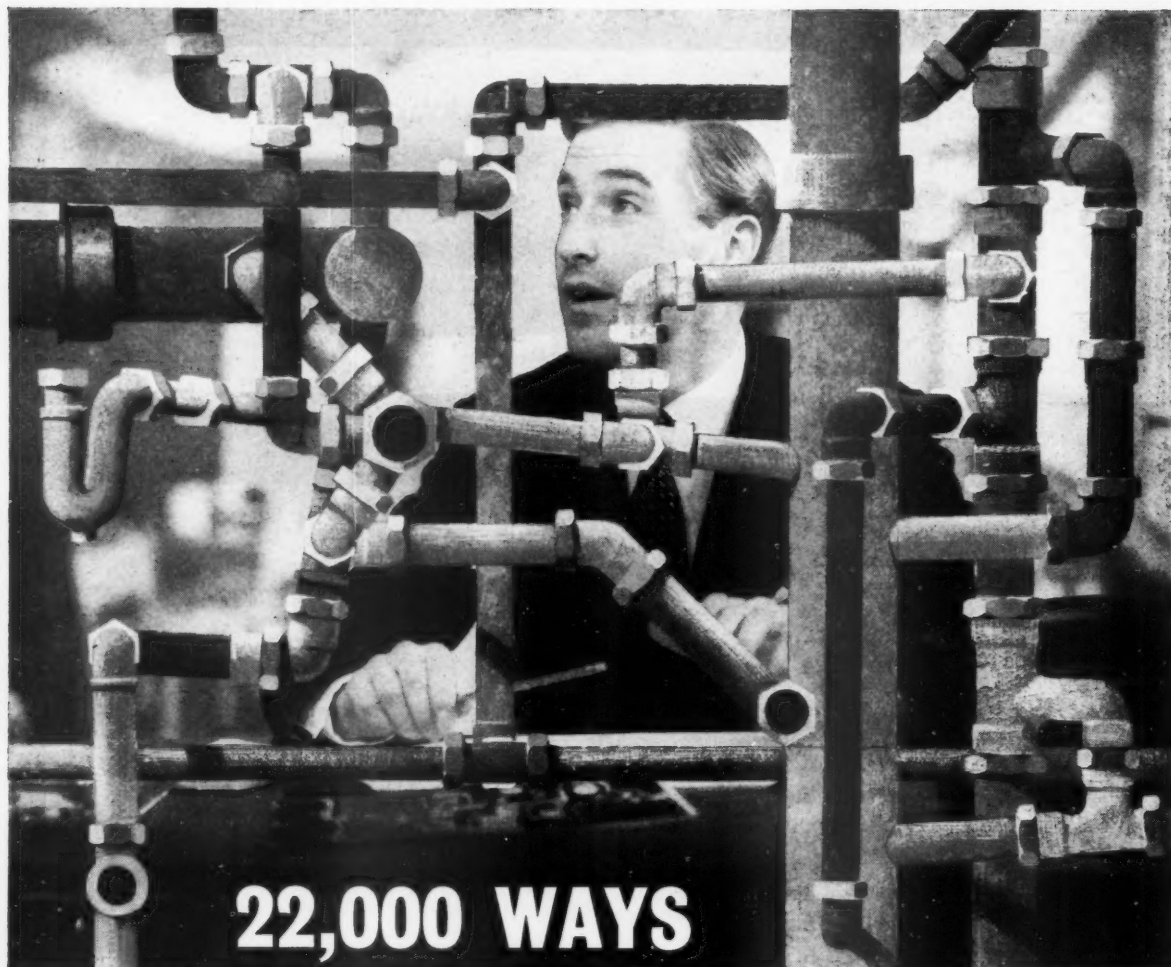
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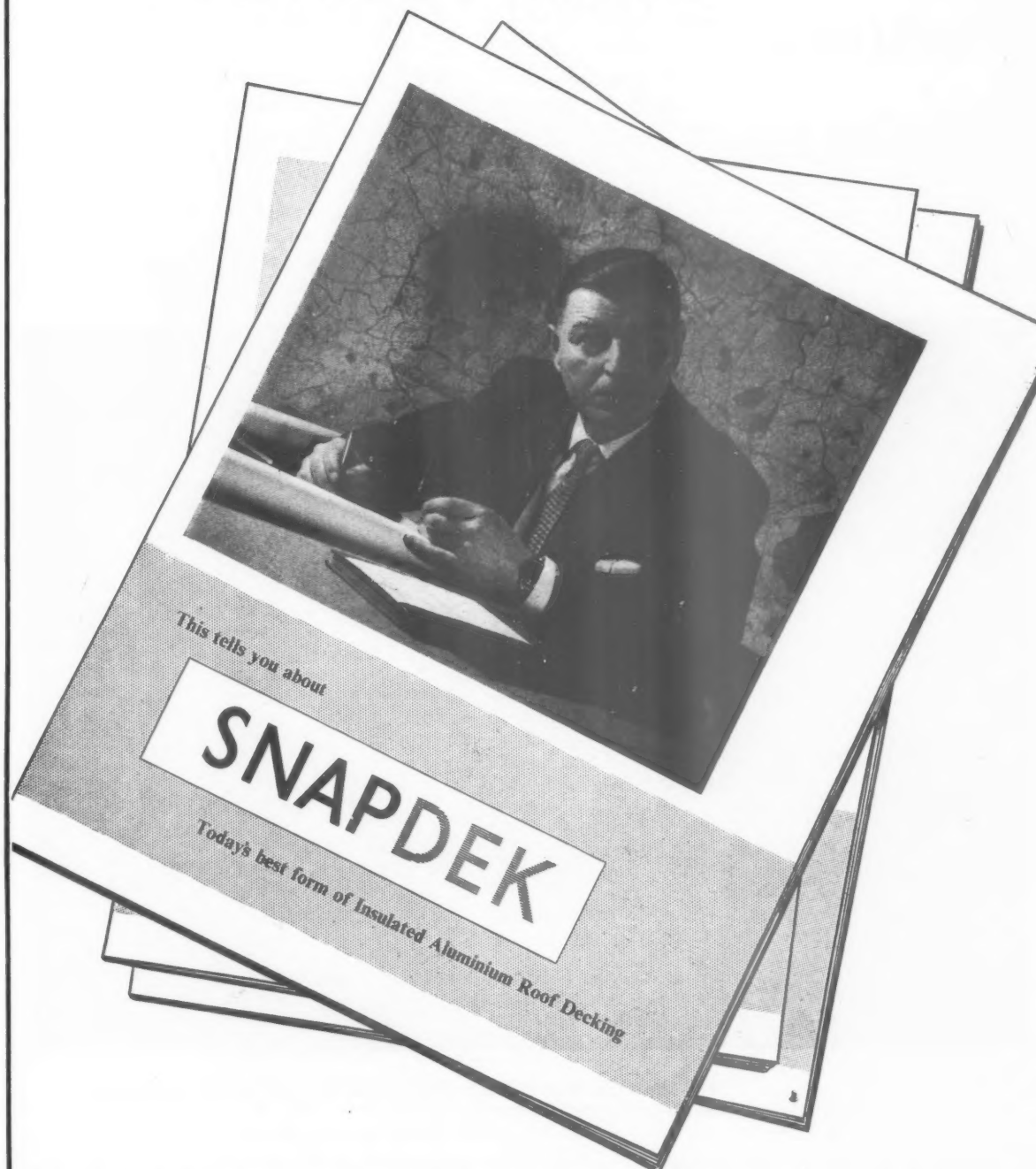
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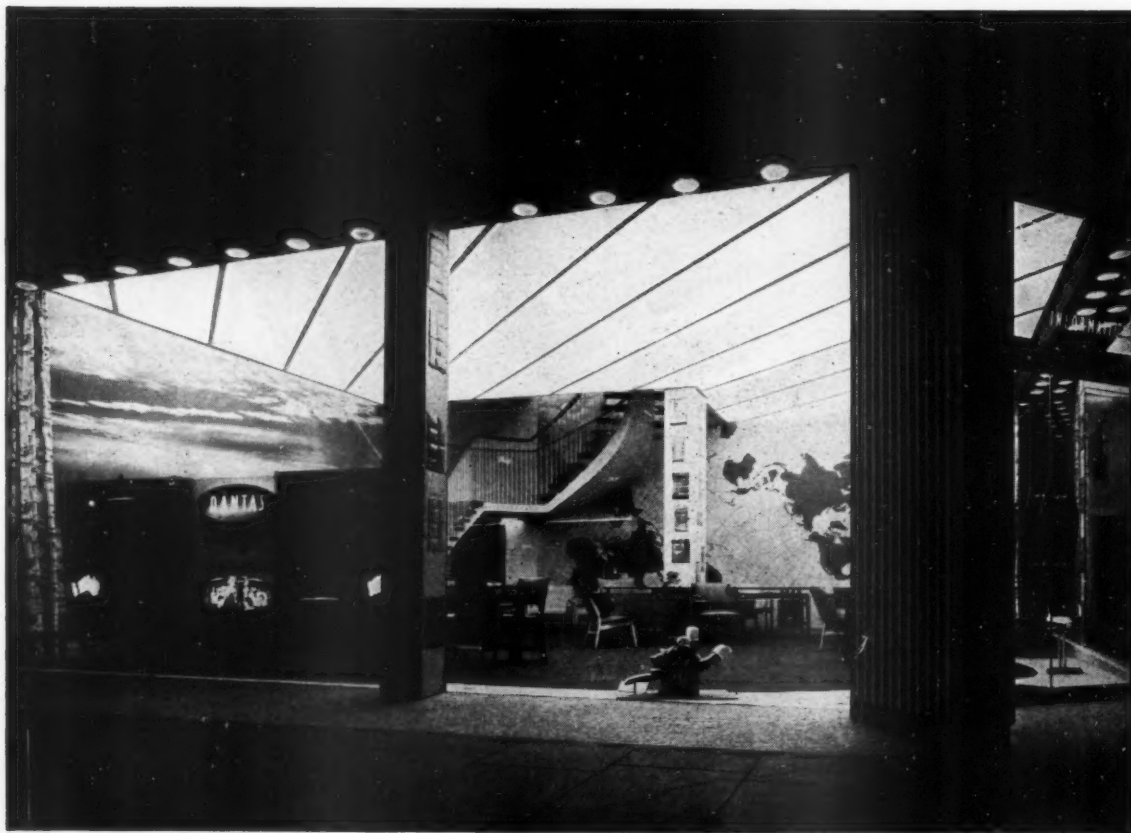
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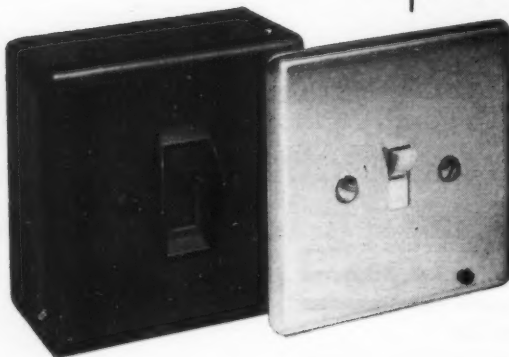
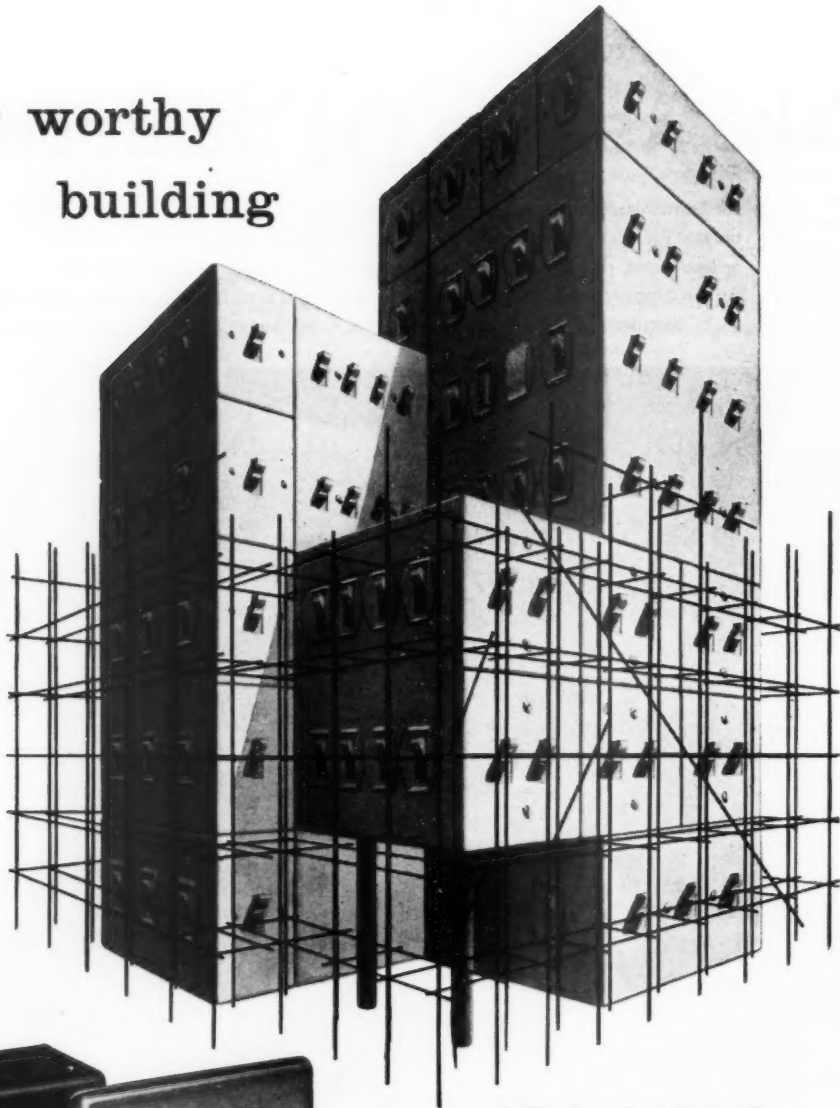


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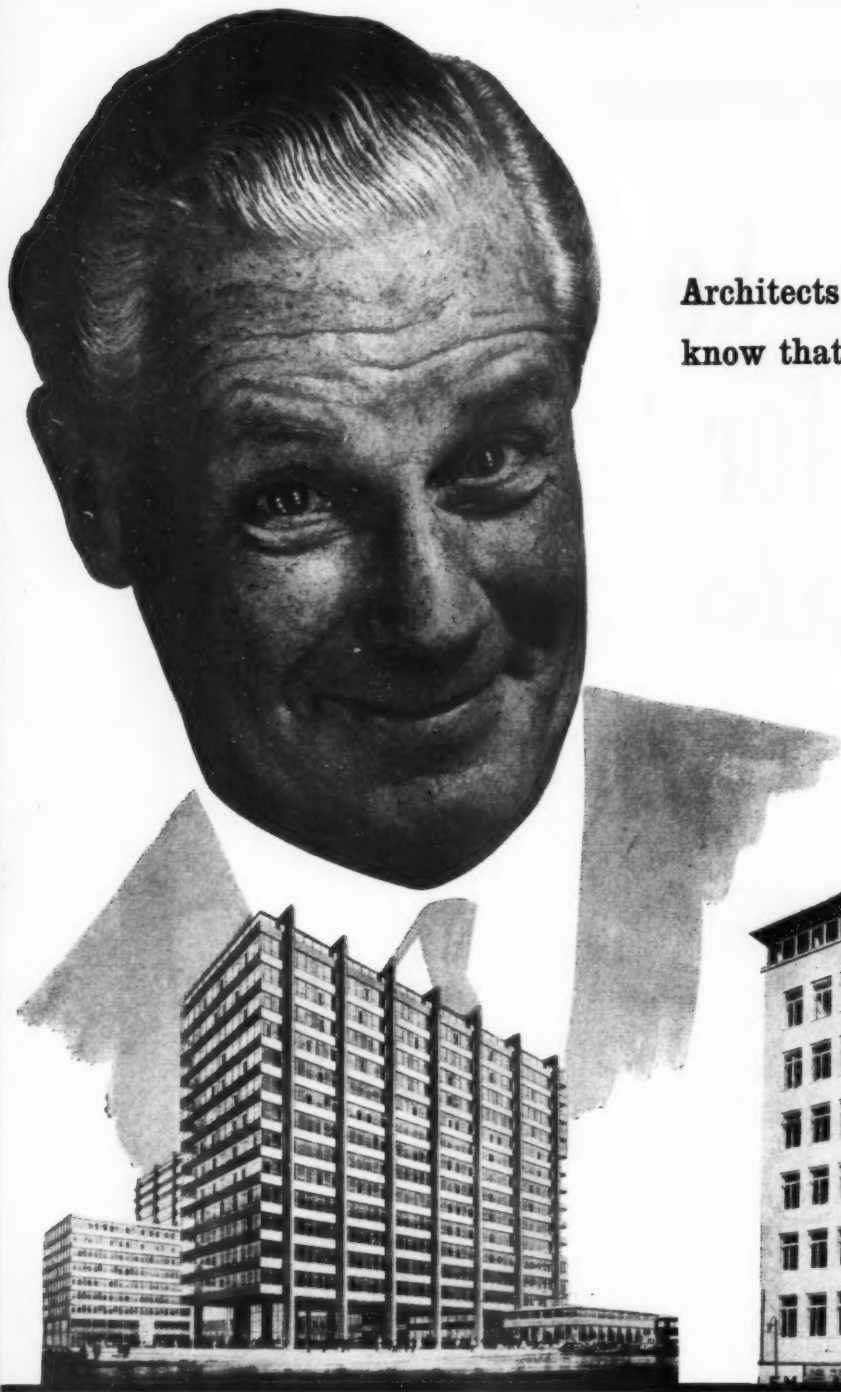
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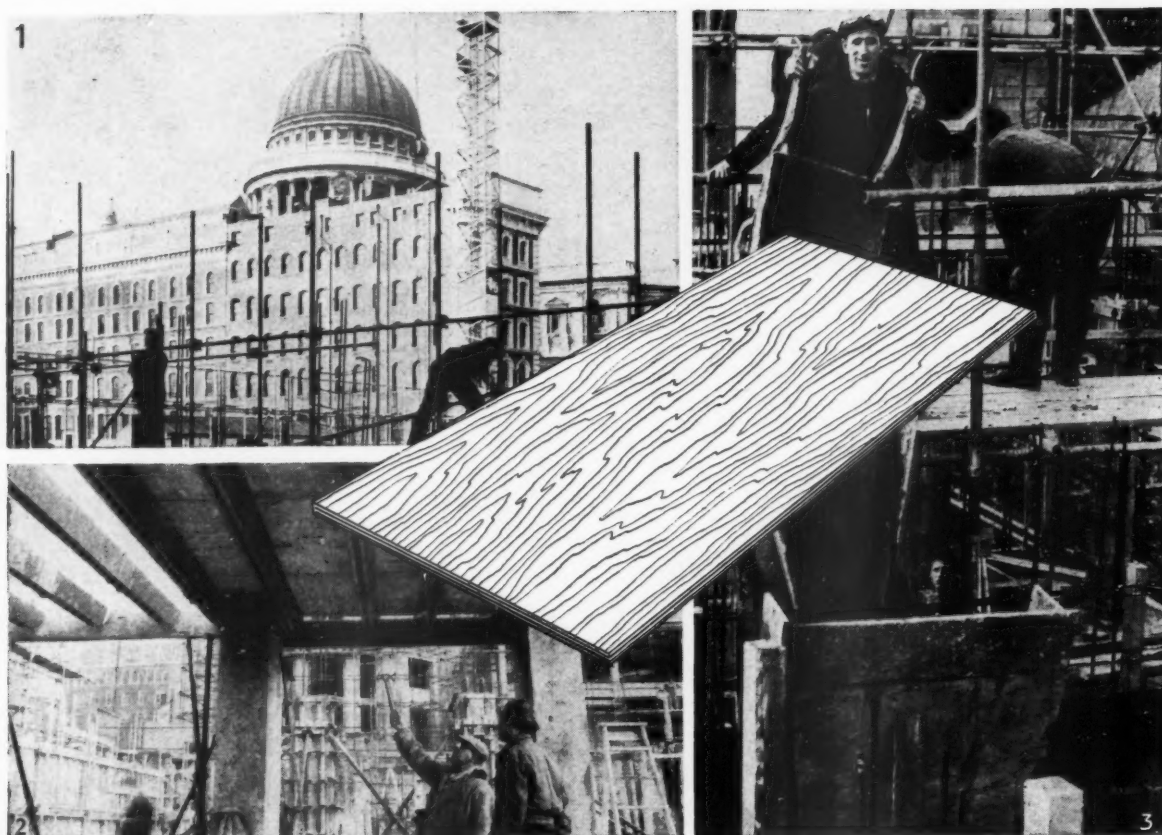


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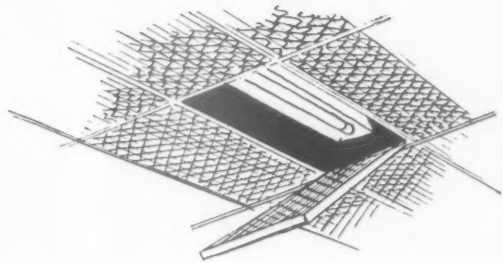
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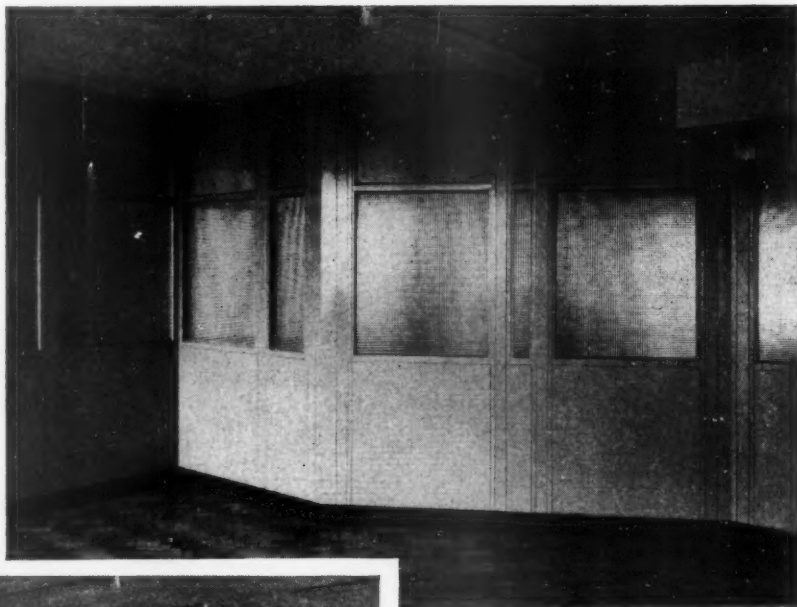
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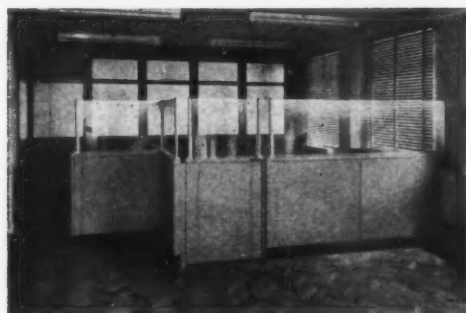
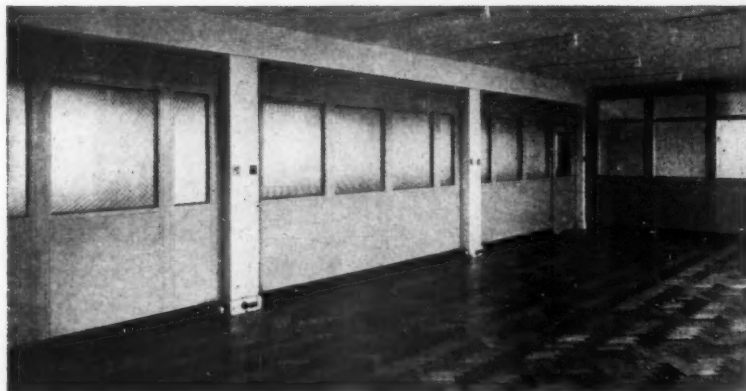
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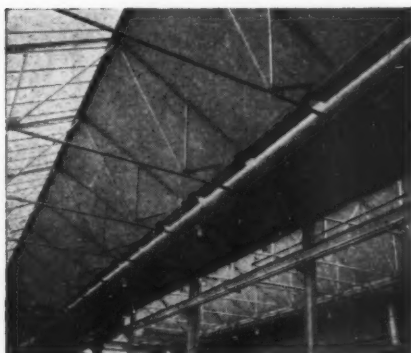
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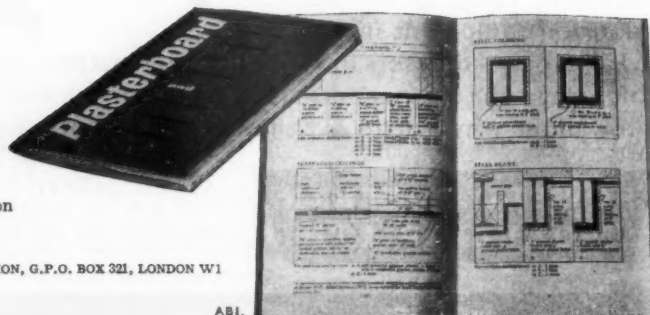
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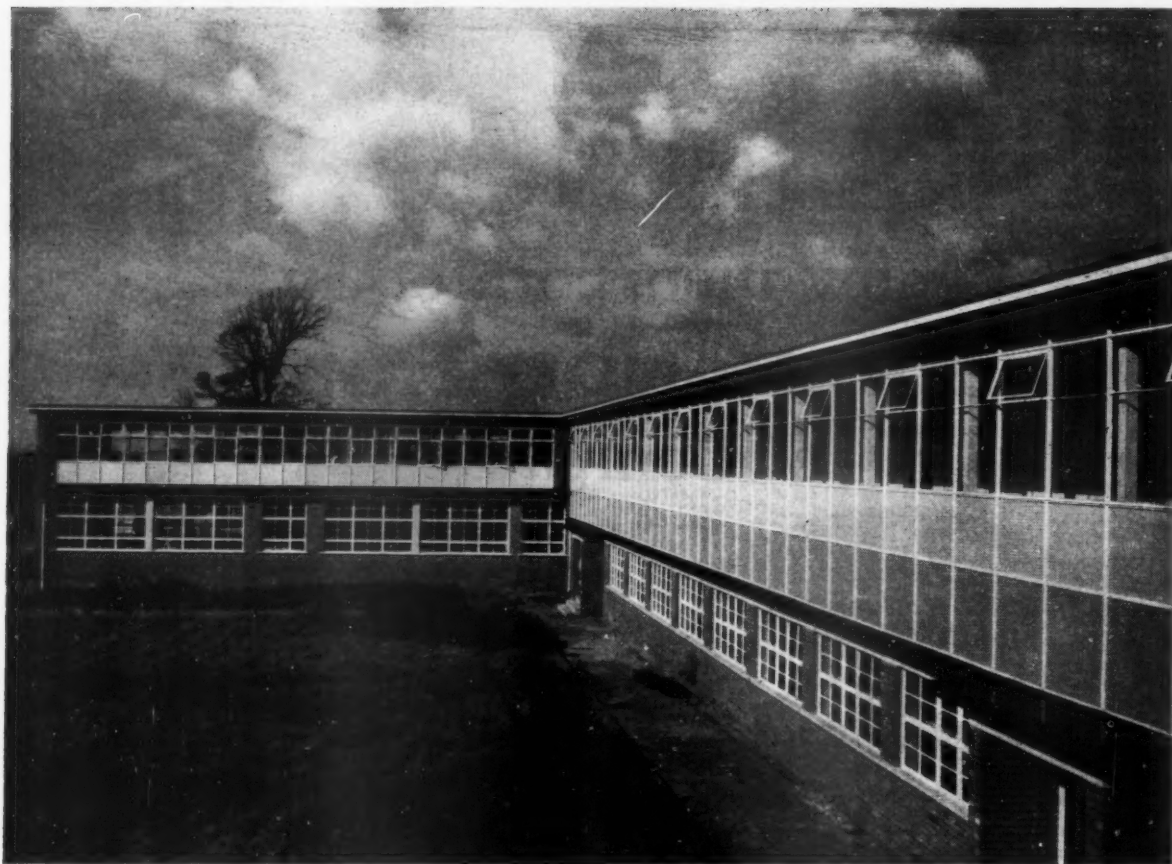
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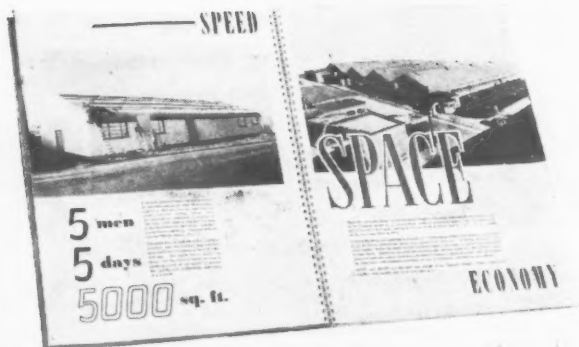
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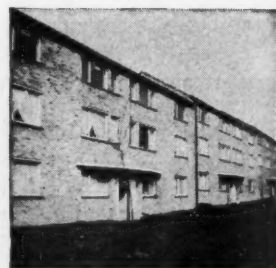
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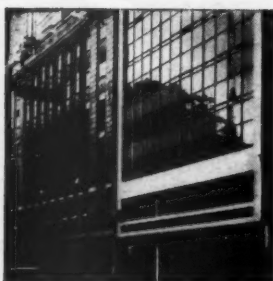
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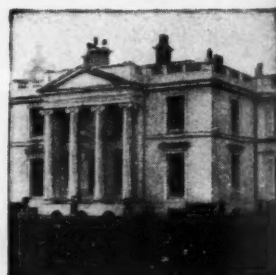
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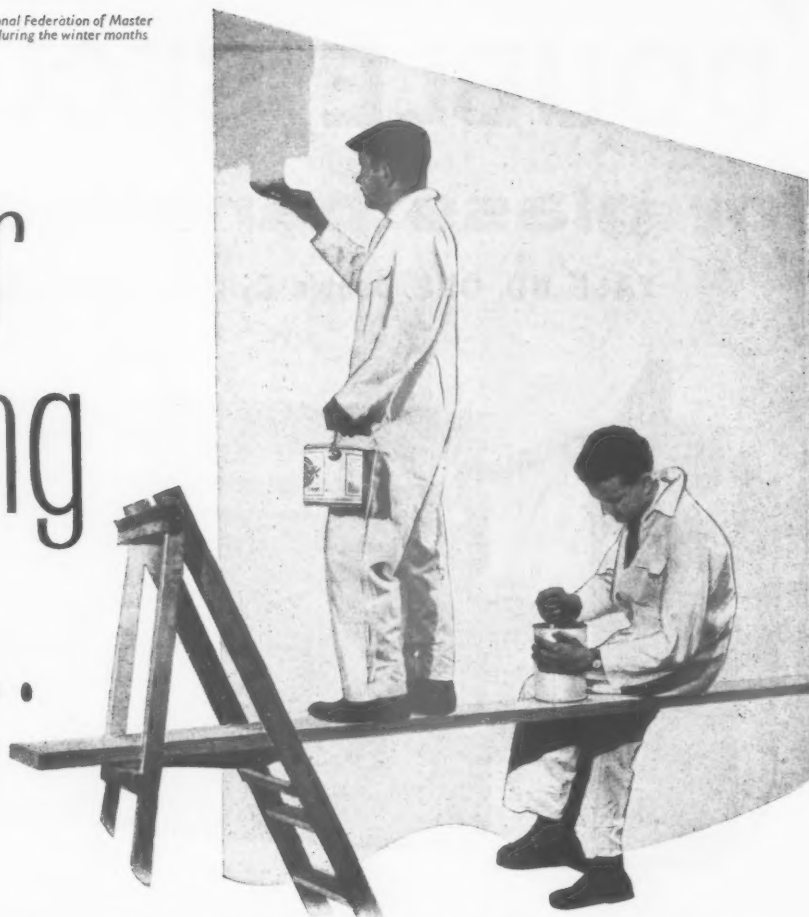
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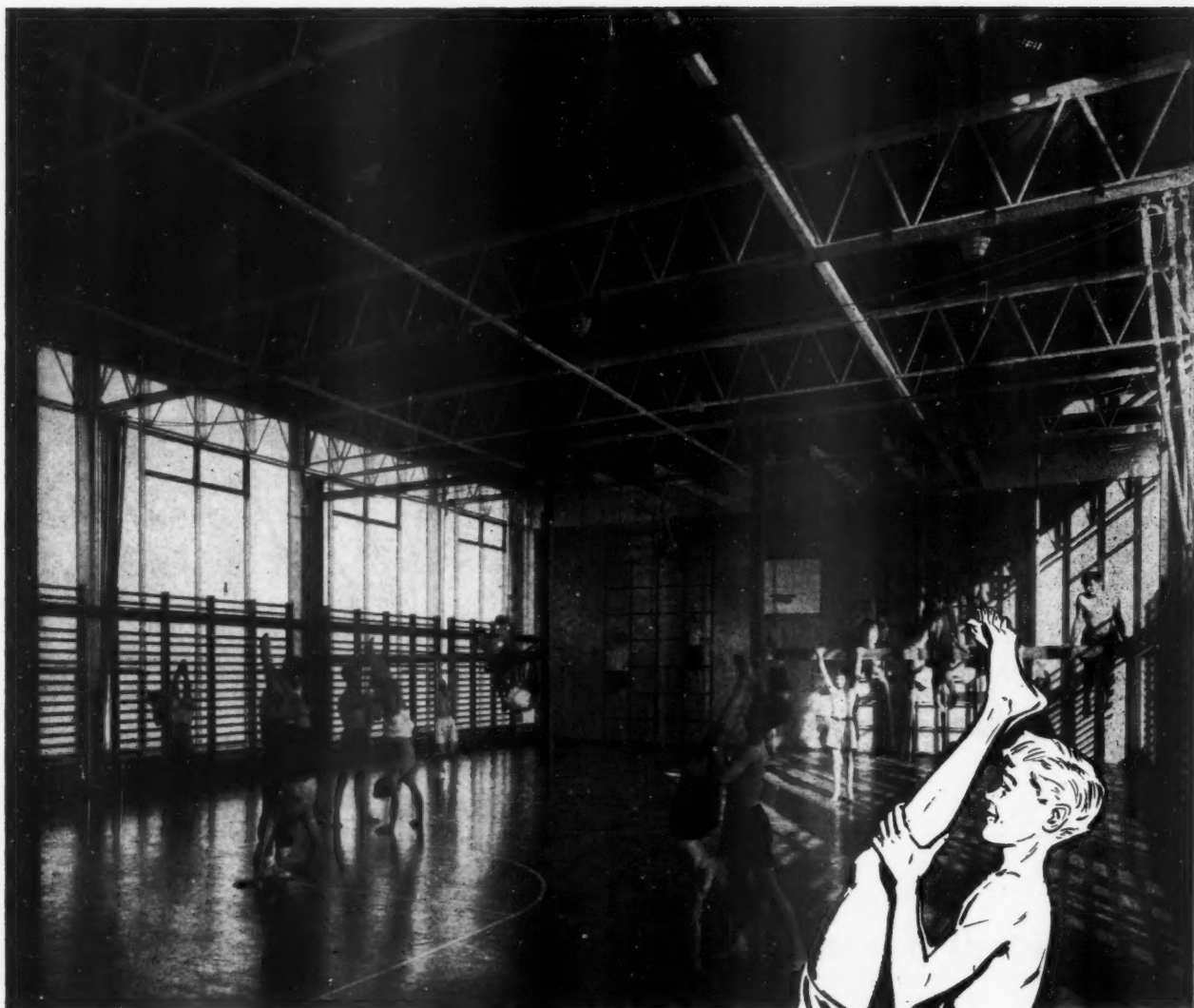
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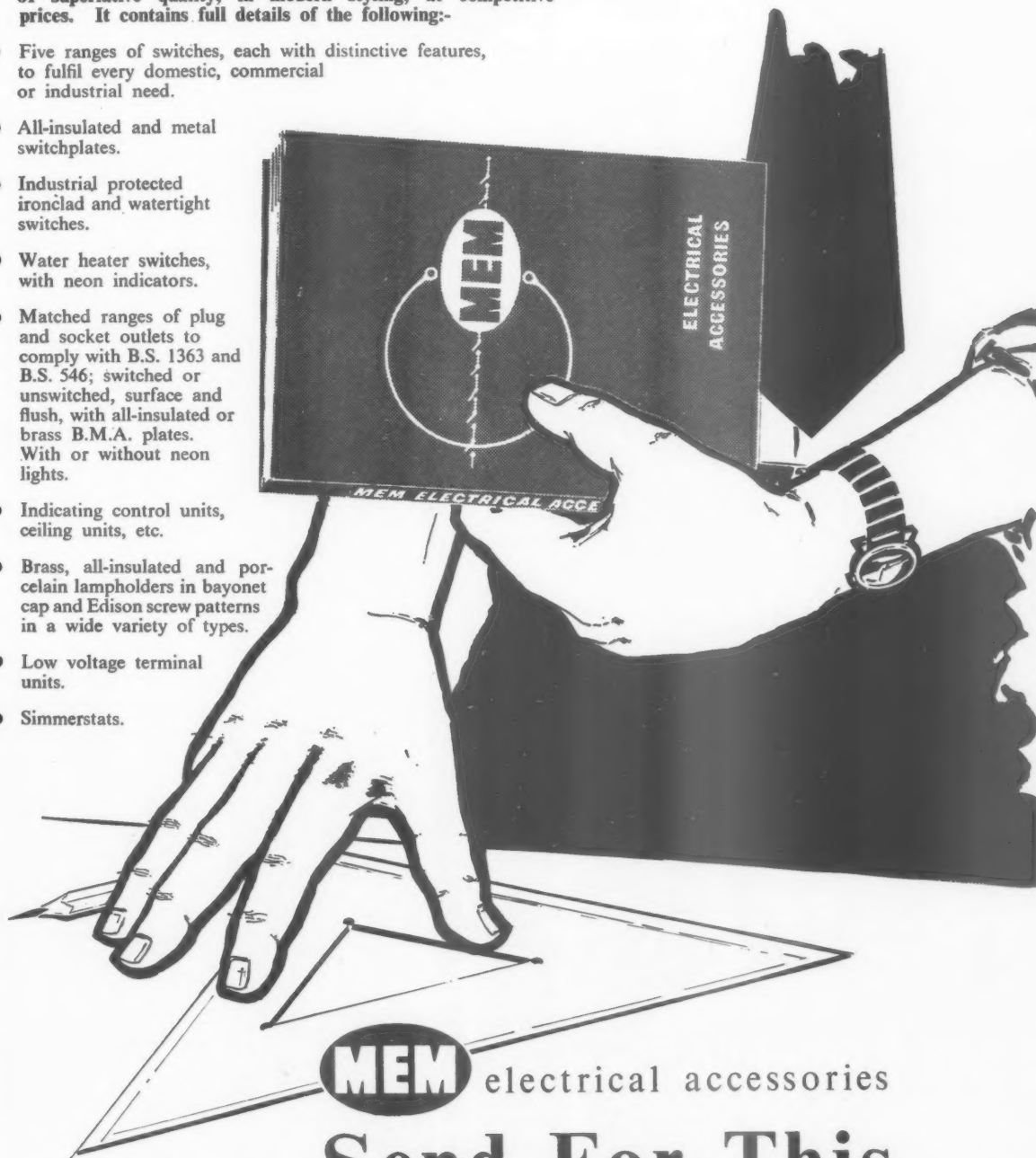
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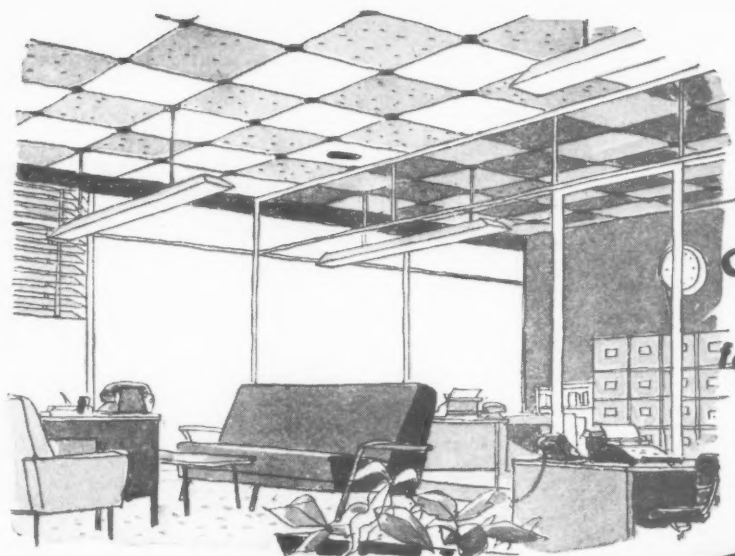
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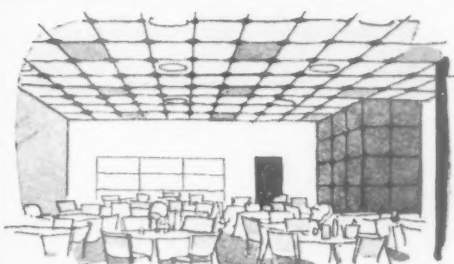
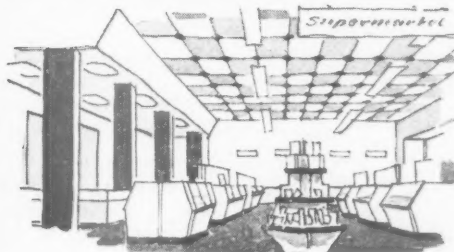
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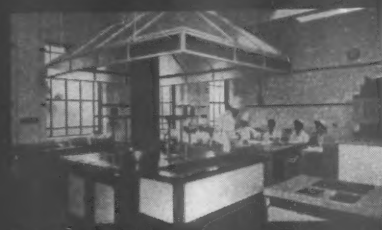
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The Architects' Journal

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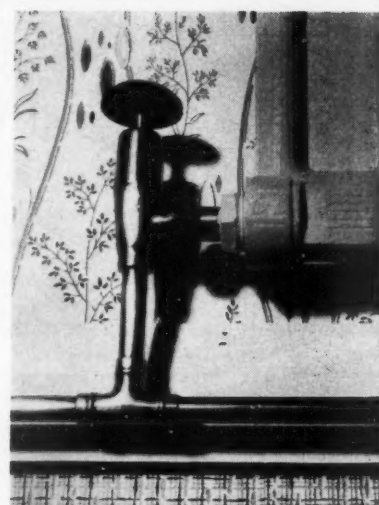
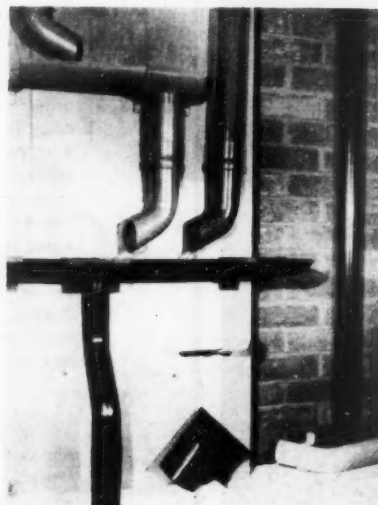
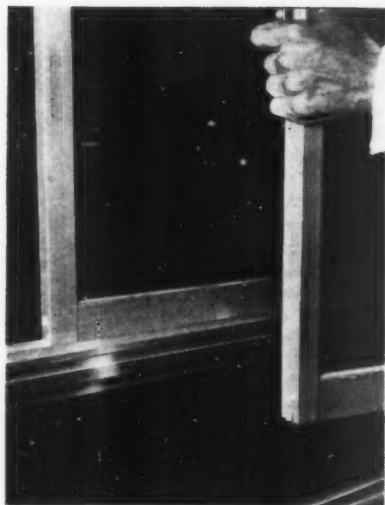
NOT QUITE ARCHITECTURE

Underneath the Arches

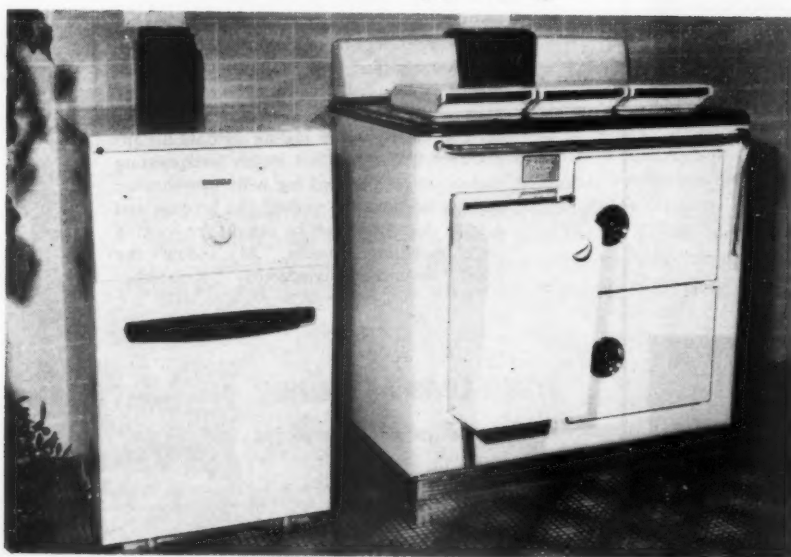
The Armstrong Siddeley Sapphire that was drawn up at his unregenerate railway-arch premises belonged to the Guvnor and the Guvnor was inside the dingy caverns giving orders with his hat on. He didn't see me come in. Somebody told him. He tossed me a scornful glance, made me wait and then tardily had a workman show me up a home-made staircase. I waited in the tiny office that was done up in green and cream without a dado band. As the other chair was acting as a sort of spilt tea puddle catchment I sat on an orange box. I was all on my own. Trains kept thundering overhead as if to a hard and fast plan for shaking the place to bits before nightfall.

*

The Guvnor helped it. The staircase collapsed under him and he was saved from concussion by a pile of empty magnesite sacks. On his feet again after the commotion, calmer, more or less recollected, he gave orders and finally joined me by ladder, clambering in through the dangerous gaping doorway as if nothing untoward had happened, a big pink fleshy fellow—shirt sleeves, braces, Eden hat. He went off ceremony after we had shaken hands below an express, serving me right for calling without an appointment, and worked at his desk, sitting feet in, knees out and big belly overhanging corrugated flies. He worked like Scrooge and a train thundered and he caught me looking up at wobbling cobwebs. "My widow's my affair," he said contemptuously. "Remember



What's Happening?



The six photos on this page are all of items which are on show at the Building Exhibition. They have been chosen not because of their pre-eminent interest or value, but because they illustrate a trend. Items and trends are as follows: Top left, Tecton beams: standard timber structural components. Top right, invisible jointing of plaster board by DSIR: self finish of factory made components. Above left, John Thompson Beacon's aluminium horizontal sliding window, with pull out frame: special windows for tall buildings. Above centre, G. H. Osborn Building Product's glass fibre gutters and high impact p.v.c. down pipes: plastics invasion of standard components market. Above, Yorkshire capillary valve for small bore central heating: extension of central heating to middle class home. Left, oil-fired versions of Smith & Wellstood's Sentry boiler (left) and Esse cooker (right): "oilification" of heating equipment.

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I told you. Don't you go harping on her again, like.

"Still, it's your job," he said grudgingly, turning to talk now and tipping back his hat. "How you keeping nowadays?"

"I've quit Munificent," I said.

"What, you have? What you after, then? What you flogging me now?"

"I'm after a floor."

"A floor, are you?" He concealed his catch like a poacher. "What, for yourself, like?"

"Sort of."

"Kitchen?"

"Larder."

A thunderous rush, a dropped, Doppler whistle, a sharp report and something like *The Flying Scotsman* had passed into the next borough, leaving the Guvnor's hard, cellulosed, full-colour, pin-up blonde lying flat on her back on the compo, drawing-pin faithful to loop of pink ribbon. "Fair old job," he said. "Putting it out to tender? Pity your friend down the line there Peskel won't play. You heard what happened to him?"

"I was sorry."

"I dare say. When all you reps found was the top clipped back on his Booths you went round and signed him up in the *Dog and Duck*. I'd no time for Peskel. He let a good business go phut through his own fault. He took on jobs towards the end, he knew he couldn't complete—knew he couldn't. And he never cared you know. He couldn't tell just looking if a floor was right. He couldn't. I say that. Peskel couldn't tell a good floor from the bum of a giraffe. I learnt the hard way, down on my housemaid's, back in days my head dummy had a foreman in his mouth. I'm still at it. Here at 8, home at 8. It pays me. My biggest job came 8.10 a.m. one Friday with the QS at Skyscrapers phoning for an estimate quick. And you'd be surprised how often architects phone me up on the night-line. I specialize, see, just the one floor. They know I won't ever have it go wrong on them. There's my reputation. I've taken up and laid again before now."

"Don't, my larder."

"Next two arches along'll be incorporated soon. You'll see changes here come summer. Didn't you meet my boy once while he was down here from Oxford?"

"Haileybury."

"He's coming in with his old man; he made up his mind last night. I'll do your larder. I'm going to celebrate. I'll do your larder better than you ever dreamed," the Guvnor said.

And he did.

ROBIN MUDIE

The Editors

TROGLODYTES IN PICCADILLY?

THE Piccadilly Circus enquiry opens in two weeks. As both the LCC and the developers support the scheme that has shocked public opinion, it is essential that opposition to it be organized, and professionally represented. Here, one would have thought, was an opportunity for the architectural and town planning professions, whose reputations have been damaged, to present a professional case for comprehensive planning and good design.

If they cannot do so the Civic Trust, which was formed with influential patronage precisely to resist civic "outrage," must oppose the scheme on behalf of the public. It can never be taken as a serious force in the fight for good architecture and town design if it can be said that it shies away from the big issues and is afraid to fight the big interests.

This is made all the more necessary by the rumours we hear of the LCC's latest ideas for the Circus. The engineers are said to favour "channelization" of traffic, which would restrict the pedestrian concourse, and divide the roadway with islands and traffic lights.

Since, moreover, the engineers, the police and the developers are opposed to an upper pedestrian level, it is now being suggested that two-level circulation could be achieved by a greatly enlarged pedestrian concourse underground. Even if this was done with the greatest boldness and imagination, with escalators to street level and direct access to shops and restaurants, it completely reverses the rational order of things. Piccadilly exists primarily for the pedestrian to enjoy the bright lights and the living city scene.

To put the cars on top and the pedestrians underground in a troglodyte Motropolis would symbolize the victory of motors over men. The need for a revolutionary approach to the traffic problem becomes clearer every day.

THE BUILDING EXHIBITION

Another Building Exhibition is over. For manufacturers and builders it is the industry's one great social event. For the architect it is some sort of index of how building technology is going. We say "some sort of index," because its haphazard nature makes it troublesome to assess. On the one hand the high cost of exhibiting keeps out too many of the newest developments and on the other the casual arrangement and staffing of the stands make it remarkably difficult to find out what, in fact, is there. It is only, therefore, the very broadest trends which can be safely noted. Thus, the interest of window manufacturers has shifted from curtain walls (the development of which seems at a standstill) to the problem of making separate opening lights in tall buildings. Timber is making a very strong bid to be considered a standard structural material. The heating industry is girding itself for the big new market in central

heating, with small bore hot water as the favoured means of distribution and oil of firing. For the architect one of the most significant developments is the great increase in self-finished factory made materials. These range from a new technique for obtaining a finished wall surface with plaster-board, to the manufacture of fair faced concrete blocks and of pre-cut veneered chipboard for assembly as built-in furniture. One last trend is the marked increase in the number of products of foreign origin which are being manufactured over here under licence. A very large proportion of the ideas which could honestly be described as "new" were American, Scandinavian, French or German. This is no cause for worry provided always that its effect is to quicken the pulse of our own inventiveness.

We have commented on the difficulty of finding things in the Exhibition. Is this necessary? Time and again in these columns, we have called for the sectionalising of the stands so that all products in one class are shown together. The answer of the Exhibition promoters has always been that firms don't like it this way and that it would create insuperable difficulties for firms like Builders' Merchants who have a wide variety of products to show. But times have changed. Consumer research has shown that when shops are grouped with others of their class they do much more business. Does not the same apply to stands also? It is gratifying to notice that this time the promoters created a definite section for painters and decorators. It is much to be hoped that this is the prelude to a sectionalisation of the whole Show: everyone would make much more money and the saving on visitors' feet would be considerable.



BRITAIN MAKES IT—JUST

So Britain is going to the Milan Triennale next year after all. Congratulations to the Ministry of Education for deciding to take part (the theme is "Schools and Homes") after other government departments had backed out. The exhibit will consist of a small, three-classroom school, standing amongst trees in the grounds of the exhibition hall. It is being designed by the Nottinghamshire architects departments (County Architect W. D. Lacey) and it is a further development of the prototype in the Nottinghamshire "rock 'n roll" system which was built at Newark. One classroom will be used to show the type of construction; the others will probably be in use, complete with school children doing their lessons. The Nottinghamshire architects, who will select cutlery, crockery, books, pictures and all the other equipment needed for the school, certainly deserve the compliment

of having their work on international display. Incidentally, they've just received a bronze medal for their Tuxford school (AJ, April 30). It's quite something when an allied society recognizes that a prefabricated school is not only economically planned and structurally exciting but also Architecture.

*

It is particularly satisfying that Britain's first official display at the Triennale is not a specially-designed show piece by one of the London boys, but so many yards of our current school programme.

ANTI-UGLY SITUATION

Most of the credit for the parliamentary fuss about Piccadilly Circus must go to the Anti-Uglies, who lobbied MP's and persuaded J. M. Richards and R. Furneaux Jordan to go to Westminster as expert witnesses. This ought to persuade people that there is more to their activities than mere undergraduate exhibitionism.

HOW HIGH HOW OFTEN?

Although London's building skyline should remain fairly low, there are advantages in building high in the right places. That is the Message of the LCC's high building exhibition at County Hall. It sounds all right. And the buildings chosen to illustrate the eight rules the LCC uses to judge applications for skyscraping are excellent—Thorn House, Eastbourne Terrace, Castrol House, the Barbican and some of the LCC flats. But the Piccadilly Circus building breaks at least four of the rules. (Has it positive visual or civic significance? Will it stifle good development in adjoining areas? Will it relate satisfactorily to higher buildings nearby? Is its design of high quality?)

Can the Council really control applications if they leave developers to select their sites and then treat each case on its merits? Hyde Park already has ten high buildings approved or proposed for its perimeter, and some of them are uncomfortably close together. Surely it would be better for the planning authorities in big cities to say in what areas, or even on what sites, high buildings would really be worthwhile additions to existing architecture.

IT'S THAT MAN AGAIN

After the second of Charles Eames's

Lethaby Lectures to the Royal College of Art I heard a high-ranking design propagandist say he thought the whole thing was an insult. It's true that as usual Eames had little to say, and that he said it incoherently; but he is too nice to be insulting. And, as a matter of fact, now that I'm getting accustomed to his manner of burbling with film or slide accompaniments, I do feel that something of the Man and his Work gets across to me. Which makes me realize that the way to learn from him is to work with him, watching his particular kind of design process in action. Someone also in the audience realized this, for one of the first questions was: "Are there any vacancies in your office?"

*

The first of the lectures was good entertainment—mostly a triple-lantern-slide programme of Eames's impressions of Moscow. He made few comments, but I noticed that those which had nothing to do with design were the least obscure. "The Russians don't go into a restaurant to eat laundry," he said; "they eat bread. As for ice cream; they have a gimmick here—they make it with real cream and things. How do you cope with a nation like that?"

*

How do you cope with a man like Eames?

VOLUNTEER-JERKING

Did you know that if you were on the rocks the ABS couldn't afford to pay you more than £65 a year? And did you know that the only home for old architects or their widows is near London? These were some of the facts Basil Spence reminded us of when he told us, at the ABS lunch, that our large and prosperous profession didn't look after its own people nearly as well as other professional bodies. I liked his proposal that the RIBA should arrange a "voluntary" increase of five shillings a year in the subscription to raise some £4,000 a year for the ABS.

A LINEAR M1 CITY?

The conference on the economic forces making for urban concentration, held recently by the International Centre for Regional Planning and Development, was most interesting, if rather confusing. There is obviously a great need for further exchanges



*This American tunnel bridge, which won a prize in a Museum of Modern Art competition, offers endless possibilities for fascinating games besides adding new colours and shapes to the playground. It is illustrated in *Playgrounds and Recreation Spaces* (Architectural Press, 69s.) which illustrates some very interesting foreign solutions for playgrounds that British local authorities and architects would do well to study. Constructional details are given, and the introductions by the Swiss playground designers Alfred Ledermann and Alfred Trachsel express an attitude to play and recreation that is all too rare in this country.*

between the economists and geographers who are studying problems of urban growth and location, and the planners and architects responsible for building or rebuilding towns. It's essential for planners to understand the economic forces at work, and useful too (I suggest) for geographers and economists to think more of human beings and less of allegedly "inevitable" movements dictated by geography and the transport network. We shall be publishing a full report later.

*

One point to emerge was that the suggestion in *Motropolis* that the M1 might become the main urban motor road of a London-Birmingham conurbation is not so far-fetched after all. Leslie Ginsburg, head of the Birmingham planning school, threw out the idea that there *should* be a linear city from Birmingham to London, and another architect-planner agreed with him. A. G. Powell, senior research officer of the MOHLG, said that the M1 was part of the machinery of urban expansion and could very well lead to the development of a linear city. You have been warned.

LIVEMANSHIP

Talking of Birmingham, the School

of Architecture might well adopt the slogan "Live Projects Pay." The fees from their much-publicized projects have paid for a student's common room and accommodation for the live project office. The common room will be furnished both from project fees and from student subscriptions of about £100.

*

Douglas Jones, the director of the school, is to visit Cornell School of Architecture as a visiting critic in the spring term of the next academic year. Will Cornell copy Birmingham before other schools in this country have got around to doing so?

NOW YOU HAVE A GUESS

How many houses is enough houses? The question was answered in two papers presented to the recent Conference of the National Housing and Town Planning Council. One paper said we needed a minimum annual programme of 410,000 dwellings. Another said that 220,000 a year would leave us with too many houses in ten years time, and that we couldn't afford it anyway. Which is correct? I leave it to you to guess. The first paper was by T. V. Prosser, president of the NFBTE; the second was by Stanley Ineson,

deputy chairman of the Leeds, Skipton and Morley Savings Bank.

THINGS TO COME ?

Mr. Marples says that his pink zone scheme for Christmas traffic in London "may well be the shape of things to come if it's a success." If he meant that the Ministry at long last intends to put a stop to indiscriminate parking and loading I have no quarrel with him.

But if he meant that the emergency car parks may be indefinitely continued then it is not too early to begin protesting. No less than 6 of his 16 car parks are in the royal parks, and one is in Battersea Park. Far from consenting to yet more of the parks being used as garages, we should be demanding the removal of the cars that are parked there now.

ASTRAGAL

DIARY

The Replanning of Rotterdam. Talk by J. T. Smits at the RICS, 12, Great George Street, London, S.W.1. 5.45 p.m.

DECEMBER 7

Modular Society AGM. At the Building Centre, 26, Store Street, London, W.C.1. 6 p.m.

DECEMBER 7

Brazilia. Talk by Sir William Holford at the RIBA, 66, Portland Place, London, W.1. 6 p.m.

DECEMBER 8

Lighting of Drawing Offices. Talk by J. B. Collins and F. G. Langdon, organized by the Illuminating Engineering Society. At the Federation of British Industries, 21, Tothill Street, London, S.W.1. 6 p.m.

DECEMBER 8

Prospect. Illustrated lecture by Nigel Melhuish, organized by the University of London, Department of Extra-Mural Studies and the New Churches Research Group. At the Lecture Theatre, Institute of Archaeology, 31/34, Gordon Square, W.C.1. 6.30 p.m.

DECEMBER 9

Aesthetic Judgment. Informal talk by Stuart Hampshire at the AA, 34/36, Bedford Square, London, W.C.1. 6.15 p.m.

DECEMBER 9

Modern Trends in Industrial Design. Paper by Sir Gordon Russell at the RSA, John Adam Street, London, W.C.2. 2.30 p.m.

DECEMBER 9

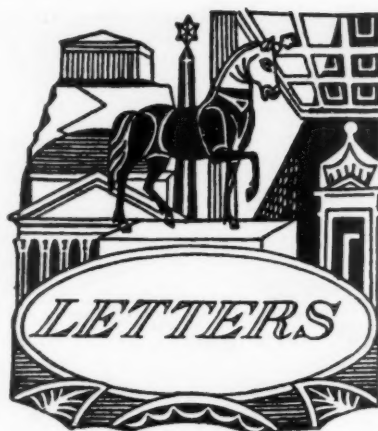
Multi-Storey Car Parks. Talk by E. N. Underwood at the ISE, 11, Upper Belgrave Street, S.W.1. 6 p.m.

DECEMBER 10

Exhibition of High Buildings in London. LCC, County Hall (North Block), London, S.E.1.

UNTIL DECEMBER 19

Exhibition of Sculpture in Ciment Fondu. At the Building Centre, 26, Store Street, London, W.C.1. UNTIL JANUARY 2, 1960



Elisabeth Beazley, A.R.I.B.A.

H. Werner Rosenthal, F.R.I.B.A.

Beverley J. Pyke

Is It Really Necessary?

SIR: I came away from the Building Exhibition with some useful information, but this might well have been acquired in the office either by telephone, or by a visit from a firm's representative.

To me—and perhaps others?—the exhibits themselves were eclipsed by the nightmare vision of acre upon acre of cleverly contrived stands. Each (perhaps excellent in itself) competed with its neighbour in originality and gimmickry. The total effect was one of lavish chaos with a deadening touch of good taste. Unfortunately it somehow missed the chaotic exuberance of say, the Piccadilly illuminations, which might have imparted energy and enthusiasm so necessary to the viewer at any large exhibition. As it was, the relief of finding one's self (I always found myself somewhere instead of arriving intentionally, despite that useful AJ guide) in the hall where the building machinery is on show was intense. No smothering display here. It made one quite light headed to be free of the clutter; I nearly ordered a bulldozer on the spot.

Is the immense energy, time, and expense which must go into creating an exhibition of this sort (for 2 weeks) justified by its usefulness in showing the latest developments in the industry? Or is it basically a good excuse to get out of the office and see what everyone is up to? If the latter (a perfectly valid reason in itself), might the show not be more simply put on to everyone's advantage?

ELISABETH BEAZLEY

London

The Lesson Of Staines

SIR: Is not the Staines Bridge scandal merely another indication of the prevailing attitude among engineers that their only job in life is to make architects' designs "stand up"? There is something vitally wrong in the education of engineers which needs urgent revision.

An excellent editorial in the current *Concrete*

Quarterly draws attention to this fact, but, the Editor also asks, "how many architects are familiar with engineering principles"? Of course, an increasing number of architects are showing considerable awareness of structural principles, but "structural theory" as it is called, is still the bug bear of architectural education. It is still mostly taught by engineers with little or no sense of design, who inject half digested formulae and abstruse calculations into an unsympathetic student body and so, by and large, the status quo is perpetuated.

Let us get our own house in order! Let us snap out of the Renaissance conception of architecture being merely form. If we teach and are taught the structural significance of form, it will put a stop to that new formalism which has crept back into architecture of late under various disguises and which only too well justifies the engineers' attitude. Then perhaps engineers will begin to realize that architecture is more than Ruskin's "cable mould" which turns a wall into architecture. We might even arrive at designs which are fundamentally economical because they have been correctly conceived.

H. WERNER ROSENTHAL

Amersham

Integration Through Pupillage?

SIR: There was a time when the term "architect" was unknown—the leader was a master-builder whose knowledge and exceptional abilities had fitted him for the premier task of the ordering of the whole works. Young men with the right qualities?—were trained under the master; versed in all the crafts and gaining site experience alongside theoretical study. As they proved themselves, so they obtained commissions on merit.

With the granting of the Charter, the isolationism of those seeking to equate an art with the dubious stature of a profession, started a rift between architect and building team which, accelerated by the establishment of an examination system for an art (albeit to some extent technical) has set up the architect as a man apart. That it was recently found necessary to hold a competition for small house designs in order, presumably, to break down the popular conception that "an architect-designed building" is a luxury article, is surely a sorry reflection upon the professional inability to create good design with a stringent economy.

It must therefore be most reasonable and rational to consider very carefully the re-integration of the architect within the building force based, I would respectfully suggest, upon ability proved through articulated pupillage rather than the present unrealistic school training programme.

Very high moral and artistic integrity coupled with economic intelligence should again become the guide which clients might find the more readily discernible.

And then might not the schools exist in their own right, with post-graduate courses for those with the skill and determination to lead the team in the greatest and most enduring Art?

Sussex

BEVERLEY J. PYKE



CIVIC TRUST

Amenity Awards

The Civic Trust announces the results of its County Amenity Awards Scheme for 1958. Seventy County Councils adopted the scheme, and there were 669 entries for the two classes of Award: Class I, for the new building or groups of buildings in the design of which most regard had been paid to their relationship with their surroundings; Class II, for other types of development making the best contribution to the improvements of the local scene. For 1958 the competition was open to schemes completed within three years in the areas of County Councils; next year it will be open to County Boroughs, and the following year to London Boroughs. Out of a possible 68 awards in each case the assessors (nominated by the PRIBA for each County) 58 were made in Class I and 35 in Class II. The Trust suggests that more awards were not made because in some counties the entries had a bias towards good architecture of a single building, whereas the Trust is more anxious to stimulate interest in the appearance of a town or village street as a whole. In one or two counties the assessors reported that many of the entries could almost be taken as examples of what not to do. In Scotland awards were made in Class II in only 8 of 16 counties that is operated in the scheme.

On the other hand, where Awards or Commendations were made, the high quality and variety of the schemes was very satisfactory. The Trust note that six road improvement schemes and four bridges were among the winning entries, and express satisfaction at the commendation of a street lighting scheme at Haddington (architect Alan Reisch) and an Award for the Dolgarrog hydro-electric scheme (architect S. Alwyn Foulkes).

Among the architectural awards were three petrol filling stations, four shops, public lavatories and a number of bus shelters, information kiosks, pavilions and other small structures.

JCC

New Tendering Code

Last September the Joint Consultative Committee of Architects, Quantity Surveyors and Builders published a significant little booklet, *A Code of Procedure for Selective Tendering*. ASTRAGAL commented at the time that "... there's nothing startling in it, but a lot of small points of procedure are neatly buttoned up." At an open meeting convened by the JCC at the RIBA last week, Mr. M. H. Thackray, F.R.I.C.S., chairman of the working committee which compiled the code, echoed ASTRAGAL's comment. He went on to say that, whilst many architects already observe a form of procedure such as is recommended, the very fact that differences arose at the earliest discussions on the subject in committee made it all the more obvious that a code of practice, acceptable to the three parties involved, was an urgent necessity. The purpose of the open meeting, which was well attended by architects, quantity surveyors, builders and representatives of various ministries and local authorities, was to allow the opportunity for discussion and questions from those present. The most significant points which were raised during the discussion are both contained in paragraph 2 of the code: (a) the time at which priced Bills of Quantity should be submitted by the tenderer for checking by the quantity surveyor, and (b) the provision that errors in the priced Bills should not alter the tender figure—which must either be adhered to by the tenderer or withdrawn. Both these points are ones on which strong views are held as was obvious at the meeting and, we were told, in committee discussions. Of those present the quantity surveyors were by far the most vocal on the first point, most speakers insisting that priced Bills be submitted at or immediately after the time of submitting tenders. Discussion was cut short, however, by the observation from Mr. Thackray that the RIBA form of contract

calls for the priced Bill at the time of signing of the contract. Nonetheless, there was obviously a residue of disappointment that the code does not make a stand on this point.

The discussion on the second point brought to light the differences in outlook. Some argued that it is extremely difficult to dissuade a client from allowing a tendered, after errors in the priced Bill have been discovered, to amend his tender if the amended figure is still appreciably lower than others. In such cases the advice that the tender must be withdrawn does not meet with much sympathy. Others put forward the familiar argument that to hold a tenderer to a figure which contained an error detrimental to himself was asking for trouble later in the job.

The official view of the JCC, as propounded by Mr. George Whitby, an architect member of the drafting committee, was that architects and quantity surveyors were sufficiently experienced to detect when a tender figure was likely to be incorrect, such, for example, as when it was very much lower than the estimate and the other tenders. One had the feeling, however, that this was rather a lame justification for an extremely important item in the code. Most builders present seemed strongly in favour of the code, which provides that tenders must stand or be withdrawn, but never altered; and, without doubt, there seems a lot of sense in it. But, in the view of the very real criticisms which can be levelled at this provision, can't the JCC fall back on a reason for their views which has a slightly sounder ring than that submitted by Mr. Whitby?

A further point which came out of the discussion was made by a builder who suggested that the code should contain a pre-fatory statement to the effect that it found the support and sponsorship of the RIBA, the RICS and the NFBTE. This is a good point, for there are many who will find the absence of any such official blessings a salient argument for disregarding the provisions of this sensible booklet.

We publish here a report of the discussion "Services for Tall Buildings" arranged by the MOW and Brixton School of Building on November 20. The method of question, answer and discussion made for easier digestion than reading a series of papers. The experts on the platform were: Sir Thomas P. Bennett chairman, J. R. Kell (heating and ventilation), R. T. Gillett (soil and waste services), J. C. Knight (lifts and electric services) and J. A. Derrington (structures). A correspondent reports the outcome of the discussion on each of these subjects separately.

SERVICES FOR TALL BUILDINGS

Symposium at the Building Exhibition

Structure

Until recently riveted or welded steel would have been the immediate structural choice for tall buildings because of its speed of erection, an important consideration in

commercial buildings such as offices where a quick return on investment is sought. However, with the improvement in general contractual organization and greater site

mechanization the time difference between steel and concrete has been greatly reduced. Even in America where steel has been traditional for tall buildings the changeover is being made to r.c. concrete on the grounds of its 25 per cent. advantage in cost over steel. In both materials stability at heights in excess of 300 ft. cannot normally be achieved with an open framework construction and it is necessary to provide special bracing either by cross walls or by diagonal bracing unless the building is of an inherently stable shape.

Office blocks, generally, are narrow in depth in order to afford good daylighting standards at the backs of rooms. Mr. Derrington suggested that a more stable shape could be achieved if the depth was increased to 70 ft. with the service core in the centre as is frequently done in other countries. The Building Regulations which require that means of escape stairs and escape routes must be ventilated direct to the open air make this more difficult to attain in England. Perhaps, we should not complain too much about the Building Regulations which are, however slowly, gradually being brought in line with current needs. Certainly in the London area the acceptance of single staircase means of escape for Section 20 buildings is a step in the right direction.

The self-load of the structure is another factor of increased importance in tall buildings (which, we were told, will settle as much as 8 in.) and it is worth while pursuing every means of reducing this as far as possible by the use of lightweight screeds, partitions, cladding materials. Perhaps we can look forward to the acceptance of lightweight concretes for the structural elements themselves.

Heating and Ventilation

The heating and ventilation engineer is another man who is likely to demand the extensive use of lightweight materials to counterbalance the prodigious heat losses produced by the increased exposures and the greater cooling effect imparted by the greater wind velocities. In buildings, then, in excess of 100 ft. the insulating standards of external walls should be increased stage by stage as the height increases. The heat loss is increased by 4 per cent. between the 3rd and 6th floors, by 17.4 per cent. between the 7th and 12th floors and by 23 per cent. between the 13th and 17th. The usual points of greatest thermal weakness occur where the structural members meet the face and the easiest way of solving this problem is by the use of curtain wall techniques in which an insulating layer can be incorporated between the facing material and the structural element.

The other source of severe heat loss occurs through windows. Double glazing solves one half of this problem and the other half remains to tantalize us—namely, a window which is airtight at pressures of 20 lb. per sq. ft. In commercial buildings it seems worth accepting fixed windows and the higher maintenance costs of window cleaning from outside by cradle and providing ventilation by mechanical means. Whether the Englishman can be induced to desert his

love of fresh air remains to be seen. If this is done the heating would be incorporated and a full air-conditioning system installed. It would have to be a high velocity system (with the noise absorbed in acoustic ducts) if the ducts are to be prevented from consuming too much of the valuable floor space. Where openable windows are adopted Mr. Kell seemed to think that the first choice would be for hot-water radiators of the convector type which allow the pressure to be pushed up. The high heat losses prohibit the use of electric floor heating which is unable to provide sufficient heat input, and like panel heating has the inherent disadvantage of being slow to respond to the rapid changes of temperature which occur under conditions of rapid cooling in tall structures. It seems that the system will be a hot-water system for although steam has the advantage of smaller diameter heating mains and distribution pipes it has less flexibility when applied in mild climates such as ours.

Where oil fuel replaces solid fuel the boiler no longer needs to be at ground level adjacent to the fuel storage and can be placed on the roof, freeing the ground and basement areas for car parking and garaging, etc. The cost effect of this depends largely on circumstances but in commercial buildings it is probable that the savings in costs of fuel is more than offset by the additional costs of fuel pumping equipment, the one per cent. extra on structure, hoisting of the boiler and provision for renewals and the cost of acoustic insulation to occupied areas below. The latter has to be done rather extravagantly for top people of to-day elect to live on top floors.

Hot and Cold Water Services

In office blocks the total hot water load is usually small in comparison to the total space-heating loading. With this small requirement, greater simplicity and considerable savings in space can be affected by avoiding bulk storage of hot water, and adopting either localized storage or a continuous circulating hot water supply.

In the case of cold water services we have become familiar with the use of booster pumps already in 100 ft. high buildings, and the tall building is treated in much the same way as a series of 100 ft. blocks one on top of the other with booster pumps and storage tanks at each of the stage points. In blocks of flats of 20 storeys this principle of division into 10 storey layers is already being carried out both for cold water services and for mechanical ventilation to internal bathrooms and wc's.

Above 200 feet additional water storage has to be provided for fire-fighting purposes, with a separate distribution system. The reason for this is that the fire engine pump is not capable of pumping water from a hydrant at ground level up a dry riser to heights in excess of 200 ft. Drinking water also has to be booster pumped separately up the block to nominal sealed storage tanks.

Lift and Electrical Services

Here again more expensive provisions have

to be made. An important point to remember is that the lifts must not only be capable of serving the needs of vertical access but must be capable of enabling swift evacuation of the building in case of fire. One or more of the lifts will be designated firemen's lifts for fire-fighting purposes with separate electrical supply and a fireman's control switch which over-rides the normal call system.

The types of lift used have speeds of 250 to 1,200 feet per minute and high rates of acceleration and it was alarming to hear that a 1,200 feet a minute lift required a 36 ft. overrun. Imagine that on the top of your building! Sir T. P. Bennett obviously could and spoke satirically of the "need for a standard Building Regulations approved Hanging Gardens of Babylon lift motor room." Unfortunately ground floor motor rooms are out of the question. With high speed lifts the wear on the roping is excessive.

Refuse and Waste Services

The system of refuse disposal generally employed in tall buildings of flats even up to 20 storeys is still the refuse chute and container system, but it is difficult to know how much further it is capable of extension. The alternative water-borne system (Garchey) is extremely costly adding more than £100 per dwelling over and above the chute and container.

Single stack plumbing with ventilation to the W.C.s only has already been successfully applied to 18-storey housing blocks. In blocks over 25 storeys it may be necessary to increase the internal diameter of the stack to more than 4 in. but even then it might need to be done only on the lower floors. It should be noted that ground floor fittings should be taken direct to the man-hole and so, too, should the ventilating stack.

All these extra requirements are not only expensive but have a voracious appetite for floor area. Services alone are likely to account for 5 per cent. of the total floor area, and after the building regulations, the structure, the access and the other requirements such as lavatories have taken up their share about 60 per cent. of the floor area is left for the occupier. Reason enough for the high cost per sq. ft. of useful floor area in tall buildings.

IN BRIEF

A symposium on Grouting Prestressed Concrete will be held under the auspices of the Fédération Internationale de la Précontrainte and RILEM in Trondheim, Norway, from June 20 to June 22, 1960. The conference will cover a wide range of problems connected with the grouting of prestressed concrete, and in particular with the properties of grout. Contributions for presentation at the Symposium should be sent to Professor I. Lyse, Norges Tekniske Høgskole, Trondheim, Norway, to reach him before March 15, 1960. The FIP-RILEM Committee on Grout will decide which of the papers submitted shall be presented at the Symposium.

Report on The Building Exhibition

Two weeks ago, in the issue of November 19, we published a Preview of the Building Exhibition, which was held at Olympia from November 18 to December 2. This week we publish our Report. The Preview was based on manufacturers' handouts and on such enquiries as we were able to make. The Report is based on the actual visits by architect reporters to virtually every stand which has products to show. It is primarily a report on new products. On each stand the representatives were asked: "Have you anything new to show?" But "new" was qualified as meaning "new since the last Building Exhibition." The Report is, therefore, a kind of recapitulation of what has been going on in the industry during the last two years.

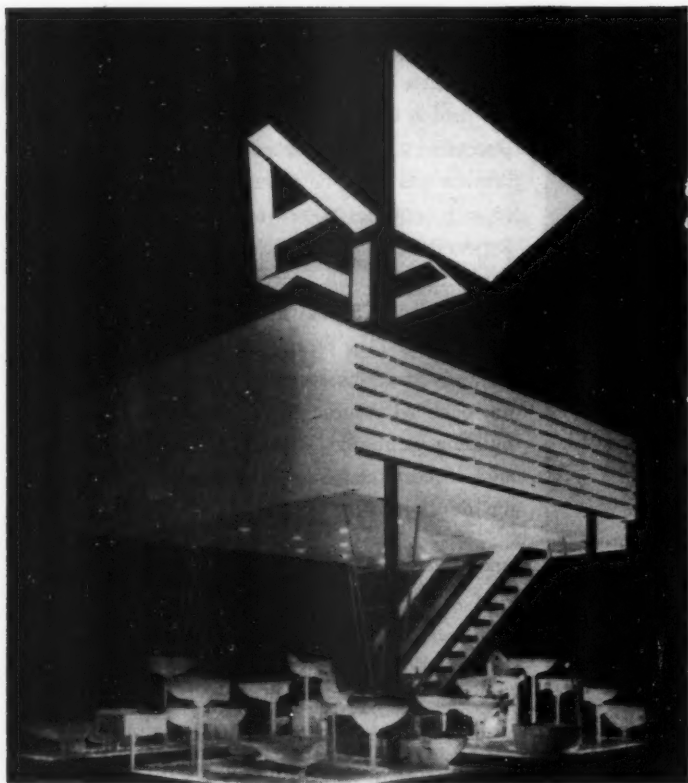
We need hardly remind readers of the hazards of the kind of proceeding which is forced on us by the time available. Our reporters have only two days in which to cover the 500 or so stands; which means that, generally speaking, they can only visit each once. Much depends, therefore, on who happens to be on that stand at the moment of visitation. It is once more a regrettable feature of the Exhibition that few firms can afford to keep a continuous rota of competent technical staff on their stands. How often is it the case that our visitants receive the reply "If only you were here ten minutes ago, our Mr. Smith would have been able to answer your questions." Bearing in mind that the Exhibition is also a great social event in the industry, the lucky presence of Mr. Smith does not always ensure a completely lucid and accurate interpretation of his firm's products. Even when it does ensure this, the interpretation of "new product" is not always easy. Does it mean new *in toto* or can it include any old timer which has received a new styling of some remote part of its anatomy? Does a new colour in a range of tiles really amount to something new? Faced with these and many other puzzles, we have inclined to a rather generous interpretation.

Once more we have used the Information Sheet classification. "Why didn't you use SfB/UDC?" you will ask. The answer is that this Report is not for filing and that time did not permit the more accurate degree of classification which SfB/UDC demands.

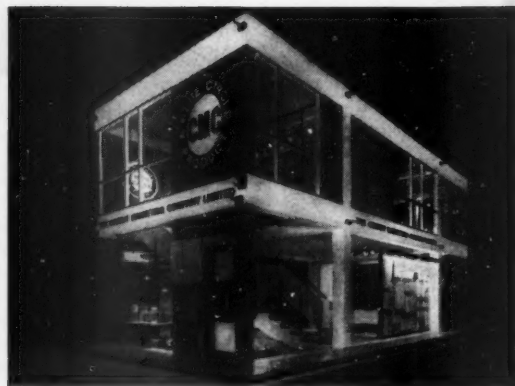
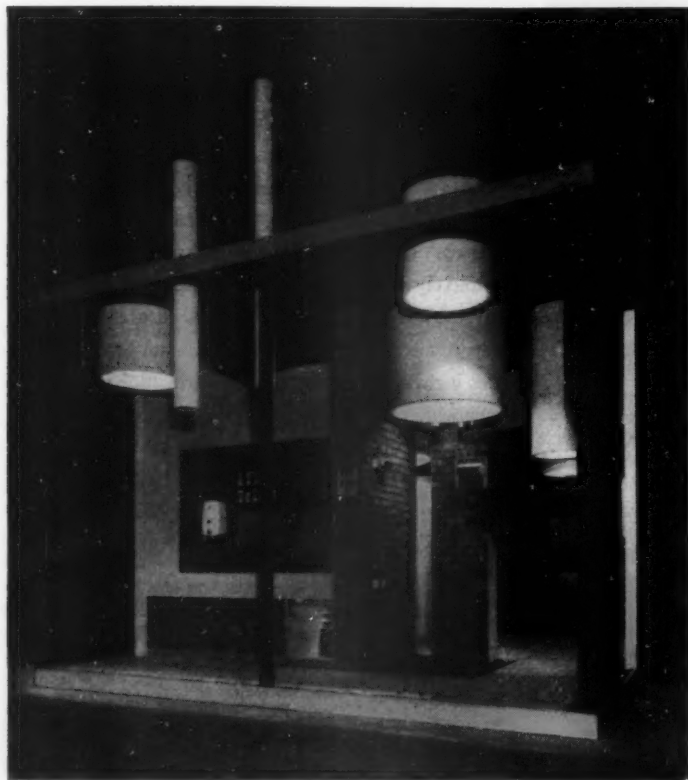


The A³ stand at the exhibition, designed by D. Dewar-Mills.

Stands at the Building Exhibition



Above, the design by Sven Sternfeldt for the Pilkington Bros. stand. Left, the design for Adamsez Ltd. by D. Dewar-Mills.



Above, The Cement Marketing Company's stand designed by Diamond, Hodgkinson and Partners. Left, Dennis Pugh's stand for Ascot Ltd.

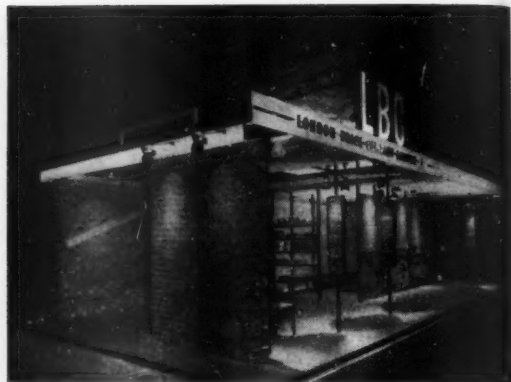


Left, Concrete Ltd.'s stand designed by Stillman and Eastwick Field. Note the suspended staircase.

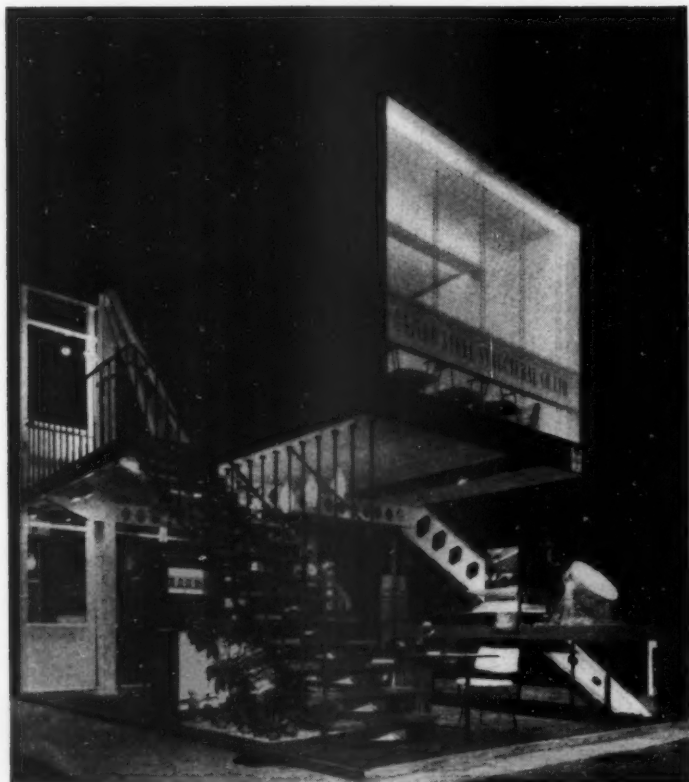
Below, the Carter Group of Companies stand by competition winner Nigel Lewis. The mural decoration on the right is by Ivor Kamlish, M.S.I.A.

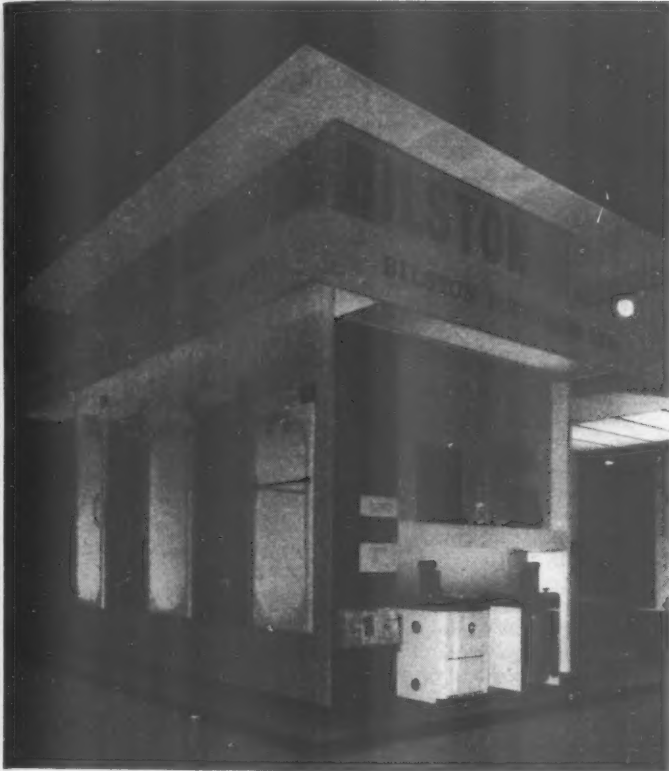


Stands at the Building Exhibition continued

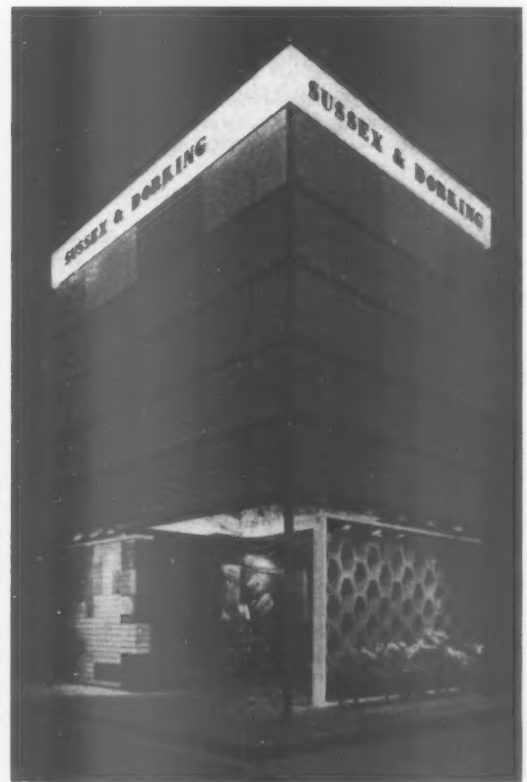


Above, the London Brick Co. stand by J. R. Harris and left, Neville Conder and Michael Cain's stand for the Crittall Manufacturing Co. Bottom left, the United Steel Structural Company's stand by V. Rotter assisted by G. Skolly and below, the Ferodo stand by Keith Cunningham.





Above, the Michell and Adams stand for Montague Meyer Ltd., timber merchants, and left, the Bilston Foundries stand by John and Sylvia Reid. Bottom left, John Thompson Beacon Windows stand by Maurice, Rose, and to the right of this the Sussex and Dorking United Brick Company's by Saunders and Son.



General

1 General Practice

There were only two items in the Exhibition which qualify for a place under this head. The first was information on Improvement Grants on the MOHLG (Whitehall, London, S.W.1. Whitehall 4300) stand. Discretionary Grants will be fairly familiar to architects ("half the cost of a conversion up to a maximum of £400 per dwelling"), but the new Standard Grants for fitting a bath, w.c., washbasin, hot water and food store only came in last June and may not be so familiar.



Chart summarizing MOHLG standard Grants.

The second item (or, rather, group of items) is a series of new surveying products on the Stanley stand. There were, first, a new "popular" level and outfit to match (level and stand £35, complete outfit including 10 ft. staff and a sort of golf bag for the whole lot £45); an optical mean reading level (A505) £115; and an optical micrometer Theodolite £224. (W. F. Stanley and Company Ltd., 79/80, High Holborn, London, W.C.1. Holborn 2684).

4 Planning and Design

The only item directly for the architect under this head was the GPO (Headquarters Building, St. Martin's-le-Grand, London, E.C.1. Headquarters 1234) plea that architects should think early and earnestly about telephone installations, particularly in buildings in which hand sets are liable to be often moved. But mention must also be made of the excellent MOW (Lambeth Bridge House, London, S.E.1. Reliance 7611) exhibits. A technique of site precasting suitable for the medium-sized builder and upwards, and the particular problems of servicing tall buildings while they are going up.

Construction (by materials)

5 Stone

Stone is not a category in which you expect new products. There was, however, some interesting green and grey/blue Swedish marble for facing on the Proctor and Lavender Ltd. (Solihull, Warwickshire. Solihull 1131) stand. Price £4 per sq. yd. unpolished, £12 polished. Also a Swedish light and dark grey gutter slate and a polished Swedish limestone.

7 Cements, Mortars and Plasters

The important development in this category is unquestionably BRS's (Garston, Watford, Herts.) new technique for providing a finished surface with plasterboard. The plasterboard is stuck direct to the walls by the use of "board finish" plaster (if the wall is damp, you must use pressure impregnated battens nailed to brickwork with chrome nails); and joints between sheets are closed and made invisible by an improved joint filler applied with a jointing box. The finished surface is much quicker to apply than traditional two-coat work (two plasterers and a labourer can do a 950 sq. ft. house in less than two days) and you have not got to wait for the drying out.

The chief new product among plasters was a new coloured plaster by Glamorock Ltd. (21, Monza Street, Wapping Wall, London, E.1. Royal 7072) named GLAMOROCK COLORPLASTER, it is produced by broadly the same process and with the same colours as Glamorock rendering (which, as readers may remember, made its first appearance at the last Building Exhibition). The cost works out at about 8s. per sq. yd. for one coat work. Another development which should be mentioned here (though it is only "new" in the broadest sense) is that of pre-mixing both plasters and mortars. An example at the Exhibition was MARLEYMIX, a product which figures in both categories, for there is a rendering mix plaster undercoat and a bricklaying mortar mix. The advantages of these are that the constituents are mixed by weight, not by volume (and thereby a big site hazard is removed) and, as they arrive in bags, they are more easily handled. The retail price of both is about 8s. per cwt. (The Marley Tile Company Ltd., 251, Tottenham Court Road, London, W.1. Museum 2324).

8 Glass

The most important technical development in glass manufacture is Pilkington's FLOAT GLASS (Pilkington Bros. Ltd., Selwyn House, Cleveland Row, London, S.W.1. Whitehall 5672). This is a more expeditious method of

manufacturing a glass which is equivalent in appearance to plate glass. Ultimately it must surely bring down the price of plate glass, but it will be some time before this occurs.

Pilkington's have also developed six new figured rolled glasses, of which by far the best visually is PACIFIC (see photograph). Prices are the same as for other figured rolled glasses. A third development of this firm's is discussed under Building Blocks (Section 14). A fourth development is the use of different combinations of glass in INSULITE double glazed panels to suit the functional requirements of different climates (e.g. toughened anti-sun outside and armourplate inside for UK, two sheets of anti-sun in tropical climates, etc.).

Another interesting glass product was on the T. and W. Ide Ltd. (Glasshouse Fields, Ratchiff, London, E.1. Stepney Green 2333) stand. Named ANGUSIDE CLADDING, it is a 1/4-in. plate glass cladding for external use with pigment fired on (see photograph). It is not possible to quote prices.

9 Iron and Steel

Stewarts and Lloyds Ltd., (8, Gough Square, Fleet Street, London E.C.4. Fleet Street 3010) whom we always associate with round tubes, showed a new range of square and rectangular section structural tubes. These are intended not to replace the round tubes but to be complementary to them. In so far as the square section is usually easier to cope with in architectural detailing, they should be useful. We illustrate part of a truss in which the top and bottom booms are of square section tube and the stiffeners of round section tube.

10 Non Ferrous Metals and Alloys

Bearing in mind the great emphasis on small pipe heating in the exhibition, special interest must attach to a tool shown on the CDA (55, South Audley Street, London W.1. Grosvenor 8811) stand for expanding and reducing copper pipes. The effect of this is both to reduce the average cost of jointing and to cut out the separate fittings which would otherwise be needed whenever there is a change in pipe size. For copper soil and waste plumbing there was the new "trapeze" joint employing a rubber ring and enabling joints to be made by merely pushing.

11 Timber

Exhibitors concerned with timber were mainly occupied with its use as a structural material. This either took the form of a demonstration of its

Construction (by products)

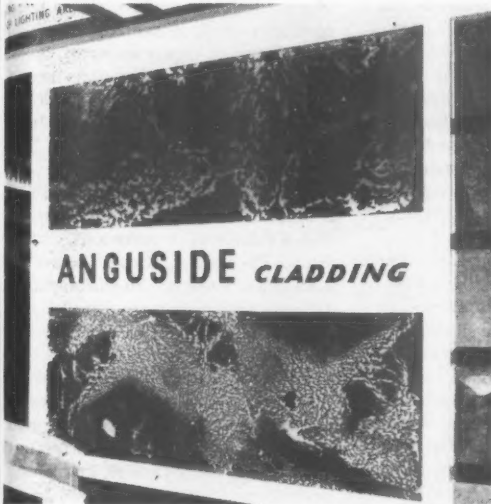
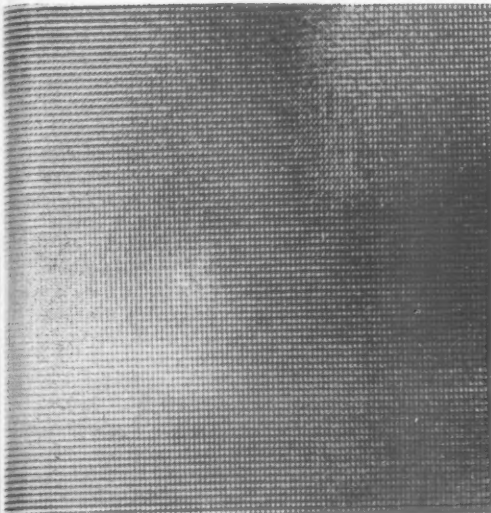
13 Bricks

The important development in bricks is the two-skins-in-one perforated brick thought up by BRS. This was one of the main exhibits on the *DSIR* (Charles House, 5/11, Regent Street, London S.W.1. Whitehall 9788) stand and was also to be seen on the stand of the *Sussex and Dorking United Brick Co. Ltd.* (Graylands, Horsham, Sussex. Horsham 2351/8) who are manufacturing it. So far only a 3-in. brick is available, but tests were also carried out with a 4½-in. brick. These showed that building the two walls of a small house in the 3-in. brick took 76 per cent of the time taken to build the same house in ordinary facing bricks and commons. Using the 4½-in. brick the percentage was reduced to 55. The 3-in. bricks cost 450s. per 1,000 delivered in the London area (it is to be noticed, of course, that each is the equivalent of two ordinary bricks). There were a few new facing bricks at the exhibition, among them a new **PURPLE HAZE** facing brick by *Stonehenge Bricks Ltd.* (Mill Tree Road, Leighton Buzzard, Bedfordshire. Leighton Buzzard 2285) at 235s. per 1,000, a new range of buff engineering clay facing bricks (at 280s. per 1,000) and a coarse textured handmade brick called **FARMHOUSE BROWN** (330s. per 1,000), both of these by *Proctor & Lavender Ltd.* (Solihull, Warwickshire. Solihull 1131). One very successful exhibit was to be seen on the *Cape Building Products Ltd.* (Cowley Bridge Works, Uxbridge, Middlesex. Uxbridge 4313) stand. This stand was principally concerned with the use of colour in architecture. The exhibit in question showed the effect of mixing systematically three shades of **UXBRIDGE FLINT BRICKS**. This was done in four ranges, each with the generic name of **FLINTMIX**; the ranges being russet, buff, heather and lavender.

14 Building Blocks and Slabs

The main preoccupation with the manufacturers of building blocks was the production of an integral fair-face finish. One new product in this class was a glazed partition block by *Candy & Co. Ltd.* (Heathfield, Newton Abbot, Devon. Bovey Tracey 3141). This block which is mainly for industrial use is 13½ in. × 9 in. × 4½ in. and is manufactured in four colours (white, cream, light green and brown). It costs 60s. per sq. yd. glazed one side, 65s. per sq. yd. glazed both sides. *Gypsum Industries Ltd.* (200, Westminster Bridge Road, London S.E.1. Waterloo 3461/5) showed a skim coat walling block made of fly ash. Named **FLYAD** they claim that its use results in

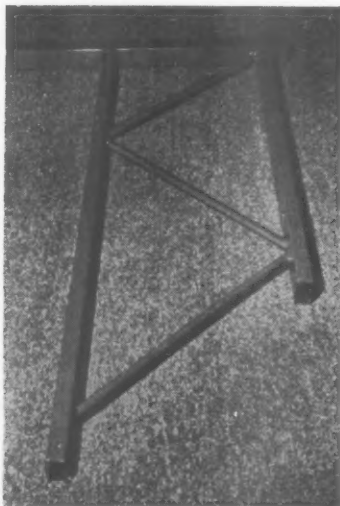
aptitude for specially designed structures, such as hyperbolic paraboloid roofs, or—and this is something which seems very characteristic of the present trend—of the presentation of a range of standard structural members which will take their place alongside standard steel sections and standard reinforced concrete beams and planks. The various firms who manufacture patent structural systems in timber and the Timber Development Association are all dealt with under section 20, page 637.



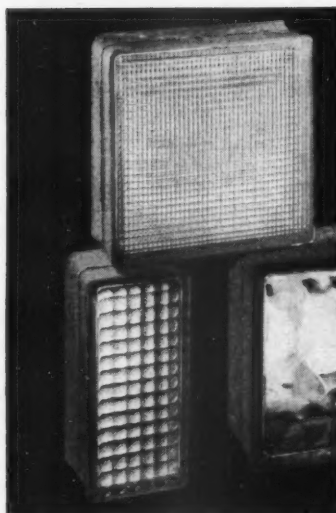
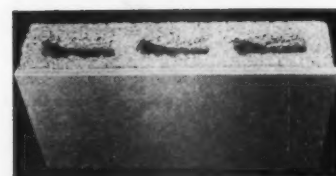
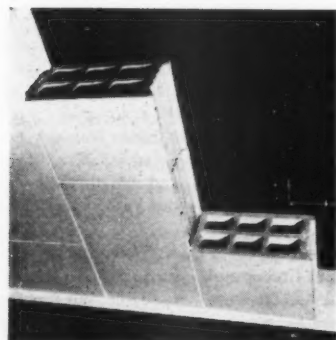
Top, Pilkington's Pacific figured rolled glass.

Centre, T. and W. Ide's Anguside cladding.

Bottom, rectangular tube in open web beam by Stewarts and Lloyds Ltd.



Construction (by products) continued



Top, glazed partition block by Candy & Co. Ltd. Centre, the Spectraglaze ceramic-faced concrete block. Above, Pilkington's glass blocks; the block on top is prismatic, the left hand is one of the new half blocks of the standard pattern. Below, Neolite $\frac{3}{4}$ -in. paving.



a saving of about 5s. per sq. yd. over ordinary concrete blocks. SPECTRAGLAZE, the glazed concrete block of American origin, made its first appearance at the last Building Exhibition when it was something of a curiosity. With a surface composed of glass silica sand in a thermo-setting resinous binder, it is now available in a range of four thicknesses, $2\frac{1}{2}$ in., $3\frac{1}{2}$ in., $4\frac{1}{2}$ in. and $8\frac{1}{2}$ in., of which all but the first are hollow blocks, in a range of 54 colours and with a full repertoire of jambs, caps and coved bases. The price works out at about 70s. per sq. yd. for all but the thickest blocks. *The Atlas Stone Co. Ltd. (Artillery House, Artillery Row, London S.W.1. Abbey 3081/4).* There were two further developments in glass blocks, both of them to be seen on the *Pilkington Bros. Ltd. (Selwyn House, Cleveland Row, London S.W.1. Whitehall 5672)* stand. The first was the manufacture of half glass blocks, which enable architects to evade continuous straight joints; and the second was a new type of prismatic glass block which deflects light both upwards (and downwards) and sideways. This is an exceedingly important contribution to functional architecture as it gives a ready defence against glare from low angle evening sunlight.

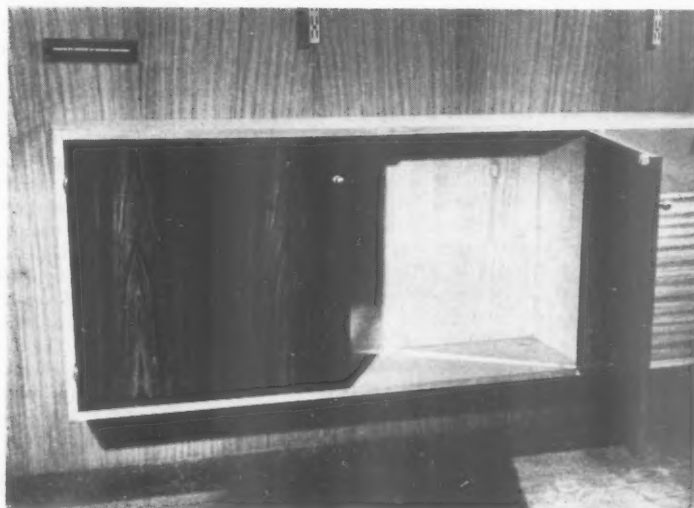
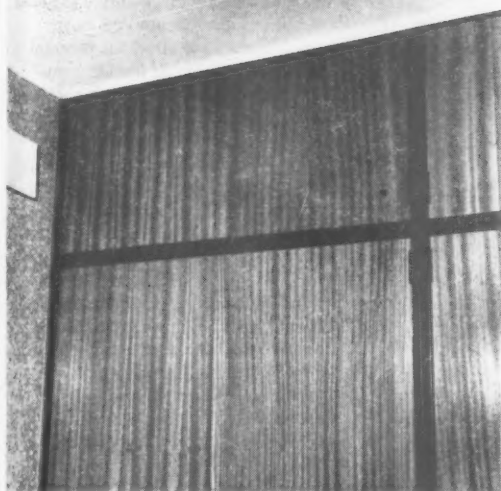
Among slabs there were only two items which seem to qualify for inclusion. The first of these was random precast concrete paving slabs with a slight colour variation made in $\frac{3}{4}$ in. thickness for laying on bitumen on flat roofs (or anywhere else when the subsurface is sufficiently unyielding). These were to be seen on *Robert Abraham Ltd.'s (43, Bankhall Street, Liverpool, 20. Bootle 2048)* stand. The second item was a pre-felted woodwool slab by *Insulated Unit Construction Ltd. (17a, Newmarket Street, Hereford 4535).* The woodwool slab as a sub-base for a felted roof has been giving a fair amount of trouble and pre-felting appears to offer one way out of the difficulty. The slabs (with the trade name VAGALITH) are 1 in. and $1\frac{1}{2}$ in. thick and are of sufficiently high strength to permit purlin spacing at 2-ft. 6-in. and 3-ft. centres, respectively. The felt is bitumen applied in the factory and is left unfixed for the bottom three inches of each slab to give an overlap to the slab below. The side laps are formed by a 6 in. wide felt strip site bonded on the joint.

15 Sheet Materials

The Exhibition was on the whole fairly fruitful in the display of new sheet materials. Nearly all of these

were concerned with the application of some finished surface to one or other of the established sheet materials: plasterboard, hardboard, asbestos cement and the metals. The contribution of plasterboard to this was mainly to be seen on the *DSIR (Charles House, 5/11, Regent Street, London, S.W.1. Whitehall 9788)* stand and took the form, not of a new product, but of a demonstration of how to use old products to produce an acceptable dry finish. This has already been described (see page 630). The only new product in this particular field is round edge *BELLROCK* plasterboard (*Gypsum Industries Ltd., Bellrock Corner, 200, Westminster Bridge Road, London, S.E.1. Waterloo 3461*) which has been designed to give an easier joint.

The sheet materials to show the most significant change are hardboard and chipboard. These are becoming a better quality product, of greater density (and thence of greater strength), in more presentable finishes and—most significant of all—available pre-cut to a great variety of dimensions and in some cases with veneered edges. If you are really knowledgeable in what is to be obtained, you can use it to make all manner of joinery work with a minimum of operations. *British Plumber Ltd. (Dover Corner, New Road, Rainham, Essex. Rainham 5262)* showed their heavy density wood veneered chipboard. With a density of 45 lb. per cu. ft., it is available in $\frac{1}{2}$ in. and $\frac{3}{4}$ in. thicknesses, in 4 ft. widths and in board lengths of up to 16 ft. The veneers are figured oak, mahogany, sapele, walnut (plain and figured) and sycamore. Prices vary between 2s. 8d. per sq. ft. (for $\frac{1}{2}$ in. thickness figured mahogany, one side only, with balancer the other) to 4s. 10d. per sq. ft. (for $\frac{3}{4}$ in. sycamore veneered both sides). The next development with this kind of product is to sell pre-cut panels for specific purposes and to provide easy fixing for them. One example of this which comes from France is *PANOCCLIPS* wood panelling marketed by *S. Leboff Ltd. (1/19, Virginia Road, London, E.2. Shoreditch 7407).* All boards are $15\frac{1}{2}$ in. wide and $\frac{1}{2}$ in. thick, and there are two heights, 6 ft. 5 in. and 8 ft. The panels are grooved on all four sides and special stainless steel fixing clips supplied with the boards enable the boards to be fixed invisibly. The panels can be obtained veneered in oak, ash, pine, and mahogany and all can be finished in heat and scratch resistant polyester. 6 ft. 5 in. panels cost £2 15s. od. each with matt finish, £3 4s. od. with



polyester finish and these prices are raised to £3 9s. 6d. and £3 19s. 6d. for the 8 ft. high panels.

VIPBOARD (*Vipboard (Great Britain) Ltd., 332, Old Street, London, E.C.1. Shoreditch 8484*) is a fully veneered chipboard (i.e. veneered on all four faces) which is designed for furniture rather than for panelling. It is of a standard $\frac{3}{4}$ in. thickness and is made in four widths (9 in., 12 in., 15 in., and 18 in.) and five lengths (3 ft., 3 ft. 6 in., 4 ft., 4 ft. 6 in., and 5 ft.). All are finished in what is described as "a warm coloured African hardwood veneer." A 3 ft. by 9 in. piece costs 8s. 9d. and a 18 in. by 5 ft. piece costs 29s. 3d.

WALL-ROBE units (*Novobord (UK) Ltd., Bush House, Aldwych, London, W.C.2. Covent Garden 2003*), as their name suggests, are designed for making built-in wardrobes. It is assumed that the back and sides of the wardrobes will be formed in masonry and the units comprise doors and a pressed steel rebated frame. Sizes are standard based on a door width of 1 ft. 11 $\frac{1}{2}$ in. and door heights of 6 ft. 2 in., 1 ft. 10 in., and 2 ft. 4 in., but architects can choose their own veneer. The average price of a unit 3 ft. 9 in. wide and 8 ft. high is £8. **BEAUTY BOARD** (*Formica Ltd., 84/86, Regent Street, London, W.1. Regent 2901*) is a plywood sheet made in two sizes, 9 ft. by 4 ft. and 8 ft. by 4 ft.

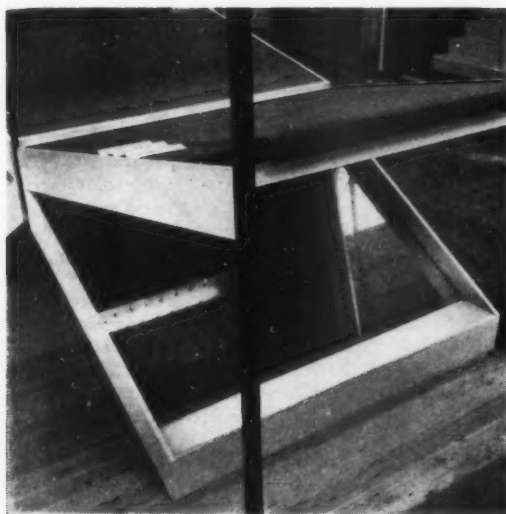
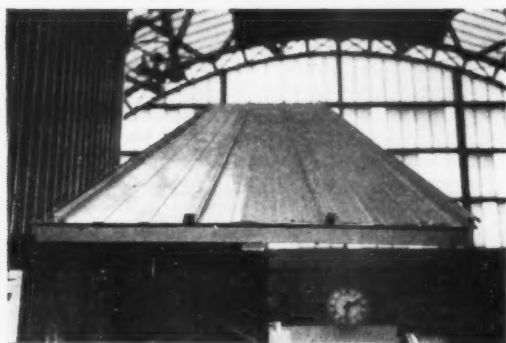
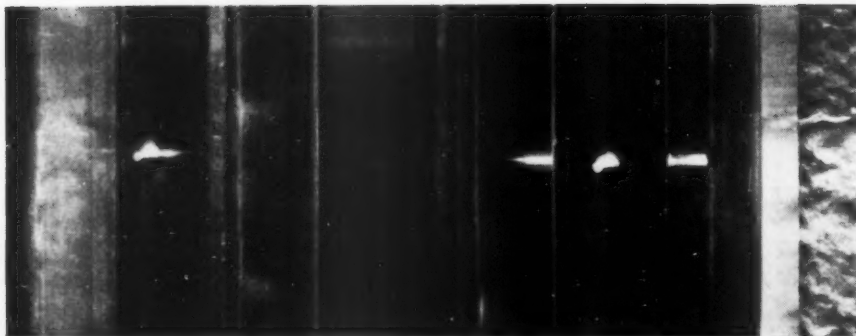
Top, Novoboards' Wall Robe unit.
Centre, Panoclip wood panelling.
Bottom, an example of veneered Plimberboard.

veneered on one side with formica and on the other with a satin black counter veneer. Prices vary between 10s. 6d. and 11s. 6d. per sq. ft.

Passing from sheets based on wood to sheets based on asbestos, the emphasis is once more on providing a finished surface on a manufactured material which is usually chosen for other than its visual qualities. **Turners Asbestos Cement Company Ltd.** (*Everite House, Southwark Street, London, E.C.1. Waterloo 4712*) have two new products: **GRANITONE**, a $\frac{1}{4}$ in. and $\frac{3}{8}$ in. flat asbestos sheet with a marbled finish for internal use only (the $\frac{1}{4}$ in. version costs 22s. 10d. per sq. yd.) and a decorative finish called **COLOURGLAZE** which has been applied to Poilite textured sheets and is suitable for external use. Presentable coloured finishes have been applied for some time to **ASBESTOLUX** sheets (*Cape Building Products Ltd., Cowley Bridge Works, Uxbridge, Middlesex. Uxbridge 4313*); but this year's stand showed a formidable development in this sphere and included some of the most carefully modulated colours that we have ever seen on a building product. Following the lead given by the RIBA and BSI earlier this year, **Cape Building Products** have developed both external and internal colour ranges based on the 101 colours and on the principle of functional selection. These colours are applied in a polyester finish and cost, for the internal grade 2s. 6d. and, for the external grade, 4s. 3d. per sq. ft. extra against the standard board price list.

Another new product in this class was p.v.c. foil faced asbestos (i.e. white, leather grained) named **NOVON TEN**. This costs 2s. 6d. per sq. ft. extra. The one important development in metal sheets between the Exhibitions is the extension of vitreous enamelling to aluminium. This substitution of aluminium for steel as the base metal seems to remove the one serious drawback to this method of finishing. An example was **Ernest Stevens Ltd.** (*Cradley Heath, Staffs. Cradley Heath 66376*) **JUGELITE** panels. These are available in the BS 101 colours and the same finish can be supplied not only to sheets but also to extrusions and castings. The cost of the materials ranges between 5s. 6d. and 7s. 0d. per sq. ft. for flat unbacked sheets of thicknesses between 22 and 16 swg. The only other development in metal sheet was a new method of fixing the **NORAL** insulated aluminium sandwich wall using stud welding (*Northern Aluminium Company Ltd., Bush House, Aldwych, London, W.C.2. Temple Bar 8430*). Studs are welded on to the

Construction (by products) continued



Top, stud welding on the Noral Sandwich wall sheet.
Centre, the Lokroll aluminium roof sheet.
Bottom, Ruberoid's ventilated flat roofing.

supporting steel structure, the aluminium sheeting is offered up and hammered over each stud so that the stud protrudes on the outside and a cap is then swaged over the stud and hole (see photograph). The cost of this method of fixing (which is certainly very neat in effect) is about 3s. od. per sq. ft. extra.

16 Roof Sheets, Roof Sheet Materials and Special Roofing

A field which, particularly since the war, has seen some remarkable developments in materials and techniques, this section has not so very much to show this year. A notable exception, as might be expected, are *Stramit Boards Ltd.* (*Packet Boat Dock, Cowley Peachey, Uxbridge, Middlesex. West Drayton 3751*) who have produced a new lightweight corrugated asbestos roofing sheet specially designed as a weatherproof covering to Stramit roof decking. The sheeting is approximately 7/32 in. thick, weighs 18.2 lbs. per square yard and has broad, shallow corrugations, 1/4 in. deep. These corrugations are increased in depth at the edge to allow for a neat interlocking joint. The makers claim that, used in conjunction with their roofing decking, a U value of 0.23 is obtained. Standard size of sheet is 5 ft. long by 4 ft. 1 1/2 in. wide and the price, unfixed, is between 7s. and 8s. 9d. per square yard depending on quantity.

The *Ruberoid Company Ltd.*, who had an elegant stand in the National Hall designed by Brian Spearpoint of Dewar Mills Design Limited, are also to the fore. Two products are of interest, the first, which is not completely new, consists of indented copper sheet applied in the factory to a reinforced glass fibre based roofing felt, the whole comprising an integral roof covering. The covering is used with an underlay which has either a glass fibre or asbestos base depending on the substructure and is bonded to

it with a bituminous compound. The purpose of the indentations in the copper sheet is to allow for thermal expansion. Laid with flat laps, the roof covering works out at 43s. 6d. per square yard and with standing seams at 49s. 6d.

The problem of blistering in built up roof coverings has also been tackled by *Ruberoid*. Their solution is to provide a vapour barrier between the roof substructure and the insulation. This is a glass-fibre based underlayer which is perforated and has coarse mineral granules on the surface in contact with the substructure and this is bonded in hot bitumen to the surface layer or layers of reinforced glass fibre roofing felt. Price is about 12s. 6d. per square yard.

The *British Aluminium Company Ltd.* (*Norfolk House, St. James's Square, London, S.W.1. Whitehall 7868*) has a new form of flat roof sheet *LOKROLL*, the significant feature of which is a preformed batten roll, which is formed in the factory and no battens are required in the fixing. Thus, according to the manufacturers, the space under the roll normally occupied by the batten is a hidden gutter. The sheet is supplied in two weights, 22 gauge and 20 gauge and is a cold rolled alloy BA60 to BS 1470 : NS3. *LOKROLL 6* has rolls at 6 in. centres and *LOKROLL 12* at 12 in. centres (see photograph) and both are 12 in. wide. Lengths up to 40 ft. are available and prices are for *LOKROLL 6*, 20 gauge £21 12s. 6d., 22 gauge £18 17s. 6d., *LOKROLL 12*, 20 gauge £19 10s. od. and 22 gauge £17 2s. 6d. Average cost of fixing is about 6d. per square foot.

17 Roof Tiles, Slates, Shingles

Tile hanging is coming back into favour, particularly for spandrel panels under windows, such as used by one of our better spec. builders. It is safely within the area of sound design and *KEYTOCLAD* is a range of clay tiles which the *Maidenhead Brick and Tile Co.* (*Burgess Hill, Sussex. Burgess Hill 2224*) developed especially for *CLASP*. Price is from 285s. to 315s. per thousand ex works.

A new development in coverings for the pitched roof is a Finnish copper tile supplied by *Marsland & Co. Ltd.* (*Conington Road, London, S.E.13. Lee Green 7924*) and on show on the *CDA* stand. The tile consists of 37 s.w.g. fine sheet copper formed over waterproof plywood sheets which are each 12 1/2 in. square and 5 mm. thick. Weight is 1.3 lb. per sq. ft. and price about £25 per square laid.



18 Wall and Floor Tiles and Flat Roof Tiles, Faience and Terra-Cotta

The Italian passion for glass mosaics spread to this country some years ago now and hardly an exposed column or wall surface in the work of some architects has escaped the treatment. It is not surprising, therefore, that firms who produce or import mosaics continue to flourish, adding all the time to their ranges of type, colour and size. The pick of the mosaics, however, seems to be the KOSTA range, imported, not from Italy, but from Sweden by Proctor and Lavender Ltd. (Solihull, Warwickshire. Solihull 113112). The range is 1½ in. × ¾ in. and ¾ in. squares, is in 60 interesting colours and includes external and internal radius tiles and round edge tiles. Prices vary from 4s. to 12s. per square foot according to colour and quantity. The Italians are represented by Milano Mosaics Ltd. (28, Victoria Road, New Barnet, Hertfordshire. Barnet 9747) who are producing a 1-in. square mosaic tile which they call DIAMANTINO because of its cross section profile. One or two of these look very good, particularly No. 10 which has a rough surface in matt black. Price is from 42s. per square yard. John Ellis & Sons Ltd. (21, New Walk, Leicester. Leicester 56682) are importers of a particularly elegant glass mosaic tile from Italy (see photograph) which costs from 12s. to 15s. per square foot. They also have a glazed cement for hard plaster, called LUSTRELUX. Price 17s. per square yard. So-called textured tiles are the latest development and Candy & Co Ltd. (Heathfield, Newton Abbot, South Devon. Bovey Tracey 3141) have a range displayed which are 65s. per

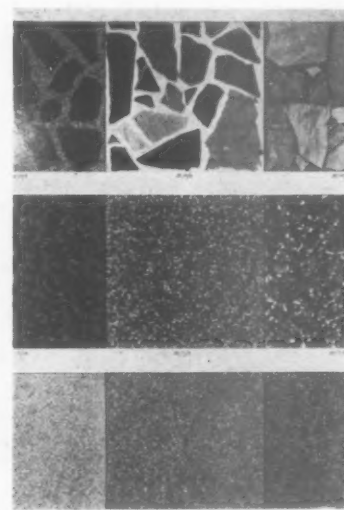
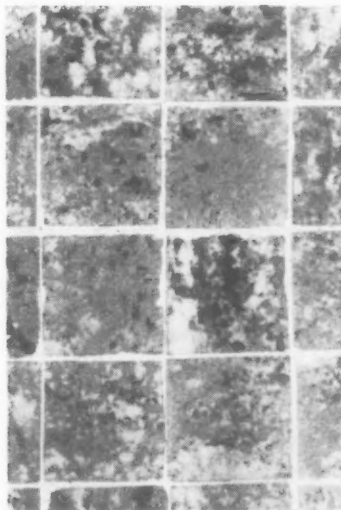
square yard for the silkscreen variety and 100s. for the transfer.

A relatively new development is the use of polystyrene and a number of firms are marketing tiles in this material. Plysu Sales Ltd. (Woburn Sands, Bletchley, Bucks. Woburn Sands 2311) have a miniature tile which they supply in pre-assembled squares 12 in. × 12 in. in which the tiles are already mounted on a special fabric ready for fixing to the wall with mastic. Price for the non-patterned plain sheets is 5s. per square foot, for the non-patterned pearlescent 5s. 6d., and for the patterned 5s. 9d.

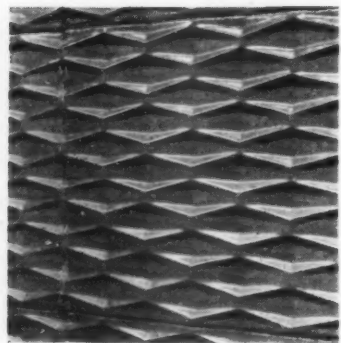
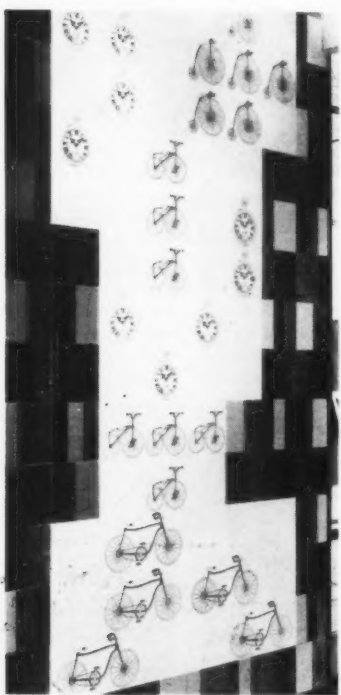
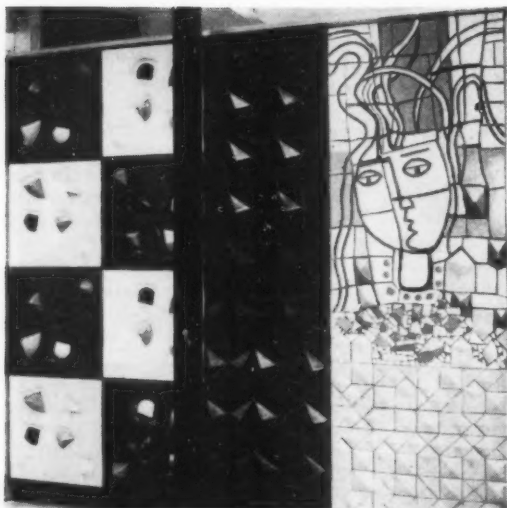
The Carter Group of Companies (Poole, Dorset. Poole 125), of course, market ceramic tiles, faience and mosaics and their standard of design is, as usual, high. Faience, a fairly traditional material in this field, has always suffered from appallingly bad design and it is gratifying to see that designers of imagination are turning their hand to this. An interesting design by Anthony Holloway, A.R.C.A., is of faience nibs inserted in precast concrete or terrazzo panels (price £15 per square yard) and there are textured faience units on show designed by A. B. Read, director of design of the Carter Group, which cost £13 10s. per square yard.

A. Quilgotti & Co Ltd. (168, Victoria Street, London S.W.1. Victoria 0380) who specialize in terrazzo and concrete work have produced a hydraulically pressed terrazzo tile in—believe it or not—a series of random shapes all of uniform thickness to produce a crazy paving pattern. The purists might have some difficulty in reconciling the manufacturing process with the end product but, there is no doubt, the

Top, the Keyoclad range of tiles.
Above, the Marsland copper tile.
Right, John Ellis' Italian glass mosaic tiles.
Far right, a sample of Quilgotti's floor finishes.



**Construction
(by products)
continued**



quality of finish is good. The weight per square yard laid is approximately 135 lb. and the price around £6. If you want to see what the effect is, have a look at The Grill and Cheese Room at Lyons Corner House, Strand. Generally speaking, new materials since the war have promised and fulfilled so much in performance standards that these days we tend to accept quite casually makers' claims which 20 years ago would have seemed fantastic. In the field of floor and wall finishes considerable advances have been made with cork, wood composition and more recently p.v.c. *Holmsund Flooring Ltd.* (26, Calthorpe Street, London W.C.1. Terminus 6621), importers of the Swedish vinyl-plastic tile, now have a new floor tile which will do bigger and better things. This is a special anti-static tile laid with a semi-conductive adhesive and designed for use in hospitals, laboratories and industrial buildings. It is 12 in. \times 12 in. \times $\frac{3}{32}$ in. thick and has a smooth non-porous surface. It is supplied in what is called a cascade pattern on a black background. Price is £3 7s. 6d. per square yard. Holmsund are not the only people marketing vinyl-plastic tiles in this country, though. A local product (*Marley Tile Co. Ltd., Sevenoaks, Kent. Sevenoaks 55255*) is MARLEY VINYL DE LUXE FLOOR TILES, price 30s. to 57s. 6d. per square yard. Marley also produce this material in sheet form in continuous lengths, 48 in. wide, called MARLEYFLOR for which the retail price is 10s. 6d. per yard, and in 12-in. \times 6-in. tiles for use as a wall covering. The wall tiles are called MARLEYMURA. They are claimed to be tough, resilient, hard wearing and resistant to grease and acid, so it is unlikely that the hazards of the average home would defeat them. The tiles may be fixed direct to any wall surface which is clean, smooth, firm and dry, thus wallpaper or flaking paint should be removed first. They are applied to the wall with a special neoprene adhesive, a gallon of which

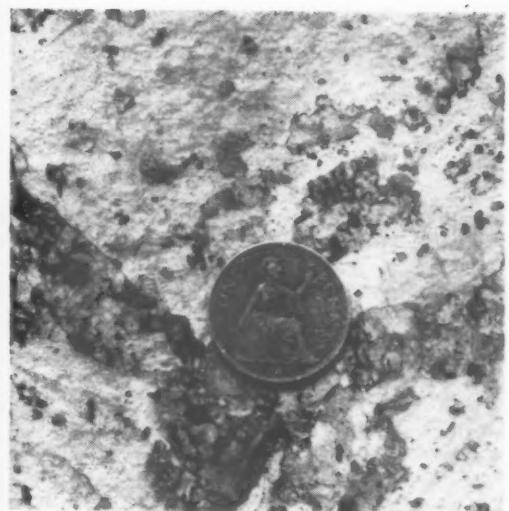
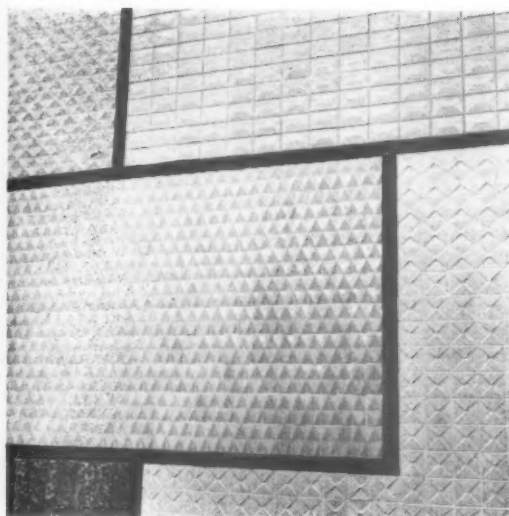
Three of Carter's exhibits. Top, a mural by Tony Holloway. Centre, detail of a mural by Gordon Cullen. Bottom, texture tile designed by A. B. Read.

covers 28 square yards. At the moment they are supplied in five pastel colours and black. Price 21s. to 25s. per square yard fixed.

Armstrong Cork Co. Ltd. (Bush House, Aldwych, London W.C.2. Covent Garden 1101) market a wide range of vinyl plastic floor coverings in both sheet and tile forms. VINYL CORLON SHEET laid with a resin bonded backing for suspended sub-floor or latex-asbestos backing for laying direct to concrete is from 40s. to 50s. per square yard. CUSTOM CORLON TILE which is described as being able to withstand loads of 200 lb. per square inch without permanent indentation, is a vulcanized vinyl tile at 55s. to 65s. per square yard. The OPALESQ VINYL TILE is described as a transparent translucent vinyl flooring produced in some startling patterns of which the Ebony Black 1481 looks interesting. Price 136s. to 158s. per square yard. A new floor covering called ROSSELLA comprising a heavy coating of p.v.c. bonded to underfelt is produced by *Dermide Ltd.* (Valley Mills, Meanwood Road, Leeds. Leeds 44721) in 51 in. widths in a variety of patterns, some of which are unfortunate but one, called Pekin, designed by Ronald Grierson, F.S.I.A., looks quite promising. It is described as having good anti-static qualities and can be used in all temperatures from 26° to 160° F. Trade price around 18s. per square yard supplied and laid. Cork is a good old standby as a flooring material and the entry of the plastics has not crowded it out. Visually, perhaps, it is not a very exciting material, but *Robinson Brothers, Cork Growers Ltd.* (54, Regent Street, London, S.W.1. Gerrard 3965) now produce cork tiles in a range of colours and patterns, some of which are particularly attractive. Sizes are 12 in. \times 12 in., and 9 in. \times 9 in. and thicknesses $\frac{3}{16}$ in., $\frac{1}{4}$ in. and $\frac{5}{16}$ in. Prices are 30s. per square yard uncoloured, 34s. for mottled tiles (i.e. with a natural cork background) and 43s. coloured.

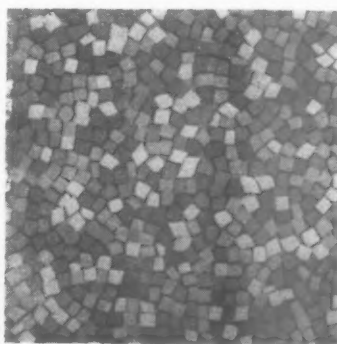
Granwood Flooring Company Ltd. (Reddings, Derby. Leabrooks 341) make a heavily compressed flooring block of wood-cement-oil composition which is not new as a material, but which is produced in a 9 in. \times 9 in. block for the first time.

Barnes and Fletcher Ltd. (75, Baker Street, London, W.1. Welbeck 2891) have produced a wood block flooring called DURABELLA in which the wood undergoes a patent process in which all residual humidity is expelled and replaced by the chemicals used in the process. Interesting tests have been



carried out in which the treated block has been heated up to 195° F. and flooded without noticeable movement. The treatment also has the effect of hardening the surface and thus increasing resistance to abrasive wear. The chemicals in the treatment render the wood impervious to chemical staining induced by building materials and immune to fungi and woodworm attack. There are many advantages inherent in this material not the least of which is that it can be laid at almost any stage during construction, being immune from likely causes of damage by the finishing trades.

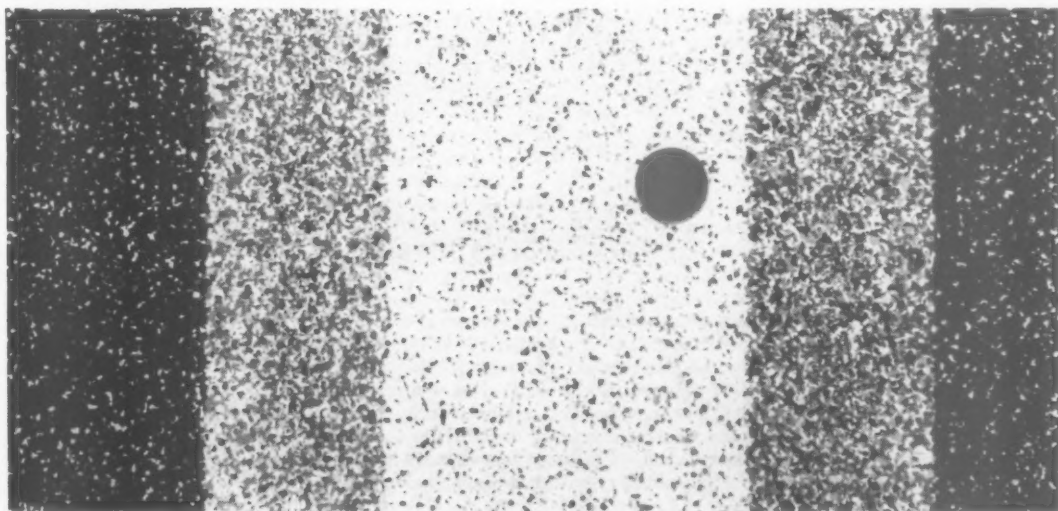
It is available in light and dark oak and light and dark pecan. Nominal thickness is $\frac{1}{2}$ in. and it is assembled from 1 in. wide strips into tiles 12 in. by 4 in. and 8 in. by 4 in. Price 30s. to 35s. ex works.



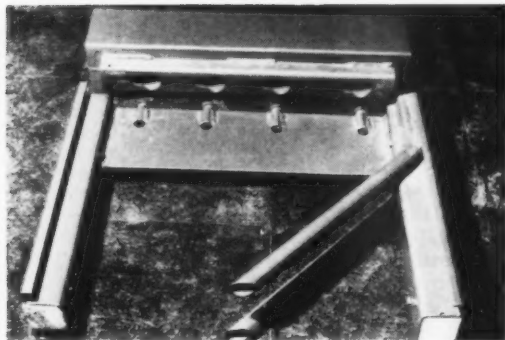
Top left, Joo-Gresite wall tiles. Above, Armstrong Tessera tiles. Left, Armstrong Driftwood flooring. Below, Armstrong Decoresq flooring.

20 Floors and Roofs: Floor and Roof Structural Elements

Without any doubt the material which has received the greatest attention in this field lately is the most traditional one of them all—Timber. Probably there are a number of reasons for this, such as the overcoming of the post-war shortage and the advances made in the technology of adhesives. The Americans and Scandinavians, for example, have pioneered laminated construction for some time and it is beginning to find favour in this country now. Structural forms not hitherto identified with timber have come to the fore such as the hyperbolic paraboloid roof which has roused the imagination of some architects and designers. Timber engineering is a field of structural design which is receiving the attention of some of our forward looking manufacturers and several exciting new structural systems, such as those which make use of a combination of plywood and solid timber, are coming on to the market. The Timber Development Association (21, College Hill, London, E.C.4. City 4771) has devoted its stand to timber roof systems in cross-wall construction and a number of these are, in fact, patent systems exhibited by different manufacturers. Beves and Company Ltd. (110, Cannon Street, London, E.C.4. Mincing Lane 9161) are showing what they call the HB system of construction which originates in Sweden. The basis of the system is a timber I section in which the flanges comprise two or three solid timber pieces, usually 1 in. thick by 4 in. wide and upwards glued together and nail-fixed to a timber web which consists of two layers of tongued and



Construction (by products) continued



The Metsec joist and V-lock fitting.

grooved boarding set diagonally at right angles to one another. Anything from simple beams and columns to portal frames can be constructed in this way. As a rough guide to costs this construction used for beams in a flat roof or floor works out at about 20s. per foot run. At least three firms, *H. Newsum, Sons and Company Ltd.* (56, Hallam Street, London, W.1. Langham 8423), *Dexion Ltd.* (Maygrove Road, London, N.W.6. Maida Vale 6031) and *Cawood Wharton and Company Ltd.* (28, Buckingham Palace Road, London, S.W.1. Tate Gallery 4001) make plywood/solid timber I beams in standard lengths, which comprise a plywood web glued to solid timber flanges. *Cawood Wharton* were probably the first firm to develop the timber I beam in this way and they have worked out a full prefabricated system of construction for timber flat roofs which has been used with considerable success in many parts of the country. *Dexion*, whose speciality is the slotted metal angle, entered the field later with their *TECTON* system, but took the lead in adapting the I beam for use in pitched roof cross-wall construction. Their cross-wall system is basically the same as the one featured on the *TDA* stand. Now *Newsums* have gone one step further by producing an I beam for cross-wall construction which is in castellated form. This system, known as *GIRDALINC*, has been on their drawing boards for a year or more and is presented at the Exhibition for the first time. There is no doubt that by having a castellated beam they have produced an economical solution to the problem of resolving the relationship between loading on the one hand and the need to support both rafter and ceiling joist with the one beam on the other. All these firms who are, indeed, very enterprising, must face the fact, however, that, whilst the development of their

respective products is taking the right direction, they have by no means completely solved the many attendant problems and it will be interesting to watch developments. Costs are not easy to pin-point, as, though the beams themselves are in many cases standard units, manufacturers prefer to supply and fix the whole roof and they will quote to do this.

Timber used with steel to combine ease of fixing and a high tensile strength is another comparatively new development. *Metal Sections Ltd.* (Broadwell Road, Oldbury, Birmingham. Birmingham Broadwell 1541) have a range of open web steel joists in which the hollow top and bottom flanges are "filled" with timber. These standard *METSEC* joists, manufactured in depths from 14 in. to 28 in. (in 2 in. increments), are suitable for spans from 20 ft. to 60 ft. The timber is treated to meet the requirements of BS 476 : 1953 Class 1 resistance to flame spread which also provides resistance to fungi and termites.

Metal Sections have also developed the *METSEC MACOMBER V-LOCK* structural system which uses rigid connections without bolts, rivets or welds (see photograph).

The increased demands for adequate thermal insulation in factories have led to continued activity in the development of lightweight plasters and concrete. An example is *PYRODEK* a patent roofing system (*D. Anderson and Son Ltd.*, Old Ford, London, E.3. Amherst 9381) comprising small steel T sections, tack welded to main steel purlins, which support $\frac{1}{2}$ in. thick permanent form boards on which mesh reinforcement is laid and 2 in. of gypsum concrete poured *in situ*. Surface finish is built up roofing and gravel. Weight of roof complete with covering is 15 lb. per ft. super and the U value claimed is 0.38. An advantage of this system is that construction can be rapid. The gypsum concrete has its initial set in approximately 15 minutes after pouring and can take light traffic after 1 hour. It can be waterproofed and finished after 24 hours.

Another system produced by *Andersons* is called *THERMOLOK* which provides a continuous steel deck to support the roof covering and finish. The system, also known as *C Decking*, comprises a U-section steel intermediate joist which is supported on main RSJs and is notched in its upper edge at 27-in. centres to support the ribs in the steel decking. Fibre board, cork board or fibre glass insulation board is placed on top of the decking and is protected from fire internally by the continuous area of

steel decking. The system is suitable for spans of 15 ft. with an economical minimum of three spans. The surface finish for a flat roof is a three layer built-up roofing and for pitches exceeding 10° a two-layer roofing. Prices are from 52s. to 58s. per square yard.

Cold formed rectangular steel sections are not new but *Stewarts and Lloyds Ltd.* (Upper Brook Street, London W.1. Mayfair 9861) are now producing these sections by a hot formed process which they say is cheaper.

A rectangular section has certain advantages over round tube. It has greater resistance to bending and the flat sides simplify junctions and connections. Usual sizes range from 1 in. to 3 $\frac{5}{8}$ in. in the square sections and from 2 $\frac{1}{2}$ in. \times 1 $\frac{3}{8}$ in. to 5 in. \times 2 $\frac{1}{8}$ in. in the rectangular sections, though larger sizes in both shapes can be produced up to 5 in. square and 6 in. \times 4 in. and larger. As an example of pure 2 $\frac{3}{8}$ in. square section 10 g costs 2s. 1 $\frac{3}{4}$ d. per ft. run.

A range of lightweight reinforced-concrete roof beams is now produced by *Thermalite Ytong Ltd.* (Lea Martin, Sutton Coldfield, Warwickshire), designed to carry a superimposed load of 40 lb. per sq. ft. in spans from 6 ft. to 20 ft. U values and prices vary with the span (and thus size) of the beam. For example, the 6-ft. span has a U value of 0.27 and costs 20s. per ft. run; the 20-ft. has a U value of 0.13 and costs 54s. per ft. run.

21 Partitions and Walls : Partitions and Wall Structural Elements

The more we think about partitioning the further we seem to be from a solution which reconciles the flexibility of a demountable system with reasonable first costs. It is probably time that some serious research (not by the vested interests) be conducted into the desirability of having partitions which you can move around at will. Is this what users really want? Will they move their partitions around so often that the child-like simplicity with which, apparently, most demountable systems can be demounted pays off? Or are the designers of these systems so preoccupied with the ingenuity of some of their ideas that they have not stopped to think that, if you can build an *in-situ* non-demountable partition for half the price of a patent demountable system, it doesn't matter if you have to knock it down with a sledge hammer when the time does come to move it? *British Werno Ltd.* (79, Portland Place, London W.1.

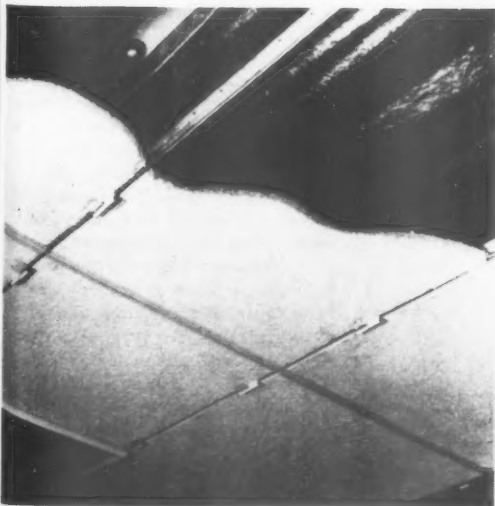
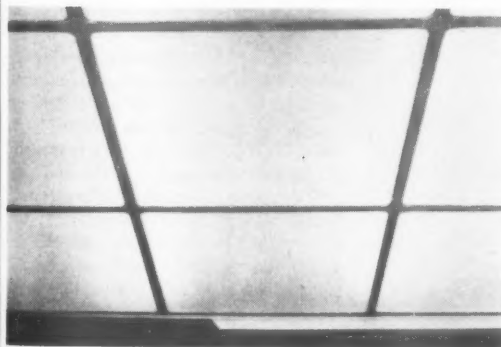


Hill's lavatory partitions.

Below, the Isora illuminated ceiling.

Below right, detail of fixing the Isora ceiling.

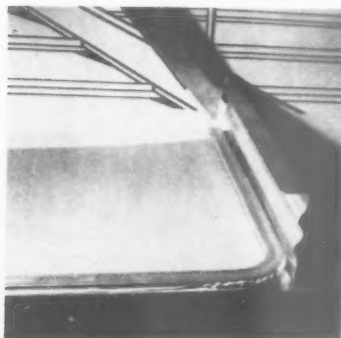
Bottom, the Greco suspended ceiling.



Langham 7702) do not seem to have any doubts about which way the wind blows and they have an elegant demountable system in timber which, in all fairness, is demountable in the sense that it is a prefabricated system which is fairly easy to assemble. The system consists of five basic panels—a solid panel, supplied in three widths (3 ft., 3 ft. 4 in., and 4 ft.) and any height up to 12 ft., a dado height panel for glazing above dado level, a high level glazed panel, a door lintel panel, glazed or solid, and a conduit dropper to required width delivered with one face loose. The panels are in 2 in., 2½ in., 2¾ in. and 3 in.

thicknesses and comprise a timber frame, a filling of parallel dry straws at right angles to the faces of the panel, and a facing of hardboard, plasterboard, asbestos, wood veneer, p.v.c. sheeting or melamine finishes. The exposed edges of the frame are grooved and rigidity of fixing is achieved by means of a timber tongue fillet between panels. With a hardwood frame a glazed partition, purpose made, would cost about £4 10s. per yard super and with an aluminium frame £8.

An essentially similar system without the variety of finish, however, is MOVAFLUSH, marketed by Stramit Boards Ltd. (Cowley Peachey, Uxbridge, Middlesex. West Drayton 3751) in which Stramit slabs are fixed into a timber frame and faced both sides with hardboard. Panels are supplied either solid or cut for glazing in standard widths of 3 ft., heights of 8, 9, 10, 11 and 12 ft. and thickness of 2½ in. At angles, intersections and



doors, timber posts are provided which have a timber tongue fillet screwed to them to which the grooved edge of the partition panel fits. Normally joints between panels are effected by rebating the edge of the frame and screwing. There is at least one other similar timber system represented at the Exhibition, the basic difference being that in the GRANGEWOOD system

(Austins of East Ham Ltd., London E.6. Grangewood 3444) the edge frame of the panel is exposed. Price varies from about 4s. 6d. to 5s. per ft. super, in softwood, according to height.

CORROGLAZE (Corroglaze Ltd., 30, Cursitor Street, Chancery Lane, London E.C.4. Chancery 6556) is a corrugated glass partition supplied in standard lengths of 59 in., 78½ in. and 118 in. and a nominal width of 32½ in. Nominal pitch of the corrugations is 3 in. and depth 1 in. The sheet is made in fine quality ¼-in. plate glass. Price from 6s. to 6s. 3d. per ft. super. For lavatory partitions, MELABORD (F. Hills & Sons Ltd., Norton Road, Stockton-on-Tees. Stockton 67141) is a standard partition system for w.c. cubicles designed by Philip R. Middleton and Partner, chartered architects. The partition panel is a hardwood veneered chipboard faced both sides with melamine in a range of six colours including a wood grain finish in Nigerian mahogany. Support and framing members are in aluminium alloy. Cost of a complete cubicle unit is from £23 to £30.

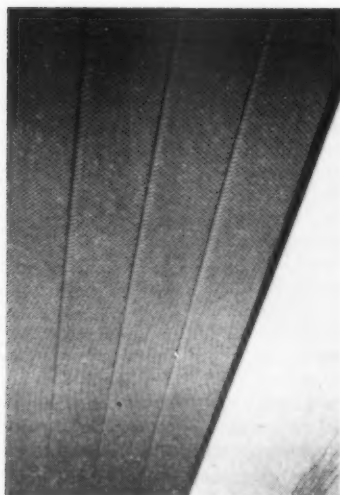
A new partition by Pilkington Tiles Ltd. (276, Old Gloucester Road, London W.C.1. Holborn 2861) consists of prefabricated panels of 6-in. × 6-in. glazed wall tiles. It is a wonder someone has not thought of this before. The panels comprise two outer surfaces of tiles fixed together by means of ceramic spacer pieces at the intersection of the tile joints. Standard thicknesses are 1¼ in., 1½ in. and 1¾ in., and standard panel sizes up to 6 ft. × 3 ft. When the panels are positioned, the cavity is filled with a concrete mix. Prices are competitive with terrazzo.

Progress in curtain walling is disappointing, if reflected in new ideas at the Exhibition. HOLOPLAST Ltd. (105, Piccadilly, London W.1. Grosvenor 6080) have developed a structural panel, called "77," which has a solid core made of flax and is faced with HOLOPLAST. It is 1⅝ in. thick and costs about 4s. 6d. per sq. ft. unerected or 11s. 6d. including fixing.

22 Ceilings

The most evident development in this field is with p.v.c. and a number of manufacturers are using the material for the first time. First developed in France, ISORA (SFIM (Great Britain) Ltd., Bedford Avenue, Slough, Bucks. Slough 22228) is a plasticized p.v.c. panel 40 in. × 40 in. stretched over a mild steel frame for use in suspended illuminated ceilings. The complete system includes 17-s.w.g. mild steel

Construction (by products) continued



Above, Burgess Ribtile.
Below, the Morrison Quiltile acoustic ceiling tile.

supporting channels and hangers. The p.v.c. sheet, which conforms with B.S.1763:1956, is 0.006 in. thick and permits light transmission of 75 to 88 per cent. Its virtue is that it is easily removed for cleaning or for access to the roof space as it merely rests on the supporting channels. Price is between 6s. and 7s. 6d. per sq. ft. supply and fix. GRECON (Eastwoods Sales Ltd., 158, City Road, London E.C.1. Clerkenwell 2041) is a lightweight metal framing system for supporting expanded polystyrene sheets for a suspended ceiling. Prices are between 68s. and 95s. per sq. yard for standard assemblies.

A system which incorporates p.v.c. covering to metal framing members for a suspended ceiling system is IONLITE (Ionlite Ltd., a member of the Falks Group, 89, Scrubs Lane, London N.W.10. Ladbroke 2468). This consists of an inverted T-section main member supported on hangers. The channels will support corrugated p.v.c. panels, $\frac{1}{8}$ -in. flat Perspex or $\frac{1}{4}$ -in. acoustic tiles in a module of 2 ft. \times 2 ft. or 3 ft. \times 3 ft. Prices range from 2s. 6d. to 6s. 9d. according to the

module and the panel.

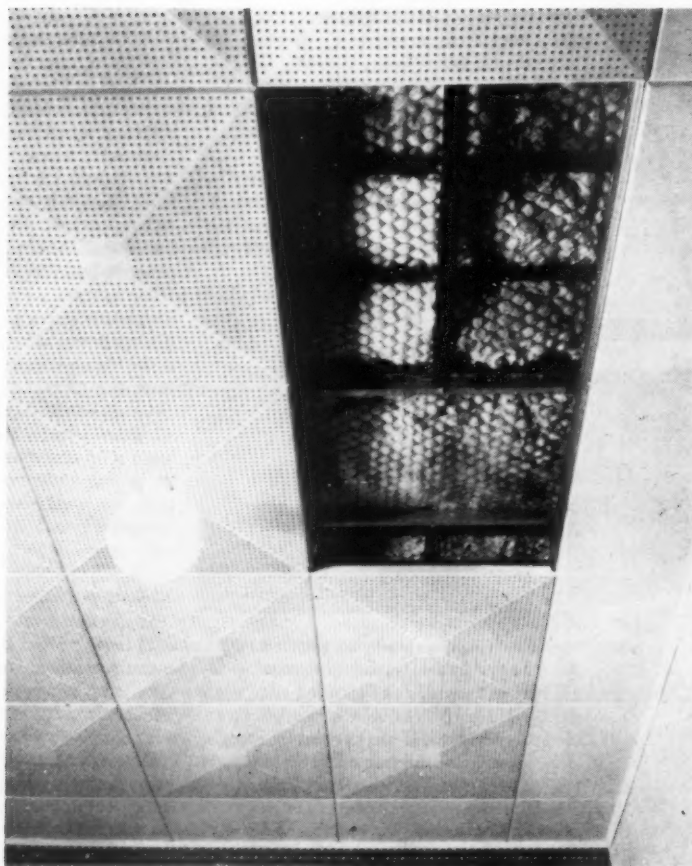
P.v.c. has also entered the field of acoustic tiles. QUILTILE (R. F. Morrison & Co. Ltd., 100, Crow Road, Glasgow W.1. Glasgow Western 7276) is a p.v.c. covered zinc plated steel tile. The tile, 24 in. \times 24 in., is perforated and has an embossed profile, the object of which is to offset the unevenness of surface so often found in ceilings covering a large area. The tiles are snapped into the supporting channels and may be easily removed for cleaning and access. Prices are from 44s. 6d. to 48s. per sq. yd. supply and fix, according to quantity. The tiles may also be used incorporating a heating system.

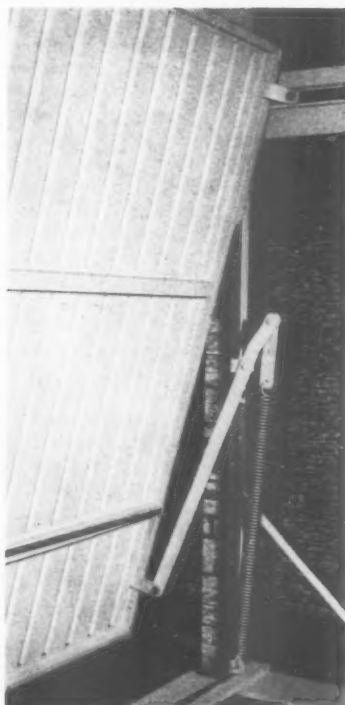
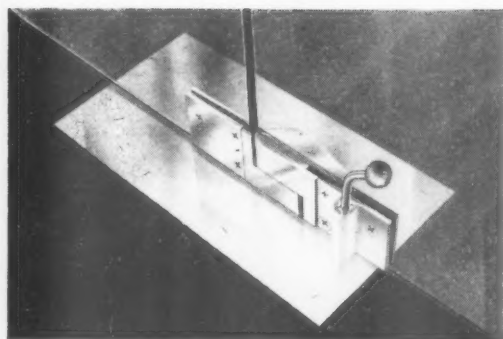
Burgess Products Co. Ltd.

(Acoustical Division, 127, Victoria Street, London S.W.1. Tate Gallery 0251) are well established in the field of acoustic ceiling tiles and their latest contribution is RIBTILE in 4-ft. \times 2-ft. panels, which is cheaper to fix as fixing is required only at 4-ft. centres. Price about 40s. per sq. yard fixed. For further products for ceilings see Section 27.

23 Doors and Frames

Manufacturers of doors and door fittings are, by and large, fairly progressive and an inherent obsession with gadgetry has produced ingenious systems for roll up, slide aside, fold up or sliding door gear from time to time. This year most activity seems to be in two quite distinct directions, roll up garage doors and folding doors. Golmet Doors Ltd. (Trecenydd, Caerphilly, Glamorganshire. Caerphilly 2065) have produced a roll-up garage door which looks as if it would be relatively simple to instal. If so, this is a definite advance. The fault with most earlier designs on the market has been that the fixing and final adjustment have been major tasks of precision engineering. In this case the makers claim that the door and frame could be installed by the average handyman. The door itself, in three standard sizes, is of either aluminium alloy or sheet steel electro-zinc coated and runs in a steel frame. The spring operation is effected by a coiled steel spring at the back of each jamb. There are no counterweights and no special headroom required. Prices are £21 and £22 complete according to size. This is one of the simplest of its type on display. A slightly more complicated version, the GARADOR, which includes counterweights, is made by Westland Engineers Ltd. (8, The Sanctuary, London S.W.1. Abbey 4822). It has the advantage that it requires no side wall fixing, and, when open, projects





beyond the opening by one-third of its height. The door is light gauge aluminium set in a heavy gauge aluminium frame and the operating gear is steel. There are three standard sizes and the price ex-works is £17 10s. Westland also produce a larger version which is divided horizontally and requires a headroom of 12 in. for doors up to 17 ft. high and 15 in. for doors in excess of 17 ft. The height of opening is further reduced when the doors are opened by the combined thickness of the two halves of the door. Clearance at the side is required to be 12 in. to allow for the counterweights.

P.v.c. used as a covering over metal is influencing the design of a number of fold-aside doors. The GIRLING FOLDING DOORS (*J. Avery & Company (Est. 1834) Ltd., 81, Great Portland Street, London W.1. Museum 9237*) consist of light aluminium alloy slats covered with p.v.c. in a variety of colours. They are remarkably compact when open, a 6-ft. wide door folding back to 6 in. The makers recommend a floor track to counteract sway where draughty conditions occur. Price about £10 15s. for a 6-ft. \times 3-ft. opening. A version with wider slats is produced by *Esavian Ltd. (Stevenage, Herts. Stevenage 500)* and for heights up to 8 ft. costs about 17s. 6d. per sq. ft. The MARLEY SPACE SAVER REGAL DOOR (*Marley Ltd., Sevenoaks, Kent. Sevenoaks 55255*) is p.v.c. on a hardboard core and is produced in colours and an extensive range of sizes from 6 ft. 6 in. \times 2 ft. 3 in. to 8 ft. \times 8 ft. Prices are from £7 14s. 6d. according to size.

STEELPLATE (*Steele's (Contractors) Ltd., Stamford Road, London, N.1. Clissold 1121*) is the name of a system of hinged glass doors in four leaves which may be folded back to provide a full unobstructed opening, of up to 14 ft. The doors are in toughened plate glass and the first leaf on either side is pivoted top and bottom at the junction with the jamb. The second leaf is fixed to the first one by means of a patent steel hinged fitting at top and bottom of the door. Fittings are supplied in BMA, satin or polished chrome finish and the fitting at the bottom of the door houses a wind-down pivot set in a floor plate.

24 Windows, Frames and Roof Glazing

Window manufacturers have been very busy since the last Exhibition. Clearly a competitive corner of the industry, new products cover a range from p.v.c. coated standard steel windows to double glazing.

It seems that p.v.c. covering to a timber or metal core is in, and certainly it has exciting possibilities. Coming to this country by way of Germany, it has been taken up by a number of manufacturers.

FERROPLAST is a window consisting of a 19 gauge steel core on to which the p.v.c. is sprung when heated to 80°C. Price range about the same as anodised aluminium. Three manufacturers in this country have acquired the patent rights and are now independently and competitively developing the project. They are *Henry Hope and Sons Ltd. (Smethwick, Birmingham. Smethwick 0891), John Thompson Beacon Windows Ltd. (Wolverhampton, Staffs. Bilston 41121)* and *Crittall Manufacturing Company Ltd. (210, High Holborn, London, W.C.1. Holborn 6612)*. There are a number of problems attached to using p.v.c. in this way, including a marked difference in the coefficient of expansion between p.v.c. and the metal core, the risk of corrosion of the core due to condensation, colour fastness and the effects of oils contained in mastics coming into contact with the p.v.c. It is to be hoped that, between these manufacturers will resolve these problems in the not too distant future. *Hopes* also produce a reversible steel window, of which a prototype was shown at the last Exhibition. Size is 4 ft. by 3 ft. 3½ in. and price £6 to £7.

LASTALITE (*Jayanbee Joinery Ltd., High Street, Uxbridge, Middlesex. Uxbridge 8222*) is a window in which a p.v.c. covering has been fixed to a timber core. Prices range from £8 12s. od. to £25 10s. od. according to type, size and quantity.

The only p.v.c. faced double glazed window on show is the CARDA (*Holcon Ltd., Slough, Bucks. Slough 25431*) which has just been introduced to the market and will cost about 25s. per ft. super.

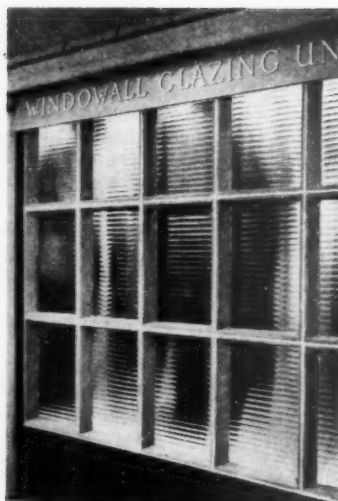
Despite widespread use on the Continent double glazing is making only slow headway here, though a number of models have been introduced during the past two or three years. The TOMO PICTURE WINDOW (*Tomo Trading Company, Ltd., Packet Boat Dock, Cowley Peasey, Uxbridge, Middlesex. West Drayton 3751*) is a timber window 5 ft. 11½ in. wide by 4 ft. 0½ in. high,

Top, floorplate for the Steelplate doors.
Centre, the Esavian fold-aside doors.
Bottom, the Golmet garage door.

**Construction
(by products)
continued**



Above, rooflight kerb and lining by Gardner and Newton. Above right, the Atlas Windowall. Below, the Teleflex swan neck winder gear showing the original version (top of window) and the new version (bottom of window). Bottom, the Teleflex Neatagear paired windows. Bottom right, Williams of Cardiff aluminium pivot window.



centre pivoted. The inner sash is hinged to the outer, casement fashion, and can be opened for cleaning. The makers claim a U value of 0.38. Price £25 nett.

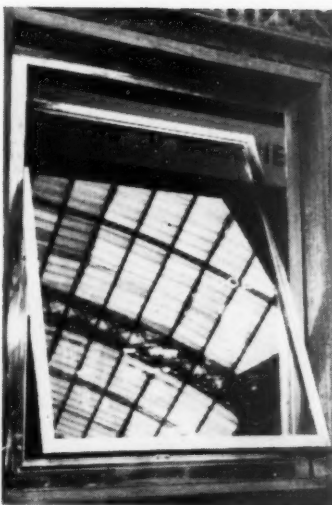
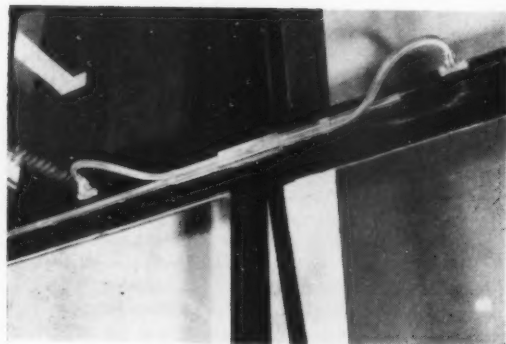
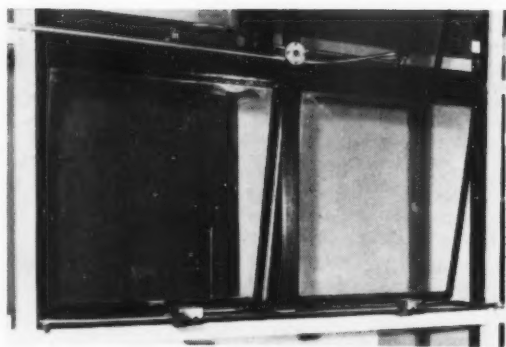
John Thompson Beacon also produce a double glazed window, their version in aluminium. Teleflex Products Ltd. (Basildon, Essex, Basildon 22861) have much improved the appearance of their NEATAGEAR remote control equipment. Gear for paired windows is much neater and a new version of the swan neck reduces inner projection to 3 in. John Williams & Sons (Cardiff) Ltd. (Finsbury Park, London, N.4. Archway 1622) have, as their latest contribution an elegant aluminium pivot window (180° pivot) which is reversible and, when closed, presents a flush face internally. Price is £10 to 10s. unglazed.

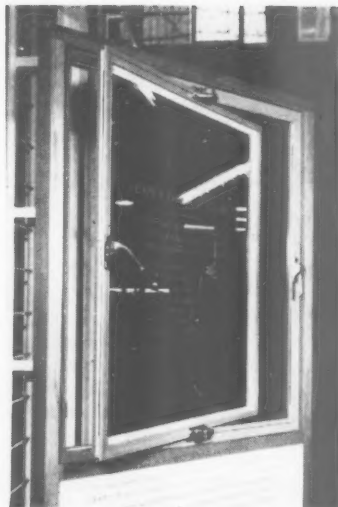
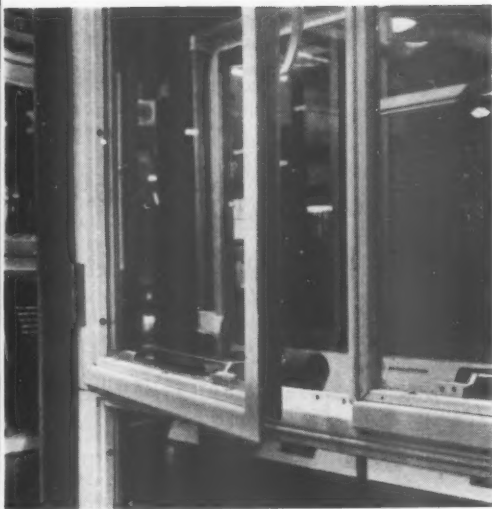
A top hung ventilator window is made by Quicktho Engineering Ltd. (5, Grafton Street, London, W.1. Hyde Park 1806) which has no hinges, the hinged effect being achieved by neat interlocking sections on the frame and sash, which are aluminium. Maximum size is 10 ft. long by 2 ft. high and price compares favourably with purpose made steel (see photo).

Patent window frames which are structural are a surprisingly rare item on the market and WINDOWALL (The Atlas Stone Co. Ltd., Artillery House, Artillery Row, London, S.W.1. Abbey 3081) is of interest if for no other reason than this. The frame is of concrete, requiring no further finishing treatment after erection and mild steel reinforcing rods are inserted in the joint between adjacent mullions. Price is about 16s. per sq. yd.

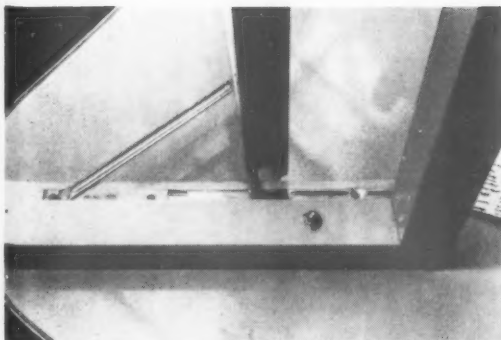
The most interesting development in window gear is a new easy clean hinge by Thomas Crompton & Sons Ltd. (Ashton-in-Makerfield, near Wigan, Lancashire. Ashton-in-Makerfield 7651) in which the moving part, the slide, is in brass and the remainder in zinc-plated steel. The hinge is completely concealed when the window is closed and by the removal of four screws the whole window can be withdrawn into the room for cleaning and repairs. When fully open (i.e. at 90°) there is a 4½ in. wide gap between sash and frame thus facilitating cleaning of the outside face of the glass. Price 5s. to 6s. a pair.

Rooflights are no longer the ugly things they used to be even five or ten years ago. Today there is any number of the neat one-piece domes on the market, but Cordar Ltd. (34, Dean Street, Newcastle-upon-Tyne. Newcastle 26214) are now producing





Top left and above right: the German Ferroplast window: detail from example on John Thompson's Beacon stand, general view from example on Hope's stand. Top right: lift out frame of horizontal aluminium sliding window; above left: Knapsack p.v.c. coated steel window both by John Thompson Beacon Windows. Below left: Crompton easy clean hinge for wood windows. Below right p.v.c. faced Carda window.



a dome roof light which consists of two layers of perspex hermetically sealed together to provide a high thermal insulation value. For the single dome, price obviously varies with size. An 18 in. \times 18 in. costs £5 15s. A 48 in. \times 96 in. costs £35 and a 36 in. diameter £10 10s. Gardner and Newton (17, George Street, St. Helens, Lancs) have a range of linings and upstands for circular rooflights.

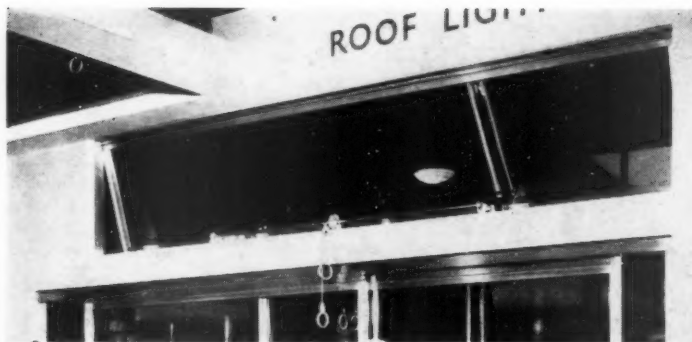
25 Complete Structures

The only real activity in this field seems to be in the housing of the motor vehicle, understandable enough when one realises the ever-increasing part it plays in our lives. Marley Concrete Ltd. (251, Tottenham Court Road, London, W.1. Museum 2324) produce a comprehensive range of standard concrete garages of which the medium size is 9 ft. 2 in. wide. Marley will quote to supply and fix. Parcar Ltd. (1, Bedford Square, London, W.C.1. Museum 5511) are offering standard designs in multi-storey garages which they will erect. Two basic systems of vertical communication are provided, the ramp and the lift. The latter includes a mechanical "dolly" by which cars are loaded on to or off the lift. Contractors buildings for the site are provided by J. E. Lesser & Sons Ltd. (Green Lane, Hounslow, Middlesex. Hounslow 7281). The buildings are prefabricated and may be taken to pieces and re-used. The system consists of timber framed floor, wall and roof panels. Floor panels are 8 ft. \times 4 ft. and 12 ft. \times 4 ft. lined on top with $\frac{1}{2}$ in. exterior grade plywood and intended to be laid direct on the ground. Wall panels (of which some incorporate windows) are 4 ft. wide \times 7 ft. high lined both sides with 5 mm. Gaboon faced plywood and with $\frac{3}{8}$ in. mineral wool insulation, and the roof panels are lined with $\frac{1}{8}$ in. exterior quality plywood finished with green mineral surfacing over roofing felt.

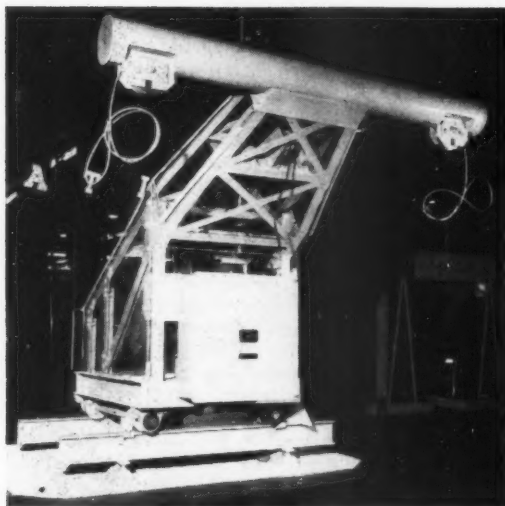
26 Products: Miscellaneous

The advent of the curtain wall on tall buildings has sharply underlined the need for making provision for cleaning and maintenance from outside the building. Early efforts, naturally enough, tended to be in the nature almost of afterthoughts and often did not enhance the finished appearance of the building. Palmer's Travelling Crane and Scaffolding Co. Ltd. (3, Woodside Green, London, S.E.25. Addiscombe 7721), who have been in the scaffolding business since 1880, have brought onto the market a neat travelling cradle, electrically operated and called the PALMATIC.

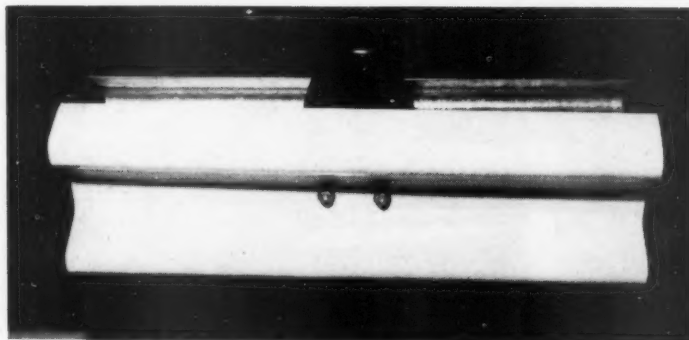
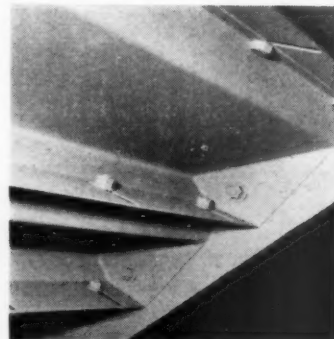
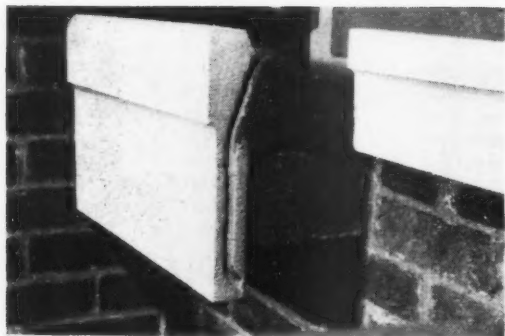
Construction (by products) continued



Above, Quicktho's aluminium top hung window.



Left, Palmer's travelling roof crane.
Below left, the Finlock Fascia unit.
Below, Gardiner's prefabricated staircase. Bottom, the Metsec traffic barrier.



P.v.c. is making its presence felt in the building industry and this was particularly noticeable at the Exhibition this year. *Sealocrete Products Ltd.* (Hythe Road, London, N.W.10. Ladbroke 0015) use it for a patent waterbar. It is chemically inert, non-corrosive and non-ageing and the makers claim it is unaffected by the action of tap water, sea water, mild alkali, mild acids, lubricating oil and by variations in climatic conditions. Standard depths are 4 in., 6 in. and 9 in. or with a tubular centre to allow for greater flexibility and movement 5½ in., 7½ in. and 9 in.

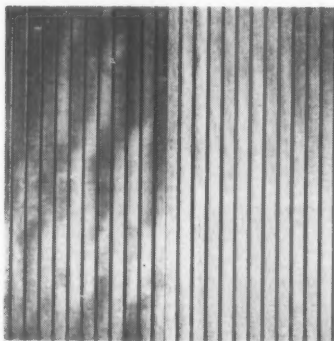
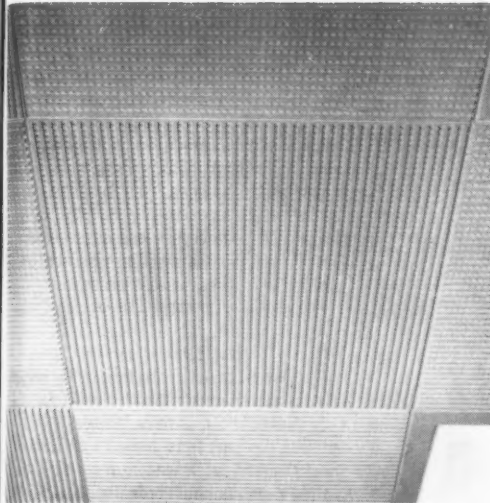
A polythene based sealing strip, called ARBOSEAL, is marketed by *Adsheed Ratcliffe & Co. Ltd.* (Belper, Derby. Belper 351). It is supplied in reels of from 82 ft. for the ½ in. diameter section to 15 ft. for the 3 in. × ½ in. section. Price 7s. 6d. to 9s. 7d. depending on quantity ordered.

Marley now produce a standard p.v.c. tread and riser in a variety of colours. Price about 9s. per linear ft. for the tread and 5s. for the riser. A new range of p.v.c. handrail, called ENDURAIL, is made by *Safety Tread Ltd.* (Dace Road, London, E.3. Amherst 4407) and is available in six very bright colours. Price 7s. 6d. per linear ft. supplied and fixed for a run of 300 ft. or more.

Mark Hartland Thomas has designed an ingenious prefabricated steel staircase known as UNIVERSAL STAIRS for *Gardiner, Sons & Co. Ltd.* (Broad Plain, Bristol. Bristol 20011). By simple adjustment various riser heights can be obtained and for each riser height the correct tread width is automatically fixed.

Finlock Gutters Ltd. (Finlock House, Frant Road, Tunbridge Wells. Tunbridge Wells 3396/9) have a new precast fascia for their gutters and *Metal Sections Ltd.* (Broadwell Road, Oldbury, Birmingham) have a new steel traffic barrier.

Services and equipment



Top, Expanded Metals' acoustic plaster tile. Centre, the Maycoustic ceiling. Above, the Woodacoustic panel. For Morrison's Quiltile and Burgess Ribtile refer to section 22.

27 Sound Control and Acoustics

Sound control is a branch of building science which lends itself to imaginative design. This year there was a number of new tiles: profile, size, colour, shape, material and surface pattern have all been given some attention. *The Expanded Metal Company Ltd.* (Caxton Street, London, S.W.1. Abbey 7766) have three new products—a perforated gypsum plaster tile, a fine mesh expanded metal tray tile, the MAYCOUSTIC, which incorporates the BRAYMEX ceiling heating system, and an expanded metal tray tile, the THORN, which incorporates a 1 in. fibre glass blanket. WOODACOUSTIC PANEL (*Coronet Engineering Ltd.*, 8-10, Hallam Street, Portland Place, London, W.1. Langham 0121) is the name given to an elegant timber acoustic panel. It is in the form of narrow slats with grooves between and there are four standard panel sizes from 23½ in. square to 97½ in. × 23½ in. Finishes are Limba, Obeche, Gaboon and Makore and price 4s. 11d. per sq. ft. net.

DEKORA is a new plaster acoustic tile on a 2 ft. 5 in. × 2 ft. grid. Price approximately 47s. 6d. supplied and fixed, including a false ceiling suspension system (*Thermo Acoustic Products Ltd.*, 43, Lower Belgrave Street, London, S.W.1. Sloane 0115). A tile whose efficiency in absorbing sound is based, not on surface perforations, but on the cellular nature of its construction is the KILNOISE mineral composition tile (*William Kenyon & Sons Ltd.*, 50, Bloomsbury Street, London, W.C.1. Museum 6363). The tile is grooved along all four edges for fixing into the company's patent metal suspension system and it is made in a variety of pastel colours in two patterns, standard and striated. Price 23s. 9d. per sq. yard.

28 Thermal Insulation and Isolation, and Refrigeration

Not a spectacular aspect of building this field, nonetheless, gives scope for enterprising ideas in the development of new materials. Once again a number of new products appeared.

FOAMGLAS is an American product, marketed here by *William Kenyon & Sons Ltd.* (50, Bloomsbury Street, London, W.C.1. Museum 6363). It is foamed glass slab, 1 in. thick, having a small cellular construction. Standard size is 18 in. × 12 in. and it is particularly suitable for thermal insulation in curtain wall construction. Price 1s. 11d. per sq. ft.

THERMOGLAS is a new roof covering material which is a glass fibre mats reinforced with continuous filament

of glass yarn and impregnated and sealed by a coating of stabilized bitumen on both sides (*D. Anderson & Son Ltd.*, Old Ford, London, E.3. Amherst 9381).

MARLEYCEL is a rigid, lightweight insulating board of expanded polystyrene (*The Marley Tile Co. Ltd.*, 251, Tottenham Court Road, London, W.1. Museum 2324). It is produced in a range of thicknesses from ½ in. to 1 in. and in sheets 4 ft. × 2 ft., 6 ft. × 2 ft. and 8 ft. × 2 ft. and has many uses such as tank lagging or wall and roof insulation. Price for tank lagging sets, for example, range from 29s. for a 10 gallon tank to 180s. for a 350 gallon tank.

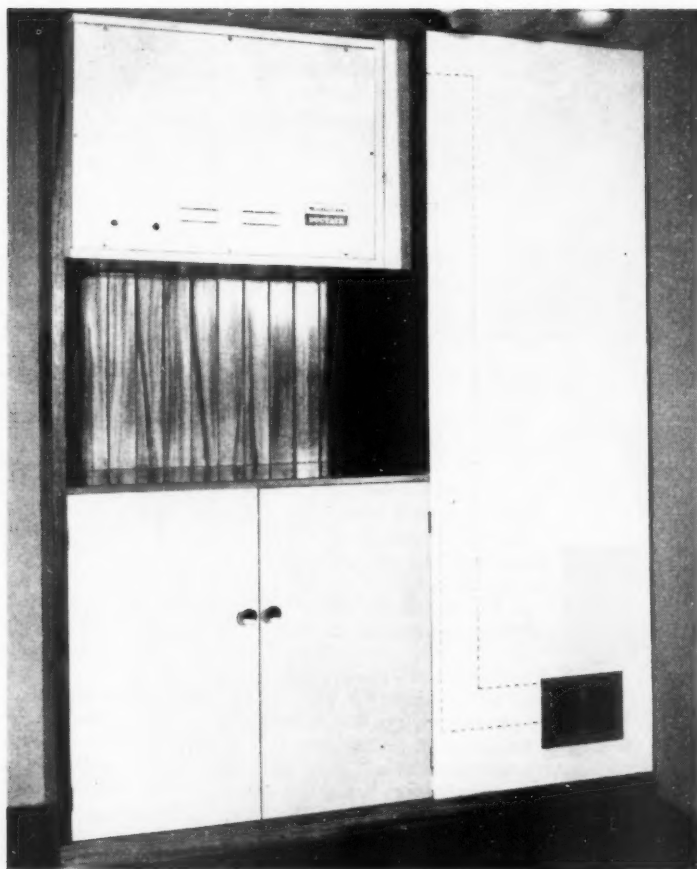
In the field of domestic refrigeration the only really noteworthy newcomer (apart from the new heat pump—see section 32) was the ELECTROLUX M27 for building in (*Electrolux Ltd.*, 153, Regent Street, London, W.1. Regent 7252). This is a very neat unit of 2½ cu. ft. capacity. Size is 34½ in. high by 22½ in. wide × 23½ in. deep and approximate weight is 100 lb.

29 Space heating

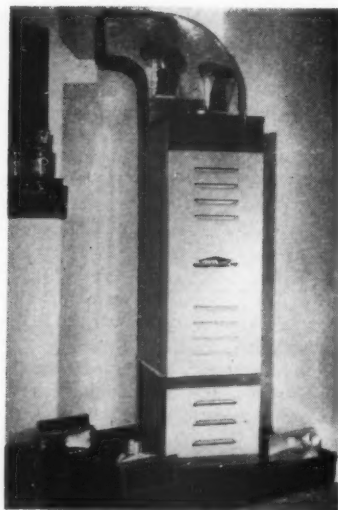
This section covers a great many different kinds of product. At one end of the scale are open fires, unit heaters and radiators, the actual equipment which stands in the room; next come pumps and fittings for central heating systems, then whole house warm air and underfloor electric systems and, lastly, boilers, whether fired by electricity, gas, oil or solid fuel. It is always a classifier's puzzle to know whether to classify these under space or water heating: here we have taken them under the former.

This year the chief pre-occupation of manufacturers of fires and stoves is to provide models that can be easily installed. *Radiation Group Sales Ltd.* (Solid Fuels Division, 10, Mortimer Street, London W.1. Museum 9411) have a new PARKRAY "room heater" (in effect an openable stove) which is designed so that the body of the stove will stand back into most fireplace openings and which, in consequence, only projects 7 in. forward into the room. This is called the PARKRAY 30, and sells at £22 12s. 6d. So that it will suit the most squat surround, it is only 20 in. high, but if the fireplace is not squat you can get up to two additional louvres to adjust the proportion. There is a companion freestanding model, the PARKRAY 32 which sells for £26 17s. 6d. *Smith & Wellstood Ltd.* (63, Conduit Street, London W.1. Regent 7791) are also worried about the low, horizontal hearth and to accommodate this, the

Services and equipment continued



Above, Bratt Colbran's Ductair G20 gas-fired warm air unit. Below, the Lincoln air heater. Below right, the Halcyon warm air unit.



new "L" COURTIER openable stove is only 19½ in. high. Its most ingenious characteristic is a pair of fire doors which, when not wanted, fold back through an angle of 270 deg. and are concealed by the casing. This seems a worthwhile innovation as fire doors are a source of considerable annoyance when flapped open. The basic price of the "L" COURTIER is £22. The same firm also have a new convector fire with a special conversion unit which enables it to be backed on to an existing back boiler. The price of this is £16 2s. 6d.

Since the last Exhibition the Clean Air Act has come into force. To meet its requirements, *Bilston Foundries Ltd.* (Highfield, Bilston, Staffs.

Bilston 42331) have issued two new open fires: the KLEENAIR inset fire and the KLEENAIR convector fire. Among the first fires to conform to BS2845, the inset version sells for £2 17s. 6d., and the convector version for £10.

The ideal of squatness seems also to have affected gas fire manufacturers.

The *Bratt Colbran Division of Radiation* (Bratt Colbran Ltd., 10, Mortimer Street, London W.1.

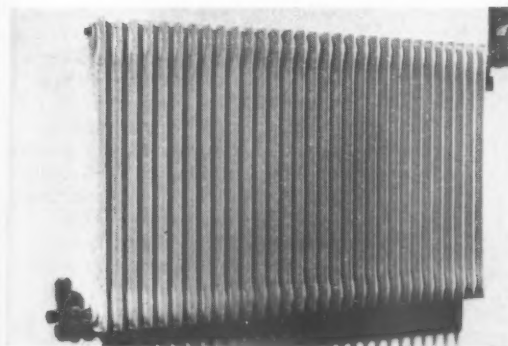
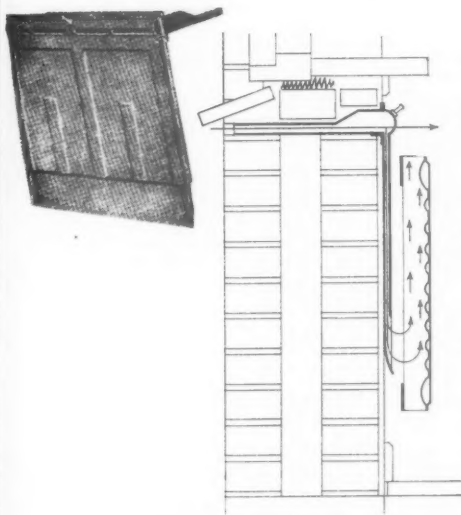
Museum 9411) have put forward a new gas fire called the WALMER which is certainly very different in aspect to the gas fire of tradition and comes uncomfortably near to looking like a television set. It is a convector fire, an efficiency of 68 per cent is claimed for it and it sells for £19 14s. 6d. (see photograph). At the last Exhibition we noted the first arrival in this country of the Dutch DRUGASAR balanced flue gas heaters (*F. A. Borchardt Ltd.*, 506, High Road, London W.4.

Chiswick 4466). The newest addition to the range is the DRUGASAR 650 which is smaller than the other models with a rated output of 7,500 B.t.u. The domestic version is completely concealed behind a very neat grille.

Though electrical floor warming was the subject of the EDA (*Electrical Development Association*, 2, Savoy Hill, London W.C.2. Temple Bar 9434) stand, there were no new developments in this field. Neither was there anything very startling in warm air whole house heating. The *Bratt Colbran Division of Radiation* have produced a new DUCTAIR gas fired unit, the DUCTAIR G20, which is even neater and more compact than earlier versions and is obtainable specially adapted for balanced flue and SE-Duct installation. The price is about £48, ex-works, and £80 installed (see photograph). *William Sugg & Co. Ltd.* (67/73, Regency Street, London S.W.1. Victoria 3211) have also adapted their HALCYON warm air



Above, the Colt Turbo-Static industrial air heater. Below, the Hudevad plan radiator. Bottom, the Stelrad radiator.



heater for use with the SE-Duct. A newcomer to this field is *Lincoln Furnaces Ltd.* (Oxted Mill, Oxted, Surrey. Oxted 3999), a subsidiary of the Canadian firm, Barlin-Scott Manufacturing Co. Ltd. (Hamilton, Ontario). They are marketing a warm air heating unit which can be either gas- or oil-fired, named the LINCOLN (see photograph). The rating is 50,000 B.t.u. and the price installed is between £225 and £250.

There is no doubt that the heating industry sets great store by the fillip which has been given to the traditional heating system using radiators, by small bore piping. The system was the main topic both of the CUC (*Coal Utilization Council*, 3, Upper Belgrave Street, London S.W.1. Sloane 9116) and of the CDA (*Copper Development Association*, 55, South Audley Street, London W.1. Grosvenor 8811) stands. A large number of the manufacturers of new boilers advertised their product as being "particularly suited for use with the small bore system," though none made it clear what made it so; lastly, there was a considerable array of ancillary equipment for small bore systems—pipes, fittings and pumps. *Copperad Ltd.* (Colnbrook, Bucks. Colnbrook 2521) had a new pump on show called the UNIPUMP 77. This was somewhat larger than was necessary for most installations as the manufacturers calculated that it was cheaper to put out one pump adaptable to all installations than to manufacture a complete range. The UNIPUMP 77 pumps seven gallons a minute at 7-ft. head and costs £27. Another pump on view was the Swedish OPIO (*Harford Pumps Ltd.*, Kirkman House, 12/14, Whitfield Street, London W.1. Langham 4811). This, it was claimed, is the only pump which can be mounted in any position. Price £27. Among the more recent radiators were the IDEAL NEOLINE in cast iron (*Ideal Boilers & Radiators Ltd.* Great Marlborough Street, London W.1. Gerrard 8686) and the NUVELLO (*Steel Radiators Ltd.*, Stelrad Works, Bridge Road, Southall, Middlesex. Southall 2603), an all-purpose radiator designed particularly to accommodate the high pressures in the lower floors of tall buildings. One newcomer was the Danish HUDEVAD Plan Radiator which incorporates the ingenious idea of an air passage passing to the outside. This air passes across the radiator and the total heat transmission, it is claimed, is thereby greatly increased. It is marketed by *Scandinavian Furnishings* (1, Drumsheugh Place, Edinburgh. Edinburgh 34253).

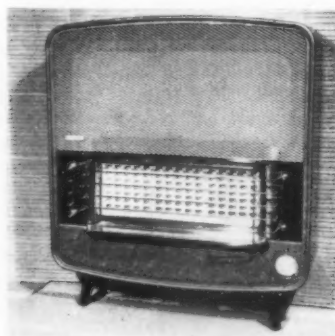
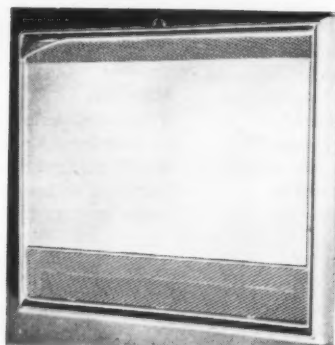
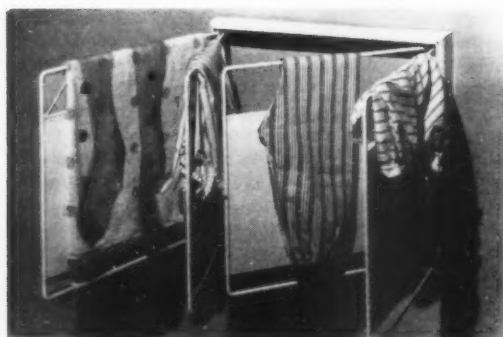
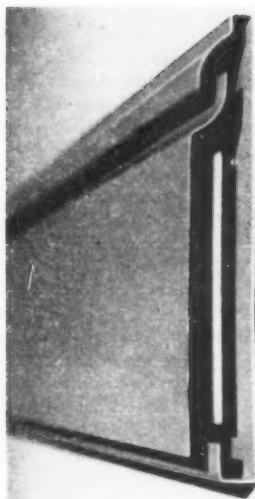
Two more products of interest in this field were shown by *Inferation Ltd.* (12/13, Coptall Court, London E.C.2. Metropolitan 8301), though the medium in this case is not water but electricity. In the first, a plastic element in the form of a long strip is enclosed behind a metal skirting board to provide skirting board heating. The loading is 50 watts per foot and the price supplied 24s. 11d. per foot. The second product is a room heater-cum-clothes drier. Four enamelled steel panels, each enclosing an INFERATION plastic element, fold into a flat case which is fixed to the wall. When they are unfolded you can hang clothes on them; when they are folded they become a conventional panel heater (see photographs). The loading is 600 watts, the price £24 5s. od. including p.t.

It is only when we come to boilers that there is a really formidable crop of new products. If we count each range of boilers as one new product, there are about a dozen new gas boilers, two new electric boilers, two new solid fuel boilers and about 17 new oil-fired boilers. It will be appreciated that this great number of new models does not necessarily mean any great technical novelty. In the great majority of cases all the new models amount to is that a firm which already produces boilers of high rating has rushed to produce a low rated version or range to cash in on the great new small house central heating market which everyone says is on the way.

Solid Fuel

Before considering the domestic field we must consider the industrial, but only to note the new Colt turbo-static industrial air heater (*Colt Ventilation Ltd.*, Surbiton, Surrey. Elmbridge 0161.) There are three new solid fuel boilers. The first is the BILSTON 30R which employs this firm's envelope waterway system (i.e., which completely encloses the firebox except for the necessary outlets). It is rated at 30,000 B.t.u. per hour for short refuelling periods and at 16,800 B.t.u. per hour for long refuelling periods. It sells for £32 (*Bilston Foundries Ltd.*, Highfields, Bilston, Staffs. Bilston 42331). The second newcomer is the AGAMATIC GF85 (*Allied Ironfounders Ltd.*, 28, Brook Street, London W.1. Grosvenor 8941). This is fan operated with a self-feeding hopper and the ash forms into a solid clinker which makes for easy removal. In other words, it is semi-automatic, needing attention once a day. The rating is 85,000 B.t.u. per hour and the price £138. The

Services and equipment continued



third new product is also from *Allied Ironfounders* and is named the AGAMATIC SF20. It is a coke burning appliance, thermostatically controlled, designed to heat a 30 gallon cylinder and up to 75 sq. ft. of radiation.

Gas

One of the minor surprises of the Exhibition is certainly the large number of new gas-fired boilers. *Ascot Gas Water Heaters Ltd.* (North Circular Road, London, N.W.10. Willesden 1234) have a new wall mounted model, the ASCOT 728, which is for space heating and which, like almost all the new gas boilers, is described as being specially for small bore central heating. Rated at 60,000 B.t.u., it sells at £77 14s. od. *Hattersley Bros. Ltd.* (Temple Chambers, Temple Avenue, London, E.C.4. Fleet Street 0807) have two new VULCAN boilers of the freestanding type for sitting in the kitchen. They are of 33,000 and 50,000 B.t.u. per hour ratings and sell at £43 and £53, respectively. (*Perkins CME Ltd.* Mansfield Road, Derby. Derby 48237), the manufacturers of industrial gas boilers, have developed a domestic model specially for the small bore system. Called the PARAMOUNT, it is rated at 50,000 B.t.u. per hour and sells for £75. But it may also be supplied complete with pump (£35 extra) and time clock (£5 17s. 6d. extra). *Glow-Worm Boilers Ltd.*, 47 Hatton Garden, London, E.C.1. Chancery 6971 have the THERM-GLOW with 30,000 B.t.u. per hour rating, a feature of which is special provision for heating the kitchen by convection. It sells for £42.

The ECONOMATIC and the ARISTOMATIC, both rated at 33,000 B.t.u. per hour and both manufactured by (*Inferation Boilers and Radiators Ltd.*, Great Marlborough Street, London, W.1. Gerrard 8686), are claimed by their makers to be "the first boilers designed for small bore heating," a claim which is in part substantiated by the fact that both the accelerator and the time clock

Left, top to bottom: the *Inferation* skirting heater; the *Inferation* towel rail in use for clothes drying and as a space heater; the *Bratt Colbran* Walmer gas fire.

are incorporated within the casing. The ARISTOMATIC is distinguished by having dual outlets, one for the night time area of the house and one for the daytime area, which seems a sensible development. The price for the ECONOMATIC is £89 5s. od., for the ARISTOMATIC £110 5s. od. Both, of course, include pump and clock. The new *Potterton* gas fired boilers (*Thomas Potterton Ltd.*, Cavendish Works, 20 30, Buckhold Road, London, S.W.18. Vandyke 7207) are also described as "small bore units" for the reason that they, too, incorporate pump and clock. As is usual with this firm's products, they are enclosed in exceptionally neat casings. Ratings and prices are as follows:

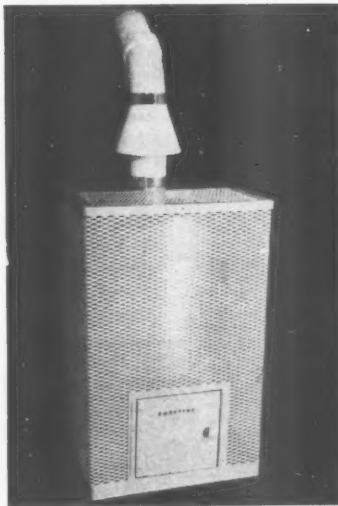
30,000 B.t.u. per hour	£90
44,000	£100
66,000	£116
100,000	£136

Electric

There are only two new electric boilers, both by the same firm *Perkins CME Ltd.* (Mansfield Road, Derby. Derby 48237). As with this firm's gas-fired boiler mentioned above, this is an adaptation of an established industrial electric boiler to the domestic market. This firm (which also manufactures oil-fired boilers) is of the opinion that, in the lowest ratings, electricity has the advantage over oil and may even be cheaper. There are two models of this boiler (called the POWER ELECTRIC BOILER): a 6 kW model rated at 20,500 B.t.u. per hour which sells at £77 (including p.t.) and a 12 kW model, rated at 41,000 B.t.u. per hour which sells at £91 (including p.t.). A circulating pump and fittings costs £36 extra in both cases.

Oil

The number of new oil-fired boilers is so substantial that the only way of coping with it usefully is to list them in order of rating. But, first, there are a few points. It seems generally agreed that only the vaporising type of oil burner is sufficiently silent and smell-less to go in the kitchen. We have, therefore, marked burners of this type with a v. It is evident from this new flight of products that the days of improvisation are over: the emphasis has shifted from those conversion units which households were invited to affix to their solid fuel boilers. In order to get into the small and medium house market, manufacturers have had to recognize that the burner must be in the kitchen and this has had a great influence on styling. This raises a problem for those manufacturers who



Rubery Owen's Easifire oil-fired boiler
(convection model above).

wish their product to be used with small pipe installations: are they going to accommodate the pump and fan inside the case or are they going to abandon all hope of neatness and to regard these as optional items to be added afterwards? Gas boilers often include fan and pump, oil-fired boilers do not. Sensible good-looking casings in the English tradition are now the order of the day. But one or two manufacturers like to regard their oil-fired heaters as something rich and rare, a piece of furniture which you will be proud of, etc., etc. Though recognizing that there is logic in the idea that people should be taught to cherish their heating equipment, the results of this policy are not wholly successful. Despite this great volume there are few products which offer anything basically new. An exception is the

Table of new or recent oil-fired domestic boilers listed in order of rating

Name of maker	Name or number of boiler	Rating	Type	Price	Comments
Glow-Worm Boilers Ltd.	Oil-Crat	13,000	v	£39	Convection heating in kitchen
Glow-Worm Boilers Ltd.	Oil-Glow	25,000	v	£42	Convection heating in kitchen
The Valor Co. Ltd.	Valor SA 25	25,000	v	£65	
Rubery Owen (Heating) Ltd.	Easifire	30,000	v	£78	Convected heat to kitchen
S. Smith & Sons (England) Ltd.	Model 30	30,000	v	£70	Round type boiler casing
Delmore Engineering Co. Ltd.	Model 30	30,000	v	£77	
C. Portway & Son Ltd.	Portway Everyman "35"	35,000	v	£75 10s. od.	
Ideal Boilers & Radiators Ltd.	Ideal Paragon Elite PE 41	35,000	v	£100 19s. od.	
Janitor Boilers Ltd.	Janitor type V	40,000	v	£98	
Delmore Engineering Co. Ltd.	Model 40	40,000	v	£88	
Ideal Boilers & Radiators Ltd.	Ideal Paragon Elite PE 51	45,000	v	£105	
Newton Chambers & Co. Ltd.	Centramatic 50	50,000	v	£128	
Groveley Heating Ltd.	The Reading Blue Flame "50"	50,000	v	£98	
The Valor Co. Ltd.	Valor SA 35	50,000	v	£72 10s. od.	
Ideal Boilers & Radiators Ltd.	Ideal Paragon Elite PE 51	55,000	v	£110 11s. od.	
C. Portway & Son Ltd.	Portway Everyman 60	57,000	v	£122	Two different burners for summer and winter burning
Groveley Heating Ltd.	The Reading Blue Flame "60"	60,000	v	£115	
Thos. Potterton Ltd.	BOA 60	60,000	j	£160	
Delmore Engineering Co. Ltd.	Model 60	60,000	v	£125	
Ideal Boilers & Radiators Ltd.	Ideal Paragon Elite PE 71	65,000	v	£114 19s. od.	
Hurseal Ltd.	Packaged Boiler HPB1	70,000	j	£170	
Watts Automatic Boilers	70 W	70,000	j	£190	
A. J. Riley & Son Ltd.	TKS 12	80,000	j	£297	Includes hot water cylinder
Delmore Engineering Co. Ltd.	Model 80	80,000	j	£145	
Thos. Potterton Ltd.	Centramatic 80	80,000	j	£149	
Hurseal Ltd.	Packaged Boiler HPB2	85,000	j	£175	
Thos. Potterton Ltd.	BOA 90	90,000	j	£180	
Watts Automatic Boilers	90 W	90,000	j	£205	
A. J. Riley & Son Ltd.	TKS 1-25	100,000	j	£305	Includes hot water cylinder
Hurseal Ltd.	Packaged Boiler HPB3	100,000	j	£190	Further models, rising from 120,000 to 280,000 Btu.
Perkins CME	PFD 6A	100,000	v	£139	Further models rising to 500,000 Btu
Trianco Ltd.	0-100/1	100,000	j	£242 15s. od.	

What is this Man Saying?



I am a satisfied user with Henderson 'Ultra'.

I get no hitches—just a brisk getaway on cold, wet mornings.

Up she goes—smoothly—quickly—safely—everlastingly. A *positive* action. No fear of dropping on my head. No water tumbles over me.

No high wind wrenches the door from me.

She does not want my week-end attention—just painted once a year a bright colour to match the house. Timber doors are *silent*, no drum, no clang.

Timber doors are kind to handle.

Timber doors are easy to maintain, cheap to repair if knocked and damaged by my wife's car.



Door illustrated is by Austin of East Ham Ltd., specially designed and marketed for use with 'ULTRA' 150 Overhead Door Gear.

Best quality Canadian Clears, precision dowelled. Panels of exterior quality resin-bonded ply. Three standard sizes: 7' and 8' wide by 7' high, and 7' wide by 6' 6" high. Resists sag, twist or warp, yet light to operate.

Doors 7' wide with Henderson 'Ultra' set 150 cost only £18 17s. 9d.

Doors 8' wide 30s. extra.

There are other higher priced standard doors of 16 square panels.

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'ULTRA' OVERHEAD DOOR GEAR

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with door for less than £19.0.0

LARGEST RANGE OF OVERHEAD DOOR SETS					
4 STANDARD SETS OF GEAR	Height of Door		Weight of Door		PRICE PER SET
	Min.	Max.	Min.	Max.	
ULTRA 140 ¹ ..	5' 11"	6' 6"	40 lb.	140 lb.	£10. 18. 9
ULTRA 150 ..	6' 3"	7' 0"	70 lb.	150 lb.	£10. 18. 9
ULTRA 210 ..	6' 9"	7' 6"	90 lb.	210 lb.	£11. 12. 6
ULTRAMATIC 180 ..	—	—	—	—	—

Locking (as shown), 36/6.

Door braces, if required, 8/6 pair.

Qualified Technical Representatives readily wait upon you (without obligation) in all areas.

NO outside projection when door is open—no wind or rain trap.

Quiet, easy action NYLON wheels.

Negligible loss to height and width of doorway.

Special tempered springs with "Dead Balance" tuning.

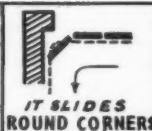
Simple fixing. Secure locking.

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SLIDING DOOR GEAR



for any door, window, or partition that slides or folds

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Services and equipment continued



HOVAL TKS 14 dual fired boiler-cum-incinerator (*A. J. Riley and Son Ltd., Kirkman House, 54a, Tottenham Court Road, London, W.1. Museum 1064*). This is a single boiler which can be fired either by oil or by solid fuel (i.e. equipment is provided for both). This seems to have a double advantage. First, you have an insurance in case anything should go wrong with oil supplies. Second, you can always get rid of domestic rubbish. One of the most formidable reasons against using a refined fuel, or any specialized solid fuel boiler, is that you are completely, hopelessly, dependent on the dustman. Any means of making you less dependent is to be welcomed.

30 Ventilation and Combined Heating and Ventilation

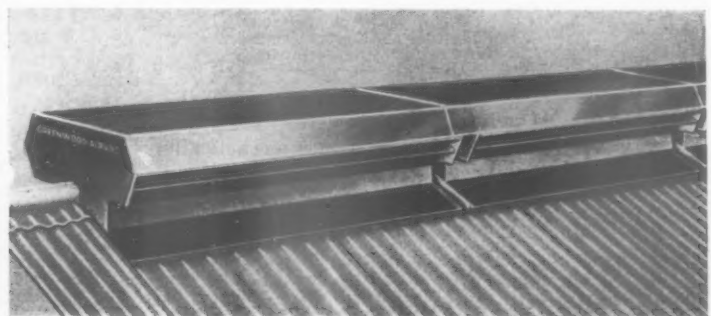
A unit for providing permanent or controlled natural ventilation in industrial buildings is called the RIDGELINE EXTRACTOR and is made by *Greenwood-Airvac Ventilating Co. Ltd. (Beacon House, Kingsway, London, W.C.2. Chancery 8135)*. It stands 9 in. high and is made of heavy gauge hardened aluminium. It can be either manually controlled or fitted with thermostatically operated motorized dampers. Greenwoods also make a neat roof-mounted powered extract ventilator called the MECHAVENT. *Colt Ventilation Ltd. (Surbiton, Surrey. Elmbridge 6511)* manufacture remote control gear for roof ventilators which is of the pneumatic type using

small polythene tube. It is possible to control up to 30 ventilators with the one unit and cost is about £10 to £11. *Manwood Miller Fans & Filters Ltd. (Colnbrook, Bucks. Colnbrook 2521)* make an air cleaner, called the type MM HI-C ELECTRONIC AIR CLEANER, the principle of which is that dust particles are positively charged when drawn into the unit and collected on a negative plate.

The BRIGHTAIR is a unit which provides a form of air conditioning where a central refrigeration plant is available (*Brightside Heating & Engineering Co. Ltd., Vincent Square, London, S.W.1. Tate Gallery 8722*). Basically it consists of a chilled water cooling coil. The unit has a plain stove enamelled finish in colours to suit individual requirements. Price around £120.

31 Cooking

There were surprisingly few new cookers at the Exhibition, due, no doubt, to the practice by manufacturers of introducing their new models at the Ideal Homes Exhibition. Designed for building in, the NEW WORLD 72 gas cooker (*Radiation Group Sales Ltd., 255, North Circular Road, Neasden, London, N.W.10. Willesden 1234*) is in two separate parts—the hotplate and the oven. The latter can be fitted into a recess 28½ in. high × 23 in. wide × 19½ in. deep. Price £58 10s. 3d. complete.



Left, top to bottom: the Reading Blue Flame 80 oil-fired boiler; the Watts 90W oil-fired boiler; the Valor SA 35 oil-fired boiler. Above, Greenwood-Airvac Ridgeline extractor. Right, Greenwood-Airvac Mechavent roofline extractor.



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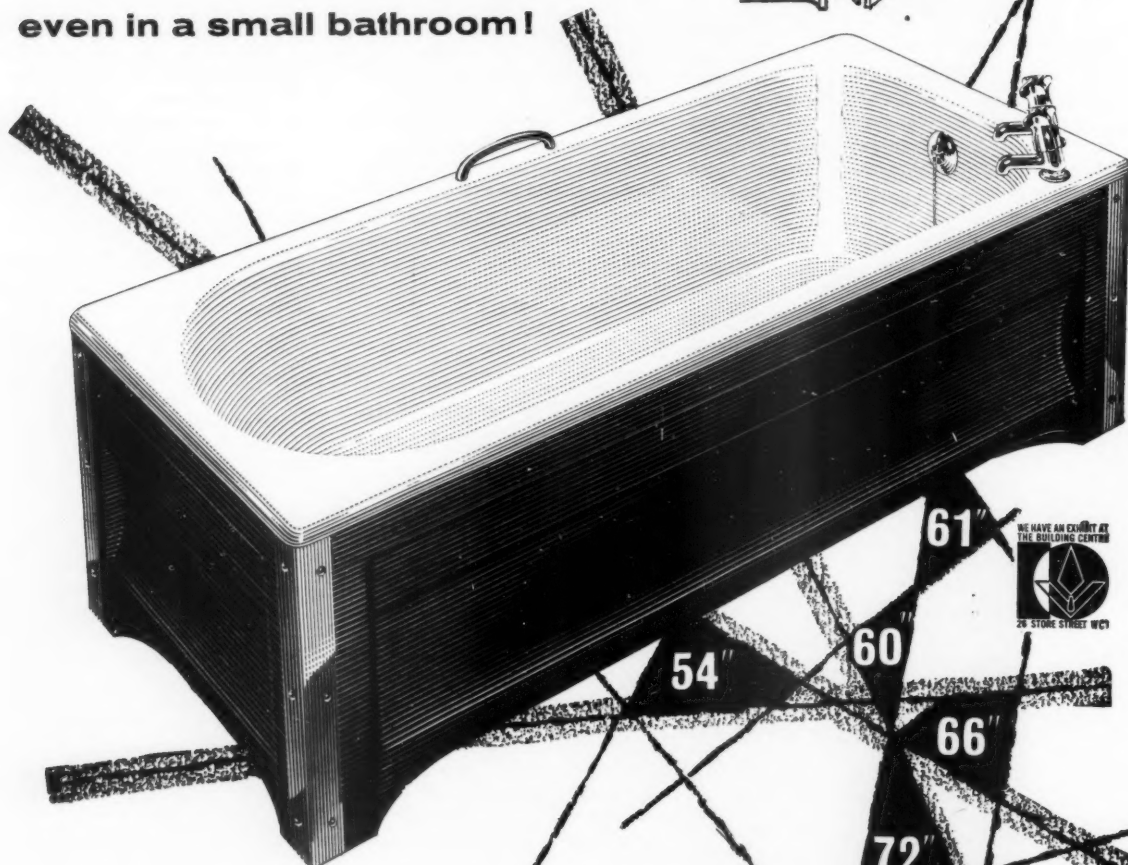
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H 142

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A Bilston **ATLANTA**

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Selected for the Design Centre, the Bilston Atlanta comes in five sizes. This famous bath can be fitted in any bathroom, large or small. The Atlanta costs no more than an ordinary bath, yet it has the superior Bilston finish and durability, plus design features that make it particularly safe and comfortable. Home buyers want the best, that's why you should fit the Bilston Atlanta.



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All this with the ATLANTA—

Flat Bottom. The Atlanta flat bottom helps to prevent slipping... ensures comfort. Particularly suitable where a shower is to be fitted.

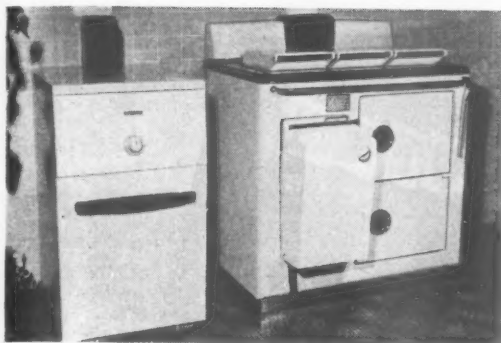
Safety. The low sides make the Atlanta safer for young and old. It can be fitted to give an overall height of only 16".

Taps can be fitted centrally, or on either corner to facilitate installation and maintenance.

Fittings. The Atlanta is supplied with or without overflow... with or without hand grip. The feet can be adjusted to accommodate all types of trap, including the Bilston 'Wasteflo' prefabricated waste, trap and overflow unit. Also available with the Bilston O.P. Hand Grip helpful to the elderly or infirm.

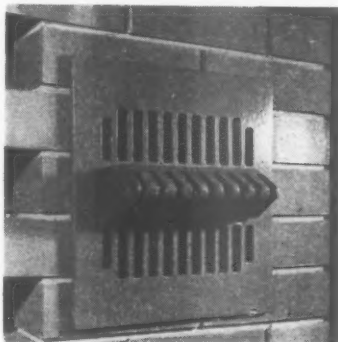
Colours. The Bilston range includes white, or the exact colour required for any decorative scheme.

Services and equipment continued



Above, Smith & Wellstood's oil-fired boiler (left) and oil-fired Esse Century cooker (right).

Below, Radiation Sales balanced flue unit for their new water heater. Bottom, Pegler's Prestex water heater. Bottom, right, two views of the English Rose Mark V combined refrigerator and heat pump. The refrigerator has a sliding door and the unit itself is preferably sited in a glazed out-house.



The ESSE CENTURY cooker and water heater (Smith & Wellstood, Ltd., 63, Conduit Street, London, W.1. Regent 7791) is now available in an oil-fired version. The makers claim that it will satisfy normal demands on hot water even when the oven and hotplates are full on. Price £216 6s. 6d. The same firm also produce the WELLSTOOD HEATSTOR, combined cooker and water heater. Price £75.

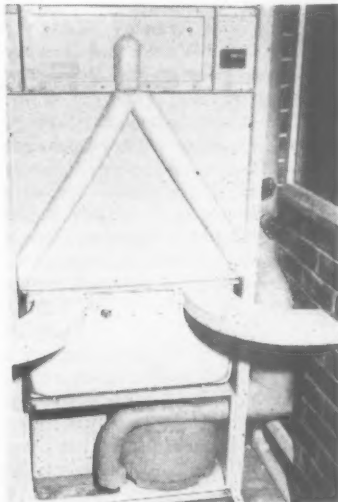
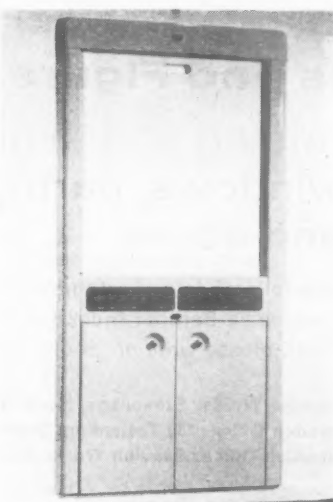
32 Water Heating

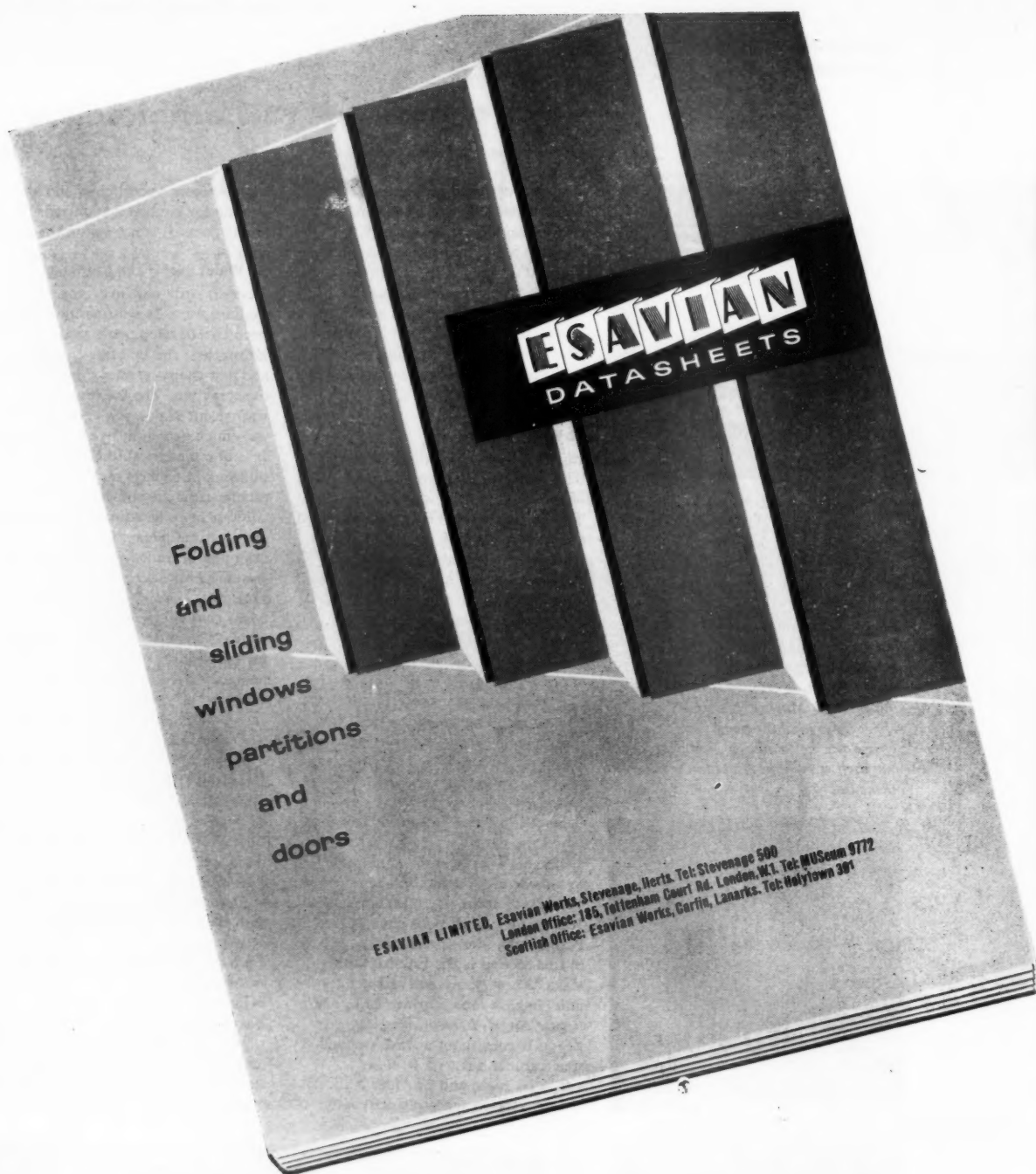
In 1957 this was a well filled section. This year it is disappointing in terms of the number of new products. The ASCOT DELUXE G512 wall mounted sink heater is a neat addition in this field. It is designed to serve both a sink and a basin (i.e., in a back-to-back arrangement). Price £16 2s. 8d. including purchase tax (Ascot Gas Water Heaters Ltd., 255, North Circular Road, London, N.W.10. Willesden 1234). Peglers Ltd. (Belmont Works, Doncaster) showed a new gas storage heater, the Prestex 526. Price £11 15s. 5d. Radiation Group Sales Ltd. (255, North Circular Road, London, N.W.10. Willesden 1234) are bringing out a new balanced flue water heater which will be on the market in January, 1960. It is suitable for wall connection direct to outside air and requires a wall opening of 10 in. x 10 in. maximum. It is made in a vitreous enamel finish. Perhaps the most interesting newcomer in this section is the English ROSE MARK V heat pump and refrigerator unit (English Rose Kitchens Ltd., 229, Regent Street, London, W.1. Regent 2435). It consists of a stove enamelled steel cabinet 2 ft. x 2 ft. 6 in. x 5 ft. 6 in. high, and provides 6 cu. ft. of refrigeration space plus hot water

for bathroom and kitchen and air cooling for kitchen if required. Price about £200. It is not yet on the market.

33 Water Supply and Sanitation

There is little new to report on sanitary ware. In washbasins there have been two developments since the last Exhibition: the building-in of basins and new shapes arising from the use of the spray tap. The building-in of washbasins is not new absolutely as it was much practised by the Victorians. It is of a piece with the practice of building-in cookers and it is of some architectural advantage as it enables equipment to be sunk within a major architectural plane. There were two examples of built-in washbasins: one was Twyford Ltd. (Africa House, Kingsway, London, W.C.2. Holborn 8606) CERAMANT vitreous china basin which "has been specially designed for building-in," a metal cover joint being used to cover the junction between the basin edge and the surrounding surface. The basin and cabinet sell for £42 14s. 6d., but of this £33 is accountable to the cabinet. Shanks and Company Ltd. (81, New Bond Street, London, W.1. Mayfair 6812) also showed a built-in basin, the CAVENDISH. This has a slightly bowed front and is designed to project forward of the surrounding top. As the basin was intended for building-in with tiles (though not only with tiles), it is surprising that the front edge is not a tile dimension, as this requires awkward cutting. In the matter of basin shape, Adamsez Ltd. (75, Victoria Street, London, S.W.1. Abbey 5846) retain their absolute lead with a series of exceedingly fetching basins intended for spray taps. These are all in glazed fireclay (see photograph) and





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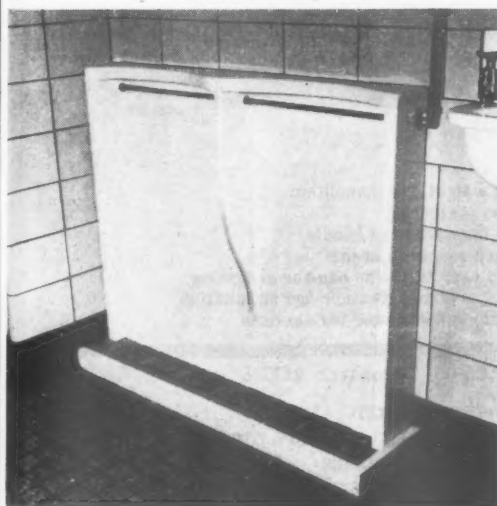
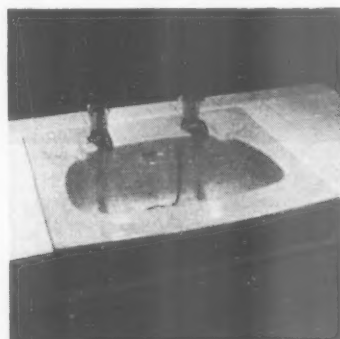
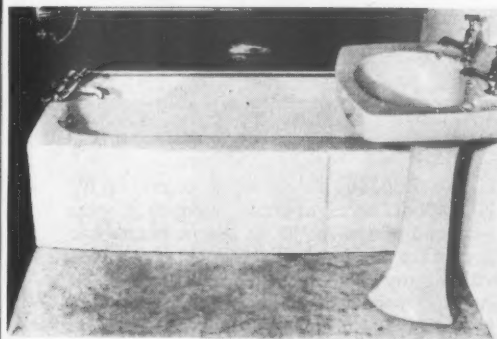
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London Office: 185 Tottenham Court Rd. London W.1. Telephone MUSEum 9772

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Services and equipment
continued

Above left, Twyford's Ceramant basin.
Above, Twyford's Sola basin. Left,
Adamsez Lotus spiral basin.



Top left, the Bilston Princess bath. Top
right, Shanks Cavendish build-in basin.
Left, Leeds Oxford urinal. Above, the
Ideal basin.

the standard models are designed for concealed fixing. The LOTUS SPIRAL model is priced at £5 10s. 9d.

Another very remarkable product is the LEAF LOTUS and STEM pedestal basin in which the basin and pedestal are cast in a single piece.

Basins for schools are commonly of better shape than others. Twyford's showed their new Sola schools basin and Ideal Boilers & Radiators their new standard spray basin.

Another very useful development at the Exhibition is the marketing of matching sets of basins, w.c.s and cisterns. One new product in this class is the KINGSTON SUITE by Ideal Boilers and Radiators Ltd. (Great Marlborough Street, London, W.1. Gerrard 8686).

This includes an admirable vitreous china lavatory basin available in two sizes and with brackets or pedestal; and a low-down w.c. suite in the same material. The smaller size of basin, bracket type, is priced at £6 16s. 6d. and the w.c. suite with two gallon cistern at £23 14s. 3d.

There were two new urinals: a new range called VITURAL in vitreous china by Ideal Boilers and a one- and two-person urinal of vitreous glazed fireclay made in one piece by Leeds Fireclay Company Ltd. (Leeds House, Cavendish Place, London, W.1. Langham 3511).

No one has quite discovered how urinals should be designed, but this last example seems one stage nearer the goal.

The makers of baths seem to favour lower sides and flatter bottoms.

Shanks & Co. Ltd. (81, New Bond Street, London, W.1. Mayfair 6812)

showed their new PARVA bath which has the latter of these attributes, and Bilston Foundries Ltd. (Highfields, Bilston, Staffordshire) showed the new PRINCESS which has both.

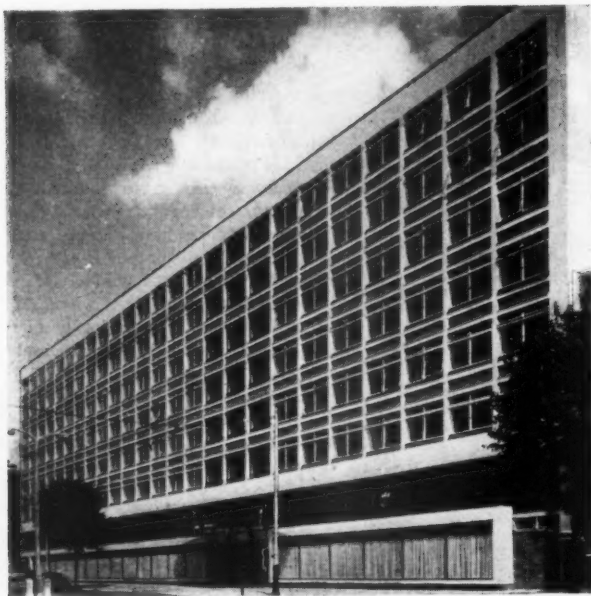
The price of the latter, in white, is £36, but for an additional sum you can have the choice of 72 possible colours.

Eastwoods Sales Ltd. (158, City Road, London, E.C.1. Clerkenwell 2040)

showed the CRELENE plastic bath. From the architect's point of view one of the disadvantages of this material is that the manufacturing process makes it advisable to change contour as often as possible, and thus to give up the simplicity of design to which we have been accustomed. The CRELENE with moulded front and end panels costs £52 2s. 0d.

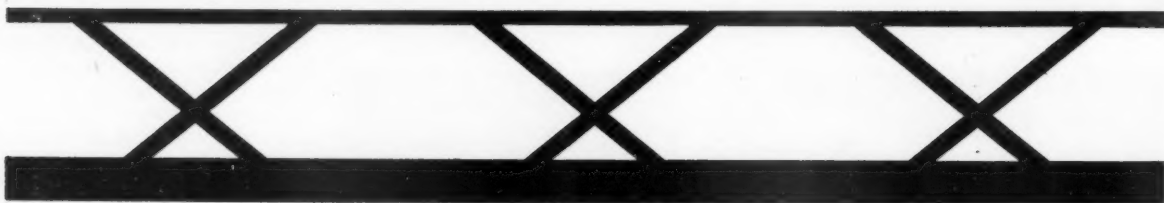
WC Pans

In w.c. pans Shires & Co. (London) Ltd. (23, Howard Road, London, N.16. Clissold 3545) have developed a close-coupled unit suite comprising a plastic cistern and seat and a ceramic pan, with chromium plated brass supply



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SAMUEL TYZACK & CO. LTD., SUNDERLAND

Services and equipment continued



Top, the Fordham plastic cistern.
Above, Ideal Boiler's Kingston suite.

fittings. It can be provided in a great variety of colours, with different colours for cistern, seat and pan if you like it that way. The same firm have also produced a new plastic w.c. seat and cover. Called the CONTINENTAL, the seat is black, the cover in a choice of eight colours.

Fordham's Pressings Ltd. (Melbourne Works, Dudley Road, Wolverhampton. Wolverhampton 23861/2) showed a new plastic cistern which has a depth, front to back, of only 7 in.

Plumbers' Brassfoundry

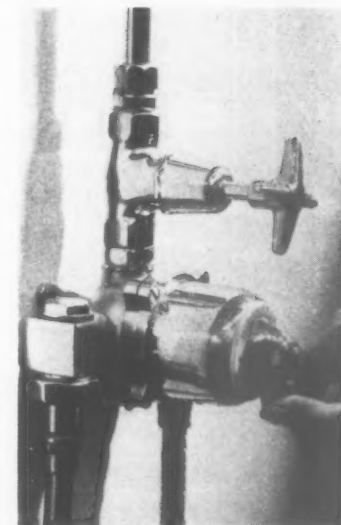
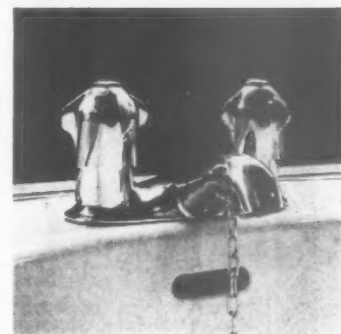
The design of taps, mixing valves and such fittings could be singled out as amongst the most advanced visually in the building industry and the number of new models displayed by various manufacturers this year maintains the standard.

An obvious but rather unexploited aspect of tap design for sinks is the swivel tap such as the BARWELL PATENT HIGH NECK TAP (*James Barwell Ltd., Phoenix, 19, Oxford Street, London, W.1. Gerrard 0091*). The taps can be swivelled back away from the sink bowl when not in use and the high neck keeps them clear of the side of the bowl. Also the hot and cold taps can be swivelled together to fill a saucepan, for example. Price approximately £3 pair. Barwell's have also produced a new sink, mixer fitting; the FLOWELL, comprising pair of taps and swivel outlet. The displayed fitting was a prototype.

F. H. Bourner & Co. (Engineers) Ltd. Manor Royal, Crawley, Sussex. (Crawley 26166) have produced a new, slicker version of their 4 in. basin mixer fitting, the SPA. It is supplied with or without a pop up waste unit for the basin outlet. Price about £3 15s. 6d. complete.

A mixing valve with manual thermostatic control, all of which is exposed to view, is produced by the *Belco Manufacturing Co. (1939) Ltd. (63, Ebury Street, London, S.W.1. Sloane 5177) called the NEW PROTECTA* its temperature control is normally set at 100° F. before leaving the factory, but an internal brass ring setting which can be easily adjusted by removing the hand grip ensures safe maximum temperature with manual operation. If the cold supply fails or hot cools, the valve closes down. Price £13 to £15.

Another new thermostatic mixing valve is the LEONARD 21 (*Walker, Crosweller & Co. Ltd., Waddon Works, Cheltenham, Gloucestershire*). It has a regulating handle and calibrated scale plate for quick temperature selection (see photograph). Under normal conditions, the makers



Right, top to bottom; the Barwell high neck swivel taps; the Supa Spa; the Barwell Flowell swivel mixer; the Leonard 21 mixing valve.

HOPE'S

announce the issue of a

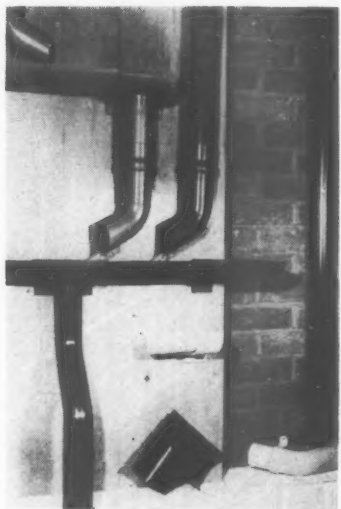
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Services and equipment continued



say, mixed water temperature is maintained $\pm 2^\circ \text{F}$.

Pipes and Fittings

The increased use of polythene tube in cold water plumbing has brought inevitable problems of jointing. POLYSTANTOR is a new range of fittings, available shortly, for use with polythene. The range includes all the usual accessories—straight coupling (5s. 6d. for the $\frac{1}{2}$ in.), elbow bend 6s. for $\frac{1}{2}$ in.), Tee junction (8s. 5d. $\frac{1}{2}$ in.), stopcock (17s. $\frac{1}{2}$ in.) and so on. Also displayed was a new radiator valve which, it is claimed, is the only capillary fitting in existence for small bore heating. *Yorkshire Imperial Metals Ltd.* (1, Upper Thames Street, London, E.C.4. Central 9651).

Greenwood & Hughes Ltd. (Carlisle House, 8, Southampton Row, London, W.C.1. Chancery 9377) have extended their range of GREVAK traps to include a new anti-siphon trap. This is a very neat fitting in which access for cleaning is provided by an easily removable base. A new telescopic joint which allows a $\frac{3}{4}$ in. axial movement and a 150° angular movement is marketed by *The Key Engineering Co. Ltd.* (c/o Albert E. Reed & Co. Ltd., 11, Grosvenor Gardens, London, S.W.1). It is intended for use with standard 4 in. pitch fibre pipes and is a standard pitch fibre coupling, to BS 2760.



Sinks

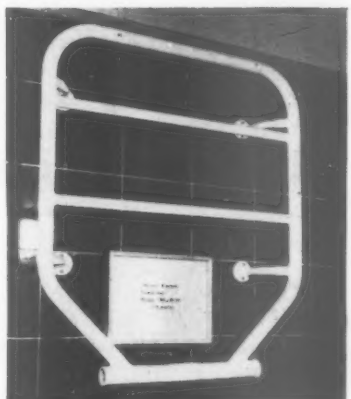
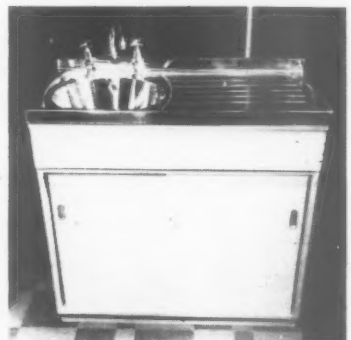
There was nothing much new in this section. *W. & G. Sissons Ltd.* (St. Mary's Road, Sheffield 2) have added to their range of stainless steel sinks with a new circular bowl sink, 36 in. \times 18 in. which costs £13 2s. 9d., and a new large rectangular bowl (22 in. long) sink, 42 in. \times 18 in. which costs £20 15s. (both for sink only).

Rainwater Goods

The one development in rainwater goods since the last exhibition is the introduction of plastics. There were two main exhibitors here. *Marley (The Marley Tile Company Ltd., Sevenoaks, Kent. Sevenoaks 55255)* who make all gutters, downpipes and fittings in vinyl, brackets in galvanized steel, and *G. H. Osborn Building Products Ltd.* (4, Dollis Park, London, N.3. Finchley 7801) whose OSMA range include gutters and fittings in polyester glass fibre and rainwater pipes in high impact p.v.c. Both are available in good colours.

Miscellaneous

Three items qualify for mention here. First an oil-filled towel rail by *Dimplex Ltd.* (17, Shepherd Street, London, W.1. Grosvenor 1025). With 120 watt loading it is reputed to run for 8½ hours for an average cost of 1d. and sells for £8 17s. 6d. (see

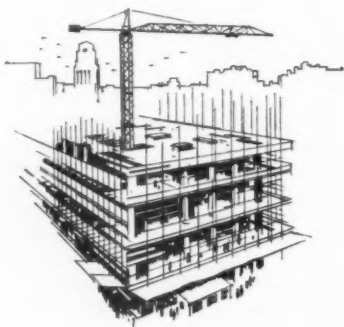


Left, top to bottom: the Yorkshire capillary valve; S. H. Osborn's p.v.c. rainwater goods; the Permutit water softener.

Above, Sisson's long bowl stainless steel sink. Above right, Sisson's round bowl sink.

Right, the Dimplex towel rail.

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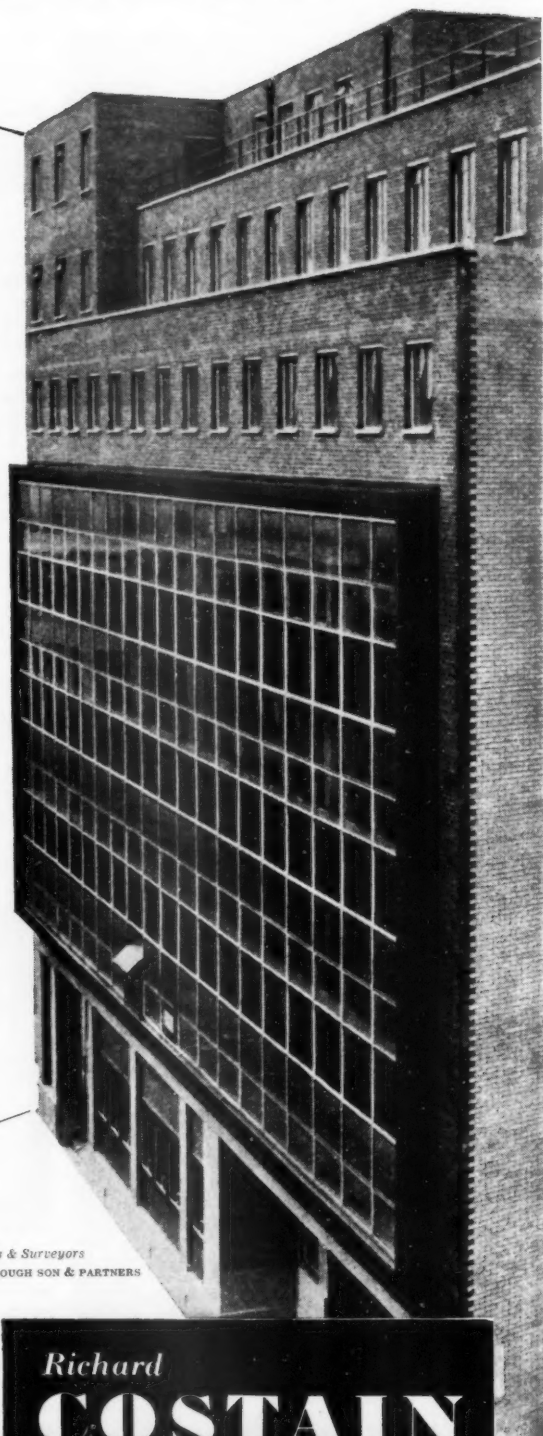
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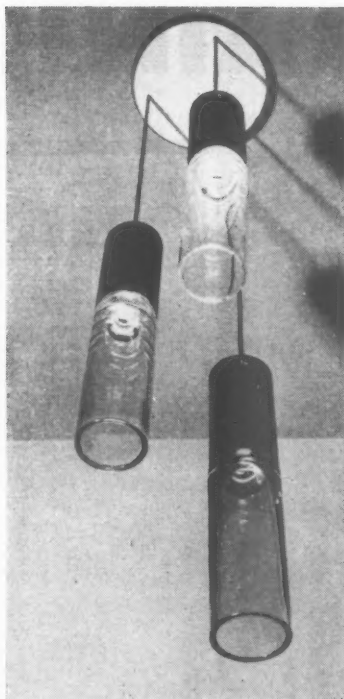
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Services and equipment continued



Chelsea hand made glass light fittings.

photograph.) Next comes a combined hot water tank by *Elsy and Gibbons Ltd.* (Elson Tank Works, Havenlock Street, South Shields, Co. Durham. South Shields 2586) which has been specially designed for use in flats where gas or electricity is the heat source. It costs £24 10s. od. The third item is a plastic portable water softener by *The Permutit Company Ltd.* (151, Regent Street, London, W.1. Regent 2972) which can be simply attached by rubber tube to a tap (see photograph). Price is £12 7s. 6d.

34 Illumination

Two firms share the most interesting new developments this year. *Atlas Lighting Ltd.* (Thorn House, Upper St. Martin's Lane, London, W.C.2. Temple Bar 2444) have a

number of new products. Their range of *CHELSEA* handwrought glass fittings includes some elegant models whose purpose, one suspects, is visual rather than functional, but for decorative and display purposes they have great possibilities. Prices from £1 7s. 11d. to £18 8s. 6d. A new *POPULAR PACK* fluorescent fitting is available with reflector and diffuser attachments. Price complete for the 5 ft. fitting (which includes gear and tube) is £4 14s. 3d.

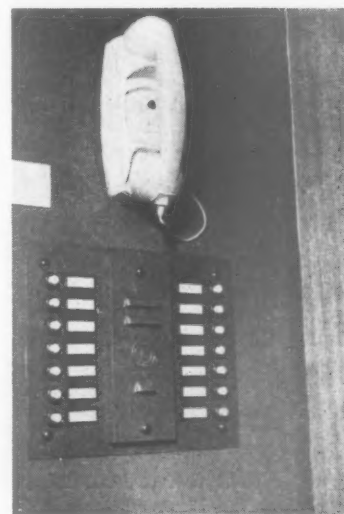
For shop window displays where a high level of illumination is required there is a range of low voltage fittings operated through a transformer. Butchers should take note of the new *Atlas* range of fluorescent fittings called *DE LUXE NATURAL*. Refrigerated food takes on a healthier, more wholesome glow under this light. Price for an 8 ft. 125 W. tube, 24s. *Falk Stadelmann & Co. Ltd.* (91, Farringdon Road, London, E.C.1. Holborn 7654) have a new range of fluorescent fittings, the *SUMMIT* range and a number of new pendant fittings for tungsten lamps.

37 Services and Equipment: Miscellaneous

An under floor duct system which is part of the structural floor is produced by *Concrete Ltd.* (16, Northumberland Avenue, London, W.C.2. (Whitehall 5504) and called the *KEY-BISON UNDERFLOOR DUCT SYSTEM*.

English Clock Systems (179, Great Portland Street, London, W.1. Langham 7226) have produced a most attractive electric wall clock approved by *COID*. There are two sizes, 10 ¹/₁₆ in. diameter giving a 9 in. dial and 13 ³/₁₆ in. giving 12 in. The case is spun aluminium and the finish satin chrome. This firm also market an automatic tea break timer which is a compact little unit 5 ¹/₂ in. × 4 ¹/₂ in. × 5 in. Price £18. Finally, in the field of telecommunications *Siemens Edison Swan Ltd.* (155, Charing Cross Road, London, W.C.2. Gerrard 8660) have an entry phone which may be operated on battery or mains. Cost of small installation about £25.

G. A. Harvey & Son (London) Ltd., (Woolwich Road, London, S.E.7. Greenwich 3232) have produced an ingenious bird baffle comprising 6 ft. galvanized metal strips of blunt spikes. These are for fixing on cornices, copings and so on, and bird lovers will be pleased to know that they do not injure birds, merely warn them off.



Top, electric wall clock by *English Clock Systems*.

Centre, *Siemens Edison Swan* entry phone.

Bottom, *Harvey's* bird baffle.

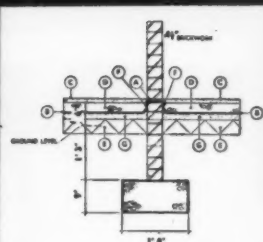
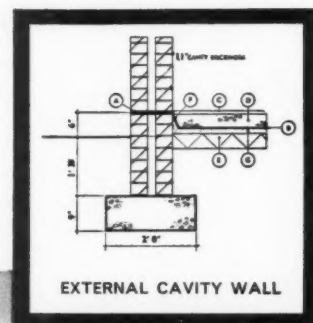
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Applied finishes and treatments

38 Paints, Stains, Varnishes and Polishes

As usual it is very difficult to report this section and to differentiate between real advances and developments by one manufacturer that merely bring him into line with his competitor.

TWINCOTE is a new wall primer undercoat produced by Duresco Products Ltd. (Charlton, London, S.E.7. Greenwich 0034). It is available in a wide range of colours and is suitable

for use on old or new plaster and plasterboard, cement rendered surfaces, concrete, asbestos cement sheet, brickwork, fibreboard, hardboard, stone, distempered surfaces or previously painted surfaces. Price per gallon 48s. TANDIX is described by its makers Dixons Paints Ltd., Ajax Works, Hertford Road, Barking, Essex. Rippleway 3326) as a pretreatment for ferrous metals and is not meant to take the place of a metal primer. It is a tannin extract which, when applied to iron or steel, acts through light rust and leaves the metal in an inert state. Price 35s. per gallon (trade).

TRETOL MULTICOLOUR is, as its name implies a paint which gives a multi-coloured finish in one spray application. Price 9s. to 10s. per sq. yard applied (Tretol Ltd., Tretol House, The Hyde, London, N.W.9. Colindale 7223). Sealocrete Products Ltd. (Atlantic Works, Hythe Road, London, N.W.10. Ladbroke 0015) produce SEALOBOND, a p.v.a. emulsion for flooring to provide a protective coating against oil, etc. Price 32s. 6d. per gallon.

39 Fire-resisting Treatment

FYRESTOS is a flameproofed fibre insulation board which the makers, Board Processors Ltd. (Horton Bridge Road, West Drayton, Middlesex. West Drayton 4021) claim is the only pressure treated board on the market. Standard thicknesses are $\frac{1}{2}$ in., $\frac{3}{4}$ in. and $1\frac{1}{2}$ in. and sizes 2 ft. and 4 ft. wide and 2 ft. to 12 ft. long in 12 in. increments. Prices 66s. to 128s. 6d. according to thickness and quantity ordered.

Furniture and fittings

42 Furniture: General

GB Educational Equipment Ltd. (Highbridge Road, Barking, Essex. Rippleway 4495) produce a range of standard locker units for schools. These are constructed in solid timber, either Agba or Sapele and have $\frac{3}{4}$ in. blockboard sliding doors. As a guide a 70 compartment unit 4 ft. 6 in. high \times 4 ft. 2 in. wide \times 18 in. deep costs £19 19s.

43 Specialised Furniture and Fittings

The largest part of this section is kitchen fittings. There are a number of firms who market prefabricated kitchen cupboard units and the standard of design is slowly but steadily rising. One day it may even reach the standards achieved in, say, boiler design or light fittings. To do this manufacturers must start by jettisoning some of the appalling cupboard door handles they persist in using.

The most interesting idea in kitchen cupboards is the NORDIA from Scandinavia (Unit Kitchen Systems Ltd., 235, Regent Street, London, W.1. Regent 8511). The cupboard units are delivered to the site in packaged form and may be easily assembled by the amateur. This is quite a good looking well finished range.

The QUEENLINE series (Jayabee Joinery Ltd., High Street, Uxbridge, Middlesex. Uxbridge 8222) is well designed and amongst the most economical.

The CALIFORNIAN range (F. Wrighton & Sons Ltd., Billet Road, Walthamstow, London, E.17. Larkwood 5521) is a good looking design in which a polyester finish is used to give a hard wearing surface to the timber. Price of a single wall unit with one drawer, approximately 36 in. high \times 21 in. wide \times 21 in. deep: Nordia £7 12s. 6d., Californian £11 15s. Laboratory furniture was displayed by a number of firms, but the best on view seemed to be the range by Griffin & George (Laboratory Construction) Ltd., (Baling Road, Wembley, Middlesex. Perivale 3344). They produce standard bench cupboards and fume cupboards in both timber and steel and include such accessories as a behind bench duct for piping. A standard fume cupboard costs about £72.

44 Fittings

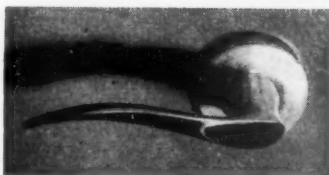
This wide and diverse section has, none the less, produced only one or two interesting new products. A patent draught excluder for fitting to door thresholds. It is called DURAFLEX (Duraflex Housecrafts Ltd., 192,



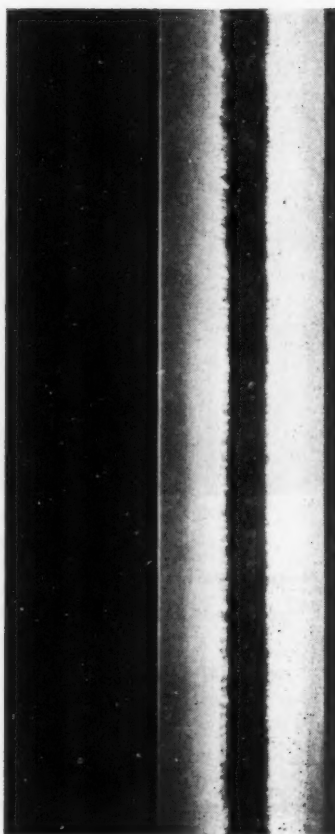
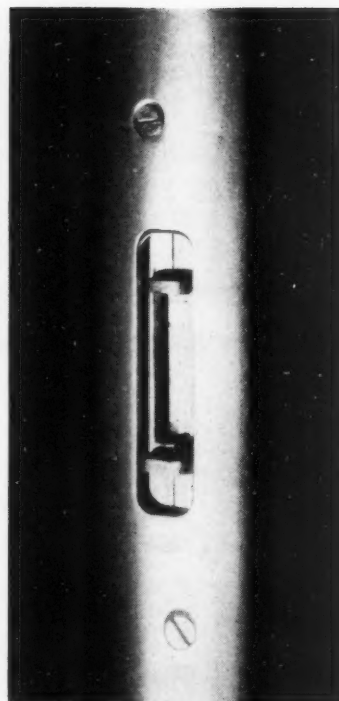
Top, the Californian range of Kitchen furniture, designed by Nigel Walters, F.S.I.A., for F. Wrighton & Sons, Ltd. Bottom, the Queenline Kitchette for old people's homes and single room flatlets by Jayabee Joinery Ltd.

Furniture and fittings continued

Pentonville Road, London, N.1) and consists of a rigid p.v.c. section which fixes to the floor and a flexible section which clips into the rigid section. Price 33s. 9d. for 30 $\frac{3}{4}$ in. length. Attention must be drawn, however, to two neat fittings supplied with Ajax aluminium doors (*Ajax Architectural Products Ltd., Ajax House, Kangley Bridge Road, S.E.26. Sydenham 7061/3*): a nylon brush weather excluder (which, it is claimed, greatly simplifies detailing on the jamb) and paired snib bolts for the front edge of swing doors (see photographs). Lastly we must mention two admirable new Dryad lever handles, K53, price 16s. to 30s., and K42R, price 32s. 6d. to 42s. according to finish.



Above, the Dryad K53 and K42 door handles. Right, Ajax pair of snib bolts for swing doors. Below right, Ajax nylon brush weather strip. Below, laboratory furniture by Griffin & George Ltd.



working detail

LIGHT FITTING: AIR TERMINAL IN COPENHAGEN

Arne Jacobsen, architect (material supplied by Alice Mylo)

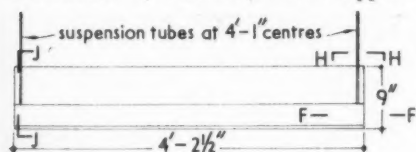
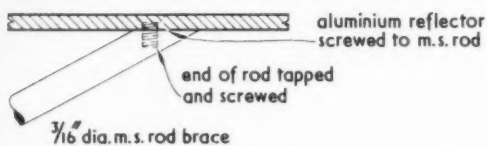


The interest in this detail lies not so much in providing good lighting conditions on the desk as in using reflecting areas to provide an architectural frame. The suspension rods are of steel, plated matt chromium.

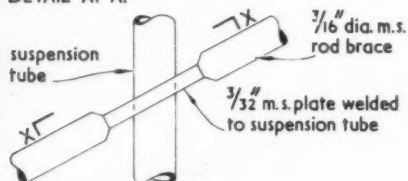
working detail

LIGHT FITTING: AIR TERMINAL IN COPENHAGEN

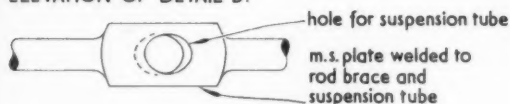
Arne Jacobsen, architect (material supplied by Alice Mylo)

ELEVATION. scale $\frac{1}{2}'' = 1' - 0''$ 

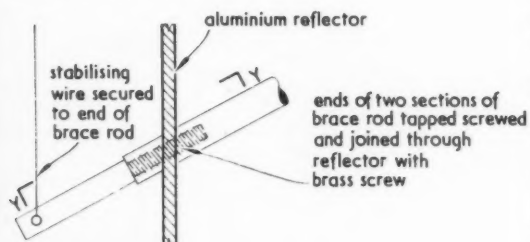
DETAIL AT A.



ELEVATION OF DETAIL B.



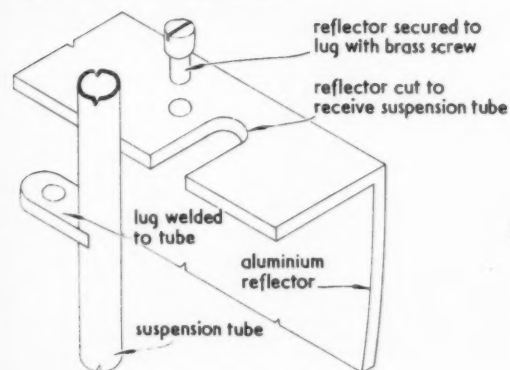
PLAN AT X-X. scale full size



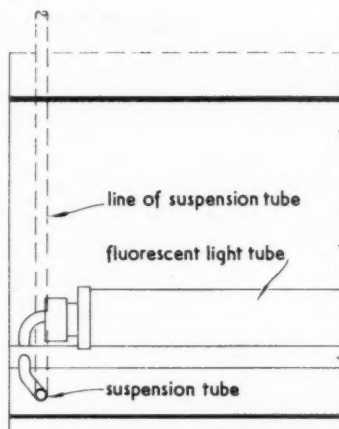
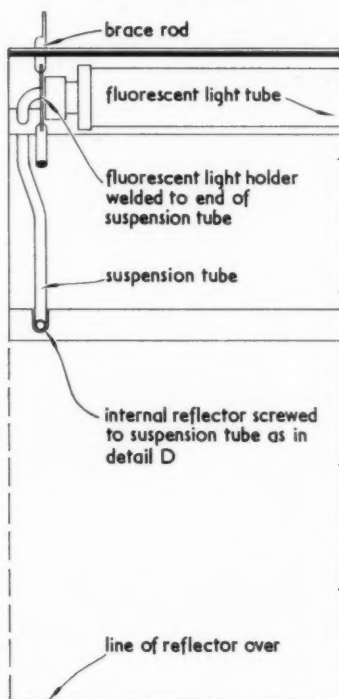
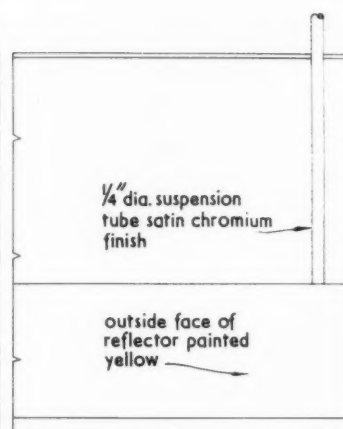
ELEVATION OF DETAIL C.



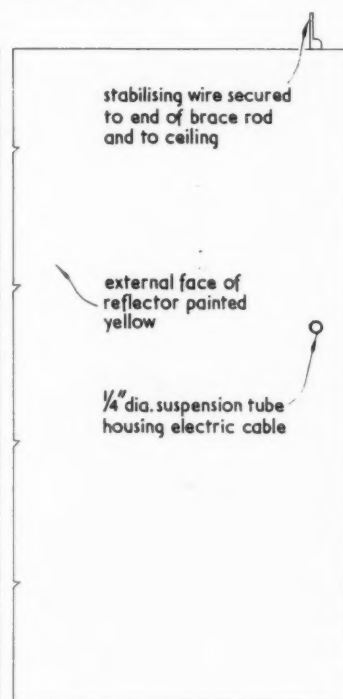
PLAN AT Y-Y. scale full size



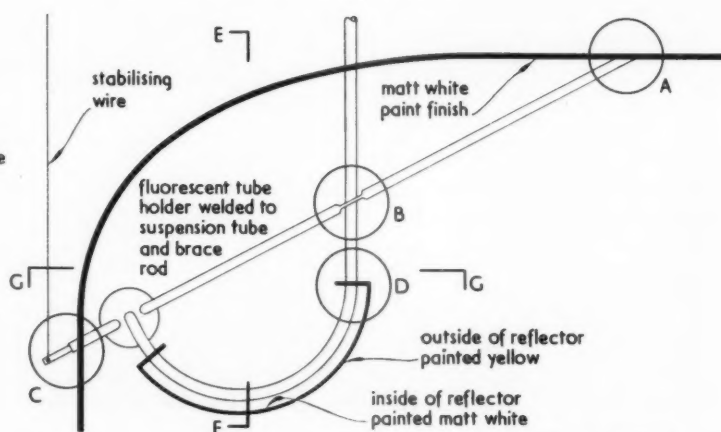
DETAIL AT D. scale full size

SECTION E-E. scale $\frac{1}{4}$ full sizePLAN AT G-G. scale $\frac{1}{4}$ full size

ELEVATION F-F.



PLAN AT H-H.



SECTION J-J.

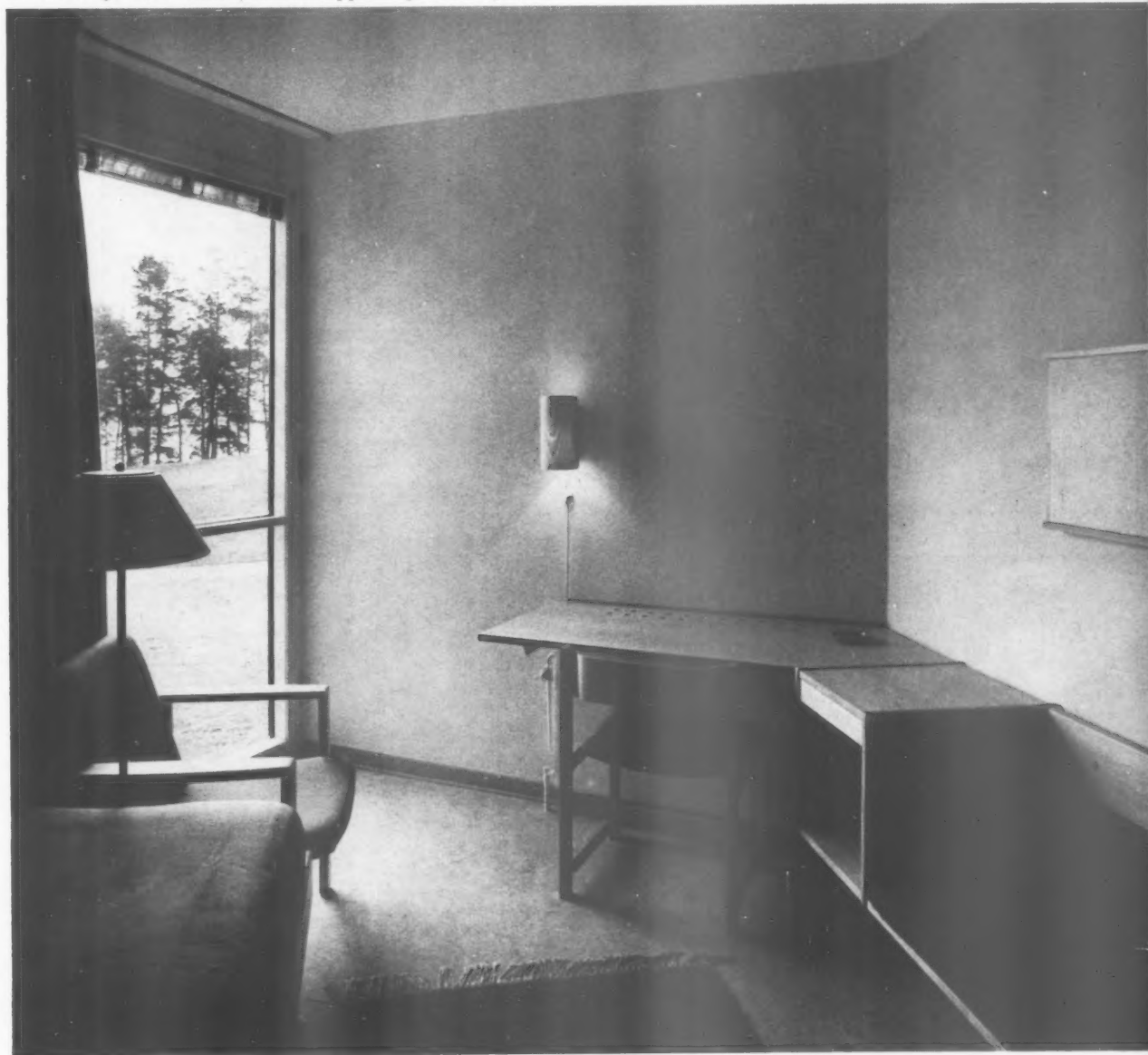
note: figured dimensions in feet and inches are approximate

working detail

FURNITURE AND FITTINGS: 82

FITTING IN STUDY-BEDROOM: TRAINING CENTRE IN STOCKHOLM

Anders Tengbom, architect (material supplied by Alice Mylo)

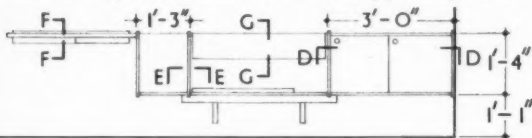


This wall fitting, which contains a small chest of drawers (not visible in the photograph), a settee, a bookshelf and a writing desk, is a good example of the effect of neatness and simplicity which can be produced by good detailing in blockboard. The holes in the back of the desk top are to allow air circulation from the radiator beneath.

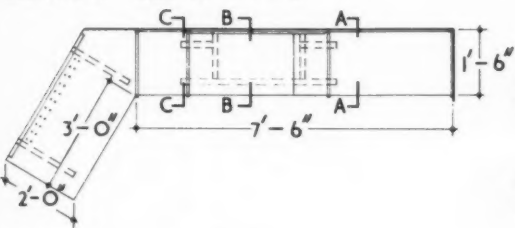
working detail

FITTING IN STUDY-BEDROOM: TRAINING CENTRE IN STOCKHOLM

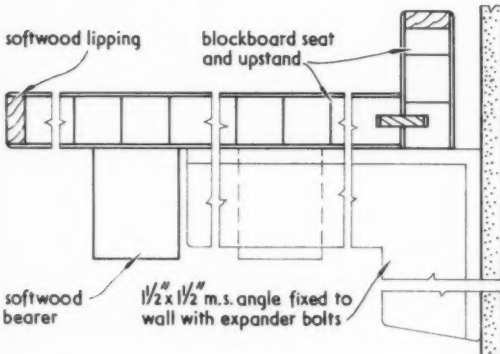
Anders Tengbom, architect (material supplied by Alice Mylo)



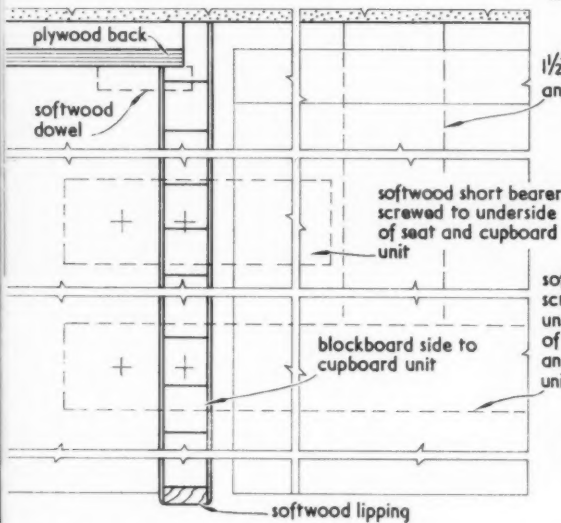
ELEVATION. scale $\frac{1}{4}" = 1' - 0"$



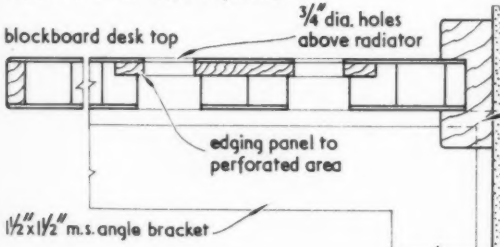
PLAN. scale $\frac{1}{4}" = 1' - 0"$



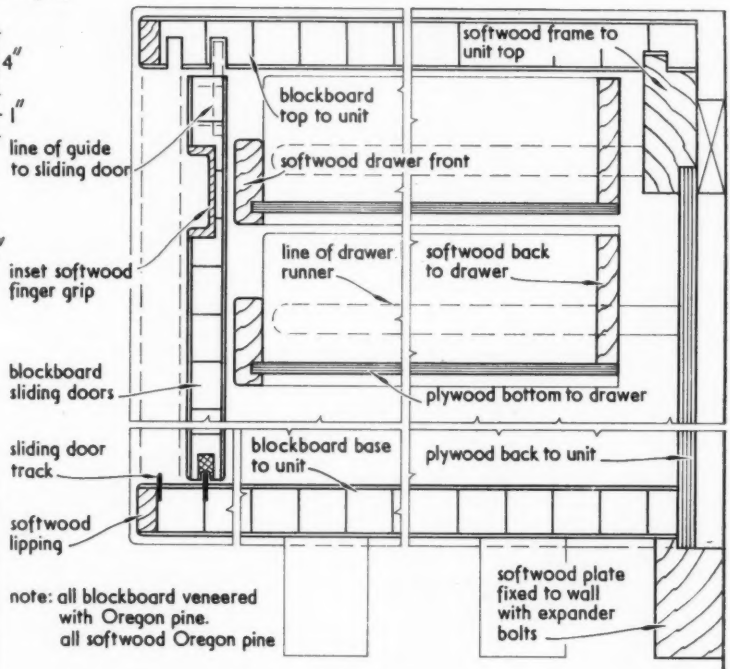
SECTION B-B. scale $\frac{3}{8}$ full size



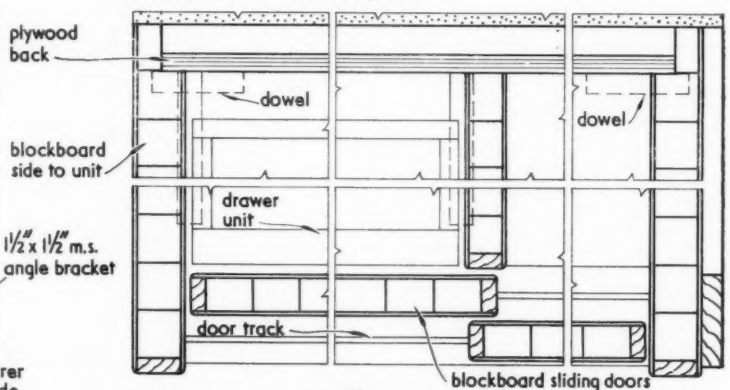
PLAN AT D-D. scale $\frac{3}{8}$ full size



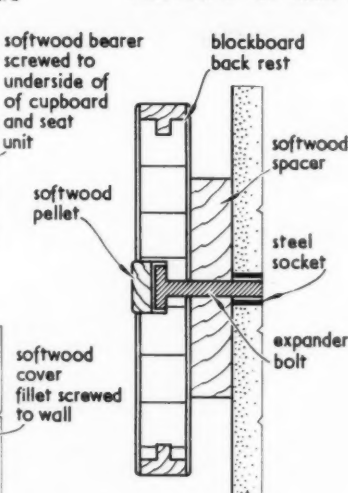
SECTION F-F. scale $\frac{3}{8}$ full size



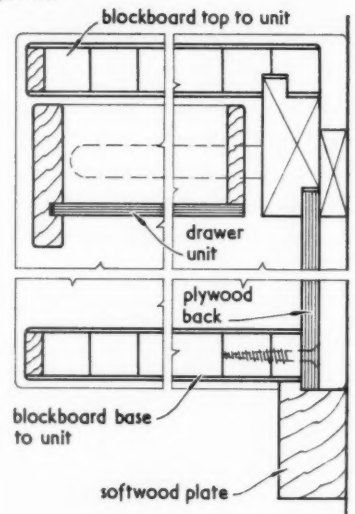
SECTION A-A. scale $\frac{3}{8}$ full size



PLAN AT D-D. scale $\frac{3}{8}$ full size



SECTION G-G.



SECTION C-C. scale $\frac{3}{8}$ full size

note: figured dimensions in feet and inches are approximate



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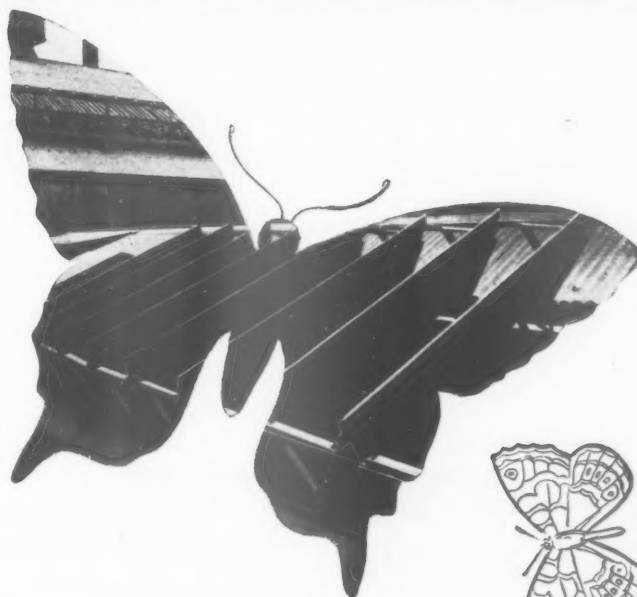


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Announcements

PROFESSIONAL

G. J. W. Thomas, M.A. (cantab), A.R.I.B.A., has moved his practice to 11a, St. Mary's Gate, Derby (telephone Derby 42046) and would be pleased to receive trade literature.

Derek J. Smart, A.R.I.B.A., is now practising on his own account at 784, Hagley Road, West, Birmingham 32 (telephone Woodgate 5411 and 5691) where he will be pleased to receive trade catalogues.

Beard, Bennett, Wilkins & Partners of 101/3, Baker Street, London, W.1, have taken G. A. Askew, A.R.I.B.A., A. Cook, A.R.I.B.A., K. A. Moore, and D. V. Thornton, A.R.I.B.A., into partnership as associates. The name of the firm will remain unchanged.

Clarence Lonsdale Watson, 3, Frederick Terrace, South Hetton, County Durham, will be pleased to receive manufacturers' catalogues (provided details of prices are given) and samples.

John H. Saunders, L.R.I.B.A., and R. W. Leggatt, A.R.I.B.A., A.M.T.P.I., (W. H. Saunders & Son) have been joined in partnership by D. Tennyson Waters dipl. Arch. (Hons), A.R.I.B.A. The firm will now practice under the style of W. H. Saunders, Son & Waters from new premises at 53, Goodge Street, London, W.1 (telephone Langham 9908/9). The practices in Southampton, Portsmouth, Coventry and Gosport remain unchanged under the style of W. H. Saunders & Son.

S. W. Sherwin, F.R.I.C.S., has moved his London office to 38, Bedford Place, Bloomsbury, London, W.C.1 (telephone Langham 5705). He has formed a partnership with W. W. Kerr, F.F.S., and they will practise under the style of Kerr, Sherwin.

The Department of Building, College of Technology, Ashley Down, Bristol 7, hope to start a Technical Library. They would therefore appreciate it if manufacturers could supply, and periodically revise, information concerning their products.

The District Architect/East, Public Works Department, P.O. Box 189, Accra, Ghana, will be pleased to receive trade literature together with names of Agents—if any—in Accra.

The firm of Willan, Stewart & Waite has changed its name to Kenneth Waite, A.R.I.B.A., due to the retirement of Mr. Willan and Mr. Stewart.

Richard Pickles & Partner, Chartered Architects, have acquired the practice of Sharp & Waller, Architects, of 32, Bradford Road, Brighouse. The style of the firm will be Richard Pickles & Partner, A/A.R.I.B.A.

A Building Research Group has recently been established in the School of Architecture, Town Planning & Building at Kumasi College of Technology. The Head of the School is Charles Hobbis, A.R.I.B.A., and G. B. Dix, M.L.A. (Harvard), A.R.I.B.A., M.T.P.I., is in charge of the Research Group.

P. R. Rathbone, B.A., has been appointed Secretary-designate of the Town Planning Institute and will take over the duties of Secretary on the retirement of A. R. Potter, O.B.E., next year.

Derek Lovejoy has been appointed Secretary-General of the International Federation of Landscape Architects, 1, Park Crescent, Portland Place, London, W.1.

TRADE

Manwood Miller Fans & Filters Ltd. have moved their London office to 1, York Street, Baker Street, London, W.1 (telephone Welbeck 1226/7).

Philips Electrical Ltd. have appointed D. I. Campbell, B.Sc., Econ., as a Lighting Division Representative of the South East region.

John Harrison is now Managing Director of Atlas Copco (Great Britain) Ltd., of Maylands Avenue, Hemel Hempstead, Herts.

The Consolidated Pneumatic Tool Co. Ltd. have opened a new district office at 1, Bedminster Down Road, Bristol 3 (telephone Bristol 63736).

P. G. Holmes, B.Sc. (Hons) has been appointed Electrical Research Engineer to Gent & Co. Ltd., Leicester.

Sir Oswald A. Scott, K.C.M.G., D.S.O., has been elected chairman of directors of Detel Products Ltd.

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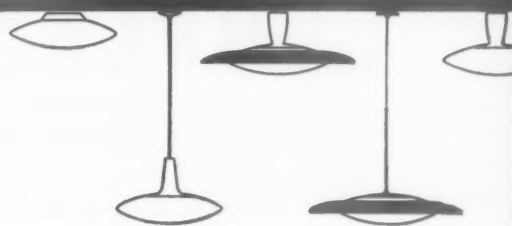
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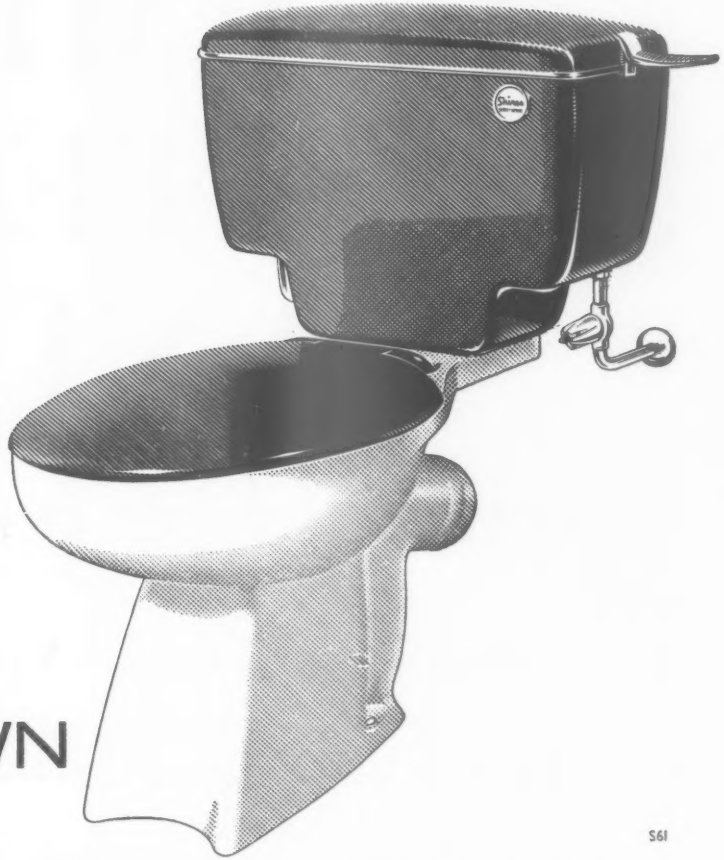
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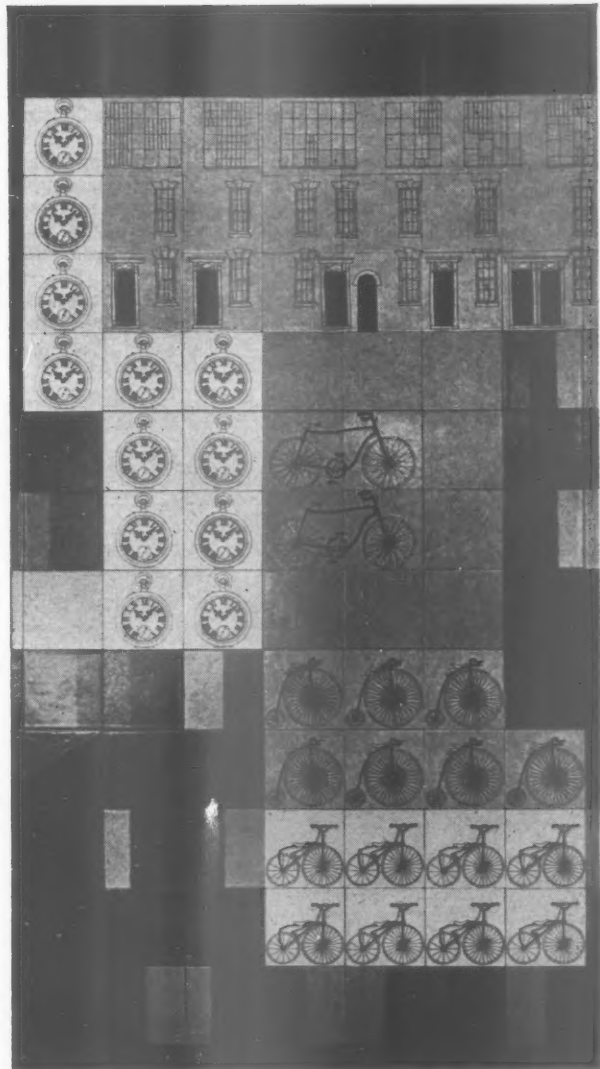
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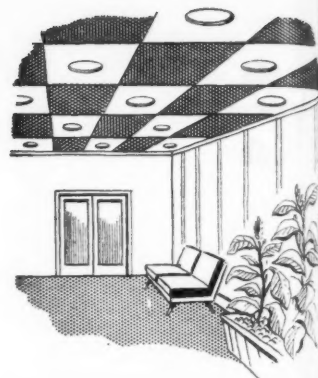
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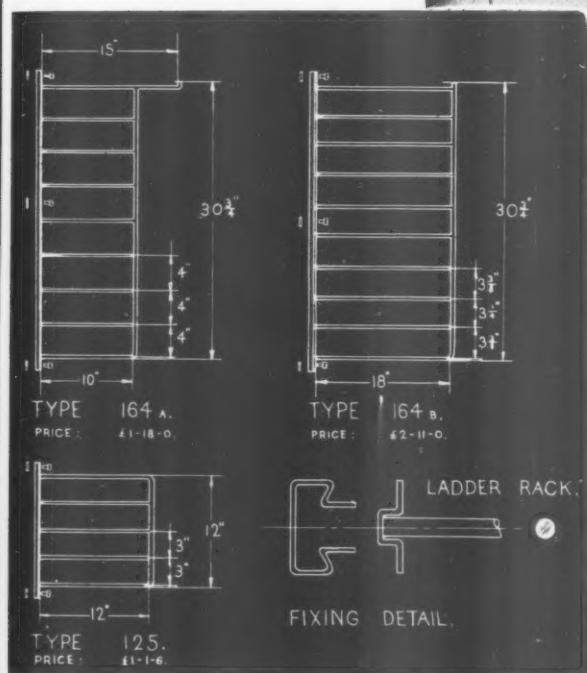
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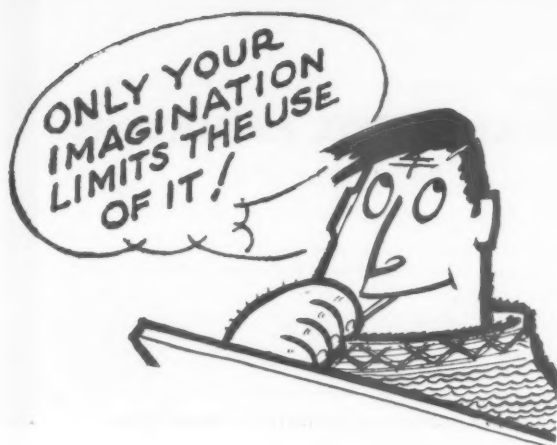
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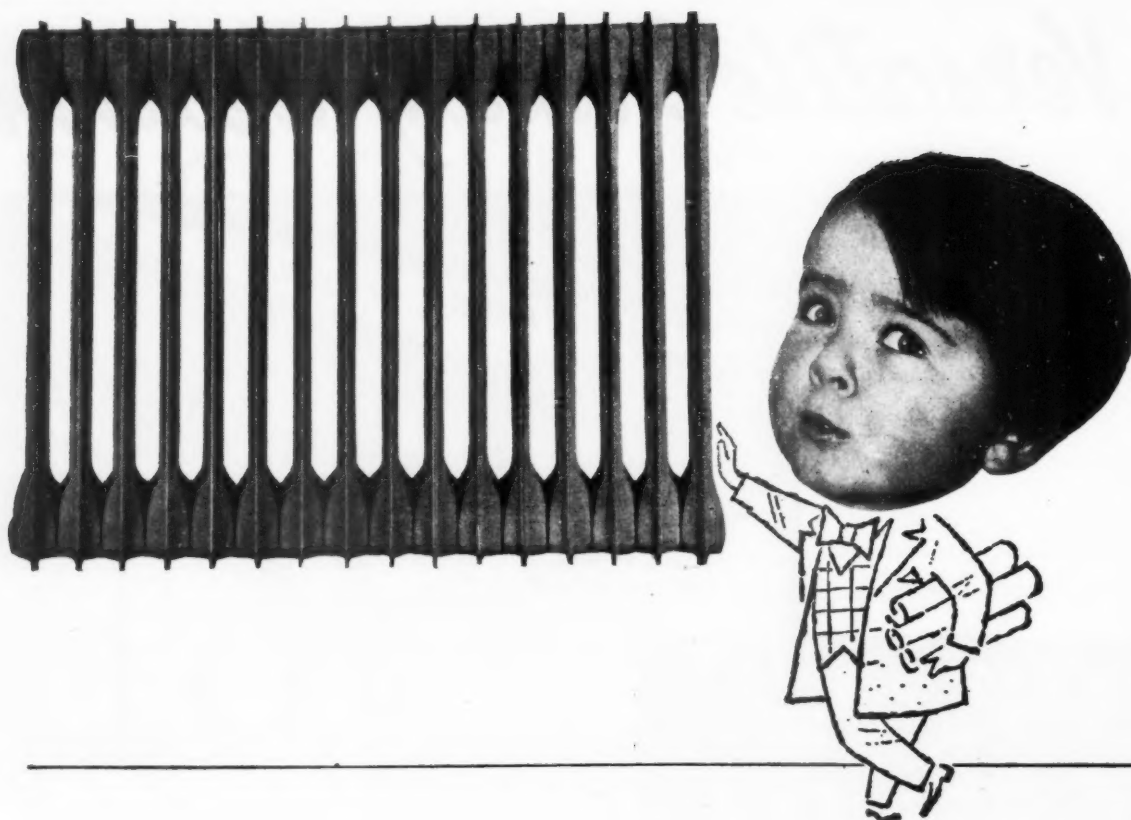
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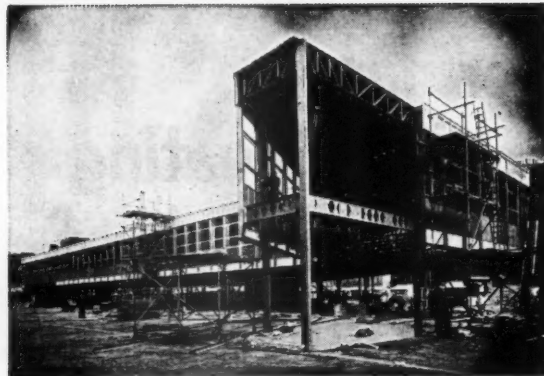
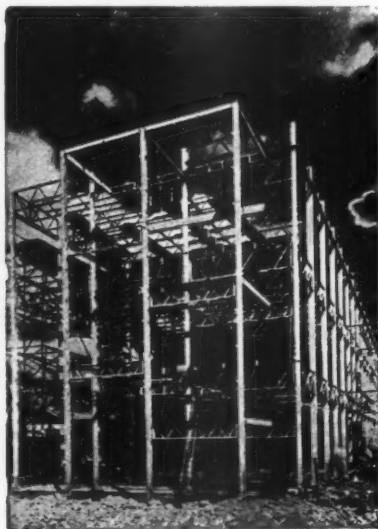
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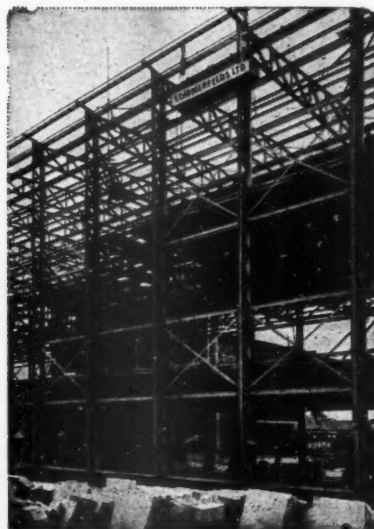
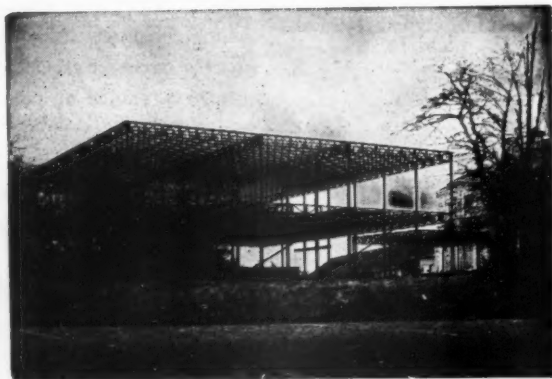


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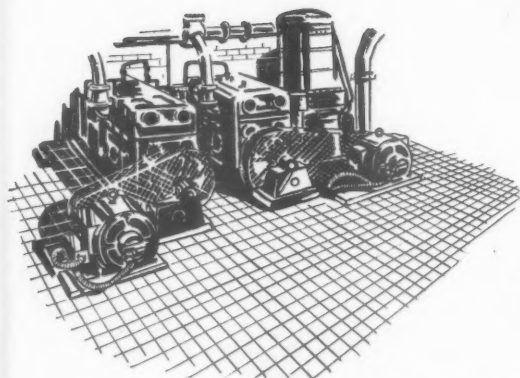
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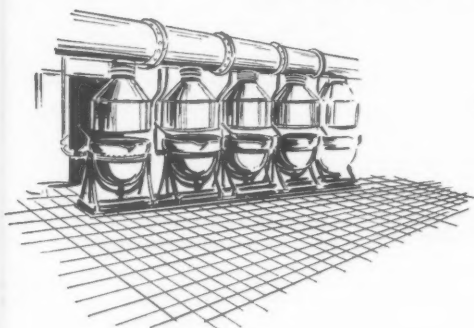
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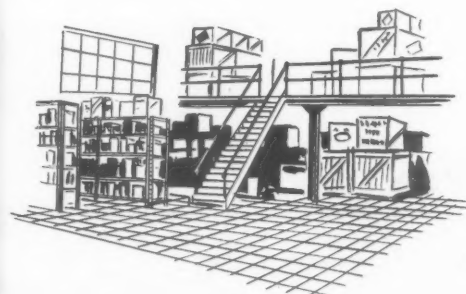
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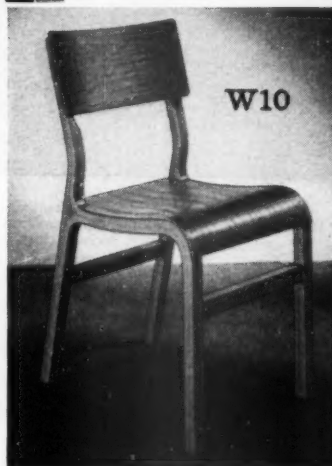
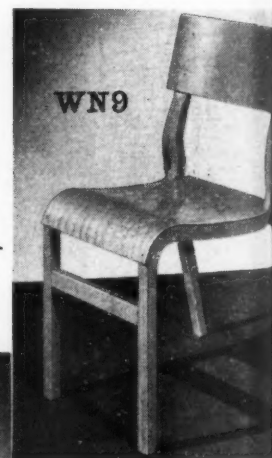
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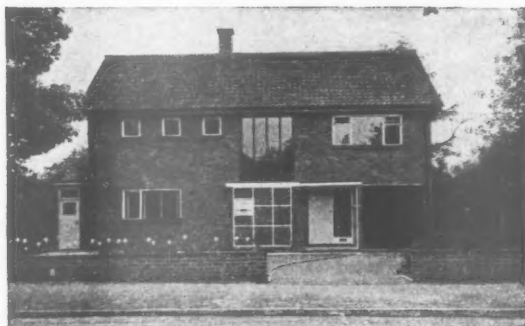
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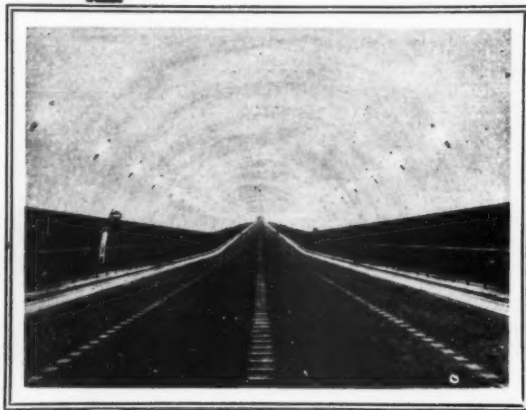


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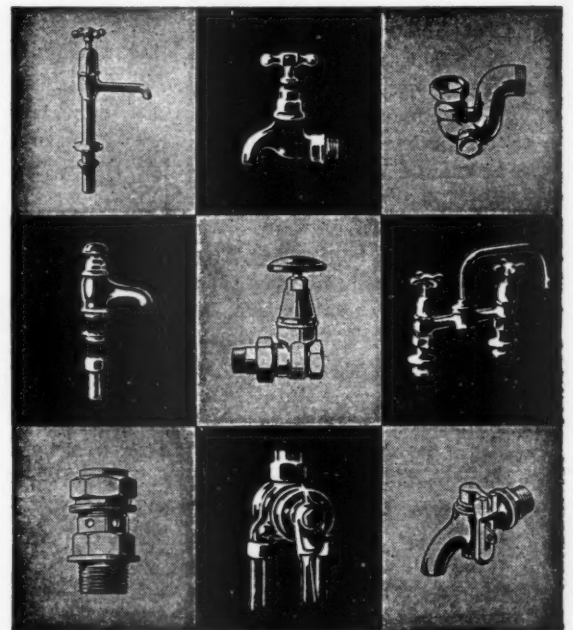
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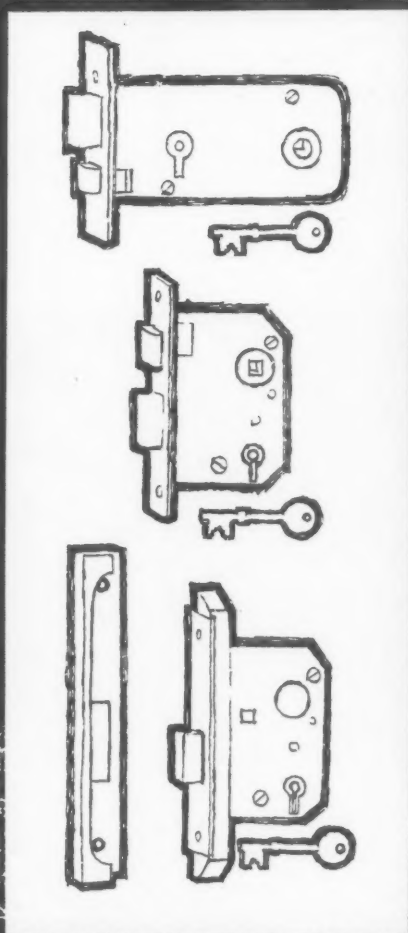
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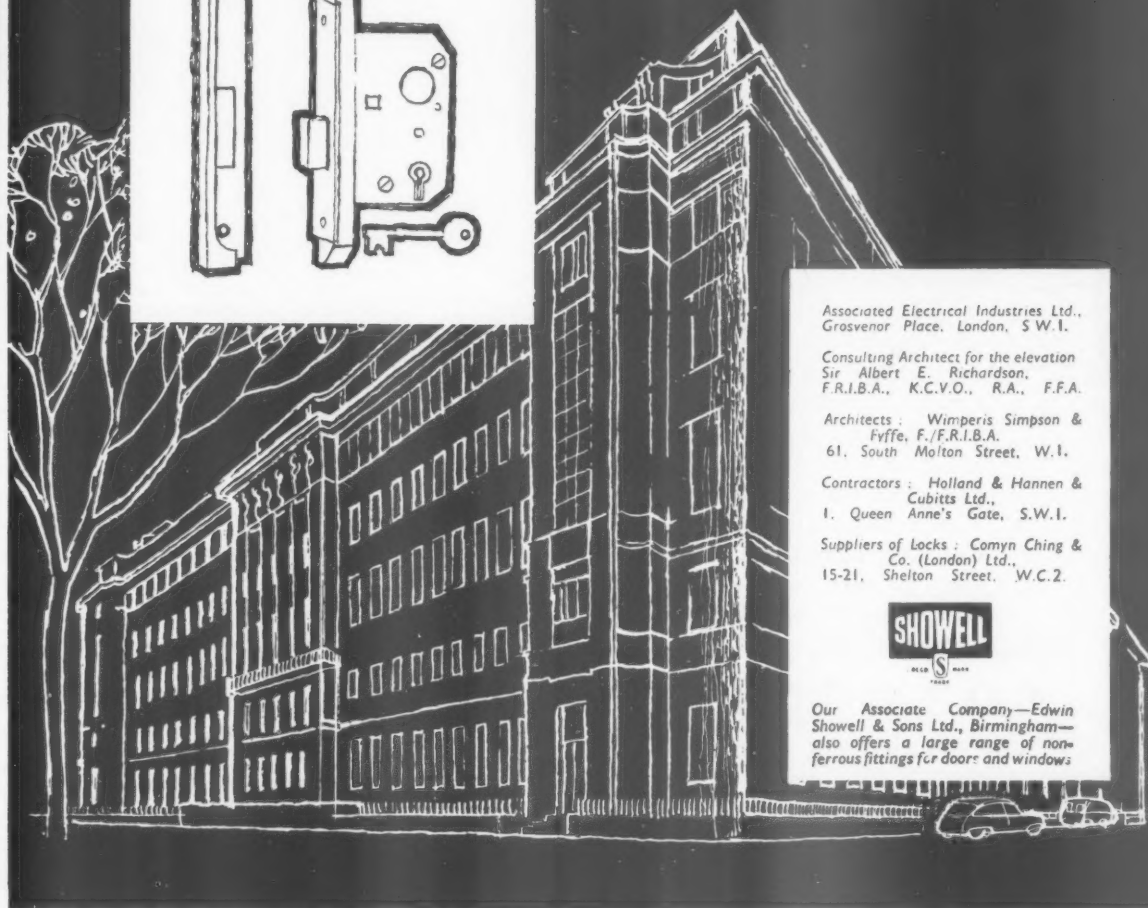
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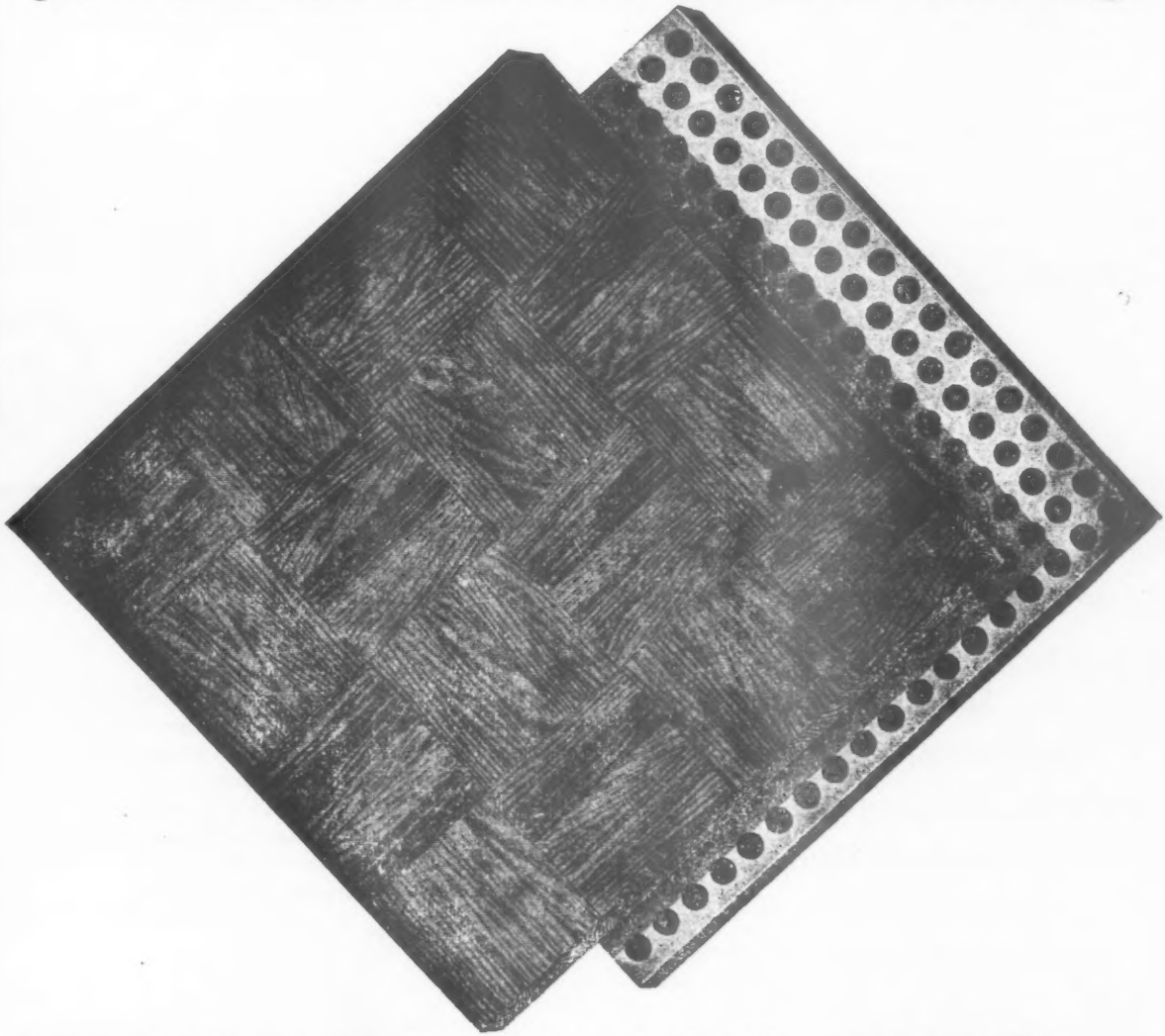
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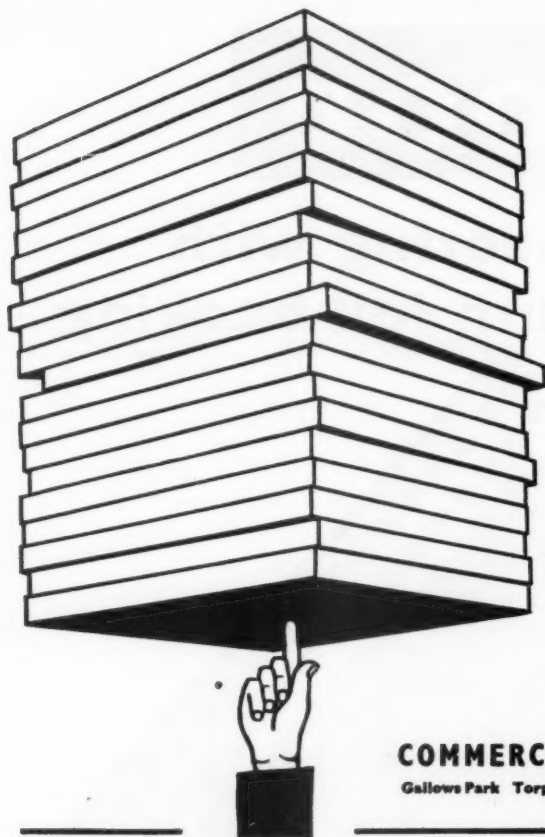
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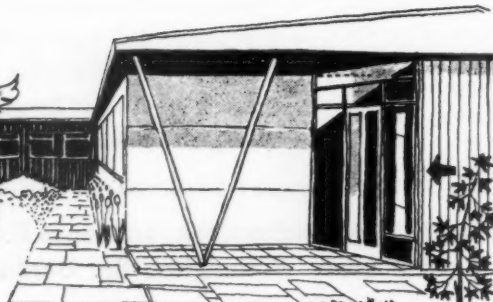
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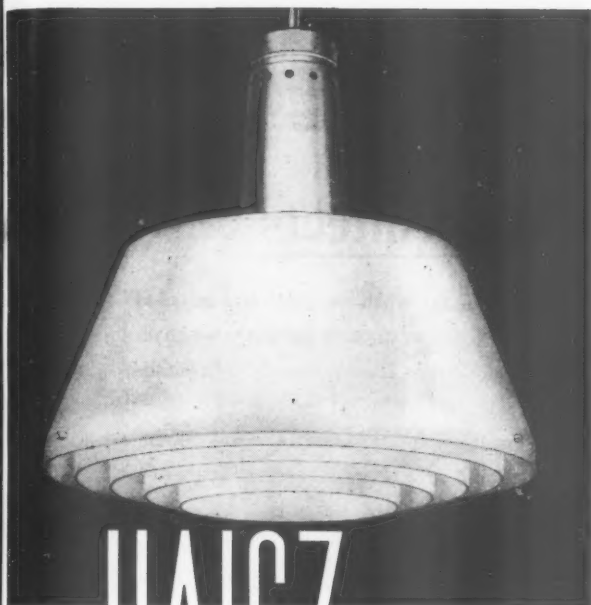
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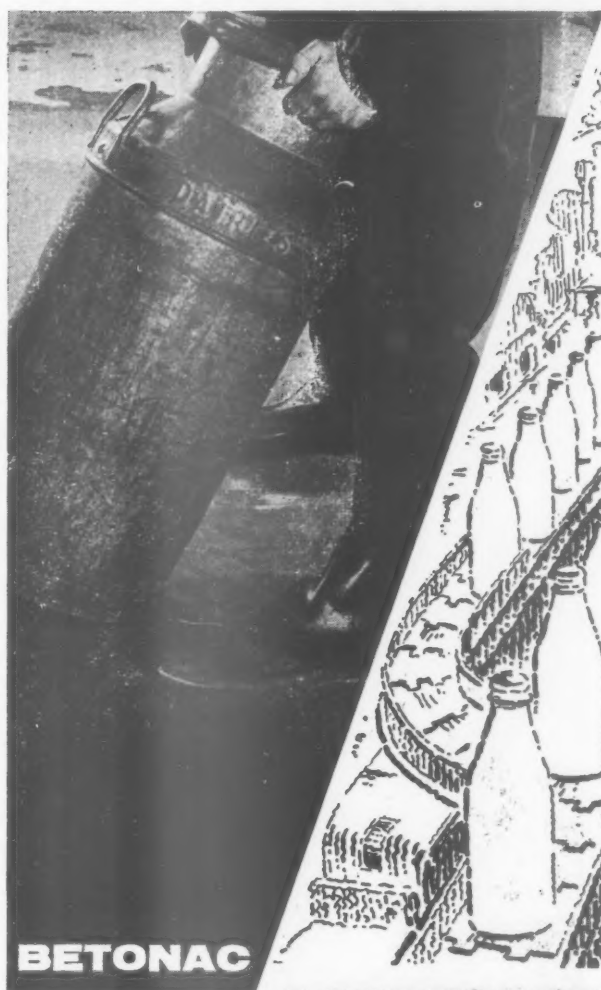
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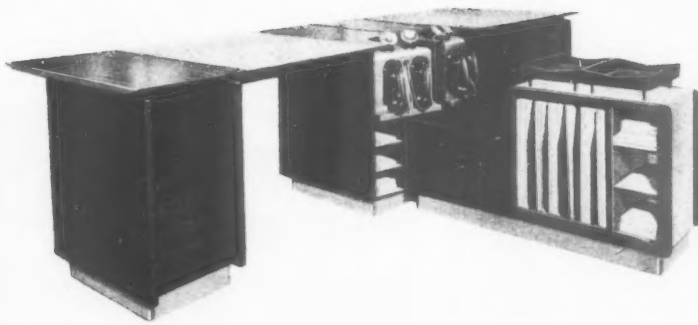
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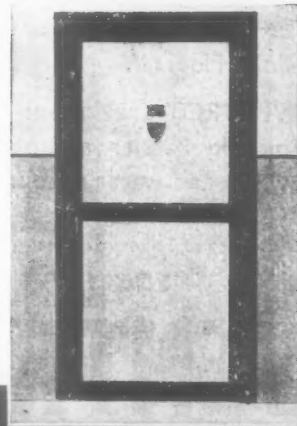
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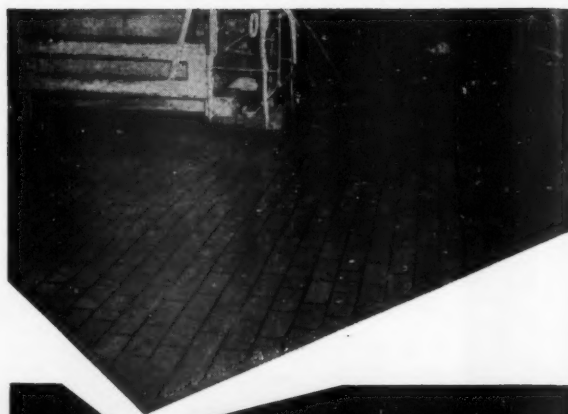
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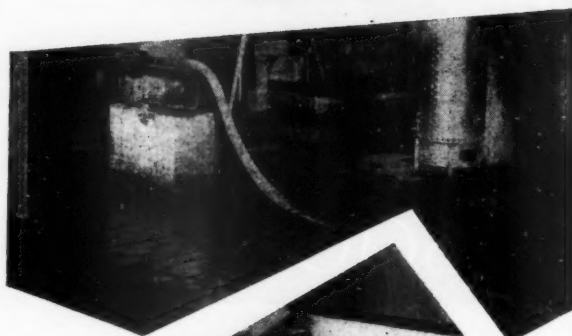
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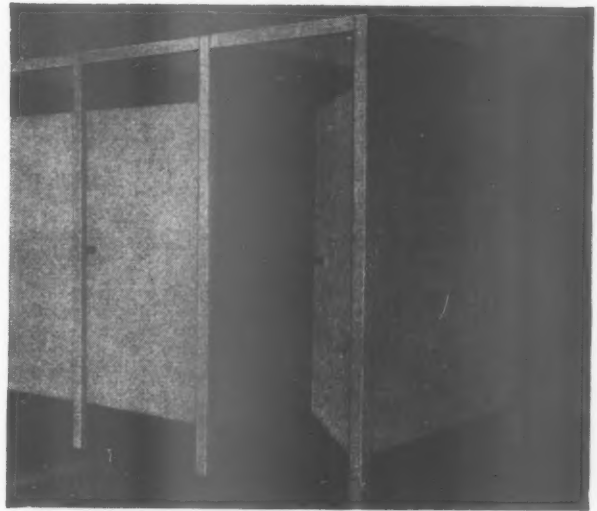
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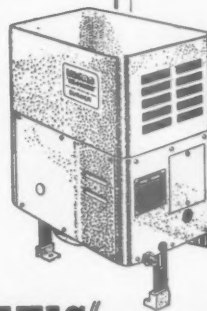
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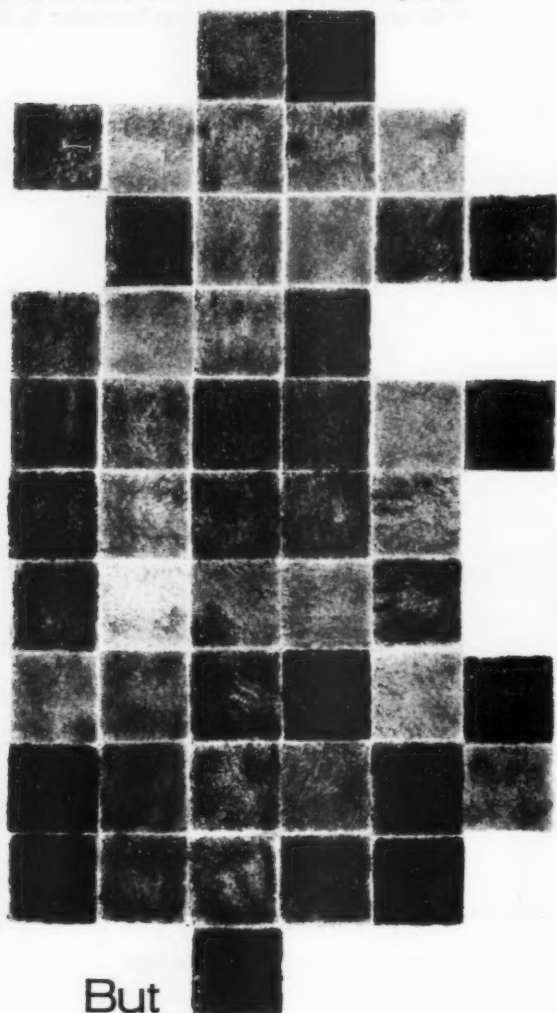
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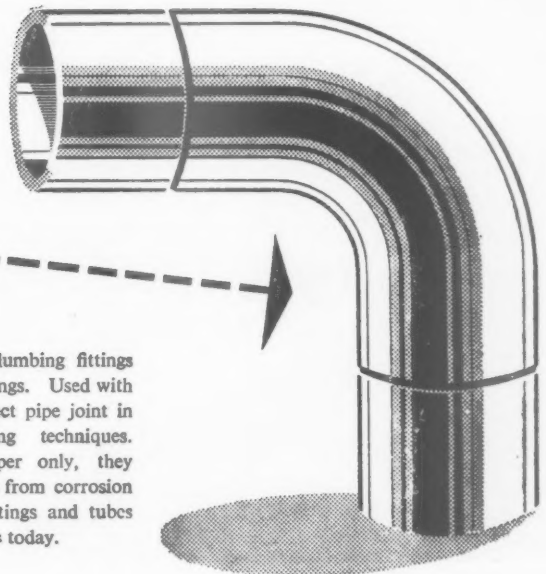
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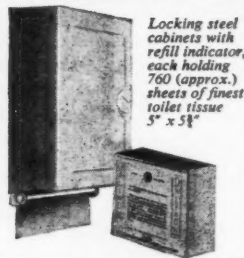
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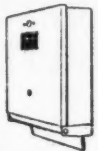


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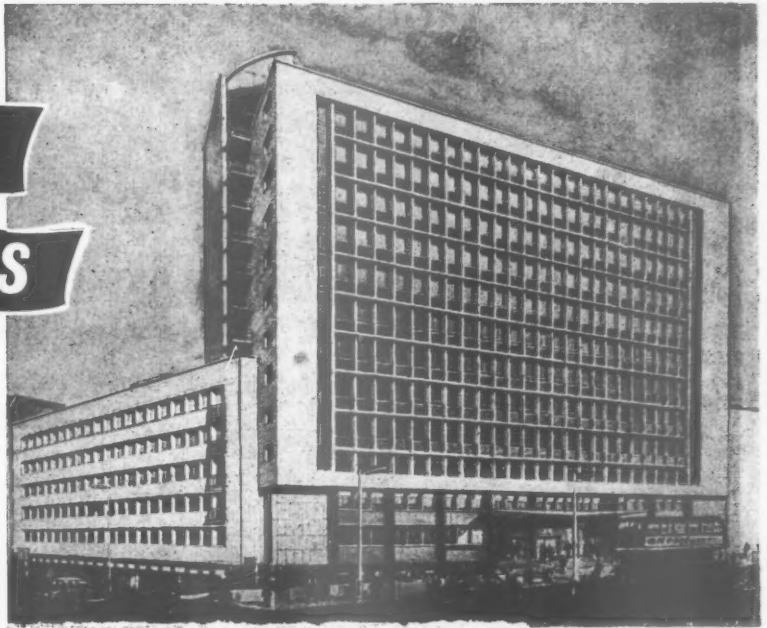
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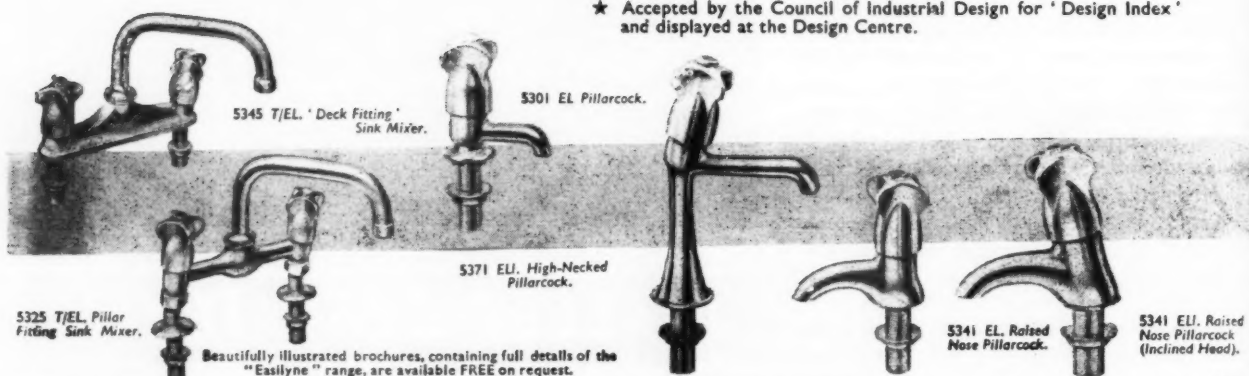
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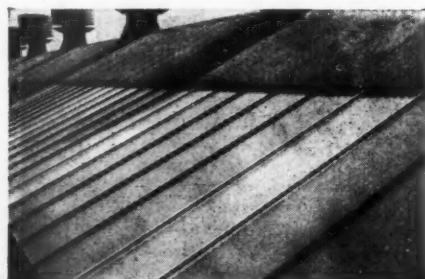
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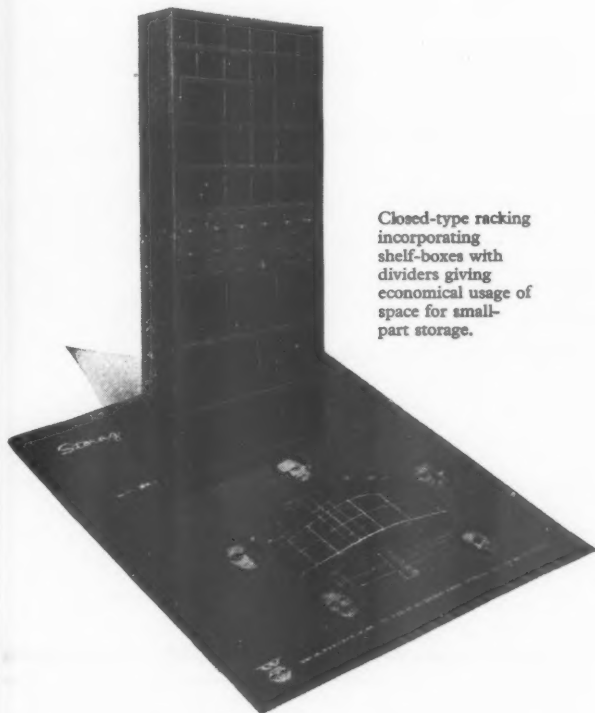
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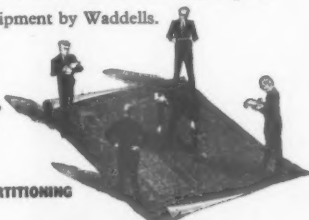
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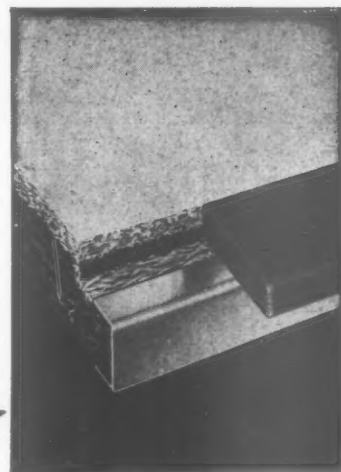
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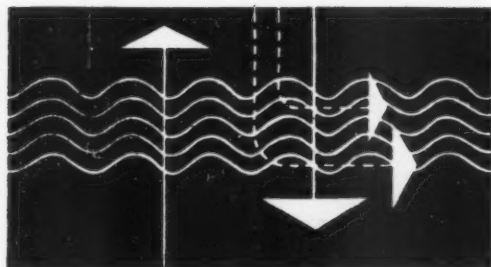
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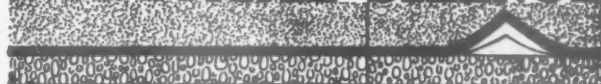
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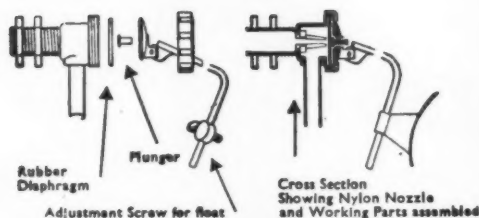
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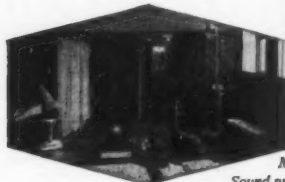
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*Medical Officer's Suite.
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Black Bronze
4/6 each.
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with recessed
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10" or 12"
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7/10 each
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- HIGH THERMAL INSULATION
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HADDON Lightweight foamed slag blocks are manufactured under strict quality control to surpass the requirements of B.S.S. No. 2028, 1953—and every block is steam cured. Look at the many advantages the **HADDON** block offers—advantages that add up to better, warmer buildings and a considerable saving in time.

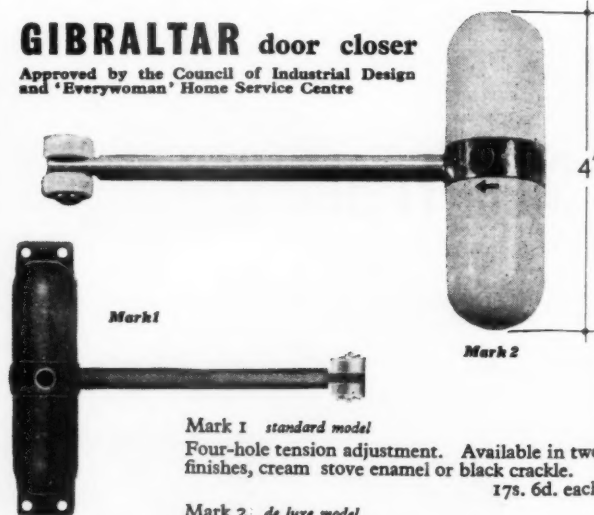
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Mark 1 standard model

Four-hole tension adjustment. Available in two finishes, cream stove enamel or black crackle. 17s. 6d. each

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Five-hole tension adjustment. In cream stove enamel or black crackle, with chrome boss and arm. A special feature is the independent slide fixing plate, enabling all fixing screws to be concealed. 27s. 6d. each

Both models are of a similar size and are able to close all but the very heaviest doors, when two closers should be fitted. Weight 1 lb.

Finish, in hammer or high gloss stove enamel, can be to any colour you specify for a minimum order of one gross.

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For sheet laps use our

ALKATHENE SELAWASHER

(Patent Application No. 6466/59)

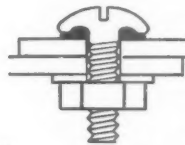
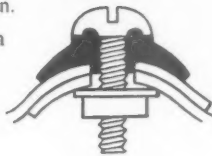
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specially adapted for use with our Roofing Bolts to prevent water penetration. The same long life and adaptability as with the Selanut is attainable.

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is still available with its small neoprene ring to protect surfaces such as vitreous enamel, glass and paintwork. It provides a watertight joint and a small degree of flexibility.



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It will no longer be necessary for your sheet fixers to carry nuts, diamond steel and bitumen washers on to the roof, all they need is the new

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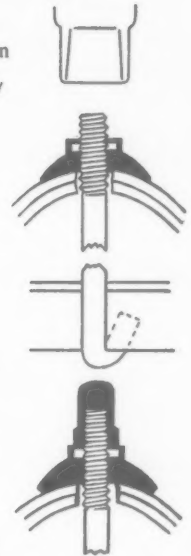
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incorporating a moulded in steel' nut. The Alkathene will adapt itself to any radius of curvature and provide a long lasting watertight joint and there will be no more dirty rust stains on the roof.

★ Full production will be attained shortly, but in the meantime send for test samples.

A protective cap covering the thread will be available shortly



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Hydraulically pressed Terrazzo Tiles with highest quality, carefully selected coloured aggregate, giving the most attractive effects, Exceptionally hard wearing, hygienic and easily cleaned. Manufactured to B.S.S. in stock nominal sizes: 6" x 6" x 3/8"; 9" x 9" x 3/4"; 12" x 12" x 1". Standard Coved Skirtings, Plain Skirtings and Bull-nosed Tiles. Technical advice, range of samples and prices freely available.

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CLASSIFIED ADVERTISEMENTS

Advertisements should be addressed to the Advt. Manager, "The Architects' Journal," 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1. Normal printing arrangements have been altered to allow for the Christmas holiday. The latest dates for receiving advertisements for the December issues are as follows:—

December 10 issue—Friday, December 4.
December 17 issue—Thursday, December 10.
December 24 issue—Wednesday, December 16.
December 31 issue—Tuesday, December 22.

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.

Public and Official Announcements

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

BOROUGH OF ENFIELD
BOROUGH ENGINEER'S DEPARTMENT
APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited for the above appointment at a salary in accordance with Grade A.P.T. II of the National Scheme of Conditions of Service (£765 to £880 per annum) with the additional appropriate London weighting.

The commencing salary will be fixed at a point within the Scale commensurate with qualifications and experience.

Application forms obtainable from Mr. H. D. Zeake, M.Sc. (Eng.), M.I.C.E., Borough Engineer & Surveyor, 7, Little Park Gardens, Enfield, Middx., should be returned to the undersigned.

CYRIL E. C. R. PLATTEN
Town Clerk.

Public Offices,
Gentleman's Row,
Enfield, Middx. 6343

NORTH RIDING OF YORKSHIRE COUNTY COUNCIL

PLANNING ASSISTANT, Special Scale (£785 to £1,070) in Headquarters Office. Minimum qualification Final Examination (or equivalent) of the Town Planning Institute; salary within the scale to be fixed in accordance with qualifications and experience. Experience on Development Plan and Town Maps essential; experience of development control an advantage. Travelling allowance for 10 h.p. car.

PLANNING ASSISTANT, A.P.T. Grade I. Minimum of three years' training and a further year's experience in planning work. Candidates should have completed or be exempt from National Service.

Applicants must disclose in writing relationship to any member or senior officer of the County Council. Canvassing disqualifies.

Applications, giving age and experience, with addresses of two referees, to the Clerk of the County Council, County Hall, Northallerton, by 10th December, 1959. 6941

ARCHITECTURAL ASSISTANTS

REQUIRED BY

MINISTRY OF WORKS

For employment in London. Keen and enthusiastic Assistants of Intermediate R.I.B.A. standard are required for the design of interesting and varied types of buildings in all parts of the world. The salary range is from £556 (at age 21) to £960. Starting pay according to age and experience. 5-day week. 3½ weeks annual leave. Good prospects of promotion and permanency. Permanent posts are pensionable and the pension scheme is non-contributory. Apply, giving details of age, training and experience to: B. Redford, C.B., C.V.O., A.R.I.B.A., Chief Architect, Ministry of Works, Abell House, Room 435, John Islip Street, London, S.W.1. 6456

BOROUGH OF HENDON
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT

DEPUTY CHIEF ASSISTANT ARCHITECT

Applications are invited for the above appointment which is in Lettered Grade B, i.e., £1,310 rising by annual increments to £1,485 per annum. Applicants should be Associate Members of the Royal Institute of British Architects and have had wide experience in design, preparation of sketch plans, working drawings, specifications, estimates and supervision of works in progress. Pensionable Post. Subject to National Scheme. Medical examination. Appointment terminable by one month's notice on either side.

Applications stating age, qualifications and experience, together with the names and addresses of three referees, much reach the Borough Engineer and Surveyor, at the under-mentioned address by 21st December, 1959.

Canvassing will disqualify.

R. H. WILLIAMS,
Town Clerk.

Town Hall,
Hendon, N.W.4. 7009

NATIONAL COAL BOARD
EAST MIDLANDS DIVISION
ARCHITECTS AND ARCHITECTURAL ASSISTANTS

Applications are invited for superannuable posts with the National Coal Board, East Midlands Division, on the staff of the Divisional Chief Architect at 69, Lower Parliament Street, Nottingham.

SALARY SCALES

ARCHITECTS, GRADE 2, £815 to £1,125.
Open to Corporate Members of the R.I.B.A. with wide practical experience.

ARCHITECTURAL ASSISTANTS, GRADES 1 & 2.
£715 to £850 (exceptionally £1,000).
£595 to £725—£710.

Qualifications: Preferably Intermediate R.I.B.A., although regard will be paid to good practical experience.

The work of the department provides excellent experience in the design and construction of large Welfare and Industrial Buildings.

Applications within 14 days, giving age and full details of qualifications and experience, to:—

Divisional Chief Staff Officer,
National Coal Board, East Midlands Division,
Sherwood Lodge, Arnold, Nr. Nottingham. 6903

COUNTY BOROUGH OF PRESTON
APPOINTMENT OF ASSISTANT ARCHITECTS

(Special Grade £785—£1,070)
Applications are invited for the above mentioned appointments in the Borough Surveyor's Department.

Candidates must be Registered Architects and Corporate members of the R.I.B.A. The programme of works is large and varied and appointments afford opportunities for good experience. The National Scheme of Conditions of Service and Local Superannuation Acts apply, and the successful applicants will be required to pass a medical examination.

Forms of application can be obtained from the undersigned, to whom they must be returned, completed, not later than 7th December, 1959.

W. E. E. LOCKLEY,
Town Clerk.

Municipal Building,
Preston. 6894

BURGH OF KILMARNOCK
BURGH ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

(a) DEPUTY BURGH ARCHITECT. Salary £1,150 to £1,250 per annum. Council House available for letting if required.

(b) ARCHITECTURAL ASSISTANT. Salary Executive Grade IV, £395 to £420 to £465.

Applicants for appointment (a) must be qualified and experienced Architects.

Applicants for appointment (b) should have passed the Intermediate examination of the R.I.B.A. and should have had good office experience. Both appointments are subject to N.J.C. conditions, and the successful applicants will require to pass a medical examination for superannuation purposes.

Applications giving full details of training and experience, should, along with copies of testimonials, be lodged with the Burgh Architect and Town Planning Officer, 64a, Bank Street, Kilmarcok, within 10 days of the date of this advertisement.

W. L. WALKER,
Town Clerk.

Council Chambers,
Kilmarcok.
November, 1959. 6987

COUNTY BOROUGH OF ROTHERHAM
ARCHITECTS

Applications are invited for the following appointments:—

(a) ARCHITECTURAL ASSISTANTS, A.P.T. I (£575—£725) to Special Grade (£750—£1,030).

(b) SENIOR ASSISTANT ARCHITECT, A.P.T. IV (£1,065—£1,220).

Candidates for (a) are required to have passed Parts I and II of the R.I.B.A. Final examination and (b) to be Associate Member of the R.I.B.A. with good general experience in design and construction. The commencing salary in the grades will be according to capabilities and experience.

Housing accommodation will be available if necessary for the higher grade appointment. Applications to be endorsed "Architects," stating age, qualifications and details of experience, together with names of two referees, should be received by me not later than Tuesday, 8th December, 1959.

Canvassing will disqualify.

JOHN S. WALL,
Town Clerk.

Municipal Offices,
Rotherham. 6918

CITY OF MANCHESTER
CHIEF ASSISTANT PLANNING OFFICER

required in the City Surveyor and Engineer's Department at a salary within J.N.C. Scale "C" (£1,385—£1,620).

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, many of which are due to be carried out very shortly. Housing accommodation and removal expenses.

Applications, stating age, education, qualifications and experience, together with the names of three referees, to the Town Clerk, Town Hall, Manchester, 2, in an envelope endorsed "Chief Assistant Planning Officer," not later than 4th January, 1960. 7122

CORPORATION OF THE CITY OF ABERDEEN
TOWN PLANNING DEPARTMENT

Applications are invited for the following appointments:—

(a) SENIOR PLANNING ASSISTANT, to take charge of the technical planning branch of the department. The salary scale for this post is £1,085 rising by annual increments to £1,235 per annum.

(b) PLANNING ASSISTANTS (2), for general planning duties in connection with development control. The salary scale for each post is £795 rising by annual increments to £1,075 per annum.

(c) JUNIOR PLANNING ASSISTANT. The salary scale for this post is £605 rising by annual increments, subject to qualification bars, to £855 per annum.

Applicants for posts (a) and (b) should possess a recognized qualification. Placing will be in accordance with qualifications and experience.

Applications by letter, with usual particulars and names of two referees, should reach the Director of Town Planning, 5 Bon-Accord Crescent, Aberdeen, on or before 10th December, 1959.

The Corporation may be prepared to assist in the provision of housing accommodation.

J. C. RENNIE,
Town Clerk.

Town House,
Aberdeen.
12th November, 1959. 6911

BOROUGH OF WALTHAMSTOW
BOROUGH ARCHITECT'S DEPARTMENT

Walthamstow is a municipal borough within the County of Essex, population 114,000, rateable value £1,747,737. It is a progressive authority and there is a large programme of interesting architectural and redevelopment schemes to be undertaken.

Applications are invited for the undermentioned vacancies on the permanent staff of the Borough Architect:—

(1) TWO SENIOR ASSISTANT ARCHITECTS A.P.T. IV (£1,065—£1,220).

(2) ASSISTANT ARCHITECT A.P.T. III (£880—£1,065).

(3) THREE ASSISTANT ARCHITECTS A.P.T. I/II (£610—£880).

(4) SENIOR ARCHITECT—PLANNER A.P.T. IV (£1,065—£1,220).

(5) ASSISTANT QUANTITY SURVEYOR A.P.T. IV (£1,065—£1,220).

(6) THREE ASSISTANT QUANTITY SURVEYORS A.P.T. II (£765—£880).

(7) TWO JUNIOR QUANTITY SURVEYORS General Division (£210—£595).

The above salaries do not include the London Weighting allowance.

Applicants for (1), (2), (4) and (5) must be professionally qualified and have had extensive experience. Applicants for (3) and (6) should have the appropriate qualification.

The Council will make 100% advances to successful applicants for house purchase in this or adjoining boroughs.

Application forms may be obtained from the undersigned.

Closing date: 14th December, 1959.

G. A. BLAKELEY,
Town Clerk.

Town Hall, Walthamstow, E.17. 6984

BOROUGH OF SOLIHULL
APPOINTMENT OF ASSISTANT ARCHITECTS

Applications are invited for the following posts in the Borough Surveyor's Department:—

(a) PRINCIPAL ASSISTANT ARCHITECT, A.P.T. V (£1,220 rising to £1,375 per annum).

(b) SENIOR ASSISTANT ARCHITECT, A.P.T. Grade IV (£1,065 rising to £1,220 per annum).

(c) ASSISTANT ARCHITECTS, A.P.T. Grade Special (£785 rising to £1,070 per annum).

(d) ASSISTANT ARCHITECTS, A.P.T. Grade III (£880 rising to £1,065 per annum).

(e) ASSISTANT ARCHITECTS, A.P.T. Grade II (£765 rising to £880 per annum).

(f) ASSISTANT ARCHITECTS, A.P.T. Grade (£610 rising to £765 per annum).

Applicants should have the appropriate qualifications and experience for the particular vacancy for which they are applying. In each case the commencing salary will be in accordance with the qualifications and experience of the selected applicant.

The vacancy for a Principal Assistant Architect, referred to in (a) above, will be required to take charge of the education section of the department, which section is responsible for the preparation of plans, etc., for a considerable number of new schools, extensions, etc., in the Borough.

In all cases, the appointments will be subject to the provisions of the Local Government Superannuation Acts, to the National Scheme of Conditions of Service, and to one month's notice on either side.

In suitable cases housing accommodation will be provided as soon as possible and half the reasonable cost of removal expenses paid.

Applications, quoting the post applied for and giving full details of past experience and qualifications, together with the names and addresses of two referees, should be submitted to the Borough Engineer and Surveyor, 90, Station Road, Solihull, Warwickshire, not later than Friday, 18th December, 1959.

W. MAURICE MELL,
Town Clerk.

The Council House,
Solihull.
25th November, 1959. 7123

LINDSEY (LINCOLNSHIRE) COUNTY COUNCIL

Vacancy on permanent staff for ASSISTANT ARCHITECT, Grade A.P.T. IV, £1,065-£1,220. Must be A.R.I.B.A. and capable of controlling large and interesting scheme. Commencing salary within the grade dependent upon experience. N.J.C. Conditions of Services. Canvassing will disqualify. Candidates must disclose in writing whether to their knowledge they are related to any Member or Senior Officer of the Council. Applications giving age, qualifications, experience, present post and salary, and the names of two persons to whom reference can be made to be sent not later than 8th December, 1959, to the County Architect, County Offices, Lincoln. 6970

BOROUGH OF WILLESDEN BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT

Applications are invited from suitably qualified and experienced persons for the following permanent appointments:—

ASSISTANT ARCHITECT within Special Grade (£750-£1,030 p.a.).
ASSISTANT ARCHITECT within Grade A.P.T. II (£765-£880 p.a.).
ASSISTANT ARCHITECT within Grade A.P.T. I (£610-£765 p.a.).

London weighting, maximum £30 p.a., is payable in addition to the above salary.

The Council is unable to assist with housing accommodation. Forms of application and conditions of appointment may be obtained from the Borough Engineer and Surveyor, Town Hall, Dyne Road, Kilburn, N.W.6. Applications to be returned to the undersigned not later than 9 a.m. on Tuesday, 15th December, 1959.

R. S. FORSTER,
Town Clerk. 7018

November 18, 1959.

LONDON ELECTRICITY BOARD ARCHITECTURAL DRAUGHTSMAN

Applications are invited for the position of Architectural Draughtsman in the Architect's Section of the Chief Engineer's Department in the Waterloo, S.E.1 area.

Applicants should be neat draughtsmen and have had experience in an Architect's office. Preference will be given to those who are taking a recognised course of study with a view to obtaining architectural qualifications.

The post is graded under Schedule "D" of the National Joint Board Agreement as Grade 6 (£660 to £780 per annum, inclusive of London Allowance).

Application form obtainable from Personnel Officer, 46, New Broad Street, London, E.C.2, to be returned completed within 14 days of the publication date of this advertisement. Please quote Ref. PER/V/2721/A. 7071

COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE

OFFICE OF THE COUNTY ARCHITECT
The Council require SENIOR ARCHITECTS in salary grades A.P.T. IV (£1,065-£1,220) and Special Grade (£785-£1,070) for their extensive and interesting building programme which includes schools, colleges, old people's and children's homes, clinics, ambulance, fire and police stations, and other public buildings. Architects appointed will be employed at the Central Office in Wakefield solely upon capital works dealing with building projects from sketch plans to completion.

Applications are also invited for the under-mentioned posts at the Central Office:—

JUNIOR ARCHITECTURAL ASSISTANTS.
Grade A.P.T. II (£765-£880).
Grade A.P.T. I (£610-£765).

Applications to be submitted as soon as possible on forms to be obtained from and returned to the undersigned.

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

Whongarth,
Westfield Road,
Wakefield. 6607

CITY ARCHITECT'S OFFICE, MANCHESTER

Applications invited for the appointment on the permanent staff of a SENIOR ASSISTANT ARCHITECT, salary A.P.T. IV, £1,065-£1,220 per annum. Housing accommodation for a limited period may be provided. Five-day week. Removal expenses allowed.

Forms of application from the City Architect, P.O. Box 488, Town Hall, Returnable by 15th December, 1959. 7120

CITY OF CHICHESTER

APPOINTMENT OF GENERAL ASSISTANT
Applications are invited for the above appointment at a salary in accordance with A.P.T. Grade II (£765-£880).

The person appointed must have a good knowledge of building construction, experience in design, and be fully competent to arrange and supervise building works.

The appointment will be in accordance with the National Conditions of Service and terminable by one month's notice on either side.

Housing accommodation will be provided, if required.

Applications, stating age, education, qualifications, training and experience, present and previous appointments, together with the names of two referees should reach the City Surveyor, Greyfriars, North Street, Chichester, by 15th December, 1959.

ERIC BANKS,
Town Clerk. 7058

26th November, 1959.

COUNTY BOROUGH OF SWANSEA BOROUGH ARCHITECT'S DEPARTMENT

Applications are invited for the post of ASSISTANT ARCHITECT—Salary Grade within the Special Class, £785 to £1,070. Applicants must be Associates of the R.I.B.A. and must have had considerable experience in the design and supervision of the erection of public buildings. Duties will include research into special forms of construction work.

Candidates must be under 45 years of age unless in Local Government Service.

The appointment will be subject to the provision of the Local Government Superannuation Acts and may be terminated by one month's notice on either side. The successful candidate will be required to pass a medical examination.

Forms of application may be obtained from the Borough Architect, The Guildhall, Swansea, to whom they must be returned not later than December 19th, 1959.

Canvassing disqualifies.

T. B. BOWEN,
Town Clerk.

The Guildhall,
Swansea,
25th November, 1959.

7124

EAST KILBRIDE DEVELOPMENT CORPORATION

The Corporation invite applications for the following posts:—

- ARCHITECTS—Salary scale £880-£1,220 per annum. Applicants must be A.R.I.B.A. with at least five years' experience of which two years should be qualified experience.
- ASSISTANT ARCHITECTS—Salary scale £765-£880 per annum. Applicants should at least have passed the Intermediate Examination of the R.I.B.A.
- JUNIOR ASSISTANT ARCHITECTS—Salary scale £510-£765 per annum. Applicants should be at least probationer members of the R.I.B.A.

The commencing salary in each case will be in accordance with qualifications, experience, etc. The duties will include work in connection with industrial, commercial and housing developments. The appointments are subject to the Corporation's Conditions of Service and Superannuation Agreement. Selected candidates will require to pass a medical examination. A house or flat will be made available if required. Application forms may be obtained from the General Manager, Torrance House, East Kilbride, to whom completed forms should be returned not later than 16th December, 1959. Canvassing directly or indirectly of the members of the Corporation will constitute an absolute disqualification. 7099



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almost every Municipal
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Often copied
— NEVER equalled.

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IRON STAIRCASES
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STAIRWAY HOUSE, COURTHILL ROAD, LEWISHAM LONDON S.E.13. PHONE: LEE GREEN 4334-9.

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— are the ideal answer to the problem of heat losses from hot water systems.

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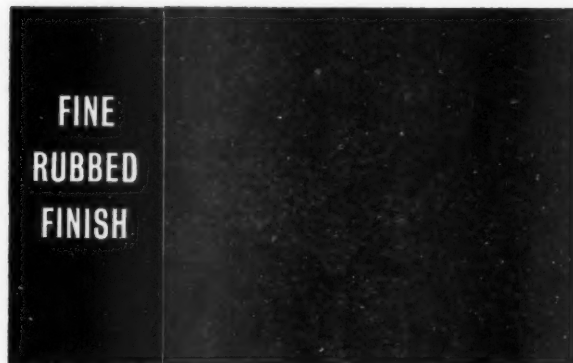
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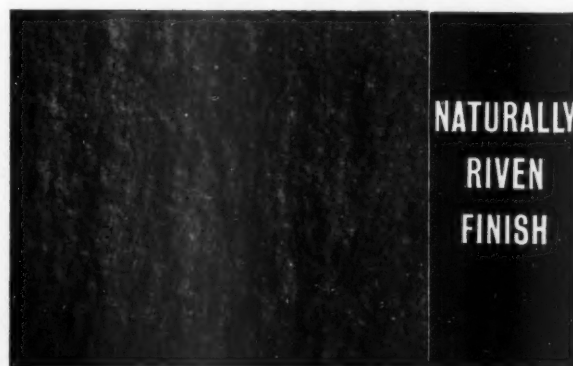
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CITY OF BRADFORD

ARCHITECTURAL ASSISTANTS

Applications are invited for the following superannuable appointments in the Architectural Section of the City Engineer and Surveyor's Department:—

- (a) SENIOR ARCHITECTURAL ASSISTANT, Post No. 217. Grade A.P.T. V (£1,220—£1,375).
- (b) SENIOR ARCHITECTURAL ASSISTANT, Post No. 219. Grade A.P.T. IV (£1,065—£1,220).
- (c) ARCHITECTURAL ASSISTANT, Post No. 204. Special Grade (£785—£1,070, according to qualifications).
- (d) TOWN PLANNING ASSISTANT, Post No. 30. A.P.T. I/Special (£610—£1,070, according to qualifications).
- (e) ARCHITECTURAL ASSISTANT, Post No. 122. A.P.T. II/Special (£765—£1,070, according to qualifications).
- (f) ARCHITECTURAL ASSISTANT, Post No. 123. A.P.T. I (£610—£765).

Applicants for (a), (b), (c) and (e) should have had experience in the design of houses, flats and shops and the layout of housing estates, have sound design ability and be experienced in the preparation of working and detail drawings.

The successful candidate for (d) will be required in connection with the layout of large Corporation Housing Estates and schemes of development as the result of slum clearance.

Candidates for (f) should have had experience in architectural design and have passed the Intermediate examination of the appropriate professional body.

Applicants for (a), (b), (c), (d) and (e) should be either A.M.T.P.I. or A.R.I.B.A. Housing accommodation cannot be provided by the Corporation.

Applications on forms to be obtained from the City Engineer and Surveyor, Town Hall, Bradford, 1, together with three testimonials, must be received by the undersigned not later than 19th December, 1959.

W. H. LEATHEM.

Town Clerk.

Town Hall,
Bradford, 1.

7044

BOROUGH OF GOSPORT

APPOINTMENT OF QUANTITY SURVEYOR
Applications are invited for the above appointment within the N.J.C. Grading of Special Classes (£785—£1,070).

Candidates should have passed the Final Examination of the Royal Institute of Chartered Surveyors, or hold a similar qualification, be fully experienced in and prepared to accept responsibility for the preparation of Bills of Quantities, measurement of works on site, agreement of final accounts, etc.

The post is subject to:—

(i) The N.J.C. Scheme of Conditions of Service.

(ii) Local Government Superannuation Acts, 1937-53.

(iii) If required, the passing of a Medical Examination.

(iv) One month's notice on either side.

Consideration will be given to the provision of housing accommodation, if required.

Applications, stating age, qualifications, present and previous appointments, details of experience, and the names and addresses of two referees, should be delivered to the undersigned not later than first post Monday, 14th December, 1959.

EDWARD ADDENBROOKE.

Town Clerk.

Town Hall,
Gosport,
Hants.

7057

COUNTY BOROUGH OF SOUTHEAST-ON-SEA

BOROUGH ARCHITECT'S DEPARTMENT

Applications are invited for the following posts:—

- ASSISTANT ARCHITECT
Special Classes Scale (£785×40(6)×45—£1,070).
- TECHNICAL ASSISTANT (ARCHITECTURAL)
Grade A.P.T.I. (£610×30(4)×35—£765).
- ASSISTANT QUANTITY SURVEYOR
Grade A.P.T.IV (£1,065×55×50(2)—£1,220).
- ASSISTANT QUANTITY SURVEYOR
Special Classes Scale (£785×40(6)×45—£1,070).

Candidates must be suitably qualified and experienced.

The appointments will be subject to the provisions of the Local Government Superannuation Acts and the National Joint Council's Scheme of Conditions of Service so far as adopted by the Council. Medical examination.

Applications, stating age, qualifications and experience, with the names of two referees, should be submitted to the Borough Architect, 30, Alexandra Street, Southend-on-Sea, by 14th December, 1959.

Canvassing will disqualify. Any candidate who is related to member or officer of the Council is required to disclose the fact.

ARCHIBALD GLEN.

Town Clerk.

6858

MIDDLESEX COUNTY COUNCIL

SENIOR PLANNING ASSISTANT, Special Scale, £815—£1,109 (max. remun.). Appointment may be made above the minimum according to qualifications and experience in Architecture or Town Planning. Five-day week, prescribed conditions. Application forms from County Planning Officer, 10, St. George Street, S.W.1, returnable by 13th December. (Quote B.507, A.J.) 7062

DUNDEE COLLEGE OF ART
SCHOOL OF ARCHITECTURE

Principal: H. ADAM CRAWFORD, R.S.A., D.A.
The Governors of the Dundee Institute of Art and Technology invite applications for the position of SENIOR LECTURER AND STUDIO INSTRUCTOR.

Applicants should be members of the R.I.B.A. and preferably be holders of a Degree or Diploma of a recognised School of Architecture. A Degree in Town Planning would also be an advantage.

Salary scales: Men—£1,300 × £50—£1,550. Women—£1,219 (under "Equal Pay" Scheme to reach £1,550 by April, 1961).

Applications should be lodged by Saturday, 12th December, or as soon as possible thereafter, and should be on the prescribed form which, with full particulars, may be obtained from the undersigned.

F. RAYMOND WILKINSON.

Clerk and Treasurer.

Bell Street,

Dundee.

19th November, 1959.

7109

METROPOLITAN BOROUGH OF LAMBETH
BOROUGH ENGINEER'S DEPARTMENT

Applications are invited for the appointment of SURVEYING AND ARCHITECTURAL ASSISTANT. Duties include the design of public buildings and the preparation of plans, specifications, quantities and estimates for all types of building construction, alterations and repairs, and candidates must be capable of supervising the work. Knowledge of L.C.C. building regulations and by-laws an advantage.

Salary £1,065—£1,220 p.a. (A.P.T. IV) plus London weighting.

Qualifications: Final examination of R.I.C.S. or R.I.B.A., with at least five years' experience (including period spent on theoretical training) and experience in an appropriate technical department of a local authority.

This appointment is temporary for a period of three years, but is otherwise subject to the National Scheme of Conditions of Service.

Application forms from Town Clerk, Lambeth Town Hall, Brixton Hill, S.W.2 (quote reference 77). Closing date: 14th December, 1959. 7049

BOROUGH OF GUILDFORD

APPOINTMENT OF JUNIOR ARCHITECTURAL ASSISTANT

Applications are invited for the above appointment at a salary in accordance with Grade A.P.T. I (£610 to £765 per annum).

Applicants should preferably have some experience in design and construction in relation to housing and general municipal building work. Housing accommodation will be provided, if required.

Applications, together with the names of two referees, must be sent to the Borough Engineer and Surveyor, Municipal Offices, Guildford, by Monday, 14th December, 1959.

HERBERT C. WELER.

Town Clerk.

7051

DIRECTOR OF HOUSING STUDY

required for the Metropolitan Halifax-Dartmouth

This study will examine, over a period of three years, the housing situation in the city of Halifax, the town of Dartmouth, and that part of the County within the Metropolitan Area, with particular reference to the quantity and quality of housing in relationship to the present and future needs of this area; it will also make recommendations for future action.

Applicants should possess a degree in Community Planning, Architecture, Social Science, or Engineering, should have experience in conducting detailed surveys of housing requirements and must have the ability and experience to relate the results to regional planning proposals. The part of Director will carry an annual salary of between £3,000 and £10,000, commensurate with qualifications and experience.

For further information and application forms please write to: D. J. Bird, Director of Community Planning, Department of Municipal Affairs, Halifax, Nova Scotia. 6777

BOROUGH OF SWINDON

APPOINTMENT OF SENIOR PLANNING ASSISTANT—A.P.T. IV (£1,065—£1,220)

Applications are invited for the above appointment in the Department of the Borough Surveyor and Planning Officer. The Borough is expanding rapidly under the Town Development Act and there is considerable scope for imaginative and skilful town planning work.

Candidates must have had suitable experience and have passed the Final examination of the Town Planning Institute. The possession of another recognised qualification would be an advantage.

Consideration may be given to an allocation of housing accommodation.

Applications, on forms to be obtained from the Town Clerk, Civic Offices, Swindon, must be returned by the 15th December, 1959. 7062

METROPOLITAN BOROUGH OF SHORE-DITCH

Applications are invited for the appointment of ARCHITECTURAL ASSISTANT. Salary within Grade A.P.T. III. £910—£1,095 n.a., according to experience and qualifications. Subject to medical examination, Council's Superannuation Scheme and N.J.C. conditions.

Applications, stating age, training and experience and giving the names of two referees to reach Borough Architect, Town Hall, Old Street, E.C.1, by 19th December, 1959. 7103

PORTSMOUTH COLLEGE OF ART

Principal: W. J. L. GARDON, A.R.C.A.
Applications are invited for the post of STUDIO MASTER AND LECTURER in the School of Architecture. Preference will be given to applicants who have been trained in a recognised School of Architecture, are Associates of the Royal Institute of British Architects, and have at least three years' post-academic practical experience.

The salary will be in accordance with the Burnham Technical Scale for Lecturers, viz., £1,370 × £35—£1,550.

Further particulars and forms of application, which should be returned as soon as possible, may be obtained from the Registrar, College of Art, Guildhall Square, Portsmouth. 7063

HORNCHURCH URBAN DISTRICT COUNCIL

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

- (a) two ENGINEERING ASSISTANTS, A.P.T. II (£380—£1,065).
- (b) One ENGINEERING ASSISTANT, A.P.T. II (£765—£880).
- (c) One ENGINEERING ASSISTANT, A.P.T. I (£610—£765).
- (d) One ARCHITECTURAL ASSISTANT, Special Grade (£785—£1,070).
- (e) One ARCHITECTURAL ASSISTANT, A.P.T. I (£610—£765).
- (f) One TRENCH INSPECTOR, Misc. IV (£590—£650).

In addition, a plussage equivalent to the London Weighting is paid according to age.

The persons appointed to (a) and (b) will be employed principally on an extensive Private Street Works programme.

Applicants for post (d) must have passed the Final Examination of the R.I.B.A.

Applicants for post (e) must be probationers of the R.I.B.A. and be studying for their Intermediate R.I.B.A.

Applicants for post (f) must have experience in the Code of Practice in connection with the Public Utilities Street Works Act, 1950.

The appointments are subject to the provision of the Local Government Superannuation Acts, to the N.J.C. Conditions of Service and the passing of a medical examination.

Forms of application, returnable by 19th December, 1959, may be obtained from the undersigned.

P. L. COX.

Clerk of the Council.

Council Offices,
Billet Lane,

Hornchurch.

7064

BRITISH SOLOMON ISLANDS

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ARCHITECTS, PUBLIC WORKS DEPARTMENT

To be responsible for the design and construction by direct labour and contract of Government buildings, preparation of contract documents and estimates.

Contract appointments. Salary range £1,152—£1,360 (sterling) plus gratuity. Quarters available at reasonable rent.

Candidates must be A.R.I.B.A. with wide post qualification experience. Experience of tropical building an advantage.

Write to Director of Recruitment, Colonial Office, London, S.W.1, giving full names, age, qualifications and experience, quoting BCD 112/45/02/E2. 7068

WILLENHALL URBAN DISTRICT COUNCIL

ARCHITECT'S DEPARTMENT

Applications are invited for the post of JUNIOR ARCHITECTURAL ASSISTANT in the Architect's Department at a salary in accordance with Grade A.P.T. I (£610—£765 per annum). The appointment will be subject to the Local Government Superannuation Acts, the National Scheme of Conditions of Service and to termination by one month's notice on either side.

Housing accommodation available and two-thirds removal expenses will be paid to the successful applicant, if married.

Applications, giving details of age, experience and qualifications, together with the names and addresses of two referees, should reach the undersigned not later than Tuesday, 15th December, 1959.

JOHN R. RIDING.

Clerk of the Council.

Town Hall,

Willenhall,

Staffs.

7082

LONDON COUNTY COUNCIL

ARCHITECTS (up to £1,135) required for Housing, Schools and General Divisions. Full and varied programme of new work including schools, multi-storey flats and Town Development. Starting salaries according to qualifications and experience.

Particulars and application form from Hubert Bennett, F.R.I.B.A., Architect to Council, EK/113/59, County Hall, S.E.1. (2630.) 7133

BUILDING SURVEYORS

Architect's Department, L.C.C., has vacancies in Building Regulation Division and District Surveyors' Service for work in connection with applications under London Building Acts and by-laws. District Surveyors' offices are located in Metropolitan Boroughs and work involves negotiations with developers and supervision of works in progress.

Up to £1,135, commencing according to qualifications and experience. Application form and particulars from Hubert Bennett F.R.I.B.A., Architect to Council, EK/111/59, County Hall, S.E.1. (2628.) 7132

BEDFORDSHIRE COUNTY COUNCIL
Applications are invited from suitably qualified persons for the following posts in County Planning Department:—
(a) Two SENIOR PLANNING ASSISTANTS (Development Control)—Salary within scale £500—£1,005, according to experience.
(b) DRAUGHTSMAN/WOMAN—Salary within scale £400—£765, according to experience.
Bedfordshire is a County with a high rate of growth giving opportunities for an interesting variety of work. Particulars of the above posts and application forms from Establishment Officer, Shire Hall, Bedford. Closing date 18th December. 7056

MERIONETH COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT
Applications are invited for the appointment of ARCHITECTURAL ASSISTANT, Grade A.P.T. I (£610—£765). Preference will be given to applicants who have passed the Intermediate examination of the R.I.B.A. or its equivalent.
Full particulars of the appointment, together with application form, may be obtained from the County Clerk, County Offices, Penarllyn, Dolgellau, by whom applications must be received by not later than 28th December, 1959. 7108

WORCESTERSHIRE COUNTY COUNCIL
Applications are invited for the post of ASSISTANT ARCHITECT, Special Grade (£785—£1,070). The County Council owns some housing accommodation for which a successful candidate may apply.
Application forms and further particulars can be obtained from L. C. Lomas, F.R.I.B.A., County Architect, 14, Castle Street, Worcester, not later than 18th December, 1959. (T. 273.) 7084

BOROUGH OF KEIGHLEY
BOROUGH ARCHITECT'S DEPARTMENT
Applications are invited for the following temporary position with a possibility of a transfer to a permanent position:—
ARCHITECTURAL ASSISTANT, Special Grade, Salary Scale £785—£1,070. Applicants must have had good experience in architectural design and building work under construction. Other things being equal, preference will be given to applicants who have passed the examination for Associateship of the R.I.B.A.
Commencing salary to be in accordance with experience.
Applications, to be made upon the prescribed form to be obtained from the undersigned, to whom same must be returned, accompanied by copies only of two recent testimonials, not later than first post 15th December, 1959.
E. G. FELGATE, A.R.I.B.A.,
Borough Architect,
Borough Architect's Department,
College Street,
Keighley. 7089

COUNTY OF CORNWALL
APPOINTMENT OF PLANNING ASSISTANT
Applications are invited for this appointment in the County Planning Department at Headquarters, Truro, with salary within A.P.T. II according to qualifications and experience.
Preference will be given to candidates who have passed the Intermediate Examination of the Town Planning Institute or R.I.B.A. Experience in carrying basic surveys, ability to map and present the information by the use of modern techniques is essential.
The customary service conditions of the Local Government Service will apply and the successful candidate will be required to pass a medical examination.
Applications, together with the names and addresses of three referees, should be addressed to the County Planning Officer, County Hall, Truro, to reach him not later than 14th December, 1959. (No application forms are being issued.)
Clerk of the County Council. 7095

COUNTY BOROUGH OF MERTHYR TYDFIL
BOROUGH ARCHITECT'S DEPARTMENT
Applications are invited for the following appointments on the permanent staff of the Borough Architect:—
(a) Two SENIOR ARCHITECTS—A.P.T. Grade IV (£1,065—£1,220 per annum).
(b) ASSISTANT ARCHITECT—Special Grade (£785—£1,070 per annum).
(c) ARCHITECTURAL ASSISTANT—A.P.T. Grade III (£480—£1,065 per annum).
(d) Two ARCHITECTURAL ASSISTANTS—A.P.T. Grade II (£765—£880 per annum).
(e) QUANTITY SURVEYING ASSISTANT—A.P.T. Grade II (£765—£880 per annum).
There is to be a large programme of redevelopment, and all types of municipal buildings are to be erected. Every facility will be given for design and contract experience.
Appointments will be made within the grades according to qualifications and experience. Applications, stating age, experience, particulars of present and past appointments, together with two recent testimonials, should be received by the Town Clerk not later than Monday, the 14th December, 1959.
The appointments are subject to the provisions of the Local Government Superannuation Acts and to the passing of a Medical Examination, and are terminable by one month's notice on either side.
Canvassing in any form will disqualify.

T. S. EVANS,
Town Clerk.
Town Hall,
Merthyr Tydfil,
19th November, 1959. 6933

MIDDLESEX COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT
The County Council has decided to enlarge substantially the staff of this department with offices in Westminster and it is proposed to make a number of appointments in each of the following grades:—
ASSISTANT ARCHITECT, A.P.T. V (£1,250—£1,405 p.a.).
ASSISTANT ARCHITECT, A.P.T. IV (£1,095—£1,250 p.a.).
ASSISTANT ARCHITECT, Special Grade (£815—£1,100 p.a.).
JUNIOR ASSISTANT, A.P.T. I (£640—£795 p.a.).

The department has in hand a large and interesting programme of works for School Buildings, Technical Colleges, Old People's Homes, Fire Stations and other County Buildings which will be designed under the direction of Mr. Whitfield Lewis, F.R.I.B.A., the County Architect. Organisation is on a group basis and full scope will be given to Architects who show design ability.

Applications are also invited for a post of ASSISTANT ARCHITECT, A.P.T. IV, to set up and take charge of a Technical Information Group and for a QUANTITY SURVEYOR, A.P.T. V, to undertake elemental analysis of estimates and preparation of costings for current building techniques.

Appropriate professional qualifications are required for all posts and commencing salaries will be assessed according to qualifications and experience. Appointments will be to the established staff subject to medical fitness and prescribed conditions.

Application forms from The County Architect, 1, Queen Anne's Gate Buildings, Dartmouth Street, S.W.1, must be returned within 10 days. (Quote B.470 S.O.) 7045

BOROUGH OF WREXHAM
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT
Applications are invited for the following appointments:—
(a) Two ENGINEERING ASSISTANTS, Salary range Specialist Grade (£785—£1,070 p.a.). Candidates must have passed the Final Examination of Institute of Civil or of Municipal Engineers and have a general experience of Municipal Engineering.
(b) One ARCHITECTURAL ASSISTANT, Salary range A.P.T. Grade II (£765—£880 p.a.). Candidates must have Intermediate R.I.B.A. or equivalent.
Casual car user allowance payable on authority of Borough Engineer. Housing accommodation provided if required.
Applications, stating age, experience, qualifications, etc., and the names of two referees, to the undersigned by not later than first post on Monday, 21st December, 1959.
PHILIP J. WALTERS,
Town Clerk. 7096

CITY OF BRADFORD
TOWN PLANNING ASSISTANTS
Applications are invited for the following superannuable appointment in the Town Planning Section of the City Engineer and Surveyor's Department:—
(a) SENIOR TOWN PLANNING ASSISTANT, Post 14, Grade A.P.T. V (£1,220—£1,375).
(b) JUNIOR TOWN PLANNING ASSISTANT, Post 57, Grade A.P.T. I (£610—£765).
The successful candidate for (a) should have experience in dealing with applications for development for new housing, industrial and commercial building and advertisement control, and should be either A.M.T.P.I. or A.R.I.B.A. Candidates for (b) should have had general experience of technical work in a planning office and should have passed the Intermediate examination of the appropriate professional body.
Applications on forms to be obtained from the City Engineer and Surveyor, Town Hall, Bradford, 1, together with three testimonials, must be received by the undersigned not later than 19th December, 1959.
W. H. LEATHEN,
Town Clerk. 7043

CITY AND COUNTY OF BRISTOL
Applications are invited for the following permanent Staff appointments and applicants should have the qualification shown or an equivalent qualification.
SENIOR ASSISTANT ARCHITECTS—Grade A.P.T. IV (£1,065—£1,220). Final R.I.B.A.
SENIOR ASSISTANT ARCHITECTS—Special Scale (£785—£1,070). Pts. I & II Final R.I.B.A.
ARCHITECTURAL ASSISTANTS—Grade A.P.T. II (£765—£880). Intermediate R.I.B.A.
ARCHITECTURAL ASSISTANTS—Grade A.P.T. I (£610—£765). Intermediate R.I.B.A.
SENIOR QUANTITY SURVEYORS—Grade A.P.T. V (£1,220—£1,375). Final R.I.C.S.
SENIOR QUANTITY SURVEYORS—Special Scale (£785—£1,070). Final R.I.C.S.
QUANTITY SURVEYING ASSISTANTS—Grade A.P.T. II (£765—£880). Intermediate R.I.C.S.
Housing accommodation available at an economic rent. Five-day week. Financial assistance towards removal expenses.
Details and application forms (returnable by 21st December) from the City Architect, Council House, Bristol, 1. 7098

LANARK COUNTY COUNCIL
Applications are invited from fully qualified Architects for appointment to the following posts in the County Architect's Department, Motherwell:—
(a) SENIOR ARCHITECTS—Salary scale £1,310—£1,425.
(b) SENIOR ASSISTANT ARCHITECTS—Salary scale £1,145—£1,310.
(c) ARCHITECTURAL ASSISTANTS—J.I.C. scale £795—£1,075.

Applicants for posts (a) and (b) should, in addition to all-round knowledge of architectural practice, have knowledge of modern school building and be capable of assuming position of responsibility.

In addition to large school building programme, work in Department embraces every aspect of building with exception of Housing; appointments, therefore, provide excellent opportunity for extending experience on an interesting and varied programme.

For (c) placing on scale may be given according to previous practical experience.

Superannuation. Medical examination. No canvassing.

Applications, stating age, qualifications and experience, together with names and addresses of two referees, should be lodged with County Clerk, P.O. Box 1, Glasgow, within 14 days of date of advertisement. 7101

Tenders Invited
5 lines or under, 15s.; each additional line, 2s. 6d. Box Number, including forwarding replies, 2s. extra

BOROUGH OF EALING
ERECTION OF A GOLF PAVILION AT HORSENDEN HILL, GREENFORD
Tender documents obtainable from Borough Surveyor, Town Hall, Ealing, W.5, upon payment of 25 returnable on receipt of a bona fide tender.
Tenders must be delivered to the Town Clerk, Town Hall, Ealing, W.5, not later than 9 a.m. on the 30th December, 1959.
E. J. COPE-BROWN,
Town Clerk. 6896

Architectural Appointments Vacant

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

ARCHITECTURAL ASSISTANTS required in busy City office. Assistants should be capable of carrying through schemes from sketch stage to final construction. Mainly Office and Residential buildings in London area. Varied and interesting projects. Long-term engagement to right person. £1,300 per annum, plus luncheon vouchers and car expenses. Five-day week. Applicants must be capable of producing sketch schemes of contemporary buildings, and preparing Working Drawings. Box 6932.

ARCHITECTURAL ASSISTANTS. Intermediate to Final standard, with some office experience, required for interesting work in West End Office. Plenty of scope for responsibility and experience. Telephone for appointment to MAYfair 9554, or write with particulars to Box 6123.

LEWELLYN SMITH AND WATERS require Senior and Junior ASSISTANTS for a widely varied programme of work. Salary according to experience. Please write stating qualifications, experience and age to 103, Old Brompton Road, S.W.7. 4522

EXPERIENCED ARCHITECTURAL ASSISTANTS required. One Qualified and one of at least Intermediate standard, for Branch Office, Birmingham, engaged on a varied and interesting programme of Commercial projects. The positions are pensionable and a five-day week is in operation. Applications, giving full particulars, to G. S. HAY, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 1, Ballion Street, Manchester, 4. 4397

RONALD WARD & PARTNERS have immediate vacancies for ASSISTANT ARCHITECTS with initiative and some experience, for interesting, commercial, industrial and civic projects. Salaries commensurate with ability. Apply, 29, Chesham Place, S.W.1. BELGRAVIA 3361. 5639

ASSISTANTS required for busy Architect's City office: Laboratory and Industrial projects. Intermediate standard or above. Apply to: Secretary, Fairclough and Morris, Temple Chambers, Temple Avenue, E.C.4. FLE. 6295. 5638

ARCHITECTURAL ASSISTANT at Final standard, required by Buckinghamshire office. Interesting and varied work with scope for initiative and responsibility. State age, experience and salary required to Box 5871.

BOOTH, LEDBERGER AND PINKHEAD, 17-20, Mason's Yard, Duke Street, St. James's S.W.1, require ASSISTANTS in salary range £750—£1,100 p.a. Tel. TRA. 1866. 5967

ERIC FIRMIN & PARTNERS require Senior ASSISTANTS for work on industrial and commercial projects. Five-day week. Luncheon Vouchers. Salary by arrangement. Please apply 5 Holborn Circus, E.C.1. CITY 8811. 6884

ARCHITECTURAL ASSISTANTS, Senior and Junior, required by firm in High Wycombe for commercial and industrial schemes. Scope for responsibility and experience. Five-day week. Write Box 6636. 6296

SENIOR ARCHITECTURAL ASSISTANT capable of making site surveys, preparing sketch plans, working drawings and specifications, and supervising work in progress. Applications stating age, experience, qualifications and salary required to K. E. Akerman, F.R.I.B.A., Chief Architect, United Dairies Ltd., 31 St. Petersburg Place, W.2. 5760

JOHN H. D. MADIN, Chartered Architect, 85/85 Hagley Road, Birmingham 16, has further vacancies for Senior and Intermediate ASSISTANTS. Suitable Senior Assistants would be required to take full responsibility for large scale interesting projects. 6416

TREHEARNE & NORMAN, PRESTON & PARTNERS, have vacancies for ARCHITECTS and ASSISTANTS with imagination and designing ability to assist with important new developments in the London area. Apply in confidence to 83, Kingsway, London, W.C.2. (HOL. 407L) 6429

EXCELLENT opportunity for Senior and Intermediate ASSISTANTS in a permanent and progressive appointment with Midland firm of Architects who are working on large projects of an advanced type of design, including comprehensive development schemes, multi-storey office buildings, multi-storey flats, shopping centres, schools, banks, public houses and industrial projects. Apply Box 6415.

SENIOR ASSISTANT required of Intermediate/Final standard in Croydon office. Varied practice of interesting work. Good draughtsmanship and sound knowledge of construction essential, together with ability to manage jobs. Five-day week. Salary according to experience. Apply, giving all particulars, to George Lowe & Partner, 4, High Street, Croydon 3008/9. 6444

H. A. HALPERN & ASSOCIATES require first-class ASSISTANT with at least five years' office experience and exceptional knowledge of building construction. Must be able to operate with minimum supervision from sketch stage to contract on Supermarkets in new developments and conversions. Apply with full particulars of experience and salary required to H. A. Halpern & Associates, Cumberland Chambers, 7, Edgware Road, Marble Arch, London, W.2. 6453

THREE qualified ARCHITECTURAL ASSISTANTS with office experience required for (a) Industrial Work, (b) School Contracts, (c) large housing scheme abroad. Assistants will be expected to take the responsibility of running and supervising these contracts. Salary according to age (limit 35) and experience. Apply to J. M. Austin-Smith & Partners, 29 Sackville Street, London, W.1. 6565

SENIOR ASSISTANTS urgently required for busy City office engaged in industrial and commercial work. Five-day week. Luncheon Vouchers. Salary up to £1,200 according to experience. Box 6564.

JAMES A. ROBERTS, A.R.I.B.A., requires Intermediate and Final standard ASSISTANTS, salary range £750-£1,200 depending upon ability, experience, and personality. Interesting and varied work with scope for initiative and responsibility. Please write: 86, New Street, Birmingham, 2. 6599

SENIOR ASSISTANT ARCHITECT required to take charge of project. Apply Ronald Ward & Partners, 29, Chesham Place, S.W.1. BELGRAVIA 3561.

SENIOR AND JUNIOR ARCHITECTURAL ASSISTANTS required for general practice which includes Office Blocks, Schools, Churches, etc. Appointment to commence immediately or within next two months. Apply in writing to Sir Giles Scott, Son & Partner, 9 Gray's Inn Square, London, W.C.1. 6840

ASSISTANTS of Intermediate or equivalent standard, required for office in South Kensington. Interesting and varied work, offering scope for initiative, responsibility and opportunities for design. Commencing salary up to £900 per annum, according to qualifications. Five-day week. Apply R. Mountford Pigott & Partners, KENSINGTON 1242. 6776

SENIOR AND JUNIOR ASSISTANTS with contemporary outlook required for expanding practice engaged on interesting and varied work including large projects. Quarterly bonuses, five-day week and three weeks' annual holiday. Salary by arrangement. Apply in writing or telephone: Kenneth Anns & Partners, 1, Lincoln's Inn Fields, London, W.C.2. Tel.: ROL. 3031. CHA. 7443. 6878

ASSISTANTS of Intermediate and Final standard required for large and small educational jobs, some overseas: at first in London and later in Guildford office. Write to Frank Rutter, F.R.I.B.A., 2 Finchley Road, London, N.W.8. 6719

ARCHITECTURAL ASSISTANTS required by Hasker & Hall, L.F.R.I.B.A., for senior and intermediate positions in their offices in London and Warwickshire. Good salary, with scope for initiative and responsibility. Write to 13 Welbeck Street, W.1. or telephone WEL. 0061 or Knowle (Birmingham) 3502. 6724

INTERMEDIATE to Final standard ASSISTANTS with some years' office experience required for University, School and Commercial work. Apply Woodroffe, Buchanan & Conter, CHANCERY 3026, for interview. 6958

COUNTRY practice with varied work including new public houses; church and parsonage restorations; restoration of historic houses; country house alterations; Public School work; private estates, shops and small industrial jobs. ASSISTANT required of R.I.B.A. Intermediate to Final standard, interested in accepting full responsibility from sketch plan stage to final accounts, including correspondence and site supervision. Salary £2500-£3000. Please write giving age and experience to Forsyth Lawson, Cunningham & Partners, Chartered Architects, 30, Horse Fair, Banbury, Oxon. 6683

EXPERIENCED ARCHITECTURAL ASSISTANT required. Must have design and constructional ability together with initiative and drive. Fully qualified Assistant preferred, but a suitable, experienced Intermediate R.I.B.A. would receive due consideration. Numerous interesting projects throughout the country. Permanent post with scope for advancement. Superannuation scheme and canteen facilities. Salary to be arranged by appointment. Apply, giving age and experience, direct to D. Greenwood, B.Arch., A.R.I.B.A., Staff Architect, Prices Tailors Ltd., Cardigan Crescent, Leeds, 4. 6969

CHIEF ASSISTANT to Staff Architect required by leading London Shopfitters. Preferably qualified, interested in contemporary design and particularly in retail store development. Box 6952.

MORRIS DE METZ, F.R.I.B.A., requires an experienced ARCHITECTURAL ASSISTANT for a large interesting office building in London; drawing office on site. Salary up to £950. Tel.: HUNTER 2581. 6935

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DENNIS S. LICHTIG requires experienced ASSISTANT for interesting work in his new Loughton office. The appointment offers good prospects for a keen man. Three minutes' walk from Central Line tube station. Five-day week. Salary range £700-£1,000. Apply to 24, Sparelease Hill, Loughton, Essex, or phone Loughdon 5864. 6971

LOUIS DE SOISSONS, PEACOCK, HODGES, AND ROBERTSON have immediate vacancies in their London office for Senior and Junior ASSISTANTS. Write, stating age, salary and experience to the above at: 3, Park Square Mews, Upper Harley Street, N.W.1. 6972

ARCHITECTURAL ASSISTANTS of Intermediate standard required for interesting; contemporary commercial work. Experience in Industrial Office desirable but not essential. Ability to prepare working drawings and 3-in. details. Permanent progressive appointment. Apply, stating salary required, to P. L. Howells, Esq., A.R.I.B.A., Chief Architect, Cow & Gate Ltd., Guildford, Surrey. 6936

QUALIFIED and unqualified ARCHITECTURAL ASSISTANTS required for interesting range of contemporary work. Please write, stating age, experience and salary required, to Michael Lyell, A.R.I.B.A., A.A. (Hons.) Dipl., 16, Yeoman's Row, Brompton Road, London, S.W.3. 6938

SMALL congenial office in Grays Inn requires SENIOR ASSISTANT, Final standard, with office experience preferably with public bodies. Can be running own jobs from start to finish. £1,000 p.a. or more according to experience, plus overtime if required. Five-day week. Phone HOLBORN 9687. 6947

ARCHITECTURAL ASSISTANT, busy general practice. Sidcup, Kent. Experience, ability and initiative first importance. Salary by arrangement. Box 6949.

SENIOR ARCHITECTURAL ASSISTANT wanted Bournemouth office. Five-day week. Reply Box 6990.

LOUIS DE SOISSONS, PEACOCK, HODGES, AND ROBERTSON, have immediate vacancies in their Welwyn Garden City office for Senior and Junior ASSISTANTS. Write, stating age, salary and experience, to the above at: Midland Bank Chambers, Howardsdale, Welwyn Garden City, Herts. 6991

GEORGE, TREW & DUNN have vacancies for ASSISTANT ARCHITECTS to work on a number of large and interesting projects including hospitals, ship interiors, office blocks and schools. Applicants should write, stating qualifications and salary required, to Messrs. George, Trew & Dunn, at 50, Eastbourne Terrace, W.2. 6992

STILLMAN AND EASTWICK-FIELD require an ASSISTANT of Intermediate standard with at least two years' office experience. Small office. Interesting modern work. 6993

SENIOR ASSISTANT urgently required. Preferably qualified with several years' experience. Must be capable and willing to work on own initiative. Salary £750 to £1,000 according to ability. Superannuation scheme available to married man also possibility of flat in New Year. Apply in writing to Ruddle & Wilkinson, F/R.I.B.A., Long Causeway Chambers, Peterborough. 6996

ARCHITECTURAL ASSISTANTS required to work on varied and interesting projects. Office experience desirable. Salaries according to experience. £500-£1,000 p.a. Five-day week. Apply in writing or telephone Covell & Matthews, 34 Sackville Street, London, W.1. REGENT 2291. 6979

VACANCIES for senior grades on varied and interesting work, good salary in accordance with experience. 5-day week. Fitzroy Robinson & Partners, CHANCERY 2111. Ref.: GWJ. 7000

SIR PERCY THOMAS & SON OF CARDIFF, SWANSEA AND SHREWSBURY, require experienced ASSISTANTS for all three offices. The programme of work is varied and includes universities, science buildings, offices, industrial buildings and hospitals. Applicants should be qualified and experienced, with a sound knowledge of progressive design, and capable of exercising a high degree of responsibility. Salary range for Assistant Architects is £1,000 to £1,500 p.a., and for Assistants up to £1,000 p.a. A pension scheme is in operation for Assistant Architects after a period of qualifying service and satisfaction. Holidays are three weeks per annum, and every third Saturday morning is free. Applications, stating age, qualifications and experience, should be made to The Secretary, 10, Cathedral Road, Cardiff. 7005

A. DAVIS, HOLDEN & PEARSON require SENIOR ARCHITECTURAL ASSISTANTS and ASSISTANTS not less than R.I.B.A. Intermediate Standard. The work includes Hospitals, Commercial Buildings and Laboratories. Apply giving age, qualifications, experience and salary required to 38, Gordon Square, W.C.1. 6991

ARCHITECTURAL ASSISTANTS required in West End. Should be capable of preparing 1/4" scale drawings and details from sketch plans. Box 6980.

ARCHITECTURAL ASSISTANT up to Intermediate standard required for busy general practice. Write stating age, experience and salary required, to Barp, Badger & Harrison, A/R.I.B.A., Guild Chambers, Scholars Lane, Stratford-on-Avon. 6991

WORCESTER Architects require competent ASSISTANTS, preferably of Intermediate standard with previous office experience, for varied busy practice. Write, stating age, salary required and experience, to Llewellyn Smith & Waters, 33, Foregate Street, Worcester, or to 103, Old Brompton Road, London. 6990

JOHN LAING AND SON LIMITED, invite applications for the following vacancies in their ARCHITECTS' DEPARTMENT (Chief Architect, Sydney Greenwood, A.R.I.B.A.) at their Head Office in N.W. London.

ARCHITECTS and **ARCHITECTURAL ASSISTANTS** of Intermediate and Final R.I.B.A. standard with experience in one of the following: Office and Industrial Schemes; Multi-storey Flats and Maisonnettes; Schools; Private and Municipal Housing.

These positions offer opportunities for advancement and a wide variety of work in a busy office. Pension Scheme after two years' service. Five-day week.

Applications to Personnel Manager (Ref. A.A.I.), John Laing and Son Limited, Building and Civil Engineering Contractors, London, N.W.7. 6907

TOOLEY & FOSTER require a SENIOR ASSISTANT, preferably, but not essentially, qualified, for interesting and varied work on hospital projects and general work with opportunities for taking responsibility and supervising work in progress. Salary will be according to age and length and type of experience. Five-day week, voluntary superannuation scheme. Apply by letter only to Midland Bank Chambers, Buckhurst Hill, Essex. 6914

PLAYNE & LACEY urgently require a recently qualified ARCHITECT or a Final standard evening school STUDENT for work on large scale University development. Telephone WHI. 2552 for interview. 6908

ASSISTANT ARCHITECTS—Senior Assistants required in Coventry office on varied work, commercial, industrial and educational. Apply, stating experience and salary required, to Hellberg and Harris, F/R.I.B.A., 13, Queen Victoria Road, Coventry. 7014

ARCHITECTURAL ASSISTANT (Final standard) required in busy architects' office in Reading. Salary according to experience. Box 6923.

ARCHITECTURAL ASSISTANT, about Intermediate standard, required for general practice in North Devon office. Pension scheme. Box 7027.

SCHERRER AND HICKS, F.R.I.B.A., have immediate vacancies for ASSISTANTS in their Manchester office.

(a) Two Senior men—5 to 8 years' experience.
(b) Two Graduate and Intermediate men.
Must be interested in contemporary design. Good salaries. Apply: B. J. Moxham, A.R.I.B.A., 2, King Street, Manchester 2. 7024

POWELL & ALPORT require ASSISTANT in their Croydon office. Salary according to experience in range £600-£850, plus bonus. Write stating age, experience and salary required. 6926

WELLS, HICKMAN & PARTNERS need a keen ARCHITECTURAL ASSISTANT capable of working without supervision. Several years' experience, sound knowledge of construction and very good draughtsmanship are vital. Salary in the region of £700. Please ring T.E.R. 1404 for appointment. 6691

ASSISTANT required, able to undertake working drawings, details and surveys under supervision. Percival G. Tuttle, Architect, Surveyor, 19 Carlton Crescent, Southampton, Tel. 21301. 7131

SIR ROBERT TASKER & PARTNERS immediately require ARCHITECTURAL ASSISTANTS (Final and Intermediate) in office with varied practice. Write to No. 3, Field Court, Gray's Inn, W.C.1, or telephone Chancery 5857 stating salary required. 4913

ARCHITECTURAL ASSISTANTS, Intermediate standard, required in London Office with varied practice. Interesting projects. Five-day week. Write giving particulars of age, experience, etc., to Box 903, c/o 7, Coptic Street, London, W.C.1. 6937

ARCHITECTURAL ASSISTANT, qualified or Intermediate standard. Apply in writing to: David Carr & Stuart Mathew, Architects, 3, Randolph Cliff, Edinburgh, 3. 7038

GET in on the Ground Floor. Possible future partners for a small but expanding London practice. Salary £1,000 p.a. more or less according to experience and ability. Applicants must be prepared to handle numerous small dull jobs until the bigger ones come along. Box 6935.

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ARCHITECTURAL ASSISTANT, Intermediate R.I.B.A. level, for work on Contemporary Housing, surveys and general detail work. Salary according to experience. Apply in writing to Box DA1322, c/o Whites, 72, Fleet Street, London, E.C.4. 7048

ASSISTANTS required in Brewery Architect & Surveyors Dept. responsible for industrial and administrative buildings. Salary range £800/£1,000 p.a. plus cost of living and annual bonus, pension fund, 5-day week. 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, Watney Combe Reid & Co. Ltd., The Brewery, Mortlake, S.W.14. 7050

ARCHITECTURAL ASSISTANTS required for several large contemporary projects. Intermediate standard or equivalent. Salary scale, £500 to £800 according to experience. Superannuation scheme. Five-day week. Please write giving full particulars to Johns, Slater and Haward, F.A.R.I.B.A., 32, Foundation Street, Ipswich. 6837

ARCHITECTURAL ASSISTANTS required now in small but busy West End Office. Although not essential experience of working in the London Area would be an advantage. Applicants will have the opportunity of handling their own jobs from sketch stage to final completion. Salary (up to £950) according to experience. Box 6763.

YORKE, ROSENBERG & MARDALL require ASSISTANTS. Apply in writing to 2 Hyde Park Place, London, W.2. 7034

JUNIOR ARCHITECTURAL ASSISTANT required in Wembley. Write stating age, experience and salary required. Box 6788.

ARCHITECTURAL ASSISTANT required in Wembley. Experience in design and construction of industrial buildings and office blocks. Write stating age, experience and salary required. Box 6787.

EXPERIENCED ARCHITECTS ASSISTANTS ARE required immediately to work under the direction of the Chief Architect and also the four District Architects of

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Applicants should be capable of preparing working drawings, details, etc., with the minimum of supervision
Five-day week, Canteen facilities, Superannuation Scheme.

Apply, giving details of age, experience and salary required, to any of the following offices:—
Chief Architect, Woolworth House, 242/246, Marylebone Road, London, W.1.

District Architect, F. W. Woolworth & Co., Ltd., 311, Oxford Street, London, W.1.

District Architect, F. W. Woolworth & Co., Ltd., Armour House, Lord Street, Liverpool, 2.

District Architect, F. W. Woolworth & Co., Ltd., Crown Site Building, 26/40, Kensington High Street, London, W.8.

District Architect, F. W. Woolworth & Co., Ltd., 47/49, King Street, Dudley, Worcs. 6801

ARCHITECTURAL ASSISTANTS wanted with experience in Design and/or Detailing. Good salary and working conditions. B.S.P. Industries, Ltd., Maxwell Road, Elstree Way, Boreham Wood, EL8 3JL (Ref. 182.) 6813

ASSISTANT of Intermediate or Final standard required in small busy London office with varied and interesting projects in hand. Good opportunity for initiative. Please telephone Holborn 1550 or write to Box 6841.

GOLLINS, MELVIN, WARD & PARTNERS are looking for staff to work on the design of hospital, University and office projects. Age and experience are less important than enthusiasm and interest in architecture. Five-day week, quarterly bonuses, pension scheme. King WELbeck 9991 for appointment. 6829

ARCHITECTS urgently required by expanding and progressive Company. B.S.P. Industries Ltd., Maxwell Road, Elstree Way, Boreham Wood. Phone EL8 3JL (Ref. 183.) 6814

ARCHITECTURAL ASSISTANT required, salary £650-£900 according to experience. M. R. Heskeith, 8 Acresfield, Bolton, Lancs. Tel: Bolton 10221. 6764

GOTCH AND PARTNERS OF LONDON AND BRIGHTON require Junior and Intermediate ASSISTANTS for varied projects in both offices. Salary according to ability and experience, and reviewed half yearly. Write for an appointment to 8 City Road, Finsbury Square, London, E.C.1, or phone Monarch 3235. 6765

ARCHITECTURAL ASSISTANT of Intermediate standard or thereabouts required for varied work on housing and industrial building. Applicant should be capable of undertaking projects with a minimum of supervision. Write giving full particulars of experience and salary required to Shepperdson & Dixon, 2 Museum Street, Ipswich. 6779

W. S. ATKINS & PARTNERS, Consulting Engineers, require qualified ARCHITECTS and ARCHITECTURAL DRAUGHTSMEN in their Architectural Department to work on major industrial projects. Conditions of service include a 5-day week and superannuation scheme. Applications should be addressed to the Personnel Manager, 156 Victoria Street, S.W.1. 6887

EDWARD D. MILLS & PARTNERS require additional ASSISTANTS for a variety of interesting contemporary work. Knowledge of modern construction essential. Write with full details for appointment to 9-11, Richmond Buildings, Dean Street, Soho, London, W.1. 7055

TWO Qualified ARCHITECTURAL ASSISTANTS urgently required for London office. Write giving particulars of experience, etc., to Box 7054.

ARCHITECTURAL ASSISTANTS with at least six years' office experience required for general practice in office containing five other assistants, two partners, engaged in Schools, Hospital and Commercial work. Box 7053.

GEORGE WIMPEY & CO. LTD. An expanding programme of work in the Architects' Department offers good opportunities to ARCHITECTS and ASSISTANTS keen to apply their knowledge and ability to progressive design and construction techniques. The work covers varying types of Industrial, Commercial and Domestic Projects of considerable size and interest. Permanent appointments, with good salaries, and covering a wide range of experience, are immediately available at Head Office. Five-day week; Pension Scheme available for successful applicants wishing to make a career with the Company. Applicants should write to: E. V. Collins, A.R.I.B.A., Chief Architect, 27, Hammersmith Grove, London, W.6. 7130

ASSISTANTS required immediately. Intermediate and Final standard. Interesting positions giving plenty of scope for responsibility and contract supervision in West End Office. Tel. MAYfair 3111 or Box 7129.

ARCHITECTURAL ASSISTANT required for interesting general practice. Intermediate to Final standard. Must be capable of working with minimum of supervision. Apply stating age, experience and salary required to Malcolm Peck, Roberts & Associates, A.A.R.I.B.A., 15, Friary Street, Guildford, Surrey. Telephone Guildford 65363. 7125

QUALIFIED ASSISTANT ARCHITECTS required, minimum three years' office experience, preferably in London. Minimum salary £1,000 according to ability and experience. Theo. H. Birks, 38, Portland Place, W.1. LAN 7236. 7126

INTERMEDIATE standard ASSISTANTS required, minimum two years' office experience. Minimum salary £750 according to ability. Theo. H. Birks, 38, Portland Place, W.1. LAN 7236. 7127

SENIOR ASSISTANT ARCHITECT required, qualified, for varied practice. Pension scheme available. Write with details training and salary required. T. H. Johnson & Son, F.F.R.I.B.A., 20, Priory Place, Doncaster. 7105

ASSISTANT ARCHITECTS, qualified or near Final, required for interesting practice. Pension scheme available. Write with details training and salary required. T. H. Johnson & Son, F.F.R.I.B.A., 20, Priory Place, Doncaster. 7106

KEEN, young ASSISTANT required in busy office of London Brewery Architect's Department (S.W. London district); must be capable of carrying out alterations to public houses from start to finish. Superannuation scheme; five-day week. Salary commensurate with ability. Write age, experience, salary required to Box 7110.

EXPERIENCED ASSISTANTS required for work on Schools, Churches, Civic Centres, etc. Salary by arrangement. Applicants interviewed, with samples of work, Monday to Friday, between 12 and 2 p.m. 7111

TRIPE & WAKEHAM, Chartered Architects, require ASSISTANTS with three to five years' office experience. Telephone WELbeck 7744 or write 16, Fitzhardinge Street, W.1, for an appointment. 7112

ARCHITECTURAL ASSISTANT. Senior, with fullest experience. Highest salary by agreement. Commercial and general practice in Liverpool. Box 7118.

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ARCHITECTURAL ASSISTANT required in the Property Department of Brewery Company. Capable of surveys, working drawings, specifications and supervision. Able to drive car. Pension Scheme. Salary £800-£1,000 per annum according to ability and experience. Apply in writing to the Chief Architect, Vaux & Associated Breweries Ltd., The Brewery, Sunderland, Co. Durham. 7114

LEEDS. SENIOR ASSISTANT. To work in general practice and on University, Hospital and School programmes. Planning, working drawings, site supervision. A.R.I.B.A. Salary range £1,050 to £1,500 to discuss. Write, stating age and experience to Jones & Stocks, F.F.R.I.B.A., 7, Blenheim Terrace, Leeds, 2. 7115

ARCHITECTURAL ASSISTANT for industrial and housing projects in small Architects' Department of leading Building and Civil Engineering Contractors in the Manchester area. Canteen facilities. Salary £750 to £900. Apply Box 7116.

NORTH AND PARTNERS, Chartered Architects, Maidenhead, have several vacancies for Intermediate and Senior ARCHITECTURAL ASSISTANTS. Salary range £750 to £1,250 according to experience. Apply in writing: 40, The Broadway, Maidenhead. 7117

WANTED. An ASSISTANT who would like to make a career in a new firm as a first assistant. Good prospects for a competent man. Write, giving full details, to E. H. Dolan, A.R.I.B.A., 36, Kenwood Drive, Walton-on-Thames. 7119

ROBERT MATTHEW AND JOHNSON-MARSHALL have some vacancies in their London office for ARCHITECTS of three to five years' experience. Applications should be made in writing to 24, Park Square East, London, N.W.1. 7121

CONTEMPORARY Sheffield Architects require experienced ASSISTANTS for work on major schemes, able to take initiative and responsibility. New offices in pleasant surroundings. Bonus, Pension and Life Assurance Schemes. Salary according to experience and ability. Full particulars to Hadfield Cawkwell & Davidson, 17, Broomgrove Road, Sheffield, 10. 7077

INTERMEDIATE standard ASSISTANT required for a contemporary practice in Bromley, Kent. Salary range £400-£600. Apply: Robert J. Wood, A.R.I.B.A., Lewes Road, Bromley. Tel. RAVensbourne 1083. 7078

JUNIOR ASSISTANT required for general drawing office duties. Good prospects. Apply in writing stating age and salary required to Westmore & Partners, 121, Cheapside, E.C.2. 7079

SENIOR ASSISTANT required to take charge of drawing office. Apply in writing stating age and salary required to Westmore & Partners, 121, Cheapside, E.C.2. 7080

ARCHITECTURAL ASSISTANT required. Must be competent draughtsman with sound knowledge of building construction. Salary according to experience. Apply to: C. Lovett Gill & Partners, 41, Russell Square, W.C.1 (Museum 4185). 7081

A. M. GEAR & ASSOCIATES have vacancies for ARCHITECTURAL ASSISTANTS either R.I.B.A. Final standard interested in development of new building techniques, previous office experience not vital, or R.I.B.A. Intermediate standard with 2 1/2 years' office experience. Apply: A. M. Gear & Associates, 12, Manchester Square, London, W.1. 7083

BOURNVILLE VILLAGE TRUST have a vacancy for an ASSISTANT ARCHITECT, varied work, some experience of housing desirable. Pension scheme and good working conditions. Apply: Selby & Clewer, F.R.I.B.A., Bournville Village Trust, Birmingham 30. 7085

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OPPORTUNITY for first class **ARCHITECTS** with initiative to take responsibility for a variety of contemporary work. South Yorkshire area. Salary according to ability. Bonus, Pension and Life Assurance Schemes. Travelling, removal and interview expenses paid. Box 7088

EXPERIENCED ARCHITECT needed to take charge of branch office in a busy country practice. Write: G. C. Beech & Partners, Deaneley Offices, Wells, Somerset. 7090

ARCHITECTURAL ASSISTANT wanted, Intermediate or Final R.I.B.A. Practical, quick draughtsman prepared to work at Birmingham or Redditch and supervise juniors. Commencing salary up to £750 depending on age and experience. Five-day week. Frederick Hill, F.R.I.B.A., A.M.T.P.I., F.I.L.A., 22, Masshouse Lane, Birmingham, 5. 7091

JUNIOR ARCHITECTURAL ASSISTANT required prepared to work at Birmingham or Redditch. Commencing salary up to £350 depending on age and experience. Five-day week. Frederick Hill, F.R.I.B.A., A.M.T.P.I., F.I.L.A., 22, Masshouse Lane, Birmingham, 5. 7092

WOLVERHAMPTON Architects require competent **SENIOR** and **JUNIOR ARCHITECTURAL ASSISTANTS** and **DRAUGHTSMEN** in busy office. Please write giving age, experience and salary required. Box 7093.

ARCHITECTURAL ASSISTANTS, Intermediate standard or above, required by Goodhart-Rendel, Broadbent & Curtis, 13, Manchester Square, W.1. Give details of training, experience and salary required. 7094

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ARCHITECTURAL OR ENGINEERING ASSISTANT required in the Design Department of leading firm of Timber Engineers for interesting work on Domestic, Commercial and Industrial Projects. The applicant must be a quick and accurate draughtsman, capable of the design of simple structures, and of working on own initiative. Initial salary £650-£850 subject to annual review. Pension and Life Assurance Scheme. Applications giving age, experience, present salary and qualifications to: H. Newman Sons & Co. Ltd., 238, High Street, Lincoln. 7069

ARCHITECTURAL ASSISTANT required, with good practical and office experience; scope for responsibility. Apply in writing stating qualifications, experience, age and salary required to J. M. Porter & Co., The Estate Office, Colwyn Bay. 7059

LEY COLBECK & PARTNERS, F/R.I.B.A., F.R.I.C.S., A.A.Dip., M.I.Struct.E., have opportunities for **ASSISTANTS** with initiative who are of Intermediate and Final standard. Salary according to standing. Pension scheme, L.V., 5-day week. Apply Palmerston House, 51, Bishopsgate, E.C.2. 7060

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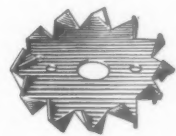
'TECO' Heavy-Duty SHEAR PLATES



Manufactured to
B.S.S. 1579:
1953, Table 2.

Inserted in pre-cut daps made by special dapping tools which are available for the purpose. 'TECO' 2½in. diam. SHEAR PLATES provide heavy shear load capacity for use in large structures for connections between timber and steel, timber and concrete, or used back to back in demountable structures.

'BULLDOG' Round Toothed-Plate CONNECTORS



Available in five diameters—self-embedding—for light and medium structures. Made in two types—double-sided for timber-to-timber connections, single-sided as a shear plate for connections between timber and steel, or used back to back in demountable structures.

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For stronger nailed joints in timber framing. Eliminate toe-nailing and notching. Simplify fabrication. Easy to place. Fixed by nailing only. For many applications in timber framing such as joist trimming and hanging, studding, fixing purlins and joists to trusses and laminated beams ceiling grounds, etc. For use with 2in. by 2in. and larger timbers.

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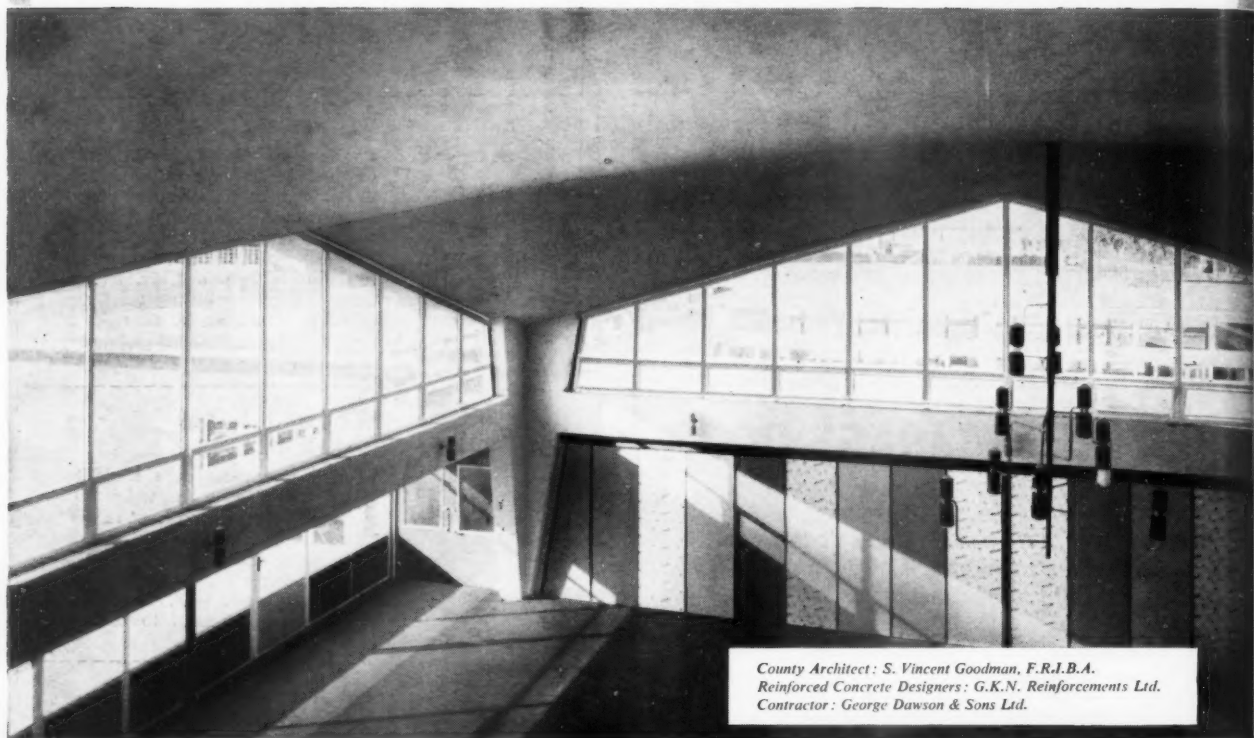
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DESIGNS IN CONCRETE

1c



County Architect: S. Vincent Goodman, F.R.I.B.A.
Reinforced Concrete Designers: G.K.N. Reinforcements Ltd.
Contractor: George Dawson & Sons Ltd.

KINGSBROOK INFANTS SCHOOL, BEDFORD

The illustration shows how hyperbolic paraboloid shells have been used as an assembly hall roof for Kingsbrook Infants School at Bedford. The compact planning of this school consists of rooms grouped round a square central hall and incorporates circulation area and dining space. This gives the feeling of spaciousness in a building which has been planned well below the Ministry of Education's limits of cost. The high level windows and lightness of structure give the answer to several problems in tight planning and the structure is a prototype to be used in Bedfordshire by the County Architect.

The roof covers an area of 1800 sq. ft. with four hyperbolic paraboloid shell units. The shells are 2 in. thick, with thickenings up to 6 in. at the edges and junctions of units. The load and thrust from the shells is taken at the corners on four tapered columns connected by tie-beams which also support adjoining flat roofs.

This new form of shell roof derives its strength from the double curvature which is generated by a system of straight lines. Considerable economies can be achieved by the use of a thin shell and by using the fact that the concrete shuttering can be fixed along straight lines.

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