

THE ARCHITECTS' JOURNAL



standard contents

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

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Wanted and Vacant*

No. 3207]

[Vol. 124

THE ARCHITECTURAL PRESS

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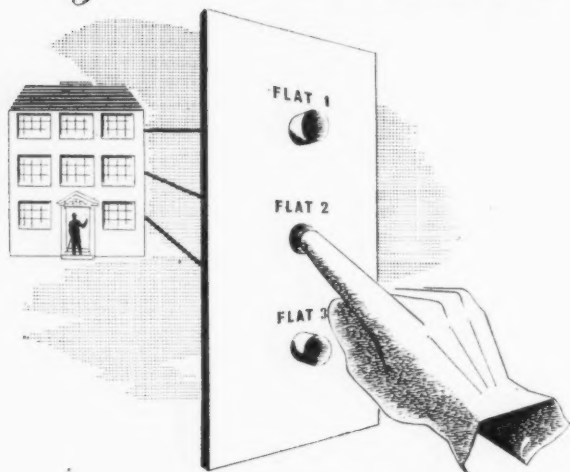
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★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ig one week, Ih to Z the next. In all cases where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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhamstead, Herts.	
ABS	Architects' Benevolent Society, 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians, 1, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain, 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association, 33, Grosvenor Street, W.1.	Mayfair 7501/8
ARCUK	Architects' Registration Council, 78, Wimpole Street, W.1.	Welbeck 2915
BAE	Board of Architectural Education, 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council, Lambeth Bridge House, S.E.1. Reliance 7611, Ext. 1706	
BC	Building Centre, 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council, 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation, 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association, Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association, 10, The Boltons, S.W.10.	Fremantle 8494
BEDA	British Electrical Development Association, 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association, 145, Vincent Street, Glasgow, C2.	Glasgow Central 2891
BID	Building Industries Distributors, 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council, 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade, Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRS	Building Research Station, Bucknalls Lane, Watford.	Garston 2246
BSA	Building Societies Association, 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution, British Standards House, 2, Park St., W.1.	Mayfair 9000
BTE	Building Trades Exhibition, 32, Millbank, S.W.1.	Tate Gallery 8134
CABAS	City and Borough Architects Society, C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Newport 65491
CAS	County Architects' Society, C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Chichester 3001
CCA	Cement and Concrete Association, 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CCP	Council for Codes of Practice, Lambeth Bridge House, S.E.1.	Reliance 7611 Ext. 1284
CDA	Copper Development Association, Kendals Hall, Radlett, Herts.	Radlett 5616
CIAM	Congrès Internationaux d'Architecture Moderne, Doldertal, 7, Zurich, Switzerland.	
COID	Council of Industrial Design, 28, Haymarket, S.W.1.	Trafalgar 8000
CPRE	Council for the Preservation of Rural England, 4, Hobart Place, S.W.1.	Sloane 4280
CUC	Coal Utilization Council, 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education, 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association, 13, Suffolk Street, S.W.1.	Whitehall 0540
DPT	Department of Overseas Trade, Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
EJMA	English Joinery Manufacturers' Association (Incorporated), Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society, 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors, 68, Gloucester Place, W.1.	Welbeck 9966
FASS	Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, S.W.1.	Abbey 7232
FBBD0	Fibre Building Board Development Organization, Ltd. (Fidor), 47, Princes Gate, Kensington, S.W.7.	Kensington 4577
FBI	Federation of British Industries, 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission, 25, Savile Row, W.1.	Regent 0221
FCMI	Federation of Coated Macadam Industries, 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd., Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District, Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders, 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders, 82, New Cavendish Street, W.1.	Langham 4341
GBPA	Gypsum Building Products Association, 11, Ironmonger Lane, E.C.2.	Monarch 8888
GC	Gas Council, 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group, 2, Chester Street, S.W.1.	Belgravia 3081
HC	Housing Centre, 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
LAAS	Incorporated Association of Architects and Surveyors, 29, Belgrave Square, S.W.1.	Belgravia 3755
ICA	Institute of Contemporary Arts, 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers, 1, Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers, Savoy Place, Victoria Embankment, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society, 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers, 17, Grosvenor Crescent, S.W.1.	Sloane 8266

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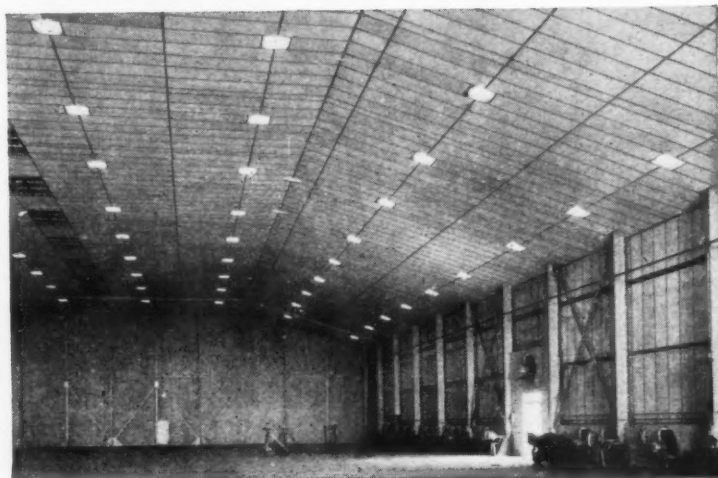


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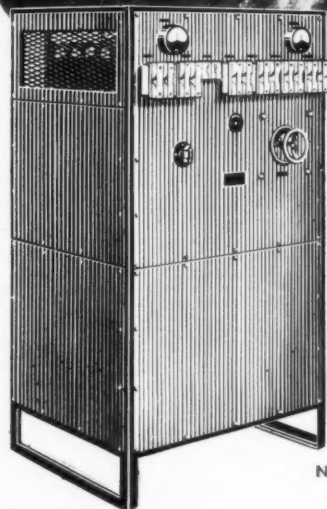
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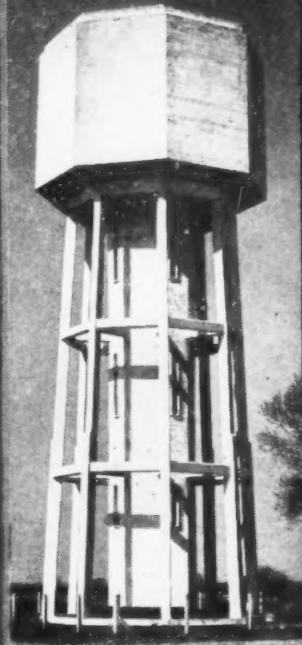
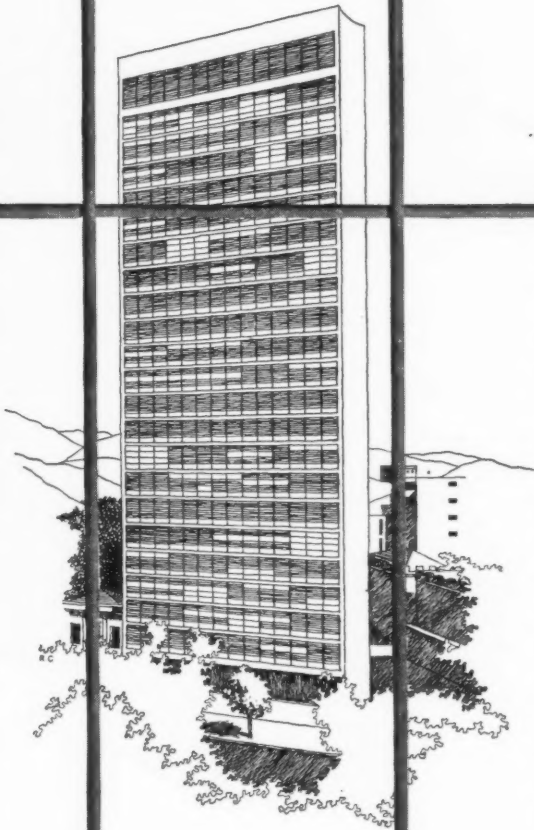


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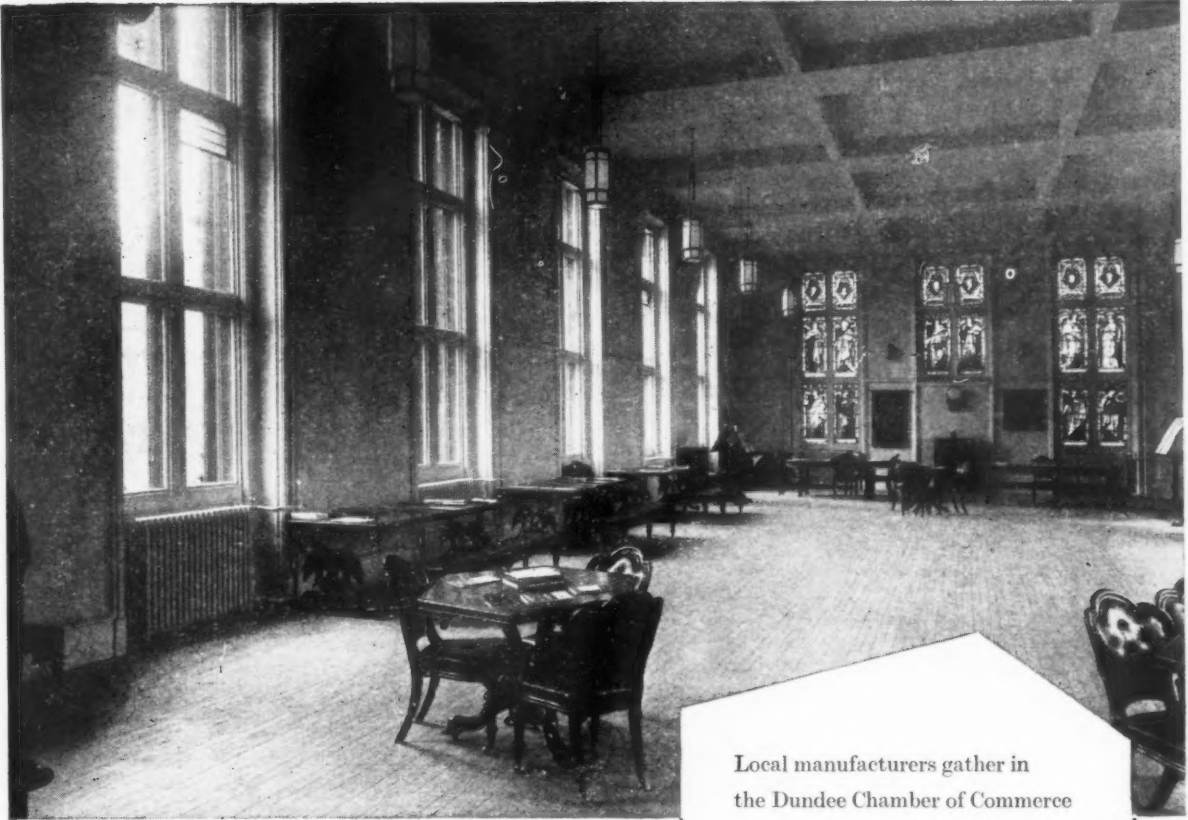
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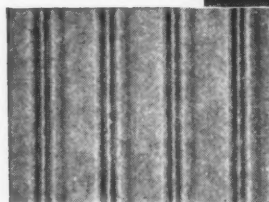


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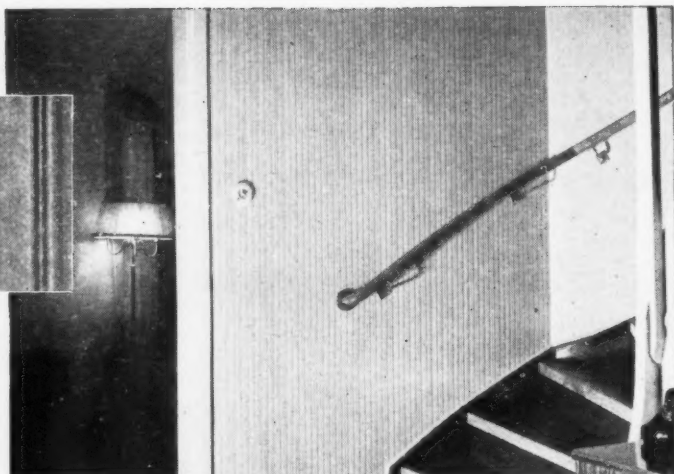
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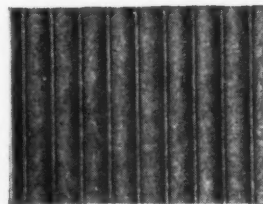


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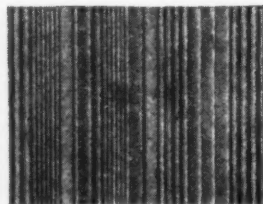
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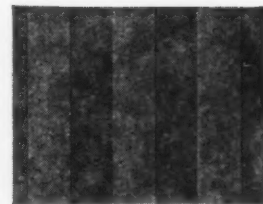
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The image features three large, curved laminated timber arches, each constructed from multiple thin layers of wood. They are arranged in a descending sequence from the top left towards the bottom right. The background is dark and textured, showing a close-up of the wood grain and the layered structure of the arches.

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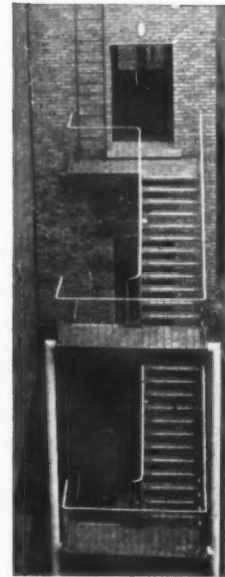
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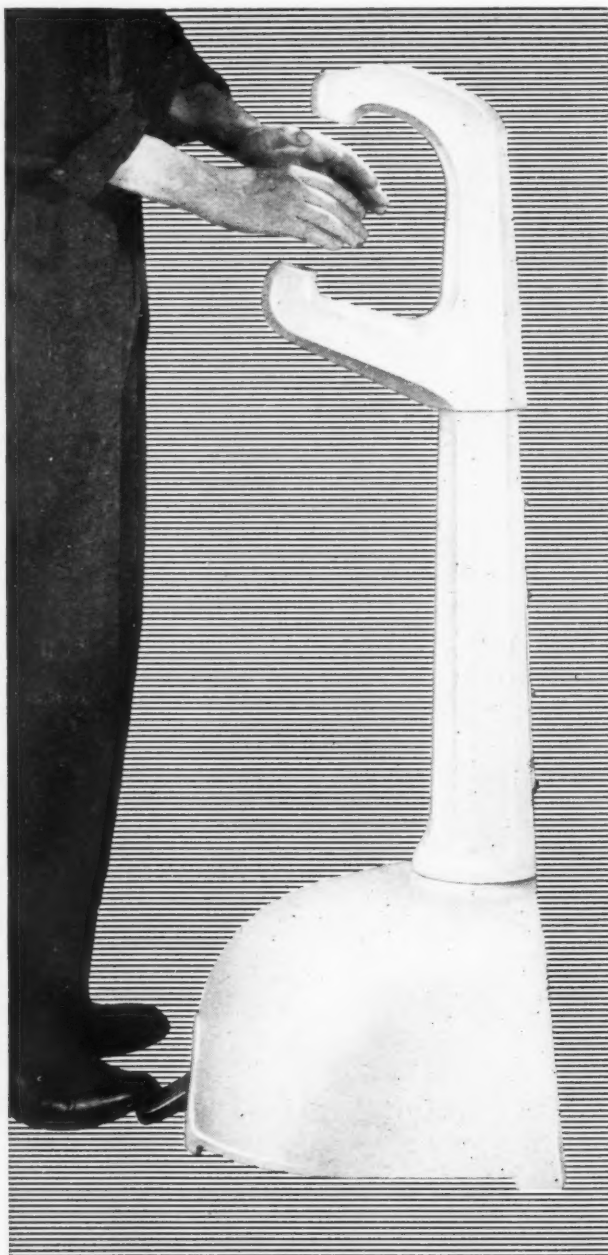
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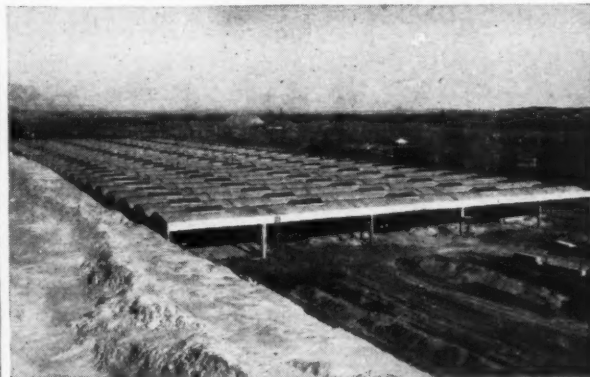
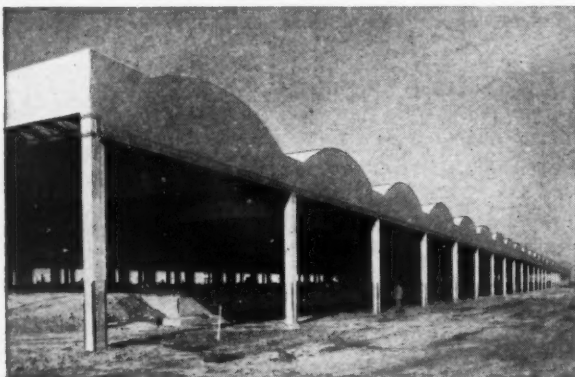
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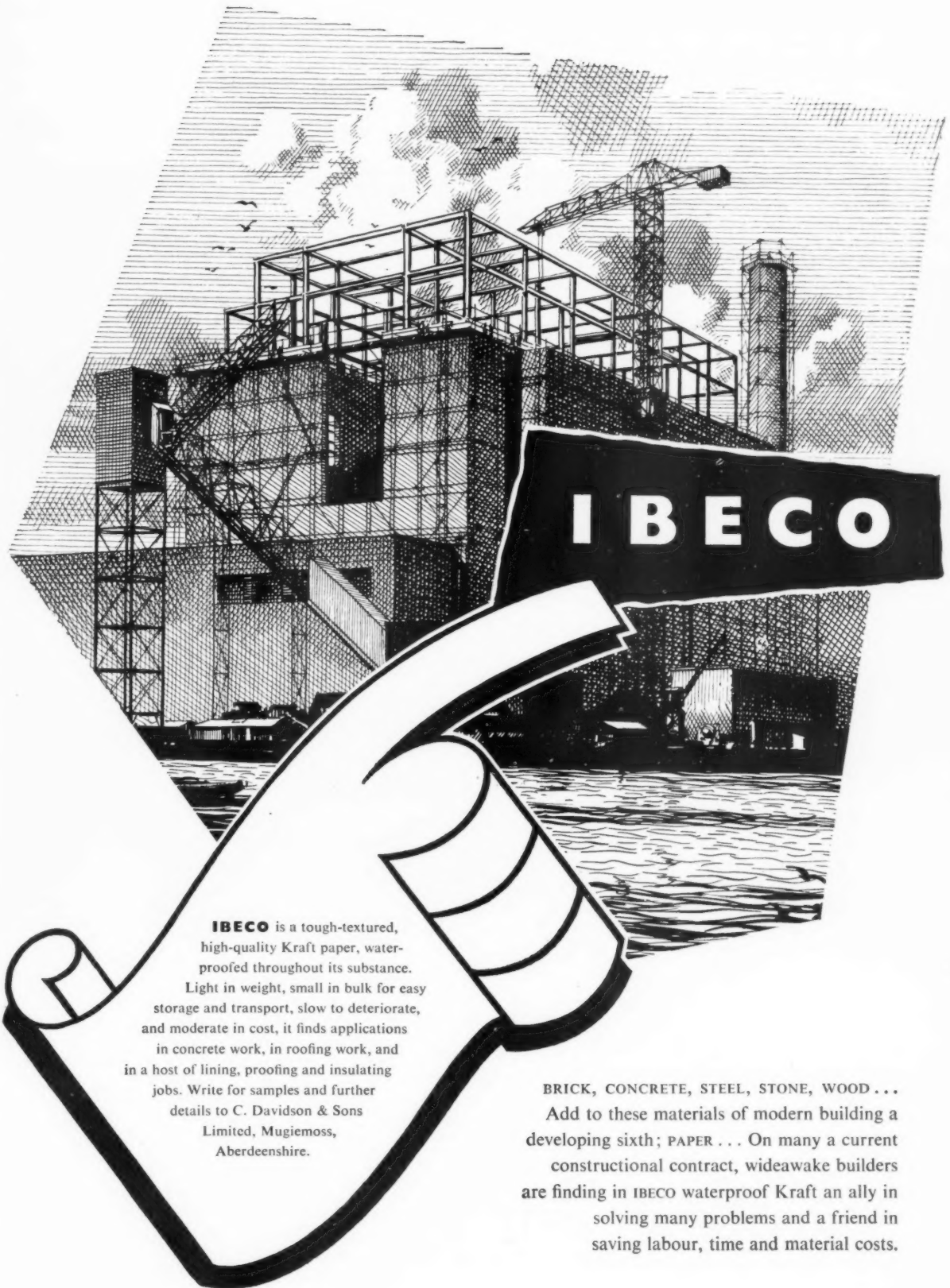


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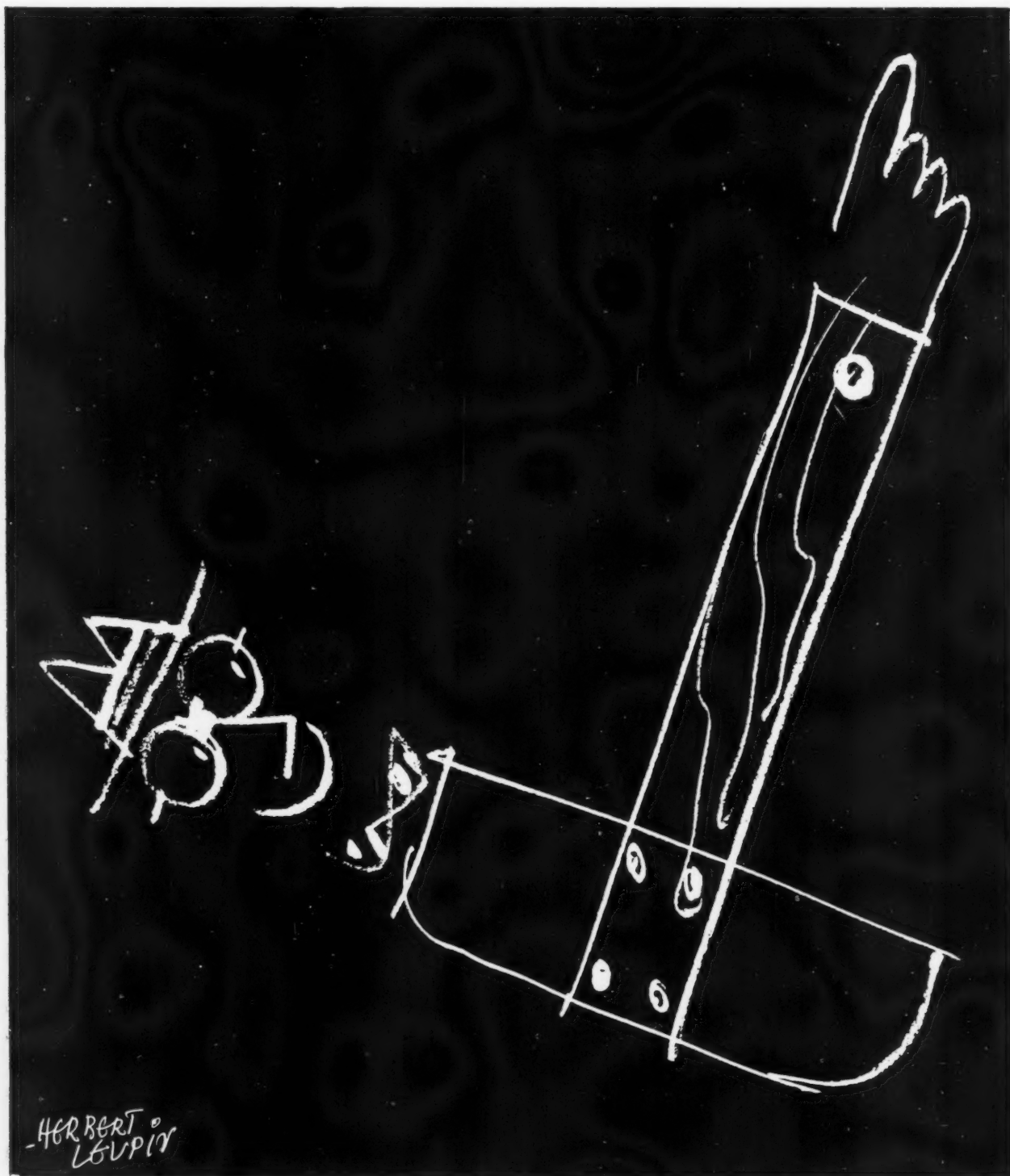
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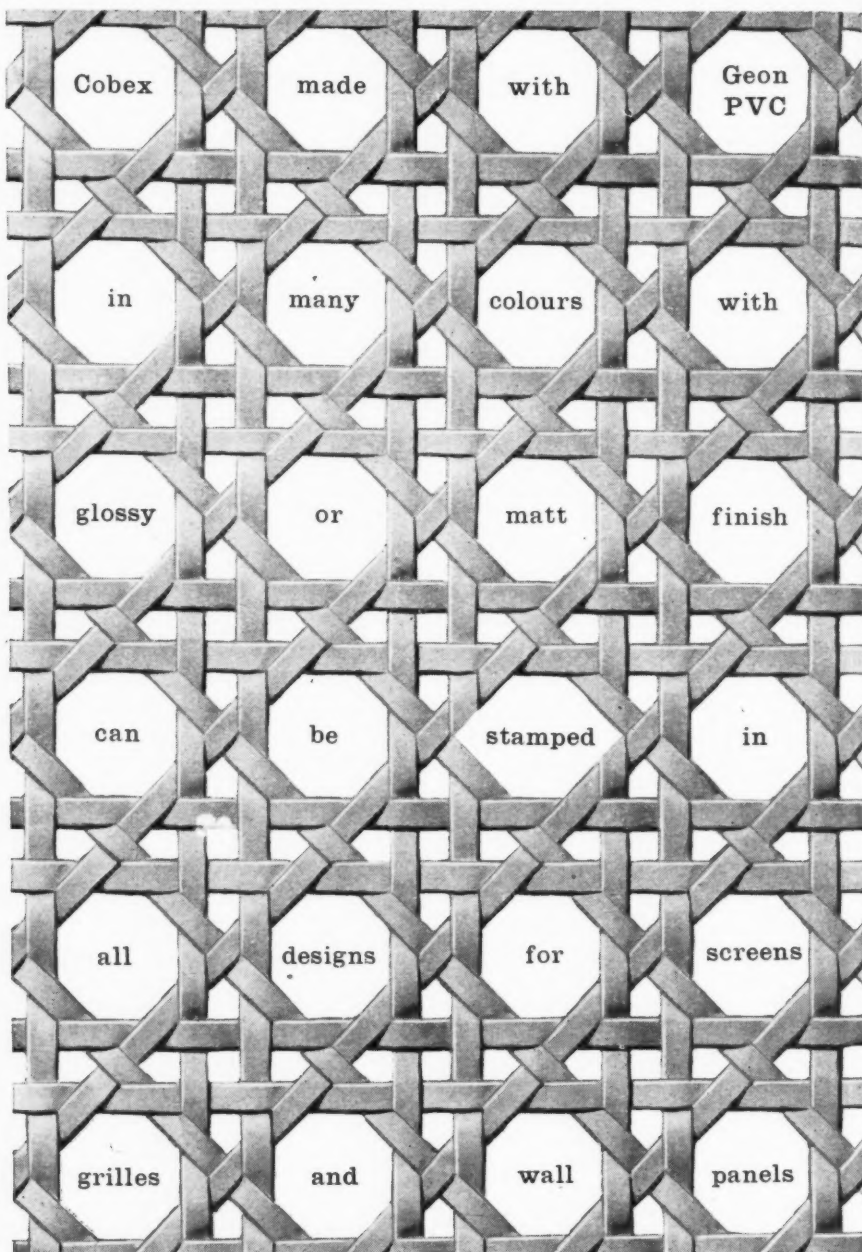


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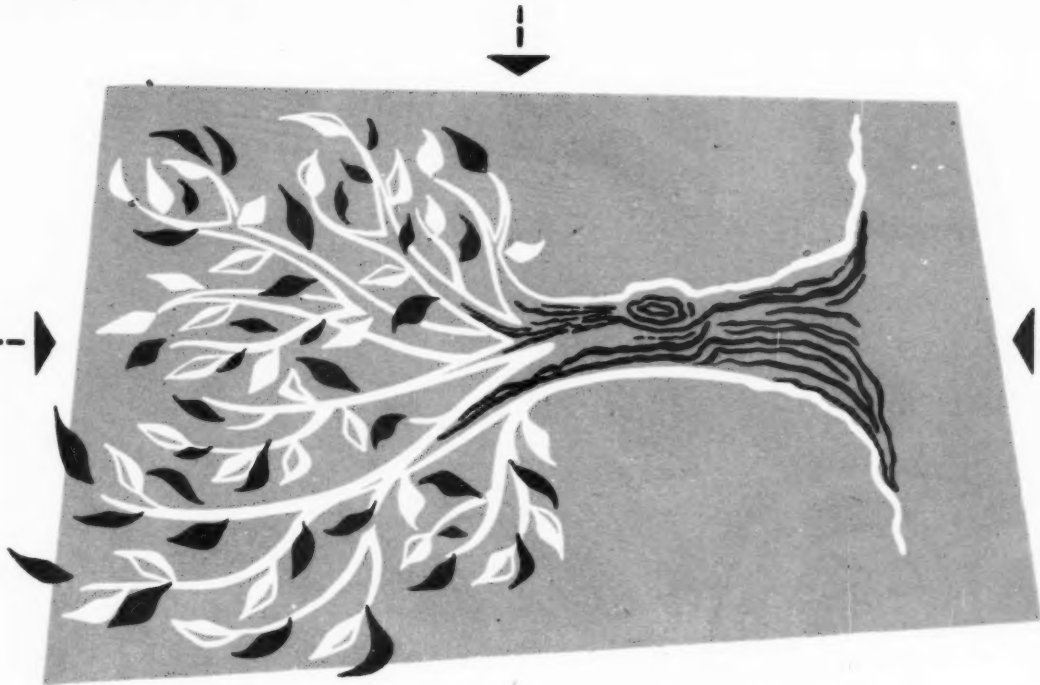
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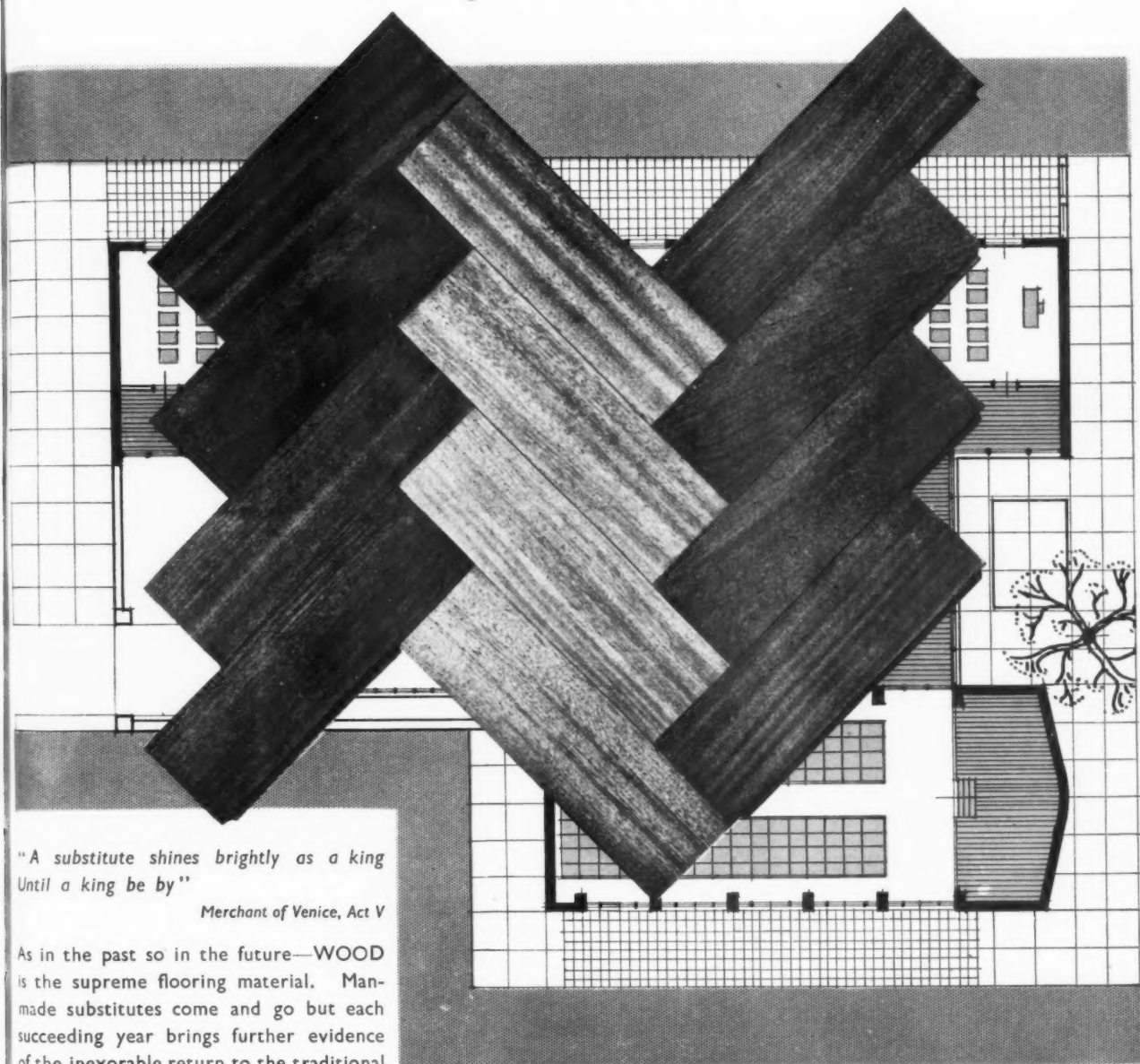
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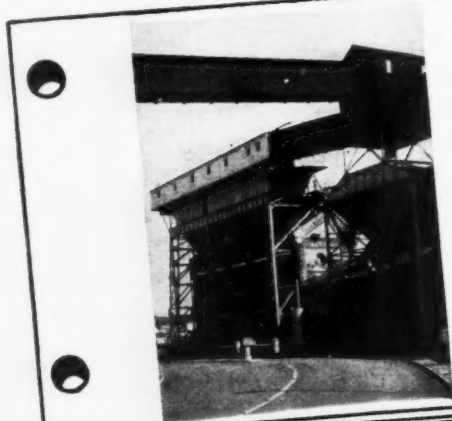
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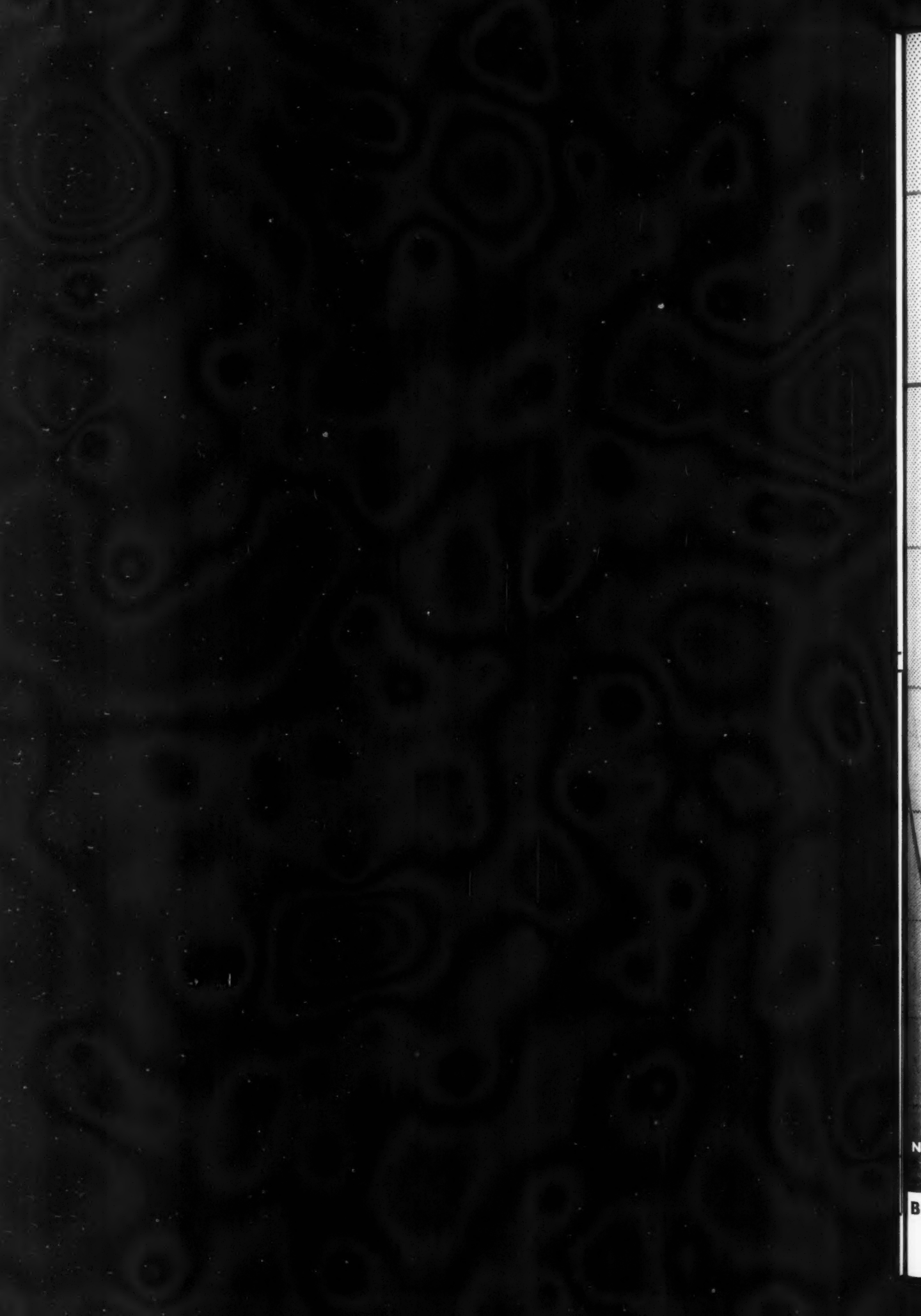
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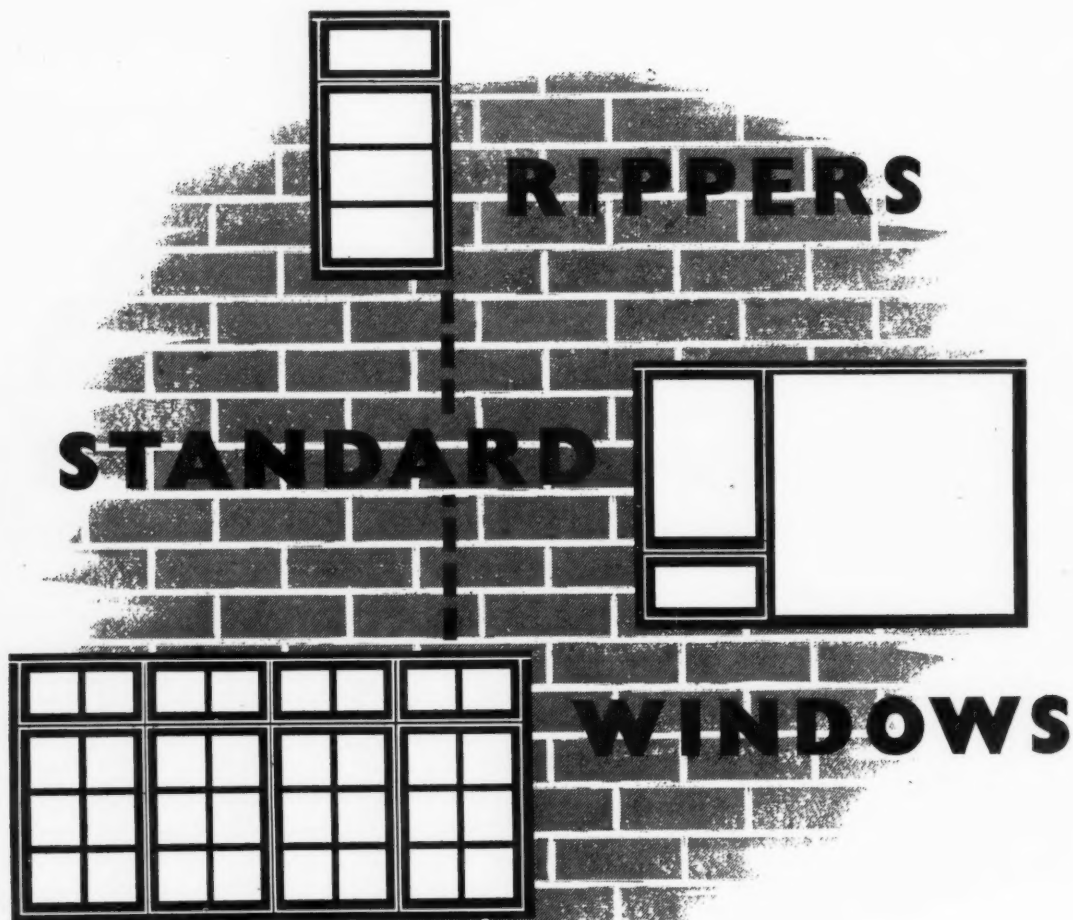
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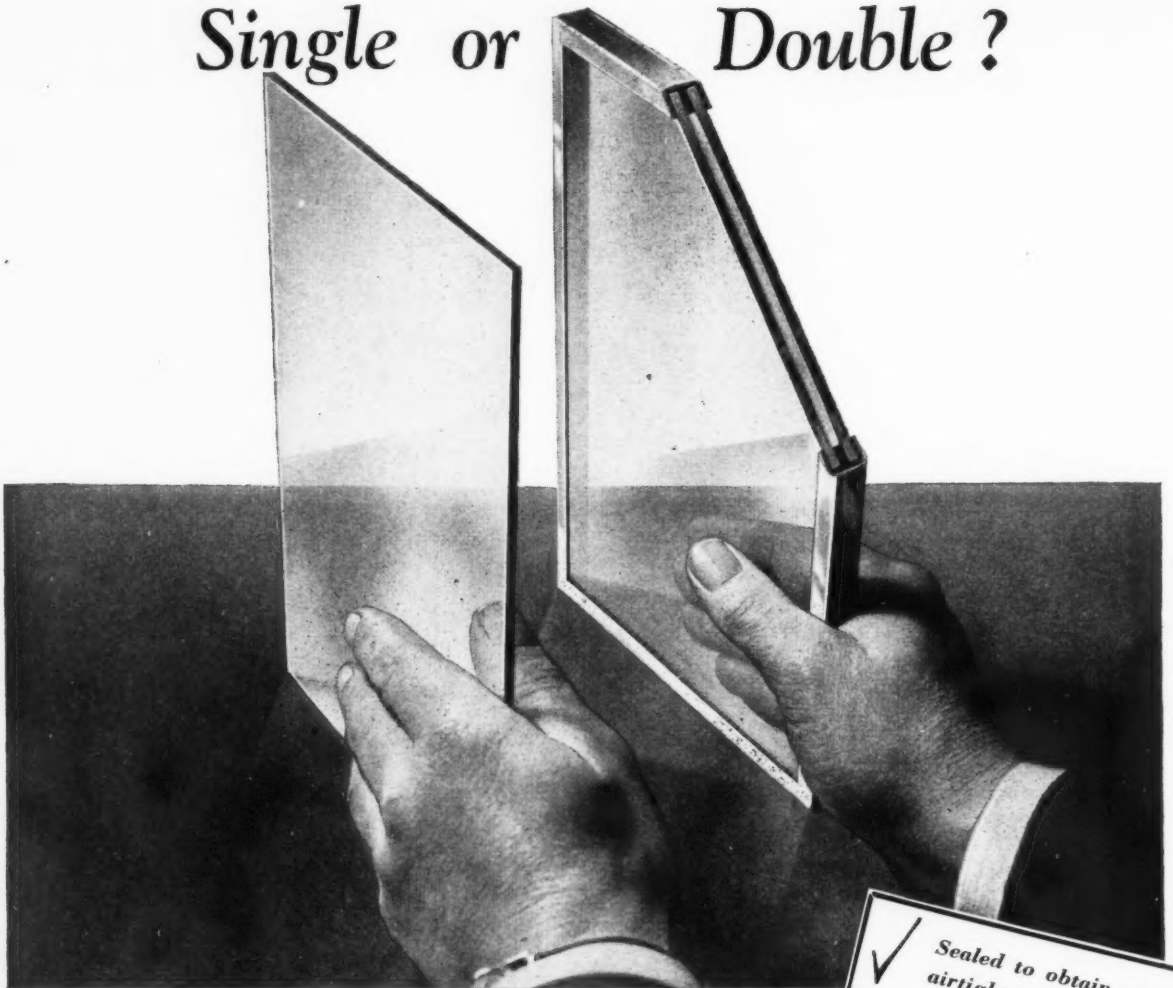
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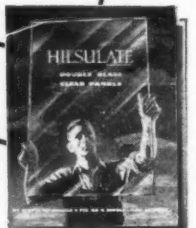
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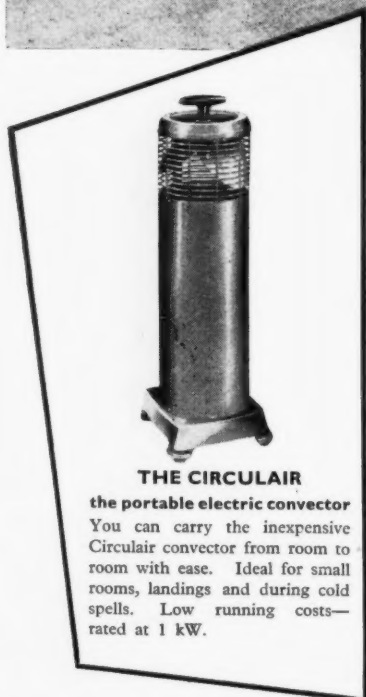
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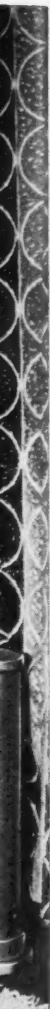
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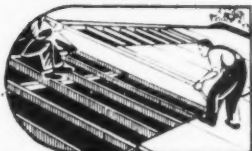
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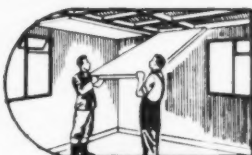
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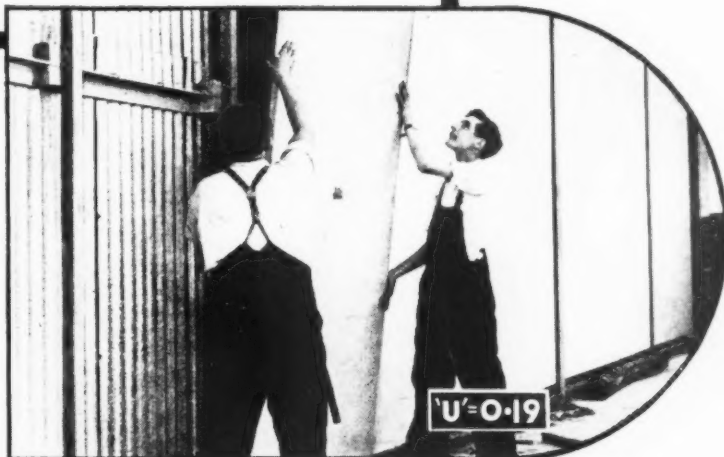
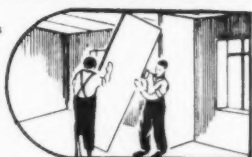


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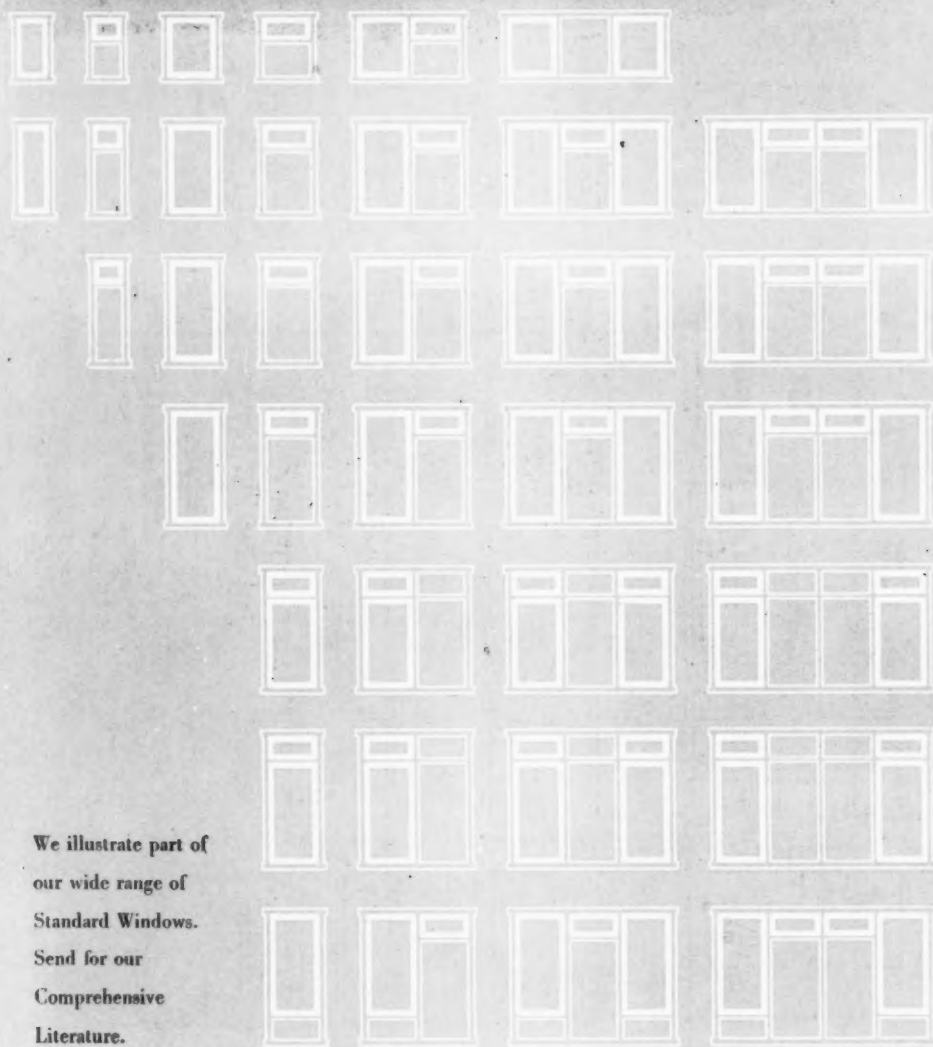
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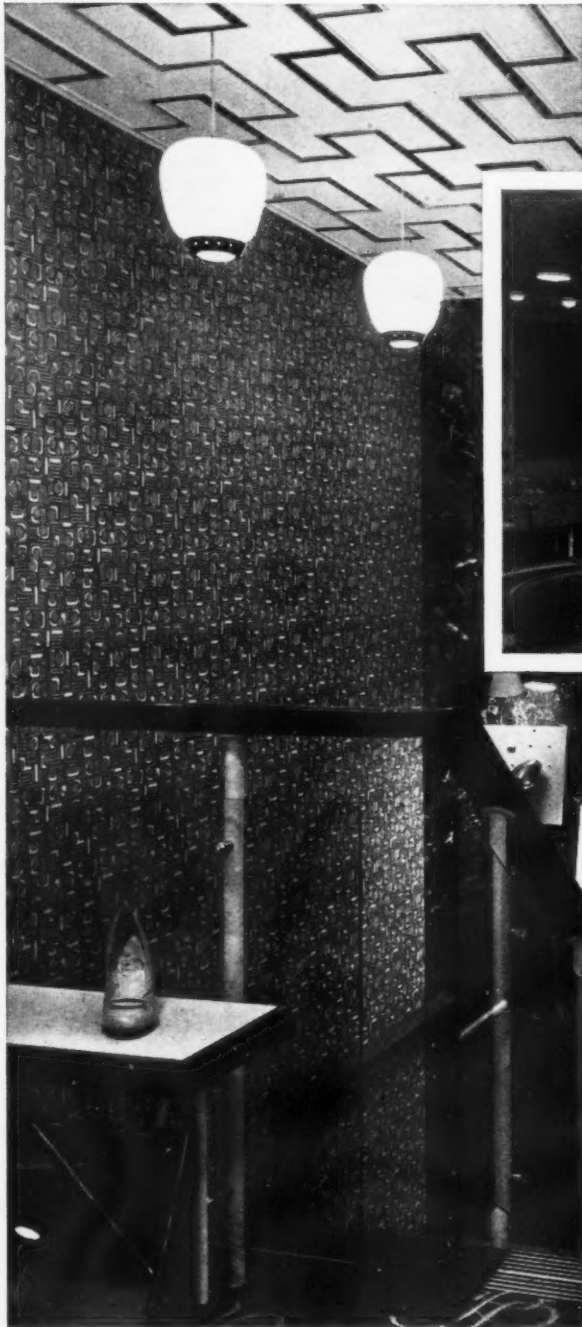
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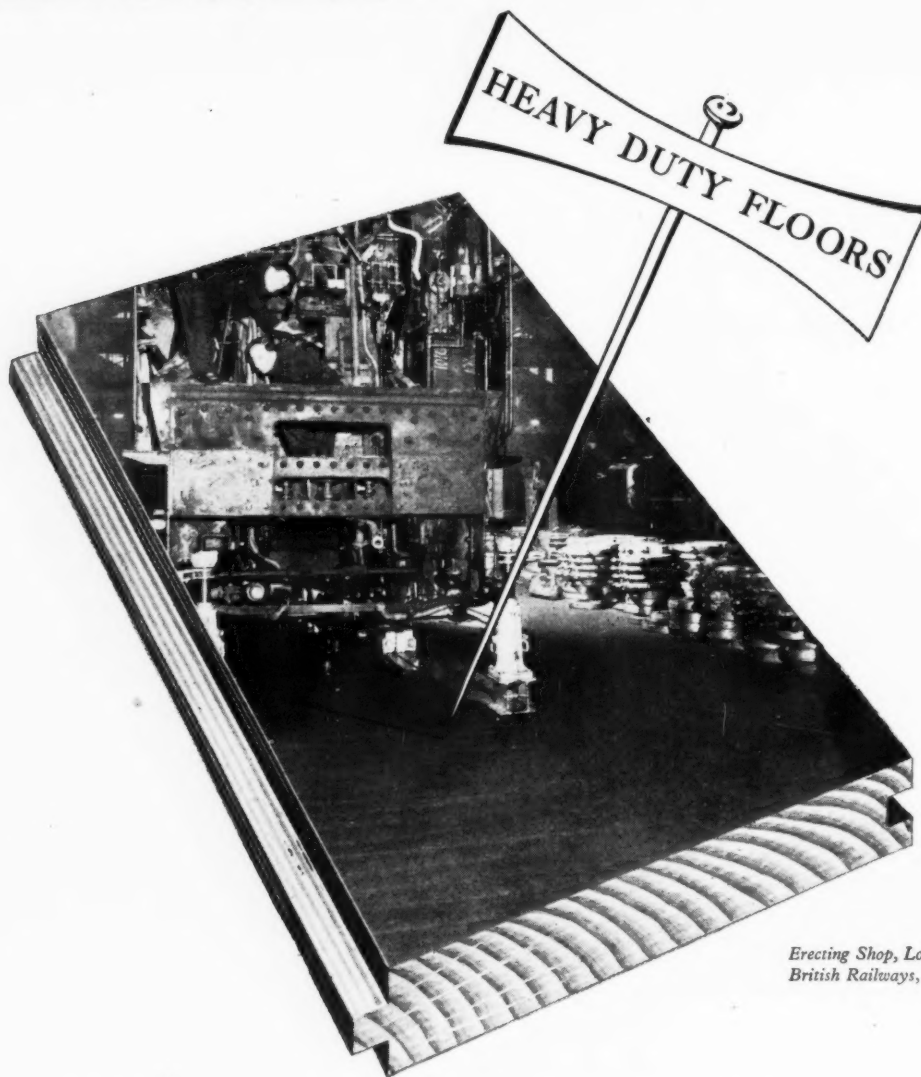
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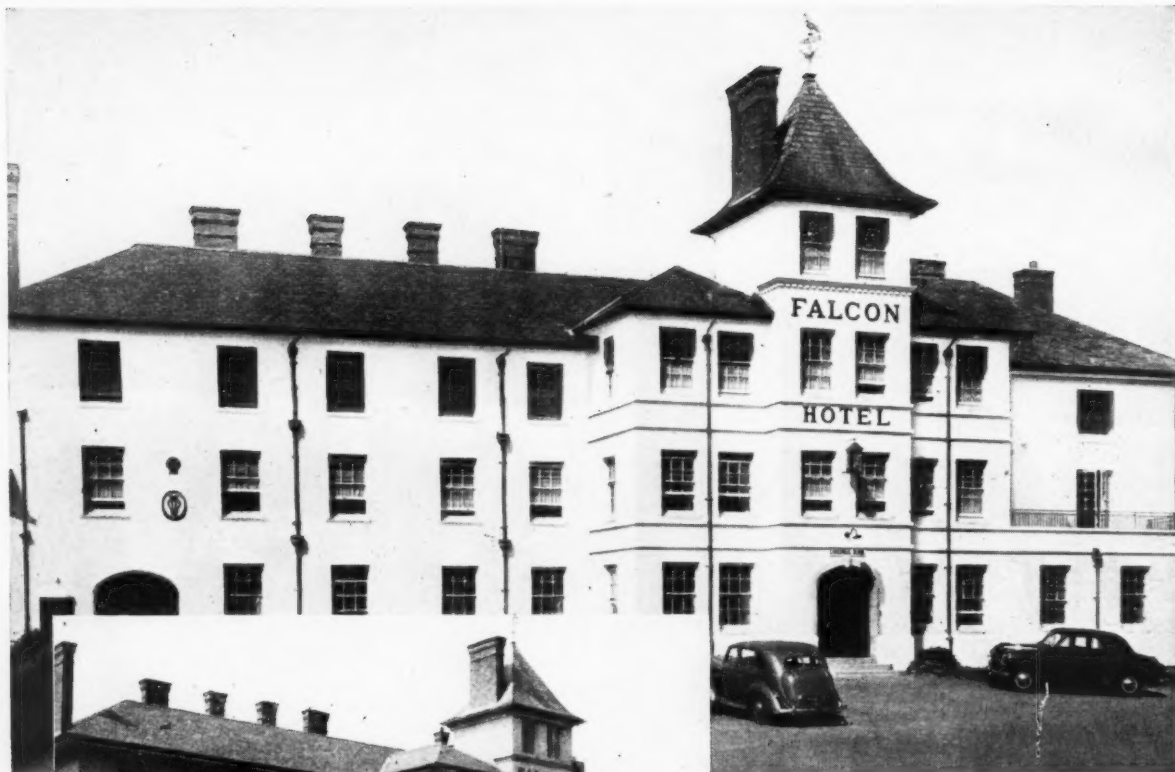
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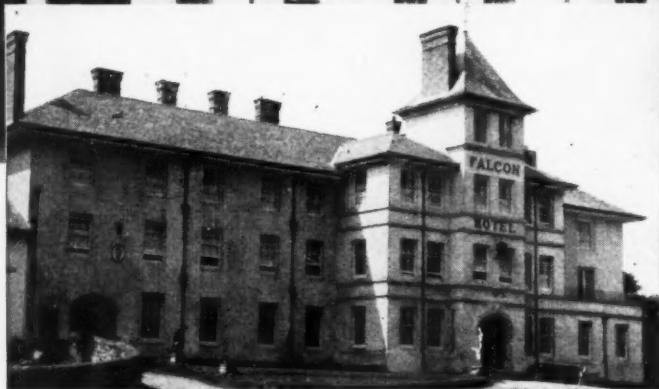
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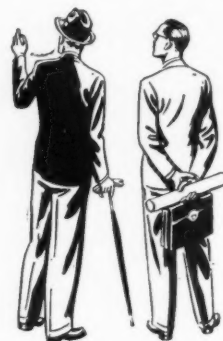
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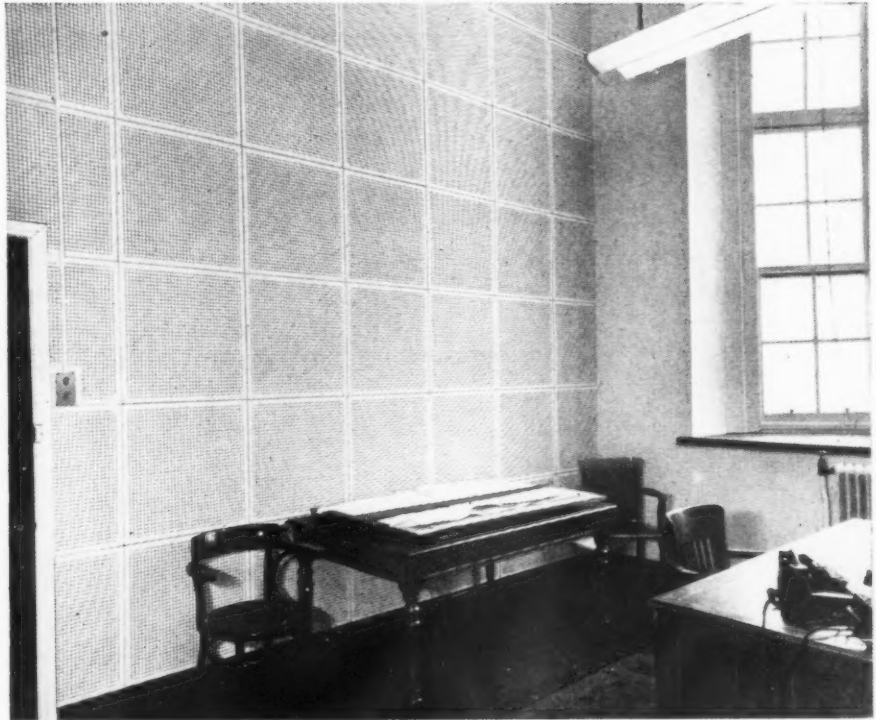


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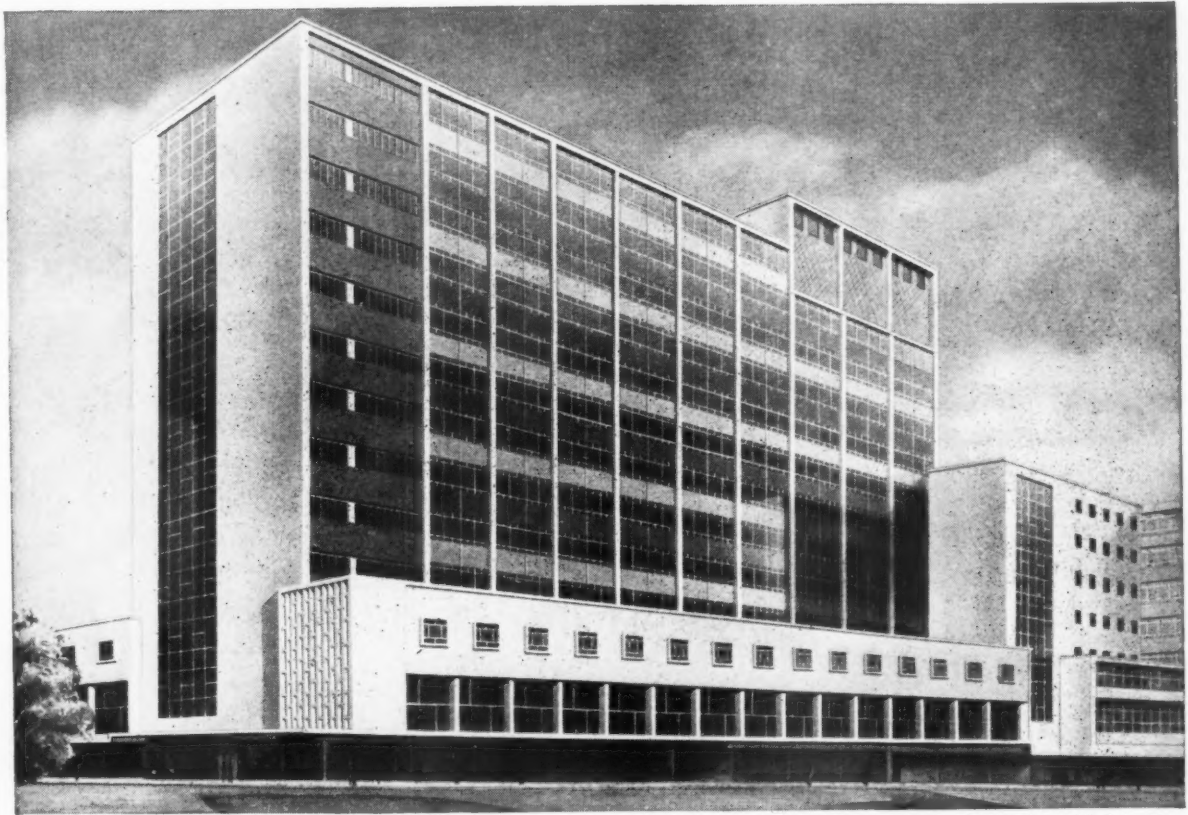
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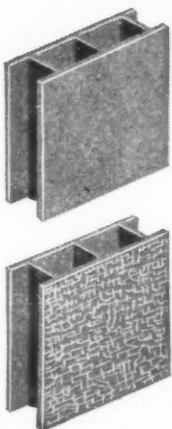
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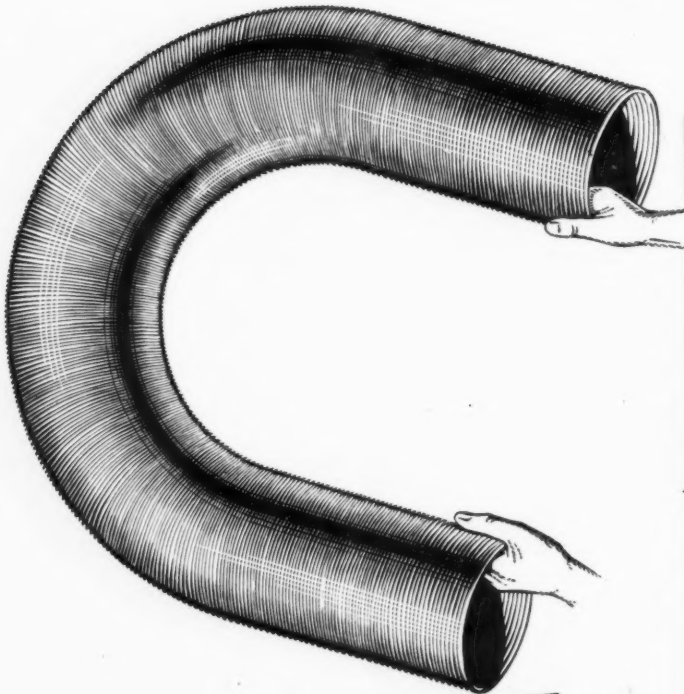


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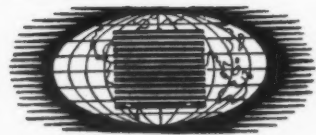
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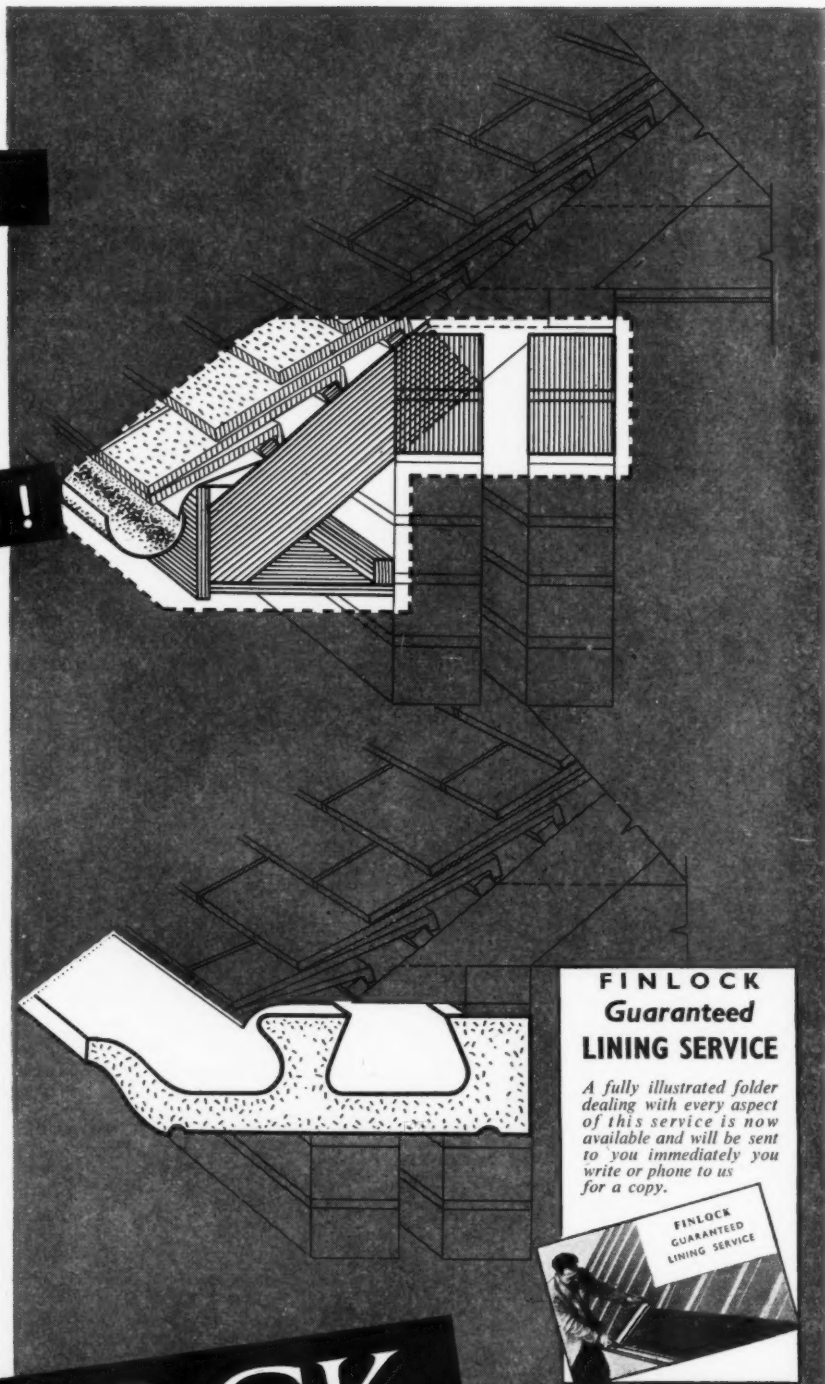
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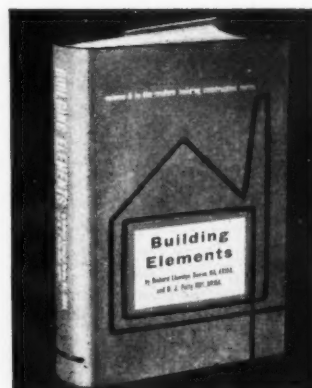
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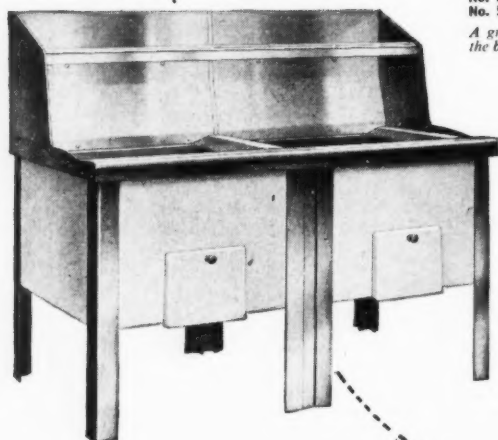
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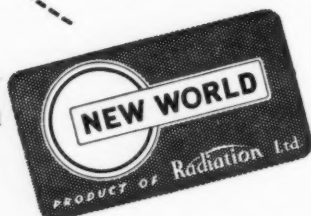
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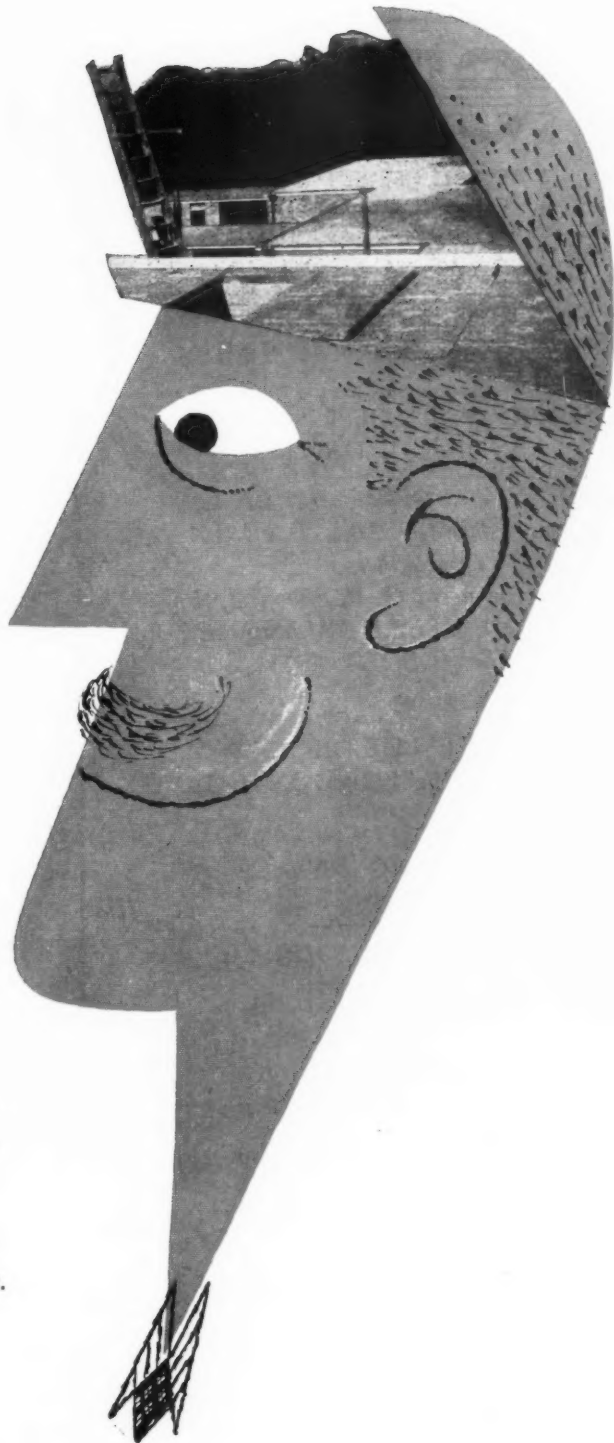
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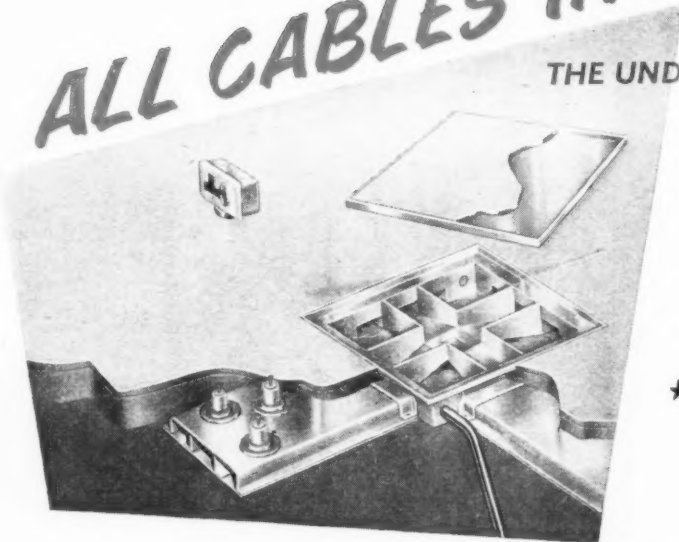
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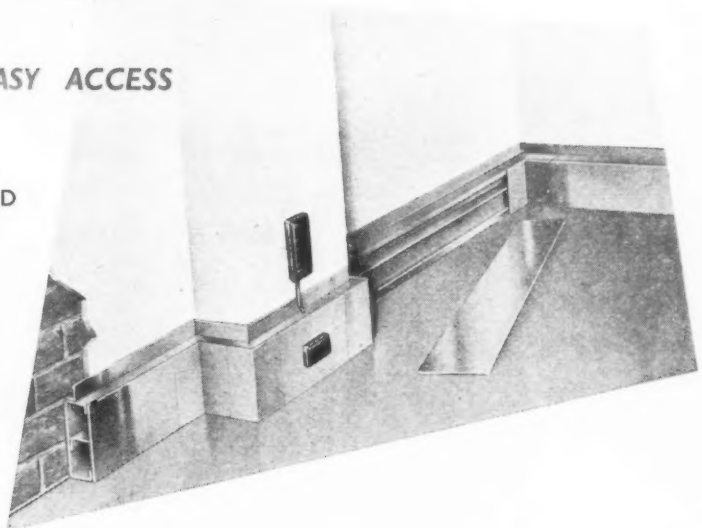
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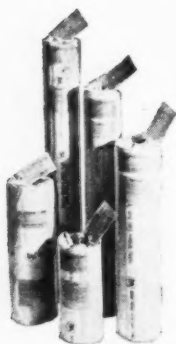
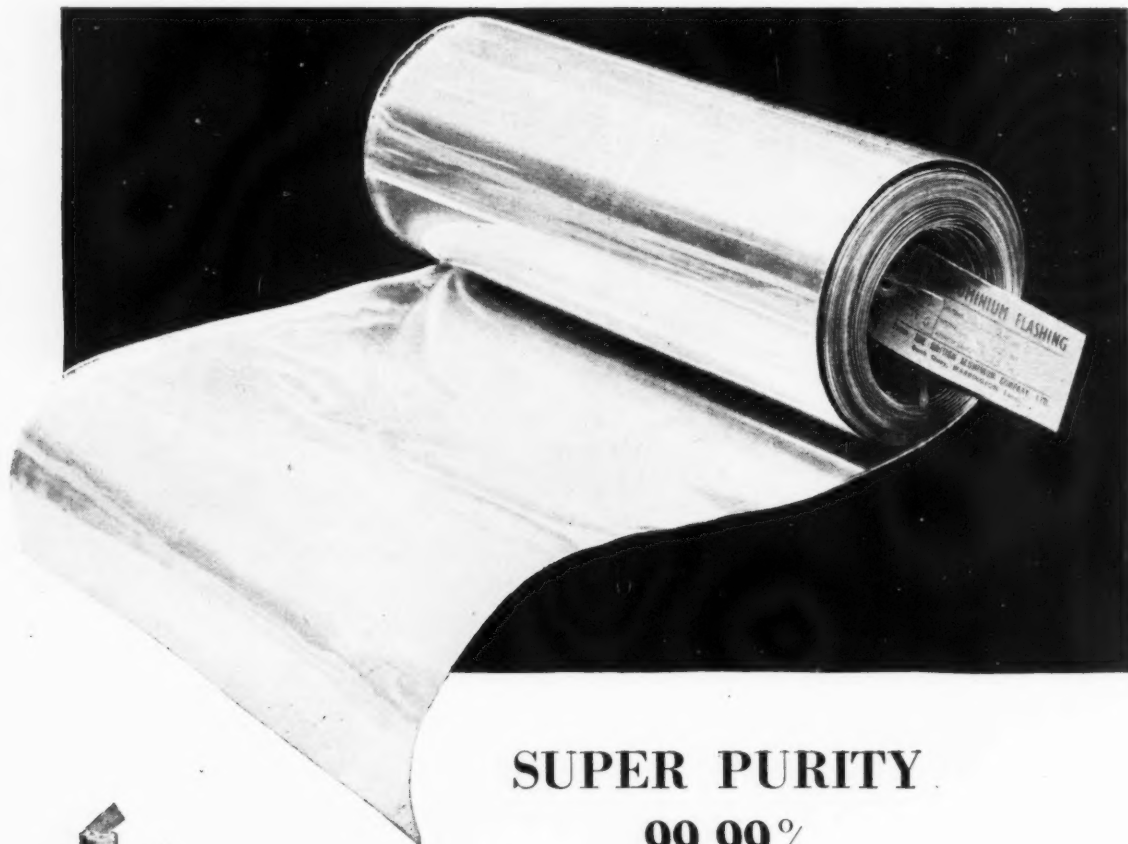
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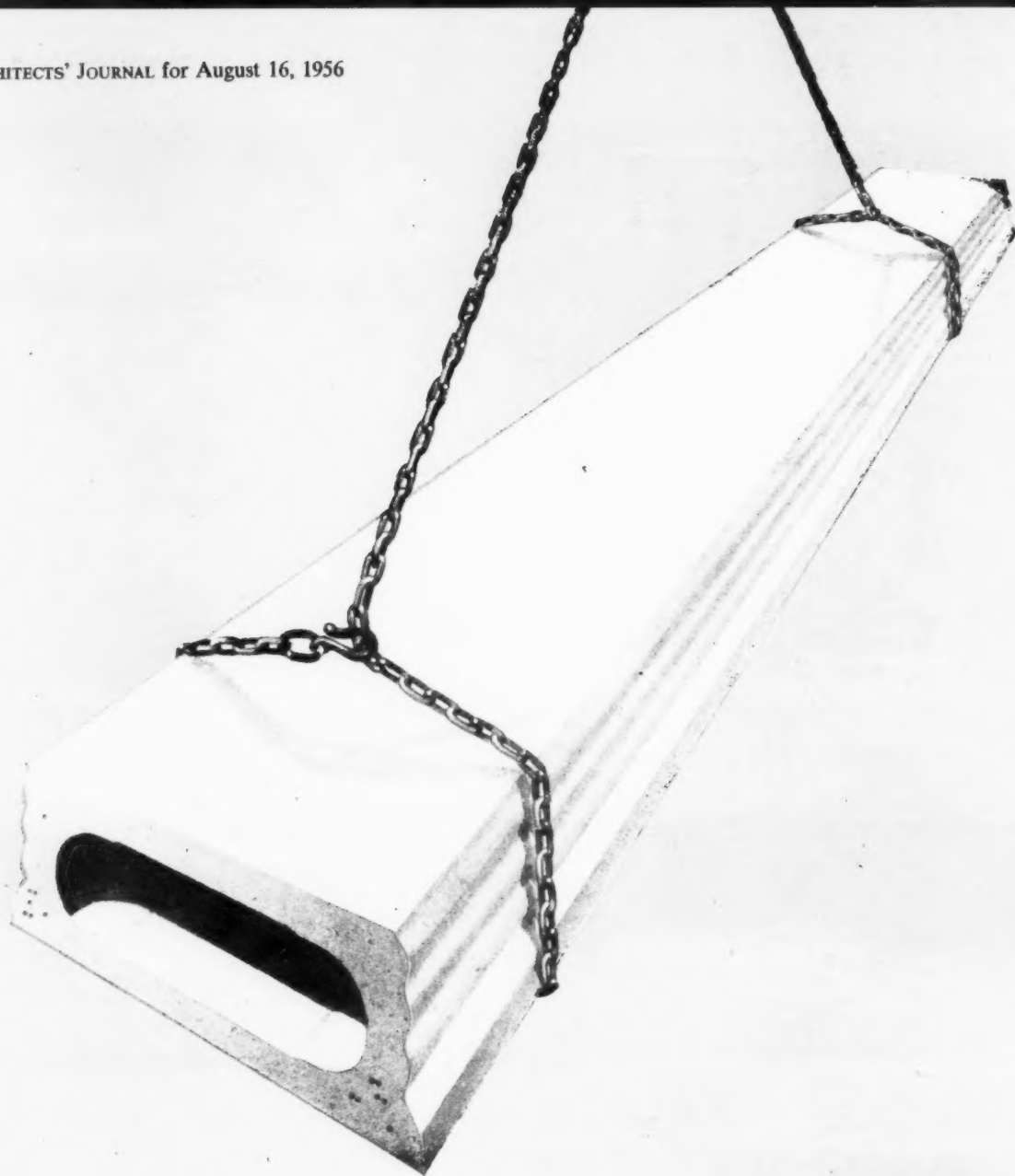
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THE ARCHITECTS' JOURNAL for August 16, 1956



THE ARCHITECTS' JOURNAL

No. 3207 Vol. 124 August 16, 1956

9-13 Queen Anne's Gate, London, S.W.1 Tel. WHI 0611.

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"This is the first time a robot has opened an art exhibition," enunciated Robby, star of *The Forbidden Planet*, "Formerly, people were used." The innovation made no difference to the sherry-snatchers in the middle of the gallery, who continued to talk and laugh just as loudly, and rudely, as if people were *still* being used. Robby thumbed through his relays, whirled his scanners and his dome began to steam up, but clearly he was not monitored to reply to hecklers, and he had to press on to the end of his little say-so. . . . "And now I declare the exhibition *This is Tomorrow* open."

This ceremony in the Whitechapel gallery was the culmination of two years of hard work, subterranean intrigue, hard work, inspired improvisations, hard work, scrounging, hard work and so forth that can't be gone into here. Let it suffice to say that *This is Tomorrow* is one of the fission products of the disintegration of the original English *Groupe Espace*, a large-scale display of architect / painter / sculptor collaboration, of the synthesis of the major arts.

This idea of synthesis is something that the Pioneers of the Modern Movement inherited from the Academies, and passed on to the Masters.

When the theme was young, it was simple. Painting was going to lie down with Sculpture, and Architecture was going to lie down smartly on top of them. But in passing from hand to hand, the theme has begun to split at

*And definitely not cricket.



the seams ; some of the stuffing has come out, bats and bugs have got in, and it is by no means certain—as *This is Tomorrow* shows—that Architecture is still top dog, or that what sculptors and painters produce is necessarily painting or sculpture.

*

What has come up is, roughly speaking, a range of graded possibilities between two seemingly irreconcilable extremes. Both extremes are to be seen in the big picture above, but before we go into that, look at the little picture on the left. It shows something

rather rare—an architect actually collaborating with a sculptor. Anthony Jackson, architect, is operating the drill, Sarah Jackson, sculptor, is holding the panel as well as the dog. Yes, they are married, which probably accounts for it, because architects showed themselves mostly unwilling to dirty their hands with actual work. Three of them took off for CIAM before their groups moved into the gallery, and one of the twelve groups involved decided to do without an architect altogether.

*

But back to our extremes. In the fore-

ground of the big picture you see brickie A. J. A. Canning building a wall designed by architect John Weeks and painter Adrian Heath. The set-up is as the Masters of the Modern Movement envisaged it. Architect and painter have settled for a simple rectangular aesthetic on a concrete-block module, and so completely sunk their personalities that the execution can be left to a third party. Their contribution ended with the beautifully precise course-by-course drawings, showing the variations in bond, the departures from the straight and narrow, which Canning had to follow. A tidy, unassuming, cerebral, minimal attempt to find a noblest common denominator for constructive art.

If their contribution is the leastest, what goes on in the background of the picture is the mostest. You see there the penultimate stages of ten days of tooth-and-nail, on-site collaboration between painter Richard Hamilton, up the nearer trestle, and sculptor John McHale up the further one, lady-brutalist Magda Cordell in the tall slot of the structure, and Terry Hamilton, help-meet and domestic Muse of Richard ditto, down there at the right with an optical illusion in her hand. And, standing for all the tech-men and equipment suppliers who were involved in this project, John Pickup of Siemens Electric, in the white coat.

And what are they doing? At the moment the photograph was taken they were erecting a giant cut out of—how did you guess?—Robby the Robot on the side of the crazy-house structure that architect John Voelcker designed for them before leaving for CIAM. And what else? Well, roughly speaking, The Lot. Their section has optical illusions, ultra-violet light, CinemaScope, recorded sound, squashy floors, collage, science-fiction, van Gogh, topology, expanded metal, a juke box . . . and a general desire to smash down all barriers, prise open all watertight conventions, and get ideas and sensory responses on the move.

And what does all this add up to? Personally, I find it the most exciting thing I have seen in an exhibition in years, and it has, to my taste, a slight lead on the strict-Brutalist section at the back of the hall. Yet *The Times*, you may have noticed, with its blinkers hard down, announced that "this faction has little to offer visually." But the best thing is to see it, and the rest of this thoroughly off-beat exhibition, for yourself, and if you still can't make up your mind, reply, when challenged, with Robby's profoundest dictum—"Quiet, please, I am analysing."

REYNER BANHAM

The Editors

HEALTH CENTRE OR GROUP PRACTICE CLINIC?

WHEN the Health Service was started up, the ideal building envisaged for its operation was the Health Centre: a little palace of health built and owned by the local authority from which the local authority's own preventive medicine services would be carried out (ante-natal clinics, infant welfare and the like) and to which doctors would go to hold their surgeries. One of these was in fact built by the LCC at Woodberry Down, but it cost so much (£179,000) that it nearly killed Health Centres once and for all. Alongside the Health Centre another concept has been growing up, that of the Group Practice Clinic. With this concept, which seems to be particularly popular in America, a number of doctors club together to found a clinic where they will practice together and where they may also provide some of the "health services" in addition.

Recently the Minister of Health wrote to the LCC on this whole issue. Briefly he advocated that Health Centres should not cost more than £35,000 apiece, that somehow or other medical and local authority services must be given *together*, that Health Centres should only be built in large scale housing developments but that land should not be earmarked for them long before it is certain that they will be wanted, and that careful consideration should be given to the idea of letting the doctors provide their own Group Practice Clinics instead, on special loans provided for this purpose. On receipt of this letter the LCC instructed their Local Medical Committee (the same Committee, incidentally, which helped in providing the brief for Woodberry Down) to go into the matter once again and report.

This they have now done and in their report (which has just come out) they agree wholeheartedly with the idea that medical attention and the Health Services should be given in one building and recommend that local authorities should make their health visitors available to all group practices. At the same time they consider that the Health Centre still has a part to play and not only on "large scale housing developments." Their solution for the site-earmarking problem is to suggest that the ground floor of a block of flats might be so designed that it could be converted into a Health Centre as and when one was wanted.

All this discussion (to which we might add an admirable lecture given not long ago to the AA by Dr. Stephen Taylor of the Nuffield Foundation) goes to show that the Health Centre/Group Clinic problem is still in the wilderness. People are still thinking in terms of prefabricated hutting (the William Budd Health Centre, Bristol), (converted Victorian houses (solution favoured by the Nuffield investigators), semi-detached houses (Group Clinics at Harlow New Town) and now the conversion of the ground floor of a block of flats. We suspect

that people are determined to keep the architect at arm's length for fear that he will spend too much and give something which will be psychologically unacceptable. But the evidence of American architect-designed Group Clinics* shows that the architect *has* a contribution to make, and that the Group Clinic and/or Health Centre will not be a joy to anyone until he is given a real chance to make it.

* See for instance *Doctors Offices and Clinics* by P. H. Kirk and E. D. Sternberg. (Chapman & Hall Ltd. for Reinhold Publishing Corporation. 96s.)



THIS IS TOMORROW?

Some months ago, ASTRAGAL promised you great things when the English splinter of *Groupe Espace* finally got round to holding its exhibition at the Whitechapel Gallery. Now that it has happened it only remains for me to urge you strongly to see it, and to see it soon because some of the exhibits may not last out until it closes on September 9. And there is plenty to see, believe you me.* The breakdown of the traditional barriers between architecture and the other arts has produced experimental results that can be put to work almost at once in some cases, a little later in others. Fluorescent floors are an immediately usable exhibition device of which we shall doubtless hear more, while the structure known as "Adrian's Wall" should start some trains of thought about the proper

study of brickwork—did you ever make a separate drawing for every course of an eight-foot wall? This column was most impressed. Also rather alarmed at the thought that the Brutalist's apotheosis of the suburban back-garden may start a wave of Betjemanesque sentimentality about tool-sheds. And watch out for that soggy neoprene flooring—a young lad might come to harm on that.

MISSED CONNECTION

The York Institute—still flourishing like the proverbial green bay tree, according to informants returning from this year's summer schools there—has just issued its second volume of *Studies in Architectural History*,* which has a slightly different slant to the first one. There are fewer party pieces by famous names, and much more new and unpublished material, mostly about North Country architecture. Thus there is a good piece of field-work on vernacular architecture in Westmorland, one of those pieces of research that starts in geology and works up. James Wyatt's contributions to the Greek Revival are investigated by Derek Buttle (and had you noticed the way that Wyatt, the Destroyer, is well on the road back to architectural respectability again?). John Carr's excursions into Gothick are traced by Robert Wragg, and a fascinating wayzgoose they prove to be, and the little-known and under-documented John Piggott Pritchett of York is sorted out and given his due by Geoffrey Broadbent. This particular due needed giving, since one of Pritchett's most notable performances, Huddersfield Railway Station, has been attributed, by no less a person than the PRA, to somebody else altogether. Pritchett is known, as far as he is known, as the architect who reworked, and flattened, the façade of Lord Bur-

lington's Assembly Rooms in York, but his practice was extensive, and Broadbent shows him to have been a designer of considerable ability and ingenuity.

JANE DRAWS

There's always an Ad-man, the New Yorker frequently avers—and now this column has decided to aver, as far as England is concerned, there's always a woman's page. It doesn't seem to matter how much you pay for your paper, twopence coloured or fourpence plain, the corn is always green on the woman's page. Take the old Fourpenny-One's Bank Holiday treatment of Jane Drew for instance: a sample of English prose sparkling with dew-fresh originality... "It becomes clear to a layman listening to her that architecture is a design for living, created by its purpose." And how is this as a sample of crystal clarity of thought: "She welcomes the idea of a well-known architect who recently built a radiator into the general line of a window."

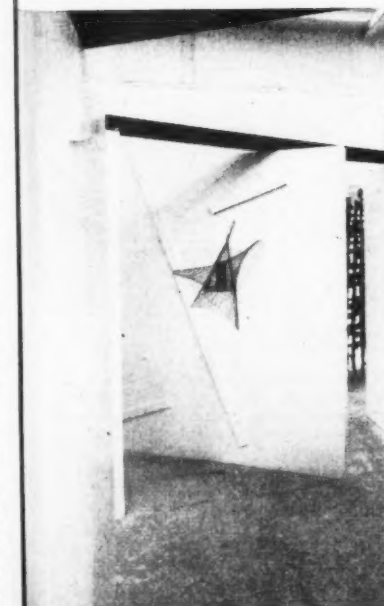
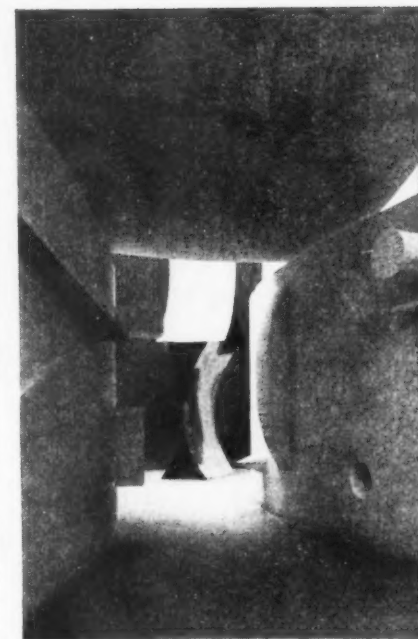
The context in which these flawed diamonds were embedded was of about the same standard—except for a marvellous photograph of Jane beaming with energy and bonniefemme (if that's the word) which is the best propaganda for women taking up professions, and architecture particularly, that ASTRAGAL has come across in years.

RICE, WATER BUT NO DISHCLOTHS

The Steichen-collected "Family of Man" photographs which are on show at the Festival Hall until the end of the month are a "must." This is not to say that the collection could not be improved, for there are odd gaps, and one would never guess that man is largely a machine-using animal. People dig, grow rice and fetch water, but there is nowhere any suggestion of the monotony of repetition work, no machine-minder watching a range of automatics, no scullery hand facing a mountain of washing up, in fact scarcely any industry at all. If the final five hundred or so pictures were really winnowed out of an original two million one could have done with less repetition and a wider range of subjects. But go to see this superb exhibition all the same, and take some time over it—a twenty-minute stroll

* And believe you Reyner Banham too (pages 217-219)

*St. Anthony's Press, 17s. 6d.



Exhibits at This is Tomorrow: Left column, top: entrance hall, architects, Theo Crosby and Germano Facetti; typographer, Edward Wright; sculptor, William Turnbull. Left column, middle: wall-sculpture; architect, John Weeks; painter, Adrian Heath. Left column, bottom: mobile-kiosk, architect, John Weeks; painter, Mary Martin; sculptor, Kenneth Martin. Centre column, top: pavilion, architect, Erno Goldfinger; painter, Victor Pasmore; sculptor, Helen Phillips. Centre column, middle: sculpture-corridor; architects, Peter Carter and Sandy Wilson; engineer, Frank Newby; sculptor, Robert Adams. Centre column, bottom, pavilion, architects, Alison and Peter Smithson; photographer, Nigel Henderson; sculptor, Edouardo Paolozzi. Below, the hero of the hour, Robby the Robot, circulating through the exhibition after opening it.



around won't get you anywhere. Alternatively, buy the book, which has all the photographs for 10s. 6d.

NOT FOR THE SQUEAMISH

And now to wipe that holiday smile off your face come two thoroughly unfunny books from the US National Academy of Sciences. The title, in both cases, is something we have all been preferring not to think about for just over ten years, *The Biological Effects of Atomic Radiation*. Not quite Architecture? Well. No. And—if I may say so—but . . . It's a problem that is beginning already to camp out on the borders of architecture, and to judge from these soberly-worded reports it could, for instance, begin to affect the size and scope of our school building programmes within the lifetime of present architectural students—if, that is, we go on increasing the

amount of nuclear industry at the present rate, and go on being as casual about waste disposal and fall-out as we are now.

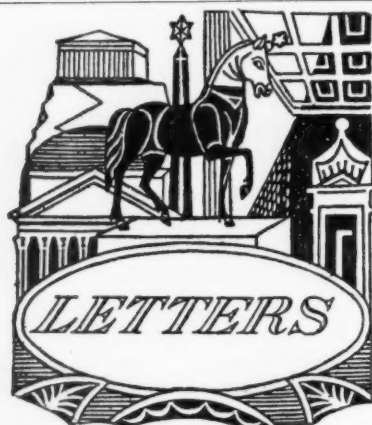
*

Then there are little matters like atom-powered trains vaporising themselves in suburban marshalling yards. Quite a lot to think about, in fact, and architect-readers could comfortably bypass the slimmer of the two volumes, subtitled *Report to the Public*, and get straight on to the real gen in the thicker *Summary Reports*—the occasional out-breaks of mathematical terminology shouldn't be beyond you, and the facts are a good deal starker than in the popular volume, where they have been slightly processed.

OBITUARY

Not the least melancholy aspect of the sinking of the *Andrea Doria* was that not only was she a handsome ship on the outside, but her interior was one of the showpieces of Italy's post-war reform in ship decoration. Apart from one or two pieces of nonsense, aimed at the show-business type of passenger, the interiors were a travelling prestige exhibition for Italy's mastery of contemporary furniture design, right the way down to tourist class, and much of the on-deck equipment showed that nautical tradition and Milanese innovation go admirably together.

ASTRAGAL



G. R. Vaughan Ellis, A.R.I.B.A.

E. M. Ackery of BEDA

Domestic Heating

SIR,—I must congratulate you on your recent issues of June 28, July 5 and 12, dealing with heating. Any architect, or student, who has not yet attempted to delve into the subject matter of these papers will

find the effort repaid in the extremely useful and practical items of information which are tucked away in the text and, being up to date, are not to be found elsewhere.

Strongly allied to heating is the subject of proper insulation and I write to say that I have observed that the incidence of "temporary condensation" in modern buildings, at any rate in the west country, appears to be high and often a nuisance. The worst troubles, of course, arise in rooms finished with hardwall plaster and thermoplastic tiles. Increased ventilation is not the answer to this as it only allows more of the warm moist air from outside to enter. In my opinion, therefore, architects need to exercise care when specifying these materials, e.g. in normally unheated rooms with a North aspect in particular.

My own interest in the subject has led me to find out more about the methods of insulation in other countries of the Northern hemisphere. In North America and Sweden, great importance seems to be attached to the use of a "vapour barrier" in walls, floors and ceilings. Special attention is given to this when using solid ground floors (you are referred to an article in the Swedish Journal *Byggmästaren*, October 20, 1955, on this subject).

In an American publication I have read that heat transfer from a building takes place in the following proportions:—Down flow—radiation 93 per cent., conduction 7 per cent.; up flow—radiation 50-70 per cent., convection up to 45 per cent., conduction 5-7 per cent.; side flow—radiation 65-80 per cent., convection 15-28 per cent., conduction 5-7 per cent. If these figures are true, it seems to me that our usual calculations for "U" values are misleading. If my deductions are correct the greater use of aluminium foil for insulation would appear to be called for because of (a) its excellent properties as a "vapour barrier" and (b) its reflectivity of 97 per cent. to radiant heat.

The views of a specialist in these matters would be of great value and interest.

G. R. VAUGHAN ELLIS.

Cornwall.

Our Specialist Editor for Heating and Ventilation writes: "Temporary condensation" is indeed a serious difficulty. It was discussed in detail in G. D. Nash's article entitled "Condensation in Buildings" published in the *JOURNAL* on January 14, 1954. One method of diminishing condensation on walls is to use a vermiculite plaster. Mr. Vaughan Ellis' American figures for heat transfer accord with figures accepted in this country, though his deduction that our "U" value calculations are misleading is incorrect, since the varying proportions between convection and radiation in floors, walls and roofs are taken into account in published figures. See, for instance, Part I of Nash, Comrie and Broughton's *Thermal Insulation of Buildings* where this, and incidentally the uses of vapour barriers, are discussed at length. It is worth noticing, however, that the figures published for different constructions relate only to the passage of heat from the inside of a building outwards, and that they would not, for instance, be applicable to tropical conditions where the passage of heat is commonly in the opposite direction.

SIR,—I was very interested in the article on "Heating and Ventilation—Running Cost of Heating Small Houses" in the *Journal* for July 12, but wished that it had been possible to obtain rather more detailed information in each case.

I do not think that I need to point out that from the technical point of view the information available is, to say the least of it, somewhat scrappy and for this reason I feel that the conclusion arrived at regarding the relative price of electric heating may be rather wide of the mark.

I have always regarded the consumption

of electricity in Brian Peake's house as being very much on the high side and denoting a relatively high degree of thermal comfort and I rather question the method in arriving at the figure for electricity, namely that of taking the solid fuel consumption and working out by means of assumed efficiencies what the consumption of electricity would be.

Naturally, for the same amount of heat supplied to the house electricity will be more expensive in fuel cost than solid fuel but I think the figure is more likely to be nearer twice the cost of solid fuel than three times. In addition to this, the ease with which an electric heating installation can be controlled very often means that the needs of the occupants are satisfied with a smaller input of heat because the heat is applied, so to speak, as and when it is required.

A final point relates to the house at Whiteleaf by Colin and Mary Oates. At the beginning of the article it states that the examples published are all below 1,500 sq. ft. of floor area, but if the drawings of the house at Whiteleaf are, in fact, drawn to a scale of 1/32 in. = 1 ft., this house would seem to have a floor area of more like 3,300 sq. ft.

E. M. ACKERY.

London.

Our Specialist Editor for Heating and Ventilation writes: It is of course true that the information given in our article was incomplete and that for this reason (as we pointed out) it is valuable only as a general indication of how heating costs are turning out. We would welcome any further data Mr. Ackery may be able to give, particularly on electrical floor heating, since this does not seem to possess the flexibility Mr. Ackery refers to in his fourth paragraph. The scale of the house at Whiteleaf was wrongly given: it should have been not 1/32 in. but 1/24 in. Even so the floor area is approximately 1,800 sq. ft. and is therefore above the 1,500 figure as Mr. Ackery points out.



NATIONAL TRUST

Ickworth Acquired

Ickworth House, in Suffolk—a building which, with its central domed rotunda, is something of an architectural curiosity—has been acquired by the National Trust. The house, which has 1,792 acres of park and woodland, was begun by the fourth earl of Bristol in about 1794. It was completed in 1830. Among its contents are some late Regency and eighteenth-century French portraits and a magnificent collection of seventeenth- and eighteenth-century silver.

NEW YORK

It Can't Happen Here

A small panic was caused in New York the other day when the windows and doors of a store began to bulge. Police cleared the streets as glass panels blew out. Investigations showed that this was caused by too much air-conditioning. Someone had gone home at night without turning off the blower of the air-conditioning unit.

HONG KONG

School Still Unrecognised by the RIBA

Last week *The Times's* Architectural Correspondent wrote an article praising the building work done in recent years at Hongkong University to the designs of Professor R. Gordon Brown, who holds the chair of architecture there.

"These new university buildings," he wrote, "together with the greatly improved recent buildings of the Public Works Department, have maintained the interest in modern architecture in Hongkong that was stimulated six years ago by the establishment of the Department of Architecture in the university. . . . But the future of this most promising school of architecture is not secure until it has been granted recognition by the RIBA in London. So far it has failed to gain this status, and as a result students who have passed, however creditably, the five-year course, cannot qualify as architects and practise locally unless they take the RIBA examination in addition. And young men from, say, Burma or Malaya will, in increasing numbers, choose to travel to America or Britain to study if they cannot qualify as architects by studying nearer home.

"This will be regrettable, not only politically (the Commonwealth has much to gain by Hongkong becoming a centre of technical education for the whole of south-east Asia) but also culturally: if the cities of the East are to produce a worthier architecture than that which they have been accustomed to borrow thoughtlessly from the West it must be rooted in local tradition at the same time as it honestly exploits western technical knowledge, and the beginnings of this merging of two traditions can already be seen in some of the Hongkong students' drawings, which show buildings that are modern in the western sense, but are conceived in terms of local climatic conditions and infused with a Chinese sensitivity to landscape values."

LAW REPORT

A Cautionary Tale for Specification Writers

What happens when a building is built according to a specification provided by the building owner and still lets in the wet? Has the builder a liability to ensure that it is habitable? The judgment in the case reported below (in which, readers will be relieved to hear, an architect was not involved—except as an expert witness) was that the builder has no such liability. The case is reported here as a timely warning to all who write specifications.

When a builder sells land with an agreement to erect on it, or to complete the erection of, a dwelling-house, there is a general legal principle to the effect that a condition of the transaction is, impliedly, that the

house when built or completed should be fit for human habitation. But such an implied condition does not invariably exist. A practical question is: does it exist when the builder completes the house in accordance with agreed plans and specifications and the house is nevertheless seriously defective? The answer given by the Court of Appeal in a recent case is that the builder is not liable, there being no room for the implied condition when there are express conditions as to quality which are duly fulfilled.

This important ruling was given in the case of *Lynch v. Thorne* (1956, 1 *Weekly Law Reports* 303) in which the purchaser of a house was unsuccessful in suing a builder for damages in the following circumstances. The plaintiff agreed to purchase from the builder a plot of land with a partially erected dwelling-house on it and the builder undertook to complete the house in accordance with the plan and specifications annexed to the agreement. The specifications provided that the walls were to be nine-inch brick walls. The house having been erected, the sale was completed and the plaintiff took possession. It subsequently appeared that the nine-inch wall on the south side of the house did not keep driving rain out and one of the bedrooms was as a result unusable. The plaintiff claimed damages. It was not disputed that the house was built exactly in accordance with the drawings and specifications. There was some evidence that the south and west walls were rather exposed for a London house.

Although the county court judge held that the defendant had carried out the building work precisely in accordance with the specifications and with sound materials and good workmanship, he allowed the claim for damages, holding that the plaintiff had relied on the defendant's skill and that there was an implied warranty that the house should be fit for human habitation. The builder appealed with success against this decision, the Court of Appeal holding that there was no such implied warranty in these circumstances.

Implied terms

The law has been well settled for a long time that *prima facie* upon a contract for sale of a piece of land with a house on it there is no warranty as to the habitability of the house. The same applies to the letting of a house. The rule is, or has sometimes been said to be, a hard one for the purchaser or the lessee who has to console himself with the Latin maxim *caveat emptor*, let the buyer beware. But there are undoubtedly exceptions to the general rule. For example, when the subject-matter of a contract of letting is a furnished flat or house, then there is an implied covenant or warranty that the place is fit for habitation.

Another exception arises when the contract is not merely for the sale of a piece of land with a house on it, but is a contract for the sale of a piece of land with a house, plus a covenant or obligation on the part of the vendor to build or complete the house. Here the maxim *caveat emptor* cannot apply for the buyer, in so far as the house is not yet completed, cannot inspect it, either by himself or his surveyor. Further, as the contract is not merely a contract to sell, but also a contract to do building work, it is only natural and proper that there should be an implied undertaking that the building work should be done properly.

But these considerations lose their force when there is a written contract expressly setting forth the bargain between the parties. The general rule then is that you cannot imply terms when express terms have been agreed on. An implied term must always yield to the express letter of the bargain except under the compulsion of necessity.

Implied terms unnecessary

The Court of Appeal saw no necessity to imply any term into the building contract

in *Lynch v. Thorne*. One of the clauses in the contract read: "Brickwork to be laid in cement mortar, facing bricks to be Ockley double diamond dark multi red facings pointed in cement to special colour." And the scale plan showed that the southern wall was intended to be a solid 9-inch brick wall, the brickwork to be of the character mentioned in the specifications. One of the architects who gave evidence in the case said that the south and west walls were rather exposed for a London house and that in that situation a 9-inch solid brick wall would not prevent penetration of rain and that the walls should be cavity walls, or solid walls tile-hung, to prevent it. Another architect thought that a 9-inch wall there was bound to admit a certain amount of damp but that in due course, perhaps in two or three years, the bricks might "weather" and so reduce the penetration; but he agreed that weathering would not stop the damp completely. A third architect thought that the rain probably came through minute cracks in the cement mortar rather than through the bricks themselves and he gave some reasons for preferring the old type lime mortar. All three expert witnesses agreed that the bricks and mortar used were of good quality and the bricklayers' workmanship excellent.

The builder had precisely complied with his express contractual obligations but it was argued on behalf of the purchaser that there was still an overriding promise or warranty that the house, when built in strict accordance with the terms of the contract, would still be a habitable house. The Court of Appeal turned down that argument.

It was also argued that the unfortunate purchaser, no expert himself in the mysteries of architecture and house building, relied on the skill and judgment of the builder. This argument was also held to have no weight in view of the express bargain made between the parties. As the Master of the Rolls said in giving judgment, one could not help feeling a great deal of sympathy for the purchaser, but that a grown adult man is presumably capable of taking competent skilled advice if he wants to. If he elects not to take such advice but to make a bargain in precise terms with someone else, then, though no doubt he does rely on the skill of the other party in a sense, he only does so in the sense that he assumes that the other party will do the job he has promised to do competently and, at best, that he believes that the house he is going to build will be a habitable house.

All this is far short of importing into the bargain an overriding implied condition or warranty. The purchaser's argument appeared to mean that because he had chosen not to take advice himself, therefore there was some duty of care thrust on the builder which should more properly have been borne by somebody engaged by the purchaser. Sympathising as the Master of the Rolls did with the plaintiff (but also with the defendant, who appeared to be a perfectly conscientious builder who performed his task with the utmost skill), he held that the plaintiff could not recover damages in respect of the damp walls. The other two members of the Court of Appeal took the same view.

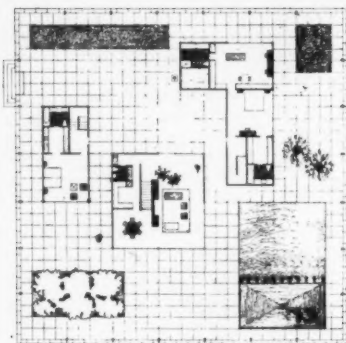
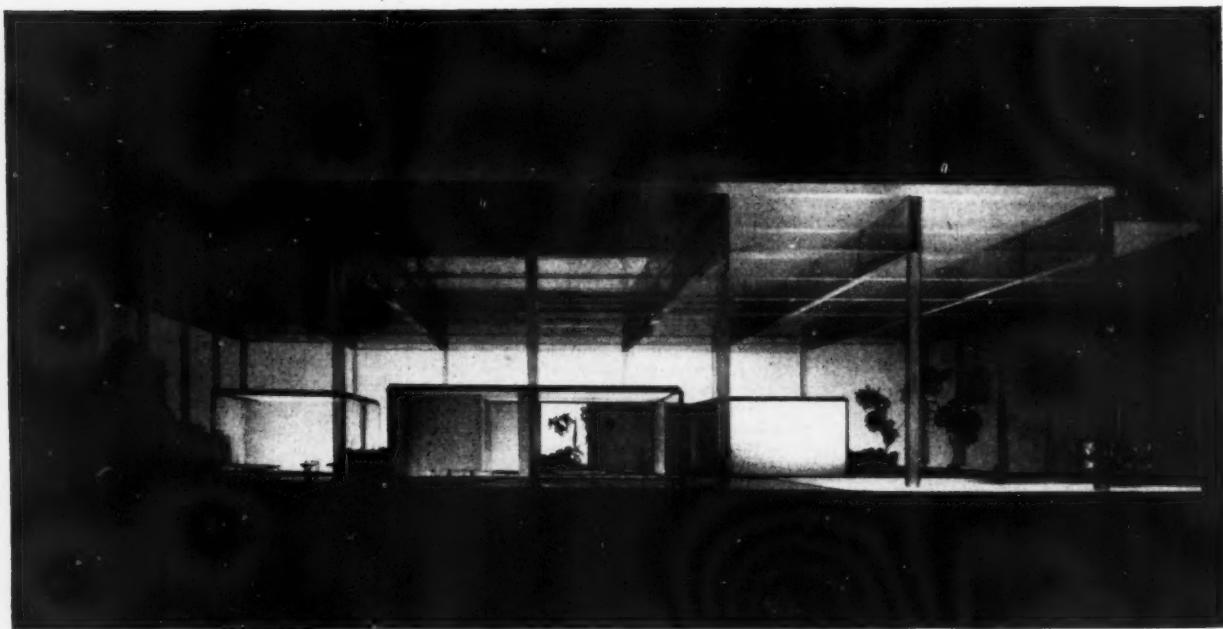
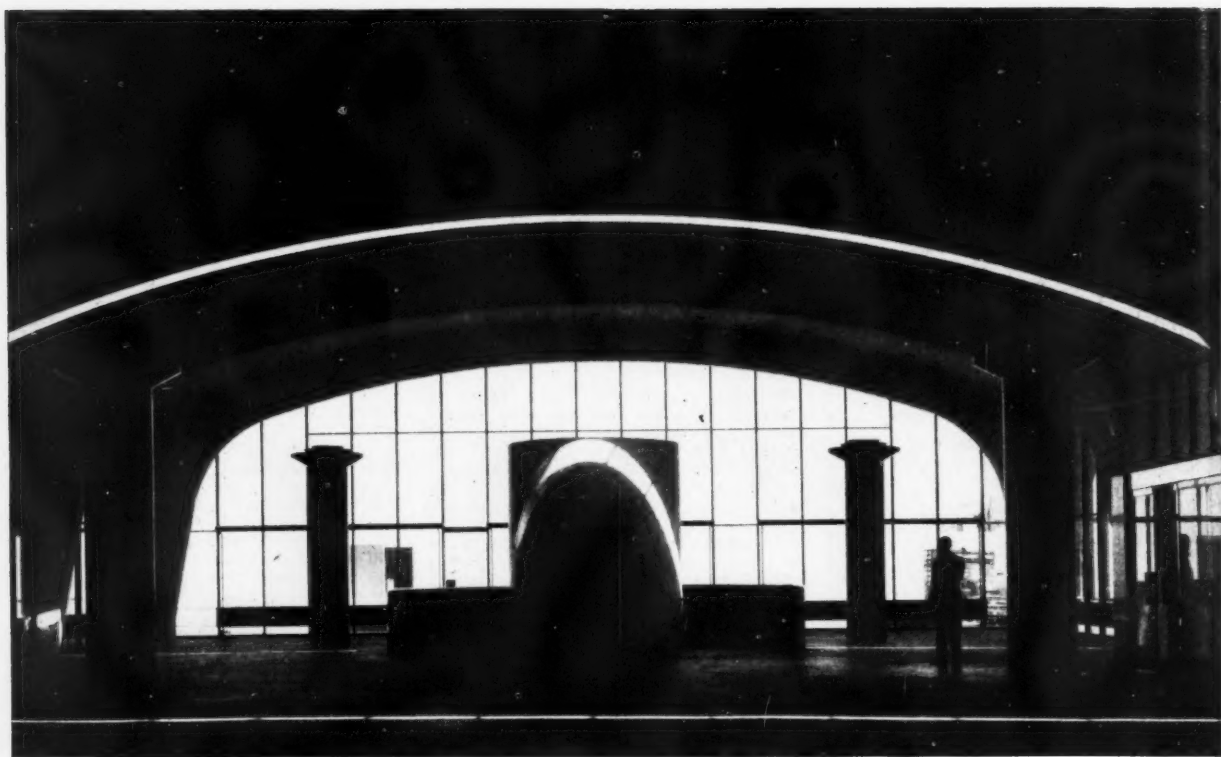
DIARY

Windows for Coventry. Exhibition at the Victoria and Albert Museum, South Kensington, S.W.7. Weekdays 10 a.m.-6 p.m., Sundays 2.30 p.m.-6 p.m. Admission 1s. 6d.

UNTIL SEPTEMBER 30

The Management of Design. COID 1956 Design Congress, three sessions: 1. Case Histories. 2. The Role of the Designer. 3. Implications for Management. At the Victoria and Albert Museum and the Royal College of Art, South Kensington.

SEPTEMBER 12 AND 13



THE GREAT INDOORS: "Do I take my hat off, or leave it on?" enquired Frank Lloyd Wright in Philip Johnson's famous glass house, "I can't tell whether I am indoors or out!" This type of ambiguity particularly pleases some American architects. Johnson's own project for a house on Mount Kisco, above and left, puts it to work by building a cluster of glass living-boxes under a thirteen-thousand square-foot canopy, making lighting effects like Rome railway station. But Pei and Associates exploit it differently in the transportation pavilion of Mile-High Centre in Denver, Colorado, top, where voyagers emerging from the lift-head find themselves in something like a contemporary roofscape, funnels and all, but still under a canopy. These designs were seen by Ian McGallum when he toured America recently—his account of which starts on the opposite page.

Earlier this year Ian McCallum, Executive Editor of the Architectural Review, went to Yale to teach architecture. Afterwards he did a five weeks' tour, looking not so much at "townscape and landscape paraphernalia" which he studied for the Review on his last visit to America about seven years ago, but at the main centres of architectural interest. Here is an account of the tour which he gave recently in a lecture at the ICA.

by Ian McCallum

COAST TO COAST

When I went to America this February it was almost seven years since my last visit. Then I had only stayed five weeks—five weeks of rapid sorties into New England, down through Pennsylvania and Maryland into Virginia, finally and briefly into the mid-West. The camera on that trip was focused not so much on architecture as on what came to be called (in the special number of the *Architectural Review* that resulted from it) "Man-made America," on townscape and landscape paraphernalia, the neat and the nasty, the gorgeous and the outrageous.

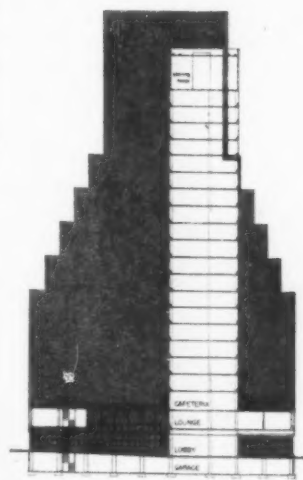
This time Yale had invited me to go over to teach architecture and I planned to take the opportunity afterwards to see some more of the country and as much of its architecture as I could in the month and a half that remained before I should return to England. Since I had a round-trip air ticket to San Francisco, the places I visited were more or less determined for me in advance by the airlines—fortunately they coincided reasonably well with the main centres of architectural interest.

Things had really got moving in seven

years, the boom in office property had brought Mr. Zeckendorff up and an amazing number of residential properties down. There were enormous holes on all hands, clouds of dust and a cacophony of riveting, drilling and welding. The boom alone, someone suggested, was insufficient to explain the chaos and inconvenience. One theory is that Americans have a guilt-complex about not having been bombed and this is their way of experiencing at least the after-effects. Certainly they are making much better use of their opportunities than we are. There is nothing being built in New York remotely as bad as, say, Haymarket or Airwork Houses; though much of it is undistinguished, largely as a result of daylight zoning. For the set-backs this zoning demands combined with the horizontal strip windows so popular until the advent of the curtain wall, result in buildings like enormous club sandwiches cut to the shape of a wedding cake.

One hopes the exceptions may soon prove the rule, though I suspect this is being a little optimistic. The first and still the main exception is the Lever Building. The U.N. Secretariat is, of course, another, but being on a free and open site its shape doesn't represent the departure from recent precedent that the Lever Building does. The diagram shows what shape the Lever Building might have taken if it had filled its zoning envelope, with its actual shape in white. Since the company only wanted 290,000 sq. ft. and didn't want to let off extra space, and since it was found that a provision in the zoning laws permitted a tower of any height without setbacks so long as the building did not occupy more than 25 per cent of its lot, a clear slab form was possible. But more than this, it provided the opportunity to landscape (or townscape) the 75 per cent. of the ground that was left. It doesn't take very complicated arithmetic to realise just what this might mean to a city if a number of building clients were prepared to accept the idea. Three-quarters of a site handed over to the public as free space and privately maintained as a public service is no mean gift. As we've seen, it is not entirely disinterested, the building can go higher if you build this

way, and the advertising value is not negligible (though as more of them get built this will presumably be a diminishing return). But there is a more serious disadvantage to the ordinary developer, for it is now established that above a certain height (about 40 storeys) rentable space for a number of reasons to do with circulation and structure,



Section through the Lever Building, New York. The dark area shows the shape the building could have taken.

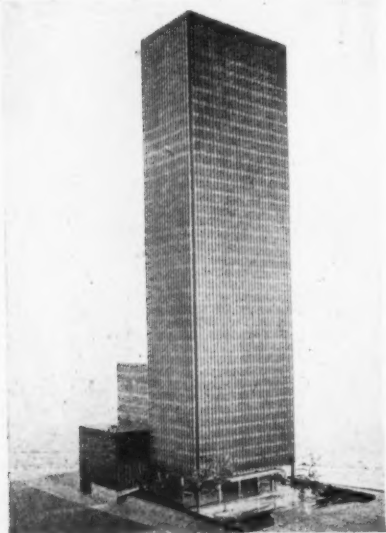
becomes uneconomic. So it seems that on Manhattan Island at least, it will not be the speculator but the spectacularly wealthy and responsible big businesses, building monuments in their own names who will follow this precedent. Fortunately, in a country as rich as America now is, there are fair number of such goliaths. And so, almost diagonally across from Lever we will soon see the Seagram building begin to rise back of a 200 ft. piazza, and down-town near Wall Street the Chase Manhattan Bank will have a 2½ acre piazza. Given a little extra municipal encouragement the trend might well create a new New York. One can envisage, if it were done with rather more foresight, a number of such public-private piazzas;



"Someday, my boy, all this will belong to Mr. William Zeckendorff." (Cartoon reproduced from the New Yorker.)

some at basement level, like the Rockefeller plaza; some at ground level, like Lever, or plinth level, like Seagrams, or half-a-floor up, like Chase Manhattan; all linked by over- or under-passes to form a pedestrian network; a series of breathing spaces that Manhattan so evidently lacks.

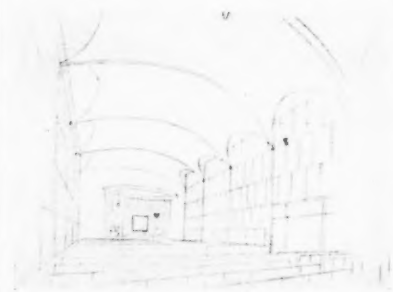
Mies van der Rohe and Philip Johnson, the architects of the Seagram building, have in mind for their piazza two sheets of water, flanking the central entrance approach on Park Avenue, and possessed of the most spectacular fountains since Versailles. One effect will be a foot-high spray-mist over the whole surface of the water; the jets that provide this will also be capable of an almost infinite variety of geometrical variations, rising, falling and weaving. In addition, if the municipal authorities permit it, there will be a pair of jets shooting on windless highdays and holidays, 200 ft. up into the air; there may also be concealed square devices in the centre of each pool capable of suddenly opening and swallowing thousands of gallons of water in one, or at any rate a few, instants, and as quickly and with a thund'rous roar, regurgitating it. The designs for the 38-storey building itself you have no doubt already seen and read about. The frame will be of steel and the curtain walls of solid bronze with infilling of granite and pink-grey glass. The bronze, which will make this building the most expensive per foot cube to be built in New York since the war, has been chosen first of all because it has a much finer quality finish than steel or aluminium; the edges



The Seagram building, New York.

are sharper and remain so and the surface more even. With the passage of time and the pollution of the city air it will go a velvety soot black. In precision of outline and in colour, therefore, it should meet the requirements of Mies's design idiom to perfection. For it is on these factors that the successful outcome of his brilliantly-understated obsession for profile, shadow lines and subtle relief, almost entirely depend. Philip Johnson has several interesting projects on the drawing boards at the moment.

One that is nearly built is the synagogue at Porchester, New York State. I don't consider it fair to show photos of it yet owing to the unfinished landscape, and the absence of important interior fittings and works of art. However, it is impressive to visit and here is a drawing of the space. The hung plaster ceiling is like a taut canvas velarium; exposed black steel ceiling members show above it and exposed black steel stanchions articulate the long walls; the



Philip Johnson's synagogue at Porchester, New York State.

arrow-slit openings between the artificial stone wall-panels are filled with stained glass of the very highest quality bought from manufacturers in Europe, and are in all colours of the spectrum. They are seen in perspective, reflected off white reveals, and the effect, as if the colours were emanating from the architecture, is very moving.

There is a project for a house at Mount Kisco, New York State. It has not yet reached the final stages of design, but the photograph of the model and the plan (page 224) give an idea of the way it is developing. The main living area is raised above the ground and comprises a terrace 115 feet square with a roof canopy 25 feet above it, partially open and partially closed. The whole of one side will have hydraulically-operated glass shields to protect the area from the north wind. There will be extensive planting and a large ornamental pool disposed in subtle relationship to three fully protected habitations, one for general sitting and dining, one for guests and one for the owners; the general living space will have a glass roof and over it the high canopy will be open, so that this space will actually be lighter than the terrace, which itself is designed to be about 50 per cent. shielded and with a quality of shimmering light similar to that in Rome railway station.

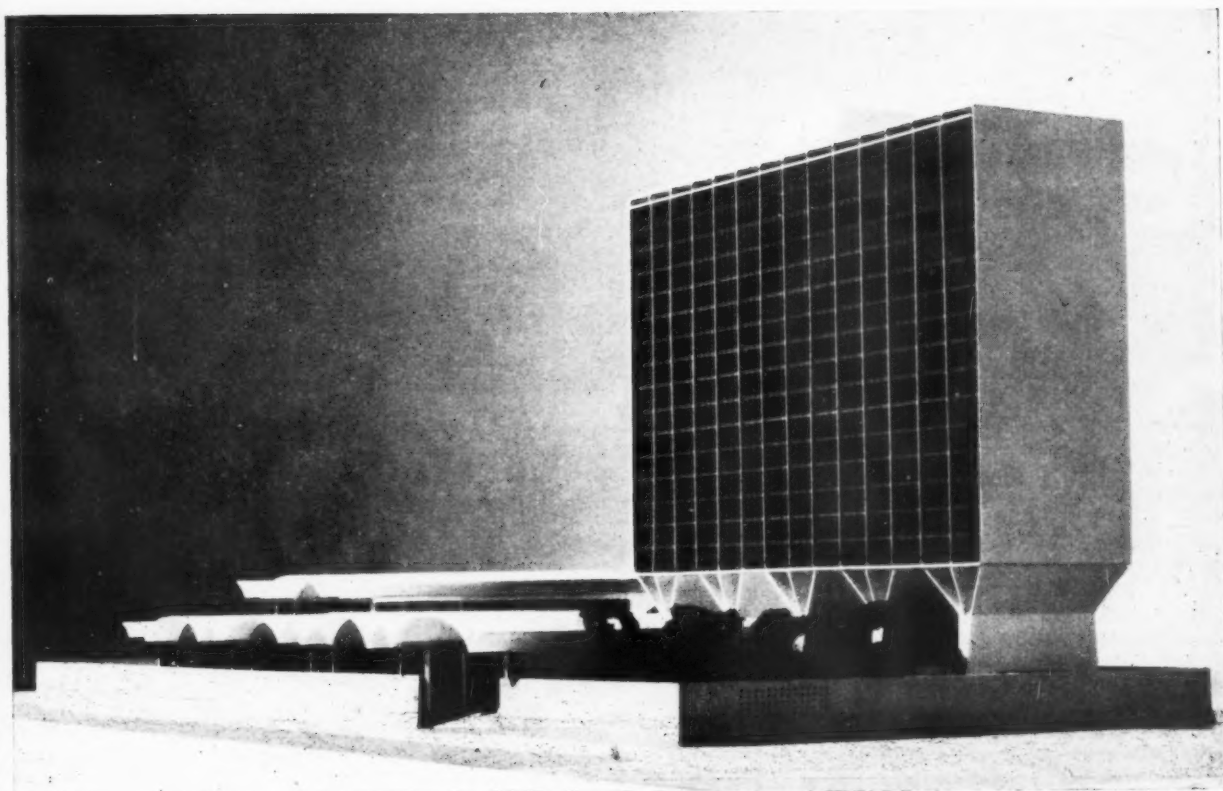
The largest of Philip Johnson's projects is a hotel in Havana, Cuba (opposite), estimated to cost something in the region of \$10,000,000. The slab block supported on trifurcated pilotis will be of box frame construction, expressed on the facade by bringing the frame about 9 in. beyond the glass; the reveals will be faced with Venetian glass mosaic. The bedrooms, which each occupy a bay, will have windows divided into four units, the centre ones sliding behind those at the side; behind them will be louvred shutters sliding in the same way, so that half of the window wall can be opened for air only or entirely opened for view as well. As the building is air-conditioned special controls have been designed to permit this.

Box frame construction has not, as far as

I can discover, ever been used in the States, presumably for reasons of high costs on shuttering. The only apparent drawback of using it in Cuba is the climate. For on the top floor there is no air space, such as a conventional frame structure will provide. You will notice, therefore, that Philip Johnson has supported a series of H beams along the transverse walls to provide a double roof with an open air space; a device which seems to me to terminate, very successfully, a vertical slab block such as this. I will not enter here the involved argument as to the relative merits of "concluded" architecture, as it has recently been described in America, as against "apparently continuous" architecture, which is, so to speak, sliced off at any horizontal or vertical division that accommodation requirements or site conditions may suggest, and without making any further architectural to-do about it. This building, with its solid end walls and double roof-line is, in my opinion, concluded architecture, though some might say that, to qualify fully, the end walls on the long elevations should appear thicker than the intervening ones—to me, an extremely unpleasant idea. The public rooms of the hotel, which includes a large gambling casino, are ceiled with shell concrete vaults with third-span cantilevers at each side; where two of these join they form pointed arches over narrower, intermediate bays. The site is on the ocean, but separated from it by a highway; the public rooms and gardens are therefore raised on a podium, and surrounded by walls of coral. Holes will be punched in the walls of various sizes and shapes and these will give carefully-timed views over sea and land. The gardens themselves will be densely planted with trees and shrubs specially chosen for texture and large-scale leaves; on to these a steady fine spray of water will be directed from concealed pipes, to produce the effect of a vigorous, if tamed, miniature jungle.

Perhaps the most important, certainly after the Seagram Building, the most spectacular architectural news from New York is the Chase Manhattan Bank. Here Skidmore, Owings and Merrill have, for the first time on a building of the type, brought the outer rows of structural columns on the longitudinal axis outside the curtain wall, thereby freeing the interior space from a series of extremely awkward and unpleasant obstructions. This design, in common with many by Skidmore, Owings and Merrill, is one that I would say represented un- or non-concluded architecture. You will see that it virtually *could* be extended either vertically or horizontally without the aesthetic necessity to change any existing element.

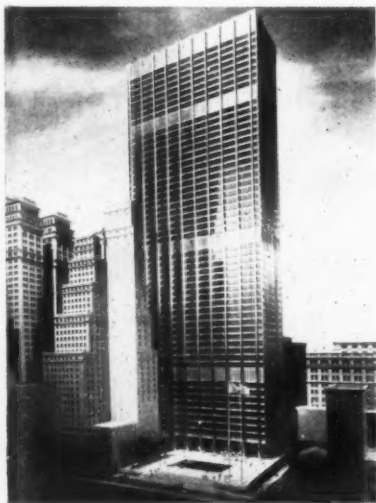
I don't think anyone has been so naive as to suggest that the all-glass slab building is also a well-functioning building. It is known that the problem of waterproofing has not yet been solved; indeed, one building has just undergone its third renewal of weather-stripping. It is known, too, that the expense of heating and cooling a largely glass building, not to mention the extra space taken up by the more elaborate plant needed, is very much more than it is in the case of a punched-hole building; also the glare must be countered by tinted glass and



Model of the proposed Monaco Hotel in Havana, Cuba, designed by Philip Johnson. In the foreground, under the shell concrete vaults, are the public rooms, including a casino. The surrounding wall is of coral, drilled with holes to give views over the sea.

venetian blinds (or similar screening) and this means that to obtain optimum conditions in even shallow office space, artificial light must be used all day as a booster. So far as planning is concerned, the clear slab form presents a disadvantage that is not encountered in the set-back wedding-cake

The Chase Manhattan Bank, New York, designed by Skidmore, Owings and Merrill.



building, for, as the number of lifts decreases on the upper floors, deep artificially lit-space is created, which is automatically dispensed with by set-backs. It says a great deal for America's faith in its architects and their architectural beliefs that, knowing all this, it is not only prepared to back them in this amazing architectural experiment but to continue by building bigger and bigger all-glass slab buildings. There is no doubt that if this architectural statement is, as it seems to be, an æsthetic answer to some deeply felt need of our, or at any rate, America's age, then perfection of the technical means to achieve it is only a matter of time—and, of course, of trial and error. One cannot but admire the spirit of these great corporate bodies who are willing to foot the bill.

From New York I travelled to New Haven on the New York, New Haven and Hartford Railway. The American railway systems each exhibit a strong individuality, as ours once did. The N.H. & H. I found particularly sympathetic, though I know few of the systems intimately; the most regretted gap being the Acheson, Topeka and the Santa Fe. I was standing one day on a platform at Stamford, Connecticut, changing trains, when one of the N.H. & H.'s enormous bell-ringing diesel locomotives drew into the far platform. Between the carriages that came to rest facing me were two large N.H.'s, both seen obliquely since they were on the curved ends. Obviously care and enjoyment had gone into their design and their colouring of red, black and white. As with all

good design they proved to be good neighbours of other objects and made other objects into good neighbours of them. A luggage handcart standing on the platform and the simple canopy overhead combined with them to form an intensely pleasurable picture. What I couldn't make out was when this lettering was done. The type was a nineteenth century one, a variant on the Egyptian face, but the scale in relation to the carriages and the handling of the colour was clearly not nineteenth century. Then on the sides of the carriages was a delightfully lettered vignette in an Edwardian style, giving the full and slightly unwieldy name New York, New Haven and Hartford Railroad, again the scale and colour perfectly handled.

I shortly discovered in the February number of the magazine *Industrial Design*, that these effects were no hangover or happy accident. Mr. McGinnis, the president of the railway, for a term of office which had ended just before my arrival in a near riot of stockholders and commuters and a snowstorm of New Yorker cartoons, had commissioned Herbert Matter to redesign all the lettering for the railway. It was not, I will hasten to add, because of his design policy that the storm arose. Overpage is a picture of Herbert Matter's lettering. The delightful Edwardian vignette I mentioned, which is not shown, proved to be genuine, for Mr. Matter himself liked it so much he felt unable to discard it.

Before catching the train on to New Haven and Yale University let us take the branch



Above left: front elevation of a New York, New Haven and Hartford Railway diesel locomotive, displaying Herbert Matter's design. Above right: the gazebo by Friedrich Kiesler outside Philip Johnson's Glass House.



line from Stamford to New Canaan and have a quick look once more at the Glass House. You will all have seen many photographs of it before, if you haven't in fact visited it, but you may not have seen the new kind of gazebo by Friedrich Kiesler that Philip Johnson has had built adjoining it: you will see depressions in the boards which top the foundations and these are to sit on and survey the prospect, which is, after all, one purpose of a gazebo—though perhaps, more accurately, the glass house itself should be called the gazebo, since its purpose also is largely to survey a prospect and since it, like the originals of the name, and unlike the Kiesler, provides shelter. Perhaps an open gazebo might now be called a *Kiesler*. On this, my second visit, I came to the conclusion that the glass house, granted its limited objectives is, to me, the most satisfactory twentieth century building I know. I can find no fault in it whatever, in scale, colour, lighting, plan or relationship to site. The way in which it dramatizes nature and the effects of the weather by day and night are breathtaking. No self-respecting stage manager would permit himself the melodramatic effects of nature as seen from the glass house—except perhaps in the last act of *Götterdämmerung*. Just before I left to come home an historic event took place. Frank Lloyd Wright paid his first visit to the glass house, coming over from the site of a house he is himself building in New Canaan. Philip Johnson was shaving in the cylindrical bathroom at the time and heard a voice saying to the maid, "I understand an architect lives here. Do you think he would build me a house?" Recognising the unmistakable tones, Philip Johnson emerged half under soap to be asked, "Well, Phil, do I take my hat off or leave it on. I can't tell whether I'm indoors or out."

To move on to a very different kind of environment—the neo-Gothic and neo-Colonial quads of Yale University, is to exchange nature enthroned for nature and artifice held captive. The care and money spent on planting and buildings must have been a record, excepting the houses of the robber barons, until the Seagram building. Fortunately there was a very gifted architect responsible; his name was James Gamble Rogers. I have been able to find out very

little about him except for a list of his buildings, the fact that he went to Yale, and the usual data from an obituary. He died in 1947. The Gothic parts of Yale (except for the hideous book stacks of the Sterling Library) are a meticulously observed reconstitution of English precedent, even to later Italianate additions built-in and numerous empty niches, for all the world as if Cromwell had been there. The scale both of the buildings and the spaces between them is excellent and the masonry and much of the carving is magnificent. The culmination is the Harkness Memorial tower of which I show you a view. In its setting it is



The Harkness Memorial tower at Yale.

hard to believe that it was only completed in the 'twenties. Not very ancient legend has it that on its completion and shortly after the workmen had painstakingly carried out the artificial weathering, Mrs. Harkness, the donor, passed through New Haven and found herself disenchanted with the effect. Whereupon the scaffolding was re-erected and the tower was once again given five hundred years of artificial weather, this time, it seems to me, with complete success. I do not tell you all this merely as an amusing aside, but because such enclaves of historicism as Yale represents have a meaning to America that we may find it hard to understand, weighed down, as we are, by the responsibilities of our ancient and heavily built-up heritage. If we were to wipe these islands clear of buildings and start again, could you put your hand on your heart and say you would not hanker after a few old stones even if they had to be faked a bit? You wouldn't do it of course, and neither would a right-thinking American architect

today; but say in all the clearance (and in all irony), that a few of the less successful efforts of Sir Gilbert Scott were all that was left, could you put your hand on your heart and say you would not treasure them like your very life-blood?

That, at any rate, is the position America begins to find itself in with regard to such buildings as these, now that it realises the days of faking (Williamsburg apart) are over. And a very interesting and tortured problem it presents to the contemporary architect who must build in close proximity to them. Paul Rudolph has recently been set just such a problem at Wellesley College, Massachusetts. The buildings seemed to me, from photography, to be not unlike those of Sheffield University among which Gollins, Melvin and Ward are so boldly and, I think, commendably building some totally contrasting structures in steel and glass. Here, I understand, no such possibility ever occurred, either to architect or clients. Neither did faking, for they would hardly have gone to a young architect with Paul Rudolph's record, if they had had such a thing in mind. No, both the board of Governors and their architect realized that this was a challenge that had not yet been successfully met. For here the new buildings were to play an integral part in the existing composition—a quite different situation from that which faced Gropius in the Harvard Graduate Centre or Lou Kahn in the Yale Art Gallery, both of which are on or beyond the periphery of earlier compositions.

I visited Paul Rudolph in the office he shares with Serge Chermayeff at Cambridge and saw him at work on this problem, and it brought home how very little the contemporary architect has to go on when he is faced with a problem of picturesque composition, which this one partly is. The central campus into which his art and music buildings must fit, is on top of a hill. The dormitory blocks which, but for his site, surround it, are of red brick, topped by high roofs studded with gabled dormers; the whole composition is held together by a neo-Gothic tower. Aside, therefore, from devising new and justifiable ways of using quantities of red brick, Rudolph was faced, so he felt, with the desirability of echoing the serrated roof line and of composing his buildings so that the changing picture of new and old in relation to one another and most particularly to the tower, should be satisfactory from each stage of whatever path one might take up the hill and on to the campus.

On my flight west I stopped first of all at that new pilgrimage centre for junketing architects, Detroit. More accurately, at Royal Oak and Bloomfield Hills, Michigan, just beyond the boundaries if such they can be called of subtopian Detroit. Here are the offices respectively of Minoru Yamasaki, architect of the new St. Louis airport and of Eero Saarinen. Yama as he is known to his friends, has a rapidly growing practice and an early nineteenth century white frame house, the ground floor of which has been extended in all directions, leaving the earlier part as a sort of decorated lantern. The photograph on page 229 shows him at the living room door with his delightful miniature Bertoia golden snowstorm visible through the glass. The spectacular sight in this part of the



Minoru Yamasaki at the door of his extended nineteenth-century home. On the left is one of Bertioia's bronze space-screens.

world is, of course, General Motors Technical centre, what the Forum has called G.M.'s "Industrial Versailles." So far as conspicuous expenditure is concerned, this is no overstatement.

Eero Saarinen's altogether admirable aim has been to apply the latest industrial tech-

niques, where they are relevant, to the design and construction of the buildings. Some of the techniques and materials are, in fact, used here for the first time; among them the two-inch thick porcelain-enamel wall-panels which come to the site already finished both outside and in, the moulded plastic-pan luminous ceilings and the neoprene gasket weather seal; the latter was developed from the sealing gasket used on buses and cars, and is zipped into place around the external junction of aluminium wall frame and glass or panel infill: it can as easily be unzipped for replacements.

The brightly coloured, glazed-brick end-walls, which are designed to provide visual accents in the vast composition, are technically of earlier origin—Assyrian of the 9th century B.C., the handout explains. The colours used are deep crimson, scarlet, tangerine, lemon yellow, chartreuse, royal blue, sky blue, grey, brown, black and white.

I haven't time to give you a thorough tour of this enormous undertaking; but I will touch on a few highlights and general impressions. My main criticism of the composition is that it just doesn't hang together. And I don't think the planting, when it grows

up, is either going to pull it together or conceal what I consider the hesitant and under-emphatic rhythm of solids and voids. For, although over 13,000 trees have been planted, 600 of them between 25 and 60 feet high, and fine though they will be, when fully grown, they do not appear to follow, in their planting plan, either the close-knit architectural style of the continent or the contrasting irregularity of the English Picturesque, but instead are well-spaced out in single file or are marshalled into solid plantations.

I think a good case could be made for providing pedestrian-scale spaces around and between the various groups of buildings (there is but one now in front of the canteen) and for leaving the larger composition as a space-time experience to be observed travelling by car, with the rhythm and relationship of buildings, spaces and planting carefully pre-determined, but never visible as one architectural whole. However, this has not been done, though it is suggested and, indeed, almost inevitable, given America's dependence on the motor car, that the spectacle be seen when travelling at about 30 miles an hour—an experience

Eero Saarinen's General Motors Technical centre at Detroit. On the left is the 132 ft. high water tower.





Another view of the General Motors Technical centre at Detroit. The dome on the right is the styling department auditorium.

which exaggerates rather than minimizes the faults in the composition. The only major accent is the splendid 132 foot high water tower, though this is appreciated as an isolated phenomenon and does not, indeed, could not have a considered relationship to the buildings around, few of which are over three storeys high.

The dome of the auditorium for the styling department, which might have provided another accent, although interesting technically (it is $\frac{3}{8}$ in. thick or, in relation to the area, as 1/30 of an egg shell is to its area) and on paper large physically (65 feet high and spanning 188 feet), disconcertingly does a vanishing trick.

The difficulty surely is that a convex surface is the best possible way of minimizing the actual size of the volume enclosed. Why were most successful domes always raised up on drums, themselves placed high in the air? And why were the domes then fluted, ribbed, panelled or, at the very least, textured and then, to make assurance doubly sure, topped with lanterns and gilded eye-catchers? Surely it was to define and, so to speak, solidify a self-liquidating form. I just don't know what today's answer is to this problem; at present it would seem to me better if you want the kind of internal space such a dome provides, not to place it at a point in a composition which demands its emphatic presence; certainly not having done so, as at General Motors, then to surface it with polished aluminium so that, chameleon-like, it takes on the colours of the sky. A bubble is all very fine, but it is not very emphatic—until it explodes.

Having made these points, I want to correct any impression I may have given that this endeavour is an architectural failure. It is well worth travelling four thousand miles to see, you can learn more from its mistakes than from most of Europe's contemporary architectural successes, and where it has succeeded it has already influenced American architecture, particularly in the technical field, from coast to coast. Also, it is by an architect who has placed himself in that

most vulnerable of positions, the unfenced one, he neither sits on top nor rests definitely one side or the other, but roams freely among the embarrassingly varied technical and formal solutions that are wide open and would frighten a lesser man into taking a stand on the ground he knows. How long an artist can safely go on roaming in this way is one of those larger questions of theory that I cannot enter into now.

My visit to Chicago was a Mies pilgrimage, for I had "done" Sullivan and Wright on the previous one. At that time there was no Farnsworth House and they had but started the foundations of the Lake Shore apartments. I am sorry to say that even this time there was still no Farnsworth House, for me or indeed for anyone else, owing to the embarrassing law-suit which still continues between client and architect, and which has induced Dr. Farnsworth to bar all visitors.

The Lakeshore apartments I do not have to describe in detail to an audience here. To me the form, surface modelling and the relationship between the two blocks more than fully met my expectations. I had heard so much, though, of the inconvenience of living in them that I was anxious to see for myself. The main charge is the absence of any efficient means of reducing the effects, particularly on the west sides, of the fierce summer sun. There is no doubt that the standard curtains provided were largely ineffectual in doing this, but blinds used close to the glass have had better success. Air conditioning is really the only satisfactory solution and I asked Herbert Greenwald, the Zeckendorff of the middle west, who financed these and the other Mies apartments now under construction, why air conditioning had not been incorporated as part of the mechanical equipment. His answer throws an interesting side light on changing American customs and attitudes. When the Lakeshore apartments were built, he told me, the prospective tenants were circularized to discover how many wanted air-conditioning and were prepared to pay for

it. Out of all the future tenants of these two buildings only 11 said they considered it necessary. In the intervening eight years the attitude to it has so far changed that over 85 per cent. of those now asked consider it not just a luxury but a necessity, and both the new Esplanade apartments adjoining 860, Lakeshore Drive,* and the Commonwealth apartments further north along the Lake, will have air conditioning as standard equipment.

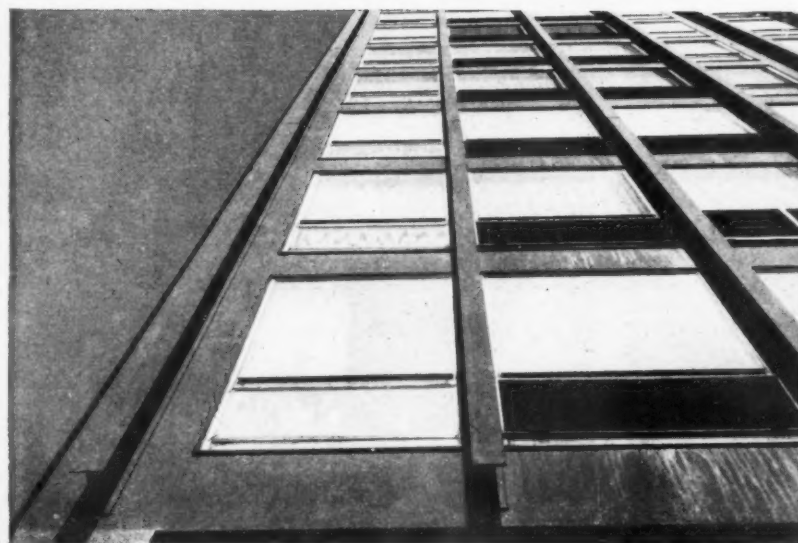
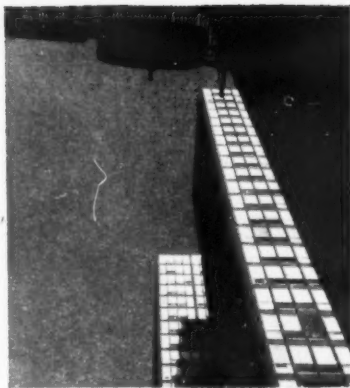
If I'm going to get to the other coast tonight I'll have to pass rather quickly by Mies' IIT buildings—raising my hat in respect and admiration for the new architecture building which encloses a stupendous piece of unobstructed and rarified Miesian "spacemanship" 120 by 220 ft. But I'm impatient to get to Denver. This was the first piece of really unfamiliar ground to me and at the core of the mile-high city was the Mile High Centre, an office block financed by Mr. Zeckendorff himself, and designed by I. M. Pei, his resident and exceedingly gifted architect. A very sophisticated piece of work it is to come upon, in this western fastness; at the end of seemingly eternal plains and backed by the formidable Rockies.

I. M. Pei's debt to Mies is at times a little too much in evidence at the Mile High Centre; too much because in some respects the lessons of the master have been studied too little. The shape of the block itself, nearly square, lacks drama; an accusation you cannot level at the Lakeshore apartments, and the modelling of the façades lacks depth and interest; the shallow grooves down the main stanchions being quite insufficient to provide this.

In what, then, does it succeed? First of all it succeeds with these faults, as against anything else one can find in Denver, or indeed, a hundred other similar cities. It

* The postal address of the Lakeshore apartments by which, now they are not alone on Lakeshore Drive, they will presumably henceforth be known.

Much has been made of the flat abstract pattern of the facades of Mies van der Rohe's Lake Shore apartments, but they are never seen flat on—except by the inhabitants of the neighbouring blocks that crowd close to them (visible at right)—the normal view being a spectacular vertical rake with the perspective nodding the heads of the two blocks together (below) and dramatizing the uninterrupted rise of the mullion stanchions (bottom) that many still believe to be unnecessary decorative additions.



succeeds handsomely, for instance, in comparison with a new office building one block away bespattered with tiresome contemporary clichés painful to look on, and unnecessary, when the uncreative architect can buy perfectly good curtain walls off the peg, like those, below, on Denver's outskirts. Apart from its praiseworthy failings the Mile High Centre also has some praiseworthy virtues. The colours and finishes are quite superb. The structural members are faced with rough-cast aluminium plates with a soot black finish; the porcelain enamel facing to the air-conditioning ducts which provide the intermediate rhythm between the stanchions are an excellent putty colour; the black and putty combine together with the blue-tinted glass windows to produce a very subtle effect of understatement.

Here again I am afraid I must agree with another criticism of the building. It relates to the pattern of the air-conditioning ducts.

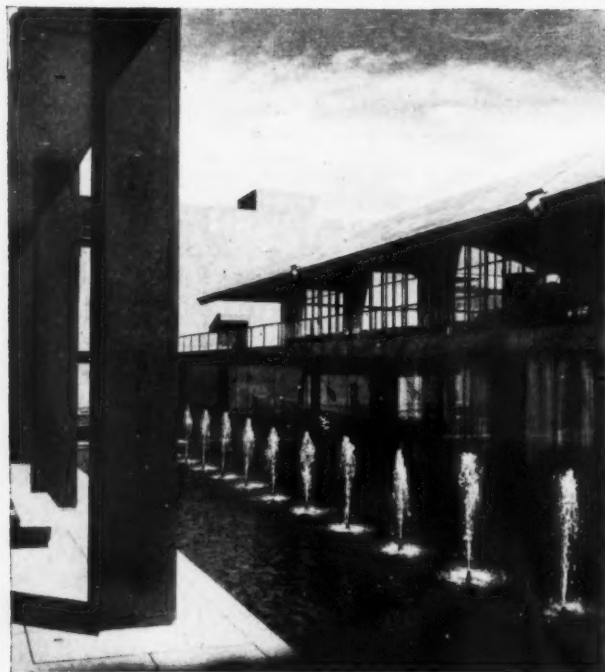
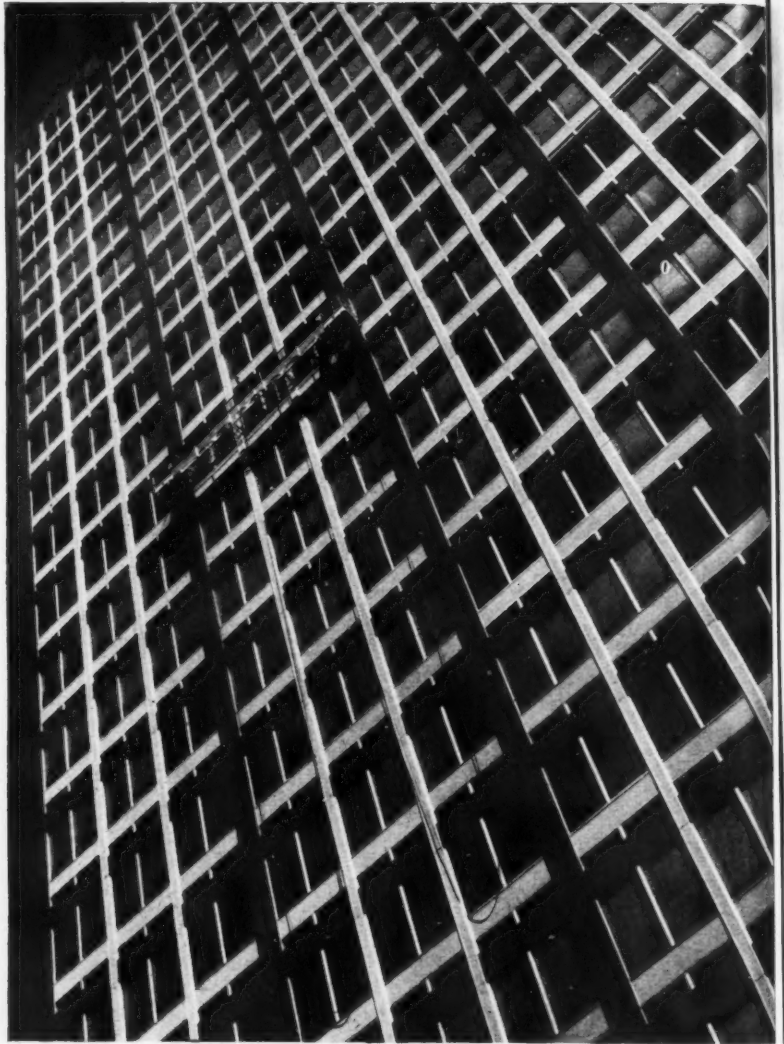
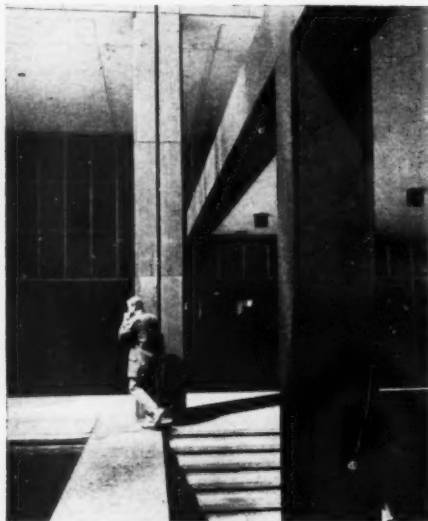


"Off the peg" curtain walling in Denver.

I can see why Mr. Pei wanted an intermediate rhythm in the bays since he had not chosen to follow Mies with high-relief window mullions. But the shape and colour of the ducts which tend to make them look like structural elements, combined with the way they are terminated in an attempt to show they are not, is, I think, unsatisfactory and distracting.

The Mile High Centre is possessed, like the New York buildings I have described, of a piazza. It is a model of how such a space can be handled, and exploits a number of devices which the *Architectural Review* has, from time to time, suggested as part of the legitimate vocabulary of the townscape—ambiguity, change of level, truncation, narrow vistas, apart from the more obvious ones of patterned and coloured floorscapes, planting used as furniture and furniture as planting, water, lighting and so on.

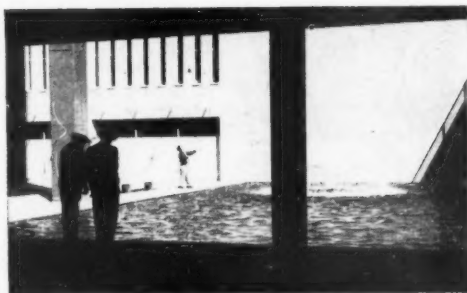
The entrance hall is merely a glassed-in section of a part of the piazza which runs below the building; there is no change in the "out-of-doors" floor surface, bay trees in tubs run, as it were, straight through the glass, seating is heavy stone benches both outside and in, and the building directory is housed behind a semi-circular wooden screen which, in this context, takes on the appearance of a beautifully trimmed hedge. The lift-hall runs off this indoor-outdoor space, and is treated, exaggeratedly, as an indoor space; there is thick carpeting and a low wire-mesh ceiling with luxurious lighting shining through it; in fact, a sort of space you are accustomed to enter through doors, and which acquires heightened drama when you realize that, here, none are needed.



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On the opposite page are some more pictures of the Mile-High Centre at Denver, by Ieoh Ming Pei (see also page 224). Top left: dark grey anodised cast aluminium and buff porcelain enamelled steel create the interlacing pattern on the office tower. The picture centre left and the two bottom ones show the colonnade in the piazza. The window-cleaning "spider" is shown in the photograph top right. In his article Mr. McCallum refers to the "delightful compliment paid to the architect by a free-lance preacher who took position in a space that might have been designed for him" facing the upper piazza. He is shown in the photograph on the right.



While I was photographing in the piazza, a delightful compliment was paid the architect by a free-lance preacher who took up position in a space that might have been designed for him, facing a fountain and a raised terrace. He had hardly got under way in a powerful, histrionic style, when the building manager arrived to turn him off—a depressing failure to understand the very purpose of a piazza.

To reach San Francisco from Denver your plane must make a great spiral to gain height for the crossing of the Rockies. Vertiginously below you are valleys, some of them spanned by remote dams, while away to the east the great plain stretches all of its thousand miles to Chicago and beyond. And then, steadily ascending you approach the Great Divide, with thoughts rising to meet the occasion. Alas! for air travel; the clouds envelop you and with ears gently popping your thoughts descend to the fallibility of human judgment and the efficiency of altimeters. Patience is rewarded, however, though the nerves are not set entirely at rest, when you emerge over what can only be described as the spaceman's moon. It is the desert of Nevada and far exceeds in beauty and strangeness the most highly-coloured spectres of the science-fiction illustrator; though its resemblance to them is sometimes so close as *not* to seem coincidental.

The approach to San Francisco at night is a confusion of light-spangled bays and bridges which I noticed it was impossible even for homing citizens to untangle as the plane banked and turned, and then turned again, to come down over the water. Though it is a city spectacularly got up to be looked at from all sides, I consider the best view of all is on the approach to the Golden Gate bridge from Marin County in the north. What I had not expected and what this view so well shows is the city's whiteness. It is what I imagine a large North African seaport looks like, its white cube buildings rising from a blue bay to hilltop towers. And it remains this way, for there is no heavy industry to pollute the atmosphere, and though it is often shrouded in mist it is never fog-ridden. The worst I heard its critics call it was an old-fashioned place pretending vainly to the raffish charm it had before the earthquake. This was one of these unkind half-truths that struck home particularly unfairly just then, when it was celebrating the 50th. anniversary of the earthquake in what was, perhaps, a slightly excessive flood of reminiscence. The worst I heard its devoted admirers call it was a city that was abandoning itself to the freeway, there is no doubt that the raised super-

highway is becoming a serious menace to its character, but in a region which has an influx of 100,000 people a year most of them owning not one, but two cars, I cannot see what alternative there is, if they are not to measure out their days in traffic jams. I didn't find many outstanding new buildings.

There is, of course, the Bay Region Style and seven years ago this might have seemed more interesting to me than it does now: interesting, as, after the war, Swedish architecture was, before everyone got underway again. But after the adventurous technical explorations of the eastern architects and the aesthetic sophistications of a Mile High Centre, the cosy redwood vernacular of the Bay Region, combined though it may be with large sheets of plate-glass and pleasing concepts of indoor-outdoor living, does seem a little fusty and unadventurous. The impression is heightened by a visit to the Christian Science church across the bay near Berkeley University. This remarkable building completed in 1912 by Bernard Maybeck, an early master of the Bay Region Style (he is still alive and living nearby aged 94), far from looking back, though it did look across the Pacific for some of its motifs, had, at this early date, asbestos sheets as an exterior

wall finish and for windows, standard English factory lights in continuous rows; both of them brilliantly handled and still looking their best.

There are, of course, a number of architects working outside the regional idiom. There's the Skidmore Owings & Merrill San Francisco branch. Overleaf is a naval research station they have built further south at Monterey, and they are just about to start building an office block in San Francisco for the Crown Zellerbach paper corporation, a smaller Lever building with the back staircase block brought out on to the main street and made into, I think, a rather questionable feature. There's Rafael Soriano, a fugitive from Los Angeles, who's only just getting under way in a floating office on a houseboat across the bay at Tiburon. And there are a number of others in San Francisco and at Stamford, just south of it, where Ed Stone's office is. I had the feeling that in *another* seven years this region will have broken with the more stultifying aspect of its vernacular tradition and will have some pretty interesting things to show.

I cannot imagine any greater contrast to San Francisco than Los Angeles: the one



Three aspects of San Francisco: above left, late 19th century houses; above, the proposed "freeway" which would obscure the face of the Ferry Building; left, Bay Region Style—centre for the Behavioral Sciences at Palo Alto, by Wurster, Bernardi and Emmons.



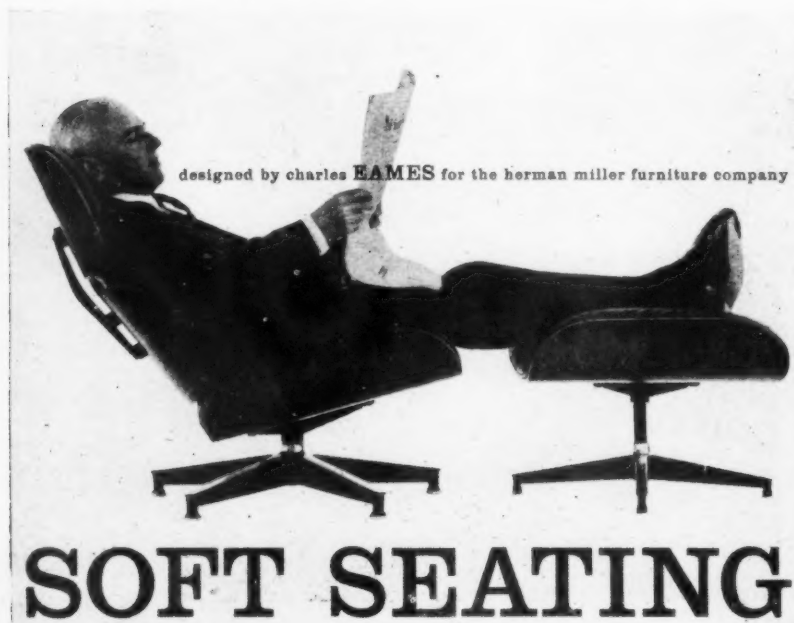
Skidmore, Owings and Merrill's naval research station at Monterey.

unmistakably metropolitan, the other unerringly suburban. There is a kind of centre, what in America is known as downtown, but it is far away from almost everywhere, and like the City of London is deserted at night: adjoining it is a civic centre, but this is a mere matter of administration, if running an accretion of suburbs fifty miles across can be called mere administration. The effect of it all as one belts along Sunset or Wilshire Boulevards is of eternally recurring Sunningdales, in-

terspersed at intervals with an occasional Slough.

Right at the Pacific end of Sunset Boulevard, down a hill called Chataqua and up a leafy drive, is a miniature park set on a ledge in a cliff; concealed below it is one of those Sloughs bordering on a great public beach; nothing is, however, visible from the ledge but the ocean; lonely-looking hawks fly between the tall, graceful eucalyptus trees, lonely but for the inhabitants of a pair of graceful steel structures hard against

Charles Eames' lounge chair and ottoman.



designed by charles EAMES for the herman miller furniture company

SOFT SEATING

the upper cliff face. For here, with unparalleled verve, live Charles and Ray Eames.

I would like to give you the detailed appreciation that the work and beliefs of Charles and Ray Eames deserve—their architecture, furniture, films, typography, way of life—but it would take another lecture quite as long as this one to do them justice. As a recent note in the ICA bulletin observed "In an age of specialising the universality artists and designers once aspired to is impossible to attain: Eames replaces the *wish* for universality by the *fact* of versatility and resourcefulness."

Below left is Charles Eames' new lounge chair and ottoman designed for Herman Miller. In his description of it Charles Eames says, "We came to realize in our search for this kind of comfort that feathers and down are pretty good materials. Like few others they give one the feeling of settling in and, when you get up, feathers and down don't instantly pop back into place as if you'd never been there. The leather cushions have built-in wrinkles to start with . . . a clue that spells comfort to come."

After the Eameses the rest of Los Angeles seems a little flat, no, not flat, flatulent. Its more extreme aspects were mirrored very well, I thought, by a lady decorator who, when it was suggested that her interiors were, perhaps, a little garish, replied, "Vat should I do vith taste? Ven people walk into my rooms I vant that they should drop daid."

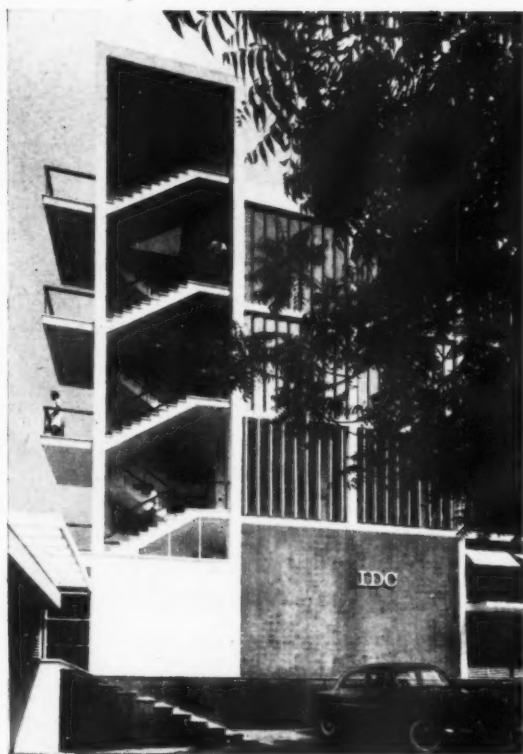
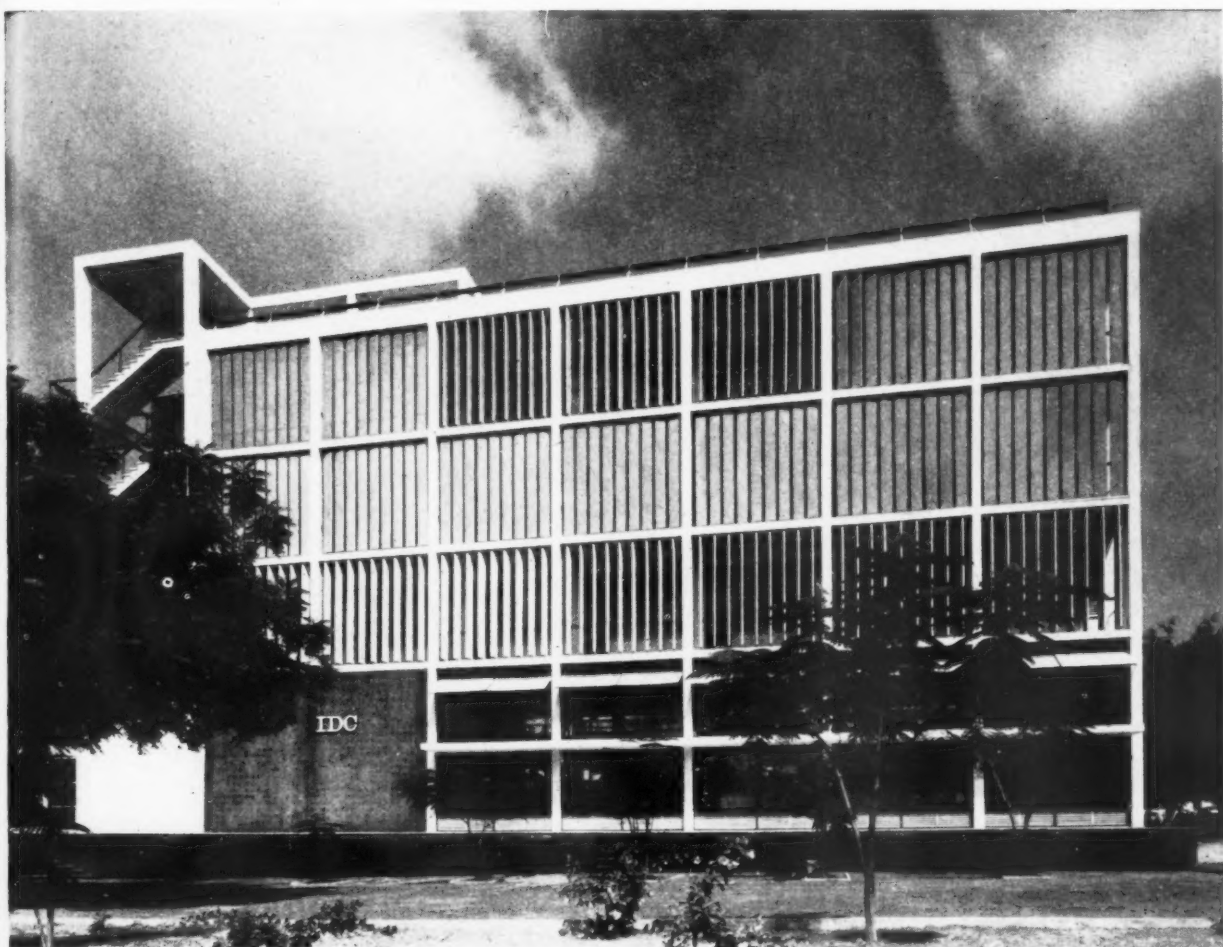
To be fair, however, there are the astrigencies of John Entenza and the Case Study



Charles and Ray Eames' house at Los Angeles.

House architects and several others I could tell you about if I had the time, but I must leave them out along with so many other things, from Yamasaki's St. Louis Airport to the Yale Art Gallery, from Forest Lawn to Frank Lloyd Wright. If there's one thing that a brief visit to America teaches you it is that architecture is a live art there—money's thrown away on it, it makes news, it's kicked around, it's vulgar, refined, reckless, extravagant, cheeseparing, naive, sophisticated—and if you can bear to see England made to look more than a little staid and middle-aged, I suggest you thumb a ride and go have a look for yourself.

IDC OFFICES AT ACCRA, GOLD COAST, WEST AFRICA



Last week we illustrated the main teaching buildings at the College of Technology, Kumasi, designed by James Cubitt, Scott and Partners. This week we illustrate other buildings on the Gold Coast, designed by the same architects. In the planning of these non-educational buildings (block of offices, a memorial hall and a bungalow) the same climatic conditions applied. It was essential to prevent the S.W. and S.E. sun from shining into the buildings and to take advantage of the prevailing light breezes. On this page and on page 236 are views of the offices for the semi-governmental organisation, the Industrial Development Corporation, in Station Road, Accra, a coastal city on the east side of the country. The building is the first to be completed on a site which will eventually also contain a five-storey Co-operative Bank, a Co-operative store and offices for the Cocoa Marketing Board. Above and left, the south facade of the I.D.C. offices, showing the open staircase at the south-west corner of the block. The block stands on a hill and there are fine views southwards over the city.

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New Dolcis Shoe Shop, 307 Oxford Street, W.1. Staff Architect : Ellis E. Somake, F.R.I.B.A.

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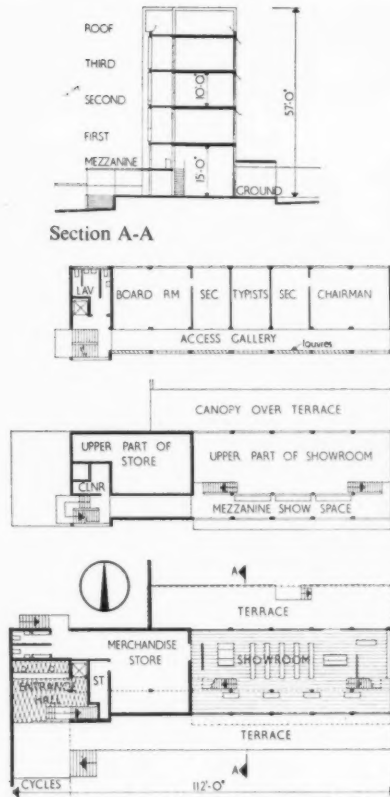
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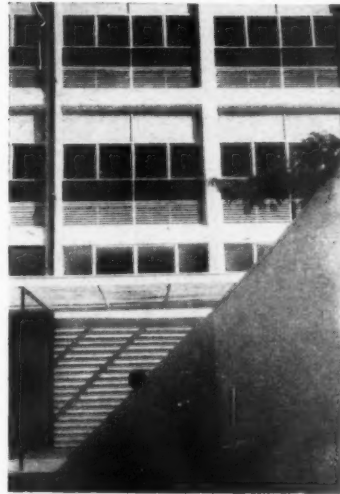
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IDC OFFICES AT ACCRA, GOLD COAST continued



Ground floor, mezzanine and typical upper floor plans [Scale: $\frac{1}{4}$ " = 1' 0"]

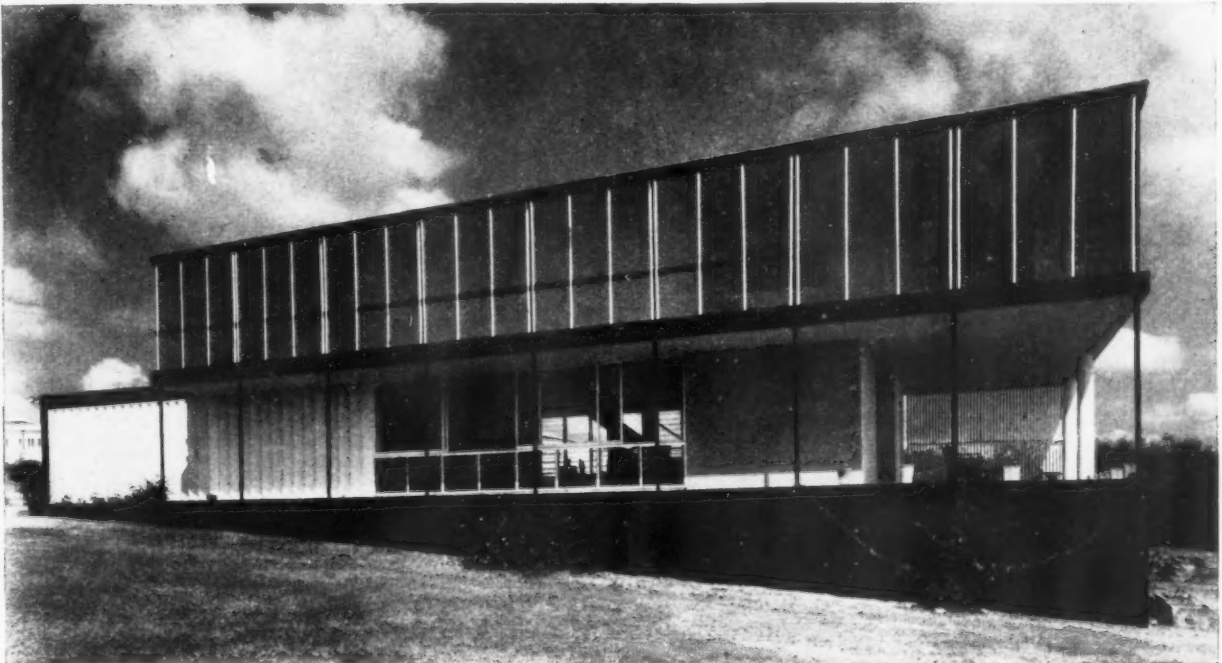


Most of the ground floor and mezzanine is used as a showroom for furniture and other products manufactured in the I.D.C. factories. The flat roof is used for open-air film shows and receptions. The construction consists of a r.c. frame, hollow tile floors and infill walls of concrete blocks. Left, part of the north facade and below, typical upper floor access gallery.



On the upper floors there are access galleries running the length of the block, clad entirely with vertical louvres, which are hand-operated and can be separately controlled in each bay. The block provides accommodation for the directors and staff of the Corporation and for personnel of affiliated organisations.

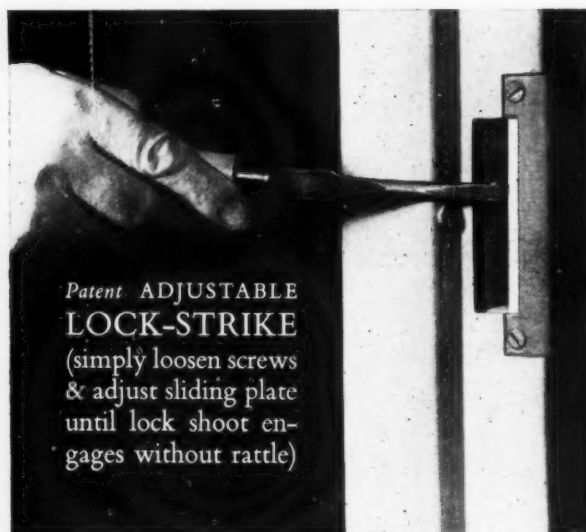
LIBRARY BOARD BUNGALOW AT ACCRA, GOLD COAST



An illustration of the bungalow designed by James Cubitt, 1956, as it formed the basis for the design of the Royal Scott and Partners for the chief librarian of the Gold Coast, appeared on page 113 of the JOURNAL for July 26,

The bungalow, seen above from the south-east, is L-shaped

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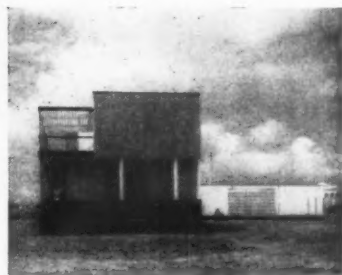
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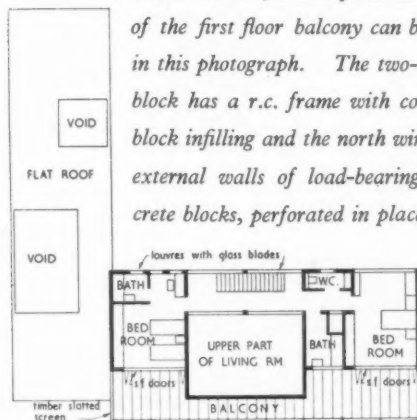
MEMBER OF THE METAL  WINDOW ASSOCIATION

LIBRARY BOARD BUNGALOW AT ACCRA *continued*

on plan; the main living accommodation is in a two-storey wing on an east-west axis, with a single-storey wing containing servants' quarters and kitchen to the north-west. The living room, in the centre of the main block, is open at first-floor level, with a floor-to-ceiling height of 16 ft. 6 in. A balcony, glazed from floor to ceiling on three sides, occupies the entire south facade. Windows to the two main bedrooms and bathroom open on to this balcony. Below, left, the living room seen through the glass shelves which divide the living and dining areas on the ground floor. The south wall of the dining room consists of



pivoted wood louvers. The first floor balcony projects 4 ft. 6 in. on the south side, acting as a sun-break to the living area. Above left, the living room from the first floor landing. Above, the bungalow from the east, with the servants' quarters on the right. The timber louvers, which form the roof of the first floor balcony can be seen in this photograph. The two-storey block has a r.c. frame with concrete block infilling and the north wing has external walls of load-bearing concrete blocks, perforated in places.

Ground floor plan and Section A-A [Scale: $\frac{1}{8}'' = 1' 0''$]

First floor plan



Meet Perishin' Fred!

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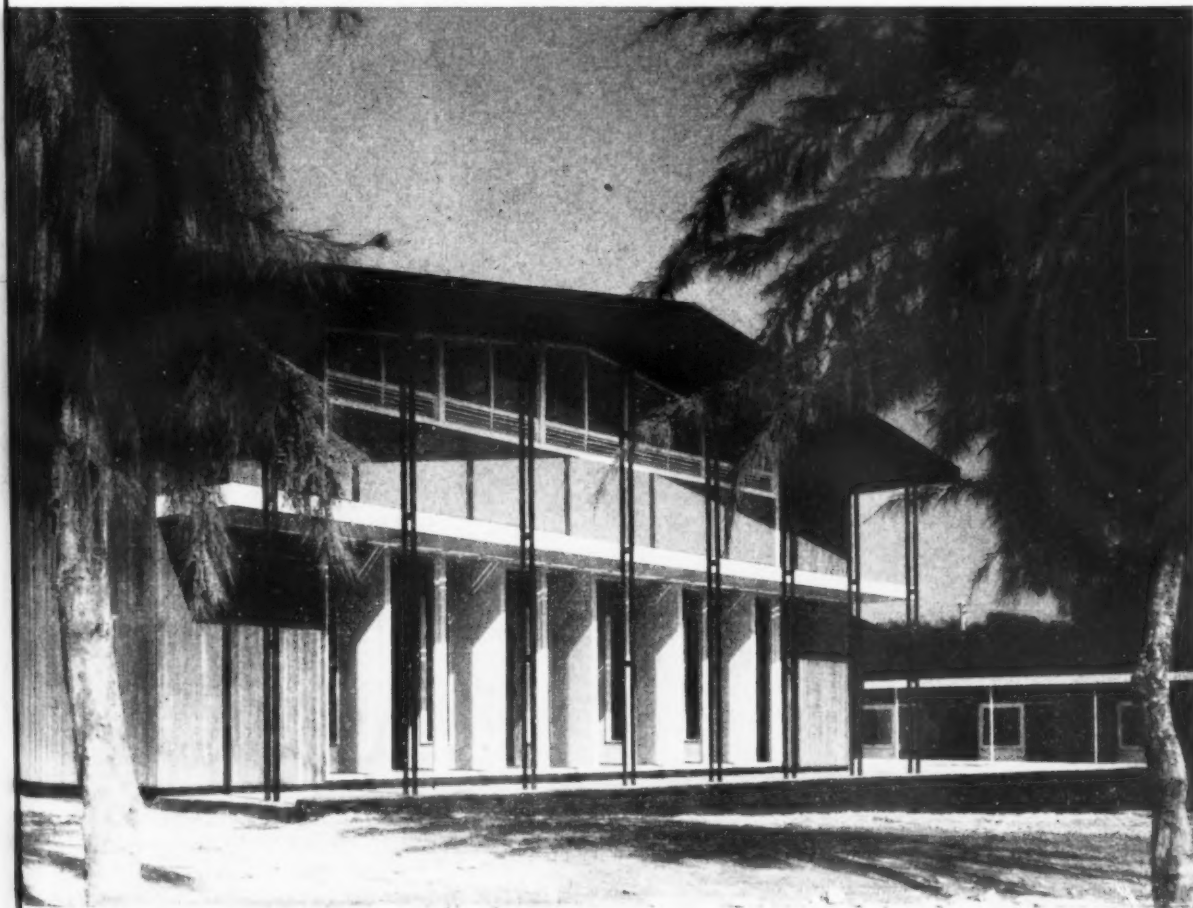
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MEMORIAL HALL AT ACCRA, GOLD COAST



This assembly hall (seen from the south-west) was built as a war memorial to Gold Coast personnel. It is sited near the government centre of Accra, off the main coastal road. Accommodation consists of a small multi-purpose assembly hall intended for meetings and social functions, with an entrance foyer and bar, offices and cloakrooms. There is also a small flat for the resident secretary and a car-port for two cars. Owing to limited funds (the total cost of the building was only £12,000)

the building is of the simplest kind and was the first building designed in the Gold Coast by the architects to have a pitched roof. Construction is largely timber-framed and boarded, with local timbers. To give a clear floor space in the assembly hall special laminated trusses were designed, but owing to local inexperience the contractors found it easier and cheaper to have these made in Holland and shipped out to Accra. Special precautions were taken to avoid insect infestation by raising the building up on



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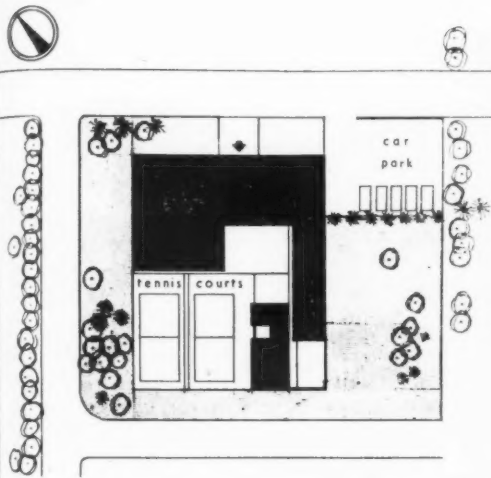
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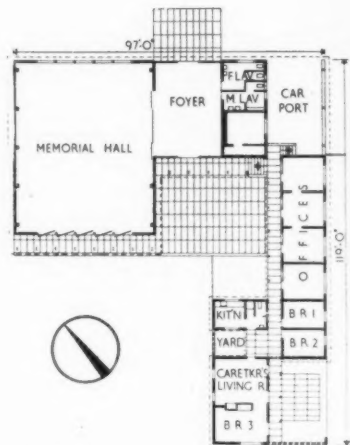
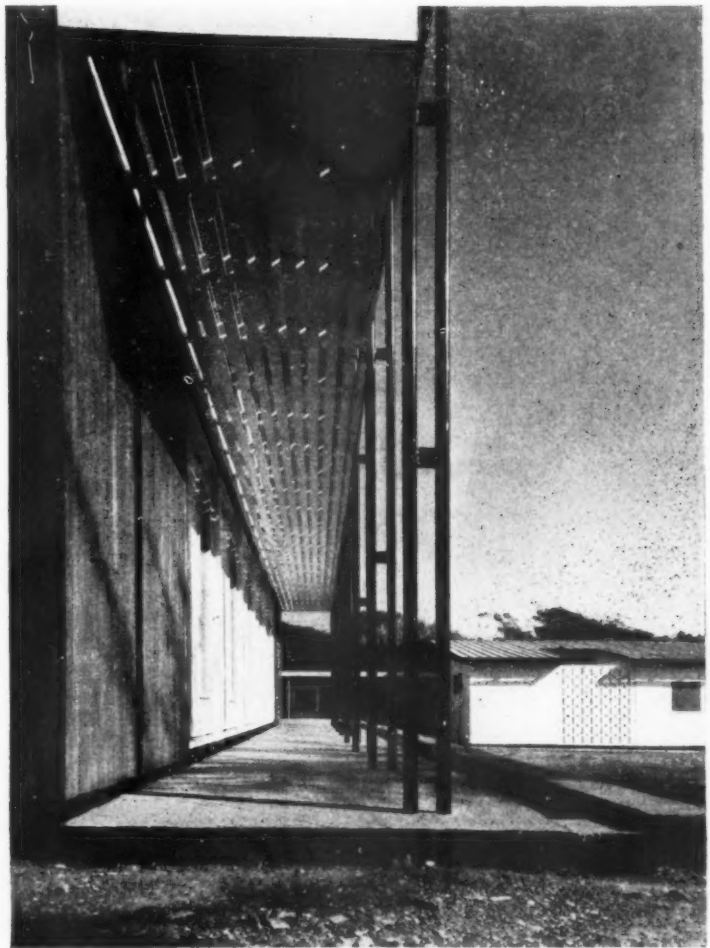
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MEMORIAL HALL AT ACCRA continued



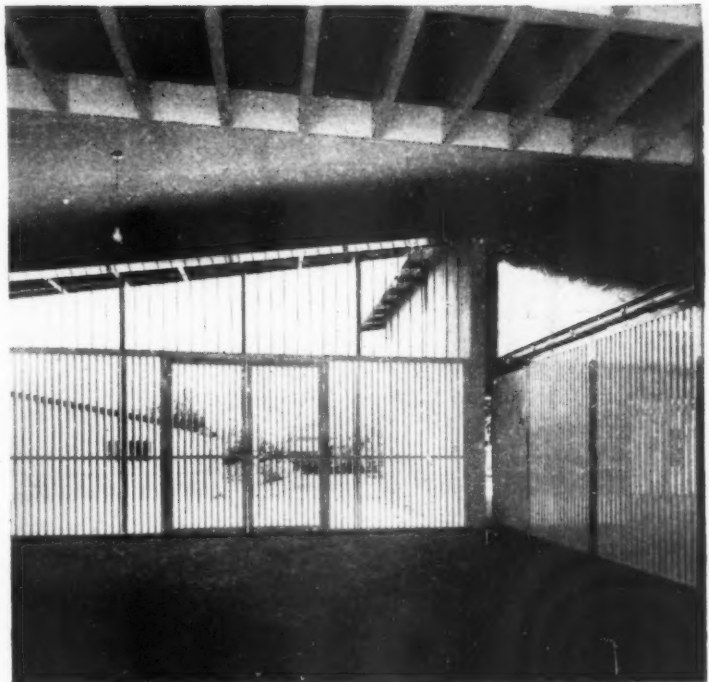
Site plan

a concrete base and the use of zinc insect barriers. All windows and doors are timber, and slatted or ply-faced hinged panels have been used instead of glass wherever possible. The roof is corrugated-asbestos sheeting, and as is usual in countries where heavy rainfall renders them useless, no roof gutters are used; instead the water is taken away by storm water channels at ground level.



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

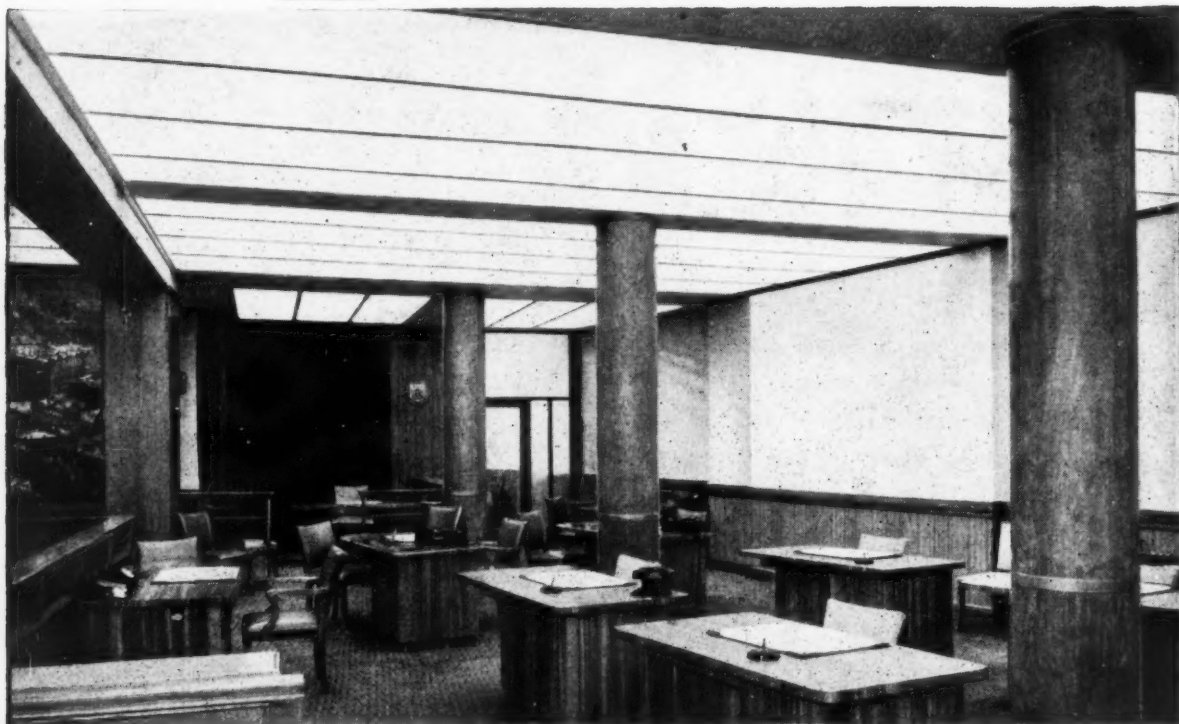
Above right, the south-west facade of the hall, showing the timber slatted sun break, and on the right is the entrance foyer.



IN OFFICES

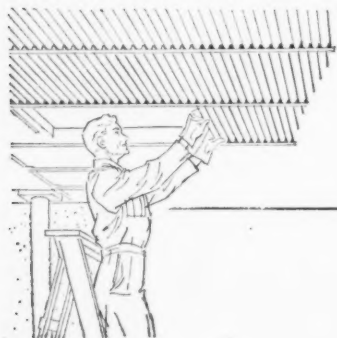


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INFORMATION CENTRE

15.139 materials: applied finishes and treatments WATER REPELLENTS

Colourless Waterproofing Treatments for Damp Walls. BRS Digest No. 90 (HMSO 3d.) In effect a brief note on how to use silicone treatments on damp masonry. The Digest is cautious about the life of these treatments but suggests that they are likely to prove more durable than earlier versions formulated from "waxes, oils, resins or fats or from metallic soaps" and the best of these are quoted as having a useful life of 5 to 10 years. Silicone treatments line the surface pores with a water-repellent film that inhibits capillary absorption. It is important that before applying them you should carefully point all cracks, joints etc., since water thrown off from the surfaces may penetrate these more readily than before. The effectiveness of treatments may to some extent be judged by the manner in which rain visibly drops off the surface; but not wholly, since treatments penetrate to some depth and an inner layer may be operative long after the outer has washed away. Architects are advised to make a year or more's trial of small areas of so-called "stone preservatives" before using them over whole buildings.

22.83 sound insulation and acoustics SOUNDPROOFING WALLS AND FLOORING

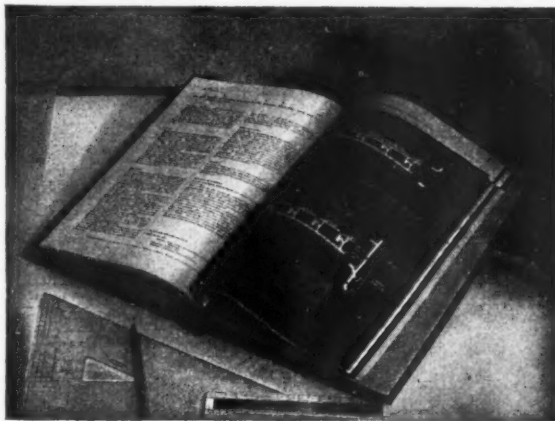
Sound Insulation of Dwellings—I and II. BRS Digests 88 and 89. (HMSO. 3d. each) These two very useful Digests supersede Nos. 2, 15 and 19 dealing with the same subject. Briefly, it has been found that it is no use insulating against an average frequency, but that you must design to stop both high and low frequency sound. In the old Digests we were advised that the 11 in. cavity wall was better than a 9 in. solid wall. We now know that this superiority relates to high frequency sound only. But in walls it is the low frequency sound that matters most, and in this respect there is nothing to choose between 9 in. and 11 in. It has also been

discovered that with wood joist floors the thickness of the walls beneath makes a big difference to sound penetration.

The first Digest attempts to lay down a system of grading based on the best obtainable practice. The standard for party walls is that provided by 9 in. brick plastered both sides. There are two standards for floors between flats with a difference of about 10 decibels reduction between them. The Digests then specify precisely what constructions will realise these standards. Interesting points to notice on the walls are that dense concrete cast in a permanent shuttering of wood wool slabs and plastered will not do, that wall-board linings are no substitute for plastering and that resilient membranes inserted be-

tween panels and the surrounding structure do not help.

Floors are more difficult than walls since impact sound must also be taken into account. The second Digest lists three certain and two probable methods of giving top grade insulation using concrete floors, and one certain method of giving the same using a timber joist floor, provided two of the walls beneath are 9 in. thick. The general conclusion seems to be that the floating floor is amply justified, so also is the time-honoured expedient of pugging. Full constructional details are given. An excellent piece of research has concluded in a most satisfactory document. No architect can afford to miss it.



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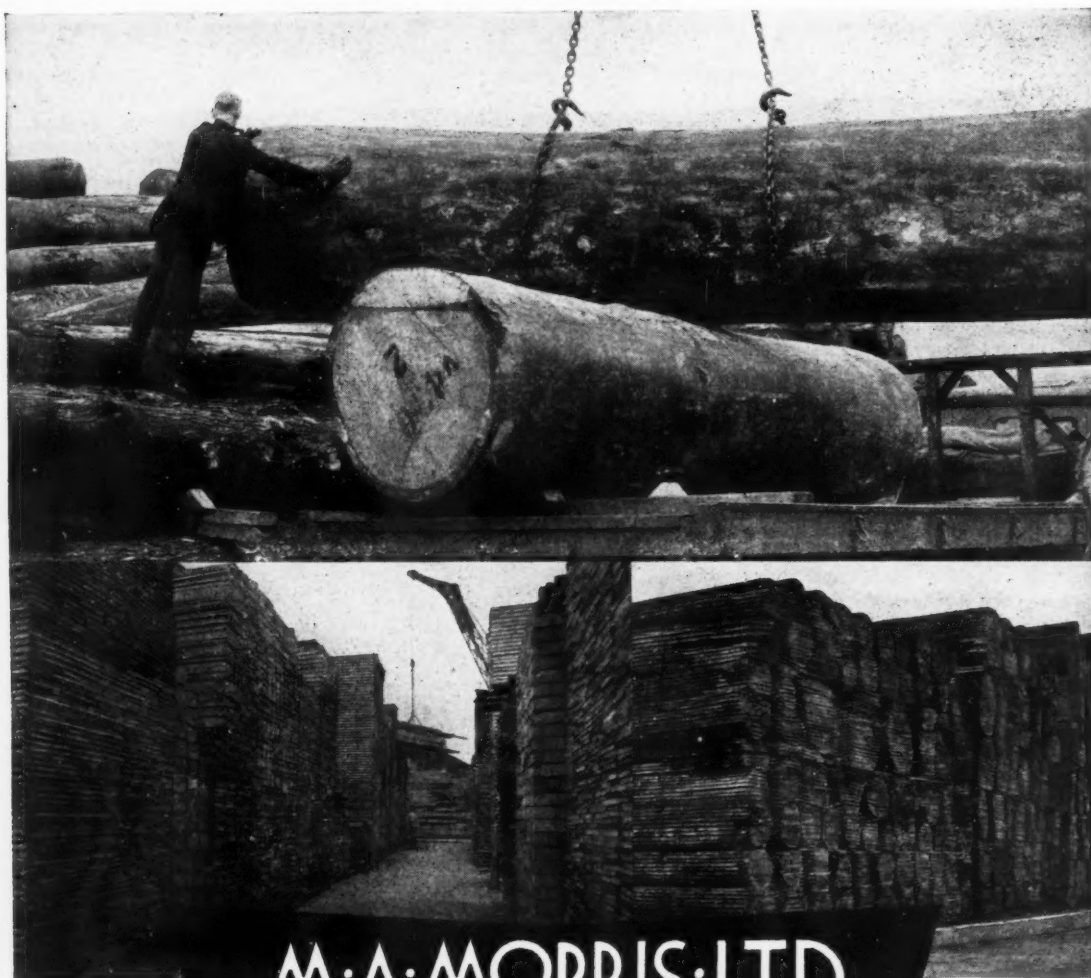
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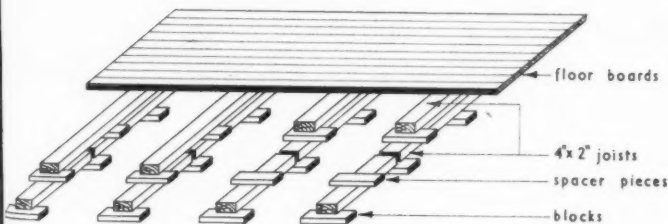
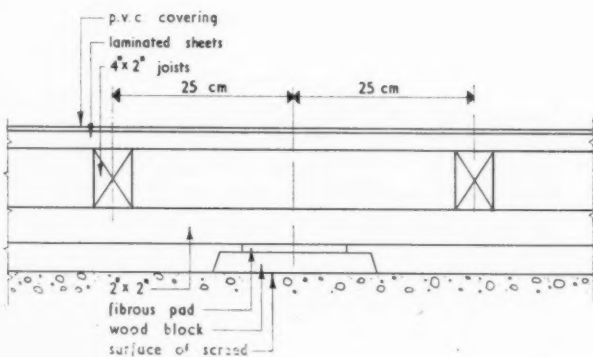
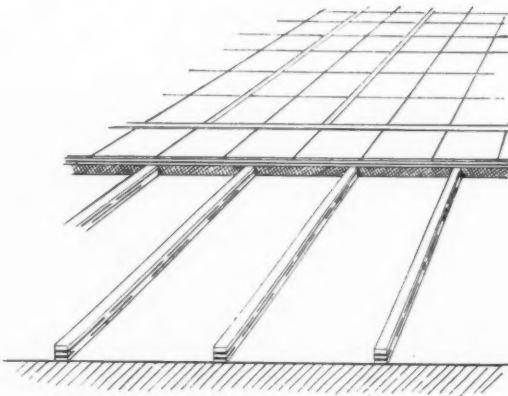
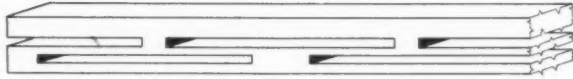


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technical section

SWEDISH GYMNASIUM FLOORS



We illustrate on this page three types of gymnasium floor now in use in Sweden. The first of these (shown in the top two drawings) is a version developed by the Lamellgolv Company which uses "sprung joists." These are wood joists approximately $2\frac{3}{8}$ in. \times $1\frac{1}{2}$ in. from which horizontal slivers have been cut away. They are laid at 1 ft. $5\frac{3}{4}$ in. centres on a cement screed and are covered normally with laminated board surfaced with p.v.c. Sound-insulating material is laid between the "sprung joists" to prevent drumming, and the total height between the finished floor surface and the top of the screed is $3\frac{1}{2}$ in. The second version (see drawing third from the top) has been developed by the Svensk Golvindustri Company and consists of a criss-cross of joists running at right angles to one another. The lower joists are 2 in. by 2 in. laid at 3 ft. $3\frac{1}{8}$ in. centres on square $\frac{3}{4}$ in. thick wood blocks placed at 1 ft. $7\frac{3}{4}$ in. centres, with $\frac{1}{2}$ in. fibre pads between joists and blocks. The upper joists are 4 in. by 2 in. and are laid on the under joists mid-way between blocks. 1 in. laminated planks are nailed to the upper joists and these in turn are laid with p.v.c. sheets. The total height from the finished floor surface to the top of the screed is about $7\frac{1}{2}$ in. The third floor, which has the trade name of "Elastik-golv," is of Danish origin, though it is manufactured under licence in Sweden by the Svenska Golvunderh  ll Company. Illustrated in the bottom drawing, the floor consists of two layers of 4 in. by 2 in. joists laid on their sides at 1 ft. $11\frac{3}{8}$ in. centres. The lower joists lie on blocks also at 1 ft. $11\frac{3}{8}$ in. centres and the upper joists rest on spacers fixed mid span between blocks. The space between the joists is filled with rockwool and the finished floor surface is $1\frac{1}{4}$ in. boards. This floor has been tested for "drumming" by the Swedish Institution for Building Acoustics and was found to give an average sound level 5 decibels lower than an ordinary "dead" floor laid directly on the screed.

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Use PRESTIK for:

MASONRY—Jointing gutter sections and coping stones. Bedding and jointing concrete blocks and panels.

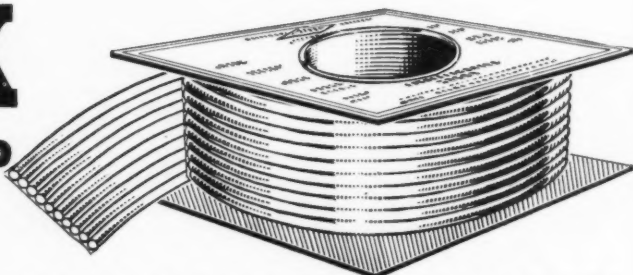
PRE-FABRICATION—Bedding and Jointing roof sections. Sealing joints in sectional buildings.

FLOORS—Sealing cable duct covers. Sealing skirting board joints.

WALLS and CEILINGS—Sealing wall-board joints (with cover strips). Sealing glass bricks to door and window frames.

DOORS and WINDOWS—Sealing door and window frames to brickwork. Bedding window frames and window boards.

SANITARY WARE—Sealing baths, wash-basins, etc., to walls.



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13 MATERIALS: TIMBER**Design and practice of joinery, 11**

by John Eastwick-Field and John Stillman

JOINERY SPECIFICATION 1

Perhaps no aspect of current architectural joinery practice is more tainted by inappropriate habits from the past than specification writing. This week John Eastwick-Field and John Stillman begin their discussion of this matter by describing the scope of a joinery specification and the manner in which the wood itself should be described. To give architects positive help in choosing woods they append the first part of a selected list of woods, tabulating their physical properties, uses, availability and cost in this country.

Whether it appears in conventional form as a "specification," or whether it is written into a Bill, or is contained in the drawings, a written description of the work to be done is necessary as an accompaniment to drawings. Only under certain conditions, which we discuss later, may drawings with only general notes be enough by themselves.

On the other hand if the description is to be of value it must be accurate and intelligible and possible to interpret. This statement should hardly need making, but there are, in fact, very few specifications written, particularly those written for joinery, which bear critical examination. It is usually assumed that they must be couched in a peculiar phraseology and that clauses which have appeared in previous specifications—which are followed as models—must be included whether they are pertinent or understood or not.

Many managers of joinery works have little esteem for the description which they receive, for no other reason than that much of what is demanded is almost impossible to provide, and would not be asked for if the implications of doing so were better understood. Timber which is "entirely free from knots and all other defects" is frequently specified even for those positions where such a high quality would be quite unnecessary, because old specifications contain such a clause; when the original specifications were written such timber may have been readily available, but in present conditions it is not.

It is therefore most important to specify only what can be reasonably obtained and what you are prepared to insist upon having. Two or three pertinent clauses are more useful than several pages of jargon. It would be to the good if anyone writing specifica-

tions were to make no reference whilst doing so to any "model" clauses or previous specifications, but instead were to write in straightforward language a simple description of what was to be done and the materials to be used, including nothing which he did not himself fully understand, but nevertheless including everything required to complete the work in every detail. It is, of course, difficult to be certain that all the necessary information is given, and that is why reference is so often made to former specifications, but we suggest it would be better to have a check list of the items which are likely to need description, rather than attempt to adapt existing clauses.

Differences in Quality

It follows from what we have said above that specifications ought not only to avoid asking the impossible but should quite distinctly differentiate between the qualities required for various classes of work. It is, in this respect, unfortunate that architect's specifications by custom require everything to be the "best," whereas it must be obvious that where money is limited it would be reasonable to accept a lower standard of materials and workmanship. What in fact happens is that the manufacturer makes his own decision about the quality he will produce and hopes that the architect will be prepared to accept it. His decision will, of course, be based very largely on the practical necessity of keeping his price competitive with that of other manufacturers producing similar work. One manufacturer, to our knowledge, finds it necessary to have what he calls a "housing" standard which is of a lower grade than that which he otherwise works to. Architects must be realistic about this. There is in general no recognized system of grading for workmanship in building and apart from the influence of economic restriction already mentioned it is only by inference that a builder assesses the quality which he will give: we all know that he would expect to have to produce the best possible workmanship for a concert hall or an embassy, whereas he would not do so for a housing estate or a farm building—yet in the past specifications have often failed to make any clear distinction.

Enforcement

As we have already said, there is a danger that builders do not read specifications because they so often contain little but old standard clauses, and it does not necessarily follow that even if the specification is prepared with great care, much attention will be paid to it, particularly to any variations from old-established practice, unless the joiner's attention is specially drawn to them. Also, it is possible that joinery of a different quality will be produced by different manufacturers even though each is working to the same specification unless the architect sees to it by frequent inspections that his requirements are carried out.

The Contents of a Joinery Specification

The object of a joinery specification—which is usually part of a general specification which itself contains

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such structural and legal clauses as are considered necessary—is to convey to the builder the kind of materials he is to use, the way the components, of which he will have a drawing, are to be made and finished, and where, when and how they are to be fixed. More precisely the specification can conveniently be divided into sections dealing with:

1. Scope of the work.
2. Materials, timber.
3. Moisture content.
4. Other materials.
5. Workmanship and manufacture.
6. Procedure.
7. Description of particular components to be made and schedules.

We ought to mention that in building specifications the clauses dealing with joinery are generally grouped with carpentry and ironmongery. This is because the "tradesmen" are titled "carpenters and joiners," although not all carpenters are capable of doing joinery! Ironmongery is included because it is fixed by carpenters and joiners. We discuss in this article only the joinery clauses, which we think should be collected into a separate specification.

British Standards

In spite of there being no system of grading there is now—for joinery—one official attempt to define quality of both workmanship and materials: namely the British Standard Specification 1186. *Quality of Timber and Workmanship in Joinery* (Part I, *Quality of Timber*; Part II, *Quality of Workmanship*). These are very useful documents but the standard set is in its own words a "standard of workmanship which is considered acceptable for general housing." It provides "a more precise alternative to such time-honoured expressions as 'in a workmanlike manner' and 'to the architect's satisfaction' which in practice depend entirely upon the judgment of an individual." It is not in fact of a high enough standard for all purposes, and furthermore, of course, it is one of the dangers of British Standards that adherence to them is often demanded without proper knowledge of what they contain. To say that all joinery shall be in accordance with BS 1186, Parts I and II, would be satisfactory if no other contradictory clauses were added, as is so often done, and if the architect fully realized what he was asking for. He must also, of course, see to it that the builder or manufacturer obtains a copy of the BS and adheres to it. So often specifications, even when clearly set out, are not read by builders, and whilst it ought not to be so, it is more than likely that a reference to a British Standard contained in a general specification will be totally ignored. In our view it would be better to extract the clauses of the British Standard relevant to the particular job and write them out in full in the specification.

Even if a higher quality of joinery should be required than laid down by the British Standard, the documents referred to are undoubtedly a sound basis for com-

piling one's own specification. We shall refer to them in greater detail below.

DISCUSSION OF CLAUSES

NOTE: *The clauses which accompany the text of this article—and others to follow in the series—embody and illustrate the various points made: many of them show alternative ways of dealing with particular problems, and as explained, not all are equally good. Together they do not, and are not intended to, form a type specification. In particular the clauses dealing with materials are given only to illustrate method and we do not necessarily recommend the materials described. A check list of items which usually require specifying will be given in a later article.*

The principle has been followed of dealing first with the materials, then the workmanship and finally the procedure for carrying out the work. Whilst it is suggested that this is the best method it is perhaps over elaborate for the minor items unless a very full specification is being written. Thus in the sample clauses, priming paint is described under Materials, the method of application is given under Workmanship, and the time it is to be applied is given under Procedure. These clauses and clauses relating to other finishes could possibly be grouped together in briefer specifications.

Scope of the Work

The purpose of this clause is to make quite clear what work is to be done and estimated for. It would be necessary only if the specification were addressed to a manufacturer who is not the General Contractor.

SAMPLE SPECIFICATION

The work shall consist of the manufacture, delivery to the site and fixing in the building of all joinery described in the Specification and shown on drawings Nos. —: including the supply and fixing of

- (a) metal, straps, lugs and dowels,**
- (b) priming, preservatives and polishing,*
- (c) all ironmongery specified or shown on the drawings.*

*Rough grounds, pallets and slips would normally be fixed by the general contractors' carpenter and should be included in the section of the general contractor's specification dealing with carpentry.

Materials: Timber

It has been the custom to specify the quality of timber required in a building under a general clause which might read as follows:

"all timber shall be bright, dry and reasonably free from waney edges, sap and shakes. It must be free from rot, worm, beetle, vermin, splits, large loose or dead knots or other defects."

Now if one pauses to think of the implications of this clause one will realize first of all that it makes no differentiation between timber for carpentry and timber for joinery; also that many of the requirements are open to very different interpretations and some may well be almost impossible to satisfy.

It would seem, too, that it is concerned more with

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softwoods and that it was written with them in mind. It is true that most of the requirements are applicable to hardwoods, but it is usually in work done with softwood that it is necessary to take particular care to see that they are carried out.

In our opinion it is probably best to specify hardwoods separately from softwoods, and we suggest below several methods of specifying each.

Specification of Hardwoods

1. *Selection by British Standard.* Refer to BS 1186, Part 1: Quality of Timber. This is to date the most detailed and precise specification we have come across, and although it is designed to set a standard suitable for general housing and similar structures it does provide a very satisfactory lower limit for all work. It includes detailed standards for the quality of timber under the headings given below (it also deals with moisture content, plywood, and the selection of species suitable for particular uses):

- (a) rate of growth,
- (b) straightness of grain,
- (c) character of grain,
- (d) boxed heart and exposed girth,
- (e) sapwood,
- (f) checks, splits and shakes,
- (g) knots,
- (h) plugs and inserts,
- (i) pitch pockets,
- (j) decay and insect attack.

Unfortunately the average builder does not possess and know all the BSs to which architects are nowadays prone to refer. They are indeed quite expensive, which discourages builders from buying them, and being so exact are not readily absorbed and understood except by those who specialize in the subject matter of each particular specification.

It would be reasonable to specify one's timber "in accordance with BS 1186" when addressing joinery factories: for most average builders, until the British Standards are more widely known, a specification is likely to be more effective if it is written out by the architect in more or less detail according to the size of the job and the type of contractor—the financial consequences of the replacement of substandard work being more serious on the larger job.

2. *Selection by species and grade.* The most practical way for an architect to specify timber, if he does not refer to the BS, is to specify the species and the commercial grades which will be acceptable and to state as an added precaution what particular defects are to be rejected should they occur in the grade chosen.

It may generally be assumed that in certain respects hardwood used in joinery is likely to be free from some of the defects which are associated with softwoods, because it seems to be accepted by importers and manufacturers that a higher standard will be required of work for which the former is specified and in any case the trunks of hardwoods are very much bigger than softwoods and are free from branches which cause knots. On the other hand, whilst there are

relatively few species of softwood used in joinery, there are literally hundreds of hardwoods, whose characteristics and appearance differ widely. When using hardwoods it is therefore of great importance to name the species which it is proposed shall be used, but there may be difficulty, as discussed later, in doing so at the time of writing the specification.

Naturally the choice will depend upon the suitability of the timber for the purpose required, but it will also be dependent to a great extent upon the appearance of the timber.

As far as its suitability is concerned, the architect must rely on his own and others' experience and upon the data given in books and also in the British Standard.

We would always advocate that a choice be made at the time of writing the specification, but to do so involves making sure that the price of the timber is what can be afforded, that the timber will be available when required, and that the client is unlikely to change his mind half-way through the job.

If, therefore, it should happen that it was not essential to have one particular kind of timber, some means of specifying alternatives must be arrived at. It may be possible to include the names of several timbers, so that it is then up to the Contractor to select when pricing the lowest priced timber which he can be sure of obtaining. It often happens that even if the species of timber is specified a different timber is eventually used for some reason or other, and it is therefore advisable to ask those who are tendering to state in their quotation the basic prices of the timbers included.

Grading of Hardwood

In practice a particular grade for hardwood is seldom specified, the assumption being that for joinery the wood will always be of the best quality, or chosen to be suitable for the purpose required. Nevertheless, hardwood is graded commercially. The difficulty is that there is no universally recognised system of grading, and even the names for the grades vary from country to country. However, certain terms are generally recognised in the trade and could reasonably be used in specifications.

FAS (FIRST AND SECONDS) OR EQUIVALENT, would require the best quality and SELECTS AND NO. 1 COMMON, OR EQUIVALENT, the next lower quality. Lower qualities than these would not often be suitable for joinery.

Grading of Logs

The grading rules mentioned above apply to square-edged boards exported from the countries of origin. Where hardwood logs are imported to this country they are usually graded A, B and C, but on conversion by the timber merchant the planks are graded again FAS, Selects, etc.

A small joinery concern would usually buy square-edged boards from a timber merchant. Large concerns can buy whole logs (possibly cut through and through) and find a use for such parts of them which may not be suitable for the joinery in question. This

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would probably prove more economic and would provide a greater choice of timber.

Defects in Hardwood

The requirements for the qualities FAS and Selects cannot be accurately defined since they vary from country to country. The best known systems of grading are the American National Hardwood Lumber Grading Rules, which are in fact applied as a minimum standard for most African timbers, and the recently revised Malayan Grading Rules.

FAS should theoretically provide clear timber free from the defects applicable to hardwood—knots, sapwood, waney edge, warping, pith, brittle heart, rot, stain and beetle attack. In *Selects* the defects should be of a minor nature, but in either case it is advisable to state as a precaution which of these defects would quite definitely not be accepted.

Selection by Species to Sample

In hardwoods the selection of the timber is often dealt with by specifying a particular species and stating that it is to be of a quality not less good than a sample which the architect has previously obtained from the manufacturer (or from several manufacturers if the works are being tendered for in competition).

This system is the only practicable one if special importance is attached to the figuring and character of grain, and indeed in these circumstances it may be necessary to examine and approve all the timber to be used after the work has been let.

Selection by Cost

If for any reason the architect cannot choose the timber at the time of writing the specification, he can get over the difficulty by inserting a P.C. sum for the wood. This arrangement excludes the cost of the timber from the competition and does not give the joiner sufficient indication of the amount of labour which may be involved, which varies according to the kind of wood chosen. If only for these reasons, we feel that this system should be avoided if possible.

SAMPLE SPECIFICATION:

Alternatives:

(a) To comply with BS 1186, Part I. Species to be chosen for each use from the medium hardwoods marked "Suitable" in Table 3.

(b) Hardwood to be African Mahogany, to comply with BS 1186, Part I, except that no knots will be permitted in joints. The wood is to comply with the BS requirements for wood "selected for staining."

(c) Hardwood to be Iroko, grade FAS or equivalent. none of the following will be permitted: sapwood, pith, splits, stain or any evidence of beetle attack or rot. Isolated sound tight knots less than $\frac{1}{2}$ in. diameter will be permitted provided they do not occur in joints

or on visible faces. The estimate is to include the basic price of the wood (kilned and square sawn).

(d) Hardwood to be one of the following species, grade FAS or equivalent: Iroko; Afzelia; Afrormosia; Makoré.

(e) Hardwood to be Guarea to match a sample already approved by the architect.

(f) Include the sum of 40s. per ft. cube (sawn square to required sizes and kilned) for hardwood to be selected by the architect.

Specification of Softwoods

1. Selection by British Standard. As in hardwoods described above.

2. Selection by species and grade. The species of softwoods are far less in number than those of hardwoods, though possibly more difficult to distinguish: we describe seven of them which are commonly used in joinery in our list of recommended woods printed at the end of this article. The grades in which the timbers are at present obtainable in this country are those described in our first article.

In general terms the Scandinavian timbers suitable for joinery are graded as "unsorted" (that is, a mixture of grades of seconds, thirds and fourths, and sometimes including some "firsts": the exclusive grade of firsts being still unavailable. The next grade down, "fifths," is not considered good enough for joinery). American timber is graded differently. The first quality is known as "clears and door stock" and this is equivalent to Scandinavian "firsts" and is obtainable. The second quality, equivalent to unsorted, is "select merchantable." It should be noted in passing that "clears" may cost as much as 50 per cent. more than "select merchantable."

3. Defects in softwood. The defects in softwoods are likely to be more commonly encountered than in hardwoods and it will be important in one's specification to say what limits shall be set upon them. We suggest that to do this the architect should refer to the clauses of the British Standard and modify them to suit his particular requirements.

SAMPLE SPECIFICATION:

Alternatives:

(a) To comply with BS 1186, Part I.

(b) To be Douglas Fir, grade select merchantable. The following defects will not be permitted: pith showing on the surface, sloping grain exceeding one in eight, checks, splits and shakes, knots, excepting isolated sound tight knots of less than $\frac{3}{4}$ in. diameter, any evidence of beetle attack or rot.

Add if required: Timber for door styles (and other positions if required) to be 100 per cent. quarter sawn.

The information will also provide a starting point for detailed enquiries to the trade for particular items of work. The supply position is complicated by the fact that

NOTES ON THE LIST BELOW
There is much confusion about the names of timbers.
The names of timbers are given in the list below.

Column 1. Name

Selection of timbers

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The information will also provide a starting point for detailed enquiries to the trade for particular items of work. The supply position is completely different for each of the various types of wood which may be readily obtainable from them but very scarce elsewhere. Three grades are given for availability:

- I = Plentiful
II = Moderate supplies
III = Intermitent or limited supplies

In making the selection of timbers suitable for joinery only those that are usually available in reasonable sizes have been chosen. Where hardwood logs are imported and can be converted for particular work, these are of the same size as the timbers of the same species. The average hardwood board is about 8 in. wide by 12 ft. long. Standard thicknesses are 1 in., 1½ in., 2 in., 2½ in. and 3 in. Notes are given of exceptions to this general rule.

Hardwoods are graded according to the average price per cubic foot for common sizes (e.g., 1½-in. boards) already kilned. A good joinery quality is assumed. It should be noted that prices vary according to the sizes required as well as to the quality.

Cost of hardwoods:

- A = Over 50s. per cu. ft.
B = 40s. to 50s. per cu. ft.
C = 30s. to 40s. per cu. ft.
D = 20s. to 30s. per cu. ft.

Softwoods: Although normally quoted per standard (165 cu. ft.) prices are here given per cu. ft. for comparison with hardwood. Prices are for unkilned sawn timber of the best quality (e.g., "Select") and are generally more expensive. Where two prices are given the higher is for the best quality (e.g., Scandinavian "Firsts" and Canadian "Clears and Door Stock") and the lower is for normal joinery quality (e.g., Scandinavian "Unsorted" and Canadian "Select Merchantable").

Cost of softwood per cu. ft. unkilned batens:

- E = 18s. to 22s. (say £1.05 per standard)
F = 14s. to 18s. (say £0.85 per standard)
G = 14s. to 16s. (say £1.25 per standard)
H = 12s. to 14s. (say £1.05 per standard)
I = 10s. to 12s. (say £0.90 per standard)

This is important, when veneered work is to match solid wood. Conversely, there are many well-known decorative veneers available which cannot be obtained in the solid.

The notes given are based on general practice. Unless stated it is assumed that external work would be painted or finished with a weatherproof transparent finish such as varnish. As mentioned in connection with

"Durability," certain woods of naturally poor durability may be used externally after impregnation with preservative.

10. Whether available as veneer

11. Suggested positions of use

There is much confusion about the names of timbers. The only safe course is to use names given in B.S. 881 and 589: 1955 "Nomenclature of Commercial Timbers."

This is the average weight of the timber at 15% moisture content. In general terms strengths of timbers are in proportion to their weights. Fuller information on strength (bending, stiffness, crushing, etc.) is given in the *Timber Handbook* published by the Timber Research Council, London, and by the Forest Products Research Laboratory, HMSO, 1954.

These are difficult to describe. Small wood samples may be obtained from the Timber Research Council on request (price 1s. each). It is suggested that one side should be polished to show the effect of applying a clear finish which is usually to darken the wood and to emphasize its colour.

This applies to hardwood only. It is the measure of resistance to fungal decay of timbers exposed externally and buried in the ground. Five grades are given:

- P = Not durable (5-10 years)
ND = Not durable (10-15 years)
MD = Moderately durable (15-25 years)
VD = Very durable (more than 25 years)

It should be noted that many woods which are not naturally durable may be made more resistant to fungal decay by impregnating with preservatives. However, some hardwoods are impervious and cannot be so treated. Detailed information on this subject is also given in the *Timber Handbook*. It is suggested that timbers to be used externally. No timber is liable to fungal decay if used internally and kept dry, i.e., below about 20% moisture content.

The grades of durability do not include resistance to insect attack. Practically all timbers are susceptible to attack by one or more timber beetles, and the only safeguard is to treat with preservative. Generally, sapwood is more prone to attack than heartwood.

Timbers are graded according to the amount of radial and tangential movement which would be experienced under normal conditions of use in this country, humidity in the surrounding atmosphere. This roughly corresponds to normal conditions of use in this country, although central heating may produce lower relative humidity percentages.

This and the following three columns give commercial information current at the time of writing. The position is bound to fluctuate but it is hoped that the comparisons which can be made will remain valid for several years.

Column 1. Name

2. Weight

3. Colour

4. Grain

5. Natural durability

Selection of timbers suitable for joinery 1.

The timbers in this list have been selected on the basis of general availability in this country and for general use in joinery: highly decorative woods have not been included, nor those used primarily in veneers. We publish this week the first part of the selection which relates to hardwoods. These are given alphabetically. A further selection completing the list of hardwoods and giving a corresponding list for softwoods will be published with the next article in this series.

BS name and country of origin. Other common names given in brackets	Average weight per cu. ft. in lbs.	Colour	Grain and texture	Natural durability	Degree of moisture movement	Availability in this country	Special notes on sizes	Comparative costs	Whether available as veneer	Suggested positions of use	Remarks
1	2	3	4	5	6	7	8	9	10	11	12
HARDWOODS											
ABURA Tropical Africa	36	Uniform light pinkish brown	Moderately straight grain and even texture	ND	Small	I	Average (i.e. boards approx. 8 in. wide by 12 ft. long)	D	Yes	Internal	Popular medium strength wood. Works well and takes good finish. Requires care in nailing to avoid splits
AFARA LIMBA Tropical Africa	35	Light yellowish brown with grey markings	Close straight grain sometimes wavy	ND	Small	II	Good lengths and widths	C	Yes	Internal	Easy to work, finish, and polish. Requires care in nailing to avoid splits. The light coloured wood is called in the trade Light Afara or Limba

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I	2	3	4	5	6	7	8	9	10	11	12
AFRICAN WALNUT	34	Brown with dark streaks. Light coloured sapwood	Interlocking grain producing a fishbone figure when quarter sawn. Medium texture	MD	Small	II	Average	C, D	Yes	Internal and external including cills. Could be oiled for external use	Closely related and similar in appearance to African Mahogany
AFRORMOSIA Gold Coast (Kokrodua)	44	Brownish yellow with darker streaks	Grain straight to interlocking. Fine texture	VD	Small	II	Good lengths and widths	B	Yes	Internal and external including cills. Could be oiled for external use	Very strong hard wood resembling teak, though it is not only like teak. Useful for superior joinery where durability and stability combined with good appearance are desired. Stains when in contact with ferrous metals under damp conditions
AFZELLA Tropical Africa (Aps, Doussie)	52	Light reddish brown: sapwood pale straw	Irregular grain often interlocking. Coarse even texture	VD	Very small	II	Good widths	B, C	No	Internal and external including cills. Could be oiled for external use	Hard, strong, durable and stable. Somewhat hard to work but finishes well and is of good appearance
AGBA Tropical Africa (Tola Branca)	32	Yellowish to pink	Resembles mahogany in grain. Fine texture	D	Small	I	Good widths	C, D	Yes	Internal and external including cills. Could be oiled for external use	A good all-round timber suitable for a wide range of purposes. Works easily. Brittle heart liable in large logs and gum exudation is sometimes troublesome during seasoning
ASH, EUROPEAN	44	White to light brown and very clean	Straight grain, coarse texture	P	Medium	II	Average	C, D	Yes	Internal	A tough elastic wood which bends easily when steamed. Works well and takes excellent polish. Ash burs valued for veneers
BEECH, EUROPEAN	45	White to light brown	Straight grain. Fine texture	P	Large	I	Average	D	Yes	Internal	A strong tough wood used for interior joinery, furniture and cabinet making. Works well and can be stained and polished. Bends easily when steamed
BIRCH, YELLOW (Canadian Yellow Birch, American Birch)	44	Light to dark reddish brown. Sapwood lighter	Straight grain. Even texture	P	Large	II	Average	B, C	Yes	Internal	Strong hardwearing general purpose hardwood. Moderately easy to work and machines to smooth finish. Gives excellent results with transparent finishes. Bends easily when steamed
CENTRAL AMERICAN CEDAR AND SOUTH AMERICAN CEDAR (Honduras Cedar)	30	Pale pinkish brown to dark reddish brown	Straight grain. Moderately coarse texture	R	Small	III	Average	C	Yes	Internal and external	A mild easily worked timber characterised by a fragrant scent. Used for interior fittings, panelling and furniture. Also boat building and cigar boxes. No botanical relationship with the true Cedar (Cedrus Libani) which is a softwood
CHESTNUT, SWEET U.K., Southern Europe U.S. Africa (Spanish Chestnut)	35	Similar to oak but without silver grain	Variable	D	Small	II	Average	C, D	Yes	Internal and external including cills	A wood similar to oak though softer and not so strong. Works well but is inclined to split. Takes a good finish
DANTA West Africa	46	Reddish brown with light brown sapwood	Interlocked grain. Even texture	MD	Medium	III	Average	D	No	Internal and external	A strong durable timber, very tough and elastic. The interlocked grain produces a striped appearance rather like sapele. Works with moderate ease. Takes a good finish and polishes well. Is used mainly for constructional purposes and floors

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ELM, EUROPEAN	35	Dull brown with light brown sapwood	Coarse wavy grain	ND	Medium	II	Good widths	D	Yes	Internal and external	A wood of fine appearance but because of its tendency to warp is safer to use in veneer form. It is, however, used in solid form in furniture, door and window casings, and for boat building. It is difficult to saw but otherwise works well.
GUAREA West Africa	37	Pinkish brown. Darkens on exposure. Sapwood whitish	Straight or wavy grain. Fine texture	D	Small	II	Good widths	D	Yes	Internal and external	Similar to Hondurans Mahogany but harder. Fairly easy to work and finish though gum exudation may cause difficulty. A variety called Scented Guarea has more resistance to splitting. A good looking wood
GURJUN / KERUING / YANG India and Burma	46	Dull greyish brown. Yang may have a pinkish tone	Fairly straight but often interlocked. Coarse even texture	MD	Large	I	Good Lengths	D	No	Internal and external including cills and drainers	A very strong wood but rather difficult to work. Resin is sometimes troublesome. Besides joinery, is used for floors and constructional work
IDIGHO West Africa (Framire, Emiri, Black Alara)	35	Pale yellow with occasional brown stripes	Straight or slightly irregular. Coarse uneven texture	D	Very small	II	Average	C/D	Yes	Internal and external including cills	Good all round timber. Works fairly easily though liable to splitting and finishes well. Subject to brittle heart which should not be used. The name "Black Alara" is misleading since this wood is not a variety of Alara
IROKO E. & W. Africa (Myule)	41	Light to dark brown. Clearly defined sapwood. Darkening with exposure	Interlocking grain well figured. Coarse even texture	VD	Very small	I	Good widths	B/C	Yes	Internal and external including cills and drainers. Could be oiled for external use	Valued for its stability and resistance to decay and is much used as an alternative for Teak. About as strong as Oak. Works with moderate ease but requires grain filling before finishing
MAHOGANY, AFRICAN	35	Light pink brown to deep red brown	Straight to interlocking grain. Texture varies	MD	Small	I	Good lengths and widths	C/D	Yes	Internal and external use	Cheapest and most readily obtained of the mahoganies. Very suitable and popular for general joinery and fittings. Working quality fairly easy. Grain hard. Grain sometimes picks up and very sharp cutters are essential. Finishes satisfactorily
MAHOGANY, Cuban or Spanish (British Honduras Mahogany)	34	Light yellowish brown to deep red orange brown	Some interlocked grain but good straight to plain grain. Finer texture than African Mahogany	D	Small		Average	A	Yes	Internal and external use	Closely related to the highly reputed Cuban or Spanish Mahogany which is no longer generally available. It is a very strong wood and the Cuban Mahogany. Irregularities in the grain produce a variety of figure. Works and finishes excellently though some grades liable to be woolly and sharp tools essential
MAKORE West Africa (Baku, Cherry Mahogany)	40	Pale pinkish brown to dark purplish brown	Straight grain. Fine texture with lustrous surface	VD	Small	II	Good lengths and widths when cut from log	C	Yes	Internal and external including cills. Could be oiled for external use. Also drainers	Comparable with the mahoganies but heavier, harder and with greater resistance to splitting. Useful for furniture and when figured for decorative work. Works with moderate ease, but blunts tools quickly
MANSONIA West Africa	38	Dark greyish brown with light and dark bands. Sapwood whitish	Straight grained. Smooth fine texture	VD	Small	II	Good lengths	C	Yes	Internal and external use including drainers	Similar in appearance to American Black Walnut. Has been used for joinery and pianos, shop fittings, and furniture. Works easily and produces a good finish

technical section

1	2	3	4	5	6	7	8	9	10	11	12
MEBANTI, RED AND YELLOW Malaya SERAYA, RED Botogo LAUAN, RED Philippines	35	Pale straw to deep reddish brown	Slightly interlocking. Rather coarse texture	MD	Medium	II	Good lengths	D	No	Internal and external use including cills. Weather boarding	These are a group of similar timbers sold as Red and Yellow Meranti, Red and White Seraya according to the colour and country of origin of the wood. They are useful for interior joinery and furniture. Works fairly easily
MUNINGA East Africa	40	Golden brown with streaks of dark red brown	Straight and irregular interlocked grain	VD	Very small	III	Average	B	No	Internal and external use	Very handsome wood but in limited supply. Similar in appearance to Padauk but softer and lighter. Eminently suitable for high class decorative joinery, paneling and furniture. Works and finishes readily
NIANGON West Africa (Nyankom)	40	Light red brown. Sapwood greyish	Interlocking grain. Coarse texture	MD	Medium	I	Average	D	No	Internal and external	Similar to African mahogany. Quarter-sawn boards have attractive figure. Kesina sometimes give the wood a sticky or greasy surface. Fairly easy to glue or finish because of resinous nature
OAK, EUROPEAN	45	Light yellow brown to deep warm brown with silver grain	Variable grain. Medium texture	D	Medium to large	I	Average	C/B	Yes	Internal and external including cills. Can be stained and polished, but is liable to stain when in contact with ferrous metals	Imported from various European countries and home grown. The latter is probably the most durable. Although heartwood is extremely durable, sapwood is liable to insect attack. Suitable for wide range of uses from gate posts to high-class joinery. Working qualities generally satisfactory but vary. Gives exceptionally fine finish
OBECHE West Africa (Wawa)	24	White to pale straw	Interlocking grain. Open texture	ND	Small	I	Good widths	D	Yes	Internal	A rather soft easily worked lightweight wood. Very suitable for internal joinery. Although its natural light yellow colour is not very attractive it takes stain well and since the grain is similar to mahogany, it is sometimes stained and used as a substitute for this wood. The sapwood is very prone to insect attack
OKWEN West Africa	40	Fawn to dark brown in light and dark stripes	Close texture	ND	Medium	III	Average	D	No	Internal	A wood of distinctive appearance which is mostly used for furniture, turnery and carving, and in veneer form. Works fairly easily
OPEPE West Africa (Bilinga, Kussia)	47	Uniform yellow or orange brown	Interlocking grain. Open texture	VD	Small	II	Average	D	Yes	Internal and external including cills. Could be oiled for external use	A heavy strong timber primarily useful for constructional work and flooring. The better grades are suitable for joinery. Works with moderate ease and takes stain and polish but requires filling
RAMIN Malaya, Sarawak (Melawis)	42	White to pale straw	Straight grain. Fine texture	ND	Medium	I	Good lengths but narrow widths	D	No	Internal	Recommended for superior joinery, doors and furniture. Works fairly easily and finishes cleanly
SAPELE Tropical Africa (Sapele Mahogany)	40	Dark reddish brown	Interlocking grain giving regular striped figure when quarter sawn. Texture-medium	MD	Medium	I	Good lengths and widths	D	Yes	Internal	Generally used for interior joinery and fittings, paneling and furniture. It is rather more difficult to work than Honduras mahogany but takes a clean finish if properly machined and polishes excellently. Gedu Nohor is similar to this wood

SHOPFRONT: SHOWROOMS IN COVENTRY

Rolf Hellberg and Maurice Harris, architects

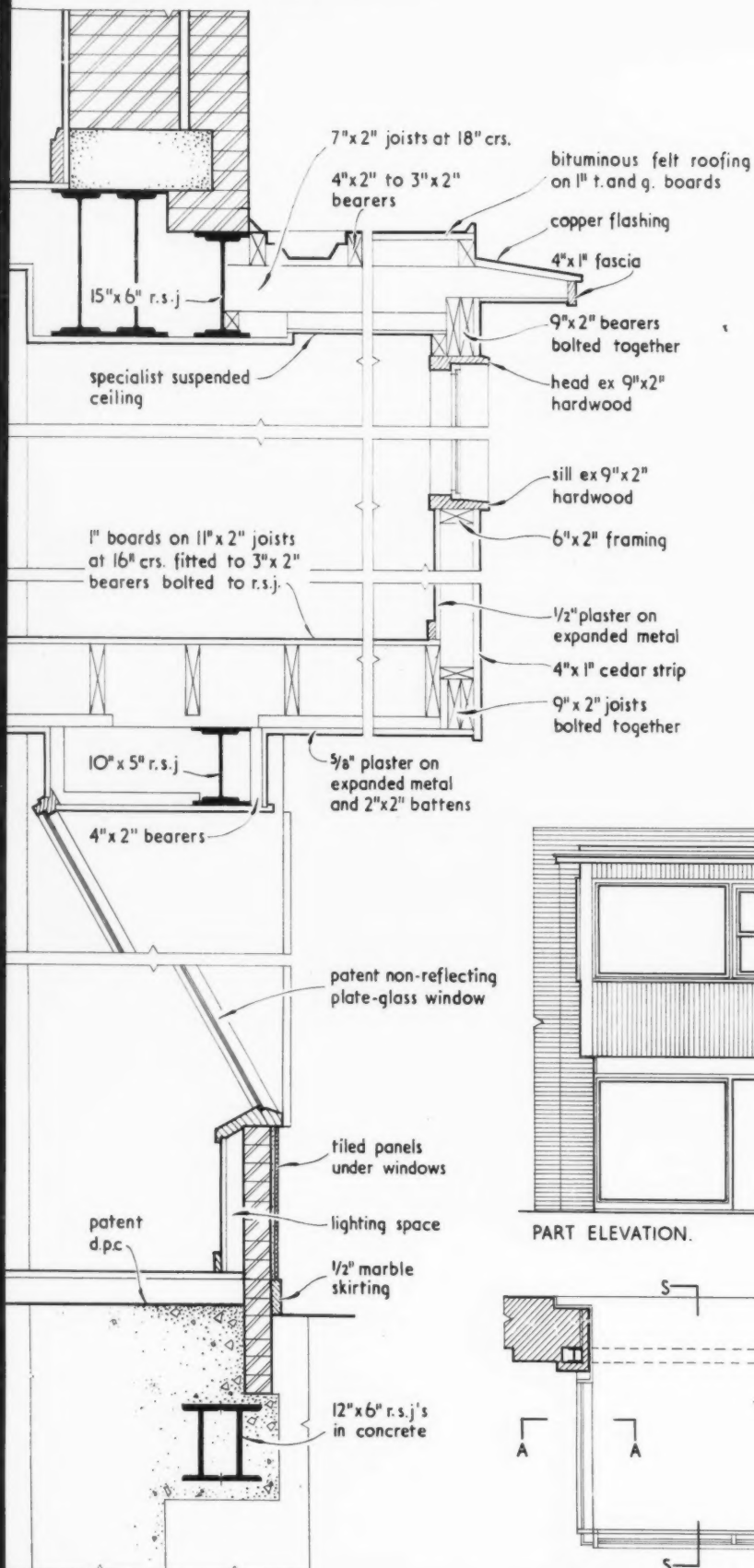
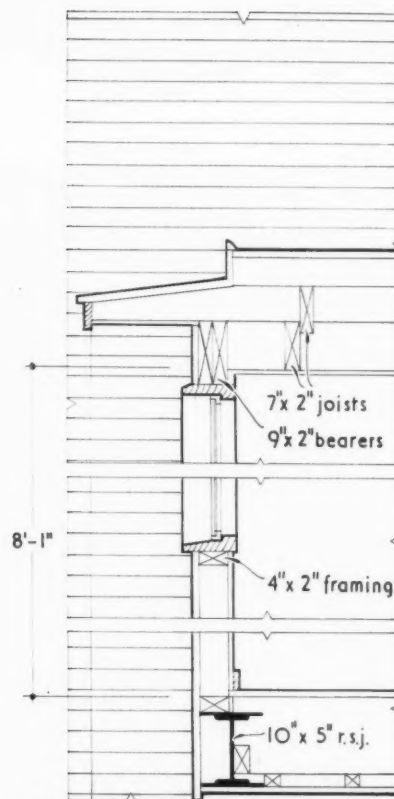
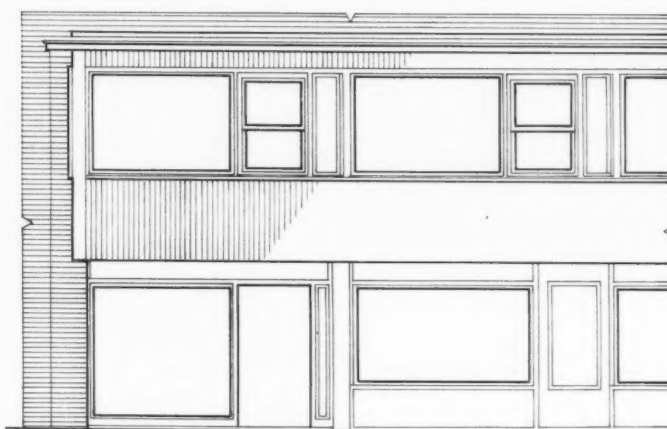
The shopfront and the brick facade from which it is projected have been built into an existing structure. Thus the heavy box-girder spanning the opening at second floor level is part of the older structure. The non-reflecting shop window on the ground floor has not been shown in full detail as it is similar in principle to a shop window in Broadgate, Coventry, by the same architect, illustrated as a Working Detail on December 30, 1954.

working detail

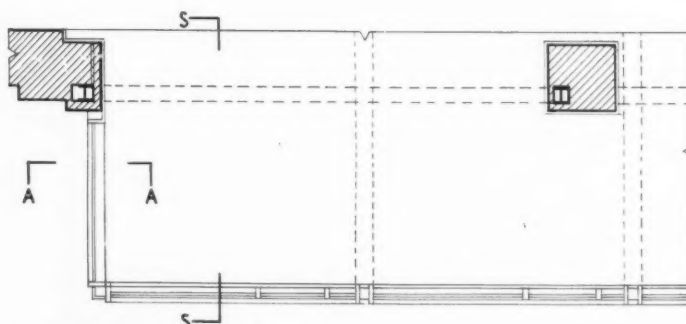
WINDOWS: 38

SHOPFRONT: SHOWROOMS IN COVENTRY

Rolf Hellberg and Maurice Harris, architects

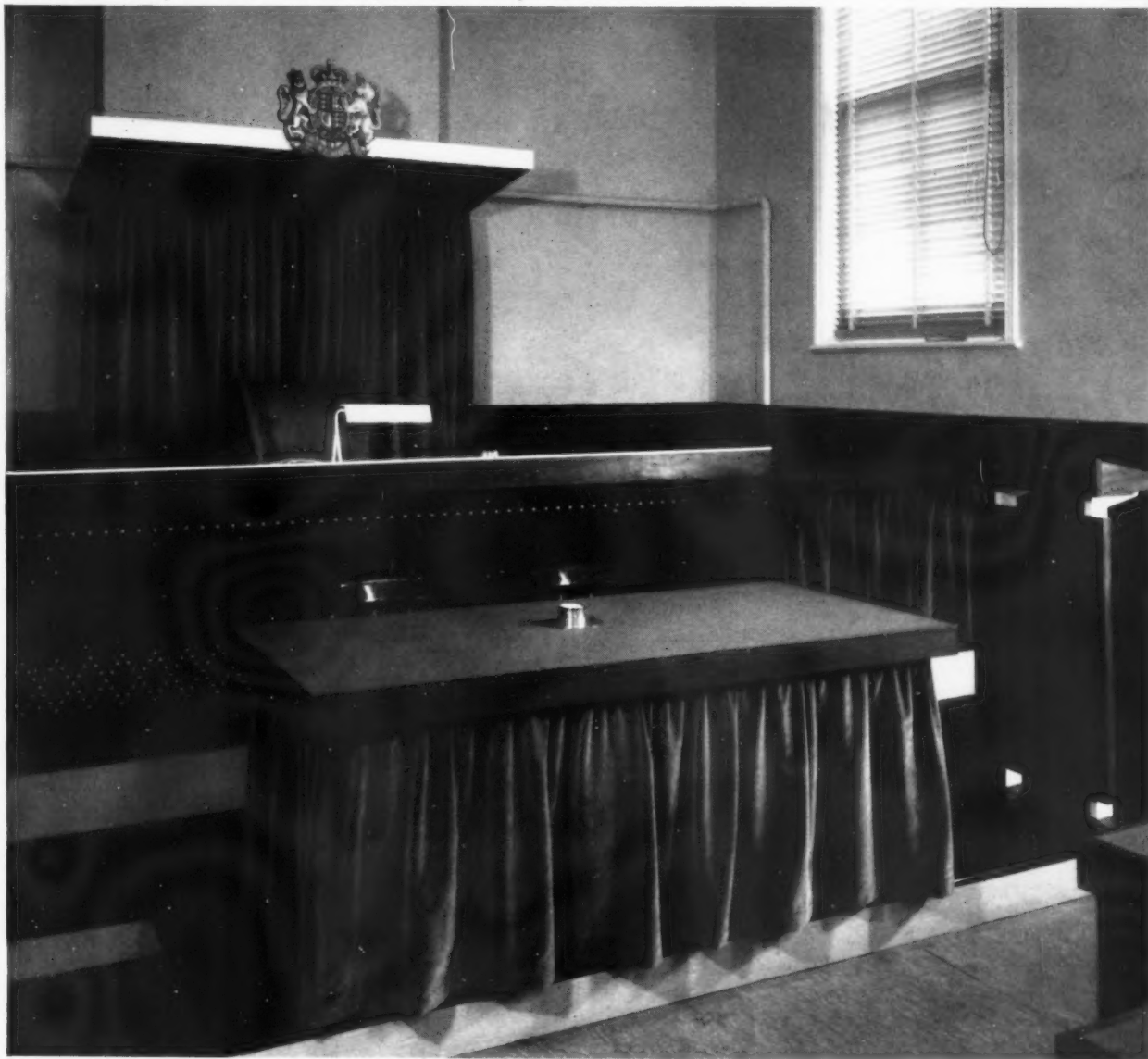
SECTION THRO' S-S. scale $\frac{1}{2}'' = 1'-0''$ SECTION THRO' A-A.
scale $\frac{1}{2}'' = 1'-0''$ 

PART ELEVATION.

PART FIRST FLOOR PLAN.
scale $\frac{1}{8}'' = 1'-0''$

MAGISTRATE'S BENCH: COURT AT LINSLADE, BUCKINGHAMSHIRE

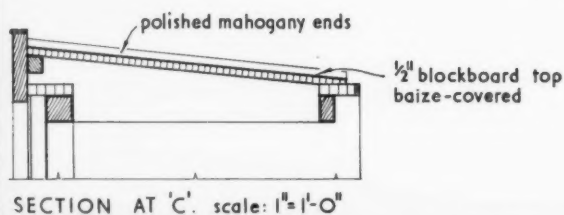
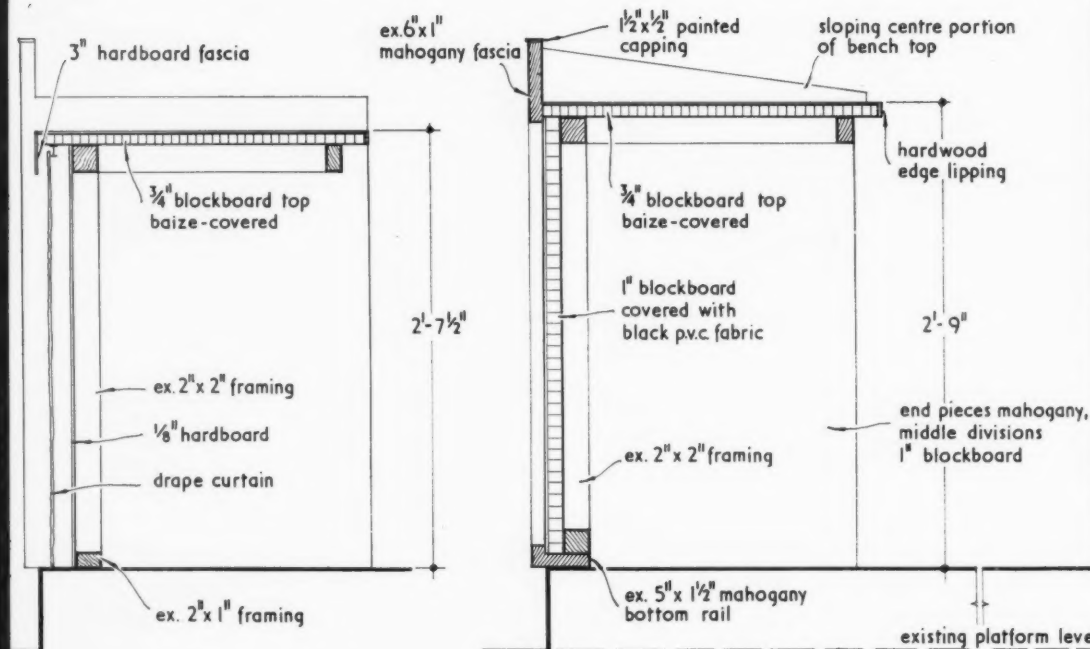
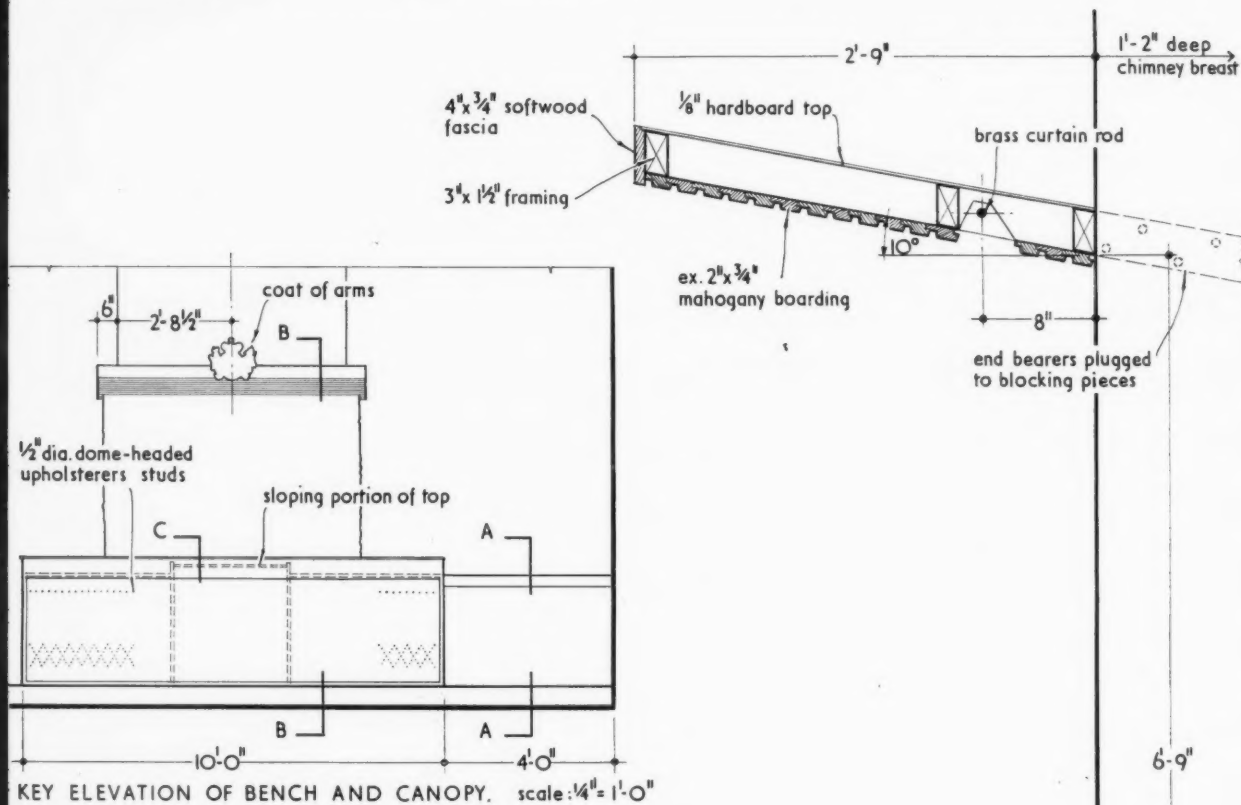
Frederick B. Pooley, architect to the Buckinghamshire County Council



The magistrate's bench forms part of the refurnishing of a police court. The drapes behind the canopy are lime green, the other drapes in the courtroom being dark green. The baize top of the magistrate's bench is described as "amber rust," the other desk tops in the room being "oyster grey." The dado is in effect a warm black, being a low chroma, low value yellow (7.5 Y 2/2): the walls above the dado are light stone (5 Y 8/2).

MAGISTRATE'S BENCH: COURT AT LINSLADE, BUCKINGHAMSHIRE

Frederick B. Pooley, architect to the Buckinghamshire County Council



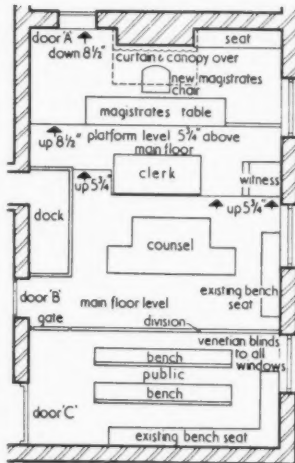
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BUILDINGS IN THE NEWS

Magistrate's Court, Linslade

The remodelling of the Magistrate's Court at Linslade, Buckinghamshire, illustrated by the photograph and plan, right, was designed by Frederick Pooley, County Architect; Ron Walker, chief assistant architect, and Derek Turner, assistant. The court, which is part of the Linslade Police Station, was built in 1872 and recently became due for normal maintenance. At this time

it was decided by the Bucks Magistrate's Courts Committee that the room should be redesigned to make it "generally more convenient and in accord with present day requirements." Floor levels have been adjusted to give the Bench a better command of the proceedings, walls were repainted, Venetian blinds were added to the windows and new pendant



Plan [Scale: $\frac{1}{2}$ " = 1' 0"]



light fittings were hung from the 20-ft. high ceiling. Specially designed furniture includes the magistrate's bench, witness stand, table for counsel, screen to the area used by the general public, dock and additions to the clerk's table. The magistrate's table and canopy is illustrated as a Working Detail this week.



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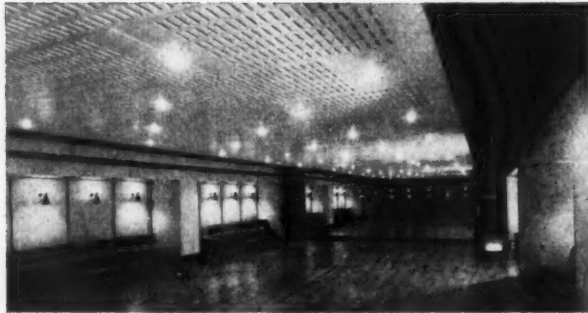
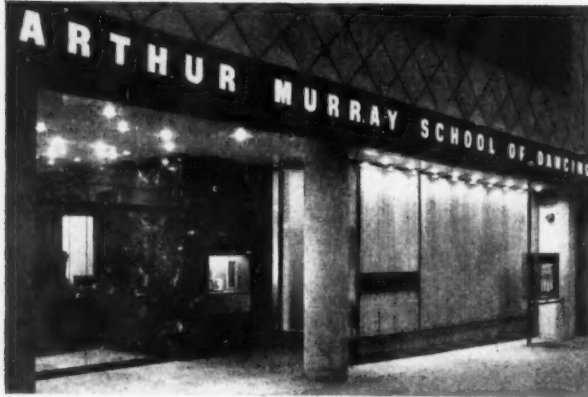
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BUILDINGS IN THE NEWS continued



School of Dancing, Leicester Square

The Arthur Murray School of Dancing, Leicester Square, W.C.2 was designed by T.H.M. Partners for a ground floor site of 6000 sq. ft., which has frontages on Leicester Square to the west and Charing Cross Road to the east. Accommodation includes four ballrooms, interviewing and supervisor's rooms, teachers' rest room, administrative offices and reception area. Top left, the main entrance from Leicester Square, with exterior treatment designed by Peter Moro. To the right of the armour plate entrance doors the wall is faced with Genoa marble and there is an inset display case and letterbox. Bottom left, the main ballroom has an end wall of mirror glass, a ceiling of white slotted fibrous plaster acoustic panels with glass silk backing, seating recesses along both long walls and a maple floor. Back walls to the recesses are covered with yellow fabric held in position by vertical and horizontal ebonised beads. The furniture consists of red and black upholstered chairs and white marble tables. The main ceiling, which is 3-in. higher than the acoustic panels is painted black.

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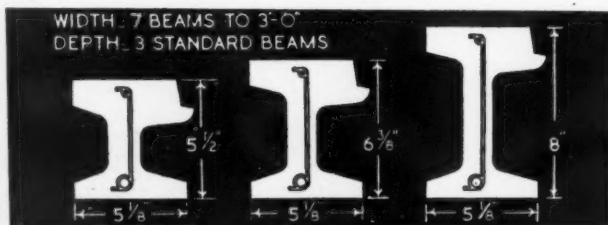
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Bad news?

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Dear Grandpa:

Thanks awfully for the ten bob. We had a lovely surprize when we got back from the hols. Wally (that's our headmistress) has had the whole school done out.

Lovely pink mirrors for us to practice de-portment and a whole wall of glass blocks in class where we used to look out over the destructor and all the bathrooms in pink and blue and sea green. Some of the girls have even started to wash. A very nice gentleman from Newcastle did it.

His name's Mr. Mulligan or something.

Ermytrude has gone home with chicken-pox. Hope I get it.

Ever your affectionate grandchild.

Vanessa.

Reed Millican★ eh? Catching 'em young!

Worse than the blasted communists,



.. ARTISTRY IN



GLASS



Architects: John King & White

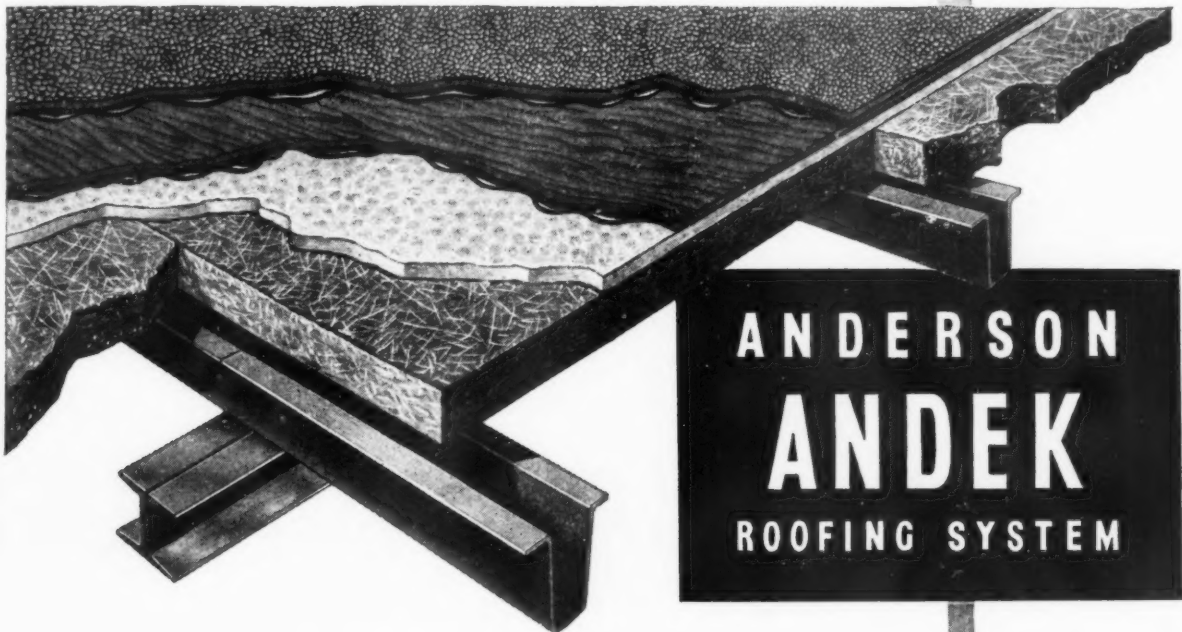
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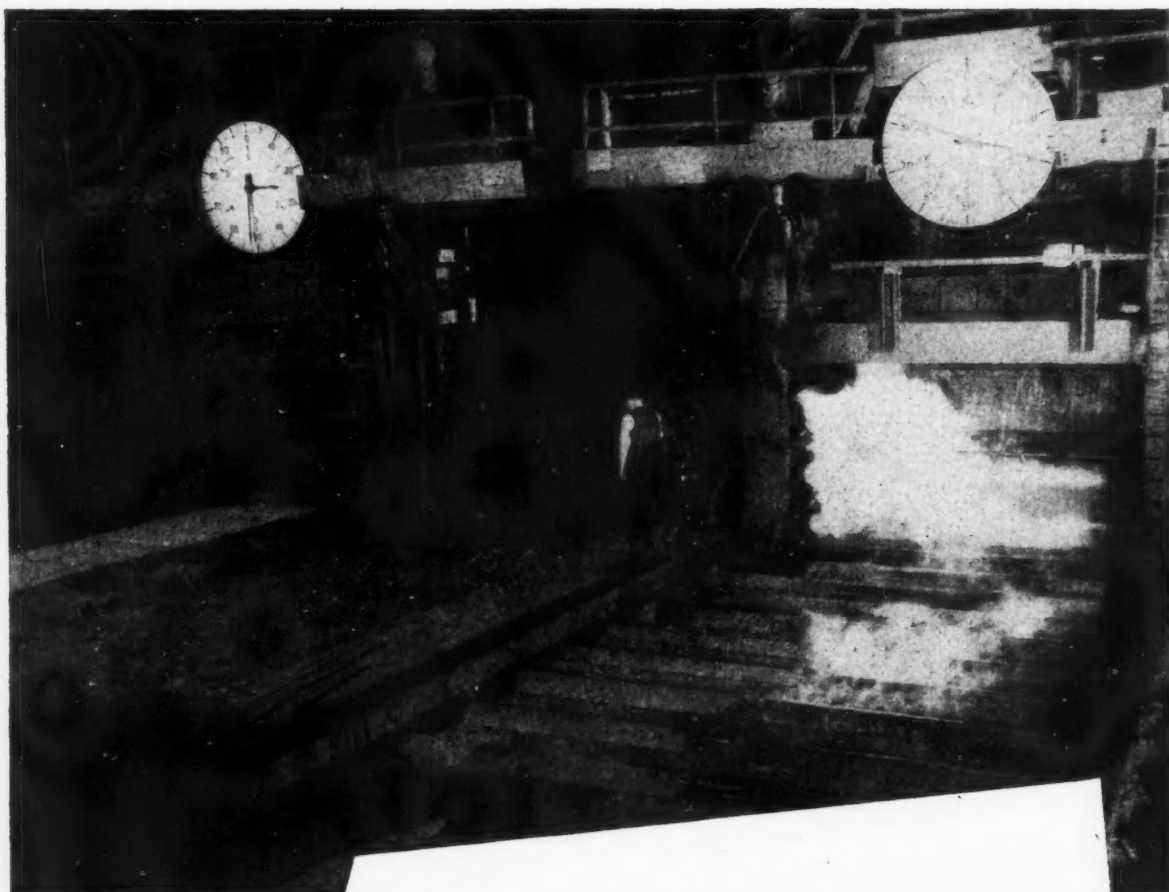
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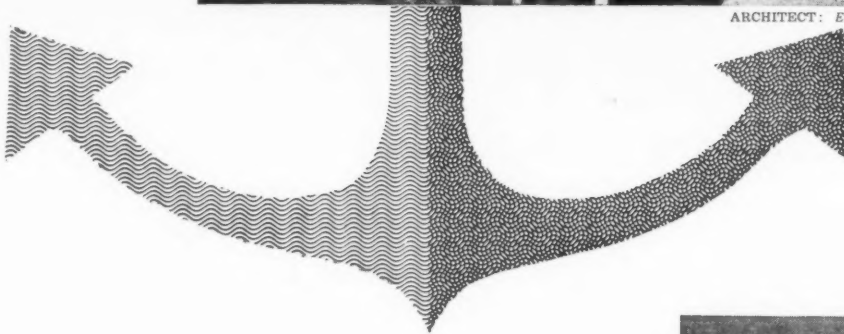
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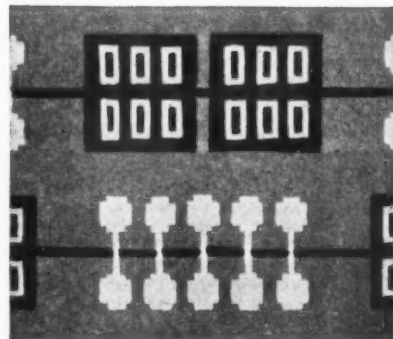


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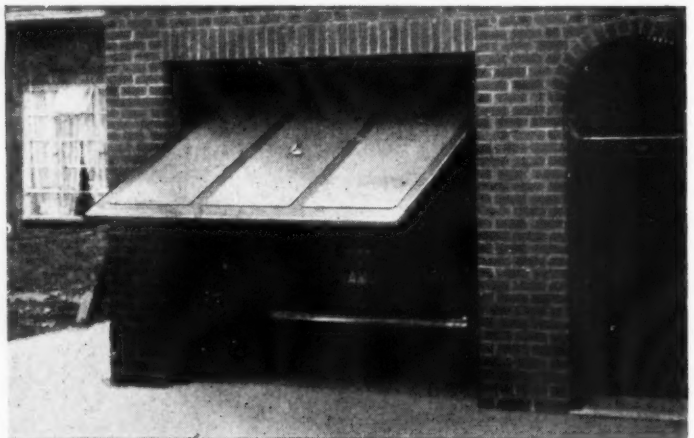
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Illustration on left shows ELLARD "Radial" Sliding Door Gear fitted to a private garage. Sliding doors are of great advantage in protecting cars against damage caused by accidental swinging of hinged doors. In addition, valuable working space is offered where it is most desired, at the entrance to the garage. Note also how ELLARD Door Gear provides easy access to and from the garage by a personal entry door. ELLARD "Radial" Sliding Door Gear is low in price and gives long service without maintenance. This gear is also suitable for the larger openings of commercial and industrial garages.

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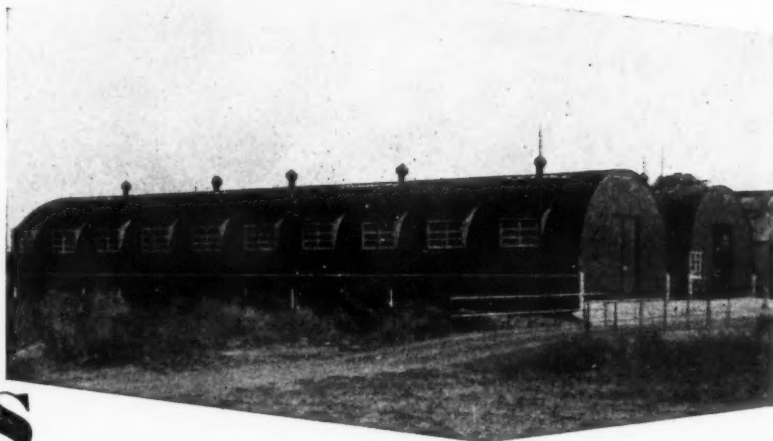


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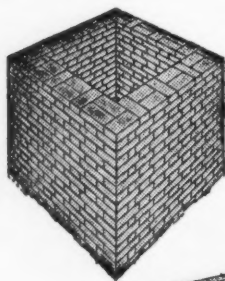
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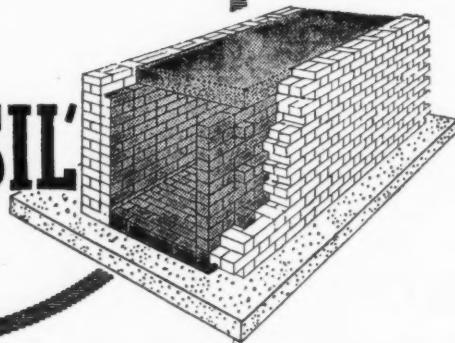
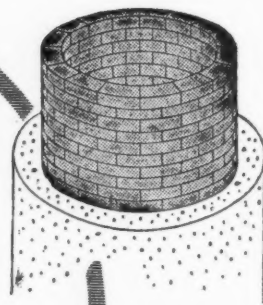


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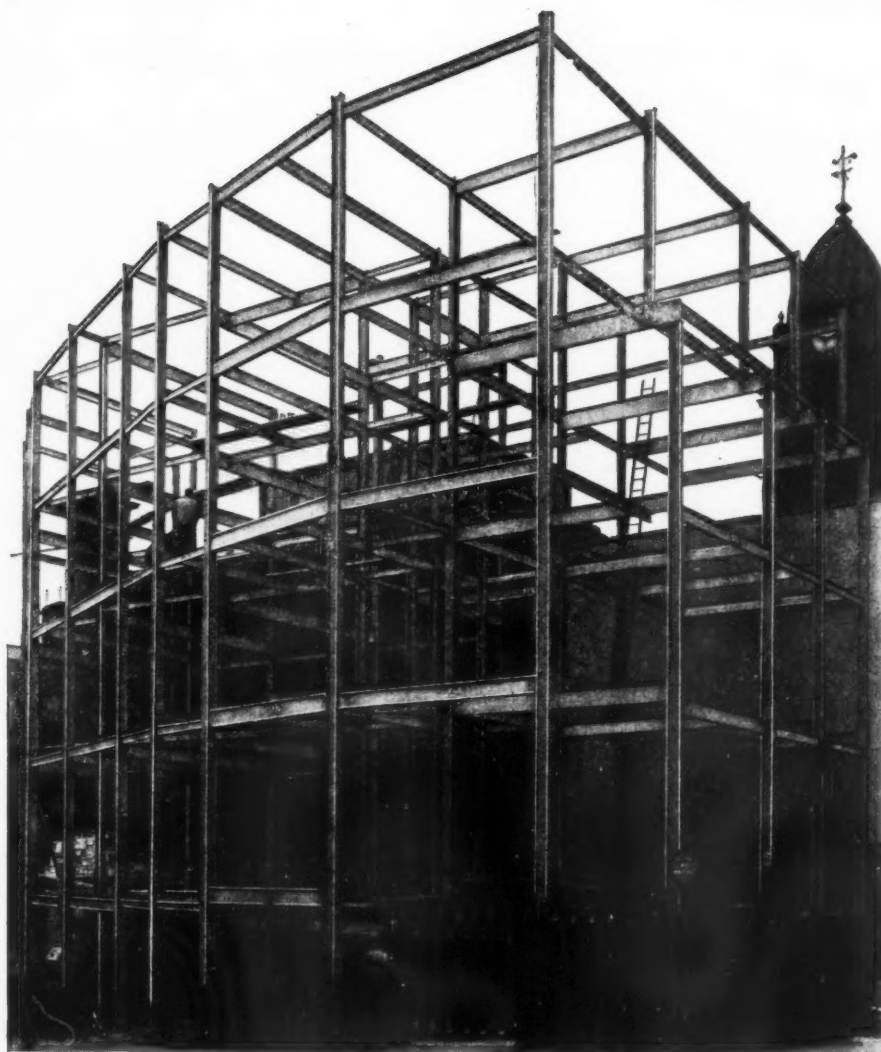
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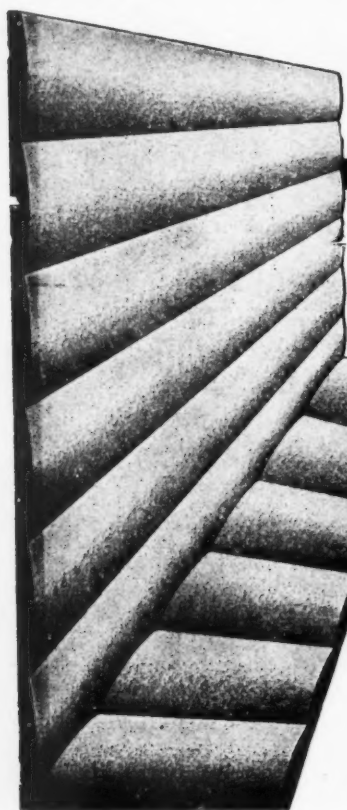
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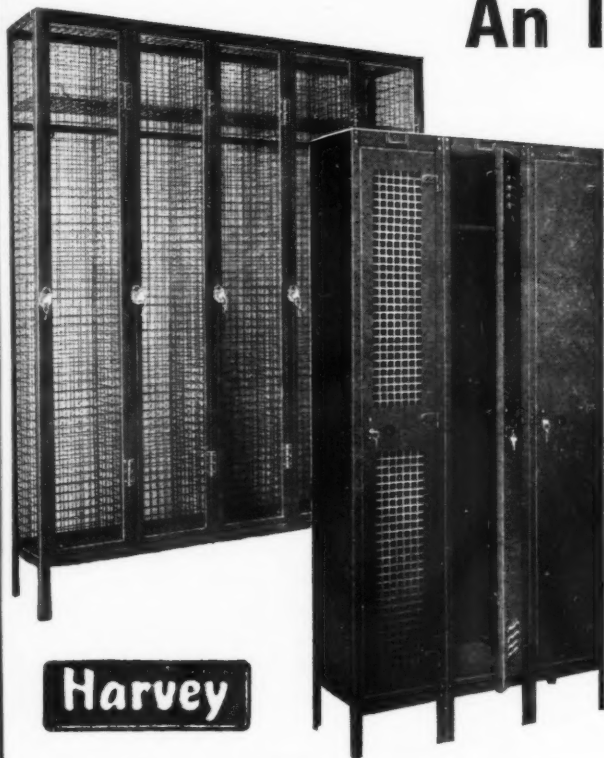
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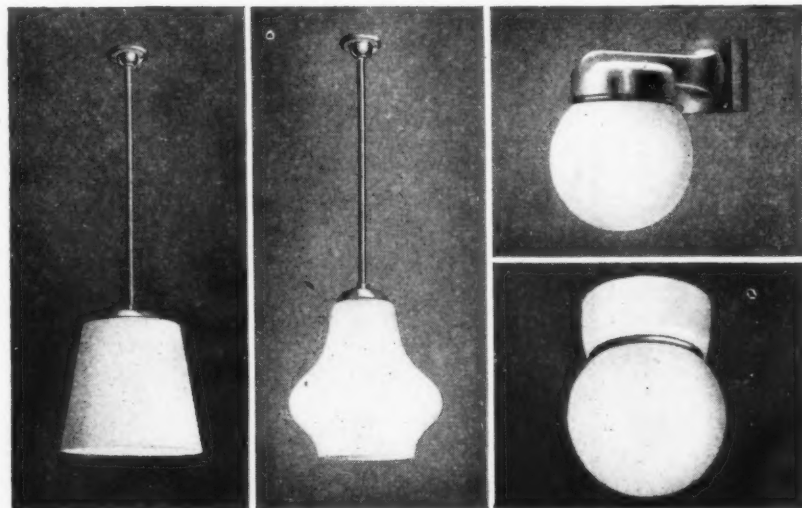
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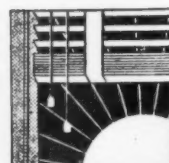
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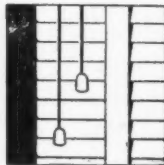


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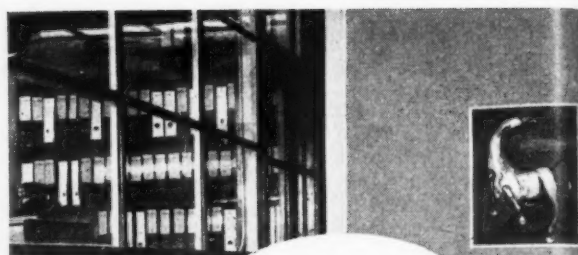
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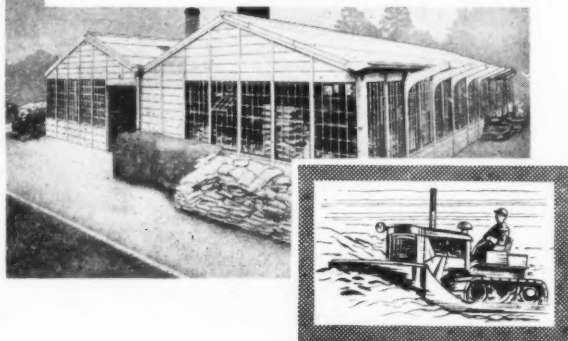


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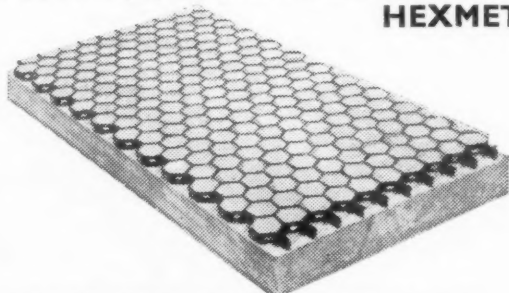


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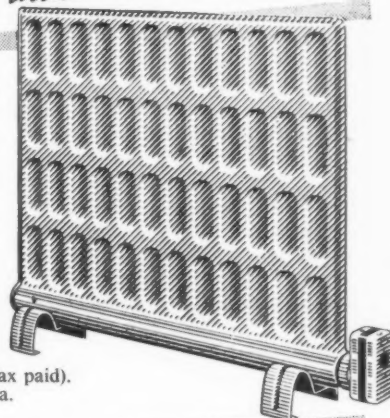
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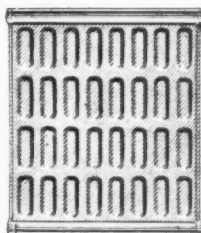
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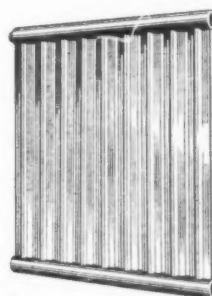
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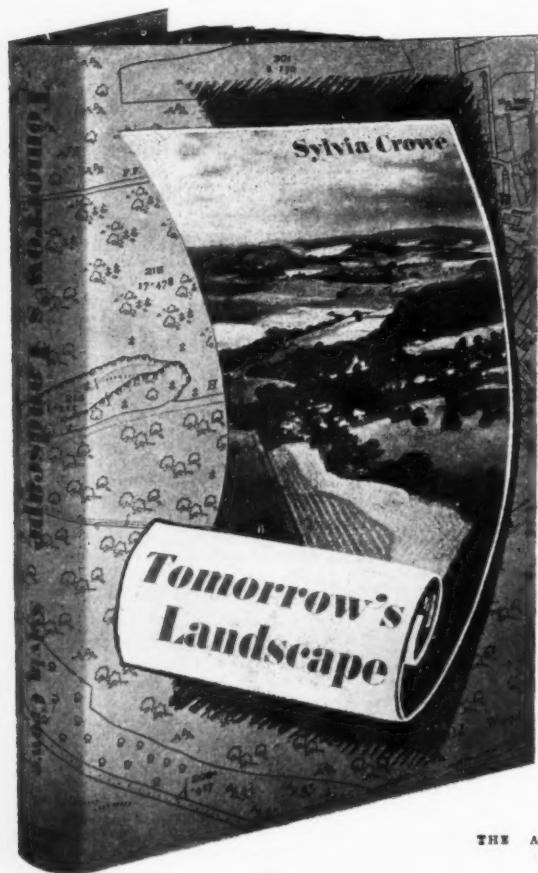
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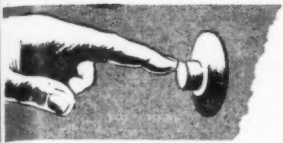
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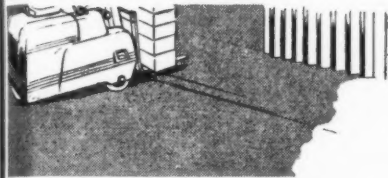
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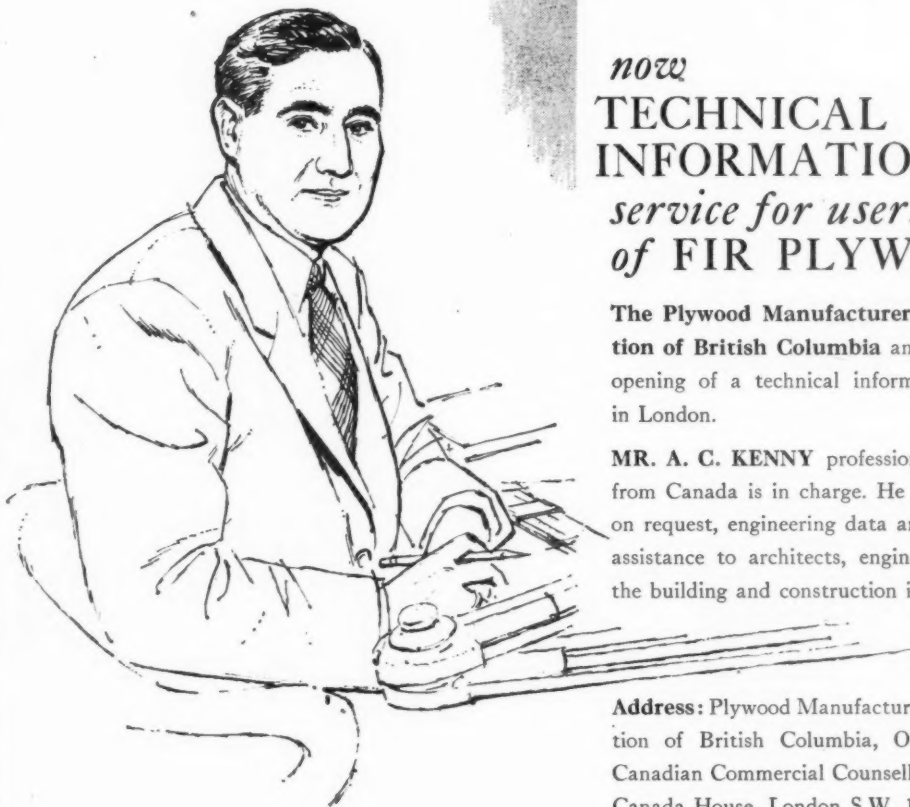
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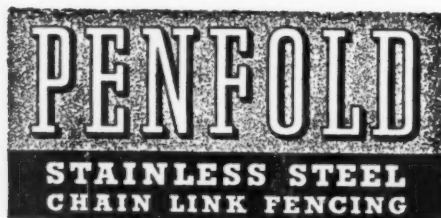
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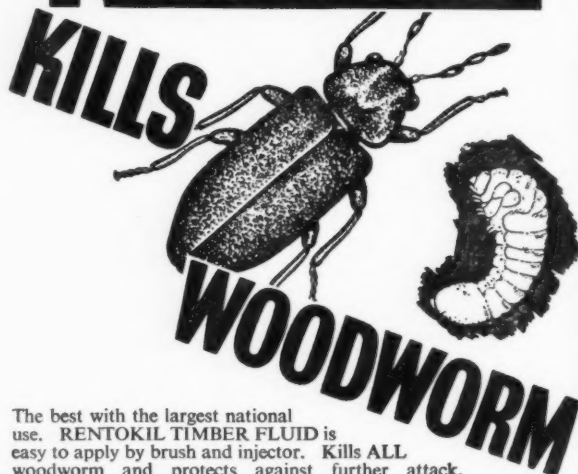
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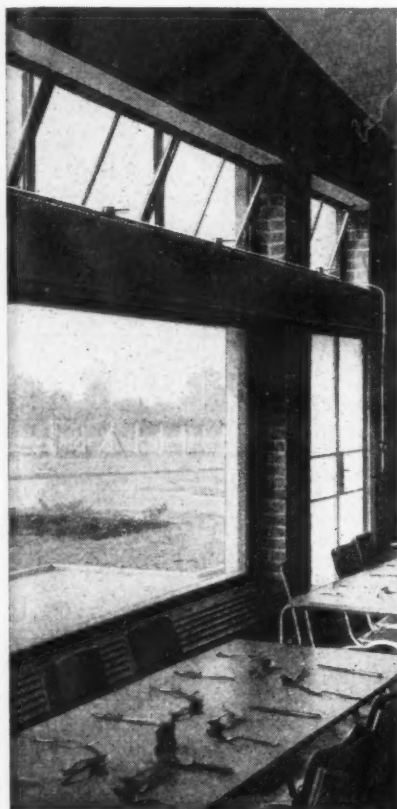


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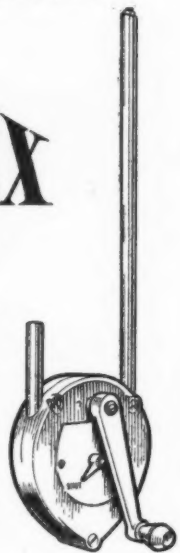
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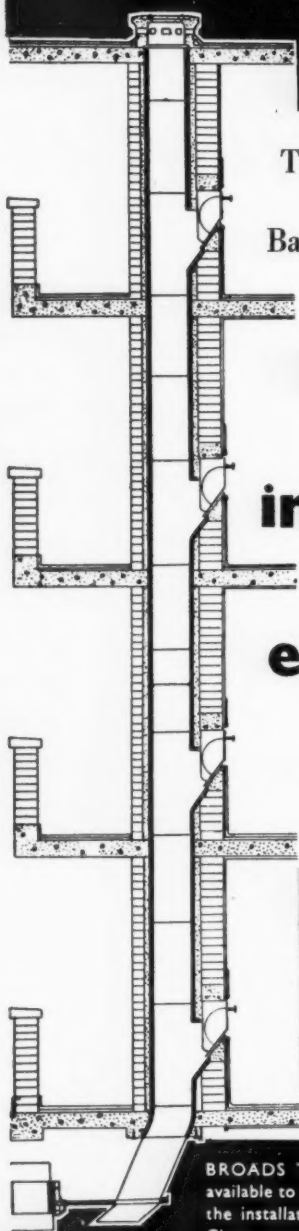
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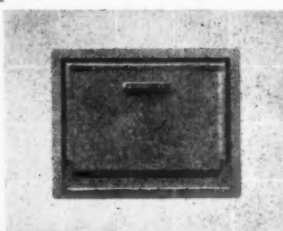
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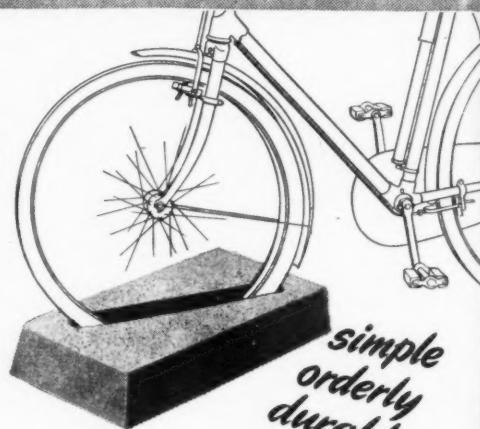
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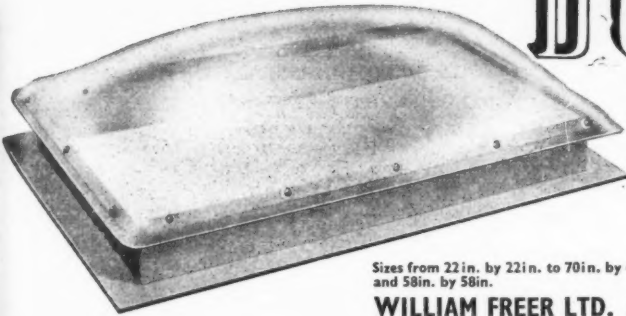
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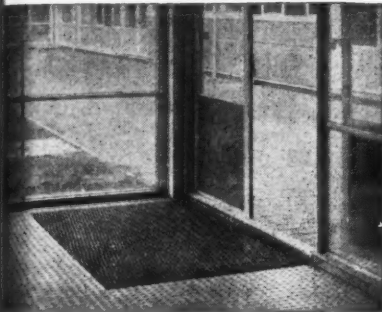
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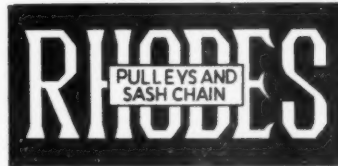
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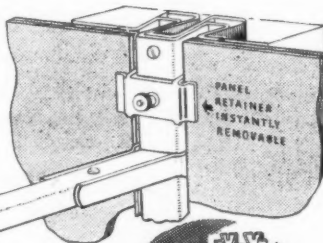


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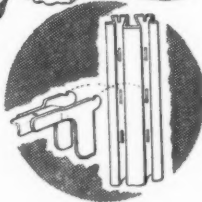
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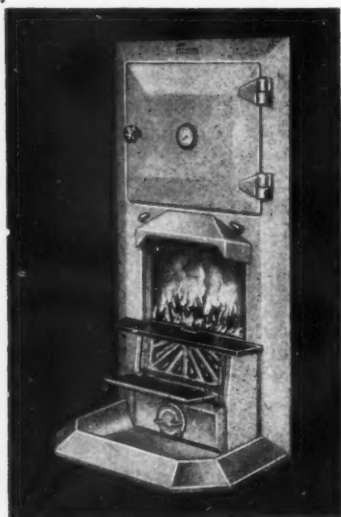
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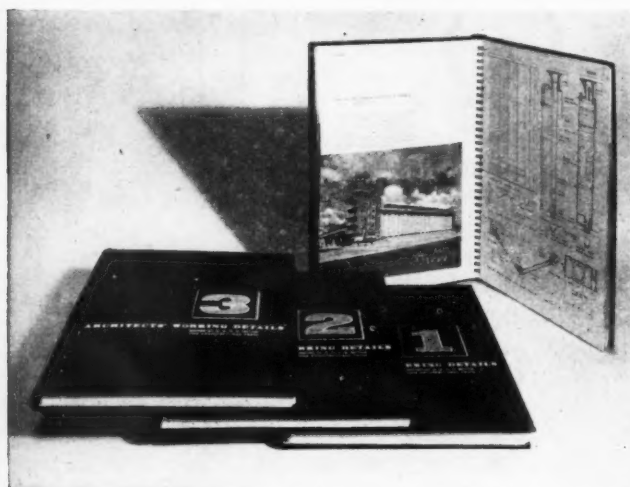
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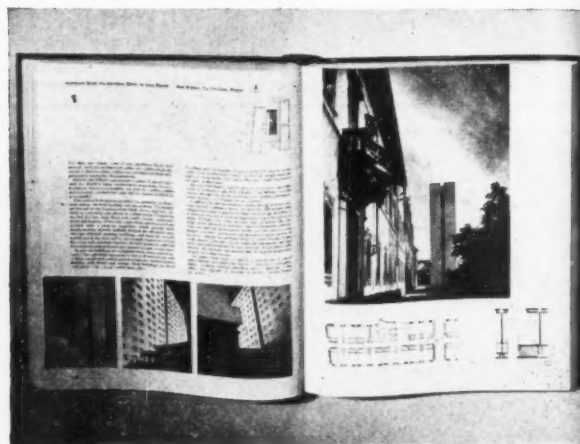
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THE MOST SUPERB and significant book on Italian architecture which has yet appeared, this is the climax of Mr. Kidder Smith's famous series on European



ITALY

architecture which began so auspiciously with *Switzerland Builds* and *Sweden Builds*. Not only will it profoundly influence every architect and planner, it will also delight and stimulate every student, traveller and lover of Italy who studies its 264 well illustrated pages.

In the first half of the book the incredible architectural inheritance of the country is, virtually for the first time, examined critically by a modern architect. Historic architecture and planning have been lifted from the category of the dull text-book and infused with a life which has particular pertinence for us today. Ernesto N. Rogers provides a perceptive Introduction, and with the stage thus set we are given the brilliant modern work which burst on the world with such impact. *Italy Builds* captures the spirit and imagination, the lessons and ideas of the country's post-war architecture in galvanic fashion. The almost unknown but shining contribution of housing and commemorative architecture (including the most significant memorials in Europe), the imaginative shops, the scintillating exhibitions are among the many building types which introduce the climax of the book—the incomparable work of Pier Luigi Nervi, the greatest architectural engineer of the twentieth century.

Size 11½ in. by 8½ in., 264 pages, with over 750 illustrations. Introduction by Ernesto N. Rogers. The text set in English and Italian. Price 56s. net. Postage 1s. 6d. inland; 1s. 2d. abroad.

This edition not for sale in Italy or the U.S.A.

THE ARCHITECTURAL PRESS

9-13 Queen Anne's Gate, Westminster, S.W.1

CLASSIFIED ADVERTISEMENTS

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

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

Public and Official Announcements

25s. per inch; each additional line, 2s.

HAYES AND HARBINGTON URBAN DISTRICT COUNCIL

Applications are invited for:—
(a) ARCHITECTURAL ASSISTANTS (PERMANENT) (two vacancies) within Grade A.P.T. II, i.e., £595-£675 per annum. (b) SENIOR ARCHITECTURAL ASSISTANT (TEMPORARY) within Grade A.P.T. IV, i.e., £710-£865 per annum, plus London weighting, in each instance, 21-25 years £20 per annum, 26 years and over £30 per annum. Candidates for (a) must have passed the R.I.B.A. Inter. Exam., good experience of housing work with local authority. Housing accommodation will be made available for one of these two appointments if necessary. (b) Must be a Registered Architect, have good general experience in design and construction in relation to municipal housing and other works, and capable of supervising large building contracts. Housing accommodation will be made available if necessary. 5-day week. Further particulars and form of application obtainable from the undersigned, which, when completed, must be returned as soon as possible.

GEORGE HOOPER,
Clerk and Solicitor.

Town Hall, Hayes, Middlesex. 1277

COUNTY BOROUGH OF DERBY BOROUGH ARCHITECT'S DEPARTMENT ARCHITECTURAL STAFF:

- (a) A.P.T. Grade IV (£710-£885 per annum).
- (b) A.P.T. Grade III (£640-£765 per annum).
- (c) A.P.T. Grade II (£595-£675 per annum).
- (d) A.P.T. Grade I (£530-£610 per annum).
- (e) Higher General Division (£180-£500 per annum).

QUANTITY SURVEYING STAFF:
(f) A.P.T. Grade V (£795-£970 per annum). Commencing salary will be according to qualifications and experience.

Permanent superannuable appointments subject to one month's notice and to medical examination. National Conditions of Service.

Applicants must state for which post they are applying.

Application forms obtainable from and to be returned to The Borough Architect, The Council House, Corporation Street, Derby, not later than Monday, 27th August, 1956.

G. H. EMLYN JONES,
Town Clerk. 1918

30th July, 1956.

SOUTH EASTERN GAS BOARD ARCHITECTURAL ASSISTANT Architect and Surveyor's Department, Katharine Street, Croydon

Candidates must have a sound architectural training and be able to prepare specifications. Salary within the range £700-£780 p.a. Applications in writing, quoting reference V16/615 and giving full details should reach the undersigned within ten days after the publication of this notice.

R. J. McCRAE,
Personnel Manager.

Katharine Street, Croydon. 1907

AYCLIFFE DEVELOPMENT CORPORATION CHIEF ARCHITECT'S DEPARTMENT ARCHITECTURAL ASSISTANT A.P.T. IV (£710-£835-£885 p.a.)

Applications are invited for the above post from persons approaching the final standard of the R.I.B.A. Applicants should have had at least three years' varied experience.

Appointment subject to N.J.C. conditions, superannuation and medical examination.

Housing accommodation provided if necessary.

Applications stating age, qualifications and experience together with the names of two referees to arrive not later than 25th August, 1956.

A. V. WILLIAMS,
General Manager.

Newton Aycliffe, nr. Darlington, Co. Durham. 1958

CITY OF BATH CITY PLANNING AND ARCHITECTURAL DEPARTMENT

Applications are invited for the appointment of a PLANNING ASSISTANT, at a salary in accordance with Grades A.P.T. I/II (£530-£675) per annum, according to qualifications and experience. The post is pensionable and subject to the N.J.C. conditions.

Applications, stating age, qualifications and experience, and giving names of two referees, should be sent to the City Planning Officer and Architect, 7, North Parade Buildings, Bath, by the 1st August, 1956.

JARED E. DIXON,
Town Clerk.

Guildhall, Bath. 1989

2nd August, 1956.

DURHAM COUNTY COUNCIL COUNTY ARCHITECT'S DEPARTMENT

APPOINTMENT OF ASSISTANT ARCHITECTS
In connection with their proposal to erect new County Offices, the Council require a QUALIFIED ARCHITECT to prepare drawings and supervise the erection of the building. The person appointed will be in charge of a small team who, together, will be responsible to the County Architect. Candidates should have a fair for design and must have had experience in the design and construction of multi-storey buildings. Salary £1,175 x £55-£1,405.

Applications are also invited from QUALIFIED ARCHITECTS for appointment on salary scales A.P.T. V (£795 x £35-£970) and A.P.T. VI (£880 x £40-£1,080).

All appointments are subject to medical examinations for the purposes of the Local Government Superannuation Acts, the Council's regulations and the National Joint Council's Scheme for the time being governing payment of salary during sickness, annual leave and other conditions of service.

Applications including the names and addresses of two persons to whom reference may be made must reach the County Architect, South Street, Durham, by 25th August, 1956.

J. K. HOPE,
Clerk of the County Council.

Shire Hall, Durham. 1935

LIVERPOOL REGIONAL HOSPITAL BOARD REGIONAL ARCHITECT required for temporary appointment in the Department of the Regional Architect in connection with the design and construction of a new 1,000 bedded Mental Deficiency Hospital.

Salary scale £640 x £25 (4) x £30 (4) x £35 (2) to £930 p.a. which is subject to a recently negotiated increase of approximately 5 per cent. The starting salary will be dependent upon age and experience and the appointment will be terminable by one month's notice on either side.

Applications stating age, experience, qualifications, present and past appointments and salary, and names and addresses of three referees (two technical) to me not later than 24th August, 1956.

VINCE COLLINGS,
Secretary to the Board.

19, James Street, Liverpool, 2. 1932

MIDDLESBROUGH EDUCATION COMMITTEE APPOINTMENT OF ARCHITECTURAL STAFF

Under a review of establishment recently approved by the Authority, the following vacancies are open in the office of the Education Architect (K. J. Caton, A.R.I.B.A.).

Appointments will be made within the grades as indicated subject to qualifications and experience.

(a) ONE PRINCIPAL ASSISTANT ARCHITECT, A.P.T. Grade VI, £975-£1,080 (responsibilities under the Chief Assistant Architect).

(b) TWO SENIOR ASSISTANT ARCHITECTS, A.P.T. Grade V, £795-£970.

(c) TWO ASSISTANT ARCHITECTS, A.P.T. Special Grade to Grade IV, £690-£840-£885.

Candidates appointed under posts (c) who must have passed the final examination parts I and II would be considered for an accelerated incremental rise on attaining Associate Membership of the R.I.B.A.

Housing accommodation is available for the successful candidates, if required.

Application forms and particulars may be obtained from the Director of Education, Education Offices, Woodlands Road, Middlesbrough, to whom completed forms should be returned not later than Thursday, 30th August, 1956.

METROPOLITAN BOROUGH OF LEWISHAM ASSISTANT ARCHITECT

Salary scale £700 rising to £870 p.a. (N.J.C. Special Scale plus London weighting.) Commencing salary according to experience and qualifications. Particulars and forms of application from Town Clerk, Lewisham Town Hall, Catford, S.E.6. Closing date 1st September, 1956.

1947

CRICKLADE AND WOOTTON BASSETT RURAL DISTRICT COUNCIL

AMENDED ADVERTISEMENT FOR THE APPOINTMENT OF ENGINEERING AND SURVEYING ASSISTANT

Applications are invited for the appointment of Engineering and Surveying Assistant to the Engineer and Surveyor, Mr. J. C. Grindley, A.M.I.C.E., A.R.I.C.S., M.I.Mun.E., A.M.T.P.I., at a commencing salary of £600 per annum in accordance with Grade A.P.T. III and proceeding into Grade A.P.T. IV (£780-£885).

The appointment will be subject to the provisions of the Local Government Superannuation Acts and the National Joint Council Conditions of Service and to the successful candidate passing a medical examination.

Preference will be given to applicants who have had experience in housing works.

Applications endorsed "Engineering and Surveying Assistant" stating age, qualifications, and experience together with copies of not more than three recent testimonials, should reach the undersigned not later than Tuesday, the 4th September, 1956.

W. J. HOSIER,
Clerk of the Council.

Council Offices, Manor House, Wootton Bassett, Swindon, Wilts. 1915

30th July, 1956.

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

Applications are invited for the appointment of PRINCIPAL ASSISTANT ARCHITECT (Housing and General Section), at a salary in accordance with A.P.T. Grade V (£795-£970 p.a.), the commencing salary to be fixed within the scope of this grade according to qualifications and experience.

Applicants should be Associates of the R.I.B.A., with good architectural experience and knowledge of Local Government procedure. Housing accommodation will be made available if required.

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

Applications, stating age, education, qualifications, full particulars of training and experience, together with copies of two recent testimonials, should be sent to the undersigned not later than Tuesday, 28th August, 1956, endorsed "Principal Assistant Architect."

A. NORMAN JAMES,
Town Clerk.

Town Hall, Dewsbury. 2017

31st July, 1956.

ARCHITECTURAL ASSISTANTS and JUNIOR ARCHITECTURAL ASSISTANTS required by Hackney Borough Council for extensive programme of new housing, public baths, libraries and other public buildings. Appointments may be in Grades A.P.T. I (£530-£610), A.P.T. II (£595-£675), or A.P.T. III (£640-£765) p.a., singly or combined, plus London weighting allowance of up to £30 p.a. Candidates must be Probationers or Students of R.I.B.A. Grade and commencing salary according to training, qualifications and experience.

Applications obtainable from the Town Clerk, Town Hall, E.8, returnable by 29th August, 1956, quoting reference J.2. 2016

CENTRAL ELECTRICITY AUTHORITY EAST MIDLANDS DIVISION

A SECTION LEADER is required in the Drawing Office of the Transmission Department at this Divisional Headquarters in Nottingham for work associated with H.V. Substations and Transmission Systems. Considerable experience on this type of work, including the Civil and Electrical Engineering involved, is essential.

Salary will be in accordance with Grade III (£925-£1,025 per annum) of Schedule D of the National Joint Board Agreement, according to experience and qualifications, and the position will be pensionable within the terms and conditions of the Central Electricity Authority and Area Boards (Staff) Superannuation Scheme.

Applications should be submitted on the official form AE6/ACT, which may be obtained from the Divisional Establishments Officer, Central Electricity Authority, P.O. Box 25, Barker Gate, Nottingham, and returned to the undersigned by 30th August, 1956. Please quote Vacancy No. 154/56/AJ.

L. F. JEFFREY,
Divisional Controller. 2011

8th August, 1956.

COUNTY BOROUGH OF DONCASTER

Applications are invited for the following vacancies in the Borough Architect's Department:—

(a) ASSISTANT ARCHITECT, Grade A.P.T. V (£795 x £35-£970). Applicants must be Associates of the R.I.B.A. and have had 5 years' experience in design and working drawings.

(b) ARCHITECTURAL ASSISTANTS, Grade A.P.T. III (£640 x £25-£765). Applicants should have passed the R.I.B.A. Intermediate Examination.

(c) TEMPORARY ARCHITECTURAL ASSISTANTS, Special Grade (£690 x £30-£840). Applicants should have passed the R.I.B.A. Final Examination.

The appointments offer scope for experience in large scale central area re-developments and educational projects, and preference will be given to those with a keen interest in contemporary design.

Housing accommodation will be available if necessary.

Forms of application can be obtained from the Borough Architect, L. J. Tucker, Esq., A.R.I.B.A., F.I.H.S., 15, South Parade, Doncaster, and must be returned to the undersigned not later than 10 a.m. on Monday, the 3rd September, 1956.

H. R. WORMALD,
Town Clerk.

1, Priory Place, Doncaster. 2010

8th August, 1956.

SURREY COUNTY COUNCIL

Applications invited for following appointments:—

1. ASSISTANT ARCHITECT GRADE IV-VI. Minimum £710, maximum £1,080, plus £30 London Allowance p.a.

2. ARCHITECTURAL ASSISTANTS GRADE I-III, minimum £530, maximum £765 p.a. plus L.A.

Salary range of appointment and commencing salary will depend on experience and qualifications.

Full details, present salary and 3 copy testimonials to County Architect, County Hall, Kingston, as soon as possible. 2024

HEMEL HEMPSTEAD DEVELOPMENT CORPORATION
APPOINTMENT OF DEPUTY CHIEF ARCHITECT, £1,625-£1,900

Applications are invited for the post of Deputy Chief Architect, responsible to the Chief Architect, H. Kellett Ablett, F.R.I.B.A., M.T.P.I.

The requirement is for a qualified architect of determination and energy with first class organizing ability and able to control a large staff. He should have a wide experience of design and construction in housing, industrial and commercial development.

Housing can be provided.

Forms of application, endorsed "Vacancy No. 2," can be obtained from the General Manager, Hemel Hempstead Development Corporation, Westbrook Hay, Hemel Hempstead, Herts., and applications are required to be in by 31st August, 1956.

2025

CITY OF PETERBOROUGH
APPOINTMENT OF QUANTITY SURVEYOR, CITY ENGINEER'S DEPT.

Applications are invited from suitably qualified Quantity Surveyors for the above appointment at a salary in accordance with Grade II and III A.P. & T. (£595 per annum rising by annual increments to a maximum of £765).

Applicants should have wide experience including taking off bills for new schools.

Any further information can be obtained from the City Engineer and Surveyor (Mr. L. H. Robjohn, M.B.E., A.M.I.C.E.).

Consideration will be given to the provision of Council housing accommodation.

Closing date for receipt of applications 31st August, 1956.

C. PETER CLARKE,
Town Clerk.

Town Hall,
Peterborough.
August, 1956.

2020

COUNTY BOROUGH OF DONCASTER
Applications are invited for the following vacancies in the Borough Architect's Department:—

(a) **ASSISTANT QUANTITY SURVEYORS.** Grade A.P.T. V (£795-£970). Applicants must be Associates of the R.I.C.S. and have had good experience in the preparation of Bills of Quantities for all types of work, valuation for interim certificates, and the settlement of final accounts.

(b) **QUANTITY SURVEYING ASSISTANT.** Grade A.P.T. III (£640-£765). Applicants must have passed the R.I.C.S. Intermediate Examination and be competent to assist in the preparation of Bills of Quantities and the settlement of accounts.

Housing accommodation will be available if required.

Forms of application can be obtained from the Borough Architect, L. J. Tucker, Esq., A.R.I.B.A., F.I.H.S., 35, South Parade, Doncaster, and must be returned to the undersigned not later than 10 a.m. on Monday, the 3rd September, 1956.

H. R. WORMALL,
Town Clerk.

1, Priory Place, Doncaster.
8th August, 1956.

2009

COUNTY BOROUGH OF OLDHAM
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT
APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT

Applications are invited from suitably qualified persons for the above appointment, at a salary in accordance with Grade A.P.T. IV (£710-£885), commencing salary according to experience.

The National Conditions and Local Government Superannuation Acts apply. Housing accommodation available if required.

Applications, suitably endorsed, together with the names and addresses of two referees, should reach me not later than Tuesday, 4th September, 1956.

A. L. HOBSON,
Borough Engineer and Surveyor.

75, Union Street, Oldham.

2005

HERTFORDSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

Applications invited for appointment of CHIEF ASSISTANT ARCHITECTS (Section Leaders). Salary, Grade "A" (£1,145-£1,320). Commencing salary to be fixed in accordance with qualifications and experience.

Previous Local Government experience not essential. Applications, giving detailed particulars of experience, qualifications, etc., and names of three referees, to County Architect, County Hall, Hertford, Herts., not later than first post, 27th August, 1956.

2018

UNIVERSITY COLLEGE OF NORTH STAFFORDSHIRE

Applications are invited for the post of ASSISTANT ARCHITECT on the staff of the Buildings Officer and Architect. Salary in the scale £790-£830 p.a. The post is superannuable. Duties may include work on buildings for teaching and research, students' hostels, staff residences, general purpose buildings and services. Applicants must be Registered Architects. Further particulars may be obtained from the Registrar, The College, Keele, Staffs., to whom three copies of application, giving full details of age, qualifications, experience, etc., and names of three referees, should be sent within 10 days of publication of this advertisement.

1990

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Applications are invited to fill the following newly created positions in the Building Regulation Division for work in connection with inspection and improvement of means of escape in case of fire:—1 Grade II (salary up to £1,184), 3 Grade IIIs (up to £987), and 6 Assistants (up to £817), with starting rates according to experience and qualifications.

Particulars and application form returnable by 1st September, 1956, from the Architect (AR/EK/CG/3), County Hall, S.E.1. (1956) 2014

GOVERNMENT OF QATAR-PERSIAN GULF
STATE ENGINEER'S OFFICE
DESIGN ENGINEER

Applications are invited for the above post under the direction of the State Engineer, Government of Qatar, Doha.

Applicants for the post of Design Engineer should be qualified Civil Engineers (Associate Members of the Institution of Civil Engineers or other internationally recognised body), having particular experience of the layout and design of roads (bitumen, macadam and reinforced concrete) and reinforced concrete structure, together with a sound working knowledge of the design of water supply, sewerage and sewerage disposal schemes. Applicants should be rapid and competent draughtsmen.

The successful applicant will assist in the design of many of the Civil Engineering works associated with a rapidly expanding town.

Salary: For the above appointment will be according to Scale E2, starting at Rs. 1,775 an Arabic month, with annual increment of Rs. 75 a month up to Rs. 2,000, and then by annual increment of Rs. 100 per month to a maximum of Rs. 2,300 per month (Rs. 1,775 an Arabic month is equivalent to £1,590 a Gregorian year).

Gratuity: Payable on the basis of one month's pay for each completed year of service; on completion of contract only.

Probation: Probationary period of six months during which contract may be terminated at three months' notice by the Government without stating its reason.

Contract: A five-year contract subject to successful completion of the probationary period. The employee may terminate the contract at three months' notice only after completing one year's service.

Accommodation: Free furnished bachelor accommodation, fuel, light and water. Married accommodation will be provided in accordance with the rules, but in no case before successful completion of probationary period.

Leave: Will be earned at the rate of 5 days for each completed month of duty.

Free Travel: On first journey to Qatar, leave not exceeding one return 1st class air passage in each year, and termination, for wife and children up to 18 years of age.

General: The climate is hot for about five months of the year, but this is offset by air-conditioning in staff houses and offices. Good climate for the rest of the year. No income tax. Duty car allowance. Free medical and dental treatment.

Applications, endorsed "Design Engineer," giving full personal particulars, including age, nationality, religion, education, marital status, qualifications, training, past experience and employment, names and addresses of three referees and recent photograph, should be sent in duplicate to The Adviser to the Government of Qatar, P.O. Box 36, Doha, Qatar. Persian Gulf. A further two copies with enclosures, similarly endorsed, should be sent to C. Tennant, Sons & Co., Ltd., 4, Copthall Avenue, London, E.C.2. 1959

BOROUGH OF WILLESDEN
BOROUGH ENGINEER AND SURVEYOR'S DEPT.

Applications are invited, in an expanding office, for the following permanent appointments:—

(a) **ARCHITECTURAL ASSISTANT, A.P.T. VI** (£880-£1,080).

Applicants must be A.R.I.B.A., and will be required to work as a Group Leader on schemes consisting mainly of housing projects.

(b) **ARCHITECTURAL ASSISTANTS (3 posts), Grade A.P.T. V (£795-£970).**

(c) **ASSISTANT ARCHITECT, A.P.T. III/IV** (£640-£885).

(d) **ASSISTANT ARCHITECTS (3 posts), A.P.T. III (£640-£765).**

London weighting is payable in addition to the above. 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 Monday, 27th August, 1956. When writing for application forms candidates must state for which appointment they wish to apply.

R. S. FORSTER,

Town Clerk.

2nd August, 1956.

1967

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

DRAUGHTSMEN required for Planning Division in connection with a review of County of London Development Plan. Pay up to £11 16s. a week, with starting point according to experience.

Application forms, returnable by 22nd August, from The Architect, County Hall, S.E.1, quoting AR/EK/DP/1. (1958)

1978

THE UNIVERSITY COLLEGE OF NORTH STAFFORDSHIRE

Applications are invited for the post of ASSISTANT ARCHITECT on the staff of the Buildings Officer and Architect. Salary in the scale: £595-£280-£675 p.a. The post is superannuable. Duties may include work on buildings for teaching and research, students' hostels, staff residences, general purpose buildings and services. Applicants must have reached Intermediate R.I.B.A. standard. Further particulars may be obtained from the Registrar, The College, Keele, Staffs., to whom three copies of application giving full details of age, qualifications, experience, etc., and names of three referees, should be sent within 10 days of publication of this advertisement.

GOLD COAST LOCAL CIVIL SERVICE
ASSISTANT TOWN PLANNING OFFICERS/
TOWN PLANNING OFFICERS

Required for duty with the Ministry of Local Government and Housing. Contract appointment for two tours of 18-24 months in first instance. Salary range: £1,180-£2,020 p.a., plus temporary addition of £29 15s. p.a. Gratuity of £150 for each year of satisfactory service on completion of contract. Free passages for officer, wife, and up to three children under 15. Quarters at low rate. Generous home leave on full salary. Candidates, under 45, must be A.M.T.P.I., or have recognised exempting qualification, and in addition either A.R.I.B.A., A.M.I.C.E., A.R.I.C.S., or A.M.I.Mun.E. Write Director of Recruitment, Colonial Office, London, S.W.1, giving age, qualifications and experience, and quoting BCD.163/13/03.

BOROUGH OF WALTHAMSTOW

Applications are invited for the following appointment in the Department of F. G. Southgate, A.R.I.B.A., A.M.I.Mun.E., A.M.T.P.I., Borough Architect, Engineer and Surveyor:—

ASSISTANT QUANTITY SURVEYOR

The salary for the post will be in accordance with A.P.T. Grade II (£625-£705, inclusive of London weighting), with the commencing salary according to experience.

Applicants must have had at least two years' recent practical experience.

Applications, with the names of two persons for reference, should be received by the undersigned not later than noon on Friday, 31st August, 1956, endorsed "Assistant Quantity Surveyor."

G. A. BLAKEY,
Town Clerk.

Town Hall, Walthamstow, E.17.

3rd August, 1956.

CITY OF OXFORD
CITY ARCHITECT AND PLANNING OFFICER'S DEPARTMENT

Vacancies on permanent staff:—

(a) **SURVEYING ASSISTANT, Grade IV, A.P.T. Division (within the range £710-£885).**

Housing accommodation provided.

Candidates must be qualified Members of the Royal Institution of Chartered Surveyors or the Chartered Auctioneers' and Estate Agents' Institute, and additional qualifications in Planning will be an advantage. Varied duties in the Estates and Planning Sections of the Department, particularly with regard to acquisition of property in areas of redevelopment and economics of Planning, including compensation matters. Local Authority experience desirable.

(b) **SURVEYING ASSISTANT.** (To deal with maintenance work and small alterations to all types of buildings.) Grade: Special Classes of Officers (£650-£840 per annum). Housing accommodation and car allowance.

Candidates should preferably be qualified Members of the Royal Institution of Chartered Surveyors, although consideration would be given to applicants not yet fully qualified, in which case the salary would be at the appropriate lower level.

(c) **PLANNING ASSISTANT** (temporary in the first instance). Grade: Special Classes of Officers, or Grade IV, A.P.T. Division (within the range £690-£885).

Candidates must be qualified Members of the Town Planning Institute; additional qualifications an advantage. Ability to deal on own initiative with general town planning problems desirable, although due consideration given to candidates with an aptitude in a particular field.

Further details and application forms, which must be returned by 31st August, from the City Architect and Planning Officer, Town Hall, Oxford.

Please indicate clearly for which post application is being made.

HARRY PLOWMAN,
Town Clerk.

Town Hall, Oxford.

BRAINTREE RURAL DISTRICT COUNCIL
ARCHITECTURAL ASSISTANT

Applications are invited from persons with sound experience in the preparation of surveys, plans, details of construction and design of housing schemes. Preference will be given to applicants with R.I.B.A. Inter. or equivalent N.J.C. service conditions. Salary: A.P.T. Grade II (£595-£675 p.a.). Write, giving age, experience, qualifications, and two referees, to me not later than 31st August, 1956. No forms. Canvassing disqualified.

W. HUMPHREY,
Clerk of the Council.

Council Offices, St. Peter's Close,
Bocking, Braintree, Essex.

2031

CITY OF BIRMINGHAM

CITY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

- (a) ASSISTANT ARCHITECTS, Grade A.P.T. V (£795—£970 per annum).
- (b) ASSISTANT ARCHITECTS, Grade A.P.T. IV (£710—£885 per annum).
- (c) ARCHITECTURAL ASSISTANTS, Special Classes (£690—£840 per annum), *ad hoc* scale.
- (d) ARCHITECTURAL ASSISTANTS, Special Classes (£615—£695 per annum), Grade A.P.T. II.
- (e) ARCHITECTURAL ASSISTANTS, Special Classes (£550—£630 per annum), Grade A.P.T. I.

Applicants for posts (a) and (b) must be Associate Members of the R.I.B.A. or hold equivalent qualifications, and for posts (c), (d) and (e), must be suitably qualified in accordance with the Regulations of the National Joint Council for Architectural Assistants.

The commencing salary in all grades will be according to capabilities and experience.

The posts are permanent, subject to a medical examination, to one month's notice on either side, and to the Provisions of the Local Government Superannuation Acts and the Birmingham Municipal Officers' Widows' and Orphans' Pensions Scheme.

Applications, endorsed with the heading of the post, stating age, present position and salary, qualifications and experience, together with the names of two persons to whom reference can be made, should reach the undersigned by not later than 31st August, 1956.

Canvassing disqualifies.
A. G. SHEPPARD FIDLER,
City Architect.
Civic Centre, Birmingham, 1. 1961

CITY OF STOKE-ON-TRENT

CITY ARCHITECT'S DEPARTMENT

Vacancies for QUANTITY SURVEYORS on the permanent staff on Grades A.P.T. IV (£710—£885), and A.P.T. III (£695—£875), capable of taking off and/or settlement of accounts.

Previous Local Government service not essential.

HOUSING ACCOMMODATION can be made available to suitable applicants.

Applicants, stating date of birth and giving full details of qualifications, training and experience, to J. R. Pigott, T.D., F.R.I.B.A., City Architect, Kingsway, Stoke-on-Trent, by Friday, 31st August, 1956.

HARRY TAYLOR,
Town Clerk.
1973

CITY OF PETERBOROUGH
APPOINTMENT OF ARCHITECTURAL ASSISTANT, GRADE A.P.T. II

Applications are invited for the above appointment in the City Engineer's Department. Applicants must possess a sound knowledge of building construction and be capable of preparing working and detail drawings under supervision. Previous experience on school buildings will be an advantage.

Applications stating age, experience, details of qualifications, together with copies of three recent testimonials, should be sent in envelopes endorsed "Architectural Assistant" to Mr. L. H. Robjohn, M.B.E., A.M.I.C.E., City Engineer and Surveyor, Town Hall, Peterborough, to reach him not later than 31st August, 1956.

Consideration will be given to the provision of Council housing accommodation.

Canvassing, directly or indirectly, will disqualify. Candidates must disclose whether they are related to any member or senior officer of the Council.

C. PETER CLARKE,
Town Clerk.

Town Hall,
Peterborough.
August, 1956. 2021

LONDON COUNTY COUNCIL requires:—

- (1) LANDSCAPE ARCHITECTURAL ASSISTANTS for new parks, playing fields, school grounds.
 - (2) ARCHITECTURAL ASSISTANTS for work on sports pavilions, cafés, service buildings, etc., in parks.
- Salaries up to £817 16s. a year, according to qualifications and experience.
Apply, giving brief particulars, to Chief Officer of the Parks Department, Old County Hall, Spring Gardens, S.W.1. (Whitehall 3121, ext. 319.) (1549) 1976

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD

Applications are invited from Associate Members of the R.I.B.A. for the following newly created post. The Board are engaged on a number of new building projects, including a new hospital at Welwyn.

SENIOR ASSISTANT ARCHITECT. Salary scale: £920 × £30 (5) × £25—£1,095, plus £40—£50 London weighting. Improved scale awaited. Applicants must have had considerable experience in design and construction, preferably in hospitals and associated buildings.

Apply, giving age, qualifications and experience, together with names of two referees, to Secretary, North West Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, by 28th August. 1981

BUCKS COUNTY COUNCIL

Applications are invited for the post of CHIEF HEATING AND LIGHTING ENGINEER, in charge of the Heating and Lighting Section of the County Architect's Department, J.N.C. Scale "B" (£1,185—£1,405 p.a.), starting point in accordance with qualifications and experience of the successful applicant.

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

Applicants must be qualified heating and lighting engineers, and have had considerable experience in the installation of heating and lighting schemes for schools or other large public buildings.

Application forms, giving further particulars of the appointment, are obtainable from the undersigned and returnable by 22nd September, 1956.

F. B. POOLEY,
County Architect.

County Offices, Aylesbury.
7th August, 1956. 1998

NATIONAL COAL BOARD

NORTHERN (N. & C.) DIVISION

Applications are invited for an ARCHITECT to take charge of a group in the Divisional Architect's office. Salary within the scale of £1,000 × £35—£1,300. Applicants must be Associates of the R.I.B.A., with at least five years' office experience, after qualification, in the design and administration of large building schemes.

Applications, stating age, training, and giving full details, including salaries, of past and present appointments, should be submitted not later than 28th August, 1956, to Divisional Chief Staff Officer, National Coal Board, Northern (N. & C.) Division, Whitley Road, Longbenton, Newcastle-upon-Tyne, 12. 2027

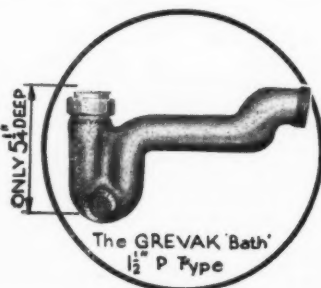
NEWTON-LE-WILLOWS URBAN DISTRICT COUNCIL

APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited for the above-mentioned appointment, at a salary in accordance with A.P.T. III. The National Scheme of Conditions of Service and the Local Government Superannuation Acts will apply. Housing accommodation available if required.

Preference will be given to applicants who have had experience in Municipal housing.

Applications, stating age, qualifications and experience, together with the names of two referees, to be received by the Clerk of the Council, Town Hall, Market Street, Newton-le-Willows, Lancashire, not later than 25th August, 1956. 1982



GREVAK 'Bath' traps with overflow connections were fitted on a simplified one-pipe system at Alice Gilliat Court, part of the Star Road (Fane Street) Redevelopment Area, Fulham — another recent example of the extensive specification of GREVAK patent anti-siphon traps to comply with the need for high standards of efficiency and hygiene on all plumbing systems.



Borough Architect & Director of Housing: J. Pritchard Lovell, Esq.,
F.R.I.B.A., F.I.A.B., P.P.I. Hsg.
Contractor: Messrs. John Laing & Son Ltd.

Fully illustrated literature and prices of the full range of 'GREVAK' traps available on request

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CHANCERY 8135 (4 LINES) · ANTIVACU WESTCENT, LONDON



**CITY OF LEEDS
CITY ARCHITECT'S DEPARTMENT**

Applications are invited for the following appointments:—

- (a) ASSISTANT ARCHITECT, Grade A.P.T. V. Salary scale: £795-£970.
- (b) ARCHITECTURAL ASSISTANTS, Grade A.P.T. I. Salary scale: £530-£610.
- (c) CLERK OF WORKS, A.P.T. II. Salary scale: £595-£675.
- (d) CLERK OF WORKS, A.P.T. I. Salary scale: £530-£610.

The payment of salary increments will be subject to satisfactory service, and will be granted normally with effect from the 1st April following the completion of six months' service. The appointments are subject to the Local Government Superannuation Acts, 1937-1953, and the successful applicants will be required to pass a medical examination.

Application forms may be obtained from the City Architect, Priestley House, Quarry Hill, Leeds, 9, to whom they should be returned, together with copies of three recent testimonials, by 12 noon on Saturday, 1st September, 1956.

R. A. H. LIVETT, O.B.E., A.R.I.B.A.,
City Architect.

Priestley House, Quarry Hill, Leeds, 9.
2nd August, 1956. 1986

**LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT**

Vacancy for Grade III (up to £987) for maintenance, repair and small improvements of Council buildings. Experience of alteration work and maintenance work on schedule basis an advantage; A.R.I.B.A. or A.R.I.C.S. desirable.

Particulars and application form, returnable by 23rd August, 1956, from The Architect (AR/EK/M/2), County Hall, S.E.1. (1559) 1977

**CITY AND ROYAL BURGH OF
DUNFERMLINE
BURGH ARCHITECTS AND TOWN
PLANNING DEPARTMENT**

Applications are invited for the post of TEMPORARY PLANNING ASSISTANT on the Salary scale: A.P.T. IV-V (£655-£760), with placing according to qualifications and experience. Preference will be given to Associate Members of the Institute of Town Planning.

Applications, stating age, experience, qualifications and present appointment, together with copies of two recent testimonials, should be addressed to Leonard Howarth, Burgh Architect and Town Planning Officer, 6, Abbot Street, Dunfermline.

The post has been designated by the Town Council for purposes of priority housing.

Applicants must disclose in writing whether to their knowledge they are related to any member or senior officer of the Town Council, and canvassing either directly or indirectly will be a disqualification.

J. DOUGLAS,
Town Clerk.

City Chambers, Dunfermline.
1st August, 1956. 1971

**AYR COUNTY COUNCIL
PLANNING DEPARTMENT**

Applications are invited for the following established posts in the Planning Department, County Buildings, Ayr:—

- (1) DISTRICT PLANNING OFFICER. Salary scale: £850-£980. Applicants should be Corporate Members of Town Planning Institute, and preference will be given to those who also hold architectural or engineering qualifications. They must have had good practical experience in planning work and in the operation of the relevant Statutes.
- (2) SENIOR PLANNING ASSISTANT. Salary scale: £745-£925. Applicants should be Corporate Members of Town Planning Institute, and preference will be given to those who also hold architectural or engineering qualifications. They should be experienced in the preparation of Town Maps.

Both posts superannuable, and placing within scales may be given according to qualifications and experience.

In each case, applications, giving age, and particulars of qualifications and experience, should be lodged with the County Clerk, County Buildings, Ayr, by 1st September, 1956. Two testimonials required. Canvassing disqualifies. 1985

**CITY OF LEEDS EDUCATION COMMITTEE
LEEDS COLLEGE OF ART
SCHOOL OF ARCHITECTURE AND TOWN
PLANNING**

Head: F. CHIPPINDALE, F.R.I.B.A.

Required as soon as possible an Architect (man), school trained, as STUDIO INSTRUCTOR AND LECTURER, with lively interest in Design. Previous teaching experience not essential, but sound office experience desirable.

Salary: Burnham Technical Scales for Senior Lecturer, at present £1,065-£1,215. Revised scale from 1st October, 1956, subject to final approval of new Technical Scales, £1,350-£1,550.

Application forms may be obtained from the undersigned, and should be returned within 14 days of the appearance of this advertisement. Candidates who have applied previously need not reapply.

GEORGE TAYLOR,
Chief Education Officer.

Education Department, Leeds, 1. 2032

**LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT**

Vacancies exist for ARCHITECT/PLANNERS (salaries up to £817). Tasks include 3-dimensional planning within London's eight major Comprehensive Development Areas (including Stepney/Poplar, the South Bank and Elephant and Castle) and other Redevelopment Areas.

The work includes the preparation of comprehensive layouts covering all the important areas of new public and private development throughout the County, and covers the whole field of planning technique.

Particulars and application form from Architect (AR/EK/ATP/1), County Hall, S.E.1. (907) 1278

BOROUGH OF EALING-TOWN PLANNING ASSISTANT, A.P.T. III (£640-£765 per annum, plus London weighting). Full particulars and application form, from Borough Surveyor, Town Hall, Ealing, W.5. Closing date 20th August, 1956.

E. J. COPE-BROWN,
Town Clerk.

1917

Architectural Appointments Vacant
4 lines or under, 7s. 6d.; each additional line, 2s.

ARCHITECTURAL ASSISTANT required, approaching Finals, with at least one year's office experience. Box 1896.

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

Applications are invited for the following appointments:—

- (a) SENIOR ASSISTANT ARCHITECTS, with experience of work on commercial and industrial projects.

(Salary range £820 to £975 per annum.)

- (b) ASSISTANT ARCHITECTS, capable of preparing working drawings from preliminary details.

(Salary range £550 to £820 per annum.)

There is a five-day week in operation, and both appointments offer prospects of upgrading.

Applications, stating age, experience, qualifications and salary required, to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester, 4. 3871

A PRIVATE Office has several vacancies for ARCHITECTS interested in new building techniques. Previous experience not essential, and work will include the research and development of standard structural and building elements.—Apply A. M. Gear, F.R.I.B.A., 12, Manchester Square, London, W.1. 1927

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

Applications are invited from suitably qualified persons. Salary on a scale £485-£945 inclusive of L.W., with placing according to age, qualifications and experience. The posts are superannuable, subject to medical examination. Five-day week in operation. Applications, stating age, experience, qualifications and salary required, to—W. J. Read, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 99, Leman Street, London, E.1. 2824

IF you are qualified and think that a knowledge of construction and good draughtsmanship are not incompatible with good design and that administration is not the essence of architecture, write to Box 1784, stating details of your career and salary required.

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

Applications are invited for the following appointments in a newly formed Branch Office. Interesting and varied commercial and industrial projects.

- (a) SENIOR ASSISTANT ARCHITECT, with experience in Store and Shop Design.

(Salary range £820 to £975 per annum.)

- (b) ASSISTANT ARCHITECTS, capable of preparing working drawings and details from preliminary sketches.

(Salary range £550 to £820 per annum.)

- (c) ASSISTANT QUANTITY SURVEYOR, capable of working-up and taking-off under supervision.

(Salary range £550 to £820 per annum.)

Applications, stating age, experience, qualifications, and salary required, to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester, 4. 3872

CROYDON—ARCHITECTURAL ASSISTANT required immediately for interesting and varied work. Inter./Final standard; capable of running small contracts.—Write age, experience, and salary required, to George Lowe & Partner, 4, High Street, Croydon, Surrey. 1951

ARCHITECTURAL ASSISTANT required for Edinburgh office, schools and industrial laboratories. Minimum two years' post graduate or one year's post apprentice experience essential. Pension scheme. Salary £500-£800. Fairbrother, Hall & Hedges, 27, Rutland Square, Edinburgh, 1. 1898

ASSISTANT, of Intermediate standard, required by Norfolk Architect.—Reply, with details of experience and salary required, to Box 1926.

ESTABLISHED practice in Charing Cross area requires SENIOR and INTERMEDIATE ARCHITECTURAL ASSISTANTS. Interesting and varied work. Good salaries offered commensurate with experience. Apply giving particulars, Box 1909.

ASSISTANT ARCHITECT required by West End firm for important airport, industrial and office schemes. Salary according to experience. Box 1891.

ARCHITECTURAL ASSISTANT with experience required by old-established Plymouth firm with wide range of work for man of initiative. R.I.B.A. qualification desirable.—Please write, giving full details, to Box 1946.

ASSISTANTS AND DRAUGHTSMEN (Male and Female) required in busy West End office. Some assistants required now; others Sept./Oct. Applicants must be competent draughtsmen, but office experience desirable but not essential. Excellent opportunities for gaining all-round experience. Good salaries and bonus. Overtime paid at 50% over basic rates. Welch & Lander, 38, Gloucester Place, W.1. Welbeck 6551. 1874

ARCHITECTURAL ASSISTANT required in busy London office with varied practice. Good salary and prospects for suitable applicant. 5-day week. Write, giving particulars of age, qualifications, experience, etc., to Box 775, c/o 7, Coptic Street, W.C.1. 9313

LONDON Consultants require immediately ASSISTANTS of Intermediate and R.I.B.A. standard for varied and interesting contemporary industrial projects. Responsibility given to applicants with good design sense and constructional ability. Apply, giving full particulars and salary required, to Box No. 401, Glovers Advertising Ltd., 351, Oxford Street, London, W.1. 9341

NORMAN & DAWBARN invite applications from ARCHITECTURAL ASSISTANTS of Inter. or higher standard, with not less than 3 years' office experience, to assist in preparation of working drawings for a large and technically complex building development in the Shepherd's Bush neighbourhood of London.—Write to 7, Portland Place, London, W.1, or 'phone Hunter 0715. 1948

ARCHITECTURAL ASSISTANT required in small, but busy West End office, engaged upon varied schemes.—Apply by letter or telephone Hastie, Winch & Kelly, 1, Bentinck Street, W.1. Welbeck 8863. Mark letters "Private". 1481

RONALD FIELDING, A.R.I.B.A., requires Intermediate ASSISTANTS.—Please apply with details of experience, age, and salary required, to Aldwych House, London, W.C.2. Chancery 3532/3. 1929

EXPERIENCED SENIOR ARCHITECT required; contemporary office. Good prospects. Salary according to experience.—C. H. Elsom, F.R.I.B.A., 10, Lower Grosvenor Place, S.W.1. VIC. 4304. 1936

ASSISTANTS for small busy City practice. Salary according to ability. First-class opportunities for capable young men.—Knapp & Deane, 6, Martin Lane, E.C.4. MAN. 6282. 1934

ASSISTANT, preferably qualified with some office experience, required for private office in West End. Box 1903.

PROGRESSIVE firm of Building Contractors in the West Riding of Yorkshire invite applications from qualified young men for newly created staff appointment. The person engaged will be required to deal with quantities, plans, estate layout, etc. Applications, giving details of experience and salary required in first instance, to Trigg, Parrish & Co., Accountants, Bow Street, Keighley. 2003

ARCHITECTS' ASSISTANTS required, Exeter and London offices. Applicants should be willing if appointed to travel and have passed R.I.B.A. Intermediate examination or attained that standard. Salary according to qualifications. Apply J. Francis Smith, F.R.I.B.A., F.R.I.C.S., 5, Cathedral Close, Exeter. 2002

**THE POLYTECHNIC
309, REGENT STREET, W.1
SCHOOL OF ARCHITECTURE, SURVEYING
AND TOWN PLANNING**

VACANCIES exist for TWO FULL-TIME TEACHERS, (1) with Architectural, Engineering or Surveying qualifications with interest in the technical and scientific aspects of the course and (2) a studio master who should be an A.R.I.B.A. and a graduate of a fully recognised school of architecture.

Both posts are Grade B. Burnham (Further Education) scale appointments, the salary scale at present having a maximum of £820 per annum plus London allowance of £36 or £48 and additional allowances for graduateship and training. The proposed scale from October 1st next is considerably higher.

A form of application can be obtained by sending a stamped addressed foolscap envelope to the undersigned.

J. C. JONES,
Director of Education. 2008

PLYMOUTH Architect with interesting and varied commissions requires assistance. Apply giving full particulars to H. Cameron Beaumont, A.R.I.B.A., 88, Torr Lane, Hartley, Plymouth. 2053

ASSISTANT ARCHITECT required for Edinburgh Office. Applicants should have good general experience but preference will be given to applicants with experience in the design of schools. Pension Scheme. Salary £1,000 per annum. Fairbrother, Hall & Hedges, 27, Rutland Square, Edinburgh. 2028

FOLKESTONE practice has vacancies for ARCHITECTURAL ASSISTANTS. Interesting and varied work, 5-day week. Apply stating age, experience and salary required: Willan, Stewart & Waite, A.R.I.B.A., 127, Sandgate Road, Folkestone, Kent. Folkestone 2134. 2012

ARCHITECTS in South Kensington require SENIOR ASSISTANT, a man accustomed to carrying responsibility as regards design and specification work. Salary range £750 to £850 according to experience. Busy general practice; five-day week. Phone KENSINGTON 1242 or write Box 2015.

AIR MINISTRY require TAKERS-OFF and WORKERS-UP in the Quantities Division, London. Takers-off must have wide experience of all classes of work. Salaries from £900-£1,640 according to age, qualifications and experience. Workers-up must be fully experienced and competent to work up entire Bills of Quantities. Salaries from £635-£925 according to age, qualifications and experience. Quantity Surveyors, Assistant Quantity Surveyors and Quantity Surveying Assistants also required by other Government Departments, both in London and Provinces. Applicants should normally be naturally born British subjects. Forms quoting 231 (A) from M.L.N.S., Technical and Scientific Register (K), 26, King Street, S.W.1. 2013

ARCHITECTURAL ASSISTANT required in Architect's Department of Schweppes, Limited. Interesting work throughout the country. Salary according to experience and qualifications. Preference will be given to the applicant in early twenties with minimum of two years' office experience and capable of undertaking small projects with minimum supervision. Write giving age, full particulars of experience and salary required to Personnel Manager, 1-4, Connaught Place, London, W.1. 2001

W. H. WATKINS, GRAY, F.F.R.I.B.A. and Partners require ARCHITECTURAL ASSISTANTS of Intermediate or near-final standard for Bristol Office. Applicants should preferably have passed R.I.B.A. Intermediate and be studying for Final. Good salary and conditions; contributory pension scheme in operation. Full details of age, experience, salary required and date available to 1, Clare Street, Bristol 1. 1995

SIR GILES SCOTT, SON & PARTNER have vacancies for qualified and experienced SENIOR and also JUNIOR ASSISTANTS. The salaries paid will be according to experience, with a maximum starting salary in the case of the senior post of £950.—Apply in writing, giving brief career details, to 9, Gray's Inn Square, W.C.1. 1798

ARCHITECTURAL DRAFTSMEN for Industrial Building and/or Staff housing. Good salary, pension scheme. Apply stating age, qualifications and experience. Staff Personnel Manager, Ashmore Benson, Pease & Co., Stockton-on-Tees. 2019

ROBERT SHARP & SON require SENIOR and JUNIOR ASSISTANTS of not less than Intermediate standard. Applicants must have previous office experience. Salary according to experience. Reply giving details of experience and age to 13, Lower Belgrave Street, S.W.1. 2023

NEW ZEALAND Architectural Practice, mainly engaged commercial, bank, and industrial work, requires: (a) ASSISTANT ARCHITECT, preferably A.R.I.B.A., with some experience since exams. salary range £825 to £900. (b) ARCHITECTURAL ASSISTANT with at least 6 years' sound office experience, salary range £650 to £775. Rates applicable depend ability and qualifications, being commencing salary, with good increases twice yearly, according progress. Splendid opportunity for enterprising capable men; minimum 2 years' assured engagement. Applicants' passage provided, subject certain minor conditions. Either single or married men considered, although single accommodation easier.—Apply airmail, with snapshot and personal and experience details, plus small recent working drawing, to Mitchell & Mitchell and Partners, P.O. Box 187, Wellington, N.Z. 1783

SCHERRER & HICKS, of 19, Cavendish Square, W.1 (Tel.: Museum 1105), require immediately several ARCHITECTURAL ASSISTANTS of intermediate standard. The work is varied and covers Research Laboratories, Offices, Housing and Schools. Five-day week. Salary by arrangement. Box 1980.

ARCHITECT'S ASSISTANTS required, London. Salaries £500-£750. Box 1964.

JUNIOR ASSISTANT required in small but busy Architect's Office on South Coast. Write age, experience and salary, etc., to Egerton W. Owen, Chartered Architect, 33, Beach Road, Littlehampton, Sussex. 1987

ARCHITECT required to take responsibility of progressive department attached to old established firm of Surveyors and Valuers, North East Kent. Age 35 to 45. General practice with drawing staff of 3. House available. Car driver. Write stating age, experience and salary required to Box 1744.

ARCHITECTURAL ASSISTANTS required in the Regional Architect's office to work on projects connected with the Railway Modernisation Plan. Good educational standard and high standard of draughtsmanship required. Salary range £320 to £706 per annum, according to age, qualifications and experience. Residential and other travel concessions available. Apply, giving age, experience and qualifications to H. E. B. Cavanagh, A.R.I.B.A., Architect, Chief Civil Engineer's Office, British Railways (Western Region), Paddington, W.2. 1968

ASSISTANT ARCHITECTS required in the Regional Architect's Office to work on projects connected with the Railway Modernisation Plan. Must be a student of the R.I.B.A., or be qualified to sit for the Special Final Examination of the R.I.B.A. within the next two years. Must produce evidence of high standard of architectural design and knowledge of modern building technique. Salary range £770 to £835 per annum. Prospects of further promotion for entrants showing outstanding qualities of leadership and responsibility. Residential and other travel concessions available. Apply giving age, experience and qualifications to H. E. B. Cavanagh, A.R.I.B.A., Architect, Chief Civil Engineer's Office, British Railways (Western Region), Paddington, W.2. 1969

LEONARD MANASSEH & PARTNERS require an ASSISTANT up to 5th Year standard, preferably with office experience. Write 29, Buckingham Street, Strand, W.C.2. 1962

PETER LAWRENCE, A.R.I.C.S., requires TAKERS-OFF in his Wimbledon office. Flat available if required. 26, The Broadway, Wimbledon, S.W.19. Telephone Wimbledon 2993. 1964

PRE-FINAL ASSISTANT required early September, 1956. Opportunity to gain all-round experience taking charge of jobs in office and on site. Salary £600 p.a. Five-day week. Geoffrey Shires, 75, Victoria Street, S.W.1. Tel. ABBey 4909. 1966

INTERMEDIATE TO FINAL ASSISTANTS required for interesting London practice. Interview expenses for provincial applicants. Five-day week. Full particulars to Box 1979.

SENIOR ASSISTANT required, Maidstone architect, possibility later partnership suitable applicant. State age, experience and salary required. Box 1983.

Architectural Appointments Wanted

4 lines or under, 7s. 6d.; each additional line, 2s.

SENIOR ASSISTANT (11 years present arch. surv. office) seeks change. London or Surrey. R.I.B.A. Special Final November. 20 years' practical experience joint professions. Car driver. Would come in as chief (sic) assistant in newly-created practice, or be newly-qualified man's standby in return for reasonable salary, prospects and loyalty. Prefer small office to give opportunity to build up clientele: could introduce clients. Tackle almost any problem except valuations. Box 1956.

ARCHITECT (R.I.B.A.), over 30 years' experience in London, seeks change of location. Would welcome congenial appointment in Surrey. Box 2022.

A.R.I.B.A. seeks responsible position. Car owner. Present salary £1,000 p.a. Box 1894.

QUALIFIED ARCHITECT. Quick, accurate draughtsman. Seeks evening and weekend work. London district. Any worthwhile offers considered. Box 1996.

ITALIAN ASSISTANT ARCHITECT, 5 years' experience, contemporary outlook, seeks evening or weekend work. Box 2000.

YOUNG, male, British Architect, Dip. Arch., Dip. T.P., seeks temporary or permanent post in Toronto or vicinity. Late September. Available interview London area. Box 2007.

DO you want something for nothing? Who doesn't; but an experienced artist/craftsman can offer the next best thing with inexpensive models, perspectives, etc. Write for details to Box 1742.

ARCHITECT'S ASSISTANT (female), approaching Final standard, seeks position (full-time) in London area. Box 1975.

CHARTERED CIVIL ENGINEER seeks congenial permanent position of responsibility with Chartered Architects who may consider it an advantage to have a section dealing with Civil Engineering ancillary to their usual work. Advertiser has 20 years' experience including administration, design and construction, quantities, specifications. Experienced all branches Public Health Engineering, roads, housing estate development, foundations, reinforced concrete, industrial work, local government law and bye-laws. Within one hour's daily travelling each way S.E. Manchester unless some assistance can be given with house purchase. Replies need not be immediate to give Principals time to consider all aspects. Box 1970.

ARCHITECT, age 42, extensive experience at home and overseas on large and small projects, desires position with a view to ultimate partnership. Prepared to go abroad, especially Canada. Box 1963.

CHARTERED ARCHITECT, in private practice 20 years, vast commercial and comprehensive experience at home and abroad, offers services covering full technique of the profession; would consider position as resident architect or partnership; Home or Southern counties preferred but not stressed. Box 1965.

ASSISTANT (31), passed part of Final, 10 years' experience, seeks position in contemporary London office. Box 1988.

FLOOR MAINTENANCE

a service to Architects

Our job is to keep floors in the pink of condition with the minimum cost in labour and materials. Every floor has different characteristics, is used for different purposes, and has to cope with different types of traffic, that is why our individual and personal attention is proving so valuable to Architects, Local Authorities, Education Committees, Hospital Boards, etc. We advise over 22,000 schools. Our representatives are placed strategically throughout the country and can give immediate advice on any flooring problem.

FLOOR TREATMENTS LTD. 14 Easton Street, High Wycombe, Bucks. Telephone: High Wycombe 1617 (2 lines)
Scottish Sales Office and store now open — 33, Mertoun Place, Edinburgh 11

Clients include:—

Royal Festival Hall
D. H. Evans Ltd.
Selfridges
J. Players & Sons, Nottingham
New Premises, Bank of England
Stock Exchange, London
Austin Motors
London Hospital

Other Appointments Vacant

4 lines or under, 7s. 6d.; each additional line, 2s.

BUILDING OR STRUCTURAL DRAUGHTSMAN required by Specialists in Prefabrication for interesting work on a number of timber building components. The successful applicant will have an opportunity of entering into the design of a new product in its early stages of development, and taking part in a development programme.—Applications, giving fullest possible details of career to date, including present salary, to be sent to G. R. Bonella, A.R.I.B.A., Messrs. H. Newsum, Sons & Co., Ltd., Carr Lane, Gainsborough, Lincs. 1925

CADBURY BROS. require a **STRUCTURAL ENGINEERING DRAUGHTSMAN** experienced in the design and construction of high-class industrial buildings in steel and reinforced concrete. Accommodation will be available. Write stating age, qualifications and salary required to E.M.A., Cadbury Brothers Ltd., Bournville, Birmingham. 1997

SHORTHAND/TYPEIST required for Architect's office. Good speeds. Salary according to experience. C. H. Elsom, 10, Lower Grosvenor Place, S.W.1. VIC 4304. 2006

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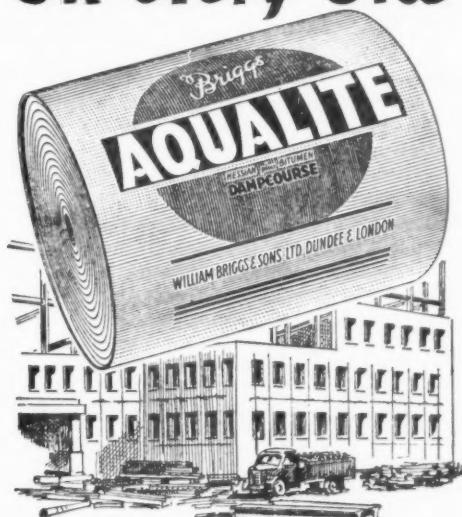
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